# Technical Work Group Meeting #3 Summary Report

## SH 16 (Bandera Road)

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

October 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. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.*

# Table of Contents

# Acronyms and Abbreviations

| | |
|---|---|
| AACOG | Alamo Area Council of Governments |
| AADT | Average annual daily traffic |
| AAGR | Annual Average Growth Rate (per year) |
| AAMPO | Alamo Area Metropolitan Planning Organization |
| DLT | Displaced left turn |
| ISD | Independent School District |
| LBS | Location-based services |
| O-D | Origin-Destination |
| RMA | Regional Mobility Authority |
| TAZ | Traffic Analysis Zone |
| TDM | Travel Demand Model |
| TMC | Turning Movement Count |
| TPR | Texas Public Radio |
| TWG | Technical Work Group |
| TxDOT | Texas Department of Transportation |
| VIA | VIA Metropolitan Transit |

# 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. 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 Thursday, September 5, 2019, TxDOT held the third TWG meeting in a series of meetings that will continue to occur throughout the project development process. The meeting was held at the Leon Valley Conference Center located at 6421 Evers Rd. in Leon Valley, Texas, 78238. The meeting was held from 1:00 to 3:00 p.m. A total of 24 individuals from 11 organizations were invited to participate as members of the TWG. Seventeen (17) individuals from 11 organizations attended the third 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.

Technical Work Group Meeting #3, September 5, 2019

## 2. Attendance

*TWG Members*

| Name | | Organization |
|---|---|---|
| 1. | Jeanne Geiger | Alamo Area Metropolitan Planning Organization |
| 2. | David Wegmann | Bexar County |
| 3. | Brandon Melland | City of Leon Valley |
| 4. | Melinda Moritz | City of Leon Valley |
| 5. | Rudy Nino | City of San Antonio, Planning Department |
| 6. | Bianca Thorpe | City of San Antonio, Transportation & Capital Improvements |
| 7. | Joseph Arteritano | LNV, Inc. |
| 8. | Lettie Mejia | Northside ISD |
| 9. | Rafael Salazar | Northside ISD |
| 10. | Ryan Losch | Page |
| 11. | Brandon Herman | San Antonio River Authority |
| 12. | Hillary Lilly | San Antonio River Authority |
| 13. | Fernando Flores | Texas Department of Transportation |
| 14. | Amy Redmond | Texas Department of Transportation |
| 15. | Clayton Ripps | Texas Department of Transportation |
| 16. | Pete Arguello | VIA Metropolitan Transit |
| 17. | Jay Louden | Work5hop |

*Project Team Members in Attendance*

| Name | Organization |
|---|---|
| 1. Bill Loudon | Alliance Transportation Group, Inc. |
| 2. Michael Wagoner | Alliance Transportation Group, Inc. |
| 3. Chad Gardiner | Halff Associates, Inc. |
| 4. Kevin Lipnicky | Halff Associates, Inc. |
| 5. Queenie Ye | Pape-Dawson Engineers |
| 6. Lena Camarillo | Poznecki-Camarillo, Inc. |
| 7. Jackie Lopez | Poznecki-Camarillo, Inc. |
| 8. Linda Vela* | Poznecki-Camarillo, Inc. |

**Attended but did not sign in at the meeting.*

## 3. Meeting Structure

A sign-in table was set up at the entrance to the meeting and the following handouts were given to attendees: (1) a presentation handout, and (2) an agenda. The handouts are included in **Appendix D**. As mentioned above, 17 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**.

## 4. Welcome & Introductions

Mr. Chad Gardiner, P.E., Consultant Project Manager with Halff Associates, Inc., welcomed TWG attendees and initiated introductions.

## 5. Presentation

### 5.1 Summary of Efforts Since TWG #2

(a) TWG Meeting #2 Summary

On April 24, 2019, TxDOT held the second TWG Meeting at the TxDOT San Antonio District. Ten (10) TWG members representing seven organizations attended this meeting.

Key takeaways from TWG Meeting #2 included:

- 2018 daily traffic volumes need to be adjusted to reflect historical trends (primarily in the north end of the project limits);
- The AAMPO Travel Demand Model was utilized as a tool to help identify potential latent demand of SH 16 (Bandera Road);
- Bluetooth origin-destination (O-D) analysis of the SH 16 (Bandera Road) corridor has been completed, including a corridor-level analysis (internal movements) and a regional-level analysis (interaction with regional corridors); and
- The crash rate of SH 16 (Bandera Road) is higher than the statewide average.

(b) Community Outreach Since TWG Meeting #2

Other community outreach events that have occurred since the TWG Meeting #2 include:

- City of San Antonio Community Meeting – April 29, 2019, City Church, 9431 Bandera Rd., San Antonio, TX 78250; 628 individuals signed in at the meeting

City of San Antonio Community Meeting, April 29, 2019

- **Texas Public Radio (TPR) Interview on "The Source"**
  April 29, 2019
  Included representatives from TxDOT and the City of San Antonio

- **Planning Team Meeting #1**
  May 20, 2019
  Leon Valley Conference Center
  6421 Evers Rd.
  Leon Valley, TX
  17 attendees from 14 organizations participated

- **SH 16 (Bandera Road) Survey #1**
  February 12 to May 31, 2019
  885 individuals participated

- **Bandera Road Task Force Meetings**
  June 4, 2019
  July 9, 2019
  August 12, 2019

- **Coordination Meeting with Work5hop (City of San Antonio planning consultant)**
  July 12, 2019

Summary reports from prior community engagement events are available for review on the project website, www.txdot.gov, keywords "SH 16 (Bandera Road) from I-410 to Loop 1604".

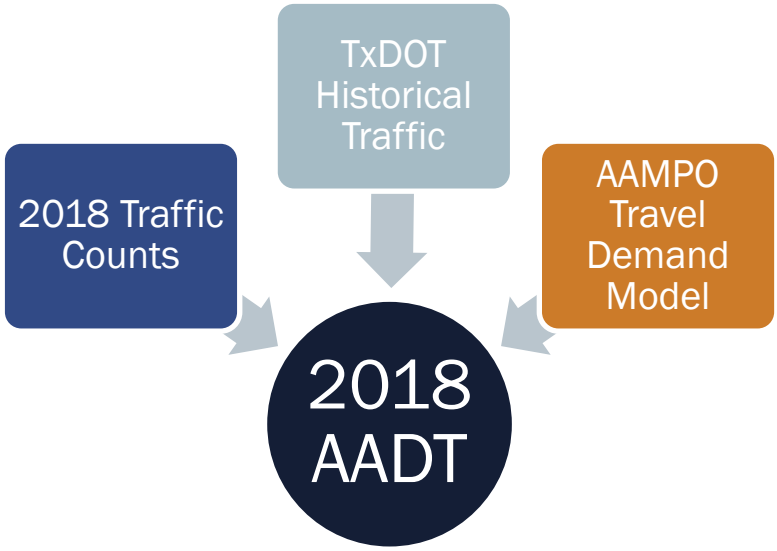

TPR, April 29, 2019


SH 16 (Bandera Road) Survey Results

## 5.2 Traffic Volumes

### (a) 2018 Daily Volumes

To complete the development of 2018 annual average daily traffic (AADT) volumes of SH 16 (Bandera Road), the 2018 traffic counts were calibrated using historical TxDOT traffic counts to ensure the 2018 volumes are representative of typical corridor conditions. Traffic volumes were adjusted throughout the corridor to create a balanced network and include the recently completed SH 16 (Bandera Road) at Loop 1604 displaced left turn (DLT).




2018 Annual Average Daily Traffic Volumes

### (b) Potential Latent Demand

The Project Team utilized the AAMPO's 2045 Travel Demand Model to identify potential latent demand for the corridor. "Latent demand" refers to individuals/vehicles that currently do not use SH 16 (Bandera Road) due to the level of congestion currently on the corridor. These vehicles use adjacent streets and cut through routes. However, they would be able to use the corridor if additional capacity were added.

To identify the potential latent demand of the corridor, the Project Team analyzed three scenarios using the AAMPO model:

- **Standard** – AAMPO model with no improvements to SH 16 (Bandera Road)
- **Scenario #1** – SH 16 (Bandera Road) modified to add two lanes in each direction
- **Scenario #2** – All roadways modified to add two lanes in each direction; this captures the traffic that might use SH 16 (Bandera Road) if congestion is eliminated from the network.

The results of this analysis are summarized in the below table. Under Scenario #1, up to approximately 15,000 additional vehicles per day would use SH 16 (Bandera Road) between Eckhert Road and Mainland Drive and between Braun Road and Camino Villa if two lanes were added to SH 16 (Bandera Road) in each direction. If all roads were modified to add two lanes in each direction (Scenario #2), approximately 6,000 to 8,000 additional vehicles would use SH 16 (Bandera Road, primarily near the project limits).

### Potential Latent Demand of SH 16 (Bandera Road)

| Location Along SH 16 (Bandera Road) | 2045 Standard AAMPO Model | Scenario #1 SH 16 (Bandera Road) "Unconstrained" | | Scenario #2 All Roads "Unconstrained" | |
|---|---|---|---|---|---|
| | 2015 to 2045 TDM Volume AAGR | 2015 to 2045 TDM Volume AAGR | Standard 2045 Compared to Scenario #1 (vehicles/day) | 2015 to 2045 TDM Volume AAGR | Standard 2045 Compared to Scenario #2 (vehicles/day) |
| Between Grissom Road and Huebner Road | 0.32% | 0.81% | 12,907 | 0.63% | 8,158 |
| Between Eckhert Road and Mainland Drive | 0.95% | 1.66% | 15,175 | 1.02% | 1,644 |
| Between Braun Road and Camino Villa | 0.72% | 2.39% | 15,569 | 1.00% | 2,628 |
| Between Quincy Lee Drive and Loop 1604 | 1.80% | 2.78% | 13,094 | 2.24% | 5,911 |

TDM = Travel Demand Model

AAGR = Annual Average Growth Rate (per year)

(c) No-Build Traffic Projections

Draft traffic projections completed by the Project Team for the No-Build Alternative for the open to traffic year (2027) and design year (2047) are currently under review by TxDOT.

Growth rates utilized for these projections are based on:

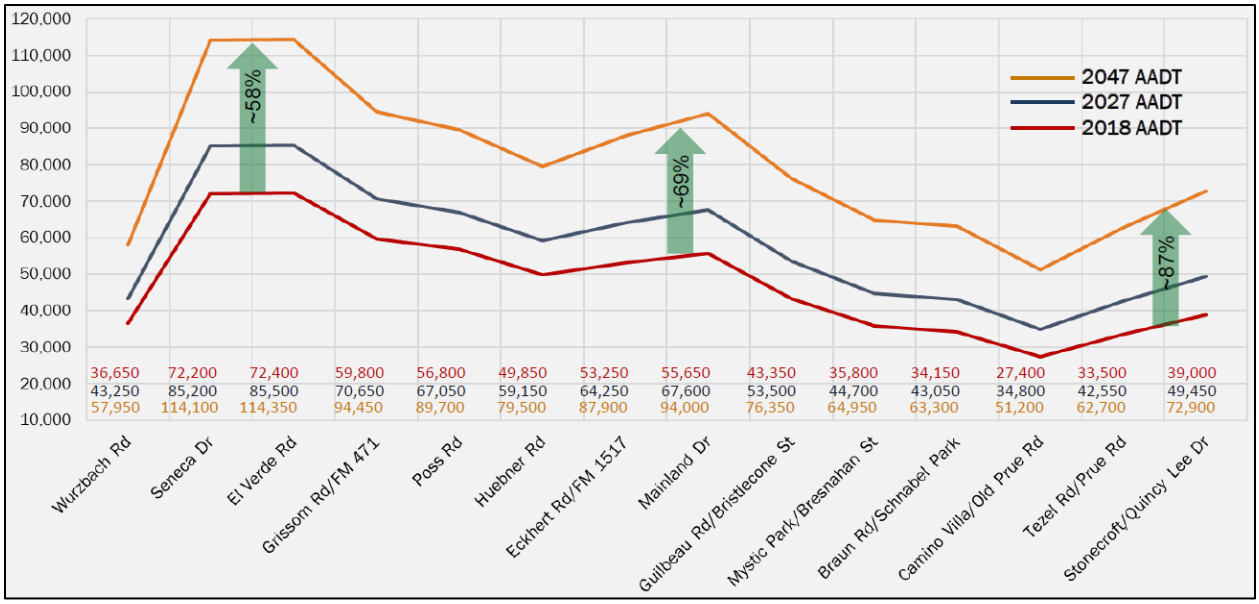
- Regression analysis of TxDOT historical SH 16 (Bandera Road) traffic counts from 1999 to 2017; and
- Analysis of AAMPO model demographics and network, including regions east and west of the project corridor.

