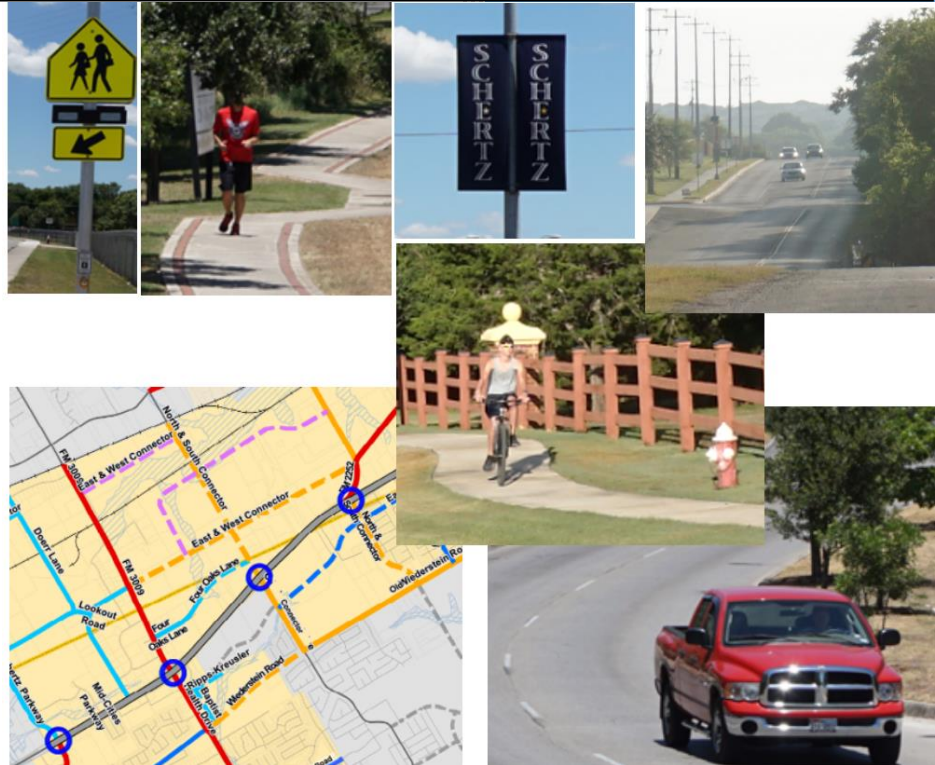


City of Schertz Master Thoroughfare Plan



SCHERTZ
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June 2017

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recommendation for MTP planned alignments with functional classifications and multimodal components. It also serves as a guide for transportation investment decisions.

This plan serves to update Schertz's long-term vision for a range of transportation options and accommodations including personal and commercial vehicles, bicycling and walking, and transit. As an initial stage of the Schertz MTP Update, the city conducted an issues identification process where a series of meetings identified issues to be addressed and the goals to be achieved by the plan.

Two groups were appointed by council to guide the development of the scope to advance the plan. These included the city's MTP advisory committee and a Capital Improvements Advisory Committee (CIAC). The appointed committees represented the public at-large in the plan update, assisted in developing a mental picture of what residents want Schertz to look and feel like as it continues to grow. The committees also provided critical input and feedback on alternatives considered by the team, draft recommendations, and helped guide community involvement for the MTP update. This input and feedback helped to refine the details of the plan working towards the plan update, which was presented as a draft to the MTP advisory committee with a target for adoption in Spring 2017.

Guiding Goals and Objectives

In 2015, initial meetings on the MTP update involved listening and the continuation of the ongoing conversation regarding transportation options necessary to accommodate future growth and reflect the positive quality of life in Schertz, and build on the city's Comprehensive Plan and Sector Plan updates from 2013. Community input helped provide background, context, and policy direction for updated recommendations related to planning transportation facilities in the city. Guiding project goals were developed based on the adopted Comprehensive Plan's goals and strategies, distilled into four goal areas regarding transportation for implementation, which are considered to represent the community's current thinking on values and aspirations as expressed through the process. They relate to the city's Comprehensive Plan in important ways. The following are a summary of the transportation-related goals and related objectives from the adopted Schertz Comprehensive Plan being addressed, updated, or included by this plan:

