austin MOTION
2016 MOBILITY BOND

SLAUGHTER LANE CORRIDOR MOBILITY PLAN

October 2018

FINAL REPORT

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EXECUTIVE SUMMARY

PROJECT GOALS & PURPOSE

The goals of the Slaughter Lane Corridor Mobility Plan (CMP) are to make recommendations that enhance mobility, connectivity, and safety for all users—including people who drive, walk, bike, and take transit. These goals are an extension of the goals and vision of *Imagine Austin* and other City of Austin plans and policies.

For the purposes of this study, each project goal is related to a set of desired outcomes. Recommended improvements developed as part of the Slaughter Lane CMP were evaluated based on their effectiveness toward achieving those desired outcomes using the quantifiable performance metrics shown in **Table E-1**.

Table E-1: Project Goals, Outcomes, and Metrics

Mode	Desired Outcome	Metric	Slaughter Lane CMP Goal		
			Enhance Mobility	Enhance Connectivity	Enhance Safety
Auto	Reduce Congestion/Delay	Level of Service (LOS)	X		
	Reduce Crashes (All Types)	Total Crashes			X
Bike	Provide a connected network of protected bike facilities	% of Corridor with Protected Bike Facilities	X	X	X
Pedestrian	Provide a connected network of ADA-compliant sidewalks	% of Corridor with Adjacent Sidewalks	X	X	X
Transit	Increase transit effectiveness	% Transit Stops with Bike/Ped Access	X	X	X
	Reduce Congestion/Delay	Level of Service (LOS)	X		

***This study focused on multimodal connectivity and did not include a measure of connectivity for the auto mode.**

The purpose of this study is to identify existing and future transportation needs of the corridor and recommend improvements that, 1) achieve the project goal and desired outcomes, 2) support implementation of the *Imagine Austin Comprehensive Plan*, and 3) meet the needs of the community.

In addition to the *Imagine Austin Comprehensive Plan*, recommended improvements align with the most recent regional and city-adopted transportation plans, policies, and standards for transportation infrastructure design.

PROJECT BACKGROUND

In November 2016, Austin voters approved $720 million in bonds for transportation and mobility improvements throughout the city. The largest portion of this funding was earmarked for the Corridor Mobility Program, which included funding for the development of a Corridor Mobility Plan for Slaughter Lane.

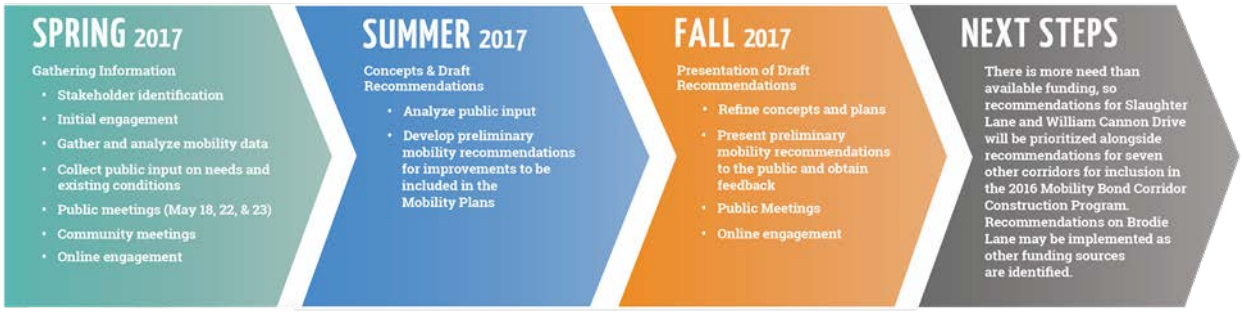
PLAN DEVELOPMENT PROCESS

Development of the Slaughter Lane Corridor Mobility Plan began in spring 2017, utilizing a project framework similar to previous corridor mobility plans successfully completed for the City of Austin. Project activities included:

- Conducting a public outreach/engagement process,
- Collection and analysis of existing traffic, land use, and infrastructure conditions data,
- Conducting site visits to gather data and observe how the public is currently using the corridor,
- Review of current and forthcoming plans and policies from the City of Austin and other agencies,
- Review of existing land uses along the corridor and future developments planned along the corridors,
- Development of traffic models to analyze existing and future traffic conditions,
- Coordination with internal and external utility and service providers,
- Development of recommended improvements for inclusion in the final Corridor Mobility Plans.

A timeline of the project development process is summarized in **Figure E-1**, below.

Figure E-1: Project Development Process Timeline



PUBLIC OUTREACH/ENGAGEMENT

Public engagement processes were implemented to share information and gather feedback from the community to inform development of the Slaughter Lane Corridor Mobility Plan. Outreach was conducted to individuals and groups of stakeholders in close proximity to the corridor, such as property owners, area neighborhood groups, businesses, schools, places of worship, and roadway users. Interested stakeholders were updated regularly with project information. Stakeholders were notified and invited to participate in

development of the Slaughter Lane Corridor Mobility Plan through a variety of means, including direct mail, social media, a webpage, public open house meetings, pop-in meetings, roadway signage, and more. **Table E-2**, below, summarizes participation in the public involvement processes for Slaughter Lane.

Table E-2: Public Involvement Participation

Participants	
Public Meetings	86*
Survey Participants	558
Mapped Comments	492
General Comments	124

*** Includes public open houses and pop-in meetings**

Comments received from 558 survey participants were grouped into the following categories (listed in order from highest quantity to lowest quantity):

- Driving Conditions
- Bicycle Accommodations
- Pedestrian Accommodations
- Public Transit
- Miscellaneous

The following are just a few examples of the many important feedback themes that were considered when developing the Corridor Mobility Plan recommendations:

- Desire for reliable and efficient transit service
- Desire for safer pedestrian crossings at intersections and other locations near schools
- Desire for safe bike facilities along the corridor
- Concern regarding congested intersections
- Desire for improved turning options

DATA COLLECTION

The project team considered current policies, plans, and guidelines produced by the City in recent years to develop a long-term vision for each corridor, including the *Imagine Austin Comprehensive Plan*, *2016 Sidewalk Master Plan/ADA Transition Plan Update*, *2014 City of Austin Bicycle Master Plan*, and *2014 Urban Trails Master Plan*, among others. Relevant regional transportation plans developed by other agencies such as CapMetro and CAMPO were reviewed and taken into consideration.

Existing conditions traffic data were collected and analyzed including 2017 intersection movement counts, historical crash data for years 2012 to 2016, and existing signal timing plans. The project team also collected and reviewed data on existing land uses along each corridor as well as future developments which have been planned but not constructed. This information was used to inform the development of context-sensitive recommendations for Slaughter Lane.

EXISTING CORRIDOR CONDITIONS

Slaughter Lane is a major arterial road located in south Austin. The limits of the Slaughter Lane Corridor Mobility Plan are between FM 1826 and Vertex Boulevard and extend approximately 10.6 miles. There are 56 intersections within the limits of the corridor plan area, 28 of which are currently signalized. This corridor provides access to residences and businesses, as well as commuters traveling through the area. Changes in the existing context of Slaughter lane were evaluated in terms of existing land use and character. For the purposes of this study, the stretch of Slaughter Lane between FM 1826 and Vertex Boulevard was divided into five (5) character zones based on existing land use types, character, and level of development.

- Zone 1: FM 1826 to MoPac
- Zone 2: MoPac to Brodie Lane
- Zone 3: Brodie Lane to Manchaca Road
- Zone 4: Manchaca Road to IH 35
- Zone5: East of IH 35

Table E-3 summarizes the character zones, existing roadway cross-sections, and amenities along the corridor. **Table E-4** provides a summary of the existing bicycle facilities along Slaughter Lane.

Table E-3: Existing Roadway Characteristics by Segment

Zone	Roadway Segment	No. of Lanes	Roadway Type	Bike Lanes	Sidewalks	Transit Service
1	FM 1826 to MoPac	4	Divided	None	Discontinuous	Yes
2	MoPac to Brodie Ln	4	Divided	None	Continuous	None
3	Brodie Ln to Manchaca Rd	4	Divided	Unprotected	Continuous	Yes
4	Manchaca Rd to IH 35	6	Divided	Unprotected	Continuous	Yes
5	IH 35 to Onion Creek Bridge	6	Divided	None	Continuous	None
5	Onion Creek Bridge to Old Lockhart Hwy	4	Divided	None	None	None
5	Old Lockhart Hwy Junction	4	Divided	Unprotected	None	None
5	Old Lockhart Hwy to Vertex Blvd	2	Undivided	Unprotected	Continuous	None

Table E-4: Existing Bike Facilities

To	From	Existing Facility	Bike Lane Width	Bike Lane Buffer	Comfort	All Ages & Abilities Network*
FM 1826	Brodie Ln	Shared Lane	None	None	Helpful Sidewalks *(limited bike access)*	
Brodie Ln	Curlew Dr	Bike Lane	6-feet	None	Medium	Yes
Curlew Dr	IH 35 SBFR	Bike Lane	6-feet	2-feet	Low	Yes
IH 35 SBFR	Old Lockhart Rd	Shared Lane	None	None	Low	Yes

***See Chapter 4 for more information on the All Ages and Abilities Network and City of Austin Bicycle Master Plan.**

Table E-5 shows locations of absent sidewalks along the existing corridor. There are also several cross-streets where absent sidewalks have been identified as "High" and "Very High" priority, including Riddle Road West, Howellwood Way, Curlew Drive, Piping Rock Trail, Briar Ridge, Gail Road, Roxanna Drive, Riddle Road East, Monarch Drive, South 1st Street.

Table E-5: Absent Sidewalks

Location	Side of Street *(North or South)*	Absent Sidewalk Priority	Approx. Length of Absent Sidewalk *(Linear Feet)*
FM 1826 to Barstow Ave	South	Low	2,300
MoPac Interchange	North	Low	1,600
IH 35 Interchange	North	Low/Medium	500
IH 35 Interchange	South	Very Low/Low	500
IH 35 to Onion Creek Bridge	North	Medium	3,300
IH 35 to Onion Creek Bridge	South	Low/Medium	2,900
Onion Creek Bridge to Vertex Rd	North	Very Low	7,400
Onion Creek Bridge to Vertex Rd	South	Very Low	3,200

TRAFFIC ANALYSIS & MODELING

Another important aspect of the plan development process was the identification of existing mobility and safety issues within each corridor based on the collection and analysis of existing traffic data. Public input received during the public outreach process was used to supplement (and in some cases guide) intensive technical evaluations of existing and future traffic conditions, in order to identify corridor-specific mobility and safety issues which are existing today or expected in the future if improvements are not implemented. Recommended improvements included in the Slaughter Lane CMP were developed with a focus on reducing

traffic congestion/delay at intersections, improving intersection Level of Service (LOS), reducing crashes at top crash locations, providing fully-connected bicycle and pedestrian networks, and providing multimodal access to all transit stops.

Intersection traffic operations were evaluated, using *Synchro 10* traffic modeling software, for **Existing (2017)**, **Future (2040) No-Build**, and **Future (2040) Build** scenarios with the goal of minimizing congestion/delay and maximizing intersection Level of Service (LOS).

LOS is a qualitative measure of intersection performance based on *average control delay*, which is the average increase in travel time (in seconds) experienced by vehicles due to traffic signal control. LOS can also serve as a surrogate measure for driver discomfort and fuel consumption. LOS is communicated using letter grades "A" through "F", where LOS A indicates the lowest delay condition (Best Case) and LOS F indicates the highest delay condition (Worst Case). The City of Austin sets the threshold for "acceptable" Level of Service at LOS D, while LOS E and LOS F are considered "unacceptable". Use of LOS D as a minimum threshold is common practice in denser urban environments where prohibitive costs and undesirable societal impacts would be required to obtain LOS C. In some cases, such as locations where demand is exceptionally high, or constraints prevent adequate capacity increases, even obtaining LOS D is not a feasible outcome.

When analyzing how the existing roadway network would handle anticipated future traffic (Future 2040 No-Build scenario), traffic reached what is often termed "breakdown conditions", where all major intersections are experiencing unacceptable levels of delay and LOS. These results were compared against analysis results for the Future 2040 Build scenario, which evaluated future traffic on a network that includes the recommended improvements. Those results, shown in **Chapter 6**, indicate a substantial improvement over No-Build conditions, even though some intersections are still expected to operate at unacceptable level of service.

A traffic safety analysis was conducted to identify crash "hot spots" (locations with relatively high crash frequency). These locations, along with locations identified as "unsafe" through public comments, were then further evaluated to identify any causal factors contributing to the high crash frequency, and proven safety counter-measures (e.g., improvements such as additional turn lanes, adjustments to signal phasing, etc.) which address those factors were considered for inclusion in the recommended improvements.

Recommended typical sections and recommended intersection improvements were then developed to address the mobility, safety, and connectivity issues identified through site observations, public input, and the analysis of existing and future traffic conditions.

RECOMMENDED IMPROVEMENTS

Recommended improvements, summarized below and presented in **Chapter 6**, were developed to address the mobility, safety, and connectivity issues identified through site observations, public input, and the analysis of existing and future traffic conditions. **Implementation of these recommended improvements will provide continuous bicycle and sidewalk networks along the entire length of the Slaughter Lane corridor, address identified safety issues, and reduce delay/congestion (improve level of service), to the extent possible, at major intersections.**

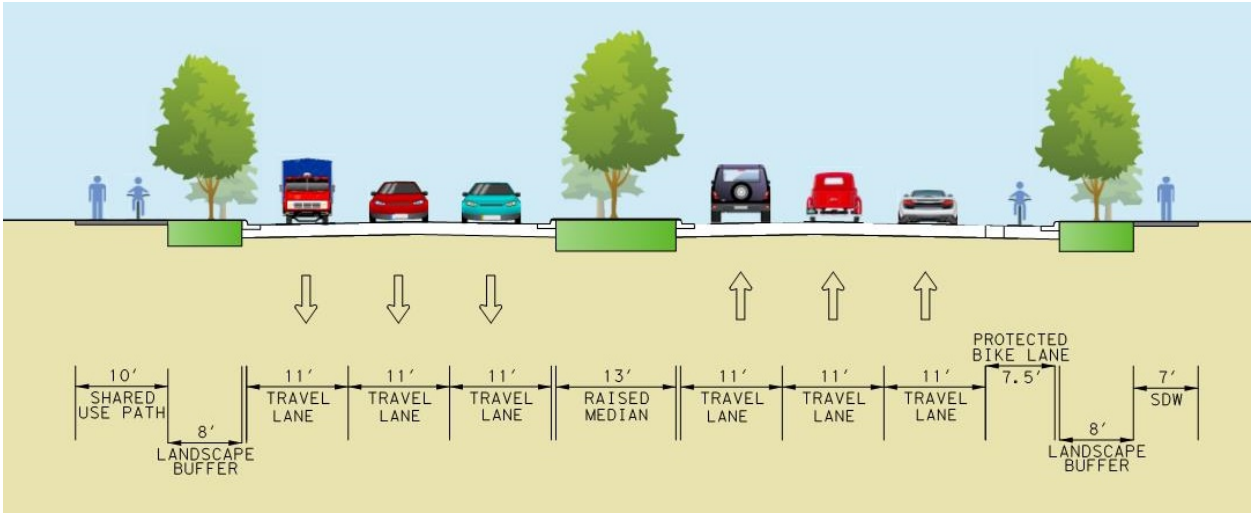
OVERVIEW OF RECOMMENDATIONS:

- Improve up to 28 traffic signals with enhanced technology to promote vehicular and transit efficiency, and pedestrian and bicyclist safety. These improvements would help address existing and future unacceptable LOS.
- Improve intersections with turn lane modifications to enhance vehicular and transit efficiency, and pedestrian and bicyclist safety at Escarpment Boulevard, Brodie Lane, South Congress Avenue, and IH-35. A need for these improvements was shown through traffic and crash analysis, and reinforced by public input.
- Install up to six miles of new or rehabilitated sidewalks to create continuous ADA-compliant sidewalks along the full length of the corridor. Field evaluation revealed that these improvements are needed, and reinforced by stakeholder input.
- Add up to 14 miles of buffered and/or protected bike lanes to improve safety and mobility for bicyclists and drivers. A protected bike lane will be added in each direction between I-35 and Brandt Road by repurposing one vehicular travel lane in each direction. A need for these improvements was identified through field evaluation and reinforced by stakeholder input. Traffic analysis confirmed the feasibility of these improvements in the near-term.
- Rehabilitate up to 3 miles of pavement to repair spot damage and improve rideability.
- Evaluate and possibly construct new midblock pedestrian crosswalk signals (Pedestrian Hybrid Beacons) for cyclists and pedestrians in the vicinity of: Zuniga Drive, Briar Ridge Drive, Vinemont Drive, and Narrow Glen Parkway. A need for these improvements was shown through land use evaluation, an analysis of existing crossings and was reinforced by public input.
- Improve transit facilities in coordination with Capital Metro, including: relocation of bus stops to far side of intersection to improve safety and operations for both transit and vehicles, adding bus shelters and benches, adding bus pull outs at transfer centers or re-location of transit centers.
- No additional ROW is needed for recommended improvements, except: 1) Small amounts on north side of Slaughter Lane between S. Congress Ave and IH 35, and 2) From Old Lockhart Hwy to Vertex Blvd, where the proposed 140-ft. ROW should be obtained by dedication as the land is developed.

RECOMMENDED LONG-TERM TYPICAL SECTION

A corridor vision was developed through application of the street design process outlined in the *Austin Street Design Guide* (**Chapter 5**) with respect to the context and character of Slaughter Lane. The resulting long-term corridor vision for Slaughter Lane is to develop a 6-lane divided arterial that provides safety and mobility for all modes of travel – vehicles, bicycles, pedestrians, and transit.

Figure E-2: Recommended Long-Term Section - 6-Lane Divided with Protected Bike Lane or Shared Use Path



VALUE ENGINEERING & CONTEXT-SENSITIVE DESIGN

The existing sidewalk and roadway infrastructure will be incorporated into the future cross-sections to the maximum extent possible. Over time, as this infrastructure needs replacement, properties redevelop, and/or additional funding is identified, the width and location of bicycle, pedestrian, and landscape infrastructure may be adjusted.

The City will take a context-sensitive approach to design and construction of final improvements to account for location-specific constraints such as available right-of-way, existing trees and utilities, etc. These recommendations may be modified during final design to accommodate context-specific elements. Features that may vary include, but are not limited to, the width and location of the recommended bicycle, pedestrian and landscaping infrastructure needs.

ESTIMATED COST AND PROJECT IMPLEMENTATION

Cost estimates were developed for the recommended improvements identified in **Chapter 6** based on approximate unit costs and construction quantities. These cost estimates were "planning-level" estimates that did not include right-of-way acquisition costs but did include engineering, materials, traffic control, construction, inflation, and contingency costs. Total project cost (in 2021 Dollars) is estimated to be $17,900,000.

FUNDING AND NEXT STEPS

Development of the Slaughter Lane Corridor Mobility Plan was funded by the 2016 Mobility Bond. This roadway was also identified for possible construction funding as part of the $482 million dedicated for corridor improvement projects through the 2016 Mobility Bond. Because there is more need on the nine construction-eligible corridors throughout the city than available funding, City Council's Contract with Voters (Resolution No. 20160818-074), approved in 2016, required the City Manager to develop recommendations for a proposed Corridor Construction Program that prioritizes improvements to be constructed using 2016 Mobility Bond funds.

Recommended improvements presented in this report were included in a prioritization model along with recommended improvements for the other eight construction-eligible corridors to determine which improvements would receive initial funding for final design and construction through the Corridor Construction Program. More information on those efforts can be found on the City of Austin's Corridor Mobility Program website, *AustinTexas.gov/CorridorMobility*.

For the above stated reasons, some (but not all) of the improvements recommended in this Slaughter Lane CMP are currently funded for final design and construction through the Corridor Construction Program that Austin City Council approved in spring 2018. Additional funding strategies will be sought for all recommended improvements not initially funded as part of the Corridor Construction Program. The City of Austin has a range of funding sources that may be used to construct mobility improvements that are not identified for funding through the 2016 Mobility Bond. These funding sources include, but are not limited to, future voter-approved bond dollars, other public improvement bond funding, grants (state/federal funding), private investment, and the City's operating funds.

CHAPTER 1 – INTRODUCTION

Slaughter Lane is a major arterial providing east-west connectivity in South Austin between FM 1826 and Vertex Boulevard. The existing corridor includes residential, commercial, and public land uses with changing character and context along its 11-mile length.

The City is addressing transportation and mobility concerns holistically through its Corridor Mobility Program, which is funded by the 2016 Mobility Bond. Slaughter Lane is one such corridor where the city is creating a plan to address short-term and long-term safety, mobility and connectivity concerns, to which rapid growth in the region is contributing.

The growing awareness and understanding of the effects of the built environment on public health has been reflected in several recent City of Austin and Travis County strategic plans. Like many arterial connectors in Austin, Slaughter Lane is currently an auto-dominated roadway. However, Slaughter Lane has been identified in the *Imagine Austin Comprehensive Plan (Imagine Austin)* as an "activity corridor" with high-capacity transit connecting "neighborhood centers" at the Manchaca Road and South Pleasant Valley Road intersections, and a larger "town center" near the IH 35 interchange. Additionally, Slaughter Lane intersects three other north-south activity corridors identified by Imagine Austin—Manchaca Road, South Congress Avenue, and South Pleasant Valley Road.

According to *Imagine Austin*, activity centers and corridors are pedestrian-friendly, walkable, and bikable areas. By improving bicycle and pedestrian networks, the City of Austin can address many of the challenges facing Austin, including motor vehicle congestion, commute times, air quality, transportation costs, lack of connectivity, bicycle safety, and recreational access. Improving connections from area neighborhoods and natural resources to the corridor is critical to implementing the health goals of *Imagine Austin*.

Due to projected growth along Slaughter Lane (and Austin generally) there is an increasing need for multimodal accommodations and access to public transit services. In addition to enhancing mobility, safety and connectivity along the roadway, improvements to the Slaughter Lane corridor in the form of pedestrian and bicycle facilities, roadway, and public green spaces have substantial potential to impact health of the neighboring communities.

This report presents the findings of the Slaughter Lane Corridor Mobility Plan which included data collection and review, public engagement, existing and future conditions analysis, and development of preliminary recommended improvements for the Slaughter Lane corridor.

PROJECT PURPOSE & GOALS

The goal of the Slaughter Lane Corridor Mobility Plan (CMP) is to make recommendations that enhance mobility, connectivity, and safety for all users—including people who drive, walk, bike, and take transit.

These goals are an extension of the goals and vision of *Imagine Austin* and other City of Austin plans and policies. **Table 1-1** shows a few examples of the link between the goals of the Slaughter Lane CMP and other City-adopted plans and policies.

Table 1-1: Examples of Supporting Guidance

CMP Goal	Related Goals from other City of Austin Plans & Policies
Enhance Mobility	*"provide for the maximum mobility for the people of the Greater Austin Metropolitan Area" (Austin Metropolitan Area Transportation Plan, 1995)*
	"reduce traffic congestion, increase transit use, and encourage alternative transportation modes" (Imagine Austin, 2016)
Enhance Safety	*"promote safe, comfortable and convenient access and travel for people of all ages and abilities" (Complete Streets Policy, 2014)*
	"Vision Zero's goal is simple: Zero traffic deaths and serious injuries in Austin by 2025" (Vision Zero Action Plan, 2016)
Enhance Connectivity	*"Complete Streets require connected travel networks." (Complete Streets Policy, 2014)*
	"Incorporate provisions for bicycles and pedestrians into all roads such as freeways, toll roads, arterial roadways, and to and from transit stations and stops, and major activity centers" (Imagine Austin, 2016)

For the purposes of this study, each project goal is related to a set of desired outcomes. Recommended improvements developed as part of the Slaughter Lane CMP were evaluated based on their effectiveness toward achieving those desired outcomes using the quantifiable performance metrics shown in **Table 1-2**.

Table 1-2: Project Goals, Outcomes, & Metrics

Mode	Desired Outcome	Metric	Slaughter Lane CMP Goal		
			Enhance Mobility	Enhance Connectivity	Enhance Safety
Auto	Reduce Congestion/Delay	Level of Service (LOS)	X		
	Reduce Crashes (All Types)	Total Crashes			X
Bike	Provide a connected network of protected bike facilities	% of Corridor with Protected Bike Facilities	X	X	X
Pedestrian	Provide a connected network of ADA-compliant sidewalks	% of Corridor with Adjacent Sidewalks	X	X	X
Transit	Increase transit effectiveness	% Transit Stops with Bike/Ped Access	X	X	X
	Reduce Congestion/Delay	Level of Service (LOS)	X		

***This study focused on multimodal connectivity and did not include a measure of connectivity for the auto mode.**

The purpose of this study is to identify existing and future transportation needs of the corridor and recommend improvements that, 1) achieve the project goal and desired outcomes, 2) support implementation of the *Imagine Austin Comprehensive Plan*, and 3) meet the needs of the community.

In addition to the *Imagine Austin Comprehensive Plan*, recommended improvements align with the most recent regional and city-adopted transportation plans, policies, and standards for transportation infrastructure design. These plans are listed below in the Project Process section and their recommendations for Slaughter Lane are summarized in **Chapter 4**.

PROJECT BACKGROUND

This initiative is a result of the City of Austin's 2012 Bond Development Process. The City of Austin's 2012 Bond Election included Proposition 12, which allowed the City to address urban mobility issues by providing funding for designing, constructing, and improving streets, sidewalks, bridges, and bikeways. Since the 2012 Bond Development Process, the City of Austin has initiated a series of corridor improvement programs to ensure Austin roadways keep up with the region's growth and can handle current and future demands. A framework has been developed for these corridor programs to provide a common approach while ensuring the specific character and needs of the different roadways and communities are assessed.

In November 2016, Austin voters approved $720 million for mobility improvements throughout the city. The largest portion of that funding—$482 million—is earmarked for corridor improvement projects. Corridors are primary roadways that affect Austin's overall transportation network. These roadways are used for getting around, are destinations for residents and visitors, and are home to businesses as well as many neighborhoods. The Corridor Mobility Program includes the development, design, and construction of projects along key Austin corridors that enhance mobility, safety, and connectivity for all users—whether you drive, bike, walk, or take transit.

The Corridor Mobility Program includes nine construction-eligible corridors, five corridors that are receiving Corridor Mobility Plan development, and three corridors that are receiving some preliminary engineering and design (**Figure 1-1**). Slaughter Lane is one of the nine construction-eligible corridors. Seven of those nine construction-eligible corridors had corridor plans completed since 2012.

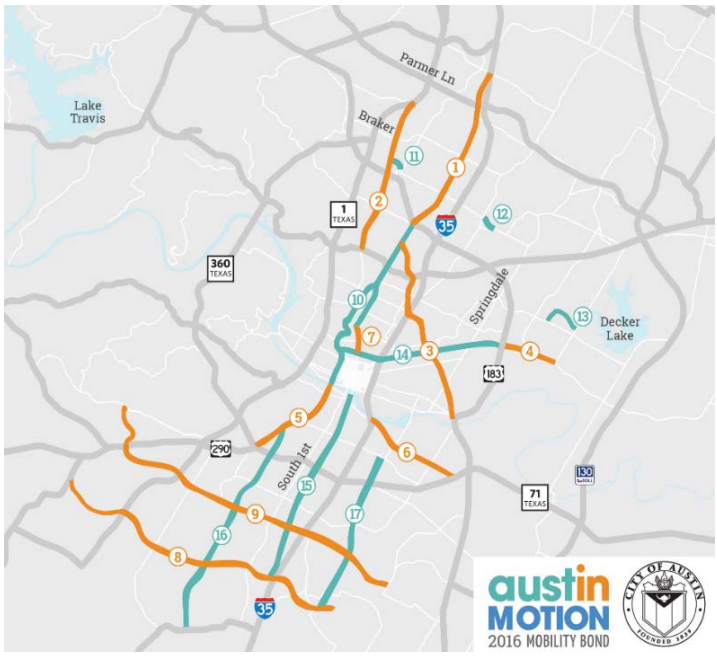


Figure 1-1: 2016 Mobility Bond Corridors

Because Slaughter Lane and William Cannon Drive did not have already-existing corridor plans, the 2016 Mobility Bond also included funding for development of corridor mobility plans (CMP) for both roadways.

NEXT STEPS

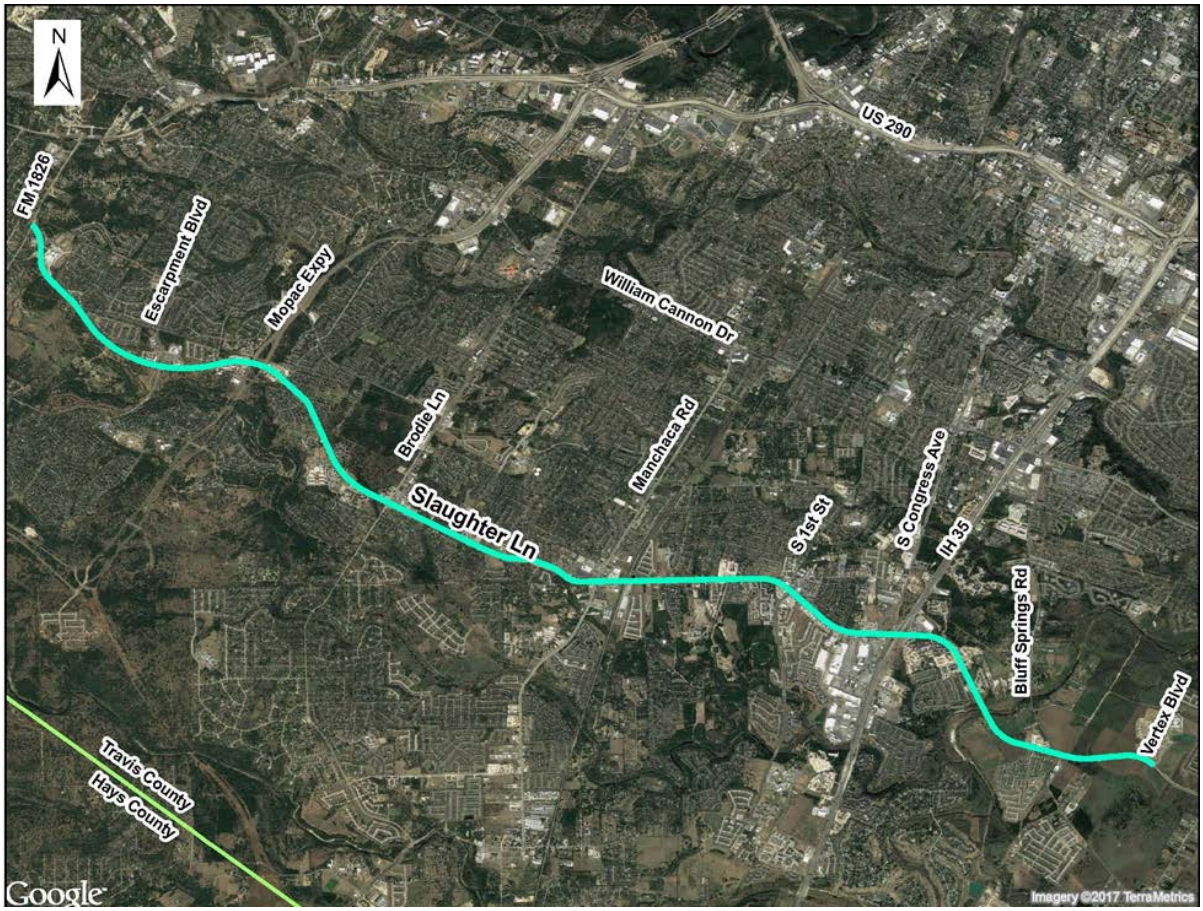
Recommended improvements presented in this report were included in a prioritization model along with recommended improvements for the other eight construction-eligible corridors to determine which improvements would receive initial funding for construction through the Corridor Construction Program. More information on those efforts can be found on the City of Austin's Corridor Mobility Program website, *AustinTexas.gov/CorridorMobility*.