As a result, varying growth rates were used for No-Build traffic projections, with higher growth rates predicted for areas north of Guilbeau Road. The recommended growth rates accounted for the potential latent demand identified from the AAMPO Scenario #1 and are summarized in the below table. Higher growth rates (three percent from 2018-2047) in the northern portion of the project limits (Guilbeau Road to Loop 1604) are expected since there are ongoing developments and undeveloped land available for development in this section. The southern portion of the project limits (I-410 to Guilbeau Road) is almost completely developed, thus explaining the lower growth rate (two percent from 2018-2047) in this section.

### Recommended Growth Rates for SH 16 (Bandera Road)

| Location Along SH 16 (Bandera Road) | Recommended Annual Average Growth Rate (AAGR) | | |
|---|---|---|---|
| | 2018-2027 | 2027-2047 | 2047-2057 |
| I-410 to Guilbeau Road | 2.0% | 2.0% | 2.0% |
| Guilbeau Road to Loop 1604 | 3.0% | 3.0% | 2.0% |

The No-Build traffic projections indicate that the number of vehicles per day on SH 16 (Bandera Road) in the southern end of the project limits (at Seneca Drive and El Verde Road) could increase by approximately 58 percent from approximately 72,000 vehicles per day in 2018 to approximately 114,000 vehicles per day in 2047. Around Guilbeau Road, where the recommended growth rate transitions from two to three percent, traffic projections are anticipated to increase by approximately 69 percent from approximately 56,000 vehicles per day in 2018 to approximately 94,000 vehicles per day in 2047. Moving north along the corridor near Loop 1604, traffic is anticipated to increase by approximately 87 percent from approximately 39,000 vehicles per day in 2018 to approximately 73,000 vehicles per day in 2047. The No-Build traffic projections are summarized in the below graph.




SH 16 (Bandera Road) No-Build Traffic AADT Volumes (vehicles per day)

(d) VISSIM Model: Existing Conditions

The Project Team is in the process of analyzing the SH 16 (Bandera Road) existing conditions using VISSIM, which is a traffic simulation and modeling software. The AM and PM peak periods are being analyzed and calibrated to represent existing conditions along the corridor.

Utilizing the collected Bluetooth data and O-D analysis, an O-D matrix was developed for SH 16 (Bandera Road) AM/PM peak periods, which included a total of 1,560 routes. The O-D matrix was balanced against turning movement volumes to produce the inputs and routing for the VISSIM model.

When proposed concepts are identified for the SH 16 (Bandera Road) Project, the O-D matrix can be applied to these concepts to help the Project Team understand how potential concepts would affect access and operations of the corridor.

Due to current demand and capacity of SH 16 (Bandera Road), there is only a certain amount of traffic that can get through the corridor in the peak periods, although there is additional traffic wanting to get through, which leads to queuing. To help capture this in the existing conditions analysis, the Project Team analyzed peak periods, rather than a peak hour.

## 5.3 StreetLight Data Analysis

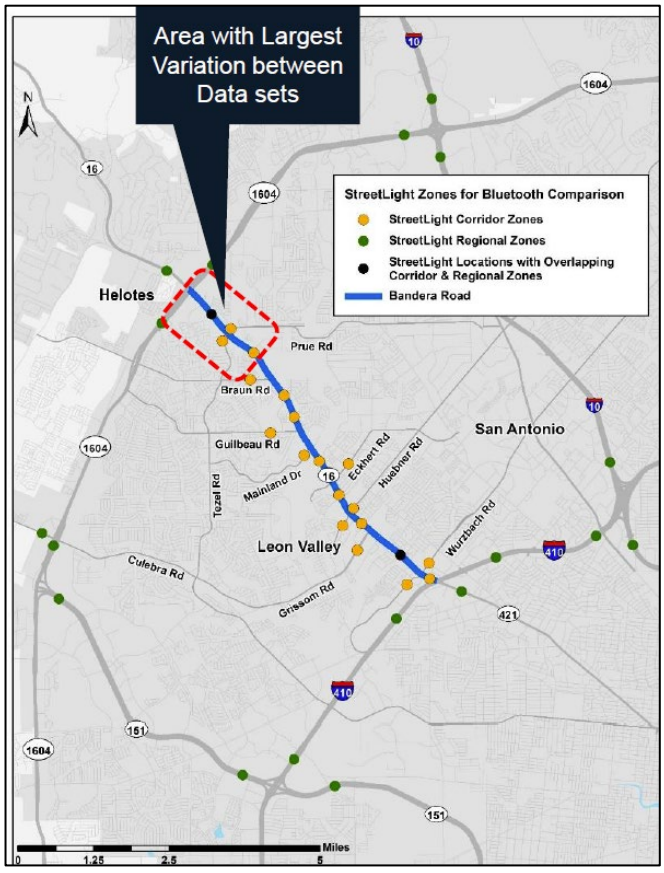
"StreetLight Data" is a service that collects location-based services (LBS) data by means of smartphone applications to represent a sampling of the total number of trips that pass through a defined location. This data was analyzed to:

- Provide a direct comparison to the Bluetooth O-D analysis;
- Provide a direct comparison to the AAMPO Travel Demand Model; and
- Provide a new O-D analysis for neighborhoods adjacent to the corridor.

StreetLight data collected on Tuesday through Thursday over the entire year of 2018 was analyzed and calibrated using the collected 2018 traffic counts and TxDOT historical traffic counts.

### (a) Bluetooth O-D Comparison

StreetLight zones were structured to overlap the Bluetooth O-D sensor locations. Corridor and regional O-D analyses were performed for comparison to the Bluetooth O-D analyses. Both the Bluetooth and StreetLight O-D analyses utilized the same traffic count control totals for expansion of O-D trips.



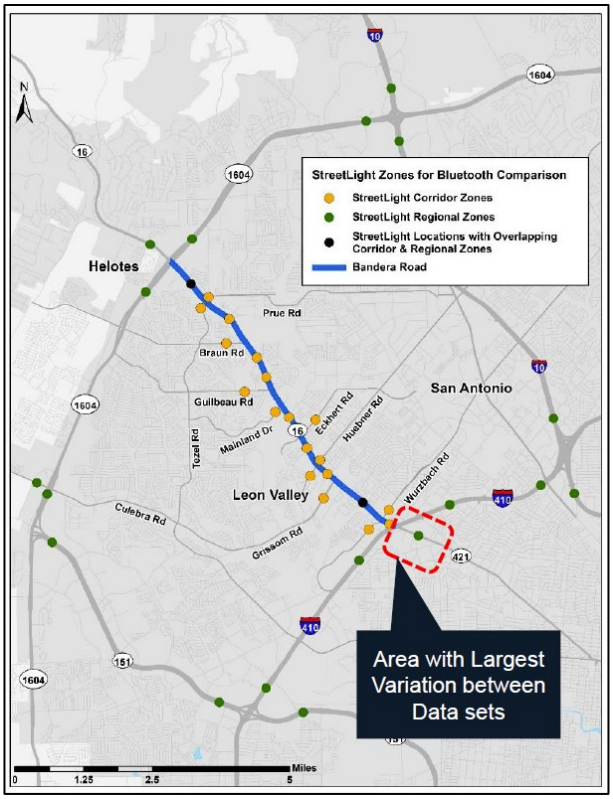

Corridor-Level O-D Comparison

<u>Corridor Level O-D Analysis</u>

Comparison of StreetLight and Bluetooth corridor-level O-D data showed very similar daily trip patterns, with the typical variation between the two datasets between one and six percent. The largest variation between the datasets was for SH 16 (Bandera Road) trips between Loop 1604 and the Camino Villa/Braun Road area; in this area, the StreetLight O-D analysis indicates approximately 13 to 14 percent more daily trips have an origin and destination within these limits.

Regional Level

Comparison of StreetLight and Bluetooth regional-level O-D data also showed a strong correlation in regional O-D trip distribution, with the typical variation between the two datasets between one and four percent. The maximum variation between the two datasets was approximately 10 percent, with the largest variation for SH 16 (Bandera Road) trips south of I-410; in this area, StreetLight data indicates approximately nine to 10 percent more daily trips have an origin and destination within these limits. Also, some specific O-D routes on I-410 and Loop 1604 exhibit an approximate 10 percent variation, but the total percentage of traffic traveling between SH 16 (Bandera Road), I-410, and Loop 1604 is similar between the StreetLight and Bluetooth data.




Regional-Level O-D Comparison

(b) AAMPO Travel Demand Model Comparison

StreetLight data was also compared to AAMPO Travel Demand Model data. StreetLight analysis utilized 17 zones, which are nested entirely within the AAMPO's Travel Demand Model traffic analysis zones (TAZs); this allows for a direct comparison between these two datasets. Trips that have a final origin or destination within these zones, not pass-through trips, were analyzed.

StreetLight data was calibrated for the AM/PM peak periods and daily trips. Both datasets use the same PM period timeframe, whereas the AAMPO model has a slightly shorter AM period compared to StreetLight. The two data sources exhibit a similar number of trips generated in all time periods, as summarized in the below table.

Comparison of Calibrated StreetLight Trips to AAMPO Model

| Time Period | Total Trips (StreetLight) | Total Trips (AAMPO Model) |
|---|---|---|
| Daily | 467,539 | 468,630 |
| AM | 93,107 | 84,885 |
| PM | 146,250 | 147,072 |

Comparison of the AAMPO Travel Demand Model to StreetLight data shows similar volumes and distribution of trips between zones, with the typical variation between the datasets for the AM/PM peak periods between 0.1 and 1.2 percent. Overall, the largest interactions occur between zones that are adjacent to one another.

The AAMPO Model and StreetLight data show there are numerous trips that travel in this region that do not necessarily travel on SH 16 (Bandera Road).

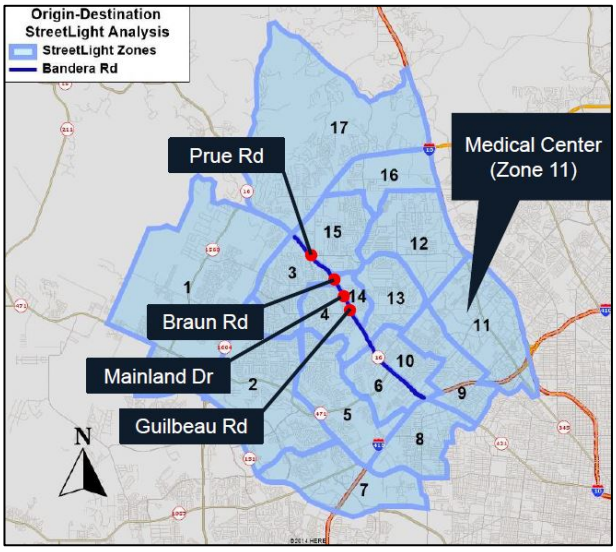
(c) Supplemental O-D Analysis

Key takeaways for the regional analysis using StreetLight data include:

- There is a strong east-west and west-east movement of trips traveling across SH 16 (Bandera Road) from one cross-street to another, including short- and long-distance trips.
- SH 16 (Bandera Road) peak period trips between the I-410 and I-10 interchange are mostly destined to the western region of the project corridor, with approximately 35 percent from the northwestern region and approximately 45 percent from the southwestern region.
- The northwestern end of SH 16 (Bandera Road) tends to have a higher percentage of localized trips.
- Trips traveling the length of the corridor between I-410 and Loop 1604 is less than 10 percent.
- StreetLight data does not indicate a significant percentage of trips that:
    - Travel between SH 16 (Bandera Road) and the I-10 and Loop 1604 interchange
    - Travel between SH 16 (Bandera Road) and the SH 151 and Loop 1604 interchange.

Key takeaways of StreetLight zone interactions with the Medical Center include:

- The majority of SH 16 (Bandera Road) trips destined to the Medical Center originate from the northern end of the corridor.
    - The majority of trips originating north of Prue Road utilized SH 16 (Bandera Road) to Prue Road to reach the Medical Center.
    - The majority of trips originating south of Prue Road that used SH 16 (Bandera Road) to access the Medical Center originate from the northwestern region near Mainland Drive, Guilbeau Road, and Braun Road.