- ***Hierarchy of Thoroughfares***
 - » Efficient connections
 - » Interagency and intergovernmental coordination
- ***Continuity of Traffic Flow***
 - » Maximize continuity of the network to ensure citywide mobility and minimize response times for emergency vehicles



- » Plan, fund, and implement improvements in the MTP
- ***Provide for increased demand while preserving and enhancing the attractiveness of the environment***
 - » Ensure transportation projects include greenspace and landscaping in the right of way (ROW)
- ***Promote Alternative Transportation Modes***
 - » Incorporate Bicycle and Pedestrian master plan, on- and off-street trails, bike routes, and sidewalks
 - » Provide safe and effective means to accommodate pedestrian traffic and prioritize improvement areas based on type of street and adjacent land use
 - » Address pedestrian safety issues
- ***Coordinate with railroad companies to improve safety conditions of lines through the community***
 - » Pursue improvements at intersections of railroad lines with arterial and collector roadways

Ultimately the MTP attempts to balance these goals and inform public decision making on the MTP based on this framework. Based on existing plans, council, and community input, the MTP actions build on the goals and objectives noted above, and focus on the four following areas, expanded on below with specific objectives:

1. Access and Mobility

Roadway connections, continuity

Regional Rail

Pathways/trail connections

Neighborhood connectivity





2. Local Context and Character Preference

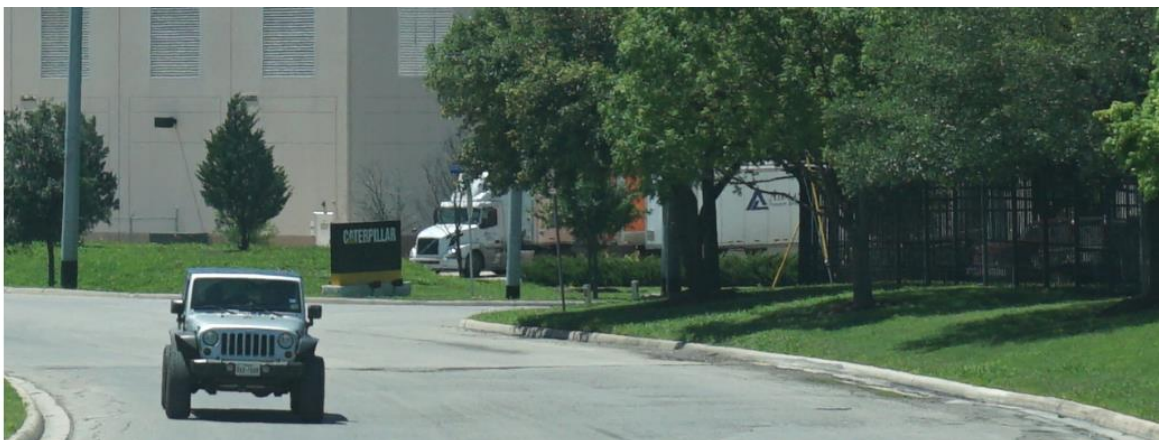
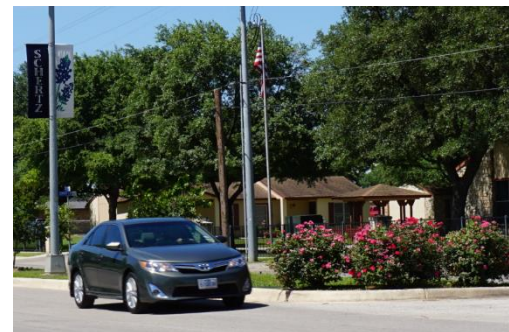
*Visual/aesthetic landscaping and greenspace
Walkable, context sensitive, prioritize connecting neighborhoods, schools, parks, shopping, and enjoyment centers*

3. Preserving Existing infrastructure

*Corridor preservation
Partner agency and neighborhood coordination and collaboration*

4. Fiscal Stewardship

*Maintenance, enhance intersections
Access coordination
Agency coordination, partnerships*



Goal #1: Access and Mobility

A crucial goal for any major MTP is the ability to reach desired goods, services, and activities. The provision of transportation options to reach destinations in Schertz will grow as the city does. This goal is represented in Schertz through efficient system management and operations, through context sensitive and complete streets designs, and with a network of transportation choices. The growing multimodal network will provide connections to where residents work, live, and play, whether in Schertz or away, through a system offering opportunities to drive, walk, bike, and connect to transit.