PROJECT AREA

Slaughter Lane is named after Slaughter Creek, which was named after the Slaughter family that first moved to the area in 1835. Slaughter Lane and the surrounding area was annexed by the City of Austin in the 1990s.

The Slaughter Lane CMP study area, shown in **Figure 1-2,** begins at FM 1826 and ends approximately 11 miles to the east at Vertex Boulevard. The study area currently includes several parks, churches, three schools, residential developments, small businesses, and large commercial areas.

Figure 1-2: Slaughter Lane CMP Study Area – Slaughter Lane between FM 1826 and Vertex Boulevard



PROJECT PARTNERS

Stakeholders on the Slaughter Lane CMP include but are not limited to: community members, businesses, and neighborhood groups such as the South Austin Neighborhood Alliance (SANA), South Austin Business Alliance (SABA), and Go Austin, Vamos Austin (GAVA).

Additional stakeholders include other public agencies, such as the Texas Department of Transportation (TxDOT), Travis County, Capital Metropolitan Transportation Authority (CapMetro), Capital Area Metropolitan Planning Organization (CAMPO), and Central Texas Regional Mobility Authority (CTRMA).

PROJECT PROCESS

Development of the Slaughter Lane CMP began in spring 2017, utilizing a project framework similar to previous corridor mobility plans successfully completed for the City of Austin. Project activities included:

- Conducting a public outreach/engagement process;
- Collection and analysis of existing traffic, land use, and infrastructure conditions data;
- Conducting site visits to collect/verify data and and observe how the public utilizes the corridor;
- Review of recently adopted plans and policies from the City of Austin and outside agencies;
- Review of planned transportation projects and future site developments planned along the corridor;
- Development of traffic models to analyze existing and future traffic conditions;
- Coordination with internal and external utility and service providers; and
- Development of recommended improvements for inclusion in the final Corridor Mobility Plans.

The project team began the project by developing a public involvement plan and reaching out to community stakeholders and neighborhood/homeowner associations. Involvement from these groups was a vital component of the Slaughter Lane corridor's planning process. Public outreach initiatives were implemented throughout the duration of the program to help guide the process.

In addition to traditional traffic data, the adjoining land uses, character, and the condition of existing infrastructure was collected and considered in the analysis of existing corridor conditions. Existing traffic operations and crash patterns were analyzed to determine current Level of Service (LOS) at study intersections and identify the type and location of safety concerns.

Intersection Level of Service (LOS) is a delay-based measure of intersection performance that is widely-used by the transportation engineering community to determine the impacts of transportation improvements at intersections by comparing existing conditions to future conditions with and without improvements. LOS is affected by several factors, including roadway geometry, traffic signal control parameters, traffic volume fluctuations, and others. The City of Austin sets the threshold for "acceptable" Level of Service at LOS D through its Traffic Impact Analysis (TIA) guidelines, while LOS E and LOS F are considered unacceptable. Use

of LOS D as a minimum threshold is common practice in denser urban environments where prohibitive costs and undesirable societal impacts are often required to obtain LOS C.

The Slaughter Lane CMP also considered the most recently adopted plans and policies influencing the future Slaughter Lane corridor. These plans define the history, context, and future layout of the corridor with regards to several aspects of the built environment, including neighborhood character, long-range and system-level plans, mode-specific plans, and others. The following plans and policies were considered in the development of recommendations for the Slaughter Lane CMP:

- Imagine Austin Comprehensive Plan
- City of Austin Complete Streets Policy;
- City of Austin Transit Priority Policy;
- 2025 Austin Metropolitan Area Transportation Plan;
- City of Austin Strategic Mobility Plan;
- Austin Street Design Guide;
- City of Austin Land Development Code (Subchapter E);
- Critical Arterials List
- Top Crash Location Intersection Priorities List
- City of Austin Watershed Protection Master Plan;
- City of Austin Sidewalk Master Plan;
- City of Austin Bicycle Master Plan;
- City of Austin Urban Trails Master Plan;
- Vision Zero Plan;
- CAMPO 2040 Regional Transportation Plan;
- Capital Metro Connections 2025;
- Capital Metro Service Guidelines and Standards;
- Project Connect Regional High Capacity Transit Plan; and
- applicable National Association of City Transportation Officials (NACTO) standards;

The Slaughter Lane CMP considered existing conditions, planned transportation improvements, future site development plans, projected traffic growth, and results of the future conditions traffic analysis, along with the vision and goals of the *Imagine Austin Comprehensive Plan*, to develop recommended improvements for the Slaughter Lane corridor.

To understand the health-related impact of recommended improvements, a Health Impact Assessment (HIA) was performed. The HIA assessed potential impacts of policies, projects or programs that affect the public's health and identified opportunities to maximize positive health outcomes while also minimizing potential negative outcomes.

The final step in the project process was to consider the project implementation and future land use strategies for the corridor. Planning-level cost estimates were developed for recommended improvements that do not include right-of-way acquisition or utility relocation costs, but do include costs for engineering, materials, traffic control, construction, and contingency.

CHAPTER 2 – PUBLIC INVOLVEMENT

OVERVIEW

The City of Austin is committed to open and transparent processes as well engaging the community to ensure that the public's priorities and opinions are heard. To achieve this goal, the Project Team implemented a public engagement process to provide information and gather community feedback for development of the Slaughter Lane Corridor Mobility Plan. The Project Team used the feedback provided by the community to help develop recommendations to improve mobility, safety, and connectivity for all roadway users.

As part of the 2016 Mobility Bond, the City of Austin also developed a Corridor Mobility Plan for William Cannon Drive and a Preliminary Engineering Report for Brodie Lane. The Project Team conducted public involvement efforts for the three roadways together due to the proximity of the corridors, timing of the projects, and convenience for public participants. The recommendations for improvements on those roadways are available as separate documents.

The goals for the public engagement process were to:

- Create public awareness about the development and purpose of the Corridor Mobility Plans
- Conduct deliberative outreach to engage the public.
- Provide an open and transparent process throughout the planning effort.
- Provide a variety of accessible opportunities and options so that stakeholders could be involved and share input at their convenience.
- Engage a diverse set of participants.
- Provide engaging interactions that result in valuable input.
- Collect input on an overall vision for the corridor and specific mobility needs that would inform the preliminary recommendations for improvements to mobility, safety, and connectivity.
- Collect public input and comments that will be included as the Corridor Mobility Plan is refined.

KEY THEMES

Several key themes and issues arose throughout the public engagement process. The mobility recommendations in this Corridor Mobility Plan specifically address the issues and themes surrounding proposed infrastructure improvements. The outcome of survey responses and mapped comments collected in spring 2017 are provided in **Appendix G**. All feedback provided by the public can be viewed in **Appendix G**.

THEME 1: MANAGING CONGESTION

The need to manage vehicular congestion arose as a primary need through the stakeholder engagement process. Managing congestion was the highest-ranked issue in a survey used to identify resident and roadway

user concerns. The most common comment from stakeholders was the identification of congested areas on the interactive and printed maps used to collect input (see "Stakeholder Activities" for details). For drivers, the primary concerns were improved signal timing, having more turning options, and safer intersections.

The recommendations for Slaughter Lane include the addition of vehicular lanes in some areas, such as an eastbound and westbound vehicular travel lane between MoPac and Brodie Lane. The recommendations also include more turning options, such as the addition of westbound and eastbound dual left-turn lanes at Escarpment Boulevard, among other recommendations that aim to improve the efficiency of the intersection and increase throughput on the corridor. If implemented, these improvements would lead to greater safety at intersections for all roadway users. In a survey responding to the preliminary recommendations, 56% responded that the proposed improvements would save them time driving.

THEME 2: IMPROVING SAFETY

Stakeholders identified improved safety as a high-priority need along the corridor. Calming traffic in residential neighborhoods and creating a safer and more supportive environment for walking ranked third and fourth, respectively, in a survey used to identify resident and roadway user concerns. Taken together, these call for increased safety within neighborhoods and along the corridor. While the Slaughter Lane Corridor Mobility Plan does not make recommendations for neighborhood improvements, it does consider the impact recommendations on the corridor may have on neighborhoods.

Participants in the engagement process identified the continuous sidewalks to improve the experience on the corridor for pedestrians. Survey participants also ranked safer pedestrian crossings and sidewalks with separation from traffic as the second- and third-highest priorities, respectively, as it relates to methods to improve safety for pedestrians. Upon review of the preliminary recommendations, more than 70% of participants said they supported the recommendations related to pedestrian infrastructure, which include continuous sidewalks or shared-use paths, additional mid-block signalized pedestrian crossings (pedestrian hybrid beacons), and improved intersections. In general, about 65% of respondents supported the recommendations related to improving safety along the Slaughter Lane corridor.

THEME 3: IMPROVING ACCESSIBILITY (TO DESTINATIONS AND NEIGHBORHOODS)

Getting to and from destinations and neighborhoods surrounding the corridor ranked as the second most important mobility issue to be addressed on Slaughter Lane. Accessibility is mode agnostic; it is the desire to be connected to a destination, whether that is a home, business, restaurant, doctor's office, grocery store, or other daily need. The mobility recommendations in this Corridor Mobility Plan collectively aim to improve transportation options, including the option to drive, walk, bicycle, or to access transit stops. In the areas of safety and mobility, respondents said the City "got it right" for each of the modes considered (driving, walking, biking, and taking transit) at a rate of approximately 52% to nearly 73%. Additionally, a majority of respondents ranked their support for the recommendations higher than three out of five.

Figure 2-1: Phase 1 Survey Response Summary

Driving Improvements:

- Improved signal timing
- Improved turning options
- Safer intersections

Transit Improvements:

- Efficient transit operations
- Upgraded bus stops (shelters, benches)

Walking Improvements:

- Continuous sidewalks
- Safer pedestrian crossings
- Sidewalks with separation from traffic

Biking Improvements:

- Separated or protected bike lanes
- Wider bike lanes
- Intersection and signal enhancements

PARTICIPANTS

Public engagement efforts aimed to reach a wide variety of stakeholders, including residents, property owners and businesses along the corridor, as well as neighborhood groups, business associations, schools, churches, and regular users of the roadway.

Overall, the Project Team received 235 surveys, 190 mapped comments, 110 comments and questions, garnering nearly 550 inputs for Slaughter Lane.

PARTICIPANT DEMOGRAPHICS

City Council District	% of Total
District 1	1%
District 2	10%
District 3	3%
District 4	0%
District 5	33%
District 6	0%
District 7	2%
District 8	36%
District 9	1%
District 10	<1%
I don't know	8%
Prefer not to answer	5%

ZIP Code	% of Total
78748	31%
78749	20%
78739	15%
78747	13%
78745	7%
78744	2%
78737	2%
78735	2%
78704	1%
78736, 78702	1%
78759, 78757, 78727, 78652, 78746	1%
78754, 78740, 78610	<1%

Race/Ethnicity	% of Total
Caucasian	71%
African American	1%
American Indian	1%
Asian/Pacific Islander	2%
Hispanic	11%
Other	3%
Prefer not to answer	11%

Age	% of Total
18-34	19%
35-44	31%
45-54	21%
55-64	16%
65+	11%
Prefer not to answer	3%

STAKEHOLDER ACTIVITIES

The Project Team conducted two phases of outreach to collect input from the community. During both phases, the public provided feedback in person and online. Stakeholders were identified based on proximity to the corridor using public data from the Travis Central Appraisal District, the City of Austin Community Registry, and the 2016 Mobility Bond email listserv.

PHASE 1 – IDENTIFYING A VISION

The first phase of engagement took place in spring 2017. Goals included:

- Introducing and explaining the Corridor Mobility Plan development process and purpose
- Describing the public engagement process
- Sharing existing conditions and constraints, traffic information, and health impact considerations
- Creating a dialogue to identify values and vision important to stakeholders
- Gathering input on:
- Specific transportation and mobility-related desires and priorities
- How to improve community health and quality of life along the roadway

PHASE 1 INPUT OPPORTUNITIES

During the first phase of public outreach and engagement, stakeholders could learn about the project and share input at public open houses and "pop-up" meetings, as well as online at AustinTexas.gov/BSWCorridors. The project webpage contained an online survey and interactive map for users to input their comments and recommendations. The results of the first phase of outreach and engagement informed the preliminary recommendations.

Table 2-1: Phase 1 Participation

Input Opportunity	Participants
Public Meetings*	86
Survey	235
Mapped Comments	190
General Comments	110

** Includes public open houses and pop-up meetings*

Public Meetings: The Project Team invited the community to four public meeting opportunities during phase one of public outreach. At the public open houses, attendees viewed large maps of the corridors on which they were invited to write comments. A survey was also made available on laptops, tablets, and paper. Materials shared at the public meetings can be viewed in **Appendix G**.

Open House and Pop-Up Meeting Details:

May 18, 2017
Langford Elementary, 2206 Blue Meadow Drive
4:30-7:30 p.m.

May 22, 2017
Covington Middle School, 3700 Convict Hill Road
4:30-7:30 p.m.

May 23, 2017
Bethany Lutheran Church, 3701 W. Slaughter Lane
4:30-7:30 p.m.

June 15, 2017
Pleasant Hill Branch Library, 211 E. William Cannon Drive
4:30-7:30 p.m.

Interactive Map: The community provided feedback on specific needs using an interactive, online map that allowed them to place dots or draw lines to indicate areas of improvement. The public was able to share input through this interactive tool on the following categories: Driving Conditions (Congested Areas, Safety and Road Conditions), Bicycle Accommodations, Pedestrian Accommodations, Public Transit, and Miscellaneous comments including "What I Like" and "What I Need." Users had the opportunity to mark routes or points on and around the corridor, add written comments, as well as see and respond to input from other users.

Survey: A survey provided in English and Spanish collected community feedback on Slaughter Lane at public meetings and online. See **Appendix G** for the survey.

General Comments: The Project Team received comments through written comment cards, phone calls, in open-ended survey questions, and via email.

PHASE 2 – CONFIRMING THE VISION

The second phase of engagement took place in fall 2017. Goals included:

- Providing an overview of the process to-date, including feedback already collected
- Sharing what we heard from the community and how it was considered
- Presenting preliminary mobility recommendations
- Collecting feedback on the preliminary mobility recommendations

PHASE 2 INPUT OPPORTUNITIES

During the second phase of public outreach and engagement, the Project Team took a more targeted approach by offering briefings to civic associations, such as HOAs and neighborhood associations, in addition to hosting public meetings, a pop-in and an expanded project website.

Table 2-2: Phase 2 Participation

Input Opportunity	Participants
Public Meetings	65
Pop-in	108
Survey – Slaughter Lane	52
Small-group Presentations	43

Pop-in: On October 4, members of the Project Team set up a table outside of Wal-Mart, 9300 S. I-35 Frontage Road (at the intersection of I-35 and Slaughter Lane), to provide information to passers-by about the Corridor Mobility Program and development of the Slaughter Lane, William Cannon Drive and Brodie Lane mobility plans. Information was available in English and Spanish, and a Spanish-speaking Project Team member was available.

Public Meetings: The Project Team hosted two public open houses to present the preliminary mobility recommendations to the community as well as provide an opportunity for attendees to ask questions and provide feedback directly to a member of the Project Team or through a survey. The information provided and the survey were available in English and Spanish, and a Spanish-speaking Project Team member was available. The primary tool for conveying the recommendations were "flip books" of the roadways. The flip books included maps of the roadway with the recommendations, such as a new sidewalk, bicycle lane, or intersection improvement, overlaid in different colors on the map. Additionally, the flip books contained the proposed preliminary cross-sections.

Public Meeting Details:

Nov. 1, 2017
Williams Elementary, 500 Mairo Street
4:30-7:30 p.m.

Nov. 2, 2017
Hampton Branch Library at Oak Hill, 5125 Convict Hill Road
4:30-7:30 p.m.

Small-group presentations: The Project Team coordinated with area community groups, neighborhood organizations, and other area stakeholder groups to gather input. The team met with groups including the River City Youth Foundation, Go Austin Vamos Austin (GAVA), Southpark Meadows, Onion Creek Neighborhood Association, and Circle C Neighborhood Association.

Website: All information provided at the public meetings, including the survey, were made available on the project website at an expanded project website, AustinTexas.gov/SlaughterLane, which was accessible from AustinTexas.gov/BSWCorridors.

OUTREACH METHODS

The Project Team used a variety of methods to promote input opportunities during the development of the Slaughter Lane Corridor Mobility Plan. The Project Team regularly measured and evaluated participation and adjusted the public engagement strategy as necessary to provide comprehensive and inclusive opportunities for public input.

For example, feedback collected during the Phase 2 pop-up at Big Lots on William Cannon Drive included a request to host another feedback opportunity for Dove Springs area residents. The Project Team also coordinated with stakeholders and co-hosted a meeting at River City Youth Foundation.

Promotion and outreach methods included:

Direct Mail: Postcards in English and Spanish was mailed to property owners and residents in the plan area using EDDM routes.

Signage: Signs promoting the public meetings were placed along the corridor.

Online Calendars: Announcements were made in community calendars as well as the City of Austin's digital community calendar at AustinTexas.gov.

Social Media: NextDoor, Twitter, and Facebook were used to promote the public engagement process, to encourage participation, and to distribute the survey.

Media: The Project Team distributed media releases kept the media updated and engaged throughout the public engagement process.

E-Newsletter: Information was sent to stakeholders via email to share information about the project, public meetings, webpage, and opportunities to get involved.

Neighborhood and Homeowner Associations: The project team coordinated with Neighborhood and Homeowner Associations in the Plan area.

Business and Business Group Outreach: The project team engaged businesses and business groups along the corridor by coordinating with property managers, owners, and tenants to share information.

Coordination with Elected Officials: The team coordinated with Council Members and County Commissioners to notify them of the public meetings and to provide them with corridor materials for further distribution.

CHAPTER 3 – EXISTING CORRIDOR CONDITIONS

LAND USE & CHARACTER ZONES

Changes in the existing context of Slaughter lane were evaluated in terms of existing land use and character. For the purposes of this study, the stretch of Slaughter Lane between FM 1826 and Vertex Boulevard was divided into five (5) character zones based on existing land use types, character, and level of development. These character zones are described below (in order from west to east) and summarized in **Table 3-1.** Context can also vary by segment within a character zone. These include less significant changes to the roadway cross-section (e.g., lane width) or land use. **Figure 3-1** identifies these segments along the corridor.

SLAUGHTER LANE CHARACTER ZONES

Zone 1: FM 1826 to MoPac – Existing land use is primarily residential with some commercial developments such as grocery stores and restaurants. Wide raised-median with trees/landscaping, and large parks make this portion of the corridor aesthetically pleasing.

Zone 2: MoPac to Brodie Lane – The primary land use continues to be residential, with Bowie High School being the major landmark in this zone.

Zone 3: Brodie Lane to Manchaca Road – The corridor begins to change character to a mix of residential, commercial, retail, and office land uses. Green space and tree cover inside and outside of the right-of-way.

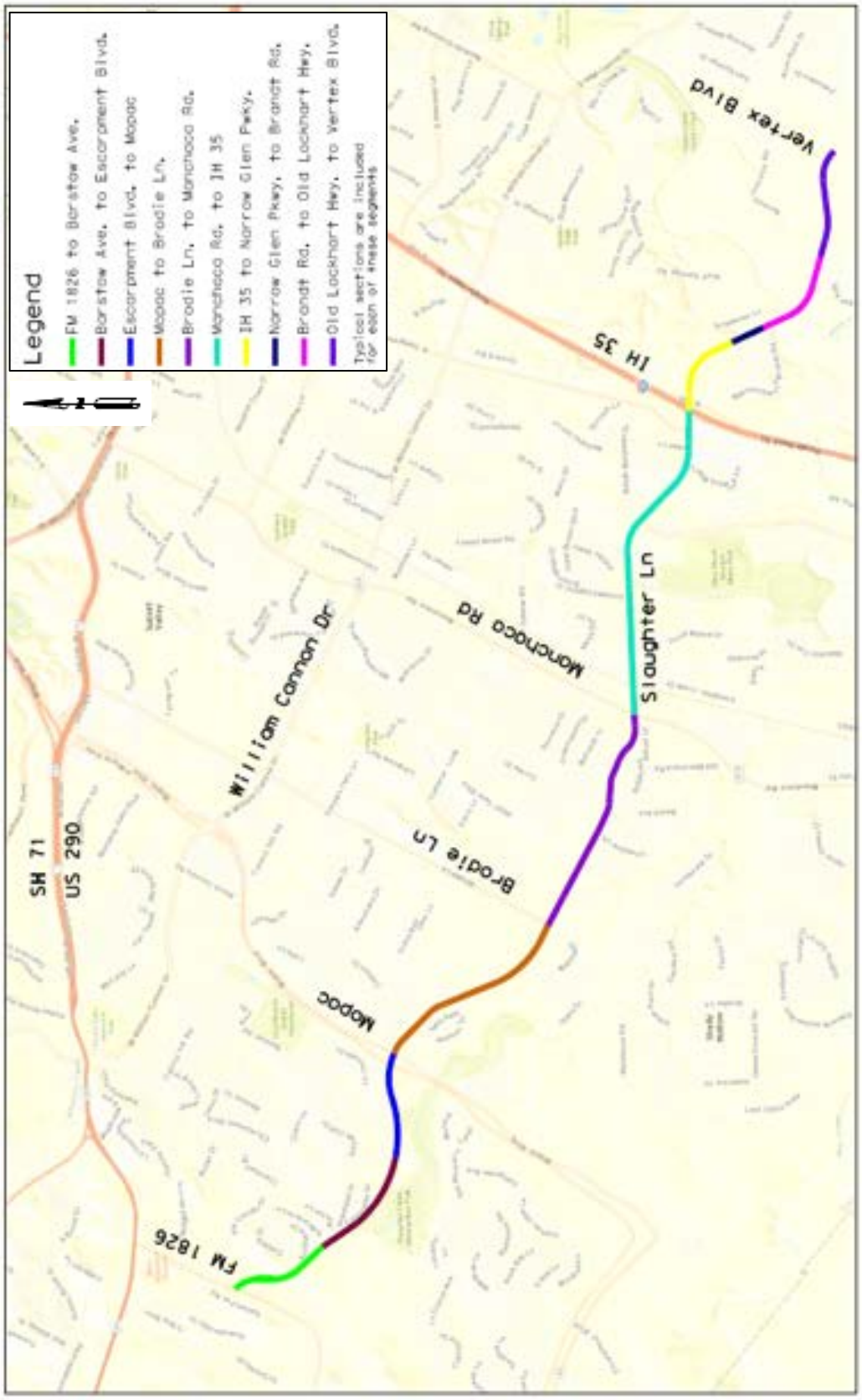
Zone 4: Manchaca Road to IH 35 – The roadway expands from four-lanes to six-lanes with increased retail and commercial land uses and higher traffic levels. The Southpark Meadows shopping center is a major center located on the southwest quadrant of the Slaughter Lane and IH 35 intersection.

Zone 5: East of IH 35 – The area becomes noticeably more rural and undeveloped. This undeveloped area is and will continue to experience growth. There are plans to extend Slaughter Lane to the east and planned site developments in the area, such as the Goodnight Ranch master planned community (discussed in **Chapter 4**).

Table 3-1: Summary of Land Use along Slaughter Lane

Zone	Segment	Primary Land Use	Secondary Land Use
1	FM 1826 to Escarpment Blvd	Single Family Residential	
1	Escarpment Blvd to MoPac	Single Family Residential	
2	MoPac to Brodie Ln	Single and Multifamily Residential	Commercial
3	Brodie Ln to Manchaca Rd	Single and Multifamily Residential	
4	Manchaca Rd to S. Congress	Multifamily Residential	Commercial
4	S. Congress to IH 35	Commercial	
5	IH 35 to Old Lockhart Hwy	Mixed Residential, Commercial	
5	Old Lockhart Hwy to Vertex Rd	Undeveloped, Rural	

Figure 3-1: Slaughter Lane Corridor Location Map



ROADWAY CHARACTERISTICS

Currently, Slaughter Lane has 28 signalized intersections and 28 unsignalized intersections within the plan study area. The typical cross-section of the existing roadway varies from a four-lane divided facility (west of Manchaca Road) to a six-lane divided facility (east of Manchaca Road). The posted speed limit varies between 40 mph and 50 mph. **Figure 3-2** to **Figure 3-9** are photos taken at various locations along the corridor.

Figure 3-2: Slaughter Lane between FM 1826 and MoPac

A four-lane divided facility with sidewalks, characterized by wide medians with trees, and landscaping on both sides of the road.

Figure 3-3: Slaughter Lane between MoPac and Brodie Lane

A four-lane divided facility with sidewalks, characterized by a wide median and green space with trees and landscaping behind the ROW line.

Figure 3-4: Slaughter Lane between Brodie Lane & Manchaca Road

Narrower four-lane divided roadway with sidewalks, on-street bike lanes, trees in the median, and trees/landscaping behind the ROW. Single- and multi-family residential land uses with some commercial.

Figure 3-5: Slaughter Lane between Manchaca Road and S. Congress Avenue

A six-lane divided roadway with sidewalks and on-street bike lanes. Multi-family and commercial land use is prevalent. Trees and landscaping are mostly behind the ROW.

Figure 3-6: Slaughter Lane between S. Congress Avenue and IH 35

A six-lane divided roadway with sidewalks and on-street bike lanes. Commercial land use is prevalent.

Figure 3-7: Slaughter Lane between IH 35 and Brandt Road

A six-lane divided roadway with sidewalks, trees present behind the ROW line; mixed residential and commercial land uses.

Figure 3-8: Slaughter Lane between Brandt Road and Old Lockhart Hwy

A four-lane divided roadway with sidewalks, trees present behind the ROW line; mixed residential and commercial land uses.

Figure 3-9: Slaughter Lane between Old Lockhart Hwy and Vertex Boulevard

A two-lane undivided roadway with on-street bike lanes; land use primarily undeveloped and rural in nature.

EXISTING TYPICAL CROSS SECTIONS

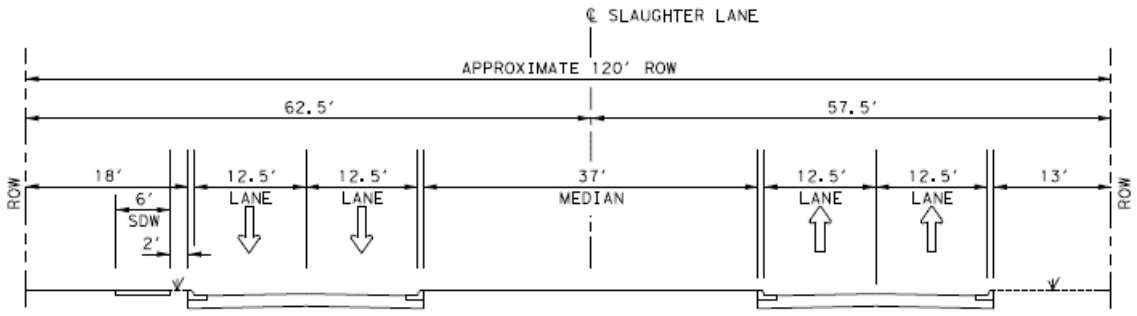
Changes in the roadway cross-section were identified and field measurements were taken for developing conceptual typical sections for the corridor. The field measurements included roadway and median widths, as well as sidewalk and bike lane widths. The apparent right-of-way (ROW) was determined based on available imagery and the location of overhead power lines.

