



# City of Bulverde

## Transportation Master Plan



Submitted by  
HNTB Corporation  
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**CITY OF BULVERDE  
TRANSPORTATION MASTER PLAN**

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# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

## Preface

### What is a Transportation Master Plan?

A Transportation Master Plan (TMP) is a planning tool that is available to cities to demonstrate to citizens, other public agencies (Comal County, Bexar County, TxDOT, etc.), and to developers that there is a coherent plan being used by the City to identify and meet the local needs for new or expanded transportation facilities. The TMP provides the regulatory authority to require developers to make improvements or take actions as they develop property, to include right of way (ROW) dedications and reservations; roadway, bridge, hike and bike trail, sidewalks, and other infrastructure construction; and ensure local standards are met by other agencies, developers, and utility agencies as development occurs.

A Transportation Master Plan is:

- A 10,000-foot view of the area being studied (a high level plan).
- A compendium of available information; very little new data was developed.
- An aggregation of data into an area-wide framework.
- An approximate location for new roadways using planning corridors 500 feet to 1000 feet wide.

A TMP is not:

- A detailed traffic study with counts on all roadways.
- A “traffic model” used for project planning or engineering studies.
- The fixed alignment for proposed new roadways or other infrastructure projects.
- Intended for use in locating the final alignment for new roadways; project level studies and data collection are needed in the planning and design process for individual projects.

### DISCLAIMER:

The proposals and recommendations included in this report are those of the authors, who represent the HNTB Corporation. Although this material has been presented to the City Staff, Mayor, City Council, and Planning and Zoning Commission, those persons and groups have not taken any official action to accept or to approve the proposals and recommendations included herein. This is a preliminary report that will be considered by City of Bulverde officials over the next few weeks, and they will consider appropriate actions that may be taken related to the various proposals and recommendations. However, the City is asking for and accepting comments and suggested changes from the residents and business owners in the Bulverde area.

### Executive Summary

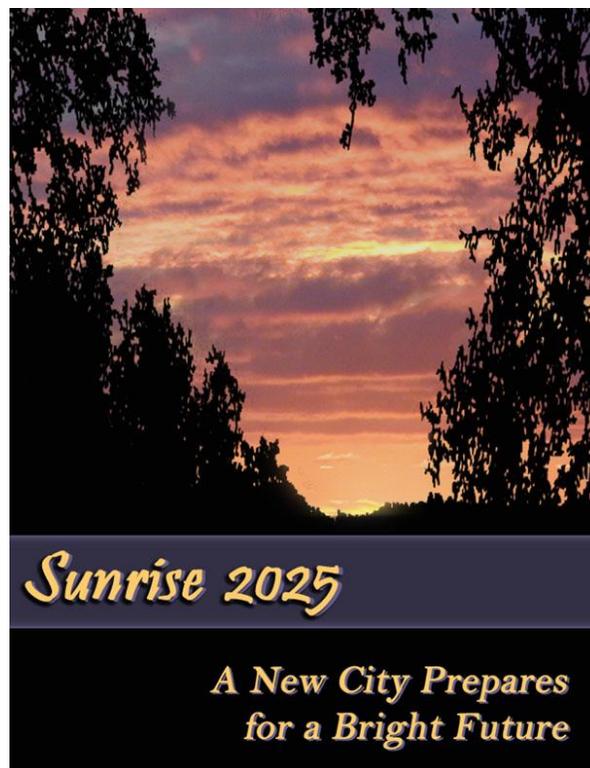
This section will provide a summary of the entire plan and will be drafted at the end of the process.

# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

## 1.0 Introduction

The City of Bulverde is located in the southwestern portion of Comal County, about 19 miles west of the County Seat of New Braunfels, Texas. The Bulverde area was first settled in 1850 on the banks of Cibolo Creek, and was called Pieper Settlement at that time. It was not until 1999 that the City of Bulverde was incorporated, pulling together into the City a number of communities and neighborhoods with primary access to US Highway 281 and to State Highway 46. These roadways provide the backbone for the City, today. The City of Bulverde is now a thriving community that is known as the “Front Porch to the Hill Country”. For more details about the City and the region surrounding the City, please visit the City of Bulverde website.

In 2004, the City adopted a long range plan for its growth and development that was known as the “Sunrise 2025: The Comprehensive Plan”. A copy of the cover of the report is shown in this graphic:



The following is an excerpt from that Sunrise 2025 Plan document:

### **Sunrise 2025: The Comprehensive Plan**

**Planning is a highly collaborative process. Through this collaborative process we help to define the community's vision for itself. Working with local residents, politicians, and special groups, planners help establish the vision. This vision is created not only from what the community members want, but based on an understanding of the problems and resources at hand. Planners provide this analysis and help the community look at the options the City has for development and change.**

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Planners consider the physical, social and economic aspects of communities and examine the connections between them. Professionally trained planners also analyze the existing conditions and future trends in the area. They analyze issues such as transportation, land use, housing, recreation and open space, natural and cultural resources, community services, population, and economic development. In addition to generating their own data, planners draw upon the work of others to create a comprehensive overview of the community. Once planners have conducted their analysis, they develop strategic alternatives for solving problems in a coordinated and comprehensive manner. These alternatives will guide future development based on the established goals and analysis.

The Plan consists of these alternatives presented in a formal document. Plans are presented to community officials, who review, revise and adopt them for action. Once the plan is adopted, the planner's job becomes the implementation of the plan, coordinating work among many groups. The tools of planning implementation include such things as land use controls and economic development strategies.

The City of Bulverde adopted Sunrise 2025 as its first comprehensive plan in July 2004 after a long process involving many citizens. It serves both as a policy guide and an information source about the City. The entire [Bulverde Comprehensive Plan](#) can be found in PDF format at this link. Or the separate chapters can be found at the following links. Many of these files are very large and may take a few minutes to load. A high speed connection is strongly recommended.

- [Cover Page](#)
- [Introduction and Table of Contents](#)
- [Chapter 1 Community Profile](#)
- [Chapter 2 Community Vision](#)
- [Chapter 3 Land Use/Development & Growth Management](#)
- [Chapter 4 Community Services](#)
- [Chapter 5 Infrastructure](#)
- [Chapter 6 Transportation](#)
- [Chapter 7 Historical/Heritage Preservation](#)
- [Chapter 8 Economic Development](#)
- [Chapter 9 Community Development](#)
  
- [Chapter 10 Implementation](#)

NOTE: The links in the above text will take the reader directly to the document or to the chapter in which they have an interest.

This Bulverde Transportation Master Plan focuses on the current conditions in the Bulverde area and recommends transportation improvements that will be needed from the current time (2015) until 2035, or twenty years hence. It is also an extension of the goals and recommendations cited in "Chapter 6, Transportation" of the Sunrise 2025 Comprehensive Plan. The Transportation Element of the Sunrise 2025 Comprehensive Plan in its entirety can be found in Chapter 6 by using the link above.

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However, this portion of Chapter 6 is included here as a reference to the general characteristics of the Bulverde community:

**“Regardless, the most desirable things about living in the Bulverde area are the quiet/slow-paced living, the country/rural atmosphere, the beauty and feel of the Hill Country, and the small town/village charm. Attributes associated with the rural lifestyle include “twisty” two-lane roads. At a January 2004 Steering Committee meeting, members commented that “winding roads” and “slower roads” contribute to more of a country atmosphere. Narrower roads mandate that traffic moves slower, and they can be used as a growth management tool. After all, wider roads can enhance undesirable or unplanned growth. The Steering Committee concluded that Bulverde needs a thoroughfare plan, and Amman Road can be improved and serve as a major route to the western part of the city’s ETJ.**

**A balanced transportation system should offer residents access to both work and non-work related destinations, a structure of connectivity that offers choices of routes and modes of travel. Transportation options should include pedestrian, bicycle and automobile facilities along with access to nearby air transport, and perhaps someday in the future, light rail or some kind of public transportation into San Antonio. This chapter describes the policy and structure for providing a sound transportation system. Bulverde can achieve safe and efficient local and regional transportation by striving toward the goals set forth in this chapter while keeping in mind there is more to a desirable transportation system than moving automobiles on four-(or more) lane highways at high rates of speed.”**

Continuing on with another excerpt from the “Sunrise 2025: The Comprehensive Plan” document, the following definition is offered for a Thoroughfare Master Plan, or as indicated in this document, the “Transportation Master Plan”:

### ***6.3 Thoroughfare Master Plan***

**The Thoroughfare Master Plan (Figure 6.1) proposed in this comprehensive plan is a result of work by the Infrastructure/Transportation subcommittee and other citizen input. In its simplest form, the Plan is a vision/map of a desirable and complete build-out of the city and county’s current roadway system. It shows proposed extensions of existing roadways, the general location of proposed roadways, and classifies them by function to determine the right-of-way (ROW) and ultimate design standards for the facility. The plan is primarily implemented through the city’s subdivision and development process and cooperation with the Texas Department of Transportation and Comal County. As property is developed, landowners are required to dedicate and preserve ROW along existing and proposed roadways.”**

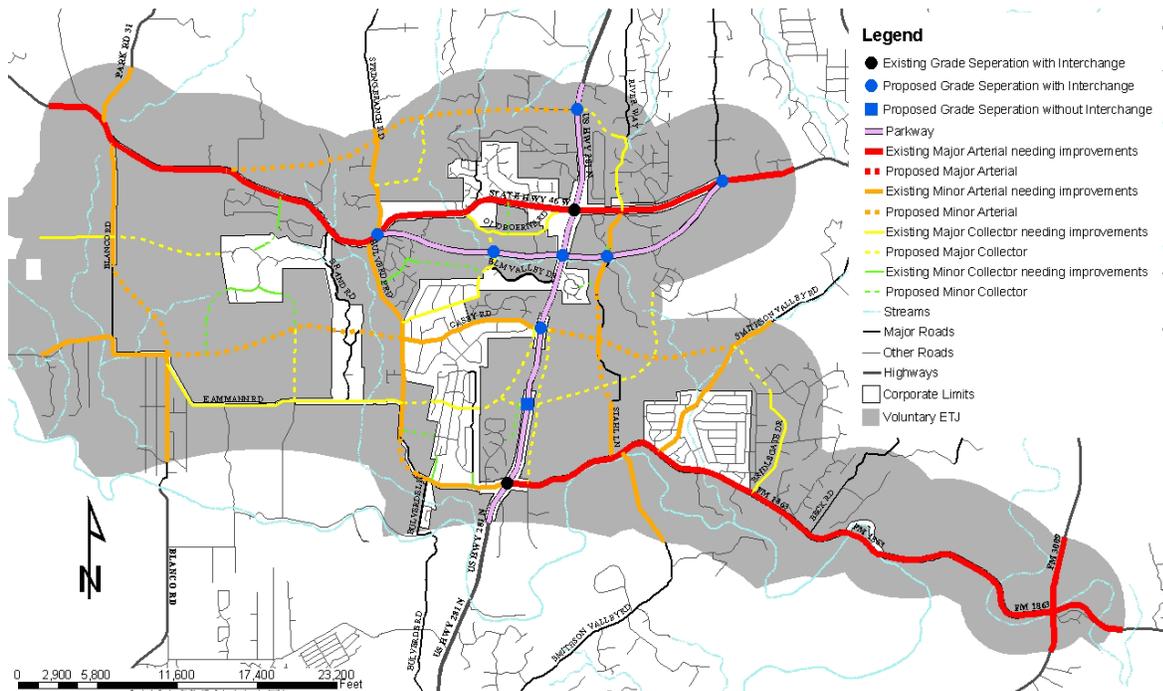
A highlighted conclusion in Chapter 6 of that Plan sums up the vision for the future regarding transportation in the City of Bulverde. It reads as follows:

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**“Bulverde has a transportation network that enables its citizens to ‘get around’ safely and conveniently, but whose design standards help retain the community’s rural Hill-Country ambience.”**

Below is the Major Thoroughfare Plan presented in the Sunrise 2025 document. It is the goal of this 2035 version of the Bulverde Transportation Master Plan to update and improve upon the plan presented in the 2004 version of the Sunrise 2025 Plan. With that as a backdrop, this document begins with some background information; a statement of the goals of the Transportation Study and resulting Transportation Master Plan; a definition of the study area and study elements; and a review of the current plans in place by the City of Bulverde (The City), Texas Department of Transportation (TxDOT), Comal County (the County), and the Alamo Area Metropolitan Planning Organization (MPO or AAMPO).

**Figure 1. Major Thoroughfare Plan from the Sunrise2025 Plan: The Comprehensive Plan (Dated 2004)**



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## 1.1 Transportation Planning Process

The transportation planning process is an important endeavor for a community. The process can allow the city residents and business owners an opportunity to collectively visualize the long term future for the City. This planning process is usually known as a Transportation Study.

Such a Study generally consists of an initial phase, preliminary phase, decision phase, and follow-up phase. The initial phase includes committing to the development of or the update of the current Plan, and agreeing to dedicate the resources necessary to conduct the Study and prepare the Plan. The next phase, known as the preliminary phase, identifies the goals and objectives of the Study, defines the study process and schedule, determines and provides the specific resources needed, and analyzes challenges, opportunities, and risks in conducting the Study.

The development of goals and objectives for the long-range transportation plan, the specific strategies to consider, and the policy issues that need to be addressed are part of the next step in the process. During this decision phase, significant interaction with the governing body and stakeholders leads to the creation of a long term vision for the community, and encourages the Council to take advantage of every opportunity to achieve that vision over the next twenty years. The decision phase also includes identifying alternative solutions, defining objectives and actions, preparing the Plan Map and Summary Report, gaining community support, and securing the acceptance and/or approval of the Transportation Master Plan (TMP or Plan) by the City of Bulverde City Council.

Implementation of the Plan occurs in the follow-up phase. The key to success in this phase of the process is to take actions on a daily and weekly basis to bring about the roadway improvements and other transportation elements included in the Plan. Also in this phase is the planned and purposeful tracking and monitoring of the planned improvements, feedback from and interaction with community stakeholders and residents, and the adjustments to the Plan on a regular basis, say at least every two years. One way to accomplish the tracking and monitoring in future years is to create a direct tie each year to the City's annual operating budget and Capital Improvement Program.

### 1.1.1 Study Goals

The horizon year for this 2015 Bulverde Transportation Study and Master Plan is **2035**. The City Council goals that guide the Transportation Study and Master Plan are the following:

- Update Chapter 6, Transportation of the Sunrise 2025: Comprehensive Plan.
- Develop a short and long term plan for improving the transportation infrastructure in the City of Bulverde and in its Extra-Territorial Jurisdiction (ETJ).
- Provide multi-modal solutions for the growing demands for transportation and mobility in and through the community.
- Prepare GIS-based maps that reflect the Transportation Master Plan, and make those available to the City for daily use.
- Address the needs for highway improvements in the area, particularly on US 281, SH 46, and FM 1863, and coordinate with Comal County and TxDOT officials to ensure funding for and implementation of those improvements.

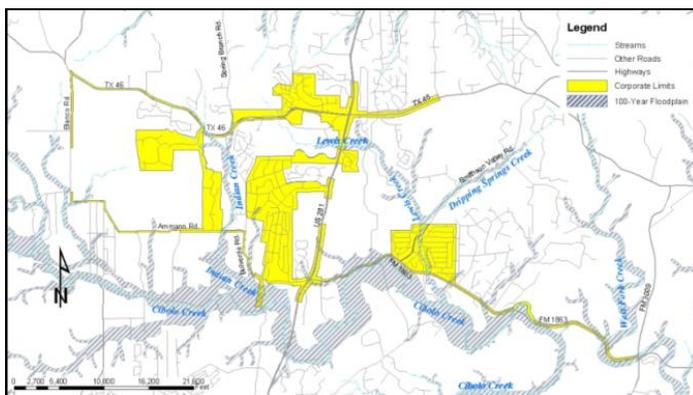
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- Review plans of other groups and agencies and include the applicable portions of those plans and study results into this Transportation Master Plan.
- Assist in informing the residents, business owners, stakeholders, and other interested persons about the Plan and its recommendations.
- Make recommendations for funding methods, implementation strategies, and policy initiatives that will aid the City and other agencies to implement the transportation network defined in this Transportation Master Plan.

## 1.1.2 Study Area

The Study Area covered by the 2015 Bulverde Transportation Master Plan includes the City of Bulverde Extraterritorial Jurisdiction (ETJ) boundaries that were in effect when the transportation planning process started in 2014. Please see **Figure 2** for the delineation of the City of Bulverde City Limits (and Drainage Ways), and **Figure 3** for the boundaries of the Study Area which coincides with the current City of Bulverde Extra-Territorial Jurisdiction (ETJ) boundaries.

**Figure 2. City of Bulverde City Limits and Drainage Ways (2014)**



**Figure 3: City of Bulverde Extraterritorial Jurisdiction (ETJ) Boundaries**



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Since the city has jurisdiction over the study area for subdivision requirements within the City Limits and its ETJ area, state law and the City's development ordinances require city approval of any development in the ETJ areas. Therefore, since these areas will be reviewed for development, it is essential that the Transportation Master Plan (TMP) encompass these same areas.

In addition, the TMP provides residents and businesses in the City and its ETJ information about what the City intends to do when the areas within the ETJ are annexed to the City. Generally, Transportation Master Plans have a 20-25 year horizon and need to be reviewed on a regular basis (say bi-annually) to determine if all elements are on track and if there are needs for adjustment. This may occur because of new city regulations, new state statutes, or high rates of growth. Every five to six years, a thorough review should be conducted, and the Transportation Master Plan and its associated maps should be updated and ratified by the City Council.

### **1.1.3 Study Elements**

The Transportation Master Plan contains the following study elements:

- Reviews of Previous Studies;
- Development of Strategic Direction and Vision Statements for the Plan;
- Public Involvement Process;
- Existing and Future Conditions;
- Current Transportation System Characteristics;
- Land Use, Population and Employment Characteristics;
- Existing and Future Traffic Conditions;
- Master Transportation Plan;
- Transportation Plan Implementation Strategies;
- Transportation Plan Funding Alternatives.

## **1.2 Review of Previous and Active Studies**

This section provides summaries of several previous studies conducted in and around the study area. These studies include the 2025 Comprehensive Plan for the City of Bulverde (Sunrise 2025) and the Alamo Area MPO Mobility 2040.