Goal #1: Provide efficient, safe mobility to, from, and within Schertz by providing multimodal transportation options and management for existing and anticipated future needs.

Objective M1. Provide safe mobility options for people who live, work, and visit Schertz, including efficient connections to regional economic activities and other communities.

Objective M2. Create and preserve convenient connections between neighborhoods, schools, access to commercial areas, and neighborhood assets to provide alternative routes for short trips for people on bike and on foot and reduce trip lengths overall.

Objective M3. Plan improvements to the arterial and collector street network to support the balanced mobility of motorists, pedestrians, bicyclists, and commerce.

Objective M4. Provide for an alternate mode of transport to and from Schertz such as a regional rail system.

Objective M5. Provide a location for a park-and-ride along the Interstate Highway 35 (I-35) and I-10 corridors to take advantage of pending express-lane improvements and expansion of regional transit connections, with the intent to provide a viable alternative to the personal vehicle for commuting.

Objective M6. Provide a network of bicycle and pedestrian facilities, including sidewalks, bike routes, bike lanes and paths, which provide mobility options, regional and multimodal connectivity, and increase recreational opportunities for Schertz residents.



Goal #2: Local Character Preference

A healthy Schertz community in 2040 will be achieved by ensuring transportation and infrastructure investments focus on people and places. Investments should enhance active transportation choices and accessibility, and also create lasting value that complements the character of Schertz's neighborhoods, employment centers, and activity centers.

Goal #2: Provide a safe transportation network planned and designed with people and places in mind, including amenities and green space design treatments that reflect a positive experience for all modes of transportation.

Objective S1. Adopt policies, ordinances, and programs that promote multimodal, context sensitive considerations, and green natural aesthetics, such as landscaped medians, into the planning and project funding of transportation facilities in Schertz.

Objective S2. Continue departmental processes and procedures to ensure coordination of land use and transportation planning, while including context sensitive solutions for design and implementation of transportation corridors and facilities in Schertz.

Objective S3. Provide transportation investments and procedures that help enhance traffic access and circulation, walkability, bikeability, aesthetics, and amenities throughout Schertz.

Objective S4. Invest in improvements to minimize the impact of railroads through Schertz.



Goal #3: Preservation of Existing Transportation Network

Through efficient system management, this plan places high priority upon maintenance, rehabilitation, safety, and reconstruction of basic infrastructure systems. As neighborhoods in Schertz continue to mature, we will continue to maintain high quality transportation infrastructure including streets, sidewalks, and other public infrastructure facilities. Investments will provide a balance between the transportation needs of the community and the needs of local neighborhoods.

Goal #3: Prioritize investments to ensure the ongoing maintenance, rehabilitation, safety, and reconstruction of the current thoroughfare network and supporting infrastructure.

Objective P1. Preserve ROW for anticipated arterial roadways through corridor preservation and subdivision plat dedication.

Objective P2. Coordinate action with regional partners to ensure that planned connections are feasible and existing infrastructure is not expanded unduly.

Objective P3. Manage roadway congestion and increase mobility and safety for all roadway users through intersection enhancements, operational improvements, targeted capacity enhancements, and promotion of alternative means of transportation.

Objective P4. Design, operate, and manage the transportation system to maintain or improve the quality of multimodal mobility, access, and safety for those traveling in and living within Schertz.

Objective P5. Develop and implement transportation performance measures and programs to monitor, evaluate, and forecast the degree to which the transportation system investments accomplish community goals and mobility objectives.