The various roadway sections are summarized in **Table 3-2.** Existing typical sections illustrating the main characteristics along the corridor are shown in **Figure 3-10** to **Figure 3-21.**

Table 3-2: Existing Roadway Characteristics by Segment

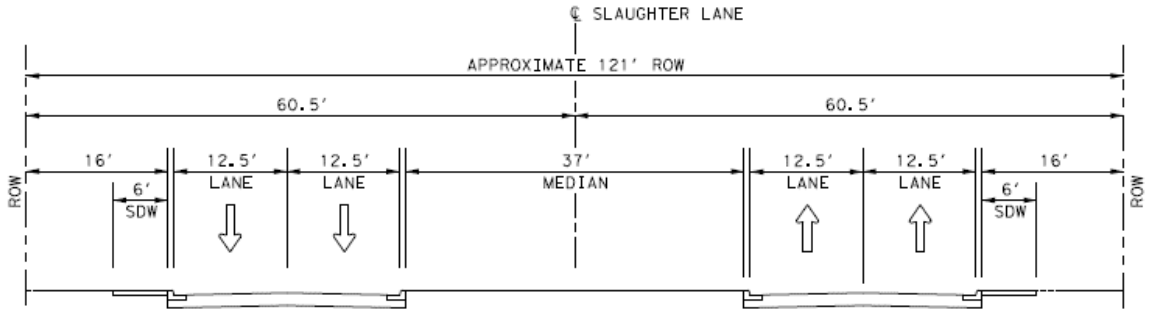
Zone	Roadway Segment	No. of Lanes	Roadway Type	Bike Lanes	Sidewalks	Transit Service
1	FM 1826 to MoPac	4	Divided	None	Discontinuous	Yes
2	MoPac to Brodie Ln	4	Divided	None	Continuous	None
3	Brodie Ln to Manchaca Rd	4	Divided	Unprotected	Continuous	Yes
4	Manchaca Rd to IH 35	6	Divided	Unprotected	Continuous	Yes
5	IH 35 to Onion Creek Bridge	6	Divided	None	Continuous	None
5	Onion Creek Bridge to Old Lockhart Hwy	4	Divided	None	None	None
5	Old Lockhart Hwy Junction	4	Divided	Unprotected	None	None
5	Old Lockhart Hwy to Vertex Blvd	2	Undivided	Unprotected	Continuous	None

Figure 3-10: Existing Typical Section – FM 1826 to Barstow Avenue



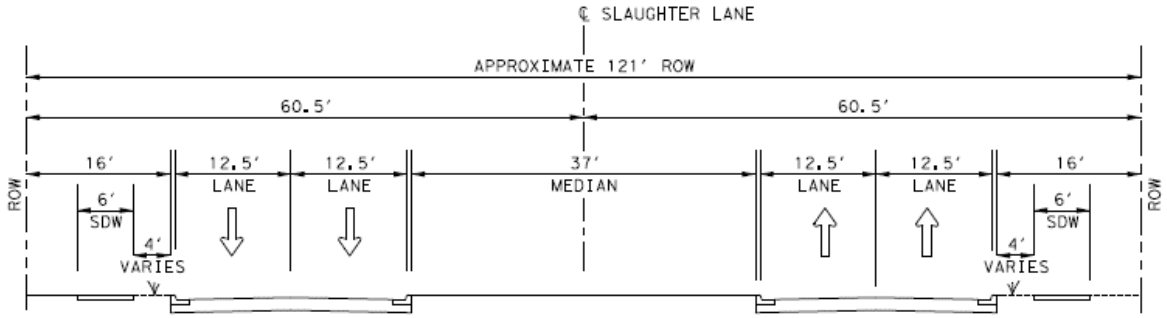
EXISTING TYPICAL SECTION BETWEEN FM 1826 & BARSTOW AVE.

Figure 3-11: Existing Typical Section – Barstow Avenue to Escarpment Boulevard



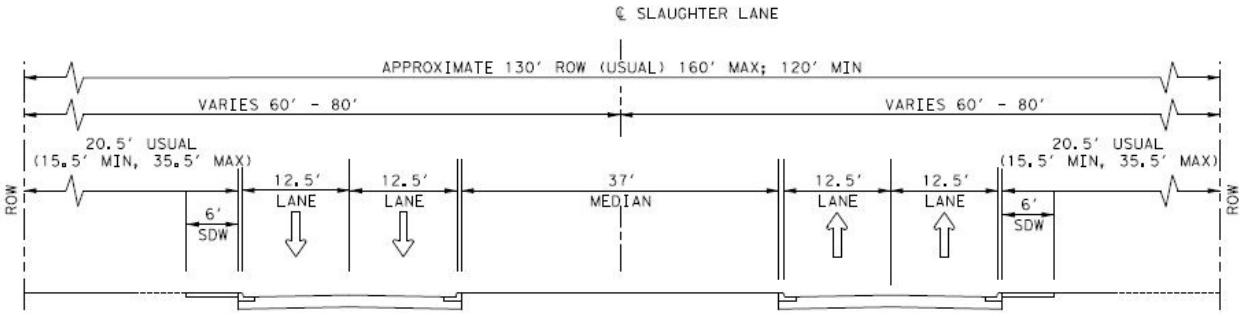
EXISTING TYPICAL SECTION
BETWEEN BARSTOW AVE. & ESCARPMENT BLVD.

Figure 3-12: Existing Typical Section – Escarpment Boulevard to MoPac



EXISTING TYPICAL SECTION
BETWEEN ESCARPMENT BLVD. & MOPAC

Figure 3-13: Existing Typical Section – MoPac to Brodie Lane



EXISTING TYPICAL SECTION
BETWEEN MOPAC & BRODIE LN.

Figure 3-14: Existing Typical Section – Brodie Lane to Manchaca Road

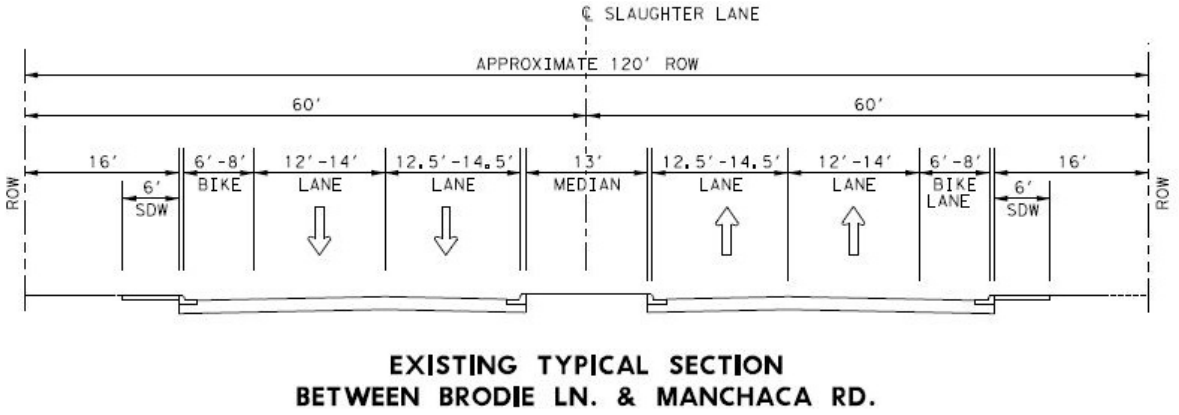


Figure 3-15: Existing Typical Section – Railroad Bridge

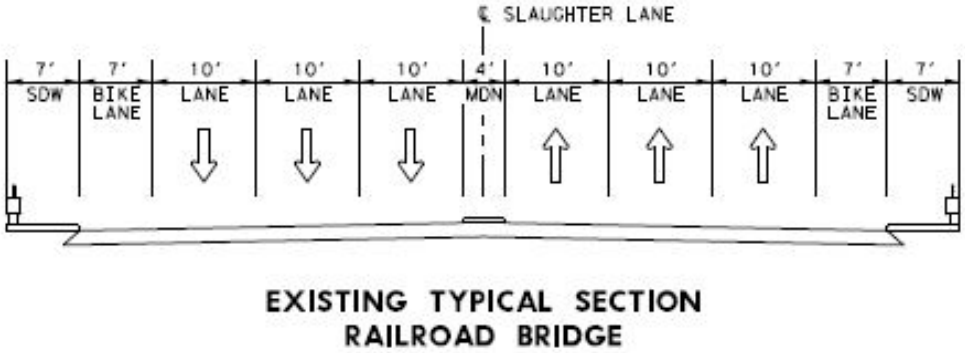


Figure 3-16: Existing Typical Section – Manchaca Road to IH 35

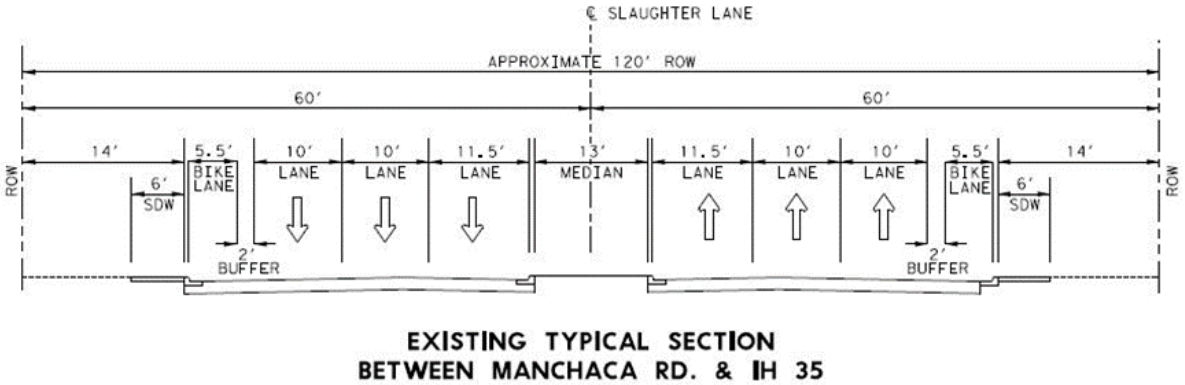


Figure 3-17: Existing Typical Section – IH 35 to Narrow Glen Parkway

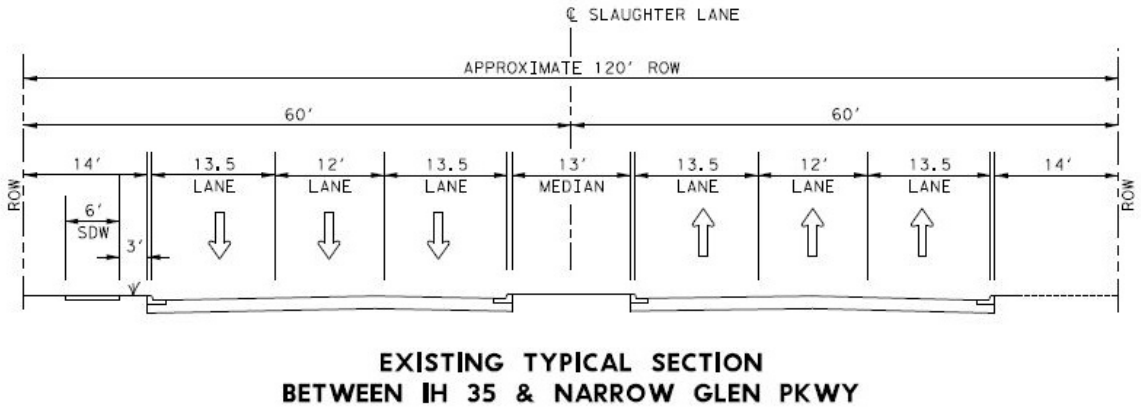


Figure 3-18: Existing Typical Section – Narrow Glen Parkway to Brandt Road

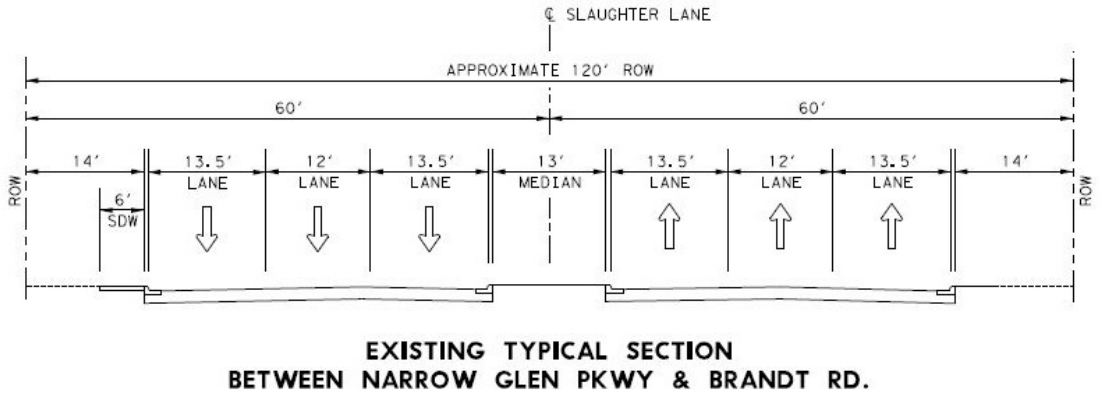


Figure 3-19: Existing Typical Section – Onion Creek Bridge

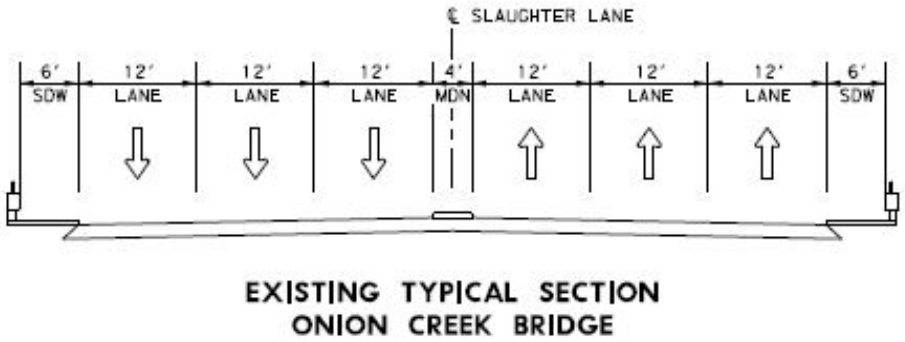


Figure 3-20: Existing Typical Section – Brandt Road to Old Lockhart Highway

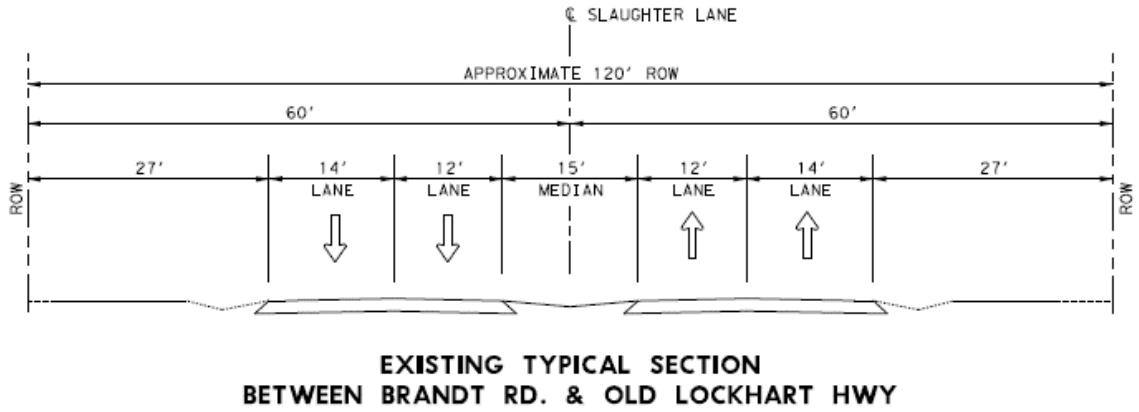
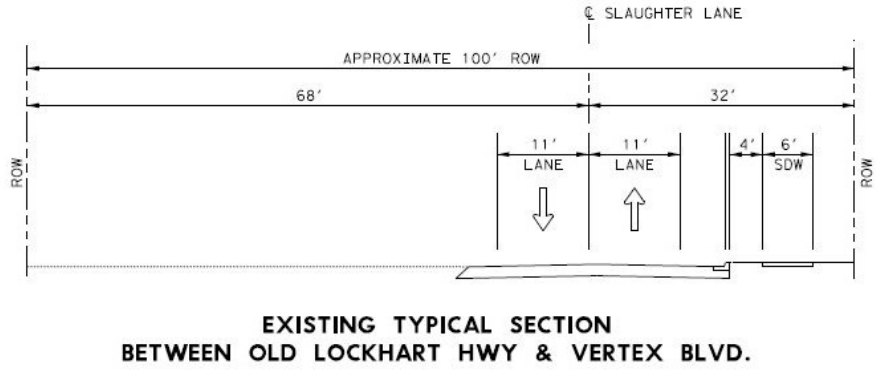


Figure 3-21: Existing Typical Section – Old Lockhart Highway to Vertex Boulevard



EXISTING TRAFFIC SIGNAL INFRASTRUCTURE

Signalized and unsignalized intersections along Slaughter Lane are summarized in **Table 3-3**. Basic characteristics of the existing traffic signal infrastructure (detection type, pedestrian signals, and signal support) at signalized intersections are summarized in **Table 3-4.**

Table 3-3: Signalized and Unsignalized Intersections

Int. No.	Intersection *(cross street name)*	Signalized
1	FM 1826	Yes
2	Barstow Ave	Yes
3	Bungalow Ln	No
4	Vinemont Dr	No
5	Escarpment Blvd	Yes
6	Beckett Rd	Yes
7	SB MoPac	Yes
8	NB MoPac	Yes
9	Sendera Mesa Dr	Yes
10	Zuniga Dr	No
11	Norman Trl/Bremner Dr	No
12	Bowie High Entrance	Yes
13	Wolftrap Dr	Yes
14	Bell Austin Entrance	No
15	Brodie Ln	Yes
16	Rocking Horse Rd	No
17	Rochelle Dr	No
18	West Gate Blvd	Yes
19	Lindshire Ln	Yes
20	Brasher Dr	No
21	Riddle Rd	No
22	Curfew Dr	Yes
23	Piping Rock Trl	No
24	Brair Ridge Dr	No
25	Gail Rd	No
26	Willers Way	No
27	Woodshire Dr	No
28	Roxanna Dr	No
29	Riddle Rd	Yes
30	HEB Exit	Yes
31	Allred Dr	No
32	Manchaca Rd	Yes
33	Sugarberry Ln/Billbrook Pl	Yes
34	Swansons Ranch Rd	No
35	David Moore Dr	No
36	Texas Oaks Dr	Yes
37	S. Chisholm Trl	No
38	Chisholm Ln	No
39	United Kingdom Dr/Talley Ln	Yes
40	S Mary Moore Seabright Dr	No
41	Place Pkwy	Yes
42	Yarsa Blvd	No
43	Simonetti Dr	No
44	S 1st St	Yes
45	Southpark Meadows Dr	Yes
46	Alice Mae Ln	*Yes
47	Cullen Ln	Yes
48	S Congress Ave	Yes
49	S IH 35 FR	Yes
50	N IH 35 FR	Yes
51	Narrow Glen Pkwy	No
52	Brandt Rd	Yes
53	Orchard Ridge	No
54	Old Lockhart Rd/Bluff Springs Rd	No
55	Old Lockhart Hwy	No
56	Vertex Blvd	No

Installed October 2017

Table 3-4: Summary of Traffic Signal Characteristics

Intersection	Detection Type	Pedestrian Signals	Signal Support	Mode	AM Peak Cycle Length *(sec)*	PM Peak Cycle Length *(sec)*
FM 1826	VIVDS	Yes	Mast Arm	FREE	-	-
Barstow Ave	Loop	Yes	Mast Arm	FREE	-	-
Escarpment Blvd	Loop	Yes	Span Wire	Coordinated	75	160
Beckett Rd	VIVDS/Loop	Yes	Mast Arm	Coordinated	80	80
SB MoPac	Loop	Yes	Span Wire	Coordinated	160	160
NB MoPac	Loop	Yes	Span Wire	Coordinated	160	160
Sendera Mesa Dr	Loop	Yes	Mast Arm	Coordinated	130	130
Bowie High Entrance	Loop	Yes	Span Wire	Coordinated	130	130
Wolftrap Dr	Loop	Yes	Span Wire	Coordinated	130	130
Brodie Ln	Loop	Yes	Span Wire	Coordinated	130	130
West Gate Blvd	Loop	Yes	Mast Arm	Coordinated	130	130
Lindshire Ln	Loop	Yes	Mast Arm	Coordinated	130	130
Curlew Dr	Loop	Yes	Span Wire	Coordinated	130	130
Riddle Rd	Loop	Yes	Mast Arm	Coordinated	130	130
HEB Exit	Loop	No	Mast Arm	Coordinated	130	130
Manchaca Rd	VIVDS/Loop	Yes	Mast Arm	Coordinated	130	130
Sugarberry Ln/ Billbrook Pl	Loop	Yes	Span Wire	Coordinated	130	130
Texas Oaks Dr	Loop	Yes	Mast Arm	Coordinated	130	130
United Kingdom Dr/ Talley Ln	Loop	Yes	Mast Arm	Coordinated	130	130
Palace Pkwy	Loop	Yes	Mast Arm	Coordinated	130	130
S 1st St	VIVDS/Loop	Yes	Mast Arm	Coordinated	130	130
Southpark Meadows Dr	Loop	Yes	Mast Arm	Coordinated	130	130
Alice Mae Ln	VIVDS	Yes	Mast Arm	Installed October 2017		
Cullen Ln	VIVDS/Loop	Yes	Mast Arm	Coordinated	130	130
S Congress Ave	Loop	Yes	Span Wire	Coordinated	130	130
S IH 35 FR	-	Yes	Mast Arm	Coordinated	130	130
N IH 35 FR	-	Yes	Mast Arm	Coordinated	130	130
Brandt Rd	Loop	Yes	Mast Arm	FREE	-	-

BICYCLE & PEDESTRIAN FACILITIES

BIKE LANES

Slaughter Lane has 6-foot on-street bike lanes running on both sides of the street from Brodie Lane to IH 35. The portion between Brodie Lane and Manchaca Road is indicated by a white stripe on the pavement, while the portion from Manchaca Road to IH 35 has a two-foot buffer zone. There are no existing bike lanes provided on sections west of Brodie Lane or east of IH 35.

The safety and comfort of bicyclists is a major concern across the corridor. According to the *City of Austin Bicycle Master Plan*, the comfort of the user experience is maximized by "providing adequate separation from traffic, minimizing flow interruptions, and providing smooth surfaces, shade and comprehensibility, along routes". The City of Austin Bike Map considers existing Slaughter Lane as having "Helpful Sidewalks" (i.e., limited bike access) from FM 1826 to Brodie Lane, as a "medium-comfort" road from Brodie Lane to Curlew Drive, and as a "low-comfort" road from Curlew Drive to Vertex Boulevard. Characteristics of the existing bike facilities along Slaughter Lane are summarized in **Table 3-5**.

Table 3-5: Existing Bike Facilities

To	From	Existing Facility	Bike Lane Width	Bike Lane Buffer	Comfort	All Ages & Abilities Network*
FM 1826	Brodie Ln	Shared Lane	None	None	Helpful Sidewalks *(limited bike access)*	
Brodie Ln	Curlew Dr	Bike Lane	6-feet	None	Medium	Yes
Curlew Dr	IH 35 SBFR	Bike Lane	6-feet	2-feet	Low	Yes
IH 35 SBFR	Old Lockhart Rd	Shared Lane	None	None	Low	Yes

***See Chapter 4 for more information on the All Ages and Abilities Network and City of Austin Bicycle Master Plan.**

SIDEWALKS

Slaughter Lane has existing six-foot sidewalks on both sides of the road throughout most of the corridor with a few exceptions. The *City of Austin Sidewalk Master Plan* (discussed in **Chapter 4**) has identified gaps in the existing sidewalk network and developed a priority ranking for addressing those gaps. **Table 3-6** shows locations of absent sidewalks along the existing corridor. There are also several cross-streets, shown in **Table 3-7**, where absent sidewalks have been identified as "High" and "Very High" priority.

The existing sidewalks along Slaughter Lane are generally adjacent to the roadway while some areas have a small green space between the curb and sidewalk. Signalized intersections provide pedestrian crossings with ramps, crosswalks, and push buttons. There is an existing pedestrian hybrid beacon (PHB) located at Slaughter Lane and Orchard Ridge.

Table 3-6: Absent Sidewalks

Location	Side of Street *(North or South)*	Absent Sidewalk Priority	Approx. Length of Absent Sidewalk *(Linear Feet)*
FM 1826 to Barstow Ave	South	Low	2,300
MoPac Interchange	North	Low	1,600
IH 35 Interchange	North	Low/Medium	500
IH 35 Interchange	South	Very Low/Low	500
IH 35 to Onion Creek Bridge	North	Medium	3,300
IH 35 to Onion Creek Bridge	South	Low/Medium	2,900
Onion Creek Bridge to Vertex Rd	North	Very Low	7,400
Onion Creek Bridge to Vertex Rd	South	Very Low	3,200

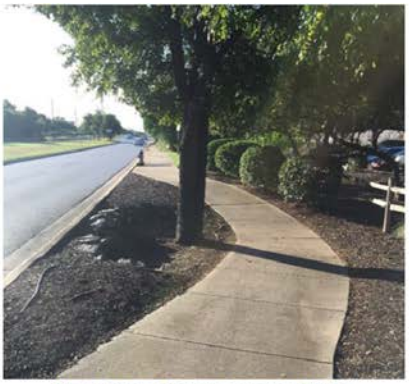
Table 3-7: Absent Sidewalks – Off-Corridor

Location	Side of Street *(North/ South of Slaughter)*	Absent Sidewalk Priority
Riddle Rd West	South	High
Howellwood Way	South	High
Curlew Dr	North	High
Piping Rock Trail	North	High
Briar Ridge	North	High
Gail Rd	South	High
Roxanna Dr	North	High
Riddle Rd East	South	High
Monarch Dr	North	High
S. 1st St	North	Very High

The condition of the existing sidewalks appears to be adequate with a few exceptions where issues with acceptable width, grade, and cross slope exist. Several areas along the existing sidewalk drop abruptly to match a lower grade. These areas do not meet ADA standards and could be unsafe. Additionally, there are number of fire hydrants located in the middle of the sidewalk. There are eight fire hydrants in a row located on the south side of Slaughter Lane near Norman Trail. **Figure 3-22** shows examples of areas needing repair.

Figure 3-22: Examples of Existing Sidewalk Issues

Uneven Slab Located Around Inlet



Elevation Change around Tree

Fire Hydrant in Middle of Sidewalk

TRANSIT SERVICE

CapMetro operates several Local, Frequent Local, Flyer and MetroRapid bus routes within the Slaughter Lane corridor. Existing transit routes along the corridor are listed in **Table 3-8** and depicted in **Figure 3-23.**

MetroBus

Route 3, **Route 201**, and **Route 318** are Local routes typically provide 30-minute frequencies, 7 days a week, and have frequent stops. **Route 10** is a Frequent Local route with 15-minute frequencies, 7 days a week, providing greater reliability by reducing the time between arrivals. **Route 103** and **Route 110** are Flyer routes providing less stops and directional service during peak periods. Flyer routes provide service toward downtown in the AM rush hour and away from downtown during the PM rush hour.

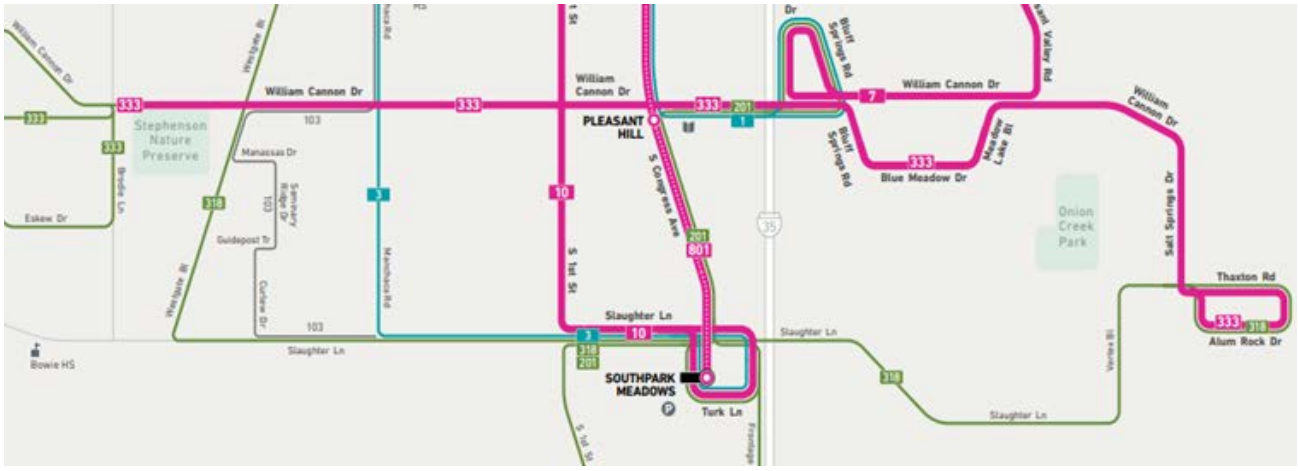
MetroRapid

MetroRapid **Route 801** travels along South Congress Avenue and North Lamar Boulevard, connecting Southpark Meadows with Tech Ridge in north Austin via downtown and the UT-Austin campus. All MetroRapid routes provide service every 10 minutes on weekdays, every 15 minutes on Saturday and Sunday, and late-night service until 2:30 a.m. Thursday through Saturday. MetroRapid buses also offer free Wi-Fi and feature transit-priority technology that changes red lights to green as they approach signals.

Table 3-8: Existing Transit Routes

Route #	Route Name	Service Type	Frequency *(Weekdays)*
3	Burnet/Manchaca	Local	30 Minute
10	South 1st/Red River	Frequent Local	15 Minute
103	Manchaca Flyer	Flyer	30 Minute
111	South MoPac Flyer	Flyer	30 Minute
201	Southpark Meadows	Local	30 Minute
318	Westgate/Slaughter	Local	30 Minute
801	North Lamar/South Congress	MetroRapid	10 Minute

Figure 3-23: Transit Routes Map



Source: CapMetro.org

RAILROADS & UTILITIES

The Union Pacific Railroad (UPRR) crosses under Slaughter Lane between Manchaca Road and Bilbrook Place. This railroad crossing does not interfere with traffic operations along the corridor.

Existing transmission power lines run along Slaughter Lane from Brodie Lane to Old Lockhart Highway. These lines are primarily located on the south side of the corridor parallel to the roadway. The section between Brasher Drive and Curlew Drive has overhead transmission power lines on the north side of the street. From Curlew Drive to South 1st Street and from IH 35 to Brandt Road there are transmission power lines on both sides of the road for a majority of the segment.