### **1.2.1 City of Bulverde 2025 Comprehensive Plan**

Sunrise 2025, the first Comprehensive Plan for the City of Bulverde, was adopted by the City Council in 2004. The Plan was developed to provide the Mayor and City Council, the Planning and Zoning Commission, City management and staff, property owners, residents, developers, and other community stakeholders with a long-range guide for the future growth and development of the City of Bulverde and the surrounding area. The City Council commissioned a comprehensive plan to help position the community for the future while protecting, maintaining and enhancing the City of Bulverde's unique quality of life and environment.

The planning process included an extensive citizen involvement program to incorporate comments, ideas, and directions from the citizens. The land use/development, growth management and

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transportation elements discussed growth issues that currently affect the study area for the 2014 Bulverde Transportation Master Plan.

### **1.2.2 Mobility 2040 (Alamo Area Metropolitan Transportation Plan)**

Mobility 2040 is an active plan that is currently being developed by the Alamo Area Metropolitan Planning Organization (AAMPO). The plan is an update of the 2035 Metropolitan Transportation Plan to meet the Federal requirements for MPOs to identify goals, strategies, and transportation projects for 25 years into the future, and to update that Plan every five years. The planning process being used to update the plan relies upon the selection of a growth scenario for the Alamo Area MPO region.

A final 2040 growth scenario for the MPO region was adopted by the Alamo Area MPO Policy Board and representatives from the individual counties included in the MPO area. The MPO Region includes Comal County where the study area for the Bulverde Master Transportation is located.

### **1.2.3 Comal County Plans**

Although Comal County maintains a high quality GIS-based mapping system for the County including the City of Bulverde, there is not a specific plan for the development and expansion of the County Road system. The County has a map identifying the existing major county roads on which the County performs routine maintenance. Within the Bulverde ETJ, but outside the Bulverde City Limits, there are several County Roads that are integrated into this Transportation Master Plan. Those roadways include portions of Bulverde Road, Ammann, Smithson Valley Road, and Spring Branch Road. As the City grows, the City will take over the maintenance of many of these roadways, and they will be classified as City streets. In the interim, there is a need to plan for improvements on these roads jointly with Comal County, and to share funding resources to accomplish upgrades.

### **1.2.4 TxDOT Plans**

The TxDOT plans for state and federal highway routes in the area are described in more detail in later sections of this TMP.

## **2.0 Development of the Strategic Direction, Vision Statement, and Goals and Objectives**

### **2.1 Development of the Strategic Direction**

This section describes the development of the vision statements, goals and objective, and strategic direction for the Plan. In response to rapid growth in the community of Bulverde and surrounding area in recent years and the prospect of that accelerating in the near future, City of Bulverde leaders have undertaken a process to analyze, assess, and develop strategies to address the increasing demands of this growth. That includes the impacts on the City of Bulverde's infrastructure, as well as the impacts of that growth and increased traffic on municipal planning, public health and safety, education, workforce expansion, and future economic development. The City Manager recommended employing a Consultant to develop the 2035 Transportation Master Plan with advice and strategic direction being provided by the City Council and the City Manager. HNTB Corporation was employed to perform the study, and that firm began the Transportation Study in April 2014.

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The first priority for the Study was to conduct a leadership retreat with the Mayor, City Councilmembers, Economic Development leaders, and members of the Planning and Zoning Commission. That meeting would establish the overall goals for the study, and set the schedule and agenda for action. But more importantly, the leadership retreat would set the vision, goals and objectives, and direction for the resulting Transportation Master Plan. To achieve the most effective plan, it was decided that public involvement and public and stakeholder input was a critical element of the Study process.

### **2.1.1 The Public Involvement Process**

A broad range of activities were planned to provide continuing opportunities throughout the study process for community leaders, residents, business owners, and stakeholders in the City and its ETJ to receive information and provide input and feedback to public officials about the issues being addressed in the Study and in the Transportation Master Plan. The City and other supporting agencies included information in area newsletters, media releases, and on the City's web site. Public meeting opportunities were provided as the study progressed and the stakeholders were asked for their input and guidance. Comments and suggestions from local residents, commuters, business owners or property owners were captured, summarized, and reviewed to ensure that input was considered and appropriately included in the study results. The combination of these various strategies created the "blueprint" for defining and recording the need for transportation improvements for Bulverde for the next twenty years. The following is an overview of the outreach activities focused on city leaders, the public, and other area stakeholders.

The process began by hosting a strategy and visioning session during the leadership retreat on July 1, 2014 with City Council, Planning & Zoning and Economic Development leaders, and then moved on to meetings with two focus groups in charrette settings on July 9 and 10, 2014. Each focus group included a mix of community leaders representing various state, regional and local governmental agencies, utility companies, the Chamber of Commerce, the Bulverde-Spring Branch Economic Development Foundation (BSB-EDF), landowners, major developers, educational leaders, transportation agencies, and the City's Consultant, HNTB Corporation. HNTB Leaders Tom Wendorf, PE, Vice President; Matthew Polanco; Cynthia Coss; and John German, PE, Project Director served as a resource for these meeting. Tom Wendorf summarized the issues and the Study process and served as the facilitator for these sessions. To aid the visioning effort, HNTB provided maps indicating current roadways and neighborhoods, terrain and drainage features, current population distribution, employment density by area, and traffic volumes.

The culmination of the planning process led to a Draft Transportation Master Plan that was unveiled at a joint City Council and Planning Commission meeting on September 8, 2014, and was further presented and discussed at a Transportation Forum sponsored by the City of Bulverde, TxDOT, the AAMPO, Comal County, and the Bulverde Spring Branch Economic Development Foundation on September 16, 2014. Public input was received at both meetings, was summarized, and later reviewed. The TMP was further tweaked to address the issues raised. Over 125 persons attended the Transportation Forum and the joint City Council-Planning and Zoning Commission meetings.

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Through this public involvement process, the residents of the City and its Extra-Territorial Jurisdiction (ETJ) provided input about their issues, concerns and future aspirations for their community. This input was used as a basis for the recommendations included in the City of Bulverde Transportation Master Plan (TMP). Comments made by attendees at the Transportation Forum are summarized in Appendix A at the end of this report.

### 2.1.2 Transportation Leadership Retreat

A transportation leadership retreat that included a strategy and visioning session was held July 1 at City Hall and included the participation of the Mayor and City Council, Planning & Zoning Commissioners and Economic Development representatives.



The City of Bulverde leadership seeks to manage growth in a manner that provides for thoughtful, well planned development, while preserving the natural beauty of the Hill Country community. Several issues were discussed during the session that helped to support the development of a strategic vision:

- Multi-modalism. Developing multimodal infrastructure that includes alternative methods of transportation such as hike and bike trails.
- Connectivity. Creating east-west connectivity and north-south parallel roadways that will help relieve congestion as well as making improvements to arterials.
- Growth. Facilitating and supporting growth of commercial districts, Bulverde Village, residential areas, among others.
- Congestion relief. Making traffic congestion relief a priority and developing an interim thoroughfare plan.
- Collaboration. Collaboration with local, county and state entities, the Alamo Area Metropolitan Planning Organization, as well as the developer community.
- Preservation. Designating “scenic roadways” in the community during the planning process to protect the natural, scenic beauty of the Hill Country views.
- Asset promotion. Leverage the community’s assets to make Bulverde a destination of choice and enhance economic development. This would include strategic placement of wastewater treatments plants and promotion of the “giga region” high-fiber optic network as an asset.
- Access. Increasing access to emergency services by pulling Emergency Service Districts into the transportation plan. Also by increasing access to subdivisions.

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### 2.1.3 Transportation Focus Groups (Charrettes)

Following the Transportation Retreat with City leadership, two focus groups (charrettes) were held with community stakeholders to gather feedback on the planning process and discuss different perspectives on issues facing Bulverde.

The first focus group (charrette), held July 9, 2014 included attendees from the Texas Department of Transportation, Comal County, Fire and EMS, Alamo Area Metropolitan Planning Organization, parks and recreation, property owners' associations, Bulverde Village, Bulverde-Spring Branch Chamber of Commerce, and realtors' associations. Feedback from this group centered on the following issues:

- Incorporating a thoroughfare plan as the backbone of the transportation master plan. The City is lacking an updated thoroughfare plan that takes into account new and future capacity beyond existing facilities.
- Stressing the importance of being mindful of culture. Addressing the urban vs. rural mindset and the challenges this brings along with it.
- Addressing fiscal constraints, leveraging federal funding, and establishing partnerships. Local entities have certain funding matches. The community is in need of an equitable means that will help maintain roads that not only the city but the region uses.
- Strategic placement of wastewater treatment plants.
- Home rule as an opportunity to annex commercial properties that can stabilize the tax base. In addition, there is a need to address the lack of land use authority and incompatible land uses.
- Right-of-way acquisition as development occurs.

The second charrette, held the following day on July 10, 2014 included attendees from public utilities, banks, the Guadalupe-Blanco River Authority, water service companies, developers, realtors, and the Bulverde-Spring Branch Economic Development Foundation. Topics discussed during this session included the following:

- Determining the mobility vs. access balance for Bulverde.
- Building a consistent message on transportation. Ensuring the message is not hijacked and carrying out stakeholder engagement to build consent.
- Strategic wastewater treatment plant placement.
- Maintaining a proactive and collaborative City Council and Planning & Zoning Commission that guides quality growth using fair and consistent regulations.
- Addressing the lack of a regional funding mechanism for transportation. How does a community implement a transportation master plan when there are limited funding mechanisms to financially support the planning, construction, and maintenance activities for the roadway, and facilities in that Plan? Does a system that is implemented piecemeal deliver the same effectiveness as a whole system?
- Right-of-way acquisition. The development community is ready to work with the City and County by dedicating ROW and/or easements, as needed.

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- Importance of developing an interim thoroughfare plan. Support from public utility leaders and developers is important.

## 2.2 Vision Statement and Goals and Objectives

The main vision statement that was developed as a result of these meetings can be stated as follows:

**“Effectively move people through and within a community of distinction while capitalizing on and protecting the natural scenic beauty of the hills and trees that compose the front porch of the hill country.”**



Goals and objectives derived from this process include:

- **establishing a thoroughfare plan;**
- **facilitating growth by promoting regional assets, strategically placing wastewater treatment plants, collaborating with other governmental entities and the developer community;**
- **addressing the lack of a regional funding mechanism and establishing partnerships to leverage local matches;**
- **acquiring rights-of-way;**
- **increasing access to emergency services; and**
- **preserving the scenic character of the community as it grows.**

The next sections describe the results of the Transportation Study. The data was collected with the intent to define the current conditions in the Bulverde community, and to understand the nature of the expected growth and development of the community over the next twenty to twenty-five years. The results are described below.

## 3.0 Existing and Future Conditions

This section describes the existing and future transportation network, land uses, population and employment estimates, and transportation conditions for the study area. The existing conditions and forecasted future conditions were based on existing plans, 2010 U.S. Census data, and data from the adopted Alamo Area MPO regional model. A final 2040 growth scenario for the MPO region was adopted by the Alamo Area MPO Policy Board and representatives from the individual counties included in the MPO area, including Comal County where the study area for the Bulverde Master Transportation is located.

### 3.1 Transportation System Characteristics

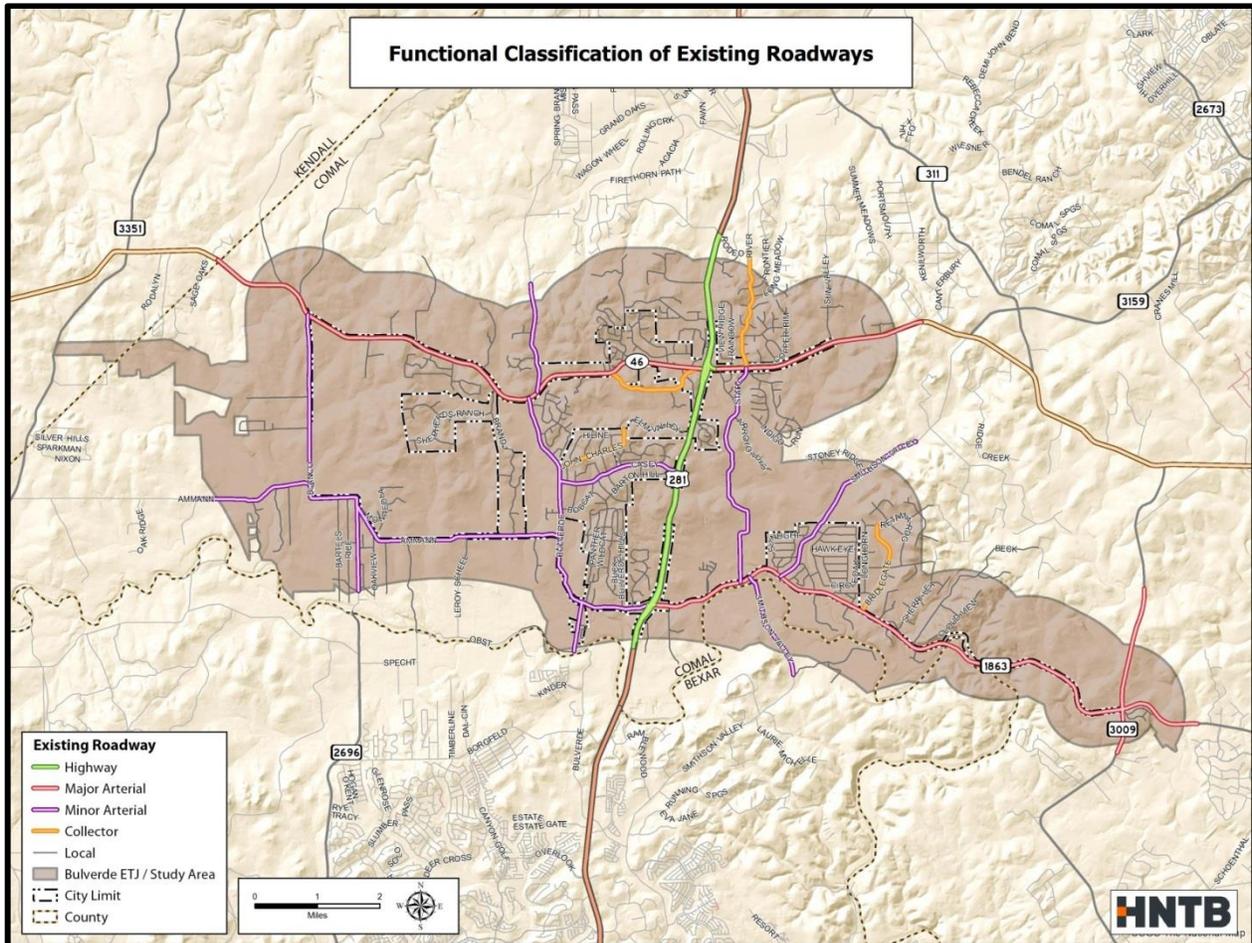
This section summarizes the characteristics of the existing and future transportation system.

# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

## 3.1.1 Current Transportation Network

In **Figure 4** below, the current transportation network in Bulverde is presented. That network in 2014 is predominantly roadways. **Figure 4** also illustrates the classification of the existing roadways.

**Figure 4. Functional Classification of Existing Roadways**



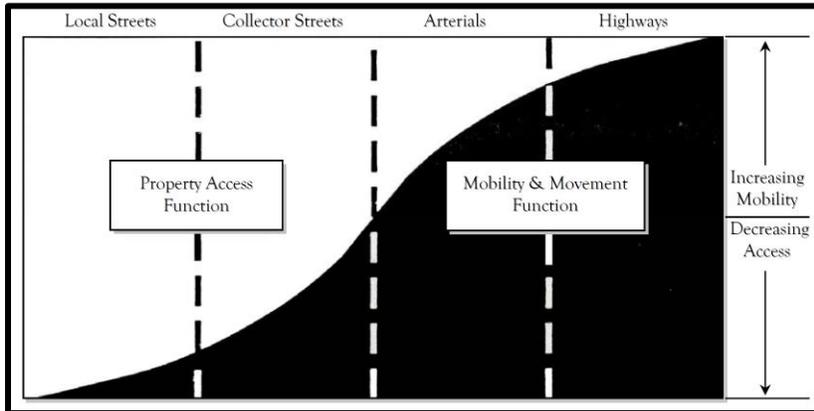
Those existing roadways and their specific classifications and other characteristics are described in more detail later in the report.

## 3.1.2 Roadway Classification

Transportation networks include roadways of various sizes, design and function. Functional classification is the process of grouping roadways into classes according to the character of services they are intended to provide. Their functions can be differentiated by comparing their general ability to provide mobility with their ability to provide access to adjacent properties or areas. Roadways in this chapter are classified according to the functional classification system shown below that includes primary and secondary highways, local arterials (major and minor), collector streets, and local streets. **Figure 5** presents the type of roadways in the study area and the relationship of each type to the access and mobility levels provided. The source for this graph is FHWA, 1992.

# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

**Figure 5: Functional Classification Types –Mobility versus Level of Access**



**Table 1: Existing Transportation Network and Specific Characteristics of Each Roadway within City of Bulverde ETJ\*\***

Roadway Name	From	To	Functional Classification	ROW	Typical Section	No. of Lanes	Speed Limit	Distance Miles
US 281	S ETJ Limit	N ETJ Area	Primary Highway	180'–450'	140'–400'	4	65	6.3
SH 46	W ETJ Limit	E ETJ Limit	Primary Highway	100 –280'	30'–60'	2-4	30-65	10.9
SH 1863	US 281	E ETJ Limit	Secondary Highway	80'–150'	30'	2	55	8.79
FM 3009	S ETJ Limit	N ETJ Limit	Secondary Highway	100'–150'	30'	2	55	1.6
Smithson Valley Rd	S ETJ Limit	N ETJ Limit	Major Arterial	35'–250'	24'–30'	2	30	3.77
Stahl Lane	SH 1863	SH 46	Minor Arterial	40'–75'	24'–30'	2	35	3.83
Bulverde Road	US 281 @ FM1863	SH 46	Major Arterial	50'–80'	30'–40'	2	35	6.4
Amman Road	Blanco Road	W ETJ Limit	Major Arterial	35'–70'	24'–30'	2	35	5.1
Blanco Rd (FM 2696)	S ETJ Limit	SH 46	Secondary Highway	45'–65'	24'–30'	2	45	4.5
Spring Branch Rd	SH 46	N ETJ Limit	Minor Arterial	50'–60'	24'–30'	2	35	1.46
Casey Road	US 281	Bulverde Rd	Minor Arterial	60'–80'	24'–30'	2	30	1.98
Old Boerne Rd	SH 46	SH 46	Collector	50'–85'	24'–30'	2	30	1.64
Bulverde Lane	Bulverde Rd.	Cibolo Creek	Collector	45'–60'	24'–30'	2	30	0.9
Bulverde Crossing	SH 46	US 281	Collector	60'–80'	40'–44'	2	30	0.4
Bridlegate Drive	SH 1863	Retama Ridge	Collector	45'–60'	24'–30'	2	30	1.6
John Charles Rd	Bulverde Rd	Hiline Drive	Collector	55'–90'	24'–30'	2	30	1.25

\*\*The Bulverde ETJ is the study area for the Bulverde Transportation Master Plan. Source: HNTB, 2014

### 3.1.3 Existing and Future Road Network

The existing and future road network descriptions are based on several sources, including the City of Bulverde 2025 Comprehensive Plan (Sunrise 2025) and the Alamo Area MPO regional model. **Table 1** above presents the existing transportation network and the specific characteristics of each major

## CITY OF BULVERDE TRANSPORTATION MASTER PLAN

roadway in the City of Bulverde ETJ. This data was collected from a variety of sources by HNTB personnel as a part of the Transportation Study.