Goal #4: Fiscal Stewardship

Schertz strives to provide a roadmap of actions for transportation and infrastructure investments to maximize the benefits for multiple user groups in a way that is both fiscally and environmentally responsible. Investments will include input from the community at large and the priorities as identified through regular and ongoing dialog with stakeholders. Consideration will be given to actions that support economic vitality that promotes economic growth while using resources in an efficient and effective manner. These fiscally sound efforts are intended to continue a diverse, vibrant, local economy with a strong tax base, thus reducing the future fiscal burden on residents to provide city services.

Goal #4: Optimize the use of City of Schertz funds and leverage additional funding for transportation to maximize the Schertz public return on investment in transportation infrastructure and operations.

Objective F1. Identify and pursue private, regional, state, and federal revenue sources for funding multimodal transportation improvements in Schertz, and actively engage in regional efforts to identify and allocate funding sources.

Objective F2. Integrate state and federal long-range transportation planning factors with local and regional transportation planning to maximize future funding opportunities for surface transportation projects in Schertz.

Objective F3. Evaluate and if appropriate, implement directed funding sources such as tax assessment for transportation that ensure adequate funds are directed to transit improvements — street construction, hike-and-bike trails, etc.

Objective F4. Plan for and preserve ROW and other real property for future multimodal transportation and supporting infrastructure investments in advance of economic development.

Objective F5. Promote land development strategies and suitable locations to maximize and support multimodal development, such as the mixed-use districts and transit oriented development of the North Sector Plan, which maximize the benefits of transit investment in a location with a combination of convenient proximity, road access, and walkability.



Transportation Planning

The MTP is the long-range plan for major transportation facilities for the City of Schertz. The MTP, like the Schertz Comprehensive Plan, is a living document and is intended to accommodate development of the city's thoroughfare network, but is also meant to be updated periodically as conditions change. The plan is also a corridor and ROW preservation document, allowing for the orderly coordination of development for a transportation network that supports the city's growth and development over time. Future thoroughfare alignments are long term and general in nature, and have been developed with high-level planning consideration based on current, available conditions. As such, their alignments may be modified during development of specific projects or over time, but the linkages should be maintained so that the overall system functions as a whole.

Thoroughfares in this plan are generally arterial roadways that serve moderate and higher traffic volumes, connect with and serve the state highway system. However, this plan also illustrates some collector class roadways — roads not considered arterials but still important to provide connectivity for the city in areas with lower densities across multiple parcels of ownership, or areas where functional connectivity is needed. This section describes the public process used in the creation of the plan, the referenced planning documents that formed the basis for its development, coordination process, and formal adoption process.

Public Involvement

Development of the Schertz MTP Update was an open and collaborative process involving citizens, adjacent jurisdictions, and public entities.

Master Thoroughfare Plan Advisory Committee

Two groups were appointed to guide the development of the plan: the MTP advisory committee and a CIAC. The MTP advisory committee provided direct input in the formative stages of the plan update. As part of the information gathering during the formative stages of the plan, the city combined the standing Planning and Zoning Commission with the Transportation Safety Advisory Commission to form this joint advisory committee. A separate CIAC was also convened to take formal action on a number of items during the process, including guidance on specific transportation projects. The CIAC is made up of the Planning and Zoning Commissioners plus one additional appointed member.

The committees met with the plan development team multiple times throughout the process, providing critical background information, context, and transportation alternatives development history for the community. They acted as a sounding board for mobility concepts to be evaluated by the team, refined goals, affirmed the identification of the existing transportation conditions, discussed and prioritized the transportation system and policy needs for Schertz, and provided feedback



on potential system improvements. The CIAC also formally adopted the growth rates to be used for demographics analysis, the resulting land use analysis used for evaluation of the transportation network, and made recommendation on near term capital improvements to the City Council.

Public Meetings and Presentations

A series of public committee and advisory group meetings, progress meetings, City Council briefings, and an open house were made to review and discuss the existing conditions and needs, plan alternatives, policies and programs, and implementation strategies for the plan update. The materials presented at these meetings and comments received are summarized in Appendix A, Meeting Materials.