DRAINAGE CHARACTERISTICS & ISSUES

Slaughter Lane has only one FEMA/COA floodplain crossing the corridor at Onion Creek. The Onion Creek Bridge at Slaughter Lane does not experience flooding and no improvements will be recommended in the Corridor Mobility Plan. Slaughter Creek FEMA/COA floodplain is south of Slaughter Lane between FM 1826 and MoPac. This floodplain does not cross Slaughter Lane and there is no drainage associated with this floodplain and Slaughter Lane.

There are several minor public and private storm drain and drainage crossings but none of them are identified as a localized flood hazard. From GIS data, storm pipes along Slaughter Lane were installed between 1981 and 2000 with large stretches labeled as unknown year. The areas where the City has modeled the storm pipe level of service it rated between the 25-year and 100-year storm event. The only exceptions were the storm pipes along Piping Rock Trail between Curlew Drive and Manchaca Road. These have a storm pipe level of service below the 2-year storm event.

The drainage between MoPac and Brodie Lane is generally on the outside of the roadway and is not in conflict with the proposed travel lanes cut into the median. The City has not studied the storm pipe level of service except for the commercial area directly east of MoPac.

METHODOLOGY

Traffic operations were assessed for the Existing (2017) conditions scenario with *Synchro 10*, a traffic analysis software, using methodologies defined in the *Highway Capacity Manual* (HCM) to determine intersection Level of Service (LOS) and network metrics for fuel consumption and emissions. Traffic counts were collected to determine existing (2017) volumes and a *Synchro* model of the corridor including existing signal timings was developed for the traffic operations analysis. Existing (2017) conditions were verified and calibrated in the *Synchro* model based on observations and intersection geometries to reflect real-world conditions. Intersection turning movement counts are located in **Appendix A**. *Synchro* model outputs are located in **Appendix B**.

TRAFFIC DATA

Extensive data collection was performed to obtain information on existing conditions along the Slaughter Lane corridor, including 24-hour bi-directional vehicular traffic counts, AM and PM peak hour intersection turning movement counts, existing speed limits, and intersection spacing.

TUBE COUNTS

24-hour bi-directional tube counts were collected on Tuesday, March 21, 2017 at five locations along the corridor. These tube counts, which represent the actual observed traffic volume over the 24-hour collection period, range from 23,000 vehicles to 40,000 vehicles. **Table 3-9** summarizes 24-hour counts at each location. Distributions of hourly traffic volume at each count location are shown in **Figure 3-24** to **Figure 3-28**.

Table 3-9: Slaughter Lane Corridor 24-Hour Counts

Location	EB *(VPD)*	WB *(VPD)*	Total
Between Escarpment Blvd and Beckett Rd	12,098	12,716	24,814
Between Bremner Dr and Bowie HS	18,845	17,372	36,217
Between Texas Oaks Dr and Chisholm Ln	19,971	20,285	40,256
Between S 1st St and Alice Mae Ln	19,887	18,911	38,798
Between Narrow Glen Pkwy and Brandt Rd	11,892	11,129	23,021

Figure 3-24: Distribution of Hourly Traffic between Escarpment Boulevard and Beckett Road

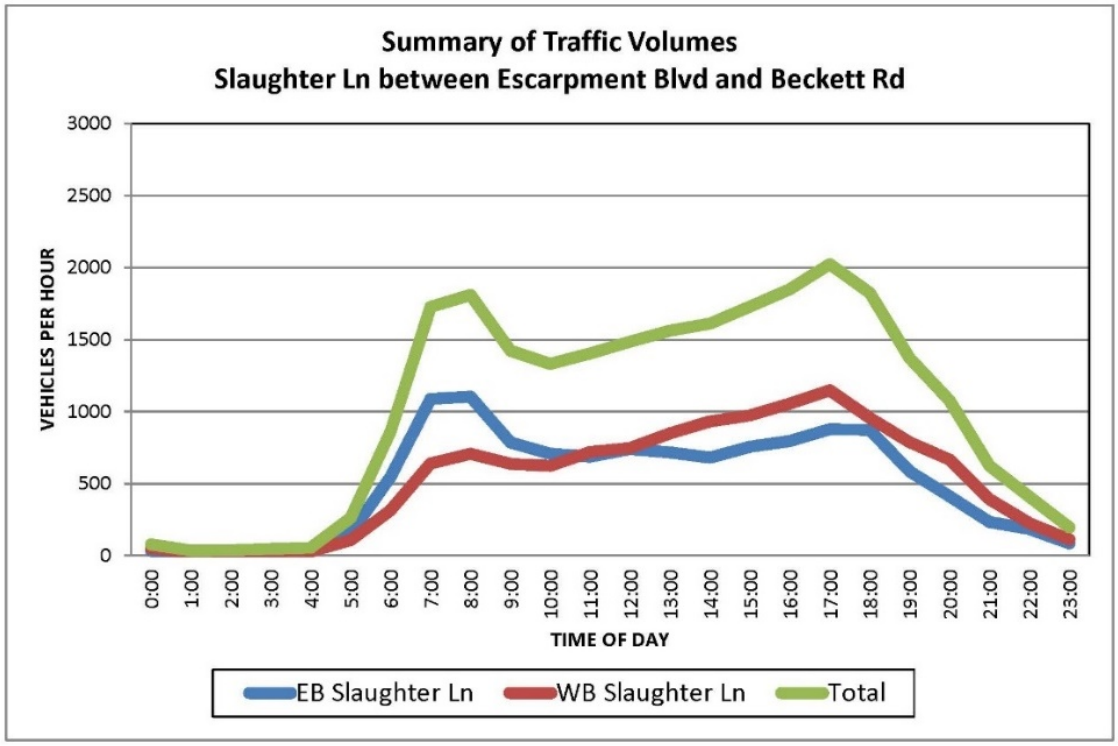


Figure 3-25: Distribution of Hourly Traffic between Bremner Drive and Bowie HS

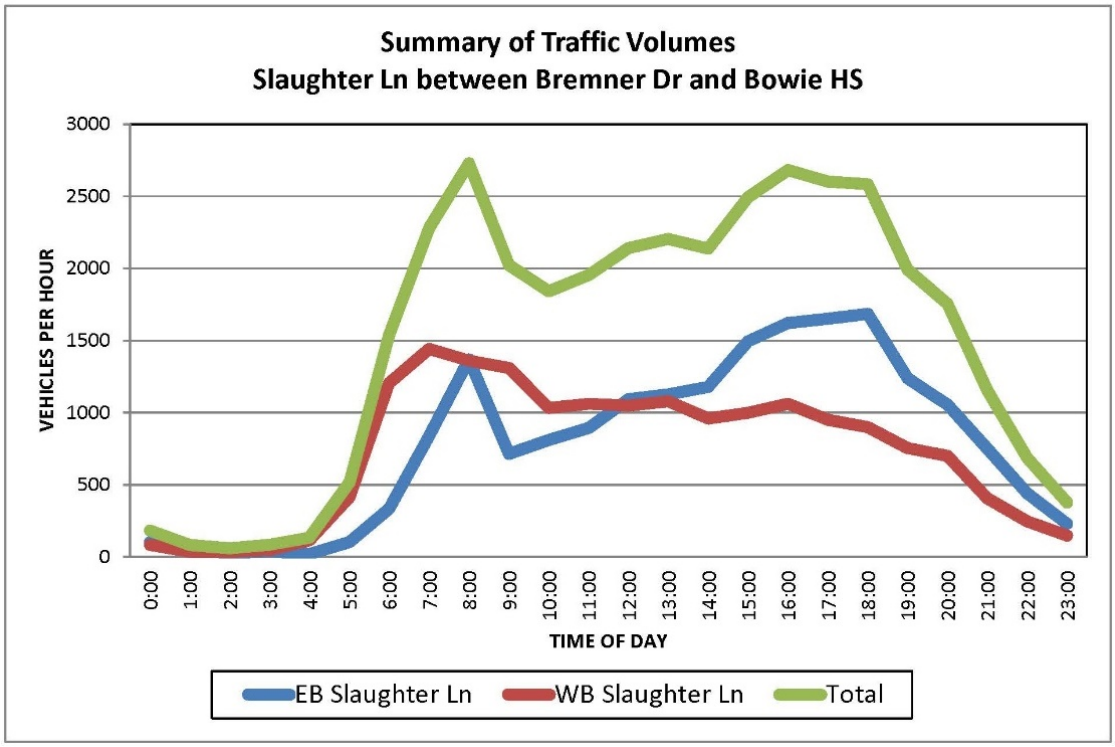


Figure 3-26: Distribution of Hourly Traffic between Chisholm Lane and Texas Oak Drive

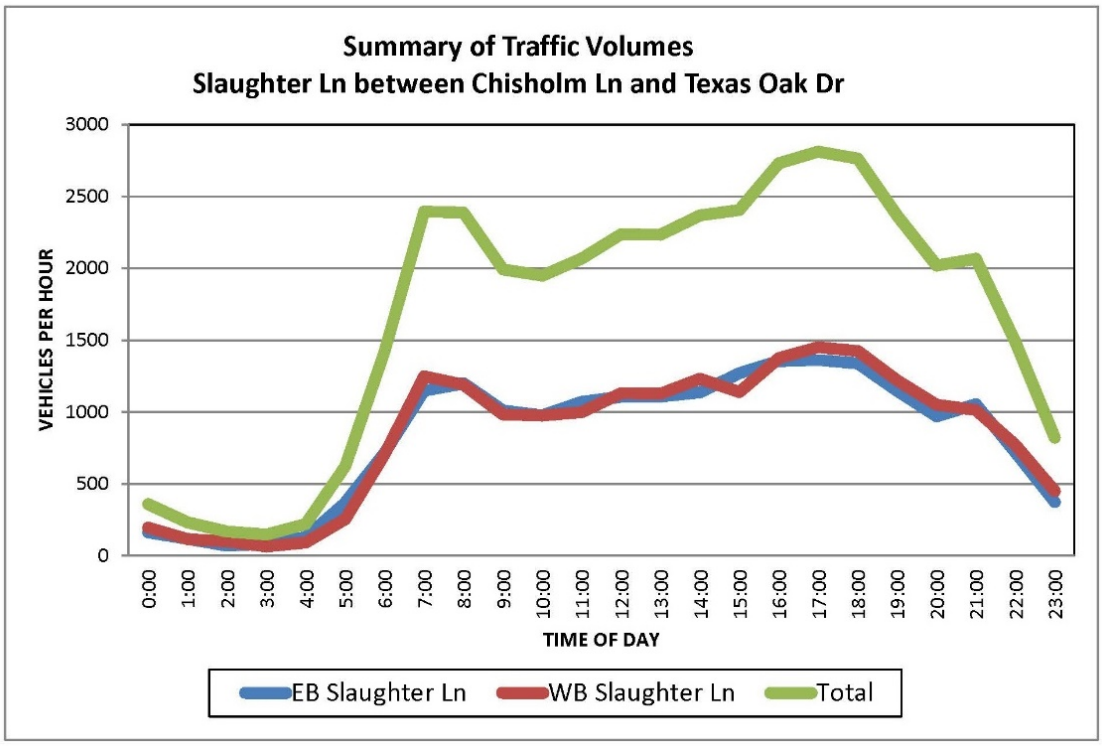


Figure 3-27: Distribution of Hourly Traffic between S 1st Street and Alice Mae Lane

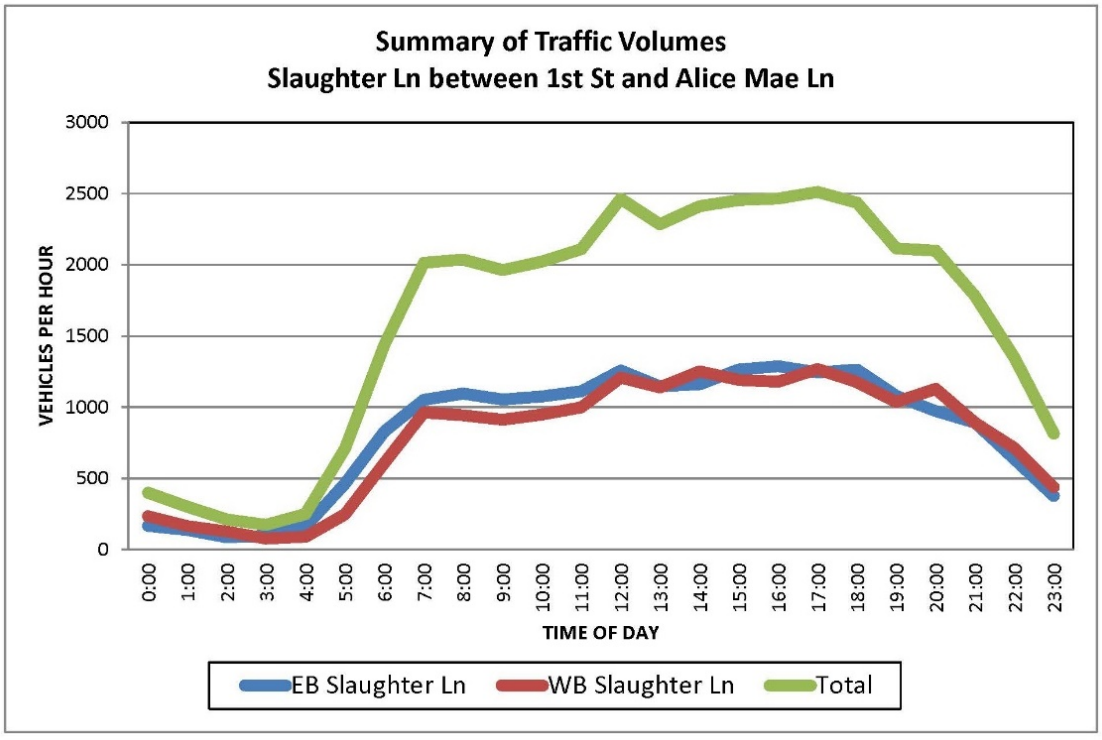
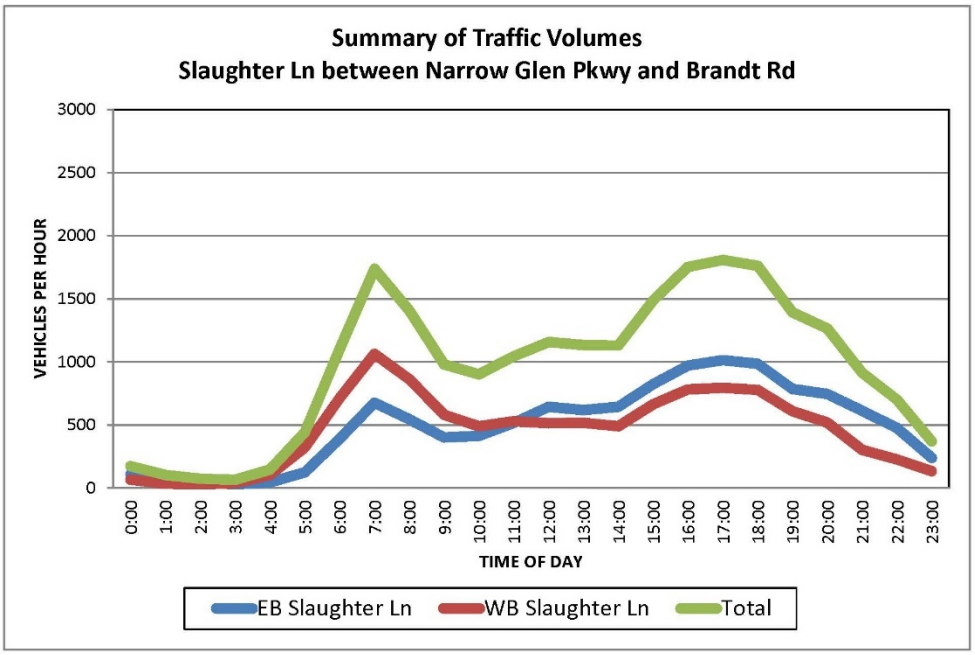


Figure 3-28: Distribution of Hourly Traffic between Narrow Glen Parkway and Brandt Road



TURNING MOVEMENT COUNTS

Intersection turning movement counts (TMCs) were collected for a typical weekday on Wednesday, February 22, 2017. The total intersection volume during the AM and PM peak hour are shown in **Table 3-12**. The complete set of turning movement counts can be found in **Appendix A**.

Cross streets with significant traffic volumes during the AM peak period include:

- Escarpment Boulevard
- NB and SB MoPac
- Brodie Lane
- Manchaca Road
- S. First Street
- S. Congress Ave.
- NB and SB IH 35

Cross streets with significant traffic volumes during the PM peak period include:

- NB and SB MoPac
- Manchaca Road
- S. First Street
- NB and SB IH 35

TRAVEL TIMES

The posted speed and approximate distance between each intersection was determined using Google Earth. The free-flow travel time from FM 1826 to Brandt Road is shown in **Table 3-10**.

Table 3-10: Summary of Slaughter Lane Corridor Free-Flow Travel Time

From	To	Posted Speed *(mph)*	Distance *(feet)*	Free-Flow Travel Time *(sec)*
FM 1826	Barstow Ave	50	3,950	54
Barstow Ave	Escarpment Blvd	50	4,591	63
Escarpment Blvd	Beckett Rd	50	2,322	32
Beckett Rd	SB MoPac	50	1,225	17
SB MoPac	NB MoPac	30	410	9
NB MoPac	Sendera Mesa Dr	40	1,037	18
Sendera Mesa Dr	Bowie HS Entrance	40	3,975	68
Bowie HS Entrance	Wolftrap Dr	45	976	15
Wolftrap Dr	Brodie Ln	45	1,942	29
Brodie Ln	West Gate Blvd	45	3,124	47
West Gate Blvd	Lindshire Ln	45	775	12
Lindshire Ln	Curlew Dr	40	1,604	27
Curlew Dr	Riddle Rd	40	2,365	40
Riddle Rd	HEB Exit	40	489	8
HEB Exit	Manchaca Rd	40	454	8
Manchaca Rd	Sugarberry Ln/Billbrook Pl	40	2,076	35
Sugarberry Ln/Billbrook Pl	Texas Oaks Dr	40	762	13
Texas Oaks Dr	United Kingdom Dr/Talley Ln	45	1,570	24
United Kingdom Dr/Talley Ln	Palace Pkwy	45	1,034	16
Palace Pkwy	S 1st St	45	2,095	32
S 1st St	Southpark Meadows Dr	45	1,566	24
Southpark Meadows Dr	Cullen Ln	45	1,710	26
Cullen Ln	S Congress Ave	45	690	10
S Congress Ave	S IH 35 FR	45	452	7
S IH 35 FR	N IH 35 FR	30	522	12
N IH 35 FR	Brandt Rd	45	3,954	60
		Total	**45,670**	**705**

INTERSECTION LEVEL OF SERVICE & DELAY

Intersection Level of Service (LOS) is a measure of intersection performance based on average control delay. Delay quantifies the increase in travel time that a vehicle experiences due to traffic signal control, but can also serve as a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average delay per vehicle (seconds per vehicle) during a specified time period (e.g., weekday PM peak hour). LOS and Delay are influenced by many factors, including signal phasing and coordination, signal cycle length, and traffic volumes with respect to intersection capacity and resulting vehicle queues.

The City of Austin sets the threshold for "acceptable" Level of Service at LOS D through its Traffic Impact Analysis (TIA) guidelines, while LOS E and LOS F are considered unacceptable. Use of LOS D as a minimum threshold is common practice in denser urban environments where prohibitive costs and undesirable societal impacts would be required to obtain LOS C. In some cases, such as locations where demand is exceptionally high or constraints prevent adequate capacity increases, even obtaining LOS D is not a feasible outcome.

For signalized intersections, LOS criteria is based on the ranges of control delay shown in **Table 3-11, as** defined in the *Highway Capacity Manual* (*HCM*) and .

Table 3-11: Signalized Intersection Level of Service Criteria

LOS	Control Delay *(sec/veh)*	Description of Traffic Flow
A	<10	*Very low vehicle delays, free traffic flow, signal progression extremely favorable, most vehicles arrive during given signal phase.*
B	>10 and <20	*Good signal progression, more vehicles stop and experience higher delays than for LOS A.*
C	>20 and <35	*Stable traffic flow, fair signal progression, significant number of vehicles stop at signals.*
D	>35 and <55	*Noticeable traffic congestion, longer delays and unfavorable signal progression, many vehicles stop at signals.*
E	>55 and <80	*Limit of acceptable vehicle delay, unstable traffic flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.*
F	>80	*Unacceptable delay, extremely unstable flow, heavy congestion, traffic exceeds roadway capacity, stop-and-go conditions.*

Source: 2010 Highway Capacity Manual

Table 3-12 summarizes the existing (2017) LOS and delay (sec/veh) at signalized intersections during the AM and PM peak hours. A complete set of *Synchro* model outputs are located in **Appendix B**. Summary tables of LOS and delay at each intersection approach are provided in **Appendix C**.

As shown in **Table 3-12**, intersections currently operating at an unacceptable Level of Service (LOS E or LOS F), include: Escarpment Blvd., SB MoPac, NB MoPac, Brodie Lane, Manchaca Road, South 1st Street, South Congress Avenue, SB IH 35 FR, NB IH 35 FR.

Table 3-12: Existing (2017) Intersection Level of Service – AM Peak and PM Peak Hours

Slaughter Lane *Intersection*	AM Peak Hour			PM Peak Hour		
	Volume	LOS	Delay *(sec/veh)*	Volume	LOS	Delay *(sec/veh)*
FM 1826	1,356	D	39	1,587	B	14
Barstow Ave	1,141	B	11	1,226	A	8
Escarpment Blvd	2,737	C	29	3,248	F	85
Beckett Rd	2,139	C	20	2,430	B	17
SB MoPac	2,772	D	43	4,602	E	74
NB MoPac	4,846	D	53	4,275	E	69
Sendera Mesa Dr	2,886	B	16	3,447	B	13
Bowie High Entrance	2,877	B	17	3,401	C	33
Wolftrap Dr	2,600	A	5	3,041	A	10
Brodie Ln	4,091	E	74	4,373	D	43
West Gate Blvd	2,777	C	25	3,056	C	24
Lindshire Ln	2,568	B	16	2,752	A	6
Curlew Dr	2,192	C	22	2,405	B	10
Riddle Rd	2,227	B	16	2,814	C	26
HEB Exit	2,120	A	0.5	2,797	A	1.3
Manchaca Rd	4,504	E	71	5,432	E	78
Sugarberry Ln/Billbrook Pl	3,020	B	18	3,714	C	22
Texas Oaks Dr	3,136	B	19	3,524	B	11
United Kingdom Dr/Talley Ln	2,848	B	15	3,450	A	4
Palace Pkwy	3,159	B	11	5,155	B	14
S 1st St	4,323	D	39	5,155	E	57
Southpark Meadows Dr	3,043	C	21	3,820	B	17
Cullen Ln	3,069	A	7	3,971	C	31
S Congress Ave	3,737	C	33	4,377	E	61
SB IH 35 FR	4,028	D	37	5,315	E	77
NB IH 35 FR	3,741	E	55	4,013	E	55
Brandt Rd	2,228	C	27	2,014	B	20

NETWORK FUEL CONSUMPTION & EMISSIONS

Synchro 10 was also used to estimate fuel consumption and emissions for the entire network (27 intersections). Model outputs for network fuel consumption and emissions are shown in **Table 3-13**.

Table 3-13: Network Fuel Consumption and Emissions

MOE	AM Peak	PM Peak
Fuel Consumed (gal)	1,728	2,138
Fuel Economy (mpg)	12.80	11.80
CO Emissions (kg)	120.77	149.46
NOx Emissions (kg)	23.50	29.08
VOC Emissions (kg)	27.99	34.64

Historical crash data for years 2012 to 2016 were analyzed to identify the type/location of crashes along the corridor and make recommendations which improve safety throughout the corridor. **Table 3-14** provides a ranking of the top 20 intersection crash locations along the Slaughter Lane corridor.

Table 3-14: Top 20 Intersection Crash Locations along Slaughter Lane

Rank	Intersection *(cross street name)*	Total Crashes
1	Manchaca Rd	107
2*	S 1st Street	105
3*	Cullen Ln	86
4	IH 35 FR	68
5	S Congress Ave	60
6	Escarpment Blvd	51
7*	Brodie Ln	50
8	Alice Mae Ln	46
9	Sendera Mesa Dr	32
10	Riddle Rd	31
11	Southpark Meadows Dr	27
12	Palace Pkwy	26
13	MoPac	25
14	Beckett Rd	23
15	Wolftrap Dr	21
16	Billbrook Pl	19
17	Bowie High School	17
18	Lindshire Ln	17
19	Texas Oaks Dr	15
20	United Kingdom Dr	15

**** Identified in COA Top Crash Location Intersection Priority List (June, 2016)***

Table 3-15 summarize the frequency of crash types at the top five intersection crash locations. These accidents occurred primarily on the east side of the corridor between Manchaca Road and IH 35.

The most frequently observed crash types were rear-end crashes and angle crashes. Common causes for these crash types include general congestion, inadequate storage length of turn lanes, unexpected turns conflicting, and lack of proper signal control. Common countermeasures to reduce the frequency of rear-end collisions is the installation of turn lanes or increasing the storage capacity of an existing turn lane. A common countermeasure for reducing Angle – One Straight, One Left-Turn crashes is to adjust the traffic signal phasing that eliminates permissive left-turn phases and allows only protected left-turns.

Table 3-15: Crash Types at Top 5 Intersection Crash Locations

Crash Type	Intersection				
	Manchaca Road	South 1st Street	Cullen Lane	IH 35 FR*	South Congress Avenue
Rear End	46	32	17	37	40
Angle – One Straight, One Left-turn	32	57	41	1	2
Angle – One Straight, One Right Turn	1	1	1	3	1
Sideswipe	14	12	20	12	12
One Motor Vehicle – Going Straight	9	1	5	5	2
One Motor Vehicle – Turning Left	1	0	0	5	0
One Motor Vehicle – Turning Right	2	0	0	2	0
Motor Vehicle/Pedestrian	1	1	0	3	2
Motor Vehicle/Bicycle	1	1	2	0	1
Total Crashes	**107**	**105**	**86**	**68**	**60**

***Includes both northbound and southbound frontage road intersections.**

CHAPTER 4 – FUTURE CORRIDOR CHARACTERISTICS

In order to develop recommendations that enhance mobility, safety, and connectivity for all users, it is necessary to consider future land use and traffic demand along the Slaughter Lane corridor. This chapter begins with an overview of recommendations from plans and policies developed by the City of Austin and other regional transportation agencies affecting Slaughter Lane. Future land use and planned site developments are considered along with planned improvements to the transportation system. This chapter concludes with a discussion of the methodology used to estimate future travel demand along the corridor.

CITY OF AUSTIN PLANS & POLICIES

In addition to achieving project goals of enhancing mobility, safety, and connectivity for all users, recommended improvements for Slaughter Lane corridor should also align with the vision and goals of Imagine Austin and other city-adopted plans and policies. The following sections describe relevant plans and policies that guide future transportation improvements and development in Austin, and their specific recommendations for the future Slaughter Lane corridor.

IMAGINE AUSTIN COMPREHENSIVE PLAN

The *Imagine Austin Comprehensive Plan* (*Imagine Austin*), adopted in 2012, is the comprehensive planning guiding document for the future of the City of Austin. Improvements to the Slaughter Lane corridor will seek to implement the vision, goals, and objectives of *Imagine Austin*. The Comprehensive Plan provides broad guidance, as well as specific criteria that can be included as part of the Slaughter Lane CMP.

Imagine Austin provides a ***"Vision for Austin's Future"*** where ***"…Austin is a beacon of sustainability, social equity, and economic opportunity; where diversity and creativity are celebrated; where community needs and values are recognized; where leadership comes from its citizens and where the necessities of life are affordable and accessible to all."***

Several "Key Challenges and Opportunities" are posited by *Imagine Austin* – for example, ***"Preserving Our Livability and Expanding Transportation Choices"*** – are directly applicable to the Slaughter Lane CMP. *Imagine Austin* outlines several Core Principles for Action, most relevant to the Slaughter Lane corridor is the call to ***"Grow as a compact and connected city"*** and ***"Develop as an affordable and healthy community."*** The robust transportation section in *Imagine Austin* outlines that the ever-increasing traffic congestion and transportation costs has led to ***"a renewed interest in creating a system incorporating all transportation choices."*** While *Imagine*

Austin envisions a long-term shift toward transit, walking, and biking, an expanded and improved roadway network must also be considered.

The culmination of *Imagine Austin* outreach and findings related to land use and transportation is a series of policy recommendations. The policies that are applicable to the Slaughter Lane corridor are included below.

Table 4-1: Imagine Austin Comprehensive Plan – Land use & Transportation Policies

ID	Description
LUT P1	Align land use and transportation planning and decision-making to achieve a compact and connected city in line with the Growth Concept Map.
LUT P3	Promote development in compact centers, communities, or along corridors that are connected by roads and transit, are designed to encourage walking and bicycling, and reduce healthcare, housing and transportation costs.
LUT P5	Create healthy and family-friendly communities through development that includes a mix of land uses and housing types, affords realistic opportunities for transit, bicycle, and pedestrian travel, and provides community gathering spaces, neighborhood gardens and family farms, parks, and safe outdoor play areas for children.
LUT P7	Encourage infill and redevelopment opportunities that place residential, work, and retail land uses in proximity to each other to maximize walking, bicycling, and transit opportunities.
LUT P11	Promote complete street design that includes features such as traffic calming elements, street trees, wide sidewalks, and pedestrian, bicycle, and transit access throughout Austin, considering the safety needs of people of all ages and abilities.
LUT P12	Achieve the goals of area transit plans through effective planning, sufficient funding, and continued partnerships between the City of Austin, Capital Metro, and other area transportation providers.
LUT P14	Promote safer routes to schools for students of all ages.
LUT P15	Incorporate provisions for bicycles and pedestrians into all roads such as freeways, toll roads, arterial roadways, and to and from transit stations and stops, and major activity centers.
LUT P16	Educate the public on the long-range need for commitment to a community fully served by a range of transportation options and the benefits of each one.
LUT P17	Develop intermediate transit solutions that allow the City to reach the ultimate goal of a complete transit network over the long-term.
LUT P19	Reduce traffic congestion, increase transit use, and encourage alternative transportation modes through such practices as Transportation Demand Management which includes carpooling, flex time work schedules and subsidizing transit costs for employees.
LUT P32	Assure that new development is walkable and bikable and preserves the positive characteristics of existing pedestrian friendly environments.
LUT P33	Apply high standards of urban design to ensure that “complete streets” are safe and accessible for all users. Encourage people to use alternative forms of transportation that are sensitive to the demands of the Central Texas climate.
LUT P34	Integrate green infrastructure elements such as the urban forest, gardens, green buildings, stormwater treatment and infiltration facilities, and green streets into the urban design of the city through “green” development practices and regulations.
LUT P36	Transform all major streets into vibrant, multi-functional, pedestrian-friendly corridors.