### ***Existing Primary and Secondary Highway System***

The study area includes two primary highways. They are US Highway 281 (US 281) and State Highway 46 (SH 46). US 281 has a total length of approximately 6.3 miles while SH 46 covers 10.9 miles within the Study Area (see **Table 1**). US 281 is a four-lane divided highway that is located in the central part of the study area. The ROW for US 281 varies between 180 and 450 feet, and the typical roadway section varies from 140 to 400 feet. SH 46 ROW varies from 100-120 feet for most of the route, but increases to 280 feet in at least one area. The SH 46 roadway varies from a two-lane roadway that is 30 feet wide to a four-lane roadway that is as much as 60 feet wide. The speed limit varies from 30-65 as SH 46 passes through the City's ETJ.

There are three secondary highways listed, including FM 1863, FM 3009, and FM 2696 (Blanco Road).

- FM 1863 is a primary east-west route paralleling SH 46 and extending to the east toward New Braunfels beginning at US 281 and Bulverde Road and extending beyond FM 3009 to the eastern ETJ limit.
- FM 3009 is found in the far eastern extreme of the Bulverde ETJ, and it connects Schertz in the south to SH 46 east of Bulverde. Only 1.6 miles of this roadway (just north and south of FM 1863) is currently in the Bulverde ETJ.
- FM 2696 (Blanco Road) is a two-lane secondary highway that is located in the eastern portion of the study area between the southern ETJ limit and SH 46.

These roadways are currently two-lane rural type highways that are maintained by TxDOT. More details about these roadways is provided in **Table 1** above in the same manner as the Primary Highways.

### ***Existing Major Arterial Network***

The study area includes three major arterials (see **Table 1**), including Smithson Valley Road, Bulverde Road, and Ammann Road. Here is a brief description of each one:

- Smithson Valley Road is a two-lane major arterial that parallels US 281 and is located in the eastern portion of the study area, connecting to the City of San Antonio on the south and extending to the north from FM 1863 and connecting to SH 46 near Smithson Valley High School.
- Bulverde Road is a two-lane major arterial that is located in the central portion of the study area and that traverses the study area from US 281 at FM 1863 to SH 46.
- Ammann Road is a two-lane minor arterial that is located in the western portion of the study area between the western study area limit and Bulverde Road.

These two primary highways, three secondary highways, and three arterials carry the bulk of traffic that occurs on roadways in the Bulverde ETJ. They provide the primary structure for the City of Bulverde's Transportation Network. The following minor arterials and collectors provide mobility for various areas of the City, but they also function to connect those areas to the primary roadway network while

## CITY OF BULVERDE TRANSPORTATION MASTER PLAN

providing access to residential areas, commercial developments, and undeveloped agricultural and ranching properties.

### ***Existing Minor Arterial Network***

The study area includes three minor arterials, including Stahl Road, Casey Road, and Spring Branch Road. The characteristics of these roadways are defined in **Table 1**. The following is a brief description of each.

- Stahl Lane is a two-lane minor arterial that is located in the eastern portion of the study area between SH 1863 and SH 46 that parallels and is in close proximity to US 281.
- Spring Branch Road is a two-lane minor arterial that is located in the northwestern portion of the study area between SH 46 and the northern limit of the study area; and
- Casey Road is a two-lane minor arterial that is located in the central portion of the study area between Bulverde Road and US 281.

### ***Existing Collector Network***

The study area includes five collectors, including Old Boerne Road, Bulverde Crossing, Bulverde Lane, Bridlegate Drive, and John Charles Drive (see **Table 1**).

- Old Boerne Road is a two-lane collector in the northern portion of the study area that starts and ends at SH 46.
- Bulverde Crossing is a wide two-lane collector that connects SH 46 to US 281 south of the intersection of US 281 and SH 46, and provides access to commercial properties as well as the Central Library.
- Bulverde Lane is a two-lane collector in the southern portion of the study area extending from Bulverde Road in the downtown area to Obst Road at Cibolo Creek. The airport flanks this road on the east and the Bulverde Community Park on the west.
- Bridlegate Drive is a two-lane collector in the eastern portion of the study area between SH 1863 and Retama Ridge.
- John Charles Drive is located in the central portion of the study area between Bulverde Road and Hiline Road.

The ROW of these collectors vary between 50 feet and 90 feet, and the typical sections varies from 24 feet to 30 feet (see **Table 1** for more details about each roadway).

### ***Existing Local Roads***

Local streets are all of the remaining roads in the study area. Local roadways vary in type and function. Many serve as access for residential and commercial properties, while other local roads bring access to rural type adjacent properties, including undeveloped land, farmland, and ranch land. These local roads are critical to the operation of the overall transportation network by providing access to all properties in Bulverde, but usually carry low traffic volumes and are not considered a high priority for upgrading. They do need routine maintenance to protect and preserve the roadway structure and riding condition.

## **3.2 Land Use and Socioeconomic Characteristics**

This section summarizes existing and future land use and socioeconomic characteristics in the study area. The socioeconomic characteristics include existing and future population and employment.

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### 3.2.1 Existing and Expected Land Use

Today, land use in the City of Bulverde's city limits is primarily single-family residential with commercial activity along US 281, SH 46, SH 1863, and Bulverde Road. The one multifamily zoned land use is located in the Bulverde Estates subdivision, and there are a few agricultural districts located along SH 46 and SH 1863. The land uses in the remaining part of the study area are primarily undeveloped with single-family and ranch land uses. **Figure 6** shows the existing zoning and planned development within the City of Bulverde's city limits. By state law, zoning controls are only allowed inside the city limits, and not in the City's ETJ. The primary control that the City of Bulverde has in the ETJ is the subdivision ordinance.

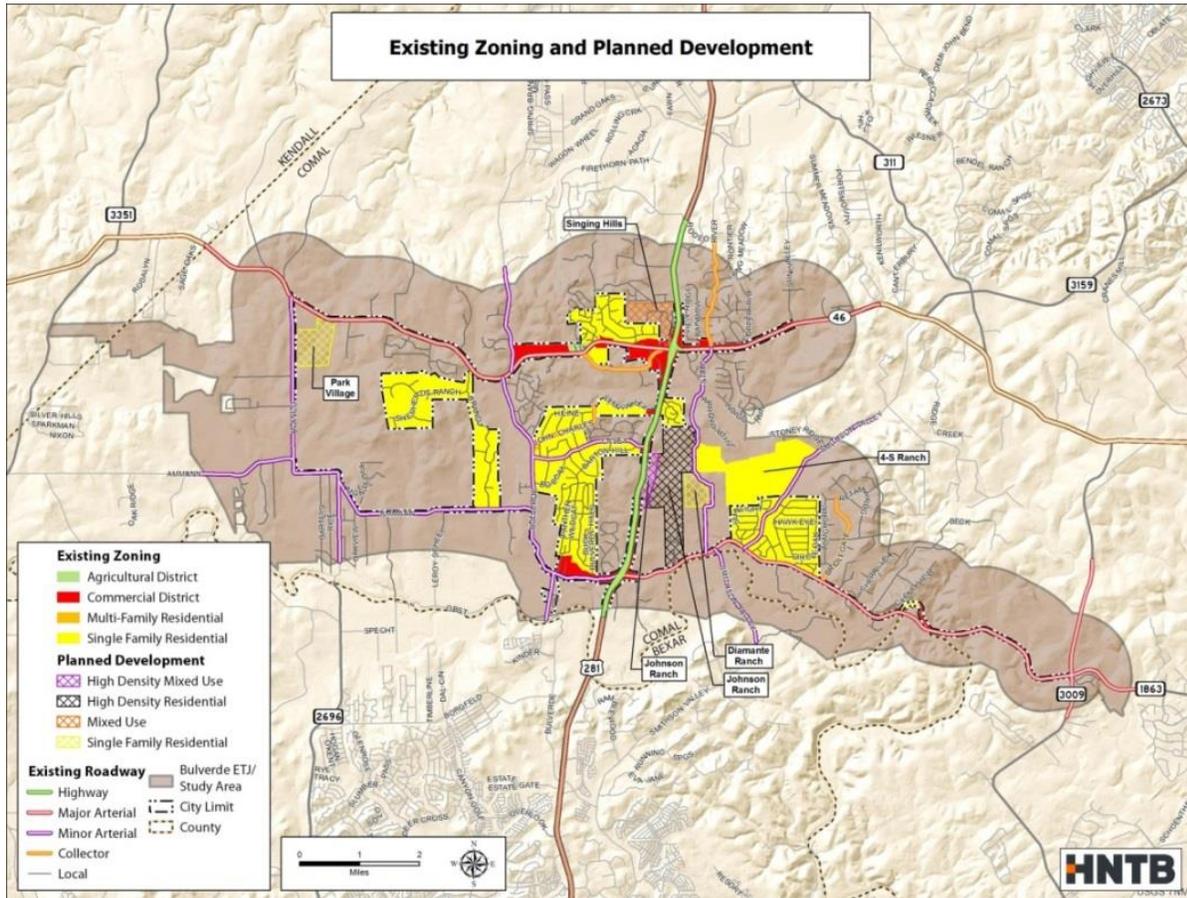
The primary driver of future growth in the study area will be the demand for suburban housing north of the San Antonio metropolitan area. As the areas within the Bulverde City Limits are built out, residential and commercial growth are expected to shift to the undeveloped portions of the study area outside of the Bulverde City Limits and into the Bulverde ETJ. There are four proposed new developments in the planning stages that are located in the study area outside of the City of Bulverde City Limits (see Planned Development in **Figure 6**). These four developments include the following:

- Johnson Ranch is located approximately 1.3 miles northeast of the intersection between SH 1863 and US 281 in the eastern part of the study area. The 767.3 acres of development would include 657 acres of high density residential land uses and 110.3 acres of high-density mixed-use land uses.
- Diamante Ranch is located to the east of Johnson Ranch approximately 1.6 miles northeast of the intersection between SH 1863 and US 281 in the eastern part of the study area. The 133.4 acres of development would include single-family residential land uses.
- Singing Hills is located to the northeast of the intersection of SH 46 and US 281 in the northern part of the study area. The 250-acre development would include a mix of single-family residential and commercial land uses.
- Park Village will be located approximately 0.7 miles to the southeast of the intersection between SH 46 and Blanco Road. The 277-acre development would include 644 single-family residential units.
- 4-S Ranch, which is located north of FM 1863, east of Stahl Road, and west of Spring Branch Road, is a 780-acre ranch property that will be developed to include 1800 single family homes, 360 apartment units, a church, and a school plus amenities for about 4500 people.

The City staff is working closely with the developers of these tracts and are expecting to see the goals and planning principles set out in the 2025 Sunrise Comprehensive Plan and this Transportation Master Plan achieved. See **Figure 6** below for the locations of these developments. The City expects to annex these tracts into the City as the areas develop and the homes are constructed.

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**Figure 6: Existing Zoning and Planned Development**



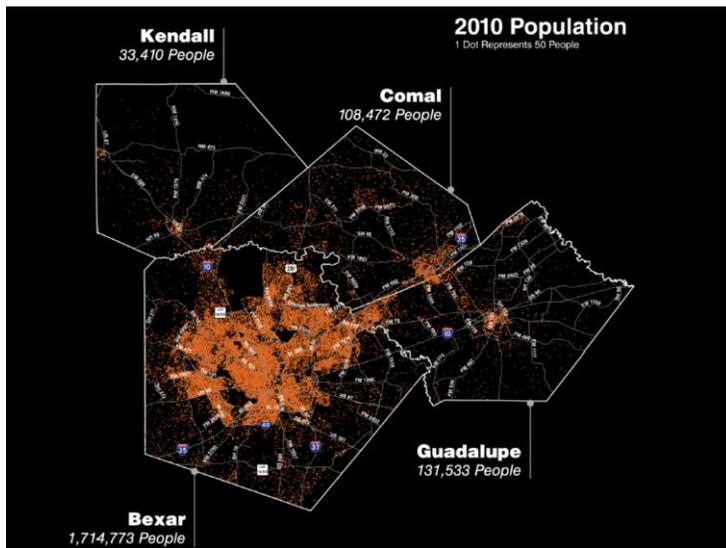
### 3.2.2 Existing and Future Population and Employment

The existing population and employment statistics in the study area are based on 2008 – 2012 five-year average U.S. Census data and the forecasted future population and employment are based on the 2040 socioeconomic data from the Alamo Area MPO regional model. The graphic below depicts the current and expected population in the region for Comal County and each of the other three nearby counties, Bexar, Kendall, and Guadalupe. This data indicates that Comal County will grow from 108,472 to 260,133, an increase of 151,661 people, or a 140% growth rate. The neighbor, Bexar County, will see its population increase by over 1.0 million people in the same time frame, for a 60% growth rate. These are projections that confirm that western Comal County will also grow rapidly, as will the City of Bulverde’s population.

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**Population Distribution in Comal County and the Three Adjacent Counties (2010)**

	Population Forecast				Employment Forecast			
	2010	2040	Growth	%	2010	2040	Growth	%
<b>Bexar</b>	1,714,773	2,747,163	1,032,390	60%	781,905	1,448,533	666,628	85%
<b>Comal</b>	108,472	260,133	151,661	140%	42,740	108,553	65,813	154%
<b>Guadalupe</b>	131,533	334,026	202,493	154%	33,929	94,288	60,359	178%
<b>Kendall</b>	33,410	62,821	29,411	88%	11,902	23,083	11,181	94%



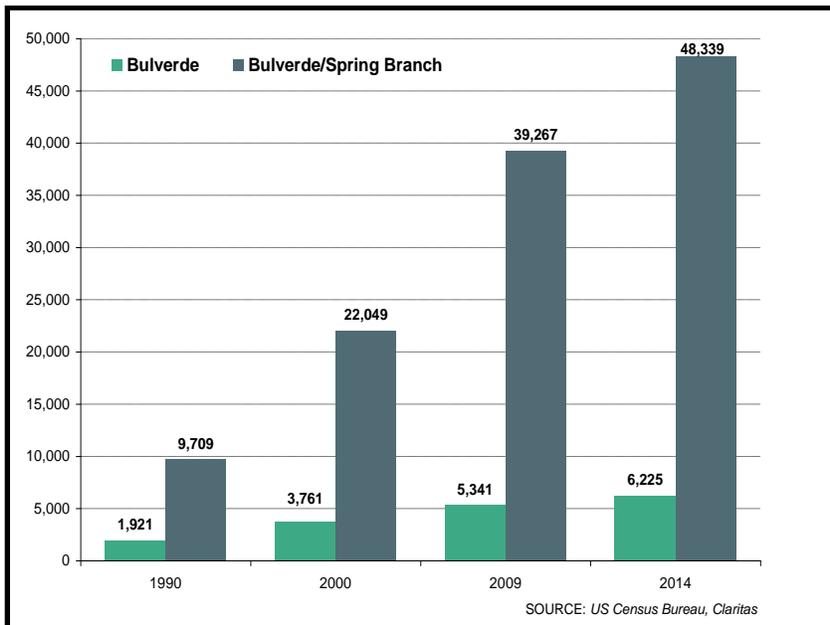
SOURCE: ALAMO AREA MPO, 2014

**Existing Population**

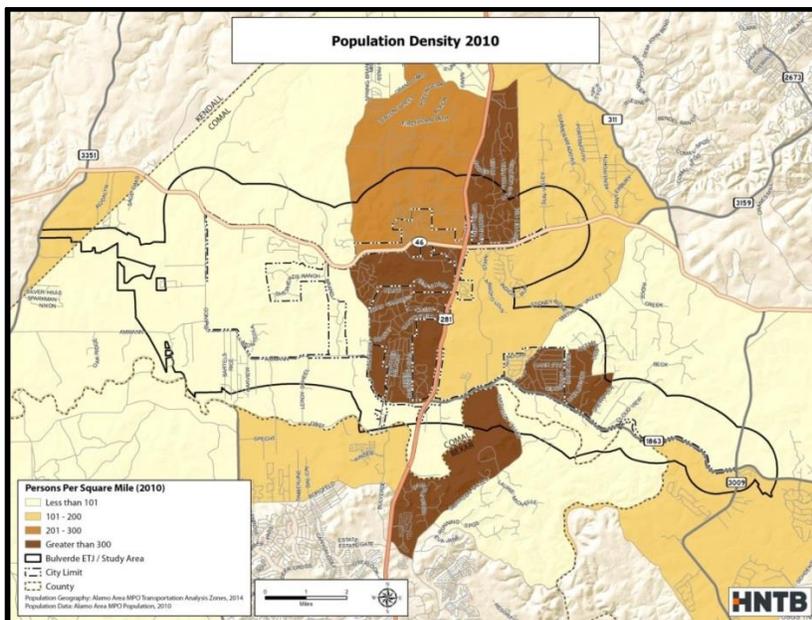
**Figure 7** below presents the 2008 – 2012 five-year average population density within the study area. Between 2008 and 2012, approximately 10,000 people lived within the study area. The highest population densities are in the City of Bulverde’s City limits. In the 2010 Census Data, the population of the City of Bulverde was 4,630. In 2010, over 108,472 people lived in Comal County as a whole. The following graphic uses the same population data to depict the population distribution in Comal County and the three surrounding counties in the 2010 Census.

# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

## Bulverde Population Projections 2010 to 2014



**Figure 7: Population Density 5-Year Average, 2008 – 2012**



### **Future Population**

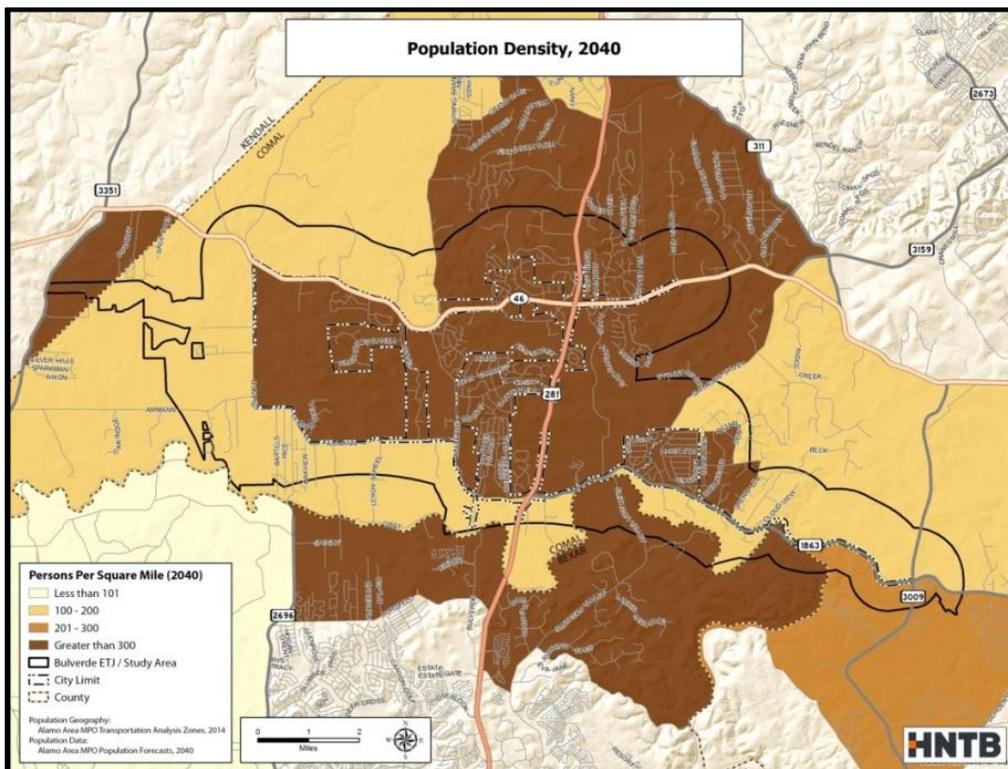
As mentioned earlier, a final 2040 growth scenario for the MPO region was adopted by the Alamo Area MPO Policy Board and representatives from the individual counties included in the MPO area that includes Comal County where the study area for the Bulverde Master Transportation is located. The

## CITY OF BULVERDE TRANSPORTATION MASTER PLAN

population of Comal County is expected to grow rapidly over the next 25 years. Using data generated by the adopted Alamo Area MPO regional model, the population of Comal County is expected to grow to over 260,000 people by 2040. The population within the study area is expected to grow to over 40,000 people by 2040, over four times more people than lived in the study area in 2010. This growth reflects the continued development of the study area.

In 2040, the MPO model shows the highest population densities within the study area continue to be found within the City of Bulverde City Limits (see **Figure 8**), though the area east and west of US 281 in the study area that is not within the City of Bulverde City Limits are expected to grow significantly. **Figure 6** showed five proposed new developments that are in planning stages and that are located in the study area outside of the City of Bulverde City Limits. These developments will initially fuel urban growth, but in the immediate future there will be other major development that will rapidly add to the population base in the Bulverde city limits and its ETJ.

**Figure 8: Projected Population Density, 2040**

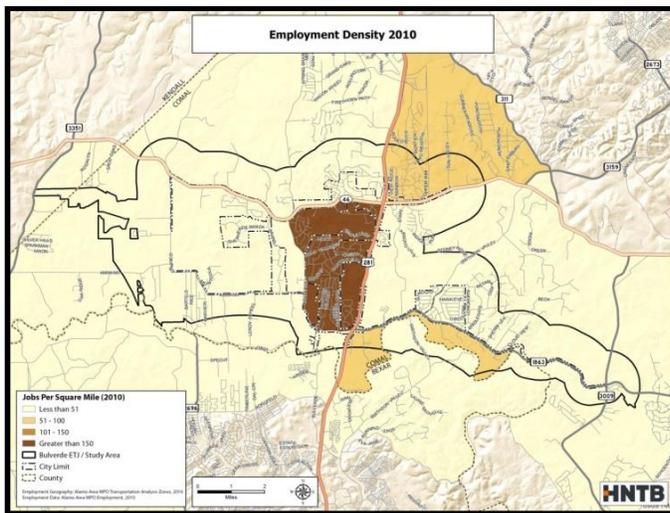


### **Existing Employment**

In 2010, total employment for Comal County as a whole was 42,733 jobs. Between 2008 and 2012, the average employment within the study area was estimated at just over 2,400 jobs. The majority of these jobs are located within the City of Bulverde's city limits and in the central portion of the study area. **Figure 9** presents the existing employment density for the study area.

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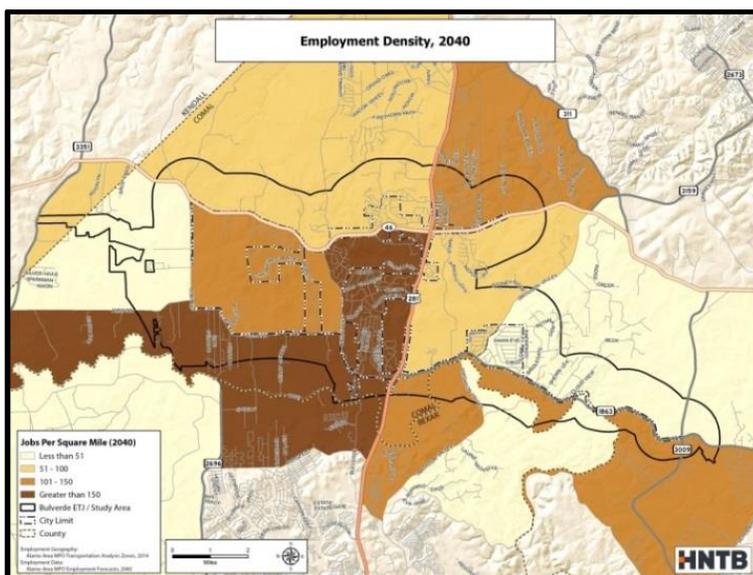
**Figure 9: Employment Density 5-Year Average, 2008 – 2012**



## ***Future Employment***

Employment in Comal County is expected to grow rapidly over the next 25 years. Using data generated by the adopted Alamo Area MPO regional model, the total employment in Comal County is expected to grow to over 108,000 jobs by 2040. The employment within the study area is expected to grow to over 6,200 jobs by 2040, over two and a half times the number of jobs in the study area in 2010. Employment in the study area is projected to grow at a fast pace, even though it is slower than population growth. In 2040, the highest job densities within the study area are projected to be significant within the City of Bulverde City Limits, through job growth in the southwestern portion of the study area. This includes the area around the Bulverde Downtown area and the local airport. (See **Figure 10**). Economic development activities should focus on this area for new businesses and commercial enterprises.

**Figure 10: Employment Density, 2040**



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## **4.0 Existing Traffic Conditions**

This section of the Bulverde Master Transportation Plan presents the current transportation conditions for the study area, including traffic volumes, roadway capacity index, and roadway level of service. The material for this section is based upon data from the Alamo Area MPO regional model and analyzed by HNTB staff.

### **4.1 Existing Traffic Volumes**

The 2014 estimated traffic volumes are based on linear interpolation of the 2010 and 2020 traffic volumes from the Alamo Area MPO regional model. Existing traffic volumes at key locations within the study area are listed in **Table 2**. The highest traffic volumes in the study area are along a major highway, US 281, which is located in the central part of the study area. The traffic volumes in the southern part of US 281 are higher than the traffic volumes in the northern part of US 281. See **Figure 11** on the next page for a depiction of the estimated average daily traffic volumes in 2014.

Another major arterial with the high traffic volumes is SH 46 which is located in the northern part of the study area. The traffic volumes in the eastern part of SH 46 are higher than the traffic volumes on the western part of SH 46. The minor arterials with the highest traffic volumes are Blanco Road and Bulverde Road which are located in the western part of the study area.

**Table 2: Traffic Volumes at Key Locations in the Study Area, 2014**

<b>Road</b>	<b>Cross Street</b>	<b>Functional Classification</b>	<b>Estimated Volume</b>
US 281	SH 1863	Highway	38,000
US 281	SH 46	Highway	22,000
SH 46	Sun Valley Road	Major Arterial	14,000
SH 46	Bulverde	Major Arterial	6,500
FM 3009	SH 1863	Major Arterial	7,800
SH 1863	Smithson Valley Road	Major Arterial	6,000
Blanco Road	East Ammann Road	Minor Arterial	5,000
Bulverde Road	East Ammann Road	Minor Arterial	5,000
Ammann Road	Persimmon Hill Road	Minor Arterial	2,800
Spring Branch Road	SH 46	Minor Arterial	2,100

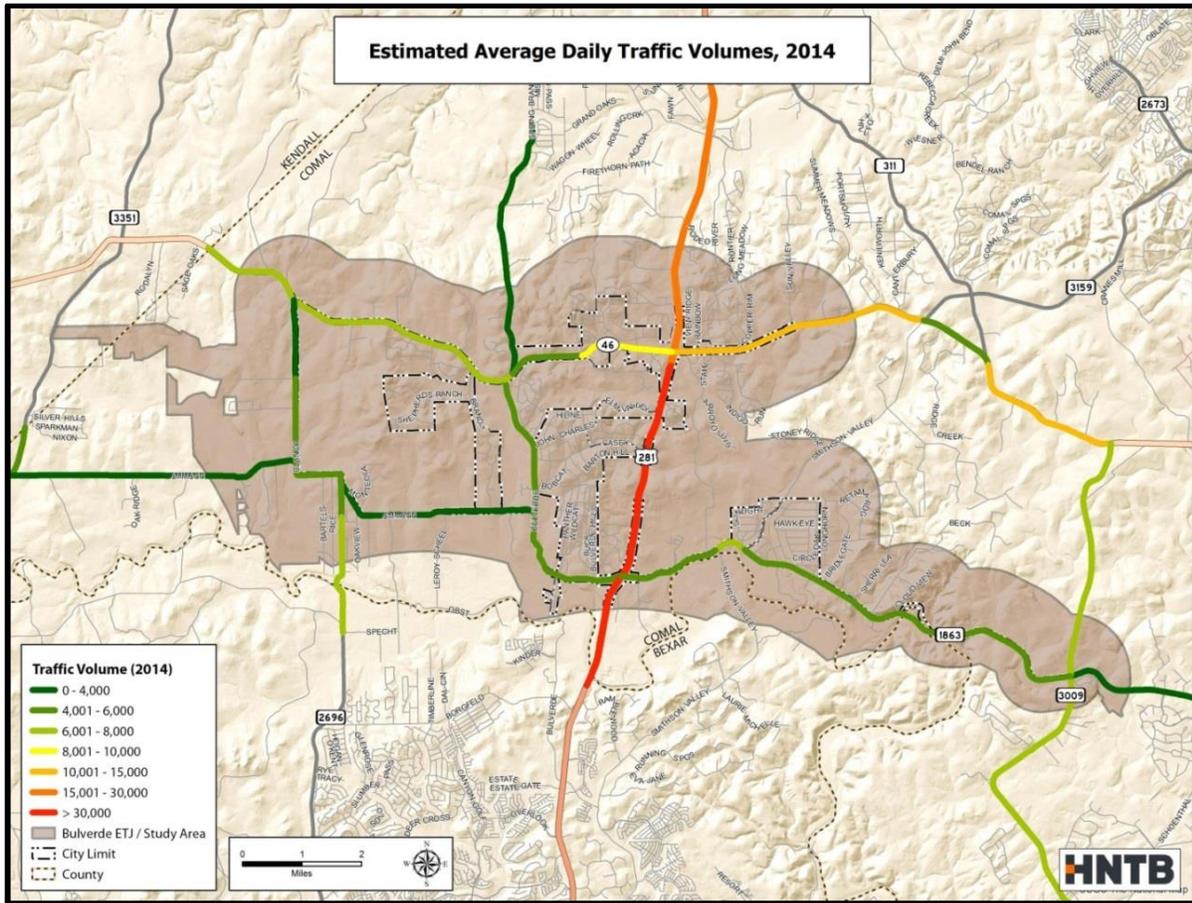
Source: HNTB, 2014

### **4.2 Existing Roadway Capacity and Level of Service**

The level of service (LOS) concept describes the degree of congestion on the roadway, and is a key indicator of roadway performance. LOS ranges from LOS A, representing free-flow traffic conditions with little or no delay experienced by motorists, to LOS F, describing congested conditions where traffic flows exceed design capacity, resulting in long queues and delays. LOS A, B, and C are generally considered to be satisfactory service levels, while the influence of congestion becomes more noticeable at LOS D. LOS E is undesirable and is considered by most agencies to be the limit of acceptable delay, and LOS F conditions are considered to be unacceptable to drivers. The LOS methodology has been widely used

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Figure 11: Estimated Average Daily Traffic Volumes, 2014



and provides a consistent tool for evaluating roadway performance. The LOS for an individual roadway segment is measured by comparing the actual traffic volumes to the capacity of the roadway segment. The Volume-to-Capacity (V/C) ratio thresholds and traffic flow characteristics for each LOS level are presented in **Table 3**.

**Figure 12** presents the resulting Level of Service grades for roadway segments within the study area for 2014. The LOS ratings are grouped into three categories: 1) below capacity (LOS A to C), 2) nearing capacity (LOS D and E), and 3) above capacity (LOS F). There are four roadways in the study area with segments of roadway where current traffic exceeds capacity. These segments include the following:

- US 281 between southern study area limit and Casey Road;
- SH 46 between US 281 and northeastern study area limit;
- FM 1863 between US 281 and FM 3009; and
- Blanco Road between southwestern study area limit and Circle Ranch Road.

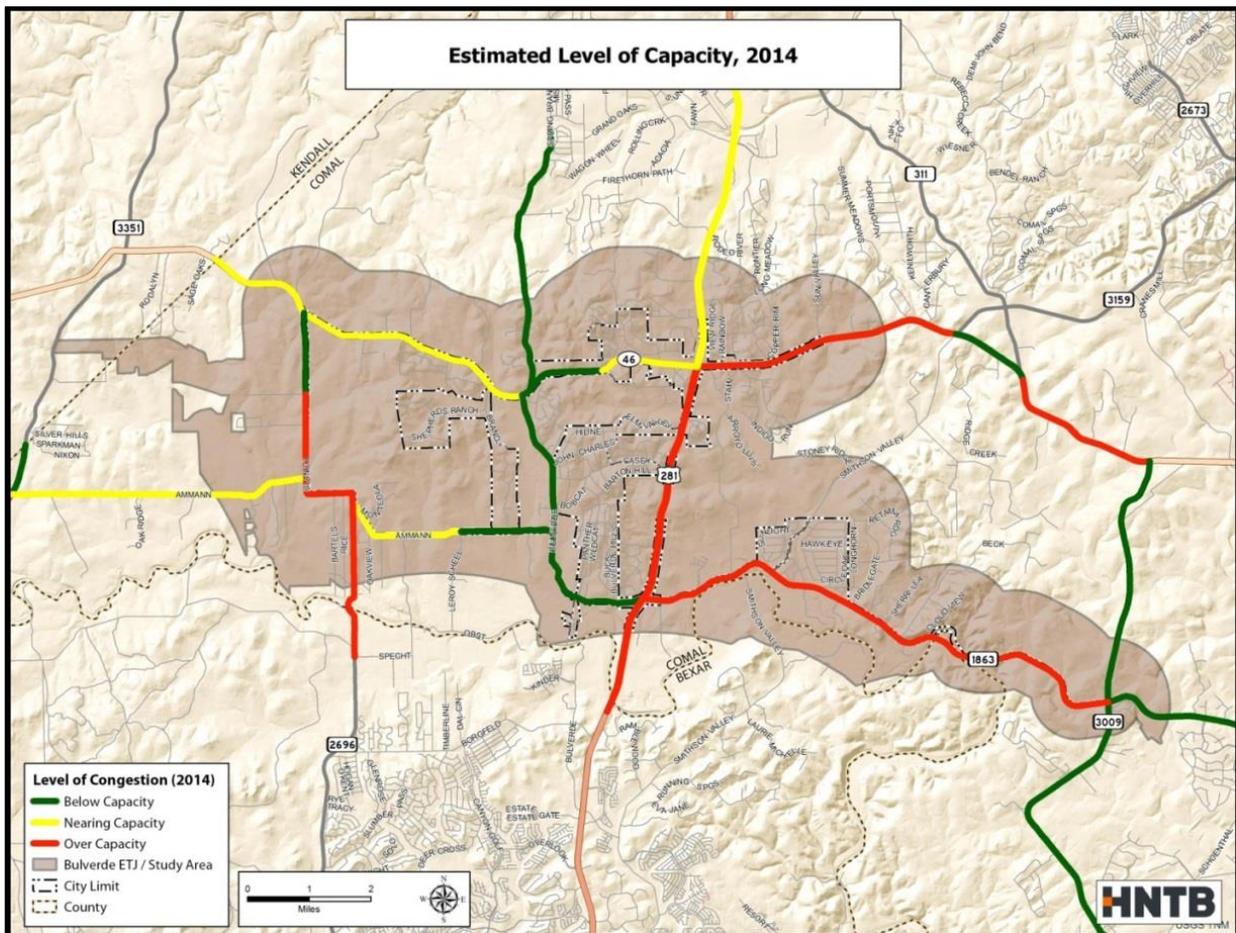
# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