Meeting	Date
City Council, Project Overview, Master Thoroughfare Plan, and Impact Fee Study	2/17/2015
Advisory Committee Meeting 1, Capital Impact Advisory Commission (CIAC) Meeting 1: Project Introduction, Needs Assessment	5/13/2015
Presentation to regional city staff: Project Introduction, Needs Assessment	5/13/2015
Advisory Committee Meeting 2 and CIAC Meeting 2: Goals and Objectives, Existing Conditions and Needs Assessment, Growth Rate	10/14/2015
Advisory Committee Meeting 3 and CIAC Meeting 3: Land Use Analysis, Preliminary Recommendations, Capital Improvements Program Options	11/18/2015
Public Open House: Goals and Objectives, Existing Conditions and Needs, Plan Options	4/18/2016
Advisory Committee Meeting 4: Draft Master Thoroughfare Plan, Policies and Programs, Capital Improvement Plan	4/12/2017
Planning and Zoning Public Hearing #1: Master Thoroughfare Plan, Policies, and Programs Plan	5/24/2017
City Council First Reading: Master Thoroughfare Plan, Policies, and Programs Plan	6/27/2017
City Council Final Reading: Master Thoroughfare Plan, Policies, and Programs Plan	7/11/17

Public Open House

An open house was held on April 18, 2016, to brief the public on progress material that had been developed and gain feedback. Topics included existing conditions and needs summary, draft goals and objectives, the active recreation and bike network, recommended modifications to functional classifications and road cross sections, and working ideas to adjust the alignments of the adopted 2011 MTP. Notices of the open house were mailed to every address within the Schertz city limits and extraterritorial jurisdiction.

The meeting had nearly 150 participants, 3 presentation sessions by Freese and Nichols, Inc., and numerous information stations manned by staff for individual questions and answers. Comments and questions were noted, an exit survey was handed out, and contact information on how to include comments on the material was made available. Comments taken at the session and written comments submitted were incorporated into the plan recommendations and alignments adjusted further based on specific input details.



Open House – Credit: City of Schertz

Input from the open house was generally positive toward the information provided and supportive of the recommendations, including wanting to see more east-west connections, better roads for currently undeveloped areas in the south to support development, and for grade separation over the railroad and Farm-to-Market Road (FM) 78. Some road classifications were changed to reflect the input, such as Old Wiederstein Road, and other suggested connections were noted. Comments on the revised alignment and lowered roadway classification for a new link between Trainer Hale Road and FM 78 to align with FM 3009 — to pull it away from an existing neighborhood north of Schaefer Road and avoid the Crescent Bend Nature Park and CCMA facility — were also generally positive. Some concerns were voiced with impacts to the existing homes along Trainer Hale Road further to the south. Comments were both supportive of additional connections to San Antonio at State Highway (SH) Loop 1604, and Cibolo south of FM 78, but also concerned with the ability to make the connection due to large property ownership.



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Chapter 2. Transportation System Needs

Regional Mobility and Connections

This assessment of needs draws upon the information gathered during the documentation and insight offered by the MTP combined advisory committees — comprised of the Planning and Zoning Commission, the Transportation Safety Advisory Commission, members of the Economic Development Corporation, and members of the CIAC. The needs identified herein form the framework for development of the MTP, potential project identification and prioritization, and needed policies and programs.

Highways

Three major highways serve to connect Schertz to other cities within the region: I-35, I-10, and SH Loop 1604 (Figure 1). While each of the three facilities experience congestion during peak periods, many recent or upcoming projects will provide substantial improvements to each facility, reducing congestion on the highways for the immediate future and accommodating future growth.