Complete streets are such a vital tool for the transportation vision provided in *Imagine Austin* that a special sub section is dedicated to explaining that concept. The plan explains ***"In a complete street network, short, local trips can be taken without burdening the big arterial roadways with more cars. By helping to reduce vehicle miles traveled, complete streets and street networks (linked to a complete regional transportation system) support a sustainable future and Imagine Austin's goals for reducing our environmental and carbon footprints."*** (*Imagine Austin*). Furthermore, relevant to the **Slaughter Lane** corridor that has several distinct character areas, the plan goes on to suggest that guidelines for context sensitive streets should be ***"adaptable to different areas of Austin and the different scales of neighborhoods and other districts. For example, complete street standards and elements will be different for a downtown street versus a small residential street."*** (*Imagine Austin*)

COMPLETE STREETS POLICY

The *City of Austin Complete Streets Policy* was adopted by the Austin City Council in 2014 to advance multiple long-term community goals defined by the vision and policies of the *Imagine Austin Comprehensive Plan*. Completion of a Complete Streets review is anticipated for project scoping and all major milestones.

To build on the vision provided by the *Imagine Austin Comprehensive Plan*, City Council adopted the *Complete Streets Resolution* in 2014 which provided a detailed vision for a healthy, green, vibrant, compact and connected community. Austin's *Complete Streets Policy (Ordinance 20140612-119)* commits the City to ***"design, operate and maintain the community's streets and right-of-way so as to promote safe, comfortable and convenient access and travel for people of all ages and abilities"*** by all travel modes. The policy establishes an approach to our streets that simultaneously advances three community goals: multimodal mobility, creating appealing people places, and integrating nature/sustainability. Other design guidelines referenced in the policy include:

- *Urban Street Design Guide (NACTO)*
- *Urban Bikeway Design Guide (NACTO)*
- *Designing Walkable Urban Thoroughfares: A Context-Sensitive Approach (ITE/CNU)*
- *2014 Bicycle Master Plan*
- *Urban Design Guidelines for Austin*

In 2016, this policy was expanded into a *Complete Streets Guide* to encourage cross department resources for good street design. This guide explains, not only the "why", but also the "how" to create complete street design across the City.

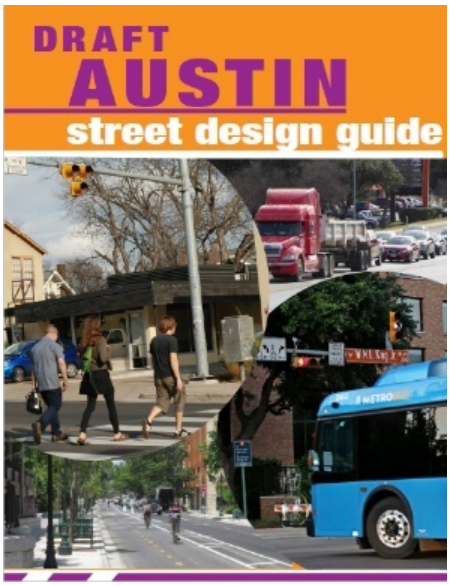
AUSTIN METROPOLITAN AREA TRANSPORTATION PLAN

The 2025 Austin Metropolitan Area Transportation Plan (AMATP) guides planning for the future of transportation in Austin. The documents released as part of the 2025 AMATP include the 1995 Ordinance adopting the AMATP, Adopted Roadway Table, 2025 AMATP map adopted by Austin City Council and Section Maps for Central, Northeast, Southeast, Southwest and Northwest. Based on roadway function specified on the AMATP map, Slaughter Lane is classified as a Major Arterial Divided.

AUSTIN STRATEGIC MOBILITY PLAN

The City is currently developing the *Austin Strategic Mobility Plan* (ASMP), which will become an update to the *Austin Metropolitan Area Transportation Plan* (AMATP) discussed above. This plan will tie together many of the City's past transportation plans, including the *Sidewalk Master Plan, Bicycle Master Plan,* several Corridor Mobility Plans, and *Connections 2025*, to expand the vision of the *Imagine Austin Comprehensive Plan* into actionable mobility-related goals and objectives to guide Austin's near- and long-term transportation investments for the next decade.

AUSTIN STREET DESIGN GUIDE



The Draft Austin Street Design Guide (ASDG) was released in 2016 as a tool to ***"assist City staff and private sector street design professionals in applying a consistent approach to street design particularly for right-of-way planning and new streets"***. The Street Design Guide will be included in the ASMP to update street design practices that includes modern street typing.

The guide is helpful in ensuring context-sensitive design and accommodating a variety of users in a constrained right-of-way. Released as a pilot, the design guide will help inform amendments to the Transportation Criteria Manual for an updated approach to street design and new cross sections that were developed during the pilot phase. An overview of the ASDG street design process as it applies to Slaughter Lane is provided in **Chapter 5**.

CITY OF AUSTIN BICYCLE MASTER PLAN

Adopted by Austin City Council in November 2014, the *City of Austin Bicycle Master Plan* provides guidance and strategies for "the implementation of bicycle infrastructure, policies and programs for all City departments, partner public agencies and the private development community". The *Bicycle Master Plan* supports the vision and goals of *Imagine Austin* by proposing the creation of a connected and protected active transportation network that will provide additional transportation alternatives for Austin residents and visitors. Goals identified by the *Bicycle Master Plan* are shown in **Table 4-2**.

Table 4-2: COA Bicycle Master Plan Goals

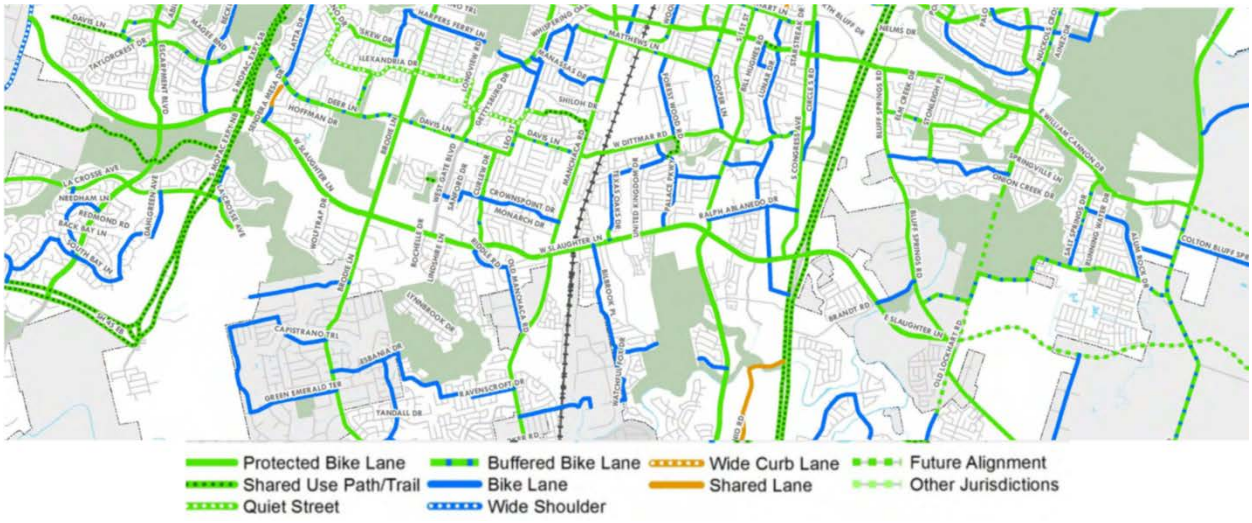
Bicycle Master Plan Goals	Goal Description
Connectivity	Create a bicycle network that serves people of all ages and abilities, providing direct and comfortable connections to where people live, work and play
Increase Ridership	Achieve a significant increase in ridership, especially transportation cycling, and a corollary reduction in motor vehicle miles traveled and/or prevented traffic congestion
Improve Safety	Reduce bicycle deaths and injuries by implementing safety measures for all roadway users, including bicyclists.
Equity	Provide equal bicycling access for all; through public engagement, program delivery, and capital investment.
Support *Imagine Austin*	Realize the potential of bicycling to support and achieve multiple goals of the *Imagine Austin Comprehensive Plan*

Benefits associated with achieving these goals include reduced traffic congestion, improved public health, economic development, affordability, sustainability and quality of life.

BICYCLE RECOMMENDATIONS FOR SLAUGHTER LANE

Improvements recommended by the Slaughter Lane CMP (presented in **Chapter 6**) align with those of the City of Austin Bicycle Master Plan, which calls for protected bike facilities from FM 1826 to Old Lockhart Road, as shown in **Figure 4-1**. The plan also calls for a protected bike lane or shared-use path on several of the north-south corridors crossing Slaughter Lane, including: Escarpment Boulevard, MoPac, Brodie Lane, Curlew Drive, Manchaca Road, South 1st Street, South Congress Avenue, IH 35, and Bluff Springs Road.

Figure 4-1: COA Bicycle Master Plan – Long-term Recommended Network



CITY OF AUSTIN URBAN TRAILS MASTER PLAN

The purpose of the Urban Trails Master Plan is to evaluate trails opportunities and policy changes to support a city-wide network of Urban Trails. The Bicycle Master Plan and Urban Trails Master Plan together set forth a connected and protected "All Ages and All Abilities" Bicycle Network, active transportation network of connected trails and on-street bikeways throughout Austin.

CITY OF AUSTIN SIDEWALK MASTER PLAN

The *City of Austin Sidewalk Master Plan/ADA Transition Plan Update*, adopted in June 2016, identifies missing and deficient sidewalks throughout the city. The priority rankings of existing and absent sidewalks (shown in **Chapter 3**) are an important aspect of the City's Sidewalk Program, however they are not the sole determinant of which sidewalks will be constructed. From the City's Sidewalk Master Plan: *"…. just because a particular section of sidewalk is ranked as a lower priority does not mean it is not a necessary component of a complete pedestrian network. Consistent with City of Austin Complete Streets policies all private and public development, redevelopment, and capital improvement projects should include ADA-compliant sidewalks (or urban trails where appropriate) along the full length of every road frontage."*

SIDEWALK RECOMMENDATIONS FOR SLAUGHTER LANE

Improvements recommended by the Slaughter Lane CMP (presented in **Chapter 6**) align with those of the *Sidewalk Master Plan*, which calls for eliminating all gaps in the existing sidewalk network and reconstructing any existing sidewalks that are not ADA-compliant.

CONNECTIONS 2025

Capital Metro's 2025 long-range transit plan, Connections 2025, is the agency's vision for a more frequent, more reliable, and better-connected transit system. Connections 2025 will guide Capital Metro route and service changes for the next five years and includes long-range opportunities for implementation in the next ten years. Connections 2025 has been adopted by the Capital Metro Board, and the agency has already begun implementation under the name Cap Remap. In addition to those changes, full implantation of Connections 2025 will also include the following changes to transit service along the Slaughter Lane corridor:

- Extension of MetroRapid Route 803 down Manchaca Road to provide service at Manchaca Road/Slaughter Lane intersection.
- Provide Bus Rapid Transit along IH-35 between Slaughter Lane and Schofield Ridge Parkway.

PROJECT CONNECT

Project Connect is the proposal for Central Texas' high-capacity transit system. This multi-agency planning effort began in 2012 to analyze several key regional transportation corridors to identify those of highest priority and to recommend alignments and technologies for such high-capacity transit.

In December 2018, the Capital Metro Board voted unanimously to approve the Project Connect Long-Term Vision Plan. Through approval of the Long-Term Vision Plan, the board authorized staff to pursue next phases including preliminary engineering, further community engagement and environmental review.

Some of the corridors included in the Project Connect vision are also corridors included in the Corridor Construction Program, as well as the Austin Strategic Mobility Plan (ASMP). Capital Metro and the City of Austin are working closely together to ensure that the Corridor Construction Program, ASMP and Project Connect will be aligned as all efforts move forward.

CAMPO 2040 PLAN

The Capital Area Metropolitan Planning Organization (CAMPO) is the Metropolitan Planning Organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis and Williamson Counties. MPOs are federally required throughout the country in areas with a population of 50,000 or more and are required to produce a 20+ year transportation plan, called a Regional Transportation Plan (RTP), and a four-year planning document called the Transportation Improvement Program (TIP). CAMPO coordinates regional transportation planning with counties, cities, Capital Metropolitan Transportation Authority (CMTA), Capital Area Rural Transportation System (CARTS), Central Texas Regional Mobility Authority (CTRMA), and TxDOT.

The *CAMPO 2040 Plan*, adopted by CAMPO in May 2015, is the active long-range regional transportation plan (RTP) for the greater Austin area. It establishes a vision, plan and implementation strategy for developing a comprehensive multi-modal transportation system by 2040. The *CAMPO 2040 Plan* identifies projects to be funded over the next 20 years based on current and anticipated land uses and development. Based on the projected growth pattern identified in the plan, the following infrastructure improvements are planned along the Slaughter Lane corridor over the next 20 years:

- **MoPac South** – Add express lanes from Slaughter Lane to Cesar Chavez Street;
- **IH 35 Improvements** - Add express lanes at Slaughter Lane;
- **FM 1826** – Widen to 4-lane divided roadway;
- **Bluff Springs Road** - Widen to 4-lane divided roadway;
- **Slaughter Lane** – Extend as 4-lane divided roadway from Bluff Springs Road to FM 973;
- **IH 35 @ Slaughter Lane** – Construct transit center;
- **Slaughter BRT** – Implement bus rapid transit on Slaughter Lane;

AUSTIN STRATEGIC MOBILITY PLAN (ASMP)

The Austin Strategic Mobility Plan (ASMP) is Austin's new city-wide transportation plan. Draft policies and maps reflect Austin's transportation vision for the next 20+ years and show both current and potential mobility projects. The ASMP is anticipated to go before City Council in spring 2019.

The Corridor Program Office is and will continue to coordinate with ASMP's plans and policies to ensure alignment between both efforts as they move forward.

PLANNED DEVELOPMENTS

Several residential and commercial developments are underway or planned for construction along the corridor, shown in **Table 4-3**. These planned developments were considered in the projection of future travel demand (presented later in this chapter) and the future (2040) conditions traffic analysis.

Table 4-3: Planned Land Development Projects along Slaughter Lane Corridor

Project Name	Land Use	Cross Street	Area *(Acres)*	Description
Circle C Apartments	Residential Multi-family	FM 1826	12.26	240 DU
Parkway Village	Commercial	MoPac	23.0	-
Bowie HS Practice Fields	Open Space	Wolftrap Dr	4.0	-
Parkside Community School	Civic	Rocking Horse Rd	12.2	-
Laurelwood Commons	Retail	Manchaca Rd		-
Texas Oaks Three Resubdivision of Lot 1 Blk A: Amended Plat	Commercial	Bilbrook Pl	10	-
Chisholm Trail Single-Family Condos	Residential Multi-family	S Mary Moore Searight Dr	35	246 DU
Buckingham Estates Condos	Residential Multi-family	S Mary Moore Searight Dr	15.95	-
Southpark Meadows	Mixed-Use	Southpark Meadows Dr	425	1090 DU, 1.6M SF (retail)
Fitness Center / South by South Congress	Commercial	Cullen Ln	10.6	-
8801 S Congress Ave Land Use	Retail	Congress Ave	25.9	130K SF (Grocery)
Ridge at Slaughter	Residential Multi-family	Narrow Glen Pkwy	18	-
Slaughter Lane Retail Center W/R SP-2015-0362C	Retail	Narrow Glen Pkwy	2.62	22K SF
Duke's Adventure Golf	Commercial	Orchard Ridge	1.3	-
Goodnight Ranch	Planned Unit Development	Vertex Blvd	703	4,533 DU, 1.26M SF retail, 15K SF community center

Parkside Village, which was built on the corner of Slaughter Lane and MoPac, is an example of development that has occurred in the last 10 years. **Figure 4-2** shows the street view before and after development. Parkside Village was built over existing greenspace, but it added a desirable destination to the corridor.

Figure 4-2: Parkside Village Development – 2011 and 2015

Goodnight Ranch is another example of an even larger development that is currently in the planning process. Goodnight Ranch is proposed to surround the intersection of Slaughter Lane and Vertex Boulevard. **Figure 4-3** shows the existing aerial image and the ultimate vision of the 703-acre planned unit development. This space includes multiple housing types, retail, and a 120-acre park on the north end of the development.

Figure 4-3: Goodnight Ranch – Current (2017) and Future

AISD FACILITY MASTER PLAN

Austin Independent School District (AISD) released a Facility Master Plan in March 2017. **Table 4-4** summarizes the 10 proposed school improvements along or near the Slaughter Lane corridor.

Table 4-4: AISD Proposed Improvements and Construction Projects

School	Proximity to Slaughter Lane	Project Type
Blazier Elementary School	Adjacent	Renovation
New Blazier Relief	Adjacent	New Construction
Casey Elementary School	Adjacent	Full Modernization
Kocurek Elementary School	Adjacent	Full Modernization
Gorzycki Middle School	Adjacent	Renovation
Bowie High School	Adjacent	Full Modernization/Expansion*
Future SE Elementary School	Near	New Construction
Cowan Elementary School	Near	Renovation
Mills Elementary School	Near	Renovation
Paredes Middle School	Near	Renovation

***Bowie High School has a full modernization expansion planned to increase student capacity from 2,463 to 2,900.**

There are several transportation projects planned or underway within the study area. Planned transportation improvements (both with and without committed-funding) were included in the future traffic conditions analysis, presented in **Chapter 6**. Planned transportation projects within this study area include:

SLAUGHTER LANE EXTENSION (TRAVIS COUNTY)

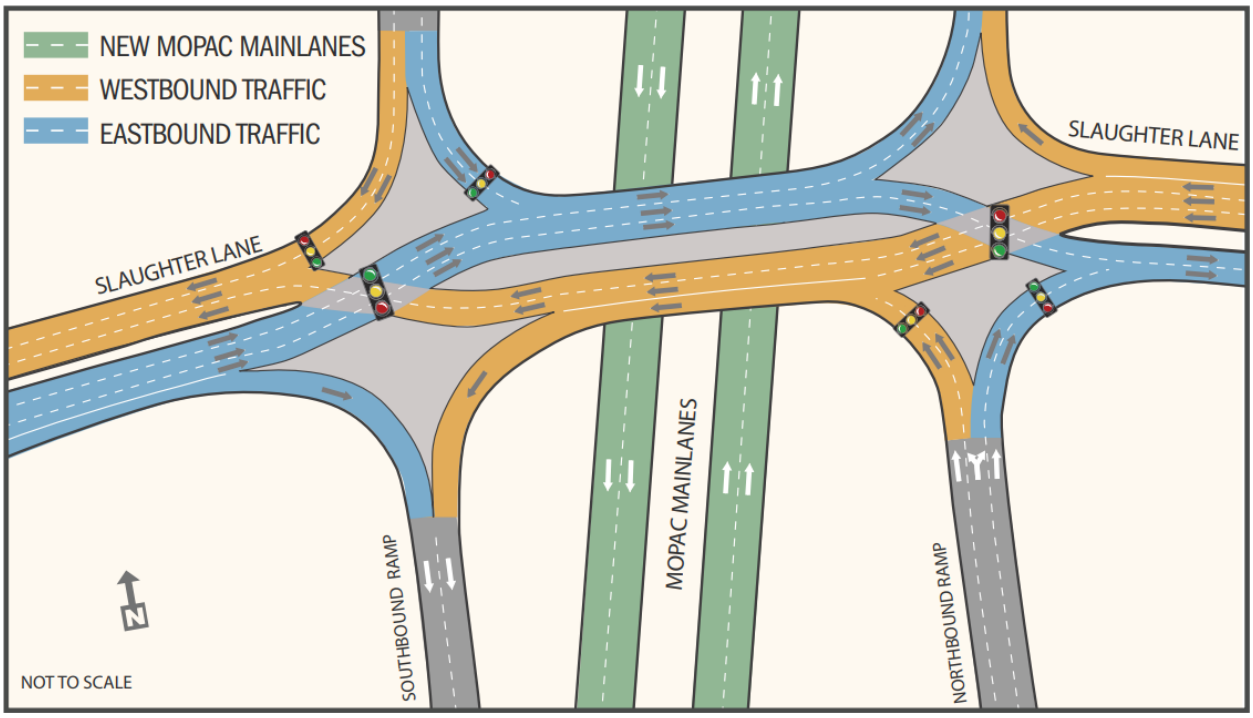
Travis County is currently extending Slaughter Lane east of Vertex Boulevard to Thaxton Road. The length of the project is approximately 8,250 feet with 140 feet of right-of-way (ROW). It will initially be constructed as a 4-lane divided roadway with 11.5-foot lanes and 6-foot bike lanes, with plans to ultimately widen the roadway to 6-lanes as future conditions warrant. This extension will provide access to McKinney Heights located on the north side of the corridor.

MOPAC & SLAUGHTER INTERCHANGE IMPROVEMENTS (TXDOT)

Project includes grade-separation of MoPac mainlanes under Slaughter Lane, construction of a diverging-diamond interchange (**Figure 4-4**), and a 10-foot shared-use path on the west side of MoPac from Slaughter Lane to La Crosse Avenue

- **Status:** In Construction
- **Anticipated Completion**: Early 2021

Figure 4-4 Mopac at Slaughter Lane – Diverging Diamond Interchange with Underpass



Source: www.txdot.gov

SOUTH 1ST STREET & SLAUGHTER LANE INTERSECTION IMPROVEMENTS (CITY OF AUSTIN)

The City of Austin, as part of Vision Zero, will construct dual left-turn lanes on Slaughter Lane, and upgrade pedestrian ramps and high-visibility crosswalks on all four sides of the intersection.

- **Status:** In Final Design
- **Anticipated Start of Construction:** Fall 2018
- **Anticipated Completion:** TBD

MANCHACA ROAD & SLAUGHTER LANE INTERSECTION IMPROVMENTS (CITY OF AUSTIN)

The City of Austin Transportation Safety Improvements Program is funding construction of dual left-turn lanes on all four approaches, which will improve mobility. New raised medians along Slaughter Lane and Manchaca Road will improve safety by eliminating dangerous left turns in and out of the driveways. A new shared-use path along Slaughter Lane, reconstruction of the pedestrian ramps at the four corners and new high-visibility crosswalk markings will provide greater safety to pedestrians and bicyclists.

- **Status:** Completed

FUTURE TRAVEL DEMAND

The development of future (2040) traffic volume projections for Slaughter Lane involved a review of existing and historical traffic data and estimated future traffic projections by CAMPO. This section presents the methodology and process used to estimate future traffic growth rates and develop future (2040) traffic volume projections.

METHODOLOGY

The following traffic data (shown in **Table 4-5**) was obtained and analyzed:

- 2015 Average Daily Traffic (ADT) volumes (TxDOT)
- 2017 24-hour traffic volume counts (collected as part of this study)
- Projected 2020 and 2040 Average Daily Traffic (CAMPO)

The methodology for development of traffic projections included the following steps:

1. Compare actual existing traffic volumes (2015/2017 counts) to CAMPO projected traffic volumes;
2. Analyze the reasonableness of CAMPO future traffic projections for years 2020 and 2040 ;
3. Consider the future roadway capacity in the evaluation of CAMPO projections;
4. Calculate growth rates;
5. Make adjustments where deemed appropriate.

For this analysis, Slaughter Lane was divided into three segments:

- Segment 1: West of MoPac
- Segment 2: MoPac to IH 35
- Segment 3: East of IH 35

Existing (2017) count data was not being available for all roadway segments, so multiple data sources were used to fill in data gaps at some locations. For *Point A* through *Point I*, 2017 traffic counts were used for comparison against the 2020 and 2040 CAMPO projections. At locations where 2017 count data was not available, 2015 TxDOT counts were used (as the most current available data) for comparison against CAMPO projections. At locations where no count data was available, traffic growth rates of nearby segments were used. These points were used in the study to help understand CAMPO predictions and plan in areas with no current traffic counts. *Point J* was included in the study to help understand predicted traffic patterns in Segment 3 in 2040 when Slaughter Lane is scheduled to be extended east to US 183.

Table 4-5: Traffic Volume Data – Slaughter Lane Corridor

Segment	Point	Limits	Existing Traffic (vehicles per day)		Projected Traffic (vehicles per day)	
			2015 (TxDOT)	2017 (Tube Counts)	2020 (CAMPO)	2040 (CAMPO)
1	*A*	FM 1826 to Escarpment Blvd	12,520	-	18,086	22,835
	B	Escarpment Blvd to MoPac	24,094	24,800	33,749	44,410
2	*C*	MoPac to Brodie Ln	35,222	26,200	23,031	29,342
	D	Brodie Ln to Manchaca Rd	-	-	25,495	34,209
	E	Manchaca Rd to S 1st St	38,599	40,200	37,341	47,173
	F	S 1st St to S Congress Ave	39,058	38,800	34,094	45,932
	G	S Congress Ave to IH 35	-	-	55,407	69,574
3	*H*	IH 35-Bluff Springs Rd	-	23,000	9,524	27,018
	I	Bluff Springs Rd to Vertex Blvd	-	-	2,483	18,759
	J	Vertex Blvd to US 183	-	-	-	15,691

Table 4-6 shows the tabulated growth rates for each of the segments for three periods of time:

- 2015 (or 2017) to 2020
- 2015 (or 2017) to 2040
- 2020 to 2040

Table 4-6: Growth Rates – Slaughter Lane Corridor

Segment	Point	Growth Rates 2015 (or 2017) to 2020		Growth Rates 2015 (or 2017) to 2040		Growth Rates 2020 to 2040	
		Over 5 (or 3) yrs.	Annual Growth	Over 25 (or 23) yrs.	Annual Growth	Over 20 yrs.	Annual Growth
1	A	44.46%	8.89%	82.39%	3.30%	26.26%	1.31%
	B	(36.08%)	(12.03%)	(79.07%)	(3.44%)	31.59%	1.58%
2	C	(-36.48%)	(-12.13%)	(-18.94%)	(-0.82%)	22.37%	1.12%
	D					34.18%	1.71%
	E	(-7.11%)	(-2.37%)	(17.35%)	(0.75%)	26.33%	1.32%
	F	(-12.13%)	(-4.04%)	(18.38%)	(0.90%)	34.72%	1.74%
	G					25.57%	1.28%
3	H	(-58.58%)	(-11.72%)	(17.47%)	(0.76%)	183.68%	9.18%
	I					655.50%	32.77%

Note: Numbers in parenthesis are based on actual 2017 traffic counts.

SEGMENT 1

West of MoPac had a general increase in traffic of about 3% per year from 2015 to 2040. Looking further into this growth, there is a larger growth rate from 2015 to 2020 at around 8% per year than from 2020 to 2040 with only around 1% per year growth.

SEGMENT 2

Between MoPac and IH 35 there was less growth, averaging about 1% per year, except for *Point C* which shows a decrease in growth from the current volume to the CAMPO 2040 projected volume. This segment is the most completely developed, although there is little space to expand. As a result, the roadway between MoPac and IH 35 has the lowest growth rate of the three segments. The prediction of traffic volumes from current to 2020 are shown to be decreasing. The traffic volumes then increase until 2040. This initial decrease is most likely due to the completion of SH 45 Southwest. Currently, the only way for residents to get from west SH 45 to IH 35 is to take the Slaughter Lane connection. Once SH 45 Southwest opens, residents from the west will have another route option to head south.

SEGMENT 3

The traffic volumes for Segment 3 showed the largest increase in volume due to new development in the area. However, the average growth rate from current values to the year 2040 is similar to Segment 2 at only around 1% per year. This seemingly low growth rate is due to the completion of east Slaughter Lane to be connected to US 183. This extension will alleviate traffic demand for this segment of Slaughter Lane by providing trips to/from these new developments with a new route option that east to US 183.

ADJUSTMENTS

Analyzing the volumes and growth rates, two points along the corridor, *Point C* and *Point G*, were corrected from the initial data gathered based on current traffic patterns.

At *Point C*, traffic counts collected in 2017 showed existing traffic volumes were already higher than CAMPO 2040 projections. While taking into consideration that traffic along Slaughter Lane could decrease with the opening of SH 45, these values still seemed too low compared to current traffic in the area. To match other sections of Slaughter Lane between MoPac and IH 35, the annual growth rate at *Point E* from years 2017-2040 was applied to the 2017 values at *Point C* to get the adjusted projected values.

At *Point G* growth projections were also corrected based on current traffic volume patterns. CAMPO's predictions for the year 2040 from *Point F* to *Point G* increased by over 23,000 vehicles. South Congress Avenue does fall between these points and contributes to the traffic but based on current left-turn patterns and the capacity of the current roadway configuration, South Congress Avenue could not contribute this much traffic in one day. To adjust the value at *Point G*, we calculated a scale factor of 1.1 times the volume of traffic on Slaughter Lane east verses west of South Congress from 2017 turning movement counts. We applied this scale factor to the values from *Point F* on the map to get the adjusted values for *Point G*.