**Table 3: Level of Service Classifications in the Study Area, 2014**

LOS	Description	Max V/C Ratio
A	Free-flow operation	0.35
B	Reasonable free-flow; Ability to maneuver is only slightly restricted	0.50
C	Stable flow; At or near free-flow operations; Freedom to maneuver is noticeably restricted; Queues may form	0.65
D	Approaching unstable flow; Operation near or at capacity; Speeds decline slightly with increasing traffic volumes; Freedom to maneuver is much more limited; Longer delays and congestion noticeable	0.80
E	Unstable flow; Operation at capacity; No usable gap in the traffic stream to maneuver; Operations are extremely volatile	1.00
F	Forced or breakdown flow; Demand is greater than capacity; unacceptable delay; Stop-and-go conditions	Greater than 1.00

Source: Transportation Research Board, Highway Capacity Manual, 2000

**Figure 12: Estimated Level of Capacity, 2014**



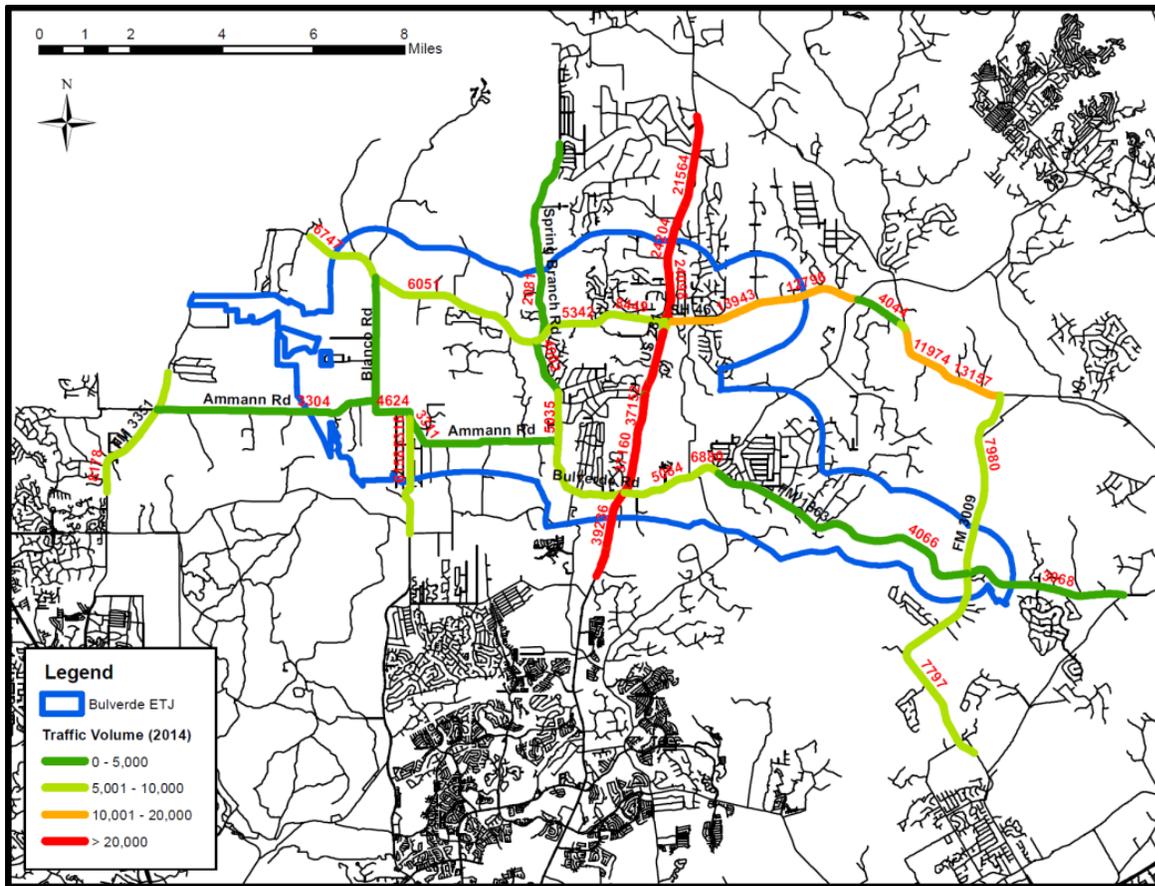
## 5.0 Future Traffic Conditions

This section of the Bulverde Master Transportation Plan presents the future transportation conditions for the study area, including traffic volumes and roadway level of service. The material for this section is based on data from the adopted Alamo Area MPO regional model and analyzed by HNTB staff.

### 5.1 Projected Future Traffic Volumes

The current traffic volumes are illustrated on **Figure 13 A** below.

**Figure 13A. Summary of 2014 Traffic Volumes in the Bulverde Area**

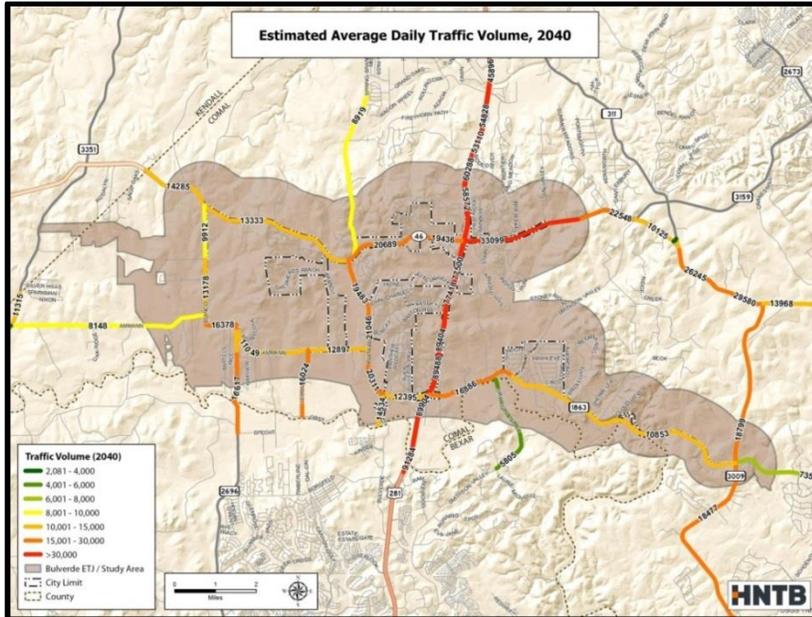


Projecting the 2014 traffic to 2040 results in the average daily traffic volumes for the roadway network in the study area as shown in **Figure 13B** and **Table 4** below.

Traffic volumes on US 281, SH 46, FM 1863, and the major and minor arterial roadway system are expected to grow substantially between 2014 and 2040. With the continued growth within the study area, the total volume of traffic on the primary roadways within the study area will grow by approximately two-and-a-half times. In addition, the total volume of traffic on the minor arterials is estimated to grow even more, or approximately three to four times current rates.

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**Figure 13B: Estimated Average Daily Traffic Volumes, 2040**



**Table 4: Traffic Volumes at Key Locations in the Study Area, 2040**

Road	Cross Street	Functional Classification	Estimated Volume
US 281	SH 1863	Highway	90,000
US 281	SH 46	Highway	51,000
SH 46	Sun Valley Road	Major Arterial	33,000
SH 46	Bulverde	Major Arterial	21,000
FM 3009	SH 1863	Major Arterial	18,600
SH 1863	Smithson Valley Road	Major Arterial	13,800
Blanco Road	East Ammann Road	Minor Arterial	15,600
Bulverde Road	East Ammann Road	Minor Arterial	20,600
Ammann Road	Persimmon Hill Road	Minor Arterial	12,800
Spring Branch Road	SH 46	Minor Arterial	9,000

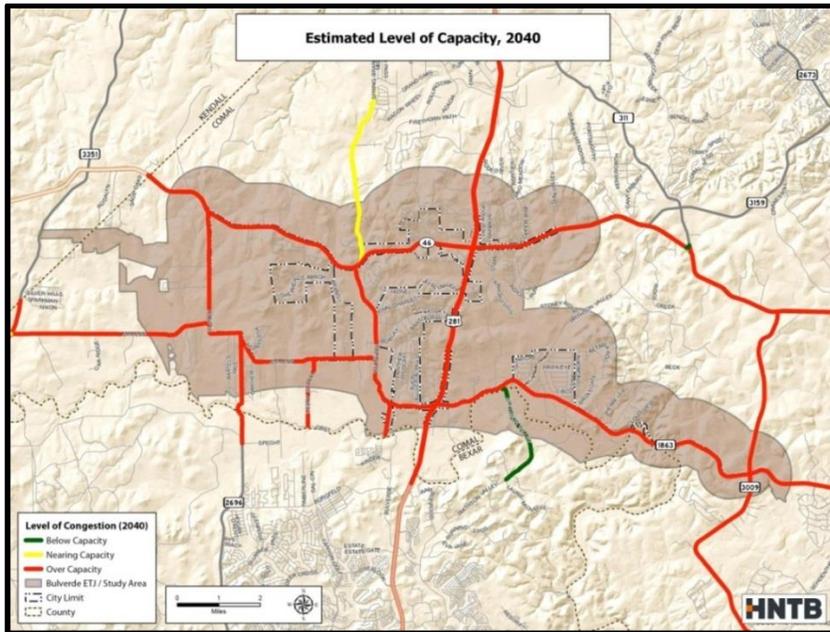
Source: HNTB, 2014

## 5.2 Projected Future Roadway Capacity and Level of Service

**Figure 14** presents the estimated capacity level on the roadway segments within the study area for 2040. Rapid population and economic growth in the study area will produce significant congestion on US 281 and all existing major and minor arterials, except for Spring Branch Road in the northern portion of the study area and Smithson Valley Road in the southeastern portion of the study area. Even so the volumes will be much greater than in 2014.

# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

Figure 14: Estimated Level of Capacity, 2040



## 6.0 Transportation Master Plan Development

The preparation of the Transportation Master Plan took the data and results presented in the previous sections into account. The population growth, employment expansion, and traffic volumes increases require that many of the primary roadways in the study area be widened and improved to provide more traffic capacity and acceptable levels of service on those roadways. This section presents the recommended transportation network for 2035 and beyond.

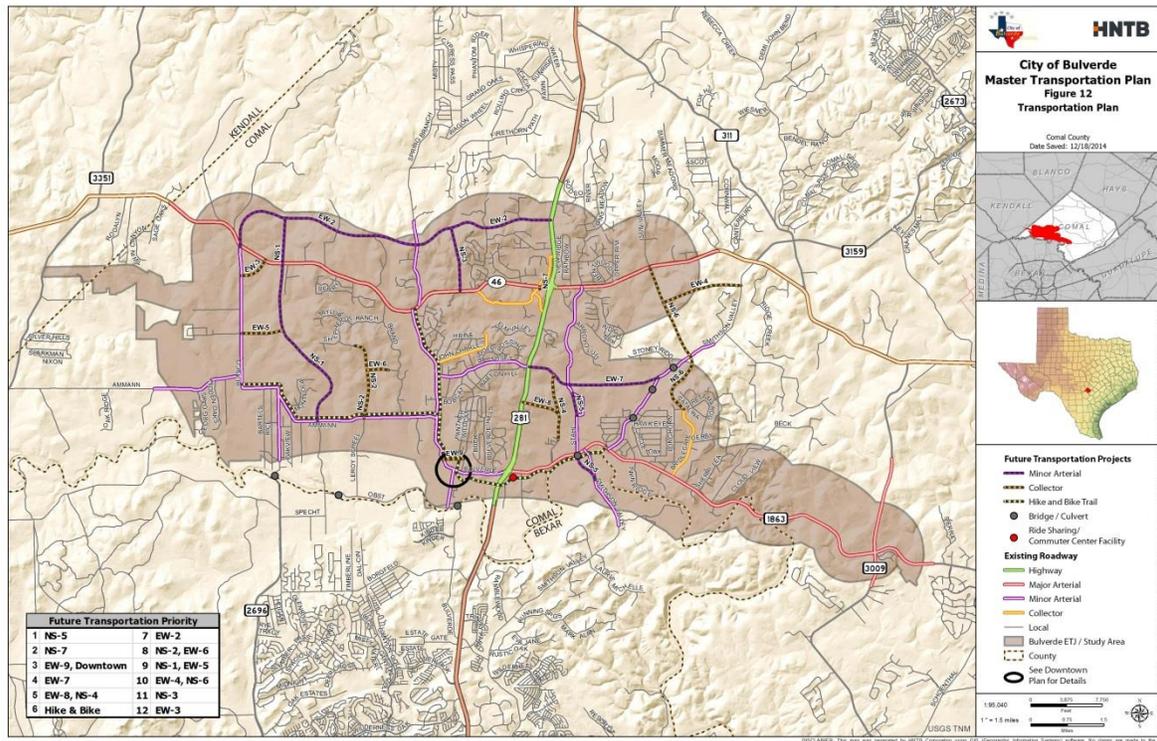
The recommended Bulverde Transportation Master Plan is summarized in the text that follows but also is demonstrated in the map shown in **Figure 15** on the following page. The TMP map was developed in concert with City Staff and is based upon input from the Mayor, City Council Members, Planning and Zoning Commissioners, representatives of a wide variety of local organizations and interest groups, and by the citizens of the area who attended the public meetings where the Plan was presented. It was also designed to address the projected growth in population, density, employment, and resulting traffic flow throughout the Bulverde ETJ and surrounding areas up to and including 2025. The growth data was developed by the Alamo Area Metropolitan Planning Organization (AAMPO), and that has been previously presented and reviewed.

The TMP Map was made available at five different meetings over a period extending from July 1, 2014 until October 16, 2014. It will be presented in February, 2015 to the City Council for initial review and consideration. The public will have an opportunity to review and comment further during that meeting.

The Bulverde Transportation Plan map includes all of the existing and proposed roadways and other types of transportation improvements. A description of each of the differing elements of the Transportation Master Plan are provided in the following sections of this report.

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**Figure 15. Bulverde Transportation Master Plan (TMP)**



## 6.1 Primary and Secondary Highways

### *General Description of Primary Highways*

The basic building blocks of any Transportation Plan are the primary and secondary highways and major arterial streets. This section focuses on the primary and secondary highways. Arterial streets are reviewed in the following section.

In Bulverde and its Extra-territorial Jurisdiction (ETJ), the major highways include US 281 and SH 46. The secondary highways are FM 1863 (extension of Bulverde Road to the east), FM 3009 (on the eastern boundary of the city’s ETJ), and FM 2696 (Blanco Road) near the western boundary of the city’s ETJ. The existing transportation network in the Bulverde ETJ is shown in **Figure 4** above. TxDOT traffic counts on the primary and secondary highways in the Bulverde area are provided in **Table 2** and **Figure 13A** in earlier sections of this report.

### **US Highway 281 (US 281)**

US 281 is a national highway extending from the Rio Grande Valley in Texas to the Canadian border in North Dakota. As a national highway, it is also significant in the San Antonio and Bulverde areas of the state. It serves to carry local residents and visitors, travelers, local and regional suppliers, and national and international freight movements in a north-south direction throughout the country. In San Antonio, US 281 pairs with IH 37 to carry traffic from the Gulf of Mexico to the Red River Boundary of Texas with Oklahoma.

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In the Bulverde ETJ, there are two primary highways. One is US 281 and the other is SH 46. Today, US 281 carries over 29,000 vehicles per day at the Bexar County/Comal County Line and over 28,000 at SH 46. To handle this level of traffic loading, the roadway has been constructed as a four-lane, divided roadway with access limited to some degree to only street intersections and major driveways for large-scale commercial developments. There are certainly exceptions, but the access in those cases is restricted to right-turns from the private property onto US 281, and right-turns from US 281 to the private property. Crossover traffic is restricted as well.

### ***Planned and Anticipated Improvements on US 281***

As 2015 begins, TxDOT leaders continue to coordinate their efforts for improvements to US 281 with City of Bulverde and Comal County officials, and TxDOT staff is also working with private developers to provide adequate mitigation for traffic impacts from new development along US 281 and SH 46. TxDOT officials have indicated their commitment to stay engaged with the City of Bulverde in the completion of the City's Transportation Master Plan, and to assist in the short and longer term implementation of that Plan. They agree that the location of and access to local arterials from US 281 and other area highways is an important output of the local plan. Local roadway improvements are critical to the execution of the overall corridor plan for transportation.

US 281 has a major traffic interchange in place at SH 46. This is the heaviest travelled intersection in the City of Bulverde. TxDOT is planning to upgrade both roadways over time. At the current time, there are ramp revisions, drainage improvements, and turnarounds being constructed at the interchange by TxDOT in conjunction with the development of Singing Hills, a large scale commercial and residential community. Those improvements will be completed by the summer of 2015.

TxDOT is also adding roadway median cuts on US 281 north of SH 46, and may add traffic signals at those locations as the Singing Hills community is constructed and the traffic volumes warrant signals.

At this point, there are no other improvements planned and funded for US 281 in the Bulverde area of Comal County. However, TxDOT fully anticipates that in the future, additional interchanges will be constructed in the Bulverde area. With that growth, short sections of frontage roads and ramps will be needed. One potential location for a grade-separated interchange within the Bulverde ETJ is the intersection of Casey and US 281. To the west of US 281, Casey serves as a residential collector street serving large lot, residential areas. In the area east of US 281, development of residential communities is now occurring and it is anticipated that commercial development along US 281 and the major roadways in the area will follow. New arterial and collector streets extending from these new residential and commercial developments will connect to US 281 south of the Casey intersection and north of FM 1863. The heavy traffic flow from the new developments, the offset intersection at Casey, and the topography could justify a grade-separated intersection at US 281 and Casey within the next 10 years.

Another potential site for an interchange is the intersection of US 281, Flying K Ranch Road, and the future EW-2 east-west arterial roadway. That future arterial roadway will connect US 281 to SH 46 west

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of Bulverde. The EW-2 major arterial street (four-lane divided roadway) would connect to SH 46 at its intersection with Blanco Road (FM 2696). Such a connection will allow for traffic to flow easily from the E-W 2 arterial to either SH 46 or to Blanco Road (FM 2696). This connection will also allow traffic northbound on Blanco Road to easily travel easterly to US 281 and then to proceed north on US 281 to the City of Blanco and beyond. Hence, E-W 2 is a significant roadway, and worthy of consideration for an interchange at US 281. However, support from Comal County and TxDOT will be needed to determine the alignment and to help plan, design, and construct the roadway along with the existing landowners and future developers. The completion of this roadway by these public agencies and the landowners and developers will likely require 10 or more years to secure funding and to complete the construction. So the interchange at US 281 will likely come about another 5-10 years later (or 2030-2035).