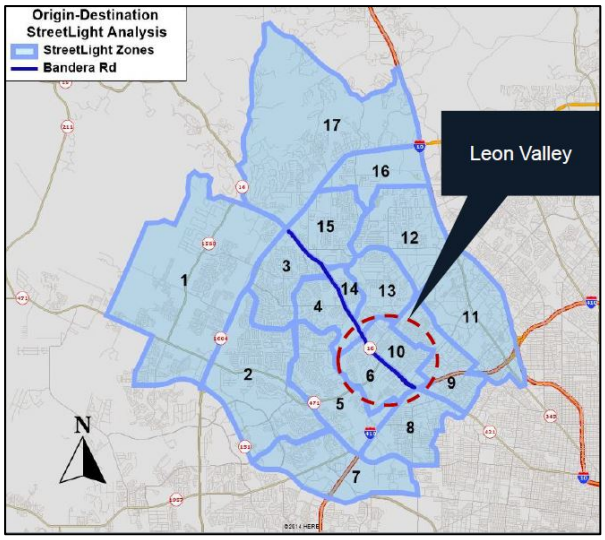



Medical Center Movement

- There are a notable number of Medical Center trips from Leon Valley west of SH 16 (Bandera Road).

Key takeaways of StreetLight zone interactions with Leon Valley include:

- Leon Valley west of SH 16 (Bandera Road) indicates the largest use of SH 16 (Bandera Road) is to access: (1) the I-410/I-10 interchange, and (2) Bandera Road south of I-410.
- Leon Valley east of SH 16 (Bandera Road) indicates the largest use of SH 16 (Bandera Road) is to access: (1) the western portion of Leon Valley, and (2) the northwestern region of SH 16 (Bandera Road).




Leon Valley West of SH 16 (Bandera Road) Movement

## 5.4 Upcoming Community Outreach

Mrs. Lena Camarillo and Mrs. Linda Vela, Community Engagement Task Leaders with Poznecki-Camarillo, Inc., gave an overview of upcoming community outreach for the project, including:

- **Planning Team Meeting #2** – September 18, 2019
- **Bandera Task Force Meeting** – September 24, 2019
- **Public Meeting #1** – November 2019 (tentative)
  - Open house format with rolling presentation
  - Stations focused on defining issues and receiving feedback
  - Exploring setup for virtual (online) open house option
- **Newsletter #1**
- **Project Outreach Ads**
  - Ads to mobile devices using "geofencing"
  - Potentially utilize social media ads
- **Project Outreach Videos**
  - YouTube videos published throughout project duration
  - Potential topics include traffic, O-D data, corridor issues, build concepts, community feedback, etc.
- **Light Synchronization Information Tool**
  - Inform regarding signal synchronization
  - Identify SH 16 (Bandera Road) characteristics and challenges
  - Targeting four to five minutes of material
  - Likely develop as a YouTube video

**Public Meeting Potential Stations**

- "What is a Feasibility Study?"
- Corridor History/ Previous Studies
- Origin-Destination Data
- Traffic Data
- Crash Data
- Light Synchronization
- Bicycle/Pedestrian Facilities
- Community Feedback to Date
- "What are we missing?" (interactive map)
- Next Steps/Study Timeline

Potential Public Meeting Stations

## 5.5 Next Steps

Next steps for the SH 16 (Bandera Road) Project include:

- Ongoing community outreach;
- Public Meeting – prepare public meeting summary report;
- Existing Conditions Report;
- VISSIM modeling for No-Build Alternative (design year); and
- Begin development of build concepts.

# 6. Open Discussion

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

| | |
|---|---|
| Brandon Herman, SARA | What is the City of San Antonio's planning effort that is being conducted parallel to TxDOT's project? |
| Lena Camarillo, PCI | The City of San Antonio's Bandera Road Corridor Plan focuses on land use, economic development, opportunities for multimodal options, and other areas. The City and TxDOT are looking at different components of the same issue. |
| Jay Louden, Work5hop | TxDOT's project is focused on transportation improvements, while the City's project is focused on planning and land use, which will feed into TxDOT's project, and vice versa. |
| Clayton Ripps, TxDOT | It is similar to what is being done on the Broadway corridor. There is a redevelopment vision for Broadway and the City is looking to complement this vision with a "complete streets" facility. |
| Lena Camarillo, PCI | It is important to note that the public sees this as one project. Therefore, we must continue to have synergy moving forward and combine our community engagement efforts wherever we can.<br><br>One difference between the City's and TxDOT's projects is duration. TxDOT's project is anticipated to take approximately four years, while the City project has a shorter timeframe of approximately 16 to 18 months. |

| | |
|---|---|
| Brandon Herman, SARA | We know that Bandera Road is currently at capacity. What is the average right-of-way of the corridor? |
| Chad Gardiner, Halff | The right-of-way varies throughout the corridor. The maximum right-of-way width is approximately 200 feet, while it narrows to approximately 150 feet in some locations. SH 16 (Bandera Road) was built in multiple phases, which explains the varying right-of-way width. |
| Bill Loudon, Alliance | The recommended annual average growth rate for the northern end of the project limits is higher than the southern end, but the absolute growth is slightly higher in the southern end. There is anticipated growth in the southern portion, but a higher amount of growth in the north. |
| Michael Wagoner, Alliance | The StreetLight Data comparison to the AAMPO's Travel Demand Model did not consider traffic outside of the 17 traffic analysis zones. |
| Brandon Herman, SARA | Why aren't people traveling between SH 16 (Bandera Road) and the I-10/Loop 1604 and SH 151/Loop 1604 interchanges? |
| Chad Gardiner, Halff | It's not that people aren't traveling between SH 16 (Bandera Road) and these interchanges, but based on StreetLight data, a lower percentage of vehicles are making these trips compared to other movements. StreetLight data showed that movements on SH 16 (Bandera Road) to these interchanges are not as high as the movement between SH 16 (Bandera Road) and the I-410/I-10 interchange. There is also a number of vehicles traveling between SH 16 (Bandera Road) and the I-410/SH 151 interchange, as well as vehicles that continue traveling on Bandera Road south of the project limits. |
| Rafael Salazar, Northside ISD | Does the data show a lot of people are traveling through the SH 16 (Bandera Road) project limits? |

| | |
|---|---|
| Chad Gardiner, Halff | Yes, the data shows approximately eight to 10 percent of traffic is thru traffic. There is also a notable amount of traffic making zig-zag movements where they will travel on SH 16 (Bandera Road) for four to five miles. |
| Clayton Ripps, TxDOT | We would love your feedback on any potential concepts you all think we should be considering. |
| Brandon Herman, SARA | We need a culture shift for public transportation. Why should we spend more money on roads when we are already at capacity? I think this is the turning point where we need to consider dedicated bus lanes or other features to get people out of their cars. |
| Jay Louden, Work5hop | I was surprised with how much cross traffic there is along the corridor. |
| Clayton Ripps, TxDOT | Although the data shows only 10 percent of thru traffic along the corridor, this should be relative to how terrible that commute is. |
| Bill Loudon, Alliance | I could see how looking at transit and demand management improvements at the Medical Center and UTSA could relieve some cross traffic in our project area. |
| Brandon Herman, SARA | The demand for transit could change. |
| Clayton Ripps, TxDOT | The underlying theme is sustainability for both TxDOT and the City of San Antonio as density and modes change. We need to ensure preservation of the corridor. |
| Melinda Moritz, City of Leon Valley | I don't believe you are going to be able to take vehicles away from people in this area. |

| | |
|---|---|
| Brandon Herman, SARA | That's because people don't have to use transit yet like they do in other large cities. |
| Amy Redmond, TxDOT | Based on the survey results, maybe we can ask VIA for more bus routes along the corridor? |
| Brandon Herman, SARA | VIA is trying to predict bus demand and is in the process of making bus stop improvements. |
| Brandon Melland, City of Leon Valley | We need to look at opportunities for connectivity amongst other roadways in the network. |

# Appendix A
# Invitation Email

**Subject:** SH 16 (Bandera Road) Corridor Study - Technical Work Group Meeting #3 Invitation
**Location:** Leon Valley Conference Center, 6427 Evers Road, Leon Valley, TX 78238

**Start:** Thu 9/5/2019 1:00 PM
**End:** Thu 9/5/2019 2:30 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 3rd TWG meeting. The intent of this meeting will be to provide an update on the project including the existing traffic and origin-destination analysis, upcoming community outreach, and to facilitate open discussion of the study. The 3rd TWG meeting for the project is scheduled for:

Thursday, September 5, 2019
1:00 p.m. to 2:30 p.m.
Leon Valley Conference Center
6427 Evers Road
Leon Valley, TX 78238

**(note the venue change from previous TWG meetings)**

Please respond to this email/meeting request by Thursday, August 29th 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 | Organization | Attendance | Response |
|---|---|---|---|
| Chad Gardiner | Halff Associates | Meeting Organizer | None |
| Sean Scott | Alamo Area COG | Required Attendee | None |
| Isidro Martinez | Alamo Area MPO | Required Attendee | None |
| Renee Green | Alamo RMA/Bexar County | Required Attendee | None |
| David Wegmann | Bexar County | Required Attendee | None |
| Brandon Melland | City of Leon Valley | Required Attendee | None |
| Melinda Moritz | City of Leon Valley | Required Attendee | None |
| Joshua Jaeschke | City of San Antonio, D7 | Required Attendee | None |
| Bianca Maldonado | City of San Antonio, D7 | Required Attendee | None |
| Rudy Nino | City of San Antonio, Planning | Required Attendee | None |
| Chris Ryerson | City of San Antonio, Planning | Required Attendee | None |
| Jay Louden | Work5hop | Required Attendee | None |
| Anthony Chukwudolue | City of San Antonio, Planning | Required Attendee | None |
| Bianca Thorpe | City of San Antonio, TCI | Required Attendee | None |
| Joseph Arteritano | LNV | Required Attendee | None |
| Byron Sanoerfer | LNV | Required Attendee | None |
| Lettie Mejia | Northside ISD | Required Attendee | None |
| Rafael Salazar | Northside ISD | Required Attendee | None |
| Jonathan Bean | TxDOT | Required Attendee | None |
| Fernando Flores | TxDOT | Required Attendee | None |
| Clayton Ripps | TxDOT | Required Attendee | None |
| Amy Redmond | TxDOT | Required Attendee | None |
| Pete Arguello | VIA | Required Attendee | None |
| Bill Loudon | Alliance | Required Attendee | None |

| | | | |
|---|---|---|---|
| Michael Wagoner | Alliance | Required Attendee | None |
| Kevin Lipnicky | Halff Associates | Required Attendee | None |
| Justin Clark | Pape-Dawson | Required Attendee | None |
| Lena Camarillo | Poznecki-Camarillo, Inc. | Required Attendee | None |
| Jackie Lopez | Poznecki-Camarillo, Inc. | Required Attendee | None |
| Jay Louden | Work5hop | Optional Attendee | None |
| Jeanne Geiger | Alamo Area MPO | Optional Attendee | None |
| Hillary Lilly | SARA | Optional Attendee | None |
| Brandon Herman | SARA | Optional Attendee | None |
| Linda Vela | Poznecki-Camarillo, Inc. | Optional Attendee | None |
| Sidra Schimelpfening | City of San Antonio, Planning | Optional Attendee | None |
| Ryan Losch | Page | Optional Attendee | None |
| Ana Villarreal | City of San Antonio, Planning | Optional Attendee | None |
| Queenie Ye | Pape-Dawson | Optional Attendee | None |

# Appendix B
# Sign-In Sheets

# SIGN-IN SHEET

**SH 16 (Bandera Road) Project**
Technical Work Group Meeting #3
September 5, 2019
1:00 – 3:00 p.m.
Leon Valley Conference Center
6427 Evers Road, Leon Valley, Texas, 78238

| FIRST NAME | LAST NAME | ORGANIZATION | EMAIL | INITIALS |
|---|---|---|---|---|
| Sean | Scott | Alamo Area Council of Governments | [redacted] | |
| Isidro | Martinez | Alamo Area Metropolitan Planning Organization | | |
| Jeanne ~~Linda~~ | Geiger ~~Alvarado-Vela~~ | Alamo Area Metropolitan Planning Organization | | -po.org |
| Renee | Green | Alamo Regional Mobility Authority / Bexar County | | |
| David | Wegmann | Bexar County | | |
| Brandon | Melland | City of Leon Valley | | |
| Melinda | Moritz | City of Leon Valley | | |
| Joshua | Jaeschke | City of San Antonio, District 7 | | |
| Bianca | Maldonado | City of San Antonio, District 7 | | |