The adjusted values used for growth rate analysis are presented in **Table 4-7.**

Table 4-7: Current and Future Traffic Volumes - Adjusted

Segment	Point	Limits	2015/2017	2020	2040
1	*A*	FM 1826 to Escarpment Blvd	12,520	18,086	22,835
	B	Escarpment Blvd to MoPac	24,800	33,749	44,410
2	*C*	MoPac to Brodie Ln	36,200	34,000*	42,000*
	D	Brodie Ln to Manchaca Rd	-	25,495	34,209
	E	Manchaca Rd to S 1st St	40,200	37,341	47,173
	F	S 1st St to S Congress Ave	38,800	34,094	45,932
	G	S Congress Ave to IH 35	-	37,500*	50,250*
3	*H*	IH 35 to Bluff Springs Rd	23,000	9,524	27,018
	I	Bluff Springs Rd to Vertex Blvd	-	2,483	18,759
	J	Vertex Blvd to US 183	-	-	15,691

Adjusted Traffic Projections

FINDINGS

After adjustments were made to the projected 2040 traffic volumes, an annual growth rate was estimated for each segment (shown in **Table 4-8**) to be used in Synchro traffic modeling. Although each segment was analyzed separately and showed different trends throughout time, only two growth rates were chosen. Segment 1 showed a natural progression for all volumes from 2015/2017 to 2040. Because of this, the growth rate was taken directly from CAMPO projections based on 2020 to 2040 projected volumes. In Segments 2 and 3, there was a disconnect between current volumes and CAMPO projections. For every data point that current traffic volumes were available, the 2015 or 2017 volumes exceeded CAMPO 2020 projections. Realizing that CAMPO underestimated the volumes for 2017, growth rates were reevaluated to get a more reasonable annual rate from the present to 2040 volumes. To do this, a growth rate was calculated from 2015/2017 volumes to the projected 2040 volumes was used for both Segments 2 and 3. Although these two segments behaved differently throughout time with Segment 2 at a constant slower growth rate and Segment 3 with an initial rapid growth rate, they showed similar trends due to the opening of east Slaughter Lane. Adjusted traffic volumes at each analysis point for existing (2017) and projected future (2040) volumes are shown in **Figure 4-5**.

Table 4-7: Resulting Traffic Volume Growth Rates Per Year

Segment	Location	Resulting Annual Traffic Volume Growth Rate *(% per year)*
1	West of MoPac	1.45%
2	MoPac to IH 35	0.75%
3	East of IH 35	0.75%

Figure 4-5: Current and Future Traffic Volumes for Slaughter Lane Corridor

CHAPTER 5 – IMPROVEMENTS TOOLBOX

As the City and surrounding area continue to grow and intensify, especially South Austin, Slaughter Lane will continue to see an increase in travel demand. Austin's regional transportation and mobility challenges will continue to impact quality of life and modal choices residents make. In this context, it is important to consider the entire range of tools available to enhance mobility, safety, and connectivity for all travel modes, not just driving. Capacity improvements to all other modes (biking, walking, and transit) can better accommodate more compact growth in a sustainable manner.

There are many improvement tools and guidelines already in place that can help to improve safety, mobility, connectivity along the Slaughter Lane corridor. As recommended by the *Imagine Austin Comprehensive Plan*, the City of Austin has adopted the *Complete Streets Policy* as a way to create public roads that are safe and inviting for all users. Complete Streets accommodate and encourage people to use alternate modes of transportation. In addition to following guidelines of Complete Streets, there are many nationally accepted standards that have been created to help improve transportation infrastructure. These standards seek to achieve safety, multi-modal accessibility and operational efficiency. The following improvements toolbox provides a range of solutions that can be used to help improve safety, mobility, and connectivity along Slaughter Lane.

COMPREHENSIVE, MASTER, & CORRIDOR PLANNING

Comprehensive, master, and corridor planning is a process that defines and articulates community vision and goals in terms of a City's physical growth and infrastructure development. Cities and communities engage in the planning process to help create and align public policies on land use, housing, recreation, environment, economy, and infrastructure with the market demand for growth.

The City of Austin, working with planners and members of the community, has developed several master plans to help serve as guides for improvements, and to ensure that community goals and vision remain in focus. City council adopted the *Imagine Austin Comprehensive Plan* in June 2012. Other plans include the *Bicycle Master Plan*, the *Sidewalk Master Plan*, and the *Urban Trails Maser Plan*. Many of these plans provide mode-specific recommendations for creating connected multimodal networks throughout the city.

Incremental progress will be required in order to achieve the long-term vision and goals set forth by *Imagine Austin* and the City's mode-specific plans. The *Austin Street Design Guide*, released in 2017, provides a framework for implementing recommendations of each mode-specific plan in a content-sensitive manner at the project level.

STREET DESIGN PROCESS

The *Austin Street Design Guide (ASDG)* is a modern guide for street design that considers street function, context, and all transportation modes. Released in 2017, the guide contains street cross-sections and serves as a precursor to updates to the City's *Transportation Criteria Manual*. Its purpose is to assist street design professionals in applying a consistent approach to street design and right-of-way planning. Application of the **street design process** presented in the ASDG to an individual corridor (e.g., Slaughter Lane) will result in recommended improvements that are context-sensitive, meet the needs of the community, and aligned with implementation of the *Imagine Austin Comprehensive Plan* and the City's *Complete Streets Policy*.

The street design process takes the following elements into consideration:

Community Context is derived from urban planning principles and nomenclature describing a setting or area based on land use and community characteristics (e.g., Urban, Suburban, Industrial, Downtown, or Alternative). Slaughter Lane has a **"Suburban"** context, based on the following characteristics:

- Developed with auto-dependent patterns.
- Single-family neighborhoods physically separated from destinations (e.g. retail, office parks).
- Streets are more hierarchical and less connected.

Street Level is a modernization of the street functional classification naming and indicates the role the street plays in the network. Slaughter Lane fits the description and function of a "**Level 4**" corridor. According to the ASDG, *"Level 4 streets accommodate travel into and out of the City from the surrounding area. They are often multi-lane thoroughfares that sometimes include a landscaped median. These can also include freeway and interstate frontage roads. They provide strong commuter linkages and tend to prioritize vehicular capacity. As a result, they must provide a clearly defined pedestrian realm and separated bike facilities".*

Right-Of-Way (existing or future) for each segment of the street network determines the limitations of street design by defining the width of the street. The ASDG presents guidance for determining ROW needs and several approaches for dealing with right-of-way constraints that are beyond the scope of this report.

Mode-Specific Plans & Design Considerations such as the Bicycle Master Plan, Urban Trails Master Plan, Sidewalk Master Plan, Capital Metro Service Plan, Project Connect, and the CAMPO Regional Transportation Plan should be used to identify recommendations and aspirational goals for each travel mode and allow for an integrated strategy of implementation. Goals and recommendations from these plans as they relate to the Slaughter Lane corridor are summarized in Chapter 4 and reflected in the recommended improvements presented in Chapter 6.

Number of Lanes (either existing or planned) ensures that adequate capacity is accounted for vehicles, while balancing the need for other modes on streets.

Street Design is the culmination of these elements to determine the cross-sections of these roadways. The ultimate design of the corridor will also include an analysis of street operations at the intersections to determine appropriate traffic control based on performance measures and community context.

MULTIMODAL DESIGN TABLE & FACILITY TYPES

Based on the context, street level, and average daily traffic volumes the ASDG provides detailed facility recommendations for each travel mode. For a Suburban Level 4 carrying the ADT of Slaughter Lane, The ASDG recommends raised bicycle lanes, sidewalks with buffers, and a safe crossing density of ¼-mile (distance between signalized crossings).

RECOMMENDED TYPICAL CROSS-SECTION

Based on the context and street level, the ASDG provides one or more recommended typical cross-sections and a design matrix specifying "recommended" and "constrained" widths for each roadway element (e.g., sidewalk, travel lane, bike lane, etc.). The constrained width should be considered only when there is not enough available right-of-way to provide the recommended width for all street elements. As a **Suburban Level 4** roadway, the recommended typical cross-sections and design matrix for Slaughter Lane are shown in **Figure 5-1** and **Figure 5-2**, respectively.

Figure 5-1: Suburban Level 4 Typical Section

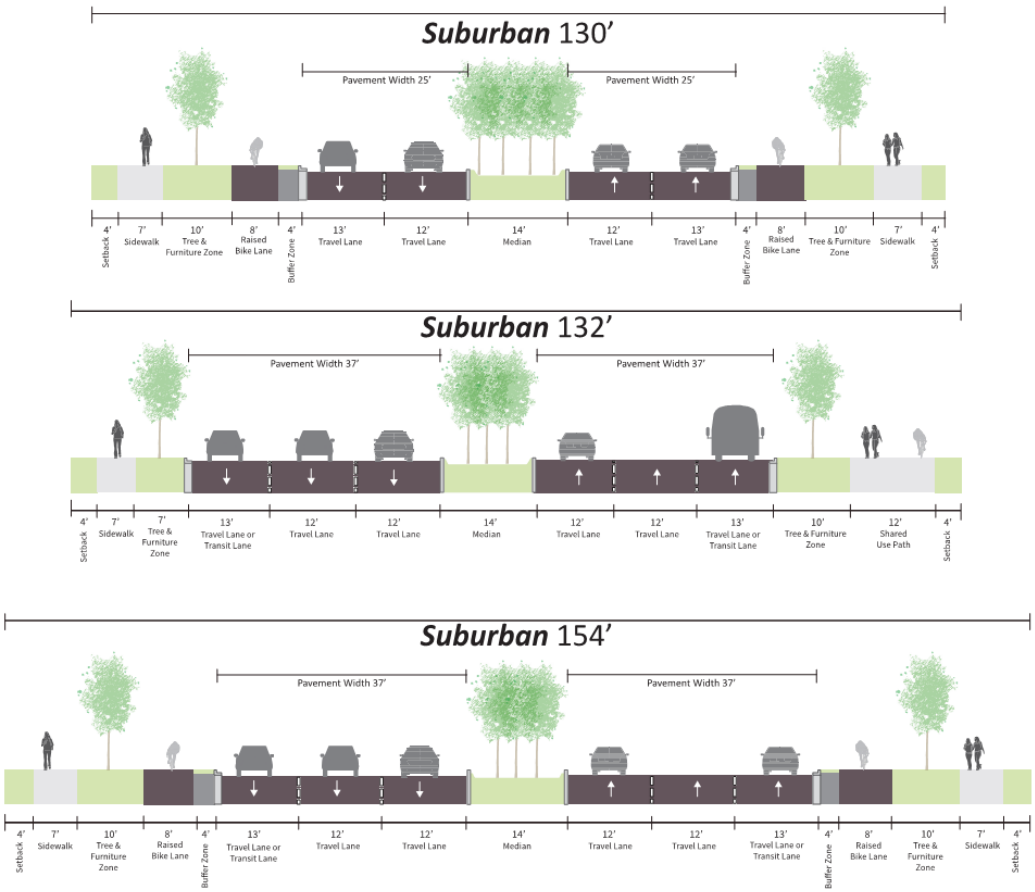


Figure 5-2: Suburban Context – Design Matrix

Suburban Context - Design Matrix

	Level 2		Level 3		Level 4	
	Desired Range		Desired Range		Desired Range	
ROW	**78'**		**96'-120'**		**130'-154'**	
Additional ROW/Easement Dedication for Parking (By Owner)	**0'-16'**		**n/a**		**n/a**	
Pedestrian Zone						
Subsection Width	**10'-15'**		**10'-16'**		**14'-21'**	
Toolbox:	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED
Sidewalk/Shared Use Path (SUP)	6'	5'	7'	5'	7' (12')	5' (8')
Tree & Furniture Zone	8'	5'	8'	5'	10'	7'
Setback	1'	0	1'	0	4'	2'
Bicycle and Street Edge Zone						
Subsection Width (Excludes Parking)	**8'-11'**		**8'-12'**		**8'-12'**	
Toolbox:	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED
Bicycle Facility						
Protected Bike Lanes (One of Two-Sided) ***Preferred***	7' Clear 4' Buffer	7' Clear 3' Buffer	8' Clear 4' Buffer	7' Clear 3' Buffer	8' Clear 4' Buffer	7' Clear 3' Buffer
On-Street Separated Bike Lanes ***Alternative***	n/a	6' Clear 2' Separation	n/a	6' Clear 2' Separation	n/a	6' Clear 2' Separation
Other Facilities						
Parking†	8'	7'	n/a	n/a	n/a	n/a
Motor Vehicle and Transit Zone						
Subsection Width (Excludes Parking)[3]	**25'-37'**		**34'-64'**		**58'-88'**	
Travel Lanes (# of Lanes)	**2-3[2]**		**3-5 (Divided)**		**4 (Divided) - 6 (Divided)**	
Transit Only Lanes	**n/a**	**n/a**	**13'**	**12'**	**13'**	**12'**
	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED	RECOMMENDED	CONSTRAINED
Outside Travel Lane Width[1]	13'	12.5'	13'	12'	13'	12'
Travel Lanes Width	11'	10'	12'	10'	12'	10'
Center Turn Lane Width	n/a	n/a	14'	12'	n/a	n/a
Median	n/a	n/a	14'	12'	14' [4]	14'

IMPROVEMENTS TOOLBOX

The following toolbox provides a range of solutions for improving safety and mobility along the Slaughter Lane Corridor. These strategies have been adapted from the FHWA Congestion Management Process Guidebook for use in this report based on the character and context of Slaughter Lane.

TRAVEL DEMAND MANAGEMENT STRATEGIES

Travel demand management (TDM) is the use of any policies and strategies which help reduce the travel demand for trips made by single-occupant vehicle during the peak period. TDM strategies include promoting or improving non-motorized travel modes that provide travelers with more options. This also includes strategies that substitute communication for travel, such as telecommuting and flexible work hour programs.

ROADWAY STRATEGIES

Safe Turning Lanes

Dedicated left-turn, right-turn and U-turns keep through-traffic flowing by providing space outside of the through lanes for turning vehicles.

Increasing Number of Lanes without Roadway Widening

This strategy provides additional capacity by taking advantage of "excess" width in the roadway cross section used for breakdown lanes or median.

Adding Lanes by Roadway Widening

This is the traditional way to increase vehicular capacity.

Geometric Design Improvements

These strategies include grade separations, additional turn lanes at intersections, extension of existing turn bays, improved sight lines, and auxiliary lanes to improve merging and diverging,

Traffic Signal Operations

Traffic signal operations can be optimized to achieve optimal flow and reduced emissions along a facility. Signal timing can be adjusted to maximize green time, and to increase efficiency for left-turns against conflicting traffic. Traffic lights can be interconnected to provide improved coordination of green time, especially where intersections are closely spaced, such as the area near the IH 35 and South Congress Avenue intersections. Adaptive signal control is another technology that can help to ease congestion. Adaptive signals can use real-time traffic information to adjust to changing traffic patterns.

Lane Reconfiguration

This strategy improves intersection operations by reconfiguring lane assignments through restriping at one or more intersection approaches to redistribute unused capacity to congested movements.

BICYCLE & PEDESTRIAN STRATEGIES

Sidewalks

The *Imagine Austin Comprehensive Plan* promotes designing for people, not just cars. The goal of the Sidewalk Master Plan is to provide an unbiased system to help prioritize sidewalk construction projects to complete a City-wide ADA-compliant sidewalk network. Improved crossings and 'filling in the gaps' helps to build connectivity in neighborhoods, and to places such as business, parks and schools. Complete connectivity also upholds ADA standards and provides access to users of all abilities. Sidewalks along Slaughter Lane should provide continuous connectivity, wide enough to accommodate pedestrians passing each other, and built to ADA standards.

Protected Bicycle Facilities

Protected bicycle lanes provide an exclusive bike facility within the transportation network. These types of facilities are physically separated from motorized traffic. Protected bike lanes are protected from the travel lanes by a curb or raised median, bollards or other physical barriers. They are separate from parking lanes and sidewalks. Different color pavement or texture is typically used to differentiate a protected bike facility from sidewalks. Protected bike lanes offer a higher level of security overall and appeal to a broader spectrum of the community.

Protected bicycle lanes require more right-of-way than paint-defined lanes. More room is needed to provide capacity for passing within the bicycle lane and for the physical barrier. Protected bicycle lanes should be considered on busy streets where streets or right-of-way can accommodate protected bike lanes and other competing interests.

The recommended bike facility along Slaughter Lane is a protected bike lane or shared use path along the entire length of the corridor. Striping across intersections indicating a path designated to bike traffic is also recommended to help cyclists cross intersections without being encroached upon by motorist traffic.

Bicycle Lane, Buffered Bicycle Lane

A bicycle lane is different from a protected bicycle lane because it does not have the physical barrier separating cyclists from motorized traffic. It is an on-road facility designated by striping, signage and pavement markings for the 'preferential or exclusive use of cyclists'. Defined by paint and discernible to motorists, a bike lane allows cyclists to maintain a comfortable speed without interference from traffic. The bike lane also helps to promote predictable behavior and interactions between modes.

Bike lanes may be distinguished using color, lane markings, signage, and intersection treatments (NACTO Urban Bikeway Design Guide, 2014). When considering a bike lane, existing traffic volumes on the roadway should be considered, along with driver and motor vehicle behavior. An ideal bike lane should also prohibit encroachment of motorized traffic in the bike lane.

Pedestrian Hybrid Beacons (PHBs)

As defined by the U.S. Department of Transportation Federal Highway Administration, a PHB is a pedestrian-activated warning device located over midblock pedestrian crossings. When ready to cross a roadway, a pedestrian can push an easy-to-reach button that activates the beacon. The beacon briefly flashes yellow warning lights to signal to motorists that a pedestrian is about to cross. The device then displays a steady red indication to drivers, indicating they should stop, and a "WALK" indication to pedestrians, allowing them to cross a major roadway while traffic is stopped.

Pedestrian hybrid beacons are especially effective in areas with high pedestrian traffic volumes such as nearby transit stops, schools, neighborhoods or major retail establishments. The Federal Highway

Administration reports that installation of the pedestrian hybrid beacon has been shown to provide up to a 69 percent reduction in pedestrian crashes; and up to a 29 percent reduction in total roadway crashes. PHBs provide a safer crossing opportunity for people who walk, with little impact to through traffic, allowing vehicles to proceed once the pedestrian has cleared their side of the travel lane.

Improved Safety of Existing Bicycle and Pedestrian Facilities

This broad group of strategies increase safety by maintaining lighting, signing, striping, traffic control devices, pavement quality; installing curb cuts and extensions, median refuges, and raised crosswalks. All crosswalks in the corridor are recommended to be converted to continental crosswalks which have distinct, visible markings. The continental striping along with pedestrian signals and crossing frequency will allow pedestrians to cross conveniently and safely throughout the area. Pedestrian refuge medians are recommended where appropriate to provide safety for those crossings.

Exclusive Non-Motorized Rights-of-Way

This strategy includes the use of existing parkland for medium- to long-distance bike trails, improving safety and reducing travel times.

Improved Wayfinding

This strategy encourages trips by walking and biking, especially for elderly and children, by providing signs and markers directing travelers to their intended destination.

TRANSIT STRATEGIES

Overall, the goal of the Corridor Mobility Program is to enhance mobility, safety, and connectivity for all users—whether you drive, bike, walk, or take transit. These strategies will enhance some transit signal priority, create better connections to transit stops and optimize bus stop locations in some areas along the corridor. These improvements have either been suggested or confirmed by Capital Metro through coordination efforts. Additional coordination is planned between the Corridor Program Office and CapMetro as ongoing planning efforts move forward.

Realigned Transit Service Schedules and Stop Locations

This strategy includes service adjustments to better align transit service with ridership markets. This is one of the goals behind Capital Metro's Cap Remap and Connections 2025 plans.

Bus Stop Relocation and Consolidation

This strategy improves transit efficiency and reduces traffic delays by locating bus stops near intersections on the far side of the intersection. This strategy may also include consolidation of local and rapid routes as well as an increase in safe pedestrian crossings.

Transit Signal Priority

The use of transit queue jumps has been employed at some intersections along the MetroRapid routes to allow buses to merge back into traffic easier.

Increasing Transit Frequencies or Hours of Service

Increased frequency makes transit more attractive to use. This is one of the goals behind Capital Metro's Cap Remap and Connections 2025 plans.

Expanding Bus Route Coverage

This strategy provides better transit accessibility to a greater share of the population. Existing transit service could potentially be extended on both the east and west ends of the corridor as growth occurs.

Improved Connections between Public Transport Systems

This strategy includes improvements to the experience of travelers using several modes of transportation on a single trip, including bus transit, pedestrian facilities, bicycle facilities, and park and ride facilities.

Improved Bicycle and Pedestrian Facilities at Transit Stations

This strategy includes improvements to facilities that provide access to transit stops as well as provisions for bicycles on transit vehicles and at transit stops. Some examples would include installation of bicycle racks, pedestrian hybrid beacons for safe crossings, shelters at bus stops, etc.

ACCESS MANAGEMENT STRATEGIES

Driveway Restrictions

This strategy limits turning vehicles that impede traffic flow and are more likely to be involved in crashes.

Minimum Intersection Spacing

This strategy decreases the number of conflict points along the corridor, which decreases incidents and delays, by maintaining a minimum distance between intersections.

Access Control to Available Development Sites

This tactic includes coordination of access points of active construction sites to reduce impacts on traffic flow.

Incident Management

As defined by the Federal Highway Administration, "Traffic Incident Management (TIM) consists of a planned and coordinated multi-disciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective TIM reduces the

duration and impacts of traffic incidents and improves the safety of motorists, crash victims and emergency responders."

CHAPTER 6 – RECOMMENDATIONS

Recommendations for the Slaughter Lane corridor were developed based on their effectiveness for achieving project goals of reduced congestion, enhanced safety, and improved multimodal connectivity. This chapter presents the methodology used to develop, evaluate, and select improvements, then presents the final recommended improvements, presents the results of the future (2040) conditions traffic analysis, and discusses the finding of the Slaughter Lane Health Impact Assessment (HIA).

METHODOLOGY

Recommended improvements were developed based on input received at public meetings (Chapter 2), the analysis of existing conditions (Chapter 3), projected future growth and background projects along the corridor (Chapter 4), cost of implementation, and relative benefit toward achieving project goals of enhancing mobility, safety, and connectivity for all travel modes.

The first step in developing proposed improvements that meet the project goals is understanding existing conditions, context, and constraints. The next step is researching the guiding plans and policies that govern and inform proposed development and infrastructure improvements. As improvements are developed in accordance with *Imagine Austin* and other plans and policies, important consideration must also be given to the feasibility and cost of recommended improvements given the existing context and constraints. Finally, if there are conflicting recommendations in the guidance documents, prioritization may be necessary to ensure that the proposed improvements maximize community benefit and fulfillment of project goals.

The project team identified improvements to reduce congestion by reviewing the relevant transportation plans outlined in previous chapters – including the Austin Metropolitan Area Transportation Plan, CAMPO 2040 Plan, and the draft Austin Street Design Guide. All these guidance documents classify Slaughter Lane as a major arterial roadway with two to three through lanes in each direction plus a median or center turn lane.

A review of the traffic simulation models confirms that the addition of left-turn lanes dramatically improves metrics used to determine congestion reduction. Left-turn lanes and medians also serve to enhance vehicle safety, another stated goal of the mobility bond program.

To address multimodal transportation options (a congestion-reduction strategy directed by *Imagine Austin*), the team researched the *Austin Street Design Guide*, *Sidewalk Plan* and *Bicycle Plan*. All these guiding documents place a high emphasis on dedicated pedestrian and bicycle facilities along major corridors. The existing four- to five-foot on-street bicycle lanes do not meet the recommendations of the *Street Design Guide* or the *Bicycle Plan*. Each of these plans recommends protected bicycle facilities or shared use path on a corridor with the traffic speeds and volume of Slaughter Lane.

The *Street Design Guide* and *Sidewalk Plan* both recommend continuous pedestrian sidewalks along both sides of all major arterial roadways. Providing a continuous network of sidewalks not only reduces congestion by providing alternate means of transportation, it also enhances safety for the most vulnerable roadway users that may be too young or old to drive a vehicle. New buffered or protected sidewalks are another top priority to include in the recommended improvements.

CONTEXT-SENSITIVE DESIGN & VALUE ENGINEERING

The location of bicycle, pedestrian, and landscape elements shown in these typical cross-sections may vary from what is eventually constructed. The City will take a context-sensitive approach to designing and constructing final improvements to account for location-specific constraints such as available right-of-way, existing trees and utilities, etc.

The existing sidewalk and roadway infrastructure will be incorporated into the future cross-sections to the maximum extent possible. Over time, as this infrastructure needs replacement, properties redevelop, and/or additional funding is identified, the width and location of bicycle, pedestrian, and landscape infrastructure may be adjusted.

Maximizing the use of existing infrastructure was an important consideration in the development of these recommendations. Reuse of existing infrastructure, where feasible, is a practical and cost-effective approach to reducing the cost of individual improvements, increasing the total number of improvements that may be implemented, and maximizing the total benefit to all users of all modes.

One example, discussed in later sections of this chapter, is the proposed repurposing of existing sidewalks to bike lanes in the segments of Slaughter Lane between FM 1826 and Brodie Lane. Field observations found that the existing sidewalks can be used as bike lanes and thus provide protected bike paths behind the curb, instead of widening the road to provide on-street bike paths which would be costly. The sidewalks can then be replaced at more desirable locations closer to the right-of-way line, separated from the travel lanes. The cost of sidewalk construction is much lower than other types of pavement, and it can be safely routed around trees to minimize impact. The repurposed sidewalks will need only spot improvements in specific areas where replacement is needed to provide even surfaces free of obstacles.

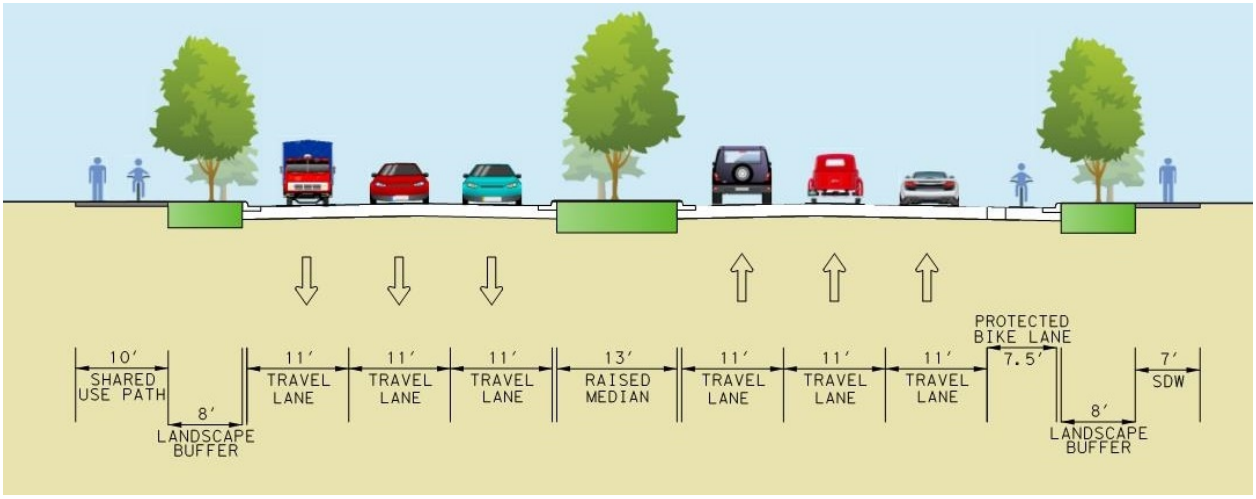
CORRIDOR VISION

The vision for Slaughter Lane corridor is to develop a **Suburban Level 4** corridor that will provide mobility for vehicles, bicycles, pedestrians, and transit users in accordance to the latest *Austin Street Design Guide* discussed in **Chapter 5**. The first step in tailoring the recommended street cross-section to meet the existing constraints is "Compact Design." Each roadway element has maximum, recommended, and minimum widths.

Figure 6-1 shows the long-term recommended section for Slaughter Lane. This is a generic typical cross-section showing two types of acceptable bicycle and pedestrian facilities – protected bike lane and sidewalk

or shared use path. The *Austin Street Design Guide* provides options to combine bike lanes and sidewalks into a single "shared use path." A shared use path provides protection from vehicular traffic and can be striped to designate specific zones for bicycle and pedestrian traffic.

Figure 6-1: Recommended Long-Term Section - 6-Lane Divided with Protected Bike Lane or Shared Use Path



Shared use paths are recommended as 12-feet wide but may be reduced to 8-feet wide in constrained sections. Similarly, buffer zones, tree and furniture zones, and setback can all be reduced to create a more compact cross-section. A shared use path meets both the *Sidewalk Plan* and *Bicycle Plan* recommendations and allows for maximizing travel lanes for vehicles and transit.

Travel lanes and medians may be reduced in width to optimize available right-of-way and obtain the desired number of travel lanes. Travel lanes may be reduced to 10-feet wide in a constrained cross-section. Medians may be reduced to 4-feet or less if needed. Center turn lanes are recommended to have a 12-feet minimum width.

Applying the compact cross-sectional elements, the design team developed an alternate compact cross-section that meets the context, goals and intent of the *Austin Street Design Guide* and the project. Each element was analyzed to maximize functionality, while delivering the reduced congestion and enhanced safety goals of the project. Individual cross-section elements may be further tailored during design phase to meet specific site constraints.

After modifying cross-sections for location constraints, alternative intersection improvements were developed and analyzed using *Synchro 10* traffic modeling software. Recommended intersection improvements were selected based on modeling results and their relative effectiveness for improving identified safety concerns, reducing congestion/delay at intersections and improving Level of Service (LOS).

RECOMMENDED CROSS-SECTIONS

Conceptual drawings of both existing and recommended future typical sections along the corridor are presented in **Figure 6-2** through **Figure 6-11**. Additional concept plans are included in **Appendix H.**

To the extent possible, existing sidewalk and roadway infrastructure should be incorporated into the final design of Slaughter Lane improvements. In the long term, as this infrastructure needs replacement, properties redevelop, and/or additional funding is identified, the width and location of the proposed bicycle, pedestrian, and landscape features may be adjusted.