Further, as the area east of US 281 develops, there will be a need to upgrade the current interchange at the intersection of US 281, FM 1863, and Bulverde Road, in a manner similar to the current improvements underway at US 281 and SH 46. Frontage roads may also be needed along US 281 from south of FM 1863 to north of SH 46. In the interim, as traffic volumes build and vehicle accidents and congestion in this sector increase, traffic signals may be needed at several intersections. This pattern will essentially repeat what occurred in the sector on US 281 between Loop 1604 and Marshall Lane inside the city limits of San Antonio.

TxDOT has indicated that when that pattern is repeated, the concept of a “Super Street” will likely be considered in the interim for traffic control and safety. See **Figure 16** below for an example of the “Super Street” in San Antonio on US 281. However, this current version of the “Super Street” approach currently in place along US 281 in Bexar County is generally not supported by Bulverde area leaders, property owners, and residents. This was noted during the public input process for the Transportation Master Plan. On the contrary, the addition of interchanges along US 281 is supported by the public and the area leaders.

The goal of all parties involved in the planning of improvements along US 281 should be to take whatever steps that are necessary and practical to maintain a high level of mobility on US 281 in the Bulverde area, and to not allow this major regional highway to become congested to a level like that now seen on US 281 north of Loop 1604 in San Antonio. For many hours during the day, the traffic congestion on that stretch of US 281 approaches level of service F, and the resulting congestion and diminished public safety is detrimental and potentially harmful to the thousands of motorists that simply want to pass through the area to reach employment centers, hospitals, shopping areas, or governmental centers in San Antonio or beyond.

Traffic engineers point out that there are other types of traffic control measures available to manage the traffic growth along US 281 while still embracing some of the aspects of the “Super Street” now in place in San Antonio. Some of these measures are enumerated in the following list:

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Figure 16. TxDOT Superstreet Concept Now in Place on US 281 in San Antonio



Source TxDOT Presentation September 16, 2014

- Interconnected traffic signals forming a signal system that provides progressive movement of traffic through a series or network of major signalized intersections. This includes traffic modeling, signal retiming, intelligent transportation systems (ITS) techniques, and upgrading controllers and detection systems.
- Traffic signal pre-emption for emergency vehicles along major routes.
- Additional through lanes provide additional capacity at signalized intersections to offset for the time shared with crossing streets and turning vehicles at critical intersections.
- Prohibition of left turns from the arterial and/or the cross street.
- Additional right and/or left turn lanes (including dual left turn lanes on the major arterial and on the cross street/driveway) to add additional capacity and shorten the amount of time diverted away from the primary through traffic. Increased access control/management and/or joint access requirements (single driveway for multiple developments).
- Free right turns at intersections and major driveways along with deceleration lanes to enter the intersection or driveway and acceleration lanes leading away from the intersection or driveway.
- Land use controls enacted by the local government(s).
- Innovative intersection design to include elements now seen in the Superstreets in the San Antonio area, but could also include “jug handles”, on-street cloverleaf routing (four right turns), and other similar methods.
- Median barriers that prohibit certain movements.

The use of some or all of these measures could be labeled as a “Modified Super Street” concept. In any case, the most important improvements are those that increase green time for the highway, US 281, at the signal locations. Often poorly managed traffic signals can reduce the capacity of the highway by 50%. That means that a roadway with two lanes in each direction, essentially converts to a roadway with just one lane in each direction. So it is critical that the original purpose of US 281 of moving traffic

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efficiently and safely through the western Comal County area is preserved and maintained as the area grows. Specific measures that assist in that effort include separate right and left turn lanes at major intersections and at commercial entrances; dual left turns on one or more of the roadways; longer left turn bays; and closing of median openings for driveways and some minor cross streets.

Already TxDOT, Comal County and the City are working on a concept as part of the Signing Hills development (along US 281 north of SH 46) to provide turnarounds north of the main entrance(s) to that development which will allow motorists to safely make U-turns and then to turn back and make a right turn into the development. Similarly, left turning traffic from the development would first turn right and travel a short distance south on US 281 and then make a U-turn back to the north. This is another modification to the current “Super Street” approach that could prove beneficial as other major developments occur along US 281.

These interim traffic control measures will assist with traffic flow for many years as growth continues, but they are not the final solution for mobility on US 281. The true solution occurs when the roadway on US 281 is finally upgraded to a full freeway section with frontage roads and access limited to interchanges. That solution may not occur within the 2035 horizon of this Transportation Master Plan, but every effort should be made even in the first 5-10 years (2020-2025) to find the necessary funding sources and to facilitate development of a full freeway on US 281 as early as possible.

### ***Texas State Highway 46 (SH 46)***

State Highway 46 (SH 46) is primarily a two-lane, regional highway extending from Seguin, Texas through New Braunfels and Bulverde to Boerne, Texas, and further west (see the following map). SH 46 passes through ranching and farming country between cities. Some commercial development has occurred along the roadway in and near the cities. For that reason, in some locations like in and through the Cities of New Braunfels and Seguin, SH 46 is a four-lane roadway often with left turn lanes and either signalized intersections or grade separated interchanges.

As a regional highway, SH 46 carries less traffic than US 281 but is still a significant roadway for the City of Bulverde and its ETJ. Because of the semi-circle of cities SH 46 passes through, it is considered to be a prime location for another loop circling around the City of San Antonio and connecting the cities of Seguin, New Braunfels, Bulverde, and Boerne. Other roadways west and south of San Antonio must be incorporated more officially into the system to have a full circular loop highway around San Antonio. Over the past thirty years, leaders in San Antonio area cities have seen the impact of growth along the concentric rings around San Antonio formed by Loop 410 and State Loop 1604. Planning and development of a newer loop SH 46 “Outer Loop” in a similar regional manner should occur over the next 20 years.

In Bulverde, SH 46 is a two-lane roadway with left turn lanes and right turn lanes added at critical intersections. SH 46 carries approximately 17,800 vehicles per day west of US 281 and that usually exceeds the capacity of the current roadway during peak periods. This results in congestion, delays, and public safety issues like vehicle collisions. Statistics indicate that the intersection with the highest traffic volumes and the highest number of vehicle collisions in the Bulverde ETJ is located at US 281 and SH 46.

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West of US 281, there are signalized intersections on SH 46 at Bulverde Crossing, Windmill Ranch Road, and eventually at Singing Oaks Drive. Bulverde Crossing Road is the busiest of these, connecting directly to the Bill Brown elementary school parking lot on the north and to US 281 to the south. The Bulverde-Spring Branch area public library and many commercial developments are found along Bulverde Crossing to the south. Because of the volumes there, the intersection of Bulverde Crossing and Old Boerne Road is controlled by stop signs in all directions. s.

The traffic volume on SH 46 east of US 281 is currently approximately 16,000 vehicles per day. The lower volumes allow this section of SH 46 to function currently at or less than capacity. However, as further development occurs along this sector of SH 46, this roadway will also become overloaded. Much of this traffic is destined for Smithson Valley High School, to Canyon Lake, or to the City of New Braunfels. There is one signalized intersections in this sector of SH 46 at the intersections of River Way/Stahl and SH 46. Left turn lanes are available in both directions, and that improves the capacity.

### ***Planned and Anticipated Improvements on SH 46***

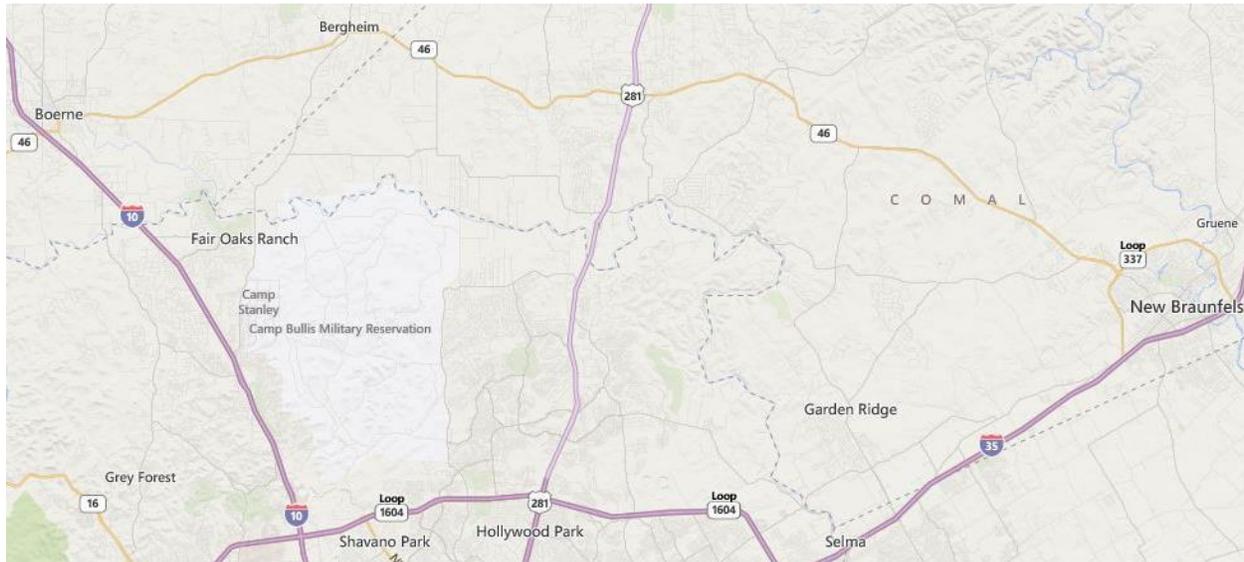
TxDOT will soon initiate corridor planning for SH 46 in the Bulverde area. TxDOT leaders in the San Antonio District Office are working with City of Bulverde and Comal County officials to determine potential funding sources for the local share of improvements on SH 46 from Bulverde Road on the west to FM 3159 on the east near Smithson Valley High School. They are considering using a Transportation Reinvestment Zone for this purpose. The Texas Transportation Institute is performing an analysis of the corridor to determine the practicality and feasibility of such an approach.

TxDOT is projecting that Preliminary Planning/Engineering and Environmental work on SH 46 will begin in the Spring of 2015. TxDOT is considering an upgrade on SH 46 to a four-lane roadway with left-turn lanes at critical intersections through Bulverde and its ETJ. Due to federal funding requirements, sidewalks will likely be needed in the vicinity of the three public schools west of US 281, including Bill Brown Elementary, Arnold Seay Elementary, and Spring Branch Middle School. There is also a private school in this sector. As new commercial development occurs to the west of this area, the developers and owners will be required to add right and left turn lanes adjacent to their shopping areas to facilitate access to their properties without disrupting the through traffic on SH 46. Traffic signals may also be installed as the traffic volumes on the side streets meet and/or exceed the TxDOT standard warrants.

The improvements to SH 46 are tentatively funded through the recently voter-approved Proposition 1 allocation of funds from the severance taxes collected on oil and gas operations in Texas, and deposited in the so-called Rainy Day Fund. The City of Bulverde and Comal County may have to provide a local match for these funds to complete the financing package. There may also be some funds from federal sources managed by the Alamo Area MPO for the SH 46 widening and related upgrades. This funding could ensure that improvements will be made to SH 46 through the City within the next 3-5 years.

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Figure 17. Area Highway Map Depicting US 281 and SH 46. Source: TxDOT, District 15.



In the interim, some improvements will occur along SH 46 as the Singing Hills development widens and provides left turn lanes at their entrance on Singing Oaks Drive. The City and TxDOT are also considering tying Old Boerne Road directly into Singing Oaks to improve traffic operations in this highly congested area of SH 46. Singing Oaks will connect to SH 46 immediately east of the Bill Brown Elementary southeastern property corner. The Singing Oaks connection to Old Boerne will extend straight south connecting to Old Boerne at the driveway to the Starbuck's entrance. A curve to the west at that point will smooth the transition between the two streets. As the developer, the City, and TxDOT make nearby improvements on SH 46, this extension can be planned, designed, and constructed and a traffic signal added to facilitate traffic movement.

Some additional widening by TxDOT in cooperation with the City and County and providing signal interconnection will also improve the traffic flow along SH 46 from Windmill Ranch Road through the US 281 intersection and easterly to the River Way/Stahl Road intersection.

### ***Other Highways in the Area***

There are three other highways in the Bulverde ETJ. They are FM 1863, FM 3009, and FM 2696 (Blanco Road). FM 1863 connects Bulverde to New Braunfels. FM 3009 connects Schertz, through Garden Ridge to SH 46. FM 2696 extends from SH 46 southerly to Loop 1604 in San Antonio.

Each of these highways is significant and each provides an alternative route into and out of the Bulverde ETJ. They are each two-lane roadways meeting minimum standards for FM highways. The current and projected traffic volumes (vehicles per day or VPD) as cited in **Table 2 and 4** above are:

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Highway	Current Volume-VPD	Future Volume-VPD (2040)
FM 1863	6,000	13,800
FM 3009	7,800	18,600
FM 2696 (Blanco Rd.)	5,000	15,600

At the present, no improvements are planned by TxDOT for these highways. However, as traffic increases on these highways, the roadways should be widened to four (4) through lanes with left and right turn lanes where needed for access or where additional capacity is needed at critical intersections. The ROW width should be a minimum of 120 feet on each roadway. Any development that may occur along these highways should be required to dedicate the property necessary to bring the highway ROW up to the 120 feet minimum width. The new development ROW line would be a minimum of sixty feet (60') from the centerline of the current roadway, or along any subsequent centerline that may be established by TxDOT or the City of Bulverde for the future expansion of each of these highways.

## 6.2 Major Streets and Proposed Improvements

### 6.2.1 Existing Highways, Arterial Streets, and Collector Streets

Within the Bulverde ETJ, there are several significant arterial and collector streets that are and will continue to be a part of the City's Transportation Network. The highways and streets are listed in **Table 5** along with the limits, classification, number of traffic lanes, and street width for each highway or street:

Street	From	To	Classification	No. of Lanes	Street Width
US 281	S City Limit	N City Limit	Expressway/Freeway	4	Varies
SH 46	W City Limit	E City Limit	Major Arterial	2	Varies
SH 1863	US 281	E City Limit	Major Arterial	2	30
FM 3009	US 281	SH 46	Major Arterial	2	30
Smithson Valley Rd.	S City Limit	N City Limit	Minor Arterial	2	24
Stahl Lane	SH 1863	SH 46	Minor Arterial	2	20
Bulverde Road	S City Limit	SH 46	Minor Arterial	2	24
Amman Road	Blanco Road	W City Limit	Minor Arterial	2	24
Blanco Rd	S City Limit	SH 46	Minor Arterial	2	24
Spring Branch Road	SH 46	N City Limit	Minor Arterial	2	20
Casey Road	US 281	Bulverde Rd.	Minor Arterial	2	20
Old Boerne Road	SH 46	SH 46	Collector Street	2	20
Bulverde Crossing	SH 46	US 281	Collector Street	2	40-44
Bridlegate Drive	SH 1863	Retama Ridge	Collector Street	2	30
John Charles Road	Bulverde Rd.	Hiline Drive	Collector Street	2	20
Circle G Ranch	Blanco Road	W City Limit	Collector Street	2	30

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**6.2.2 Proposed Arterial and Collector Street Expansions**

The proposed Bulverde Transportation Master Plan recommends expansion of the following roads to include the number of lanes and proposed ROW width as indicated in **Table 7** below:

**West of US 281**

- Bulverde Road-From US 281 to SH 46
- Ammann Road-From Bulverde Road to Blanco Road
- Blanco Road-S. ETJ Limits to SH 46
- Casey Road-US 281 to Bulverde Road
- Spring Branch Road-SH 46 to N. ETJ Limits
- Old Boerne Road-SH 46 east to the SH 46/Singing Oaks Intersection
- Bulverde Crossing-SH 46 to US 281
- Bulverde Lane-Obst Road to Bulverde Roads

**East of US 281**

- Smithson Valley Rd.-from FM 1863 to SH 46
- Stahl Road- from FM 1863 to SH 46
- Connection of Stahl Road to Smithson Valley South of FM 1863

For the above highway and street improvements, **Table 6** below provides the proposed ROW widths, pavement widths, design speed, and curb and gutter requirements as cited in the City of Bulverde

**Table 6-City of Bulverde Standards for Roadways in New Subdivisions**

Functional Classification	Minimum ROW	Min. Pavement Width	Design Speed (mph)	Curb and Gutter
Local Rural	60'	22'**	30	No
Local Urban	50'	30'	30	Yes
Collector Rural	72'	40'	40	No
Collector Urban	72'	44'	45	Yes
Minor Thoroughfare	86'	48'	50	Yes
Major Thoroughfare	120'	48'-72'	60	Yes
*Source: City of Bulverde Subdivision Ordinance				
**The only change recommended to these roadway standards is to increase the minimum width of Local Rural Roads to 26 feet.				

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Subdivision Ordinance provisions. **Table 7** below summarizes the proposed improvements to the Existing Arterial and Collector Streets in the City of Bulverde.

**Table 7-Expansion of Existing Roadways**

Street Name	From	To	Classification	Existing Lanes	Proposed Lanes	Proposed ROW
Smithson Valley Rd.	S ETJ Limit	N ETJ Limit	Minor Arterial	2	4	86
Stahl Lane	SH 1863	SH 46	Minor Arterial	2	4	86
Bulverde Road	US 281	SH 46	Minor Arterial	2	4	86
Amman Road	Blanco Road	W City Limit	Minor Arterial	2	4	86
Blanco Rd	S City Limit	SH 46	Minor Arterial	2	4	86
Spring Branch Road	SH 46	N City Limit	Minor Arterial	2	3	86
Casey Road	US 281	Bulverde Road	Minor Arterial	2	3	86
Bulverde Lane	Obst Road	Bulverde Road	Minor Arterial	2	3	86
Old Boerne Road	SH 46	SH 46	Collector Street	2	3	72
River Way	SH 46	N City Limit	Collector Street	2	3	72
Bridlegate Drive	SH 1863	Retama Ridge	Collector Street	2	2	72
John Charles Road	Bulverde Road	Hiline Drive	Collector Street	2	2	72

**6.2.3 New Arterial and Collector Streets**

As reported earlier in this report, the population will increase dramatically over the next 20 or more years. Similarly, employment will expand as the population grows. The existing roadway network described in the previous section of this report will not be sufficient to meet the needs of this growing population and employment, and its resulting residential and commercial area developments. As is the case in San Antonio and Austin, and the other cities in the region, Bulverde will grow and the traffic demands will increase. Fortunately, however, the City of Bulverde has the opportunity to both plan and to implement a comprehensive arterial street expansion program over the next 10 to 20 years. A few of these future roadways are already being started in some areas of the City through subdivision actions of the City and major developers.