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| FIRST NAME | LAST NAME | ORGANIZATION | EMAIL | INITIALS |
|---|---|---|---|---|
| Rudy | Nino | City of San Antonio, Planning Department | [redacted] | |
| Chris | Ryerson | City of San Antonio, Planning Department | | |
| Anthony | Chukwudolue | City of San Antonio, Transportation & Capital Improvements | | |
| Bianca | Thorpe | City of San Antonio, Transportation & Capital Improvements | | |
| Joseph | Arteritano | LNV, Inc. | | |
| Byron | Sanoerfer | LNV, Inc. | | |
| Lettie | Mejia | Northside ISD | | |
| Rafael | Salazar | Northside ISD | | |

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| FIRST NAME | LAST NAME | ORGANIZATION | EMAIL | INITIALS |
|---|---|---|---|---|
| Hillary | Lilly | San Antonio River Authority | [redacted] | HL |
| Johnathan | Bean | TxDOT | | |
| Fernando | Flores | TxDOT | | FF |
| Clayton | Ripps | TxDOT | | CR |
| Leroy | Alloway | VIA Metropolitan Transit | | |
| Pete | Arguello | VIA Metropolitan Transit | | |
| [illegible] | BRANDON HERMAN | SARA | | BH |
| | | | | |
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Project Team

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|---|---|---|---|---|
| Bill | Loudon | Alliance Transportation Group, Inc. | [redacted] | WRL |
| Michael | Wagoner | Alliance Transportation Group, Inc. | | MW |
| Matt | Bucchin | Halff Associates, Inc. | | |
| Chad | Gardiner | Halff Associates, Inc. | | CG |
| Kevin | Lipnicky | Halff Associates, Inc. | | KL |
| Justin | Clark | Pape-Dawson Engineers | | |
| Lena | Camarillo | Poznecki-Camarillo, Inc. | | LC |
| Jackie | Lopez | Poznecki-Camarillo, Inc. | | |
| Amy | Redmond | Texas Department of Transportation | | |
| Jay Ryan | Losch | Workshop Page | | JR JRC |

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|---|---|---|---|---|
| Queenie | Ye | Pape-Dawson | [redacted] | |
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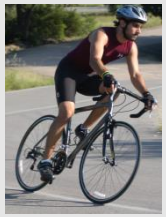
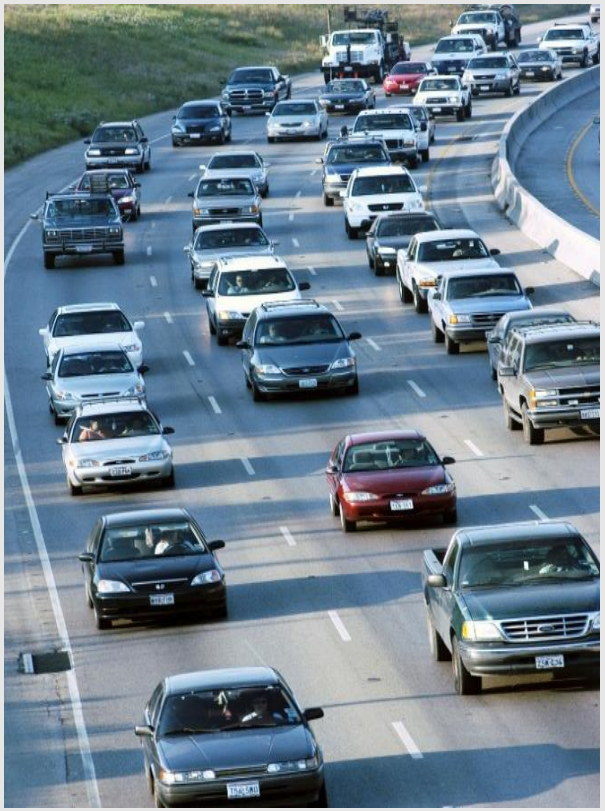
TEXAS DEPARTMENT OF TRANSPORTATION





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

## Technical Work Group Meeting #3

September 5, 2019

# Agenda

# Introductions

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

HALFF

POZNECKI INC CAMARILLO

ATG ALLIANCE TRANSPORTATION GROUP

Blanton & Associates, Inc.
ENVIRONMENTAL CONSULTING · PLANNING · PROJECT MANAGEMENT

PAPE-DAWSON ENGINEERS

ARIAS GEOPROFESSIONALS

# TWG Meeting #2 Summary

- Occurred on April 24, 2019
- 10 TWG members from 7 organizations attended
- Key Takeaways
  - 2018 daily traffic to be adjusted to reflect historical trends (primarily north end)
  - AAMPO model utilized as a tool to help identify potential latent demand
  - Bluetooth origin-destination (O-D) study completed
    - Corridor level analysis: internal movements
    - Regional level analysis: interaction with regional corridors
  - SH 16 crash rate higher than statewide average

**Participants**

AAMPO

The State of Texas · County of Bexar

City of San Antonio · Est. 1718

Leon Valley

Texas Department of Transportation

VIA

**Other Organizations Invited**

AACOG · Alamo Area Council of Governments

Alamo RMA

# Community Outreach Since TWG Meeting #2

- City of San Antonio Community Meeting
  - April 29, 2019
  - City Church, 9431 Bandera Road, San Antonio, TX 78250
  - 628 individuals signed in at the meeting


- Texas Public Radio interview on "The Source"
  - April 29, 2019
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- Planning Team Meeting #1
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  - 17 attendees from 14 organizations participated

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- SH 16 (Bandera Road) Survey #1
  - Online from February 12 to May 31, 2019
  - 885 individuals participated in the survey
- Bandera Road Task Force Meetings
  - June 4, 2019
  - July 9, 2019
  - August 12, 2019
- Coordination Meeting with Work5hop (CoSA planning consultant)
  - July 12, 2019

## Survey Results

**SH 16 (Bandera Road) Priorities**

1. Improve Congestion
2. Improve Safety
3. Add Sidewalks & Improve Pedestrian Crossings

**Primary Reason for Traveling within Corridor**

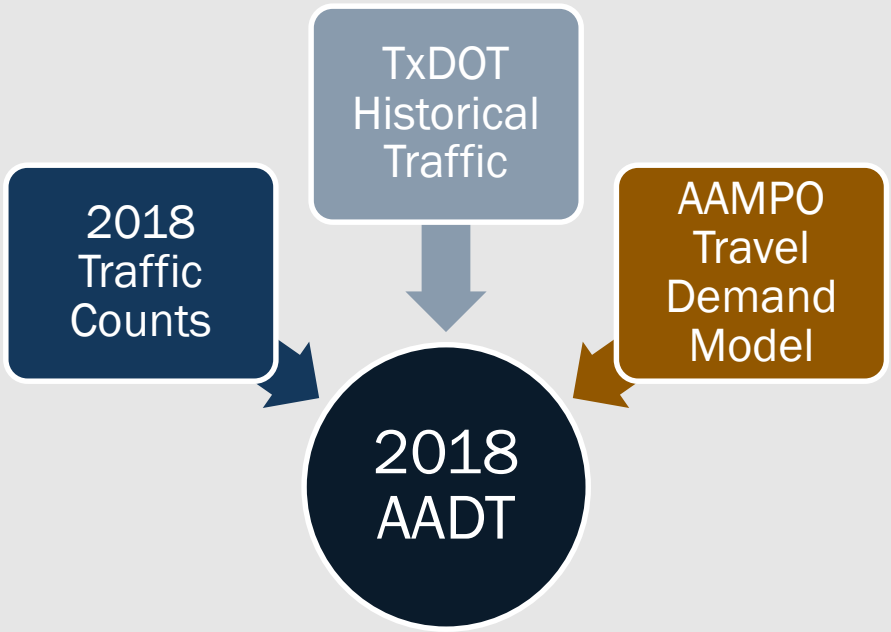
1. Shopping/Errands
2. Commute to/from Home
3. Commute to/from Work

**Design Features Requested**

1. Improved Sidewalks
2. Improved Lighting
3. Improved Crosswalks

# 2018 Daily Volumes

- 2018 Annual Average Daily Traffic (AADT) volumes completed
  - 2018 traffic counts were calibrated utilizing historical TxDOT traffic counts to ensure volumes are representative of typical conditions
  - Traffic is adjusted throughout the corridor to create a balanced network
  - 2018 AADT includes recently completed SH 16/LP 1604 Displaced Left-Turn



# Potential Latent Demand

- AAMPO 2045 travel demand model utilized to test potential latent demand
  - Standard: AAMPO model with no improvements to SH 16
  - Scenario 1: SH 16 modified to add 2-lanes per direction
  - Scenario 2: AAMPO model modified to add 2-lanes per direction to ALL roadways
    - Captures traffic that might use SH 16 if congestion is eliminated from the network

| Location Along SH 16 (Bandera Road) | 2045 Standard AAMPO Model | Scenario #1 SH 16 "Unconstrained" | | Scenario #2 All Roads "Unconstrained" | |
|---|---|---|---|---|---|
| | 2015 to 2045 TDM Volume AAGR[1] | 2015 to 2045 TDM Volume AAGR[1] | Standard 2045 Compared to Scenario #1 (Vehicles/Day) | 2015 to 2045 TDM Volume AAGR[1] | Standard 2045 Compared to Scenario #2 (Vehicles/Day) |
| Between Grissom Rd and Huebner Rd | 0.32% | 0.81% | 12,907 | 0.63% | 8,158 |
| Between Eckhert Rd and Mainland Dr | 0.95% | 1.66% | 15,175 | 1.02% | 1,644 |
| Between Braun Rd and Camino Villa | 0.72% | 2.39% | 15,569 | 1.00% | 2,628 |
| Between Quincy Lee Dr and LP 1604 | 1.80% | 2.78% | 13,094 | 2.24% | 5,911 |

Notes:
1) AAGR = Annual Average Growth Rate (per year)

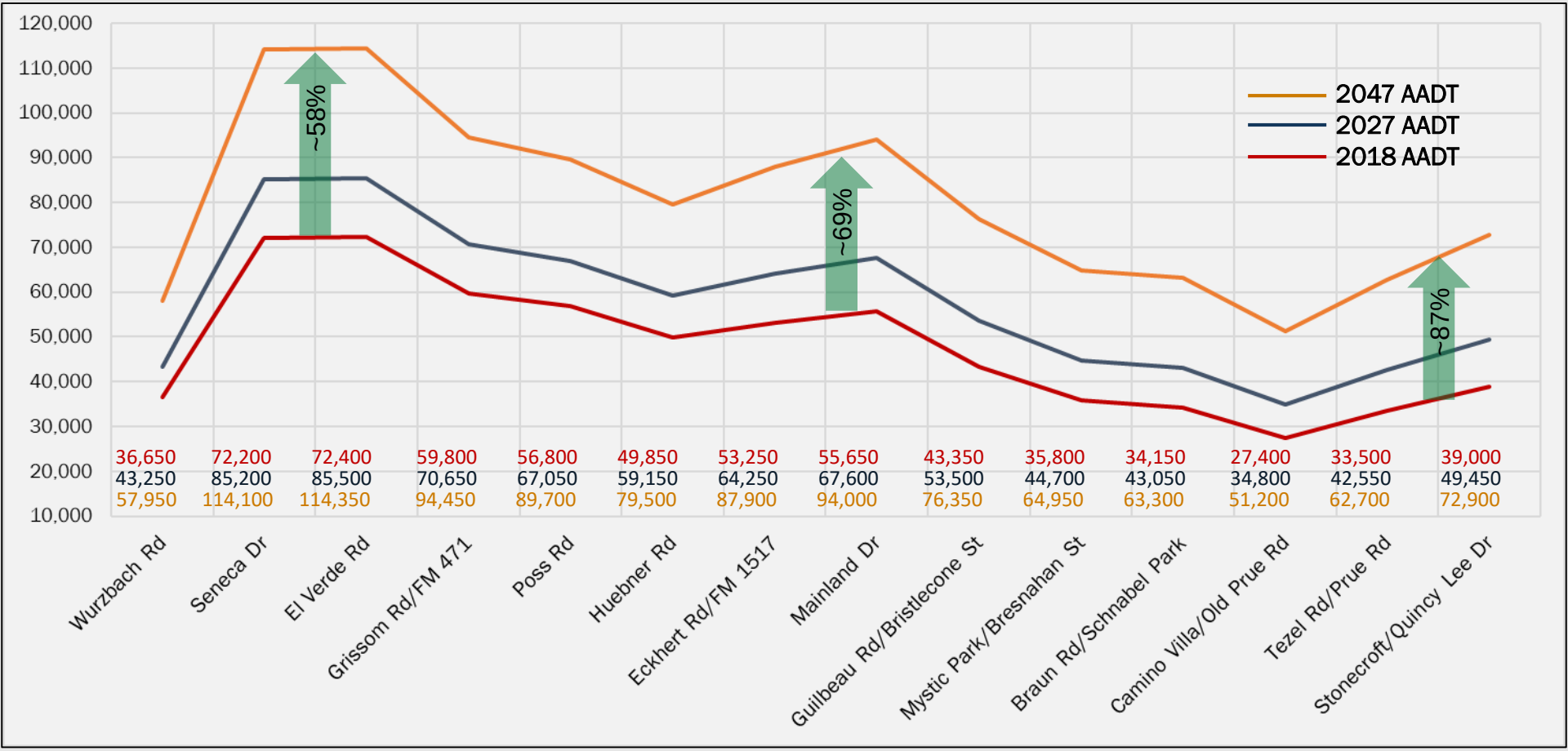
# No-Build Traffic Projections

- Draft no-build alternative traffic completed (under review by TxDOT)
- To determine growth rates, the following data was utilized:
  - Regression analysis of TxDOT historical SH 16 traffic counts from 1999 to 2017
  - Analysis of AAMPO model demographics and network, including regions east and west of the project corridor
- Varying growth rates to be used for the SH 16 (Bandera Road) Project
  - Higher growth predicted north of Guilbeau Road
  - The recommended Annual Average Growth Rates (AAGR) account for the potential latent demand AAGR from AAMPO Scenario #1

| Location Along SH 16 (Bandera Road) | Recommended Annual Average Growth Rate (AAGR) | | |
|---|---|---|---|
| | 2018-2027 | 2027-2047 | 2047-2057 |
| I-410 to Guilbeau Road | 2.0% | 2.0% | 2.0% |
| Guilbeau Road to Loop 1604 | 3.0% | 3.0% | 2.0% |