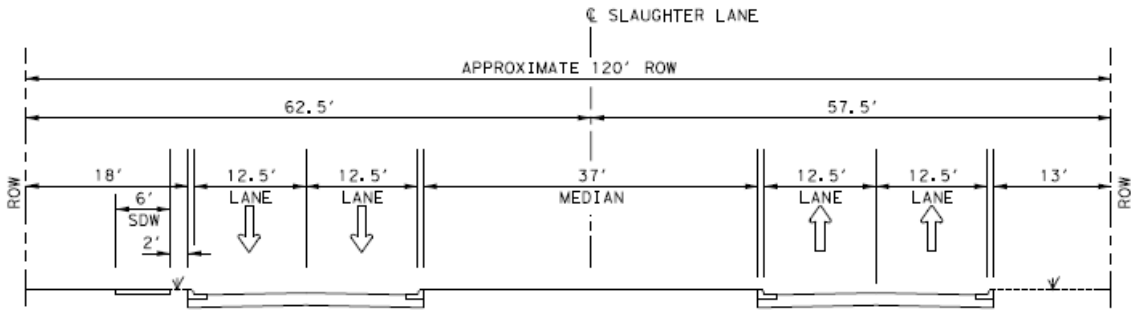
The bicycle, pedestrian, and landscape infrastructure alignments shown in the typical cross-sections may not be reflective of how the actual infrastructure improvements will be aligned once constructed. A context-sensitive approach should be used during final design and construction of improvements to account for specific location constraints such as available right-of-way, existing trees and utilities.

Implementation of the recommended improvements is not expected to require additional ROW, except:

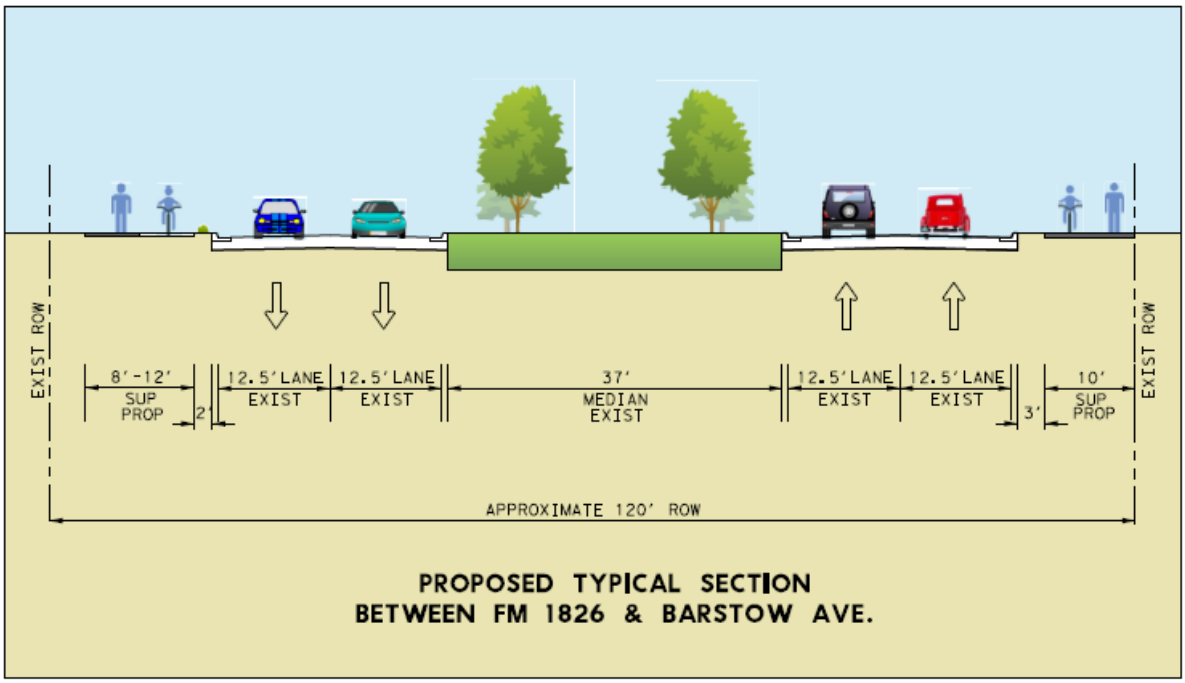
- Small areas on the north side of Slaughter Lane between S. Congress Avenue and IH 35 SB FR.
- Old Lockhart Highway to Vertex Boulevard, where the proposed 140-foot right-of way should be obtained through dedication as the land is developed.

- Add an eight to twelve-foot shared use path on the south side;
- Add six feet to the existing sidewalk to create a shared use path on the north side.

Figure 6-2: FM 1826 to Barstow Avenue Existing and Proposed Typical Sections



EXISTING TYPICAL SECTION
BETWEEN FM 1826 & BARSTOW AVE.

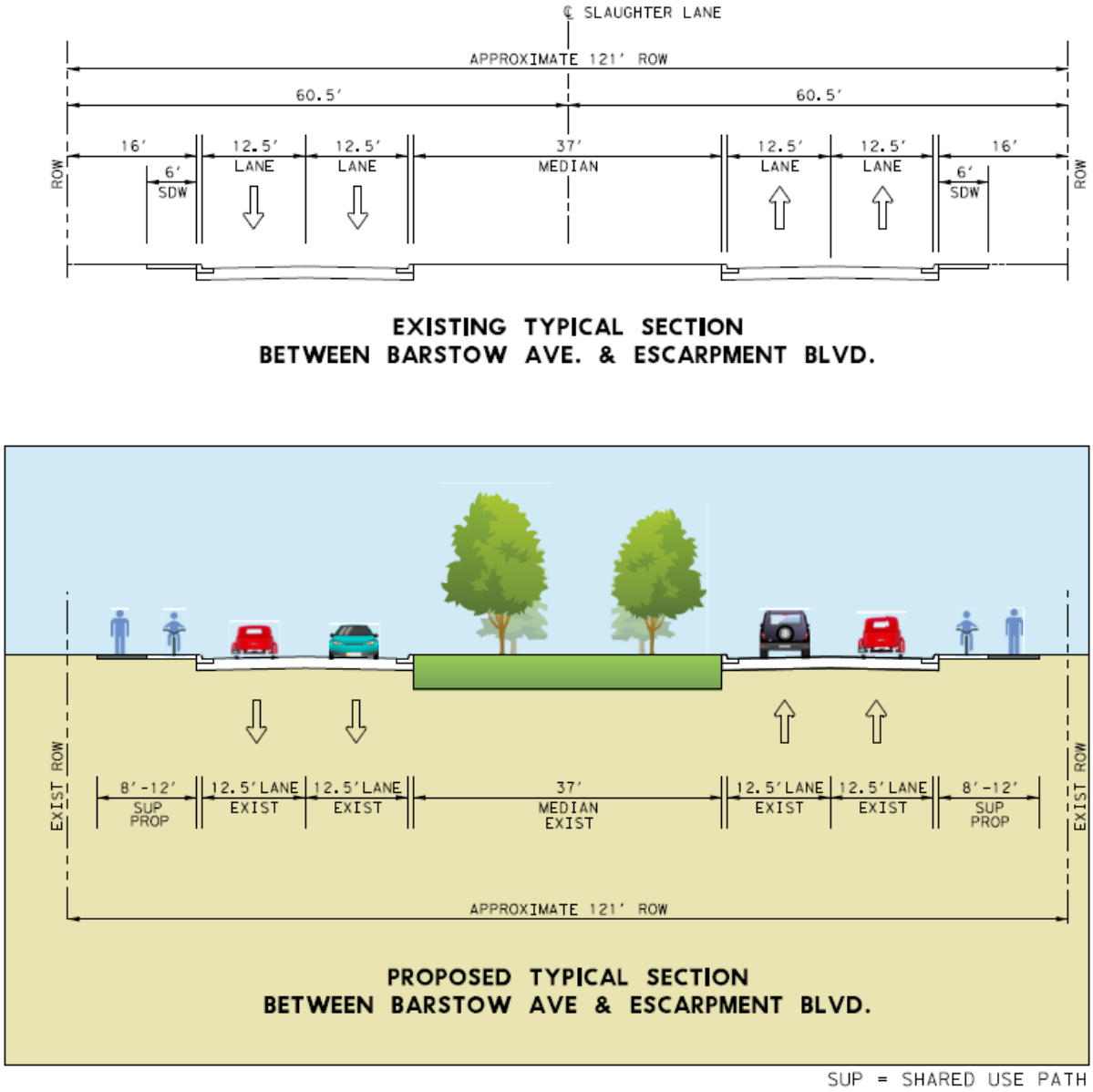


PROPOSED TYPICAL SECTION
BETWEEN FM 1826 & BARSTOW AVE.

SUP = SHARED USE PATH

- Replace existing sidewalk with a shared-use path on both sides.

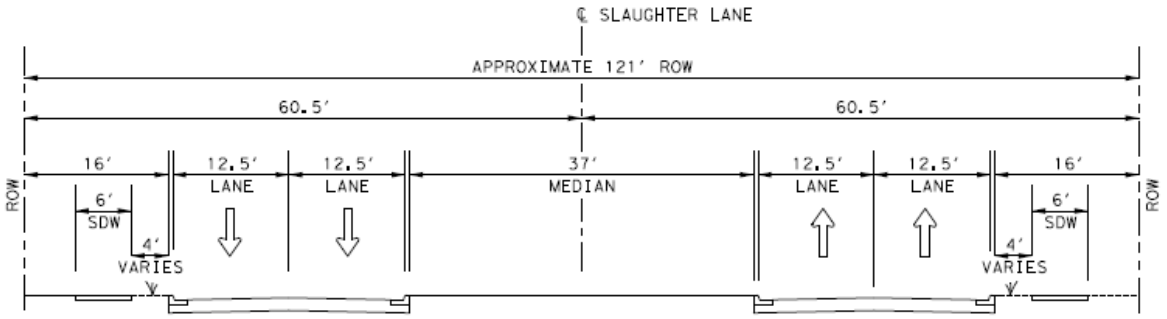
Figure 6-3: Barstow Avenue to Escarpment Boulevard Existing and Proposed Typical Sections



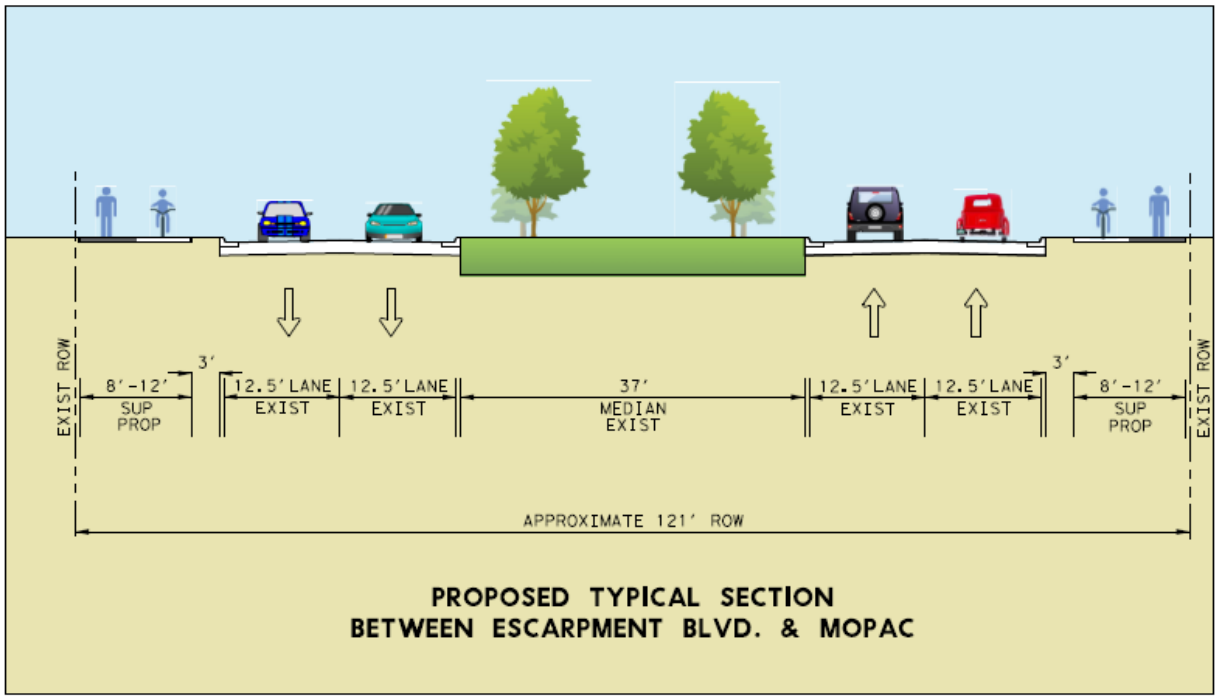
ESCARPMENT BOULEVARD TO MOPAC

- Replace existing sidewalk with a shared use path on both sides.

Figure 6-4: Escarpment Boulevard to MoPac Existing and Proposed Typical Sections



EXISTING TYPICAL SECTION
BETWEEN ESCARPMENT BLVD. & MOPAC



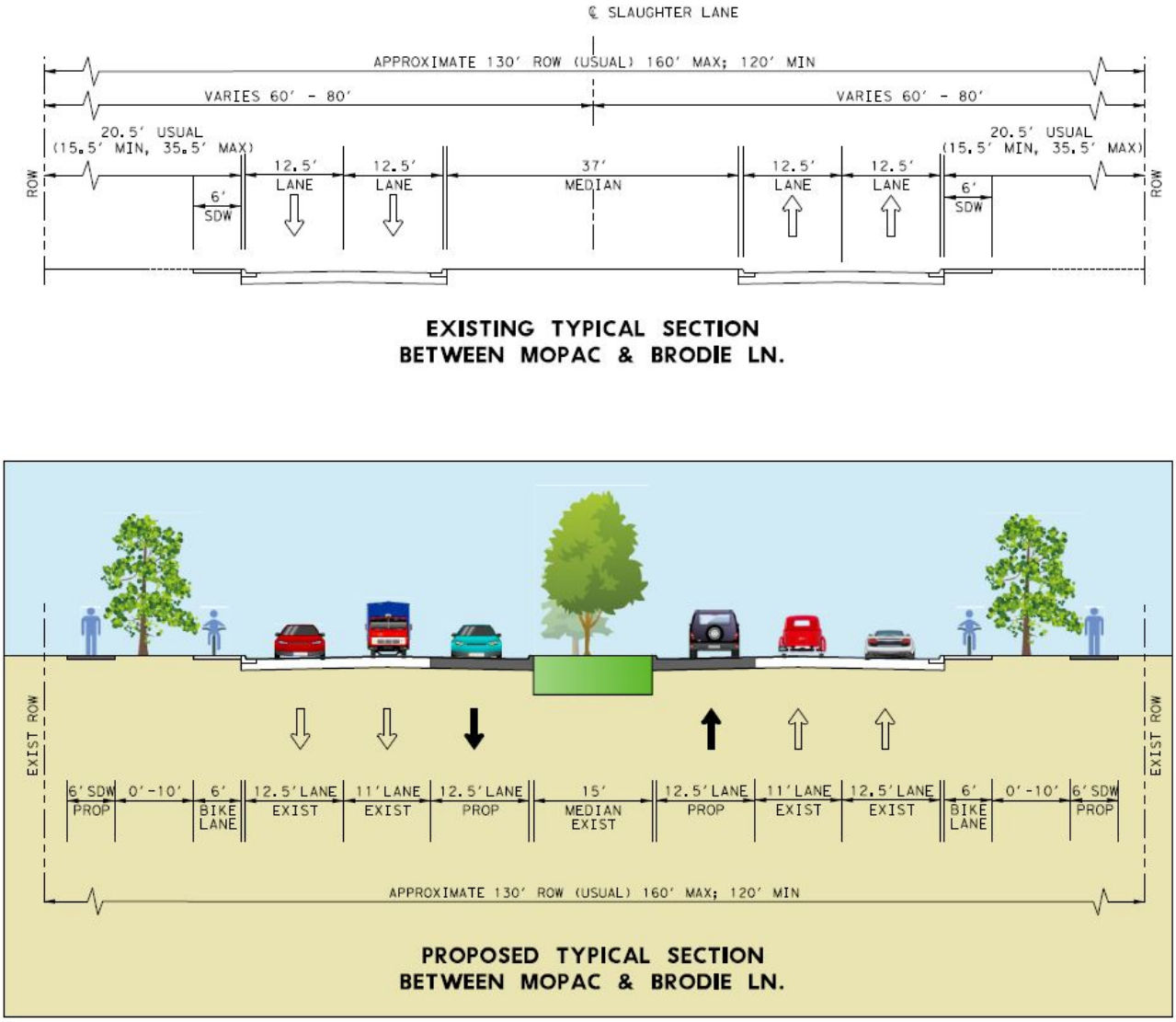
PROPOSED TYPICAL SECTION
BETWEEN ESCARPMENT BLVD. & MOPAC

SUP = SHARED USE PATH

MOPAC TO BRODIE LANE

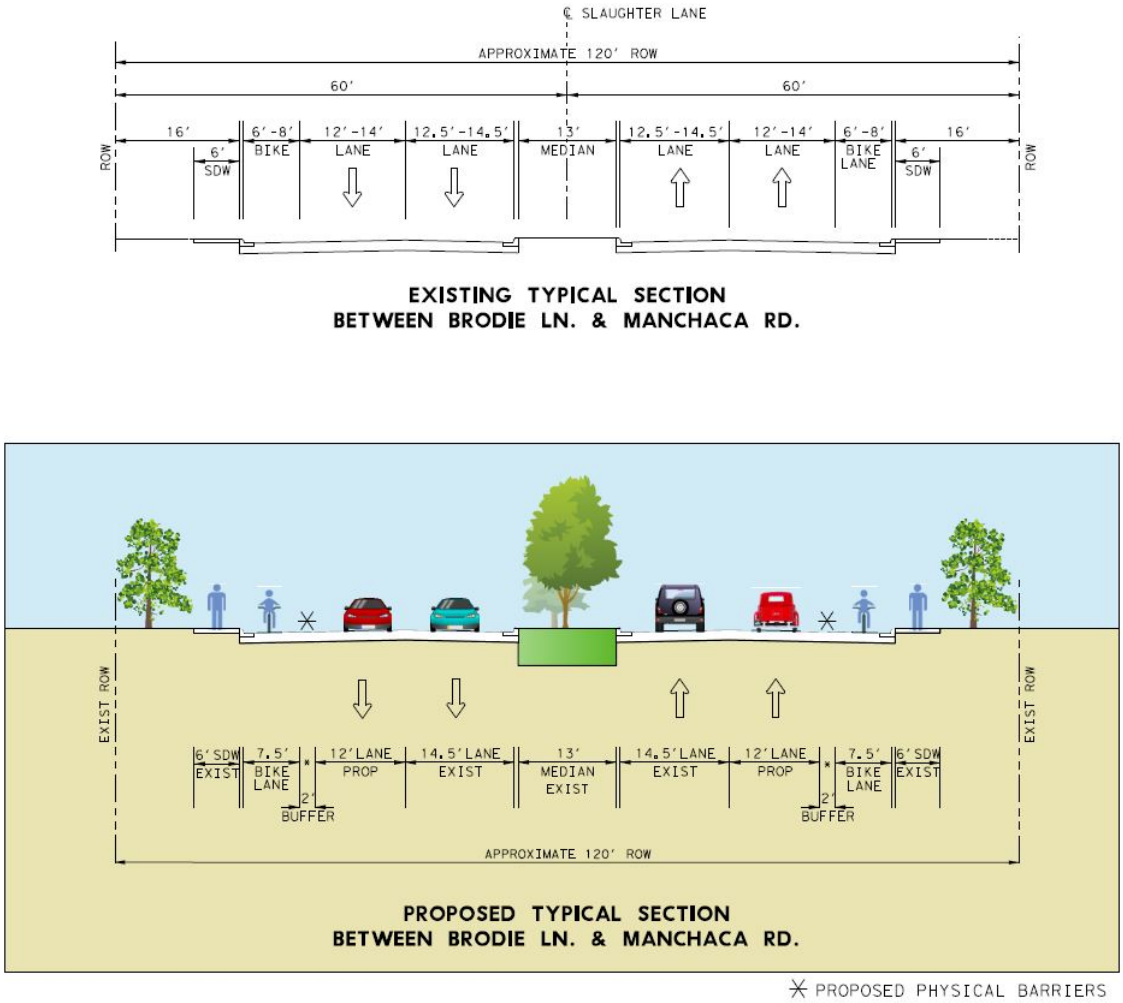
- Provide additional eastbound and westbound travel lanes by reducing the existing median;
- Convert existing sidewalk to bike lane on both sides;
- Construct new six-foot sidewalk on both sides;
- Provide green space between bike lanes and sidewalks, where possible.

Figure 6-5: MoPac to Brodie Lane Existing and Proposed Typical Sections



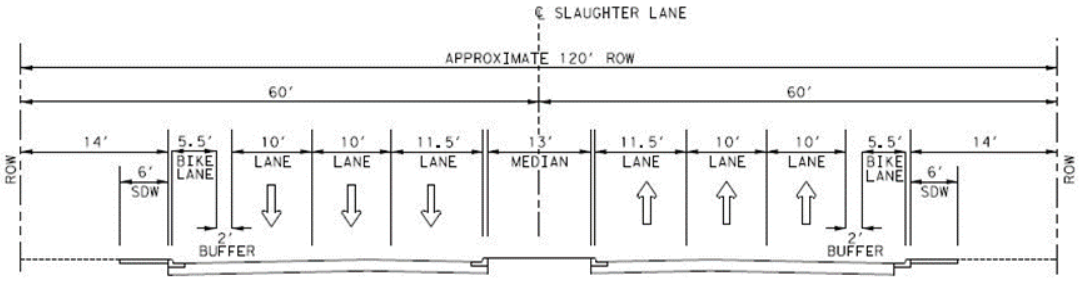
- Add physical barrier between existing bike lane and travel lane on both sides.

Figure 6-6: Brodie Lane to Manchaca Road Existing and Proposed Typical Section

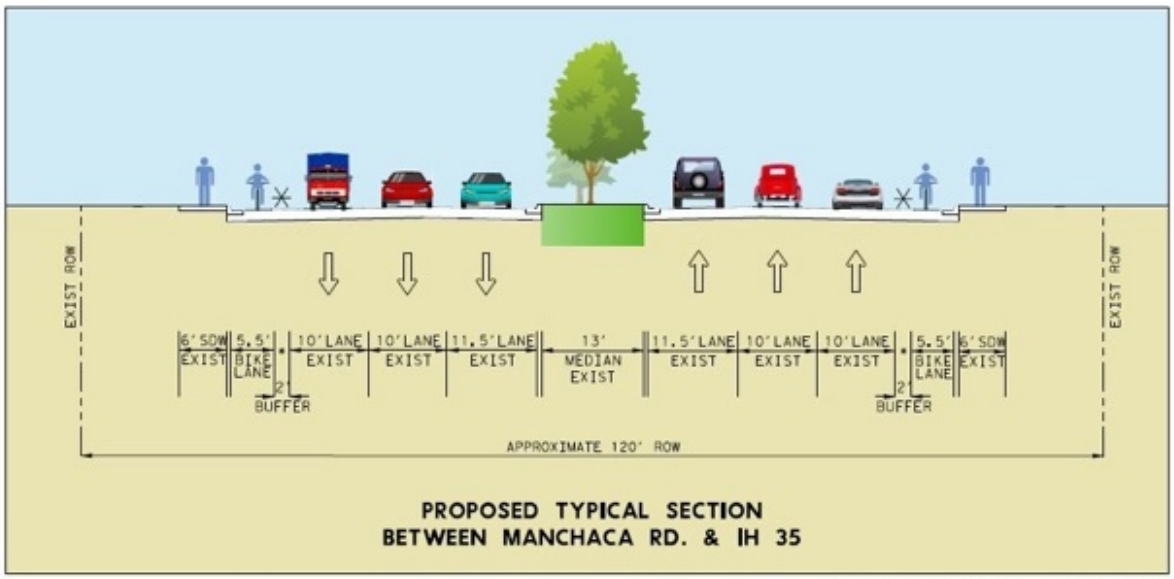


- Add physical barriers between existing bike lane and travel lane on both sides.

Figure 6-7: Manchaca Road to IH 35 Existing and Proposed Typical Sections



EXISTING TYPICAL SECTION
BETWEEN MANCHACA RD. & IH 35

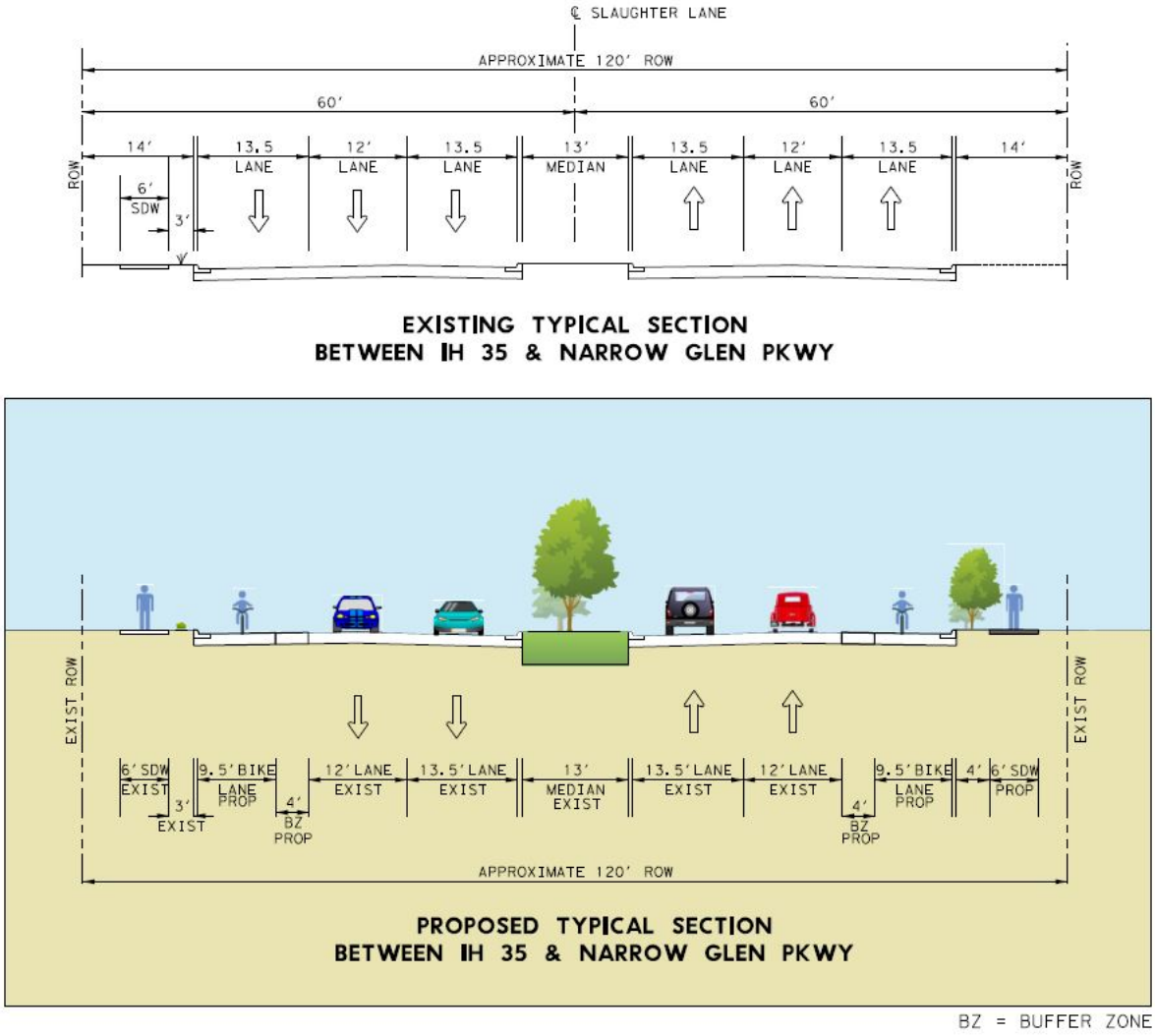


PROPOSED TYPICAL SECTION
BETWEEN MANCHACA RD. & IH 35

✕ PROPOSED PHYSICAL BARRIERS

- Reduction to two travel lanes each direction;
- Existing travel lane to be used as bike lane and buffer zone on both sides;
- Add six-foot sidewalk on the south side of Slaughter Lane.

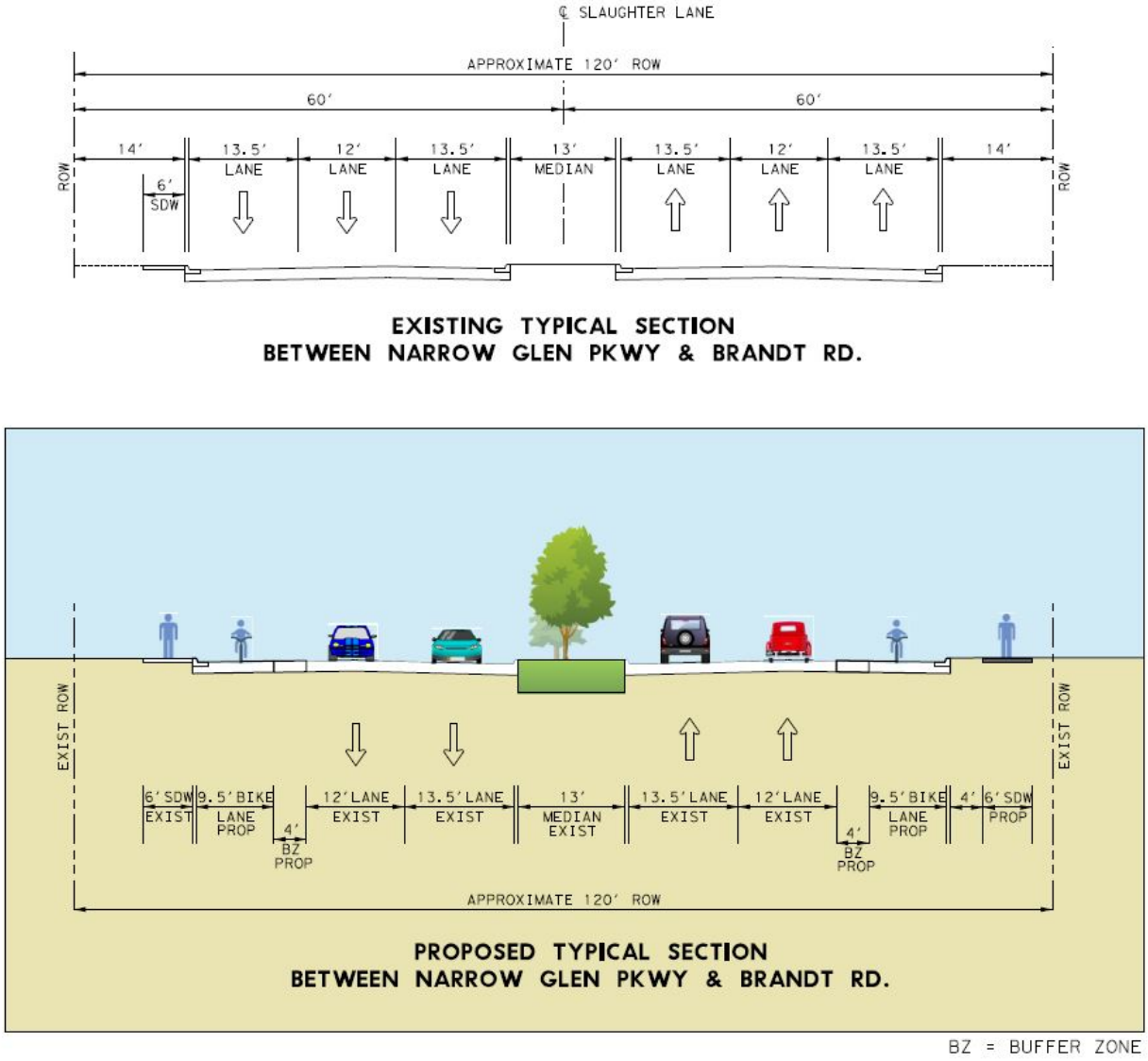
Figure 6-8: IH 35 to Narrow Glen Parkway Existing and Proposed Typical Sections



This reduction from 6-lanes to 4-lanes can accommodate projected future traffic volumes, potential speed limit reduction and safer crossings, and will match the future typical section of the Slaughter Lane extension to be completed by Travis County. The existing 6-lane section could be repurposed in the future as needed by constructing a shared use path off the street.