Working jointly with the City staff, the MPO planning team, and area interest groups, like the Bulverde Spring Branch Economic Development Foundation and the Bulverde Chamber of Commerce, a plan for new roadways has been conceived, reviewed, and generally accepted by these groups. The following

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table (**See Table 8**) provides a summary of the new arterial and collector roadways and more details about the location of each new street.

**Table 8-Proposed New Arterial and Collector Streets in the Bulverde ETJ**

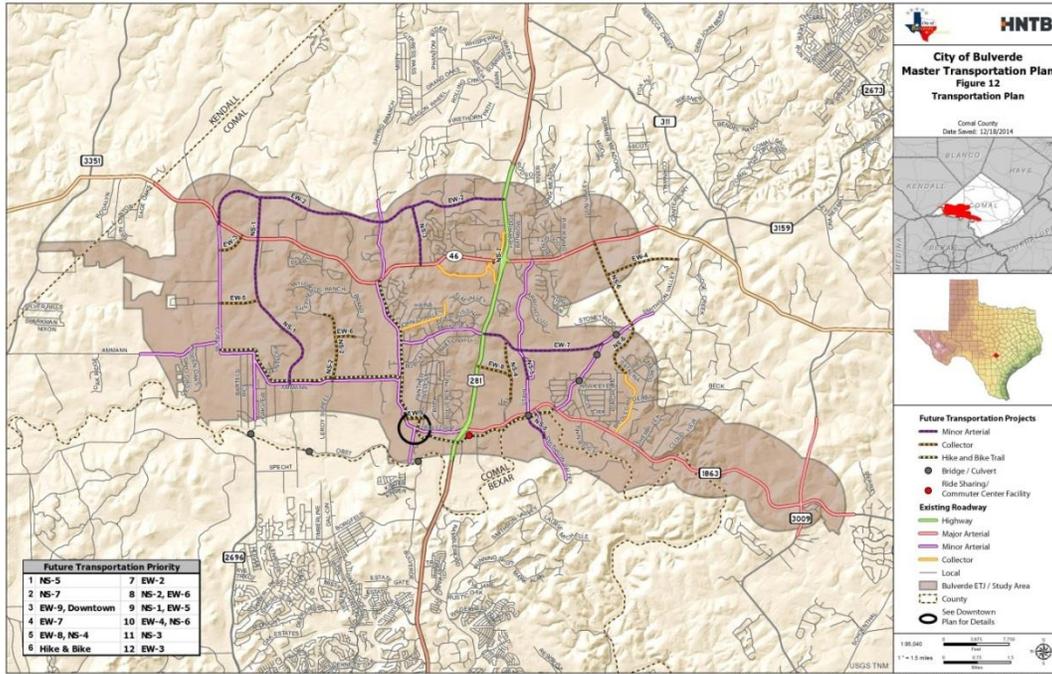
Timing	Street Designation	Street Name	From	To	Remarks/ Locator
1	NS-5	Stahl Road Extension*	Stahl Road at FM 1863	S. to Smithson Valley	New Connection and bridge across Cibolo Creek
2	NS-7	Old Boerne Road Extension	Old Boerne Road	Singing Oaks at SH 46	W. of US 281
3	EW-9	New Downtown Street(s)	Cougar Bend	Bulverde Road	Downtown Circulation Street(s)
4	EW-7	Casey Road Extended	US 281	Smithson Valley Road	Casey Extension East of US 281
5a	EW-8	New-Eastside	US 281	NS-4	S. of US 281 and Casey
5b	NS-4	New-Eastside	FM 1863	EW-7	E. of US 281
6	Hike and Bike Trails	New	On Bulverde Lane	On Bulverde Road	Also On Ammann, FM 1863, Obst-Specht Road, parallel to Cibolo Creek
7	EW-2	New Northside	US 281	Blanco Rd. at SH 46	Parallel to SH 46-Far North
8a	NS-2	New-Westside	Ammann	North	Collector
8b	EW-6	New-Westside	NS-2	East	Collector
9a	NS-1	New-Westside	Ammann	EW-2	New N-S Arterial parallel to Blanco Rd and US 281
9b	EW-5	New-Westside	Blanco	NS-1	Circulation
10a	EW-4	New-Eastside	Smithson Valley	NS-4	Collector-parallel to SH 46
10b	NS-6	New-Eastside	SH 46	Smithson Valley	Collector
11	NS-3	New-Northside	SH 46	EW-2	Circulation Route
12	EW-3	New-Westside	SH 46	Blanco	Commercial Collector

\*Includes connection to Smithson Valley Road from FM 1863 south across Cibolo Creek.

Also see **Figure 15** below for a map that depicts the existing and new roadways on one map.

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**Figure 15: Transportation Master Plan Map (Repeated)**



## 6.3 New Hike and Bike Trails

The Bulverde area has become a popular place for recreational bicycle riders to visit. They seem to enjoy riding on the scenic hill country roads in and around the City of Bulverde. In addition, many Bulverde residents are riding their bikes for exercise and even an occasional ride to shop or to school. However, aside from riding bikes in the public roadways, the facilities for bicycle riding are almost non-existent.

The Transportation Master Plan recommends that the City create a hub for both local and regional bike riders to start their rides. That hub would be the Bulverde Community Park on Bulverde Lane. From there, cyclists would be encouraged to use the following roads for their rides out from the Park and back:

- Bulverde Lane-Bulverde Community Park to Bulverde Road in the Downtown area
- Bulverde Lane-Bulverde Community Park to Obst
- Bulverde Road-east to US 281
- FM 1863-US 281 to Smithson Valley Road
- Cibolo Creek Green Belt Trail-from US 281 to Smithson Valley Road
- Bulverde Road-west and north to SH 46
- Ammann Road-Bulverde Road to Blanco Road
- Obst and Specht west to Blanco Road

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Bikers would share the road on existing roadways until the planned roadway improvements are made. However, as roadways along these routes are widened, separate bike lanes or trails should be added as well. The Cibolo Creek Green Belt trail would be built in or the near the Cibolo Creek floodway.

In school areas, both on-street bike lanes and sidewalks should be provided with new street construction around the schools to facilitate students riding their bicycles or walking to nearby schools. The lanes and sidewalks should extend out from the school sites for as much as a mile in each direction along collector streets.

### 6.4 Commuter Ride Share Lots

Commuter ride sharing lots can be valuable assets to a city, especially those that have a higher number of residents traveling to the Central City, in this case San Antonio, to work or for special events. Commuter ride share lots are simple to incorporate into the parking areas of major commercial developments. To start this process, a facility should be located in the southeast corner of the interchange at FM 1863 and US 281 as that corner is developed further.

The commuter ride share lot could be located at a designated corner of a shopping center or employment center situated near the corner of US 281 and FM 1863 and use just a portion of the facility's parking lot for persons to travel to the lot, park in the lot, and catch a ride with one or more other persons in a car-pool fashion to employment centers or other venues and activities in San Antonio. The specific size of this facility would be determined at a later date based upon interest and the amount of land available for such a facility.



**Figure 18. US 281 and FM 1863 Proposed Site for Commuter Ride Share Lot**

With this lot in place, a bus park and ride facility could be added in the future should the demand for this type of service occur. Persons who want to ride an express bus into downtown San Antonio or to

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the San Antonio Medical Center could use the service. This could also be available for special events and activities planned in the downtown area or at the AT&T Center east of downtown. Special events could include Spurs games, events on the River Walk, football games in the Alamodome, parades and fiestas, and other entertainment opportunities. To fund and manage the bus park and ride facility, the City should work with VIA to serve as the developer and operator. Federal grants could be available through VIA and the Federal Transit Administration to cover some or all of the costs if VIA is involved. Initially, a simple bus stop with a shelter would suffice for the bus park and ride. That could be expanded later to a more comfortable waiting area as the ridership demands increase.

### **6.5. New Bridges over Area Creeks**

In flooding events, three major creeks often overflow their banks and often block many of the roadways that enter Bulverde from the south and west. Those creeks are Cibolo Creek, Lewis Creek, and Indian Creek. Cibolo Creek is a regional creek stretching over 25 miles west of Bulverde with headwaters west of Boerne. Lewis Creek and Indian Creek are more local waterways, with headwaters west and north of Bulverde. Each of these creeks causes road flooding, because the roadways cross the creeks at low-water crossings. A low-water crossing is one that is only safe to cross in dry weather when there is only a trickle of water in the creeks, if at all. Rainfall events exceeding 2 inches can cause the low-water crossings to be hazardous to health and safety of drivers. For a variety of reasons, bridges have not been built to allow all-weather access across these creeks.

Cibolo Creek crosses several major roadways at low-water crossings. Those include Blanco Road (FM 2696), Obst-Specht Road (see photo below), Obst-Bulverde Lane, and Stahl/ Smithson Valley Road. These crossings should be upgraded to include bridges or large culverts. Public safety and emergency access to and from Bulverde would be greatly enhanced if new bridges are constructed. The funds for such bridges could be derived from TxDOT and FHWA, FEMA, and/or Bexar and Comal Counties, since Cibolo Creek generally follows the boundary of Comal County and Bexar County. Either Comal County or Bexar County could serve as the agent to build the bridges for the various funding agencies. It is also in the interest of the City of Bulverde to help fund these joint transportation and public safety improvements that are inside the City limits.



The bridge over Cibolo Creek on Smithson Valley Road east of Stahl Road can be built as part of the plan to extend Stahl Road to the south of FM 1863 and to connect that extension to Smithson Valley Road south of Cibolo Creek. The Stahl Road Extension would not only cross Cibolo Creek on a new bridge but

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would also allow north-south traffic from Smithson Valley Road to continue on an upgraded Stahl Road to SH 46. In this configuration, Smithson Valley-Stahl Road becomes a major alternative to US 281 in the Bulverde area. Smithson Valley Road connects to Bulverde Road further south in the City of San Antonio and that combined roadway extends south to Loop 1604. With Blanco Road on the west and the Bulverde/Smithson Valley/Stahl Road combination on the east, the City of Bulverde ETJ residents would have three major options to travel north and south in the region.

The bridges could be designed similar to the ones in the photos below.



Lewis Creek causes major flooding on several local roads in the Bulverde ETJ, the most serious of which is the flooding on and along Smithson Valley Road from FM 1863 to a point south of Smithson Valley High School. Comal County should be asked to fund the bridges and/or culverts that would be necessary to remove Smithson Valley Road north of FM 1863 from the 25-year flood plain. These improvements would provide safer access to the Smithson Valley High School from area neighborhoods, and would eliminate the threat of death by drowning in the many low-water crossings along Smithson Valley Road. Again, there is a joint benefit to transportation and public safety by making these improvements.

## 7.0 Transportation Plan Implementation

### 7.1 Prioritization of New Roadways

The new roadways will be constructed primarily by land owners and developers as their developments progress. Projects are first to be delivered by others including:

- Residential developers, landowners, new or expanding employers, or commercial firms
- TxDOT or other state and federal agencies
- Comal County
- Other public and private entities

And then are delivered by the City as funds are budgeted and available using the following types of funding sources:

- Existing Local taxes, fees, contributions, payments, charges, and other local funds
- Raising local taxes and fees to “Pay-as-you-go”
- Leveraging funding from other agencies

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- Tax Increment Financing (TIF) or Tax Increment Reinvestment Zone (TIRZ)
- Indebtedness, to include City G.O. Bond Funds or Certificates of Obligations
- Utilizing other financing options such as Public Private Partnerships (PPP)
- Short-term financing options such as commercial loans
- Some combination of all of the above

Controls will be in place through the Subdivision Ordinance to ensure that roadways that fall in or near new development must be planned, designed, and constructed by the Developer and/or land owner of the property being platted and/or developed. It is not possible to know precisely the order that properties in the ETJ will be developed. However, based upon past experience and current trends the likely development patterns can be projected.

With that in mind, the priority for development of the new arterial and collector roadways called for in the Transportation Master Plan should generally follow the following priority pattern:

**Table 9  
Priority for Future Arterials**

1. NS-5
2. NS-7 (Singing Oaks-Old Boerne Connection)
3. EW-9 Downtown
4. EW-7
5. EW-8, NS-4
6. Hike & Bike Trails
7. EW-2
8. NS-2, EW-6
9. NS-1, EW-5
10. EW-4, NS-6
11. NS-3
12. EW-3

This priority order has been added to the face of the Transportation Master Plan Map, for future reference. These priorities can be adjusted as appropriate over the next 5-10 years until the pattern of development is clearly established.

### **7.2 Priority for Expansion of Existing Arterials and Collectors**

The priority for making improvements to existing arterials and collector streets can be difficult to ascertain. Since funding for these improvements must be provided by state and local agencies, the current needs of the community must be considered along with the resources funding street improvements occurs during an annual budgeting process, or is included in a Bond Program or Capital Improvements Program sponsored by the City. At this point, the City of Bulverde has limited resources,

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both staff and financial, to take on major implementation programs. However, as those resources do come available in the future, the logical process is to define the most pressing needs, prioritize the related improvements envisioned, develop preliminary plans and estimates, and secure funding for individual projects one or two at a time.

Improvements to the primary and secondary highways will be the responsibility of TxDOT, while Comal County will be responsible for roadway improvements outside the Bulverde City Limits but inside the City of Bulverde ETJ. For example, TxDOT is already focused on upgrading SH 46 through the Bulverde area and is doing long range planning for US 281 in the area. At the present the County does not have any projects underway or planned in the Bulverde area. However, improvements to Smithson Valley Road from FM 1863 to the vicinity of Smithson Valley High School should be a priority.

It is expected that the City will focus its efforts on roadways like Bulverde Road and Bulverde Lane because of the development and planned implementation of the Bulverde Downtown Visioning Plan. It will also be asked to assist with the local share of the TxDOT funded projects. Further, the City will assist with the extension of Old Boerne Road to connect to Singing Oaks at SH 46.

As development occurs in the area east of US 281 and north of FM 1863, the City will be expected to use its authority to require development to build roads that complete a network of streets in that area. Many of the recommended new roadways are in that area, but the City will likely be called upon to also sponsor some projects to complete the transportation network in that sector over the next five years. One high priority project in this area is the development of Stahl Lane from FM 1863 to SH 46 as a major arterial. In this case, the City will work hand-in-hand with the County and developers in the area to ensure the proper improvements are completed as development occurs. The developers will carry the bulk of the cost with some assistance from public agencies, as appropriate. This will become a common practice over the years where public agencies and developers plan and execute infrastructure projects in a cooperative, productive, and beneficial manner.

### **7.3 Using the Subdivision Ordinance to Assist in Implementation**

The City of Bulverde has enacted an ordinance to define the requirements for dividing property within the City limits and within the City's ETJ. This "Subdivision Ordinance" assists the City Staff and local landowners plus the local development community in the processing of subdivision plats, plans, and related documents. As a developer takes a large piece of land, say an area ranch, and then begins to divide that ranch into smaller ranches, or into new residential areas or commercial tracts, the Developer/Builder/Realtor must follow the processes and meet the requirements set out in that Subdivision Ordinance.

As plans for new development are made and roadway patterns are established, those roadways must conform to the Subdivision Ordinance, and it requires that the new development comply with the Comprehensive Master Plan, and its sub elements including the Transportation Chapter. Whenever a major roadway is planned to traverse the property being subdivided, the landowner and developer must be available. Initially, the City will only fund those projects within the city limits of Bulverde. Usually the decision process for comply with the Transportation Master Plan, as adopted by the City. It is the

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role of the City's Planning and Zoning Commission to review and approve all new subdivisions. The City staff, including the Director of Planning and the Director of Public Works, assists the Commission in the review and approval process.

Because of the critical nature of the Subdivision Ordinance, it is important that it be updated on a regular basis to ensure compliance with federal, state, and local laws, policies, and Plans. Following the adoption of this Transportation Master Plan, the Subdivision should be thoroughly reviewed and updated. The following issues should be addressed in that process:

- Strengthen the legal connection between the City's Comprehensive Plan, its Transportation Master Plan, and the City Subdivision Ordinance.
- Update the detailed requirements for subdivision plats, and related plans for streets, sidewalks, bike trails, storm drainage, and provision of ROW for state Highways and arterial streets within the subdivision.
- Include design standards for proposed new streets and update street construction requirements for all city streets, curbs, driveway and other access ways, sidewalks, hike and bike trails, and park facilities in the City.
- Define the level of developer participation in the cost of each size and type of roadway, sidewalks, and hike and bike trails through their developments. For example, the developer would dedicate right-of-way and pay for 100% of local and collector streets, sidewalks, and trails in their subdivision, and perhaps 90 percent of major arterial streets. In addition ROW for highways would be dedicated for future widening. There are obviously other possibilities, but this is just one example.
- Ensure that utility agencies are included in the planning and design of streets and easements in new subdivisions.
- Coordinate with the Comal County Independent School District to protect sites for new schools in or near new subdivisions.
- Develop drainage standards and flood control programs to protect 100-year flood plains from new development.
- Update building codes to the latest available standards.
- Consider landscaping and streetscape improvements in new subdivisions.
- When reviewing plans, ask for innovative development patterns to improve the quality of life in new developments and for the existing area residents.

Much of the proposed Transportation network will actually be designed and constructed as part of new subdivisions over the next twenty years. It is critical that the ROW is provided and all of the required roadways are constructed in compliance with this plan, or the plans that supersede this Transportation Master Plan over the years. Missing that opportunity, the City and its taxpayers will assume that burden and the City will be responsible for the construction requirement and also the resulting cost. For a small City that could easily exceed a city's financial capability.

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Much of the foundation for this development process is currently in place in Bulverde, and those requirements and process do not need changing. But wherever the Subdivision Ordinance is lacking or silent on a critical issues, that section should be reviewed, discussed, added or reworded, and adopted as part of the amended Subdivision Ordinance.

### **7.4 Policy Issues**

#### ***Funding for Improvements***

One of the major issues for the City of Bulverde leadership will be the funding of the City's share of primary and secondary highway improvements, especially the proposed SH 46 improvements, a high priority for the City, Comal County, and TxDOT. The next section describes methods to maximize the options available to the City.