# No-Build Traffic Projections

## SH 16 (Bandera Road) No-Build Traffic AADT Volumes (vehicles per day)



# VISSIM Model: Existing Conditions

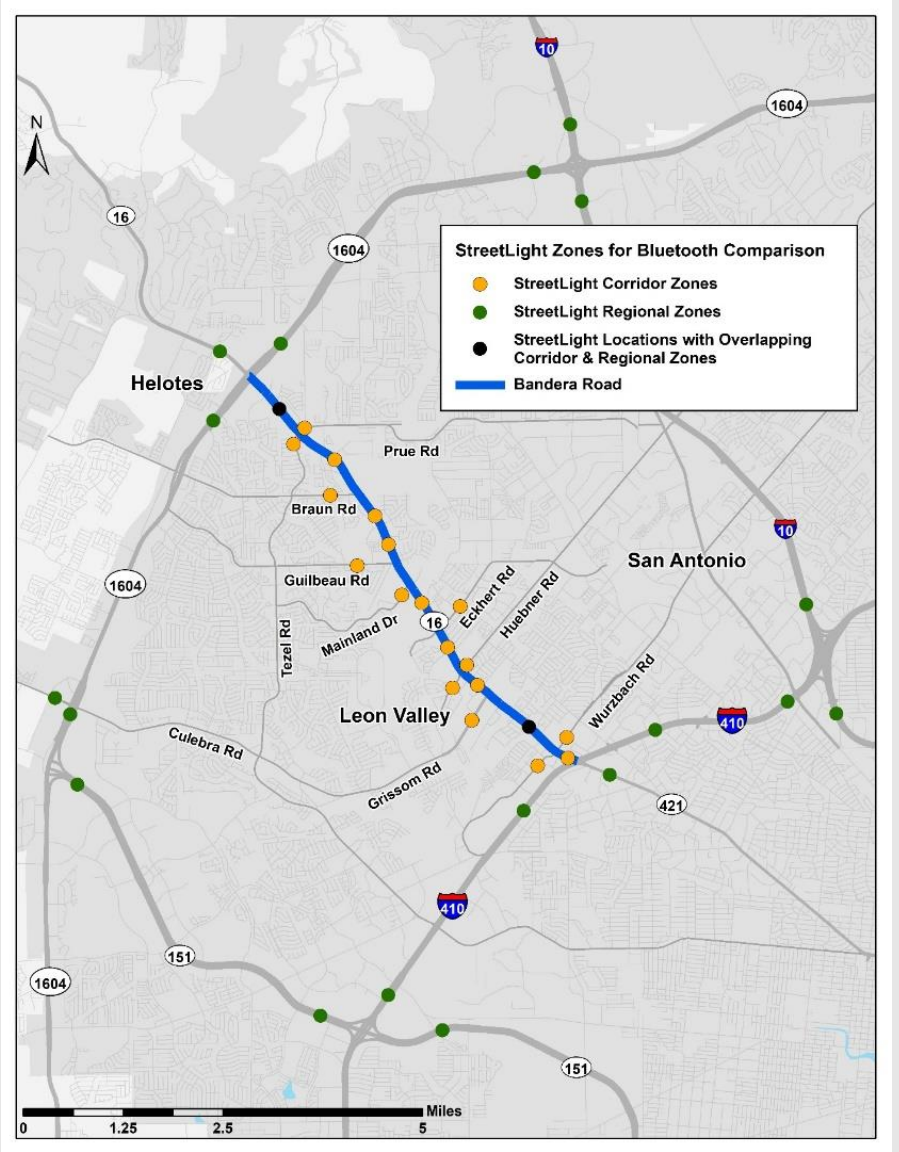
- **Development of O-D Matrix for AM/PM peak hours**
  - Bluetooth O-D report/data for AM and PM peak hours applied to VISSIM model
    - 1,560 routes applied to the VISSIM model
    - O-D matrix balanced against turning movement volumes to produce the inputs and routing for VISSIM
  - The O-D matrix can be applied to all proposed concepts to understand how concepts affect access and operations
- **Development of Peak Demand Volumes and Model Calibration**
  - Turning Movement Count (TMC) volumes in the peak periods were adjusted to account for the actual demand
  - VISSIM operations were compared to site observations/data

# StreetLight Data Analysis

- **What is StreetLight Data?**
  - Service that collects Location-Based Services (LBS) data by means of smartphone applications to represent a sampling of the total number of trips that pass through a defined location
- **How was the StreetLight data utilized?**
  - Used as a supplemental data set to:
    1. Provide a direct comparison to the Bluetooth O-D analysis
    2. Provide a direct comparison to the AAMPO Travel Demand Model
    3. Provide a new O-D analysis for the neighborhoods adjacent to the corridor
  - Analysis was performed on Tuesday-Thursday data over the entire year of 2018
  - Results calibrated using the collected 2018 traffic counts and TxDOT traffic counts

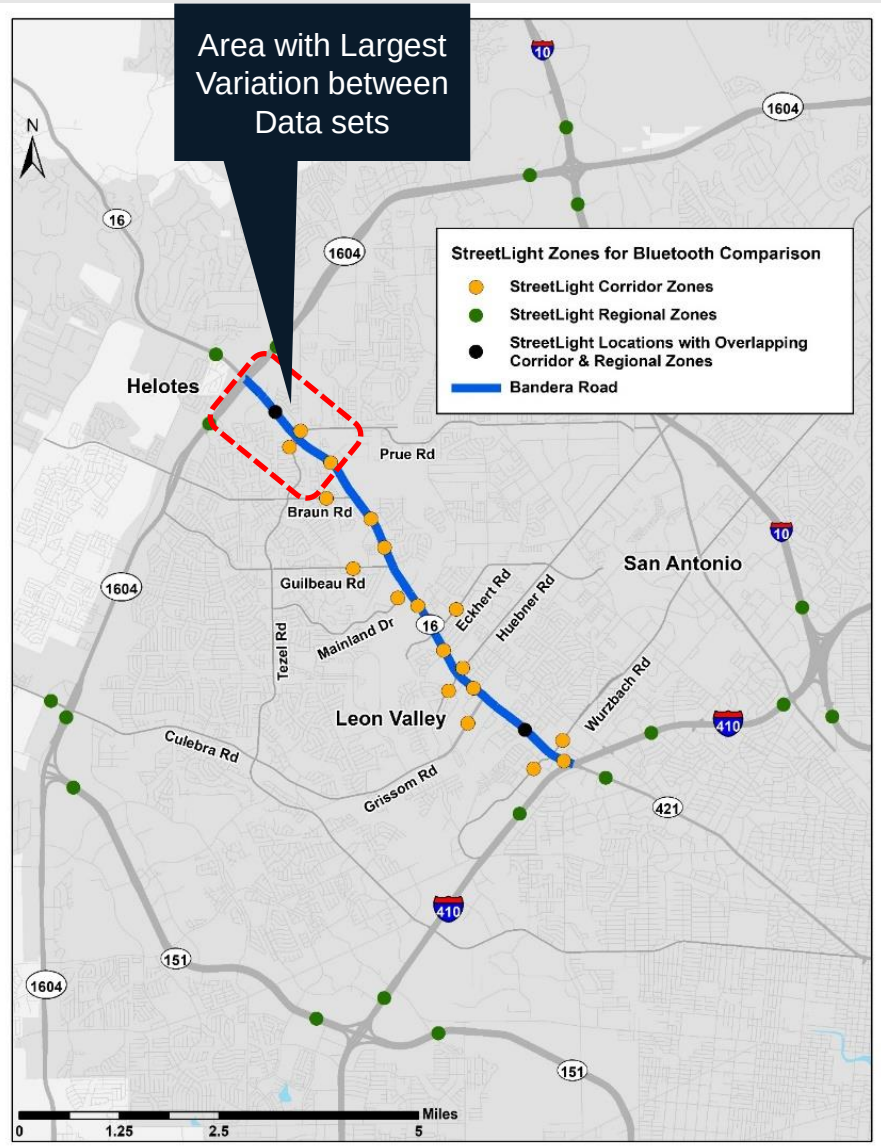
# StreetLight Data: Bluetooth O-D Comparison

- StreetLight zones structured to overlap the Bluetooth O-D sensor locations
  - Corridor and Regional O-D analyses were performed (same as the Bluetooth O-D)
- Utilized to validate the results from the Bluetooth O-D analysis and to confirm confidence in the StreetLight results
- Bluetooth and StreetLight O-D analyses use the same traffic count control totals for expansion of O-D trips
- Results were not expected to be identical, as the nature of the source data varies



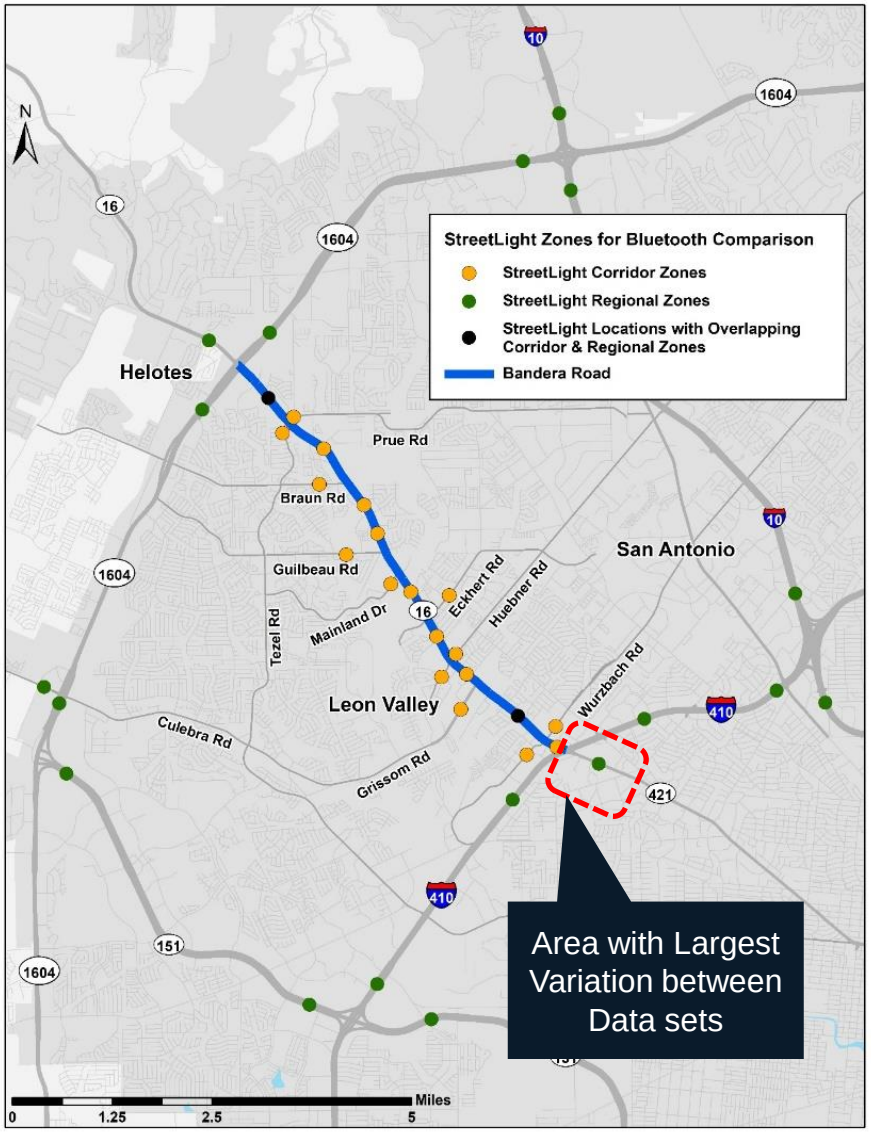
# StreetLight Data: Bluetooth Corridor O-D Comparison