- Reduction to two travel lanes each direction;
- Existing travel lane to be used as eight-foot bike lane and four-foot buffer zone on both sides;
- Add six-foot sidewalk on the south side of Slaughter Lane.

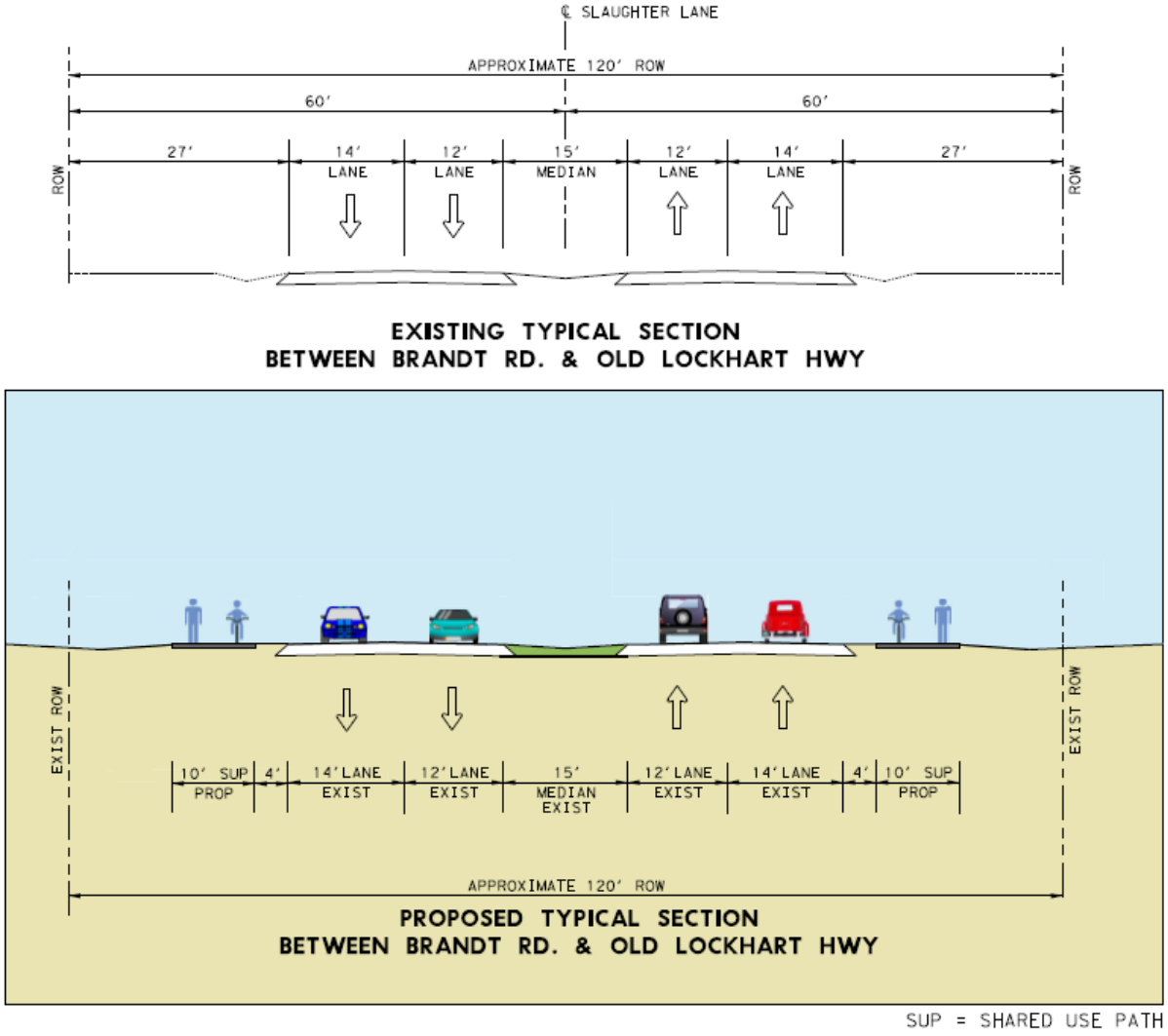
Figure 6-9: Narrow Glen Parkway to Brandt Road Existing and Proposed Typical Sections



This reduction from 6-lanes to 4-lanes can accommodate projected future traffic volumes, potential speed limit reduction and safer crossings, and will match the future typical section of the Slaughter Lane extension to be completed by Travis County. The existing 6-lane section could be repurposed in the future as needed by constructing a shared use path off the street.

- Add ten-foot shared use path on both sides.

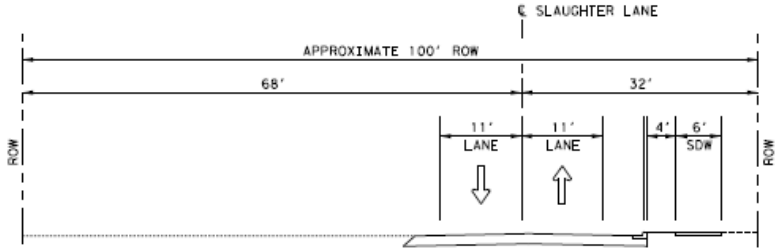
Figure 6-10: Brandt Road to Old Lockhart Highway Existing and Proposed Typical Section



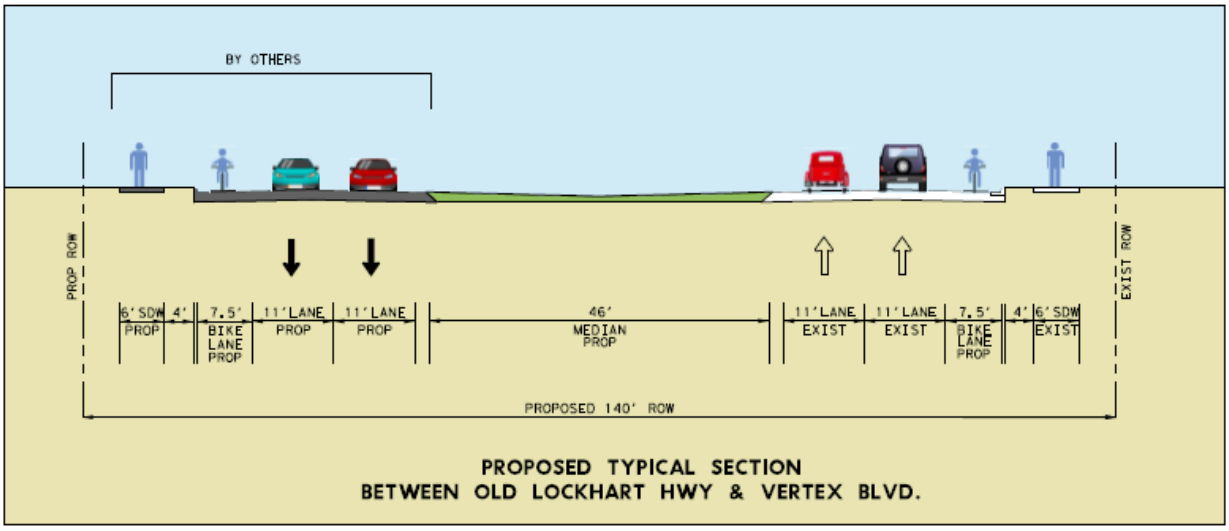
OLD LOCKHART HIGHWAY TO VERTEX BOULEVARD

- Existing travel lanes to become two eleven-foot westbound lanes and a 7.5-foot bike lane;
- Add two eleven-foot eastbound travel lanes;
- Add 7.5-foot bike lane on the north side of Slaughter Lane;
- Add six-foot sidewalk on the north side of Slaughter Lane.

Table 6-11: Old Lockhart Hwy to Vertex Blvd Existing and Proposed Typicals



EXISTING TYPICAL SECTION
BETWEEN OLD LOCKHART HWY & VERTEX BLVD.



PROPOSED TYPICAL SECTION
BETWEEN OLD LOCKHART HWY & VERTEX BLVD.

NOTE: THIS PROPOSED TYPICAL SECTION WILL MATCH THE TYPICAL SECTION PROPOSED BY TRAVIS COUNTY FROM VERTEX BLVD TO THAXTON RD.

RECOMMENDED INTERSECTION IMPROVEMENTS

The following intersection improvements are recommended as part of the Slaughter Lane CMP. Conceptual layouts of the recommended intersection improvements is included in **Appendix I**.

SLAUGHTER LANE AT VINEMONT DRIVE

- Perform a traffic signal warrant analysis to determine if a signal is warranted by vehicle traffic and/or pedestrian crossings. The study should include weekend data. If a traffic signal is not warranted, then consider the option of a pedestrian hybrid beacon to serve pedestrians to and from the park on the south side of Slaughter Lane.

SLAUGHTER LANE AT ESCARPMENT BLVD.

- Construct eastbound and westbound dual left-turn lanes in the median of Slaughter Lane;
- Widen southbound approach of Escarpment Boulevard in the median to provide a separate left-turn lane and provide two through lanes plus a bike lane;
- Widen the southbound departure lanes of Escarpment Boulevard to provide two lanes for approximately 500 feet, plus a bike lane;
- Improve safety of pedestrian crossings with continental markings and ADA-compliant ramps.

SLAUGHTER LANE AT BRODIE LANE

- Widen the north side of Slaughter Lane in the westbound direction to shift existing through lanes, add a westbound through lane, eliminate the existing left-turn trap lane, and continue to provide dual left-turn lanes; a separate southbound right turn lane is not warranted based on traffic volumes;
- Widen the southbound departure lanes on Brodie Lane to extend the two lanes as much as existing ROW will allow, roughly 1,200 feet;
- Extend two lanes on Brodie's northbound approach as much as existing ROW will allow, in order to provide queuing length which will allow more efficient use of the available green time northbound;
- Improve safety of pedestrian crossings with continental markings and ADA-compliant ramps.

SLAUGHTER LANE AT CONGRESS AVENUE

- Construct a southbound right turn lane;
- Construct dual left-turn lanes eastbound and extend the storage capacity of the left-turn lanes;
- Improve safety of pedestrian crossings with continental markings and ADA-compliant ramps;
- Construct shared use path connections for pedestrians and bikes;
- Provide bike lane markings and physical barriers for existing on-street bike lanes to remain in place.

SLAUGHTER LANE AT IH 35

- Reconstruct the median of Slaughter Lane eastbound approach to provide dual left-turn lanes eastbound to northbound; lane modification will be required on the westbound lanes;
- Widen the eastbound approach to add a separate right turn lane; this improvement will improve operations between Congress Avenue and IH 35 by addressing the southbound-to-eastbound-to-southbound traffic demand;
- Widen the north side between IH 35 and S Congress Avenue to provide/replace an additional travel lane westbound;
- Move the existing westbound on-street bike lane to a proposed shared used path; this improvement may require small amounts of right-of-way, or an easement;
- Widen the westbound approach to the IH 35 NB frontage road to provide and additional thru lane and replace the existing right turn lane;
- Re-stripe the existing pavement under IH 35 to provide two westbound travel lanes plus a left-turn only lane, and two eastbound travel lanes plus two left-turn only lanes.

In addition to the above recommendations, other intersection improvements proposed or underway by the City of Austin include:

- Slaughter Lane at Manchaca Road- Safety and operational improvements
- Slaughter Lane at S 1st Street and Cullen Lane- Safety and operational improvements
- Slaughter Lane at South Park Meadows- Traffic signal installation

CORRIDOR-WIDE SIGNAL SYSTEM IMPROVEMENTS

- Implement Flashing Yellow Arrow operation for permitted left-turns, where possible, to improve safety and operation of left-turns.
- Optimize traffic signal timing plans throughout the corridor, as warranted by traffic conditions.
- Utilize state-of-the-practice signal technologies, such as expansion of the adaptive signal program or other technologies for traffic management.

SIDEWALK & BIKEWAY IMPROVEMENTS

The goals for sidewalk and bike facilities across the Slaughter Lane corridor are the same as those stated in the City of Austin Sidewalk and Bicycle Master Plans. With this connectivity, there will be improved access to transit stops on the east and west side of Slaughter Lane, businesses along the road, and schools in the areas such as Bowie High School. CapMetro has proposed bus stops on the east side of Slaughter Lane as well as a new park and ride located on the west side of Slaughter Lane. Both additions along with the improvements of sidewalks and bike lanes will make Slaughter Lane an effective multimodal corridor.

BIKE FACILITIES

The recommendation for FM 1826 to Brodie Lane is to have raised six-foot bike lanes or an eight to twelve-foot shared use path. The improvements in this section will provide additional bike access between the Violet Crown Trail and the Slaughter Lane Trail. Both of these trails are multiuse pathways serving South Austin. Brodie Lane to IH 35 is proposed to have six-foot on-street bike lanes with physical barrier. Flexible bollards will serve as the physical barrier however, a wide variety of other options are available. It is recommended that IH 35 to Brandt Road has eight-foot on-street bike lanes with four-foot buffer zones and that Brandt Road to Old Lockhart Highway has ten-foot shared use paths. The section from Old Lockhart Highway to Vertex Boulevard is adopted from a typical section prepared by Travis County from Vertex Boulevard to Thaxton Road. Sections of the existing sidewalk can be repurposed into bike lanes as well as added onto to create shared use paths. With these proposed improvements, the entire stretch of the project will have a bike lane or shared use path on each side of the road.

SIDEWALK FACILITIES

The recommended improvements in this Mobility Plan have sidewalk access for the entirety of the project. This is achieved through six-foot sidewalks or eight to twelve-foot shared use paths. Sidewalks of six-foot width fall within the desired range for Suburban Level 4 corridors in the Austin Street Design Guide. Shared use paths are also recommended in the design guide and an example illustrating the proposed shared use paths can be found in **Figure 6-12**. Completing the sidewalk network along Slaughter Lane will provide pedestrian connectivity throughout the corridor and provide improved access to public transportation.

Figure 6-12: Shared Use Path Example

Frequent safe crossings are an important complement to the sidewalk network. The Slaughter Lane CMP recommends installation of pedestrian hybrid beacons

at four locations along Slaughter Lane, including: Vinemont Drive, Zuniga Drive, Briar Ridge Drive, and Stone Creek Ranch. **Appendix J** illustrates existing signalized intersections and pedestrian hybrid beacons as well as bus stops and the recommended pedestrian hybrid beacons.

SLAUGHTER LANE FROM FM 1826 TO MOPAC

- Provide bike lanes on both sides of Slaughter Lane by repurposing the existing sidewalks to bike lanes;
- Build new sidewalks generally parallel to the bike lanes but avoiding existing trees; easement agreements with local HOA will be needed.

SLAUGHTER LANE AT IH 35

- Provide a shared use path between frontage roads for bikes and pedestrians to cross under IH 35, by utilizing the existing concrete islands that separate the U-turn lanes, and extend the bike lanes to east of IH 35.

SLAUGHTER LANE FROM IH 35 TO BRANDT ROAD

- Convert the six-lane divided facility to four-lane divided with bike lanes, by re-striping the outside through lane to a bike lane, in each direction; provide shared use right-turn lanes/ bike lanes at intersections with collector streets, arterials or major traffic generators

These bike lane and sidewalk improvements, in conjunction with improvements identified under intersection and corridor improvements, will provide continuous bike lane and sidewalk facilities for the entire length of the corridor from FM 1826 to Brandt Road. Further extensions to the east can be incorporated into the corridor improvement plans being developed by Travis County and other land development projects along the east end of the corridor beyond Vertex Road.

FUTURE TRAFFIC OPERATIONS ANALYSIS

The Synchro models were updated to reflect the recommended improvements along the Slaughter Lane corridor. Only the intersections with added or reduced capacity were modeled with Synchro. The analysis of future traffic operations considered two roadway network scenarios:

- Future "No-Build" scenarios analyze traffic operations on the existing roadway network.
- Future "Build" scenarios analyzed traffic operations on the improved roadway network.

To evaluate the immediate impact of recommended improvements, the "No-Build" and "Build" networks were evaluated using existing (2017) traffic volumes. **Table 6-1** shows a comparison of average delay and LOS

results for the "No-Build" and "Build" scenarios with the existing volumes. To evaluate future traffic operations **Table 6-2** shows the Delay and LOS results for the 2040 scenarios. Synchro outputs for the "No-Build" and "Build" scenarios are in **Appendix B** and **Appendix D**, respectively.

Table 6-1: Existing (2017) LOS Analysis Results for No-Build and Build Scenarios

Intersection	2017 No-Build				2017 Build			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*
Sendera Mesa Dr	B	16	B	13	A	7	B	11
Bowie HS	B	17	C	33	B	19	C	24
Wolftrap Dr	A	5	A	10	A	5	A	5
Brodie Ln	E	74	D	43	D	44	D	39
Manchaca Rd	E	71	E	78	D	50	D	42
S 1st St	D	39	E	57	C	34	D	48
S Congress Ave	C	33	E	61	C	21	D	40
IH 35 SBFR	D	37	E	77	C	32	C	27
IH 35 NBFR	E	55	E	55	C	27	D	44

Table 6-2: Future (2040) LOS Analysis Results for No-Build and Build Scenarios

Intersection	2040 No-Build				2040 Build			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*	LOS	Delay *(sec/veh)*
Sendera Mesa Dr	D	38	B	19	B	19	B	14
Bowie HS	C	20	E	63	C	20	C	29
Wolftrap Dr	A	6	B	15	A	8	A	7
Brodie Ln	F	125	E	57	E	76	D	49
Manchaca Rd	F	105	F	128	E	70	E	62
S 1st St	E	62	F	108	D	45	F	80
S Congress Ave	E	76	F	86	C	31	E	68
IH 35 SBFR	E	70	F	125	E	60	D	54
IH 35 NBFR	E	80	E	78	D	45	E	63

As shown in **Table 6-1**, implementing the recommended improvements would substantially benefit existing traffic operations along the corridor. Long term, shown in **Table 6-2**, the recommended improvements show a substantial improvement over the "breakdown conditions" that will be experience if no improvements are made. Some intersections are still projected to experience LOS E or LOS F even after improvements are implemented due to a very high projected traffic demand, however even these locations show substantial improvement over No-Build Conditions. For example, at Manchaca Road during the PM Peak there is a substantial difference in the driver experience between LOS E with 62 seconds of delay (Build condition) and an LOS F with 128 seconds of delay (No-Build condition).

HEALTH IMPACT ASSESSMENT

The Health Impact Assessment (HIA) is part of the master scope of services for the Slaughter Lane Transportation Corridor Project and presents potential health impacts of the existing conditions along the corridor as well as potential solutions for better general health of those who frequent Slaughter Lane. The entire HIA can be found in **Appendix E**.

The transportation environment has both direct and indirect impacts on public health by influencing people's decision to participate in physical activity via walking or bicycling and by creating exposure to traffic hazards or vehicle emissions.

HIA PROCESS

Steps in the HIA Process include:

1. Screening,
2. Scoping,
3. Conducting a preliminary assessment,
4. Assessment of the corridor PER, and
5. Recommending solutions with the HIA in mind.

Throughout the HIA process, existing conditions of the corridor were evaluated for potential improvements that have a positive impact on public health, including the location of green space, sidewalks, bicycle lanes, and hazardous traffic conditions.

HIA FINDINGS & RECOMMENDED IMPROVEMENTS

Based on analysis results, the Slaughter Lane HIA recommendations for the corridor include: ADA ramps and more visible pedestrian crossings at intersections, continuously connected sidewalks and bike lanes, and left-turn lane additions at several intersections. These HIA recommended improvements were evaluated based on cost and level of impact to the corridor, and then prioritized with other recommended improvements included in the Slaughter Lane Corridor Mobility Plan. Implementation of these recommended improvements will provide improved connectivity throughout the corridor, increased access to public transit, and more convenient, safer routes for people to participate in exercise or active transportation. The improvements to the transportation system will subsequently influence more active lifestyles and improved health outcomes for those who live, play, and travel along the Slaughter Lane corridor.

CHAPTER 7 – PROJECT IMPLEMENTATION

Implementation of the recommended improvements will require a multi-step process. This chapter describes the costs of the transportation improvements and highlights those necessary steps, funding and implementation partners, and other considerations that affect project implementation.

COST ESTIMATES

The recommended improvements were organized into sub-projects for cost estimation based on location and a natural division of work to be performed. This was done for cost estimation purposes and may vary from actual project implementation.

Cost estimates were developed for the recommended improvements identified in **Chapter 6** based on approximate unit costs and construction quantities. It is important to note these are "planning-level" estimates that do not include right-of-way acquisition costs but do include engineering, materials, traffic control, construction, inflation, and contingency costs. Estimates were developed using both 2017 and 2021 dollars. With a 4% inflation factor, total project cost in 2021 dollars is estimated to be $17,900,000.

Table 7-1 shows cost estimates for each sub-project in 2017 dollars. Actual construction costs may vary and will be developed after detailed design is completed. Detailed cost estimates of improvements can be seen in **Appendix F**. A cost comparison of roadway and intersections improvements vs. bike lane and sidewalk improvements is shown in **Table 7-2**.

Table 7-1: Cost Estimate Summary

Location	Description of Work	Cost* *(2017 US$)*
FM 1826 to Barstow Ave	Shared use path on both sides of the road	$ 1,160,000
Barstow Ave to Escarpment Blvd	Shared use path on both sides of the road	$ 650,000
Escarpment Blvd Intersection	Left-turn lanes and extending 2nd lane southbound	$ 810,000
Escarpment Blvd to MoPac	Shared use path on both sides of the road	$ 900,000
MoPac to Brodie Ln (Sidewalks)	Sidewalk on each side	$ 1,120,000
MoPac to Brodie Ln (Travel Lanes)	Travel lane in each direction	$ 6,020,000
Brodie Ln Intersection	Turn lanes and storage extension	$ 2,140,000
Manchaca Rd to IH 35	Physical barriers added to buffer zone	$ 400,000
S. Congress and IH 35 Intersection	Turn lanes and storage extension	$ 3,170,000
IH 35 to Narrow Glen Pkwy	Converting travel lane to bike lane in each direction	$ 230,000
Narrow Glen Pkwy to Brandt Rd	Converting travel lane to bike lane in each direction	$ 110,000
Brandt Rd to Old Lockhart Hwy	Shared use path on both sides	$ 1,190,000
	TOTAL	**$ 17,900,000**

**Cost estimates rounded to the nearest hundred thousand dollars.*

Table 7-2: Cost Comparison – Roadway/Intersection Improvements vs. Bicycle/Pedestrian Improvements

Improvement Type	Cost*
Roadway & Intersection Improvements	$ 12,140,000
Bike lane & Sidewalk Improvements	$ 5,760,000
Total	**$17,900,000**

**Cost estimates rounded to the nearest hundred thousand dollars.*

FUNDING

2016 MOBILITY BOND

Development of the Slaughter Lane Corridor Mobility Plan was funded by the 2016 Mobility Bond. This roadway was also identified for possible construction funding as part of the $482 million dedicated for corridor improvement projects through the 2016 Mobility Bond. Because there is more need on the nine construction-eligible corridors throughout the city than available funding, City Council's Contract with Voters (Resolution No. 20160818-074), approved in 2016, requires the City Manager to develop recommendations for a proposed Corridor Construction Program that prioritizes improvements to be constructed using 2016 Mobility Bond funds.

Recommended improvements presented in this Slaughter Lane CMP report were included in a prioritization model along with recommended improvements for the other eight construction-eligible corridors to determine which improvements receive initial funding for construction through the Corridor Construction Program (CCP). More information on those efforts can be found on the City of Austin's Corridor Mobility Program website, AustinTexas.gov/CorridorMobility.

Design and construction of some, but not all, of the improvements recommended in **Chapter 6** are included in the Proposed Corridor Construction Program that Austin City Council approved in spring 2018. The City of Austin is investing approximately $48 million from the 2016 Mobility Bond into the Slaughter Lane corridor. The corridor will receive Corridor-wide Mobility Improvements, as well as Enhanced Multimodal Improvements between MoPac and Brodie Lane as envisioned in the Corridor Mobility Plan.

The Enhanced Multimodal Improvements from MoPac to Brodie are made possible as a result of CAMPO grant funding that has been awarded to the corridor. Improvements that are funded by the CAMPO grant include adding a third travel lane in each direction, and adding a Shared Use Path on both sides of the roadway between MoPac and Brodie Lane.

Additional funding strategies will be sought for all recommendations in the Corridor Plan not initially funded as part of the Corridor Construction Program. The City of Austin has a range of funding sources that may be used to construct mobility improvements that are not identified for funding through the 2016 Mobility Bond. These funding sources include, but are not limited to: future bond dollars, grants (state/federal funding), private investment, and the City's operating funds. Plans like this one are often stepped investments over multiple years and leverage multiple funding sources. Options for future funding sources will be considered as they become available.

CHAPTER 8 – FUTURE STRATEGIES & CONCLUSION

Presents below are several principals to guide future transportation improvements, new development, environmental conservation and cultural enrichment within the Slaughter Lane corridor study area. Concluding the Slaughter Lane CMP, a summary evaluation considers the effectiveness of recommended improvements toward achieving the project goals and desired outcomes described in **Chapter 1**.

CORRIDOR-WIDE DEVELOPMENT PRINCIPALS

PRESERVE INTERSECTION FUNCTIONAL AREA

Functional area is the space beyond the physical intersection within which vehicles are stored and within which drivers make decisions and maneuvers to stop, proceed through the intersection or turn. Additional conflicts are caused by cars entering and exiting driveways and increase safety risk and reduce mobility. As redevelopment occurs driveway permits should be carefully considered with these factors and risks in mind.

CAPITAL IMPROVEMENTS AND MAINTENANCE

A sufficient financial investment will need to be made to implement the improvements recommended for Slaughter Lane. An appropriate maintenance plan will be necessary to maintain these improvements and preserve the integrity of the infrastructure. The City of Austin should include the maintenance of Slaughter Lane in their Transportation Fund to ensure the corridor continues to operate at ideal conditions.

ACCESS MANAGEMENT

Promoting and following smart access management can improve safety and mobility along a major arterial roadway like Slaughter Lane. Carefully managing the location, spacing, design, and operation of driveways, median openings, and street connection is a valuable strategy in urban planning. Careful access management can increase public safety, encourage alternate modes of travel, extend the life of roadways, reduce traffic congestion, and improve the appearance and character of the built environment.

ACCOMMODATE NON-MOTORIZED ROAD USERS

City of Austin Land Use and Transportation Policies state that development should be designed to encourage walking and bicycling. Communities should have realistic opportunities for bicycle and walking travel. Planning for improved infrastructure on Slaughter Lane that provides continuous, connected, protected and safe conditions for those wishing to travel by non-motorized means will provide an increased sense of space and will meet the goals of the *Imagine Austin Comprehensive Plan*.

ACCOMMODATE BUS AND TRANSIT CORRIDOR USERS

A system of well-connected sidewalks and bike lanes will also contribute to improving access to transit stops. Transit stops should accommodate people on foot and people on bikes, and should meet guidelines for providing adequate shelter, shade and amenities to transit rider. Amenities at transit stops that increase the usability, convenience, safety and comfort of riders contribute to the overall appeal of public transportation. Waiting pads, shelters, seating, lighting, route information, bike racks and trash bins are some examples of amenities that will help to accommodate bus and transit users.

PROMOTE SUSTAINABLE WATER AND STORM WATER PRACTICES

The *Imagine Austin Comprehensive Plan* promotes environmental awareness to ensure the long-term health and quality of the community. Growth and infrastructure systems should be well-managed to respect the limitations of our natural resources. Integrating stormwater management systems into buildings and site development can help to reduce the threat of flooding to public safety and private property. Stormwater management systems can also help to reduce pollution in creeks from runoff, overflow and other non-point sources. Implementing sustainable landscaping with native plants will reduce water consumption, reduce or prevent pollution and erosion, and maintain ecological balance, as well as enhance the built environment.

CONCLUSION

The recommended improvements presented in this report achieve the project goals of enhancing mobility, safety, and connectivity for all travel modes. These recommended improvements will result in the desired outcomes of creating fully-connected bicycle and pedestrian networks and providing multimodal accessibility to all transit stops along the corridor. These recommended improvements, in conjunction with other projects planned and underway by the City, address existing safety issues at intersections throughout the corridor. Additionally, these recommended improvements will provide immediate relief from traffic congestion experienced at major intersections and, in the long-term, provide substantial benefits over the traffic congestion that will be experienced if these recommended improvements are not implemented.