Another related issue is the difficulties in raising new revenue for the City while also being a General Law City. Steps are already being taken by the City Council to transition to a Home Rule City as established by Texas State Law. The City already meets the population criteria, which is 5,000 people in the City limits. A Citizens Charter Committee has been created and a draft Home Rule Charter will be developed by this group and the City staff and Council. An election will be called by the City Council and the residents/voters in Bulverde will go to the polls to make a decision about adopting the proposed charter. When approved, the City should move as quickly as the Law allows to adopt the new Charter and begin implementing the governance structure allowed by that Charter.

#### ***Annexation***

One benefit of the new Charter will be the ability to annex additional property into the City, and to fill in the open spaces between the various segments of the current City. Annexation along some critical county roads, like Bulverde and Ammann, will allow the City to make improvements identified in this Transportation Master Plan. Further, as SH 46 develops more fully, the proposed improvements on that roadway can be made with the benefits of funds derived from adjacent property owners through a mechanism like a Transportation Reinvestment Zone (TRZ). Other financing methods will also be more readily available under a Home Rule Charter.

The City should develop a strategic plan for annexation of new property. First, the City should focus on close-in properties that are now in the City's ETJ, especially on commercial properties that are being developed to city standards in accordance with the City's Subdivision Ordinance. These developing areas can continue to seek voluntary annexations, while the City uses its annexation powers to bring intervening properties into the City. This will close gaps and avoid having donut holes in the City's limits. The resulting new tax base from these annexed areas should be used to help finance improvements to roadways and other needed infrastructure in the areas being annexed. That provides a nexus between the new tax base and the improvements, and minimizes the concern that the areas are being annexed strictly to fund improvements in other parts of the City.

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### ***Centralized Wastewater Collection and Treatment System***

Another major issue is the development of a City owned, centralized wastewater collection and treatment system. The City has once again taken the leadership role in evaluating the options to achieve that system. A study is underway by M & S Engineering to determine where to place major treatment facilities, major collection lines, and associated lift stations. Cost will be determined and a plan prepared to create, fund, and implement such a system. The initial collection lines will likely follow creeks and tributaries to a central treatment facility in the southeastern portion of the City's ETJ. However, some of the lines serving new developments could actually be placed in the ROW of new collector and arterial streets serving those developments.

The revenue from this wastewater collection and treatment system will help to fund the utility placements in the public street ROW as the roadway is improved, not 1-5 years later when such construction could have negative impacts on the life of that roadway. Good planning and investment now will prevent serious damage to the streets in the future.

For developers, the concept of a centralized wastewater system is easily adopted. They see the value of having regional solutions to the wastewater problem rather than individual septic tanks, or a host of small package treatment plants installed on a subdivision basis and maintained by the developer and/or the residents in that subdivision. The natural environment and the quality of water in the creeks can be maintained by proper operations of the wastewater collection system. New subdivisions generally need utility services, and centralized wastewater collection is one of those critical services that make a neighborhood a great place to live.

### ***Stormwater Utility (SWU)***

Similarly, the creation of a Storm Water Utility (SWU) will benefit the City and allow for maintenance of the storm water system. The storm water system includes all facilities that convey storm water runoff to a creek or river in or near the community. That can include natural waterways like swales, streams, and creeks, or man-made improvements like roadside drainage ditches, curbs and inlets, storm sewer pipe, holding basins, culverts, bridges and dams. In the case of Bulverde, the end point of conveyance for stormwater runoff is the Cibolo Creek in the southeast portion of the City. Other major creeks include Lewis Creek and Indian Creek. As the City grows north, the Guadalupe River will be the receiving stream for far northern portions of the City.

A study is now underway to determine the size and nature of the storm water conveyance system, and to address flooding problems in portions of the City and its ETJ. The costs of needed improvements will be identified. At that point, the City should consider the creation of a Storm Water Utility and enact a storm water fee to help pay for some of those improvements plus assist with annual maintenance and operational costs. Many cities have created a SWU and established base fees of \$2-4 per household per month to operate the SWU. The fees are also graduated upward for larger developments such as apartments, commercial centers, industrial facilities, and retail centers. The fees are decreased for undeveloped land or farm and ranching land.

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## ***Agency Coordination***

Coordination with other agencies in the area is very important. The City would continue to benefit from working and coordinating with Comal County, TXDOT, and MPO for transportation planning, priority setting, funding options, construction standards, operations and maintenance, and emergency services. The City should also reach out to Bexar County, Blanco County and Kendall Counties and the City of San Antonio relative to long range transportation planning and improvements to US 281, SH 46, Smithson Valley, Bulverde, Obst-Specht, Blanco Road, Ammann Road, and other interconnecting roadways. Coordination with all of these agencies could also improve public safety on area roads and address drainage and flood control along Lewis, Indian, and Cibolo Creeks. Other benefits could include joint economic development, mutual aid, regional solid waste services, and other mutually beneficial activities. There could be benefits for joint funding of bridges, roadways, and regional public facilities.

It is important to coordinate with regional water, electric, gas, and telecommunications utility agencies to develop common standards for locating utility lines in City streets and other public ROWs. A Utility Coordination Council (UCC) could be established that would formulate procedures for the installation and maintenance of lines in City and county roadways, and cost effective methods to extend services to existing customers, and to homes and new commercial enterprises in new developments. The ultimate goal is to avoid damage to roadways and to the utility lines, as well as promote public safety and minimize disruption to neighborhoods.

## **8.0 Transportation Plan Funding**

The City of Bulverde currently has a significant number of options for funding transportation infrastructure development projects. Funding can be provided:

- Through operating budgets to include the use of property taxes, sales taxes, fees, fines, and private contributions.
- Through future Capital Improvement Programs tied to bond election programs.
- Through ROW dedications by property owners, landowners, commercial and residential developers, and new and existing commercial and industrial employers in the area.
- Through the full or partial financing of individual projects by other agencies like TxDOT, Comal County, Bexar County, and the City of San Antonio.
- Through the contributions and/or participation of other taxing entities like the EMS and Fire District, the Library District, water conservation district, and other area governmental units in the Bulverde area.
- Through the cooperation and participation by area water, electric, and communications utility services providers.
- Through developer participation in new subdivisions and through development related fees and charges, such as traffic impact fees to address off-site improvements.
- Through development of agreements with the local school district to fund roadways, sidewalks, and storm drainage improvements required for new schools in the area.

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- Through the promotion of the development of large scale residential neighborhoods and commercial areas so that they have the financial basis to assist with roadway and sidewalk improvements.
- Work with major developers seeking approval for zoning changes to ensure construction of streets and sidewalks adjacent to the property as part of the building permit requirements.
- Through a combination of many of these options based upon the location and characteristics of the particular project.

However, this list of options will likely still not be sufficient to implement the full program of Plan improvements over the next 20-25 years. Other options that can be considered are:

- Use of Transportation Reinvestment Zones (TRZ) and the provisions of the state legislation for such zones that allow for the sale of bonds to make infrastructure improvements, and then pay the bonds off over time with the increase in tax revenues that result from the enhancements caused by the roadway improvements. This concept is now being considered for assistance in funding the local share of the SH 46 roadway improvements to be done by TxDOT.
- Creation and use of Special Road Districts and/or Municipal Utility Districts to fund and develop specific roadway and utility projects.
- Participate in public private partnerships (P-3's) to leverage the funding capabilities of both the private and the public entities involved.
- Create a citywide Storm Water Utility (SWU) to fund and implement storm drainage, flood control, and bridge projects in the area, and to provide maintenance of the drainage ways throughout the community. Streets form a part of the drainage system and the cleaning, sweeping, and some maintenance aspects of street may be eligible for funding through the SWU. This financing tool is already in place in many cities in Texas. A fee is charged to all property owners to address the increased runoff occurring from their property, to minimize flooding, and to enhance storm water quality in area creeks and rivers.
- Consider the use of Transportation Fees, in a manner similar to Austin and many other cities, to assist with street maintenance, street repairs, traffic operations, traffic signal installation and maintenance, and major roadway upgrades.
- Seek funding support from the Texas Legislature.
- Seek and utilize other innovative ways to leverage funding from other sources and/or to create new revenue streams that would allow for the sale of bonds for roadway improvements.
- The use of tolls, or "managed lanes," has been identified as a funding source for various public and private roadways in other parts of the State. As an example, several proposed projects in northern Bexar County, but outside of Comal County and Bulverde's jurisdictional area, are contemplating the utilization of tolls to help potentially fund highway facilities and provide "express managed lanes." However, at

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this time, the City of Bulverde has expressed that the use of tolls would be inappropriate for the funding of roadway improvements for the projects outlined in this current Transportation Master Plan within Bulverde's specific jurisdictional area.

It is not the role of a Transportation Master Plan to define the costs of an individual roadway improvement project or to identify the funding source for each project. That is usually the result of follow-on work by City staff or consultants. That process includes the analysis of every street and roadway included in the plan and the development of a scope of work and cost for each street or segment of street that needs to be widened, reconstructed, or newly constructed. This is often referred to as a "Needs Analysis". From that long list of projects, priorities are set and a few of the higher priority projects are set out for development in the next five years. This is commonly known as a Capital Improvement Program (CIP).

To finance these improvements a city can elect to pay for the projects out of operating funds on a year-to-year basis. This is known as a Pay-as-You-Go method of financing. Other cities take the approach of using bond financing to fund the development of these high priorities streets over the next five years. The bonds are known as General Obligation Bonds. They rely on the full faith and credit of the issuing agency. The debt is usually paid off over 10-20 years with debt service funds derived from the City's property taxes.

Once one or more projects are defined, a scope of work is developed for each, costs are determined, and a timeline is established. An individual project can be assigned to City Staff to design or the City can turn the project over to consulting engineers to perform the design. With a completed plan in hand, construction bids are solicited and a contractor is selected, usually by lowest qualified bid, to build the project. The City staff and consultant oversee the work of the contractor. This process is repeated for each high priority project until that program of street improvement projects is completed. Then another five-year program can be developed, and the whole cycle is started again. The available funds can be stretched to make it possible to complete the highest number of high-priority projects possible.

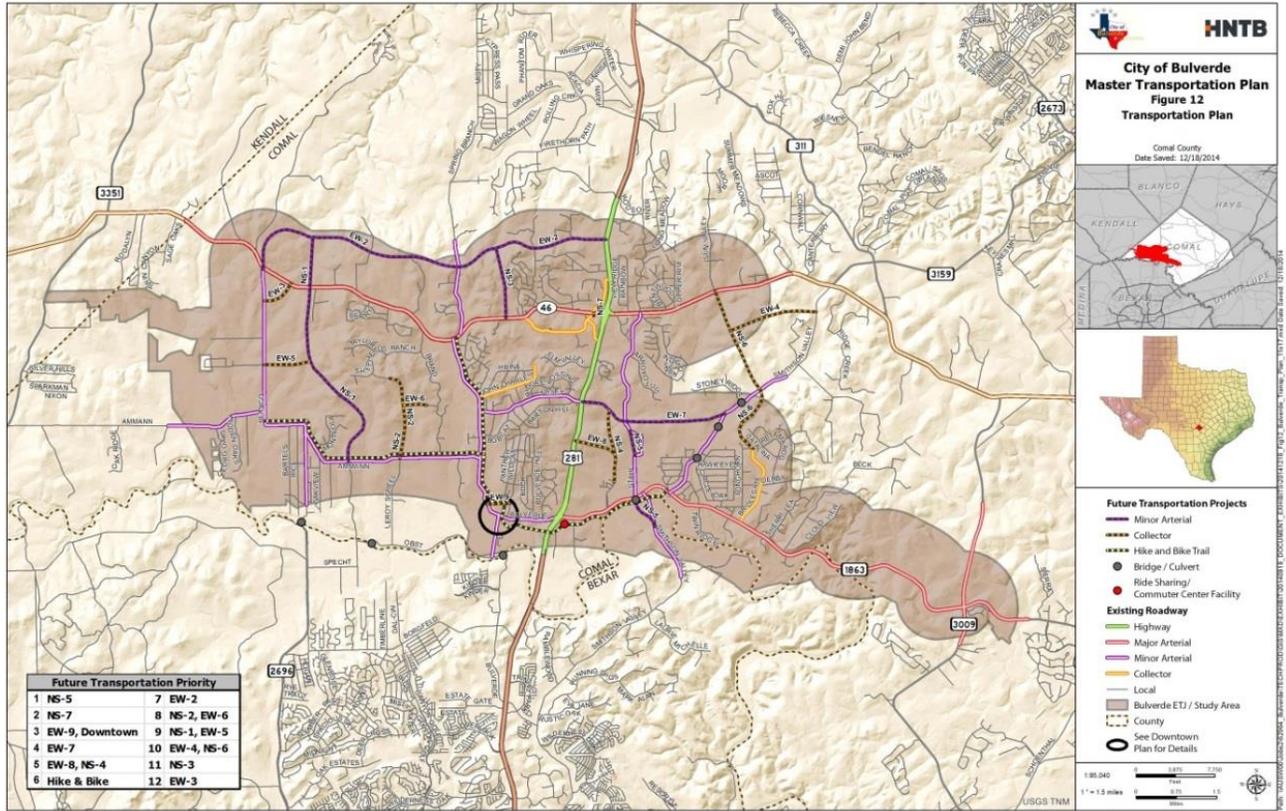
These alternatives provide for the funding of the City of Bulverde Transportation Master Plan and offer a process to implement the proposed street improvements over time. However, it will require the diligence, foresight, and constant actions of the City staff, City Council and area stakeholders to bring the Plan to fruition. Without that dedicated effort, the Plan will not reach its full potential, and the growth of Bulverde and its ETJ may result in increased traffic problems, congestion on area roads, and public safety and environmental impacts. Mobility within the City will also be restricted if the narrow, two-lane roadways that form the primary transportation network in the City are not upgraded as proposed in this Plan.

The Bulverde area roadways will become increasingly congested as the population of the City rapidly increases over the next twenty years. By upgrading the arterials and collectors as recommended in the Transportation Master Plan, the balance of the local roads can preserve the same "Hill Country image"

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envisioned in the Sunrise 2025 Comprehensive Plan, and cited earlier in this report. The Plan shown once again below defines the improvements needed to achieve this “vision for the future”.

**Figure 15. Bulverde Transportation Master Plan Map (Repeated)**



## 9.0 Summary

In summary, HNTB Corporation appreciates the opportunity to assist with the orderly growth and development of the City of Bulverde through this Transportation Master Plan. The Professionals at HNTB Corporation stand ready to assist the City with the implementation of this plan over the next few years. We want to continue to be a part of the workings of this vital and growing city on the move.

# APPENDICES

**CITY OF BULVERDE  
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**Appendix A**

**Summary of Written Comments Made by Attendees  
at the BSB-EDF Transportation Summit Regarding Bulverde Proposed TMP**

**September 16, 2014**

The following is a summary of the comments about the proposed Bulverde Transportation Master Plan (TMP) made by attendees at the public meeting on September 16, 2014 at the GVTC Auditorium. The Forum was sponsored by the Bulverde-Spring Branch Economic Development Foundation (BSB-EDF), the City of Bulverde, TxDOT, the Alamo Area Metropolitan Planning Organization (AAMPO), State Representative Doug Miller, and San Antonio Mobility Coalition (SAMCO), and each agency or group made a presentation. The comments directed toward the other agencies, individuals, or groups are not recorded here. The comments are arranged in no particular order.

**NOTE:** The written comments are available for review at the City. Names are not included here.

- A. To Mr. Nowak. What plans are you making concerning the traffic from the Singing Hills Development? Highway 46 is already a mess, especially at school drop-off and pickup times.**
- B. For HNTB. Are the slides available, especially the maps, for us to review?**
- C. What else can the City of Bulverde do to attract [new] highway funding?**
- D. The Master Transportation Plan shows new proposed roads cutting through private property. Is the City, County, and/or state planning to use eminent domain to acquire ROW?**
- E. If Item 44 on the MPO Survey comes in first on the list of projects to accomplish, how fast will TxDOT begin construction? Are the plans already drawn up from previous attempts?**
- F. Pape-Dawson and TxDOT have repeatedly stated that the superstreet project in Bexar County is a temporary solution only. So why is TxDOT proposing the Superstreet as a solution in Comal County?**
- G. ROW established in past. Take taxes out of the general fund and use as needed on roads. The ROW has not been given for access roads to date. Improvements are desperately needed. [US 281 and/or SH 46]. There is no direct north/south roadway for SB [traffic from Bulverde] into San Antonio. Tolling US 281 is not acceptable.**
- H. Recent research by TTI shows Texans ranked toll roads dead last, and hike and bike trails and transit also ranked at the bottom. No one is clamoring to get on a bus and ride into San Antonio. We want our roads fixed/expanded, especially US 281. So why are you recommending bike trails and expensive transit centers (\$12-20 Million) when that's not the priority of most Texans. Transit sends up a red flag since VIIA is pushing its transit toll lanes on US 281 in San Antonio and they want to extend those toll lanes up here into Comal County. Please take those out of your recommendations.**
- I. Considering that HNTB is the toll road authority's consultant, how can its study be unbiased or trusted source for our Bulverde Transportation Plan? Won't the addition of stoplights on US 281 necessitate extending the toll road up into Comal [County]? How does your study [TMP]**

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address the adverse impacts of the commuters having to pay \$8/day in tolls to get into San Antonio? For instance, people won't want to live here when it costs them \$2,000/year in new taxes to get to work. That will affect home values, etc. We could become a ghost town.

- J. I would like to thank Comal County for the matching funds and/or seed money that got US 281 north of the Guadalupe River built. Without their foresight that project would still be a dream.
- K. If Bulverde was not part of the San Antonio MPO, where would our funding come from for Bulverde area projects?
- L. Consider roadway impact fees to support funding for projects. Most needs are on TxDOT roadways. Work with TxDOT to fund their projects. Require developers to fund all improvements required by developers. TIRZ/TRZ [mechanisms] assist developers. The City should not tie up tax dollars to assist developers. Demand more than a Superstreet. US 281 Superstreet [in San Antonio] has safety and maintenance issues. I do not want my community looking like the superstreet network. Demand the proper improvements to US 281. HNTB provided a weak report/Plan. Consider Transit at SH 46 and US 281.
- M. Since Spring Branch is not an incorporated entity, how can we get representation on decisions that will affect us as residential homeowners?
- N. How many representatives from the Comal/Bulverde area on the MPO [Policy] Board? None. Why? It will impact us [Bulverde area] more than the Bexar County area.

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**APPENDIX B**

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