- **Comparison of Corridor Level O-D**
  - The **typical** variation between the two data sets for daily trips patterns was within **1% to 6%**
  - Largest variation between data sets is for SH 16 trips between Loop 1604 and the Camino Villa/Braun Road area
    - StreetLight O-D indicates 13% to 14% more daily trips have an origin and destination within these limits
  - Overall, comparison shows **similar traffic patterns** between the StreetLight and Bluetooth O-D data



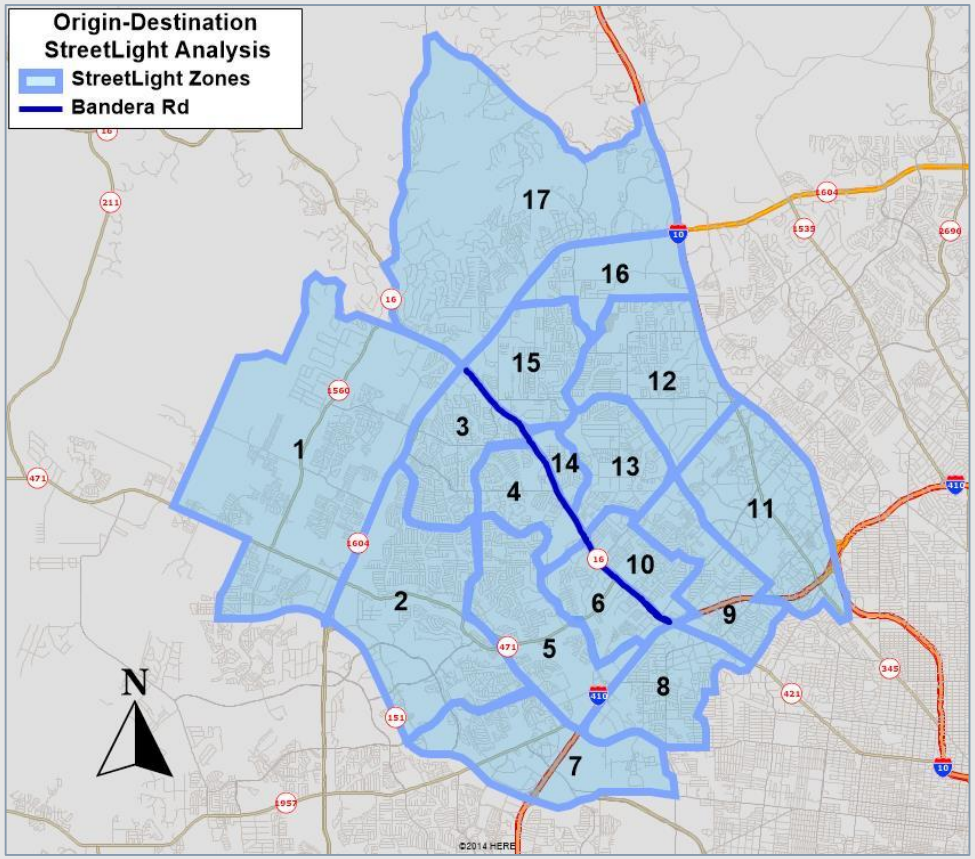
# StreetLight Data: Bluetooth Regional O-D Comparison

- Comparison of Regional Level O-D
  - The **typical** variation between the two data sets for daily trips patterns was within **1% to 4%**
  - Trip distribution maximum variation ~10%
    - Largest variation between data sets is Bandera Road south of I-410 (StreetLight 9% to 10% higher)
    - Some specific O-D routes on I-410 and Loop 1604 exhibit ~10% variations, but total % of traffic travelling between SH 16, I-410, and Loop 1604 is similar between StreetLight and Bluetooth data
  - Overall, the Bluetooth and StreetLight regional O-D comparison shows a **strong correlation in regional O-D trip distribution**



# StreetLight Data: AAMPO Travel Demand Model Comparison

- StreetLight analysis utilized 17 zones
- AAMPO Travel Demand Model traffic analysis zones (TAZs) are nested entirely within the Streetlight zones
  - Allows for direct comparison
- Analyzed trips that have a final origin or destination within these zones
  - No pass-through trips



# StreetLight Data: AAMPO Travel Demand Model Comparison

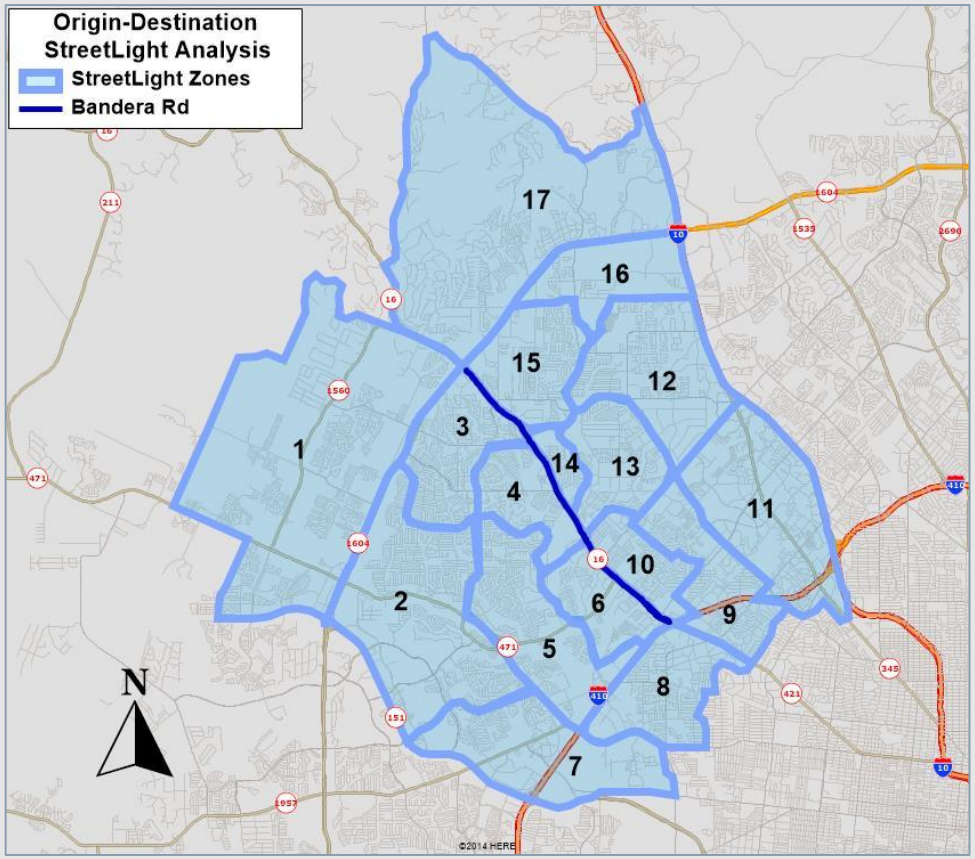
- The StreetLight data was calibrated for the AM/PM peak periods and daily trips
  - The AAMPO and StreetLight data utilize the same PM period time frame
  - The AAMPO model has a slightly shorter AM period compared to StreetLight
- The two data sources exhibit similar number of trips generated in all time periods

**Comparison of Calibrated StreetLight trips to AAMPO Model**

| Time Period | Total Trips (StreetLight) | Total Trips (AAMPO Model) |
|---|---|---|
| Daily | 467,539 | 468,630 |
| AM | 93,107 | 84,885 |
| PM | 146,250 | 147,072 |

# StreetLight Data: AAMPO Travel Demand Model Comparison

- Comparison of the AAMPO Model to StreetLight shows similar volumes and distribution of trips between zones
  - The **typical** variation between data sets for the AM/PM periods was **0.1% to 1.2%**
- Overall, the largest interactions occur between zones that are adjacent to one another
  - The AAMPO Model and StreetLight data show there are numerous trips that travel in this region, but do not necessarily travel on SH 16

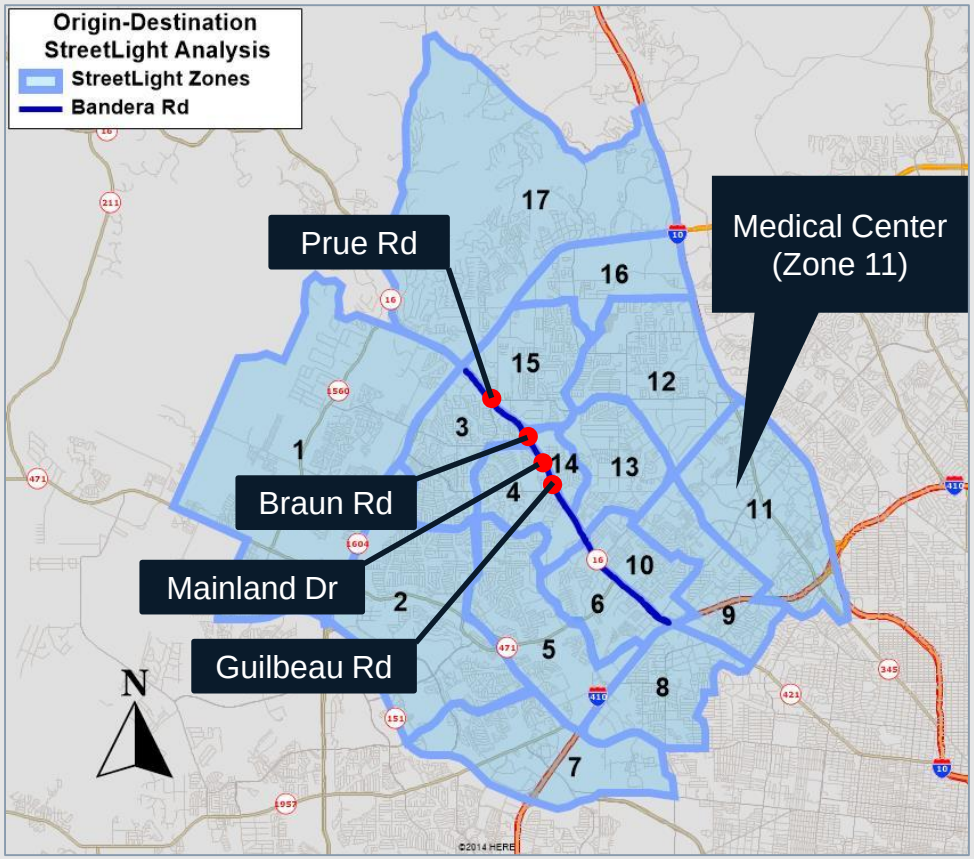


# StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Regional Interactions**
  - Strong east-west/west-east movement of trips traveling across SH 16 from one cross-street to another
    - 50%-60% of trips in the AM/PM peak periods
    - Combination of short and long-distance trips
  - Trips from the I-410/I-10 interchange to SH 16 are mostly destined to the western region of the project corridor
  - Regional trips to/from the northwestern end of SH 16 are more localized trips
  - StreetLight Data **does not** indicate a significant percentage of trips that:
    - Travel the entire length of the corridor between I-410 and Loop 1604 (<10%)
    - Travel between SH 16 and the I-10/Loop 1604 interchange
    - Travel between SH 16 and the SH 151/Loop 1604 interchange

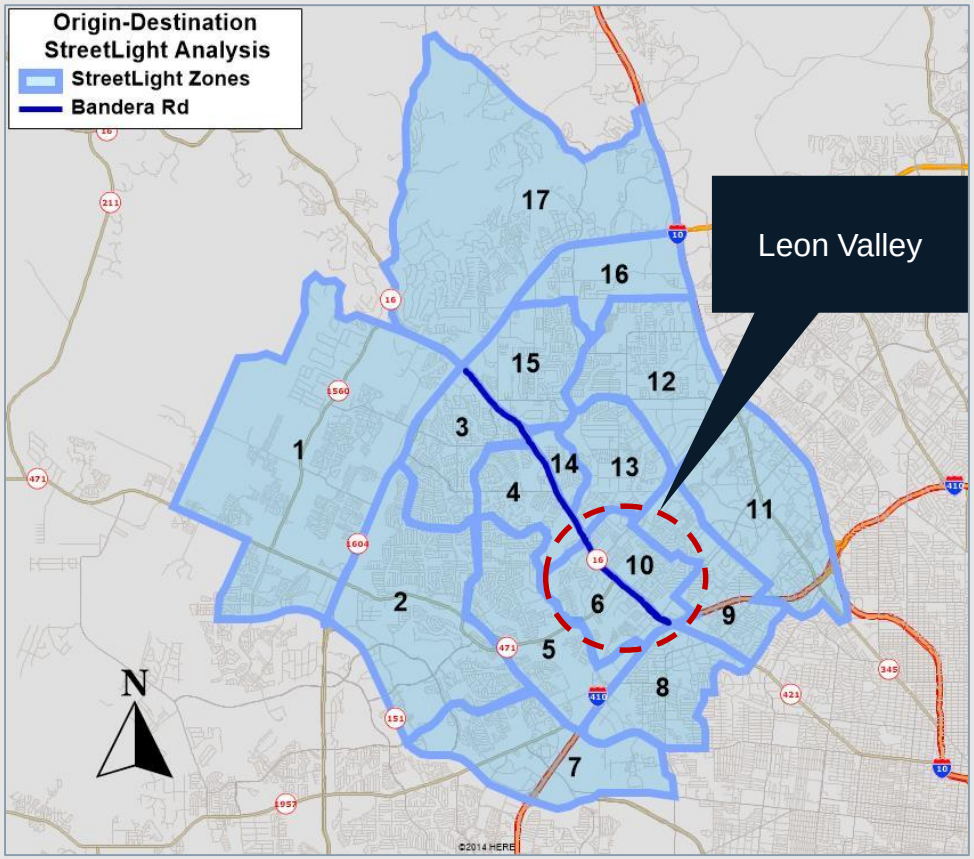
# StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Zone Interactions Medical Center**
  - Majority of SH 16 trips destined to the medical center **originate from the northern end of the corridor**
    - Majority of trips originating north of Prue Road utilized SH 16 to Prue Road to reach the medical center
    - Majority of trips using SH 16 (south of Prue Road) to access the medical center originate from the north-western region near Mainland Drive, Guilbeau Road, and Braun Road
  - Notable number of medical center trips from Leon Valley west of SH 16 (not as high as northern end)



# StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Zone Interactions Leon Valley**
  - Leon Valley west of SH 16 indicates the largest use of SH 16 is to access:
    - I-410/I-10 interchange
    - Bandera Road South of I-410
  - Leon Valley east of SH 16 indicates the largest use of SH 16 is to access:
    - The western portion of Leon Valley
    - The northwestern region of SH 16



# Upcoming Community Outreach

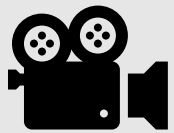
- **Planning Team Meeting #2**
  - September 18, 2019 (tentative)
- **Bandera Task Force Meeting**
  - September 24, 2019
- **Public Meeting #1**
  - November 2019 (tentative)
  - Open house format with rolling presentation
  - Stations focused on defining issues and receiving feedback
  - Exploring setup for virtual (online) open house option

| Public Meeting Potential Stations |
| --- |
| ▪ "What is a Feasibility Study?" |
| ▪ Corridor History/ Previous Studies |
| ▪ Origin-Destination Data |
| ▪ Traffic Data |
| ▪ Crash Data |
| ▪ Light Synchronization |
| ▪ Bicycle/Pedestrian Facilities |
| ▪ Community Feedback to Date |
| ▪ "What are we missing?" (interactive map) |
| ▪ Next Steps/Study Timeline |

# Upcoming Community Outreach

- Newsletter
- Project Outreach Ads (tentative discussions)
  - Ads to mobile devices using “geofencing”
  - Potentially utilize social media ads

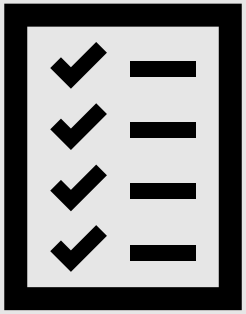
- Project Outreach Videos
  - YouTube videos published throughout project duration
  - Potential topics include traffic, origin-destination data, corridor issues, build concepts, community feedback, etc.



- Light Synchronization Informational Tool
  - Inform regarding signal synchronization
  - Identify Bandera Road characteristics and challenges
  - Targeting 4 to 5 minutes of material
  - Likely develop as a YouTube video

# Next Steps

- On-going community outreach
- Public Meeting
  - Prepare public meeting summary report
- Existing Conditions Report
- VISSIM modeling for no-build alternative (design year)
- Begin development of build concepts



# Questions / Comments?

# Contact Information

- TxDOT Project Manager
  - Mr. Fernando Flores, P.E.
    Texas Department of Transportation
    4615 Northwest Loop 410
    San Antonio, Texas 78229-0928
    Phone: (210) 615-5869
    Email: Fernando.Flores@Txdot.gov

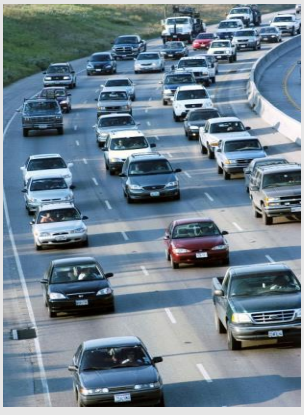
- Consultant Project Manager
  - Mr. Chad Gardiner, P.E.
    Halff Associates, Inc.
    1201 North Bowser Road
    Richardson, Texas 75081-2275
    Phone: (214) 346-6239
    Email: CGardiner@Halff.com

# Appendix D
# Meeting Handouts

TEXAS DEPARTMENT OF TRANSPORTATION


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

## Technical Work Group Meeting #3



September 5, 2019

1

## Agenda





2

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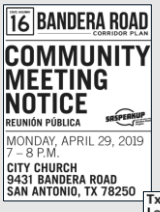


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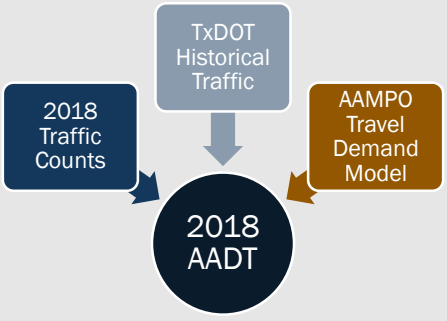
3. Commute to/from Work

**Design Features Requested**
1. Improved Sidewalks
2. Improved Lighting
3. Improved Crosswalks

## 2018 Daily Volumes

- 2018 Annual Average Daily Traffic (AADT) volumes completed
  - 2018 traffic counts were calibrated utilizing historical TxDOT traffic counts to ensure volumes are representative of typical conditions
  - Traffic is adjusted throughout the corridor to create a balanced network
  - 2018 AADT includes recently completed SH 16/LP 1604 Displaced Left-Turn



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## Potential Latent Demand

- AAMPO 2045 travel demand model utilized to test potential latent demand
  - Standard: AAMPO model with no improvements to SH 16
  - Scenario 1: SH 16 modified to add 2-lanes per direction
  - Scenario 2: AAMPO model modified to add 2-lanes per direction to ALL roadways
    - Captures traffic that might use SH 16 if congestion is eliminated from the network

| Location Along SH 16 (Bandera Road) | 2045 Standard AAMPO Model | Scenario #1 SH 16 "Unconstrained" | | Scenario #2 All Roads "Unconstrained" | |
|---|---|---|---|---|---|
| | 2015 to 2045 TDM Volume AAGR[1] | 2015 to 2045 TDM Volume AAGR[1] | Standard 2045 Compared to Scenario #1 (Vehicles/Day) | 2015 to 2045 TDM Volume AAGR[1] | Standard 2045 Compared to Scenario #2 (Vehicles/Day) |
| Between Grissom Rd and Huebner Rd | 0.32% | 0.81% | 12,907 | 0.63% | 8,158 |
| Between Eckhert Rd and Mainland Dr | 0.95% | 1.66% | 15,175 | 1.02% | 1,644 |
| Between Braun Rd and Camino Villa | 0.72% | 2.39% | 15,569 | 1.00% | 2,628 |
| Between Quincy Lee Dr and LP 1604 | 1.80% | 2.78% | 13,094 | 2.24% | 5,911 |

Notes:
1) AAGR = Annual Average Growth Rate (per year)



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## No-Build Traffic Projections

- Draft no-build alternative traffic completed (under review by TxDOT)
- To determine growth rates, the following data was utilized:
  - Regression analysis of TxDOT historical SH 16 traffic counts from 1999 to 2017
  - Analysis of AAMPO model demographics and network, including regions east and west of the project corridor
- Varying growth rates to be used for the SH 16 (Bandera Road) Project
  - Higher growth predicted north of Guilbeau Road
  - The recommended Annual Average Growth Rates (AAGR) account for the potential latent demand AAGR from AAMPO Scenario #1

| Location Along SH 16 (Bandera Road) | Recommended Annual Average Growth Rate (AAGR) | | |
|---|---|---|---|
| | 2018-2027 | 2027-2047 | 2047-2057 |
| I-410 to Guilbeau Road | 2.0% | 2.0% | 2.0% |
| Guilbeau Road to Loop 1604 | 3.0% | 3.0% | 2.0% |



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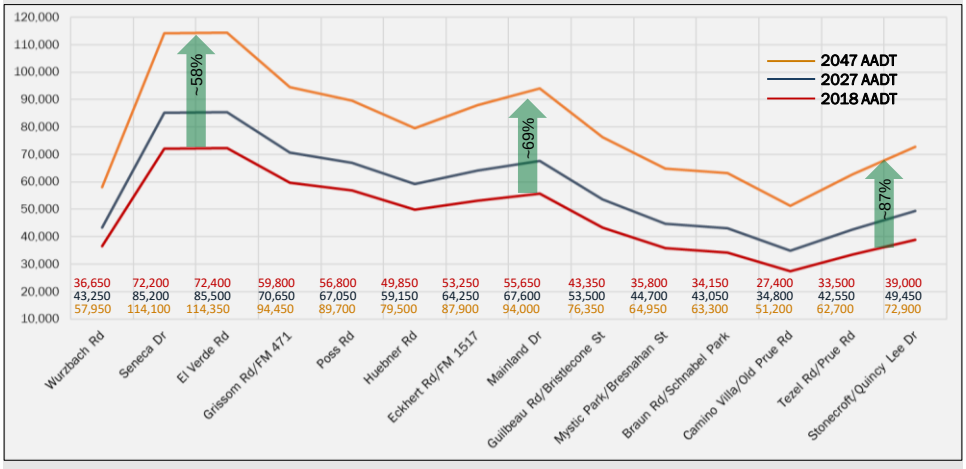
## No-Build Traffic Projections

**SH 16 (Bandera Road) No-Build Traffic AADT Volumes (vehicles per day)**



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## VISSIM Model: Existing Conditions

- **Analyzes AM/PM peak periods (not just a peak hour)**
- **Development of O-D Matrix for AM/PM peak periods**
  - Bluetooth O-D report/data for AM and PM peak periods applied to VISSIM model
    - 1,560 routes applied to the VISSIM model
    - O-D matrix balanced against turning movement volumes to produce the inputs and routing for VISSIM
  - The O-D matrix can be applied to all proposed concepts to understand how concepts affect access and operations
- **Development of Peak Demand Volumes and Model Calibration**
  - Turning Movement Count (TMC) volumes in the peak periods were adjusted to account for the actual demand
  - VISSIM operations were compared to site observations/data

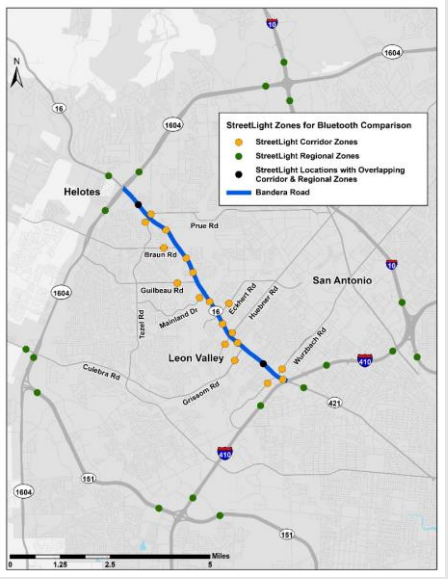


## StreetLight Data Analysis

- **What is StreetLight Data?**
  - Service that collects Location-Based Services (LBS) data by means of smartphone applications to represent a sampling of the total number of trips that pass through a defined location
- **How was the StreetLight data utilized?**
  - Used as a supplemental data set to:
    1. Provide a direct comparison to the Bluetooth O-D analysis
    2. Provide a direct comparison to the AAMPO Travel Demand Model
    3. Provide a new O-D analysis for the neighborhoods adjacent to the corridor
  - Analysis was performed on Tuesday-Thursday data over the entire year of 2018
  - Results calibrated using the collected 2018 traffic counts and TxDOT traffic counts

## StreetLight Data: Bluetooth O-D Comparison

- StreetLight zones structured to overlap the Bluetooth O-D sensor locations
  - Corridor and Regional O-D analyses were performed (same as the Bluetooth O-D)
- Utilized to validate the results from the Bluetooth O-D analysis and to confirm confidence in the StreetLight results
- Bluetooth and StreetLight O-D analyses use the same traffic count control totals for expansion of O-D trips
- Results were not expected to be identical, as the nature of the source data varies



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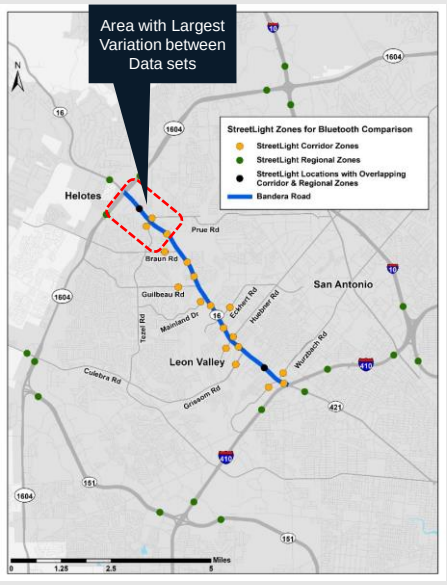
## StreetLight Data: Bluetooth Corridor O-D Comparison

- **Comparison of Corridor Level O-D**
  - The **typical** variation between the two data sets for daily trips patterns was within **1% to 6%**
  - Largest variation between data sets is for SH 16 trips between Loop 1604 and the Camino Villa/Braun Road area
    - StreetLight O-D indicates 13% to 14% more daily trips have an origin and destination within these limits
  - Overall, comparison shows **similar traffic patterns** between the StreetLight and Bluetooth O-D data



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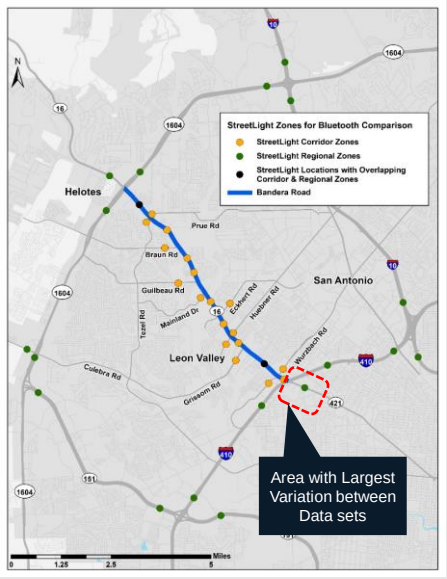
## StreetLight Data: Bluetooth Regional O-D Comparison

- **Comparison of Regional Level O-D**
  - The **typical** variation between the two data sets for daily trips patterns was within **1% to 4%**
  - Trip distribution maximum variation ~10%
    - Largest variation between data sets is Bandera Road south of I-410 (StreetLight 9% to 10% higher)
    - Some specific O-D routes on I-410 and Loop 1604 exhibit ~10% variations, but total % of traffic travelling between SH 16, I-410, and Loop 1604 is similar between StreetLight and Bluetooth data
  - Overall, the Bluetooth and StreetLight regional O-D comparison shows a **strong correlation in regional O-D trip distribution**



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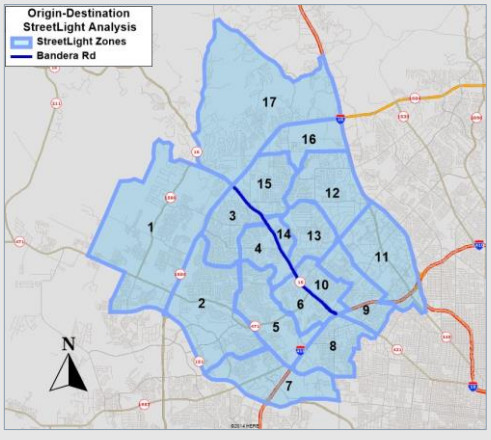
## StreetLight Data: AAMPO Travel Demand Model Comparison

- StreetLight analysis utilized 17 zones
- AAMPO Travel Demand Model traffic analysis zones (TAZs) are nested entirely within the Streetlight zones
  - Allows for direct comparison
- Analyzed trips that have a final origin or destination within these zones
  - No pass-through trips



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## StreetLight Data: AAMPO Travel Demand Model Comparison

- The StreetLight data was calibrated for the AM/PM peak periods and daily trips
  - The AAMPO and StreetLight data utilize the same PM period time frame
  - The AAMPO model has a slightly shorter AM period compared to StreetLight
- The two data sources exhibit similar number of trips generated in all time periods

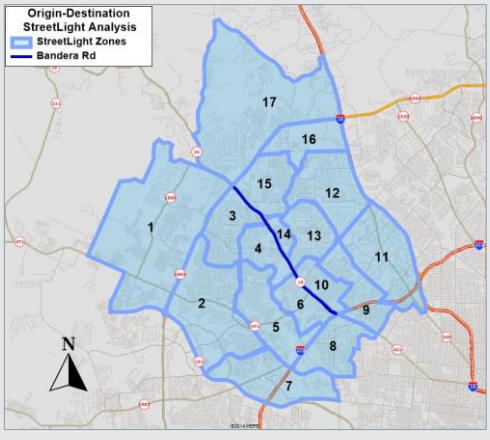
**Comparison of Calibrated StreetLight trips to AAMPO Model**

| Time Period | Total Trips (StreetLight) | Total Trips (AAMPO Model) |
|---|---|---|
| Daily | 467,539 | 468,630 |
| AM | 93,107 | 84,885 |
| PM | 146,250 | 147,072 |



## StreetLight Data: AAMPO Travel Demand Model Comparison

- Comparison of the AAMPO Model to StreetLight shows similar volumes and distribution of trips between zones
  - The **typical** variation between data sets for the AM/PM periods was **0.1% to 1.2%**
- Overall, the largest interactions occur between zones that are adjacent to one another
  - The AAMPO Model and StreetLight data show there are numerous trips that travel in this region, but do not necessarily travel on SH 16



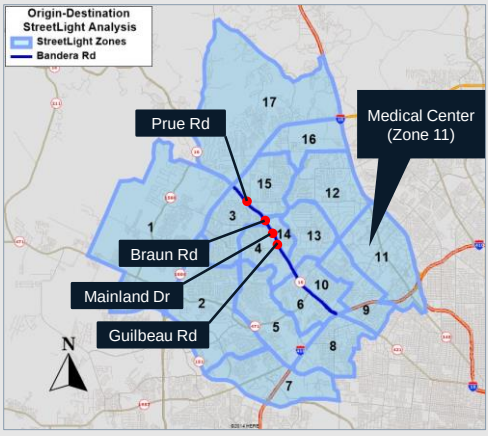
## StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Regional Interactions**
  - Strong east-west/west-east movement of trips traveling across SH 16 from one cross-street to another
    - Combination of short and long-distance trips
  - SH 16 peak period trips between the I-410/I-10 interchange are mostly destined to the western region of the project corridor
    - 35% from the northwestern region and 45% from the southwestern region
  - The northwestern end of SH 16 tends to have a higher percentage of localized trips
  - Trips travelling the length of the corridor between I-410 and Loop 1604 is <10%
  - StreetLight Data **does not** indicate a significant percentage of trips that:
    - Travel between SH 16 and the I-10/Loop 1604 interchange
    - Travel between SH 16 and the SH 151/Loop 1604 interchange



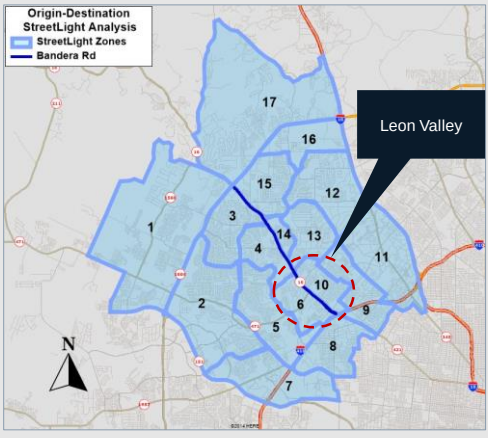
## StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Zone Interactions Medical Center**
  - Majority of SH 16 trips destined to the medical center **originate from the northern end of the corridor**
    - Majority of trips originating north of Prue Road utilized SH 16 to Prue Road to reach the medical center
    - Majority of trips using SH 16 (south of Prue Road) to access the medical center originate from the north-western region near Mainland Drive, Guilbeau Road, and Braun Road
  - Notable number of medical center trips from Leon Valley west of SH 16 (not as high as northern end)



## StreetLight Data: Supplemental O-D Analysis

- **Summary of StreetLight Zone Interactions Leon Valley**
  - Leon Valley west of SH 16 indicates the largest use of SH 16 is to access:
    - I-410/I-10 interchange
    - Bandera Road South of I-410
  - Leon Valley east of SH 16 indicates the largest use of SH 16 is to access:
    - The western portion of Leon Valley
    - The northwestern region of SH 16






## Upcoming Community Outreach

- **Planning Team Meeting #2**
  - September 18, 2019 (tentative)
- **Bandera Task Force Meeting**
  - September 24, 2019
- **Public Meeting #1**
  - November 2019 (tentative)
  - Open house format with rolling presentation
  - Stations focused on defining issues and receiving feedback
  - Exploring setup for virtual (online) open house option

**Public Meeting Potential Stations**

- "What is a Feasibility Study?"
- Corridor History/ Previous Studies
- Origin-Destination Data
- Traffic Data
- Crash Data
- Light Synchronization
- Bicycle/Pedestrian Facilities
- Community Feedback to Date
- "What are we missing?" (interactive map)
- Next Steps/Study Timeline

## Upcoming Community Outreach

- **Newsletter**
- **Project Outreach Ads (tentative discussions)**
  - Ads to mobile devices using “geofencing”
  - Potentially utilize social media ads

- **Project Outreach Videos**
  - YouTube videos published throughout project duration
  - Potential topics include traffic, origin-destination data, corridor issues, build concepts, community feedback, etc.

- **Light Synchronization Informational Tool**
  - Inform regarding signal synchronization
  - Identify Bandera Road characteristics and challenges
  - Targeting 4 to 5 minutes of material
  - Likely develop as a YouTube video



## Next Steps

- On-going community outreach
- Public Meeting
  - Prepare public meeting summary report
- Existing Conditions Report
- VISSIM modeling for no-build alternative (design year)
- Begin development of build concepts

## Questions / Comments?



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## Contact Information

- TxDOT Project Manager
  - Mr. Fernando Flores, P.E.
    Texas Department of Transportation
    4615 Northwest Loop 410
    San Antonio, Texas 78229-0928
    Phone: (210) 615-5869
    Email: Fernando.Flores@Txdot.gov
- Consultant Project Manager
  - Mr. Chad Gardiner, P.E.
    Halff Associates, Inc.
    1201 North Bowser Road
    Richardson, Texas 75081-2275
    Phone: (214) 346-6239
    Email: CGardiner@Halff.com



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# AGENDA

## TECHNICAL WORK GROUP (TWG) MEETING

### SH 16 (Bandera Road) from I-410 to Loop 1604

**Texas Department of Transportation, San Antonio District**

**September 4, 2019 – 1:00 P.M.**

I. Welcome and Introductions

II. Presentation

   a. Summary of efforts since TWG #2

   b. Traffic Volumes

   c. StreetLight Data

   d. Upcoming Community Outreach

   e. Next Steps

III. Open discussion