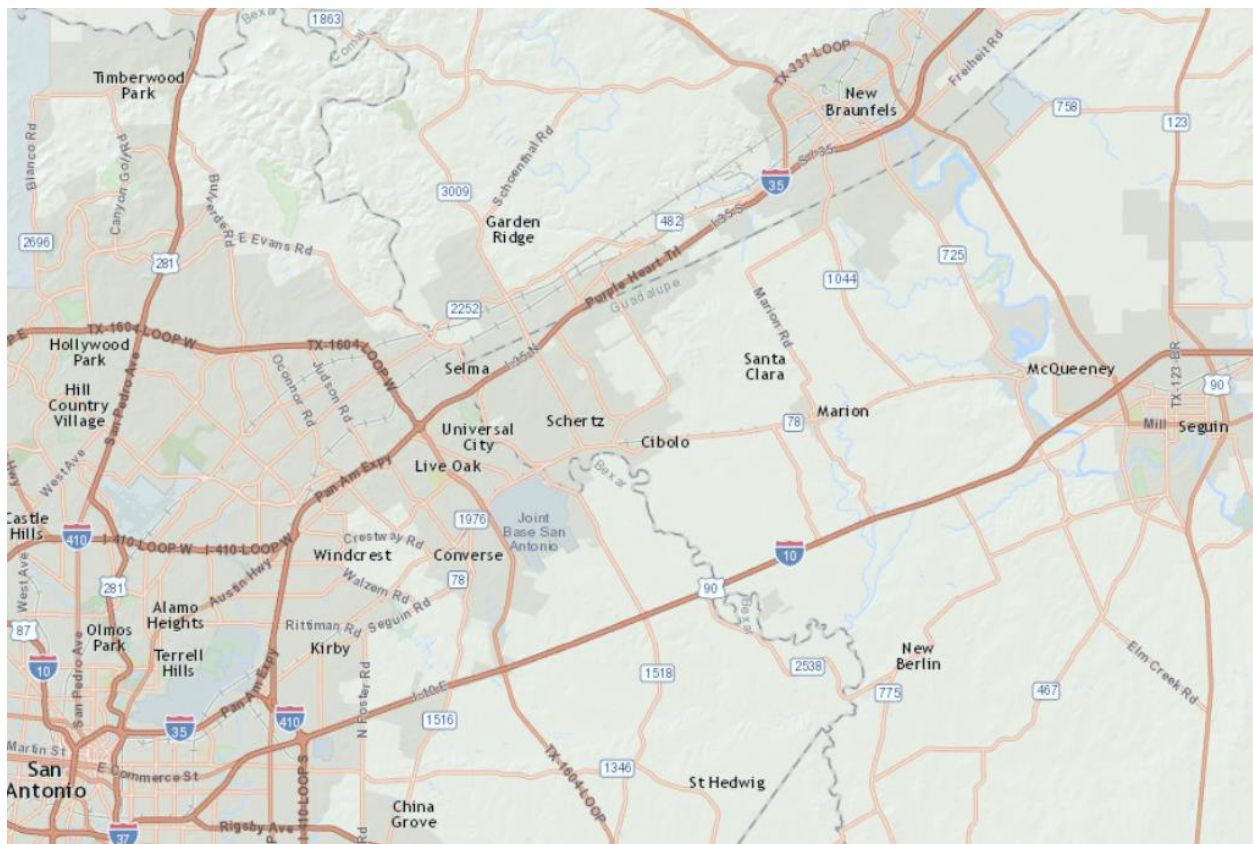


Figure 1. Regional Highway Network

Interstate Highway 35

I-35 is a critical international trade corridor freeway facility carrying the highest traffic volumes through Schertz, and though primarily serving trips that begin and end outside of Schertz, the I-35 corridor also serves as a critical linkage between Schertz and San Antonio. Within Schertz, the current average annual daily traffic volume on I-35 (total of both directions) range from 108,000 east of FM 1103, to 152,000 at FM 3009, where volumes increase at each interchange to the west of Schertz. Current Texas Department of Transportation (TxDOT) plans, called “I35Nex,” call for the addition to I-35 of two managed lanes that will end at FM 1103, a significant project that will add a considerable amount of capacity to the corridor. In 2015, TxDOT received a Finding of No Significant Impact (FONSI), which allows the project to continue with design for construction.



Continued growth in the region is represented in planning documents for the I35Nex by growth in traffic volumes of 20 to 25 percent. The continued growth of the city’s north sector plan area, as well as the northern portion of Schertz in general, in turn, lead to the evaluation of roadway segments directly connected to I-35, particularly the interchanges at FM 3009 and FM 1103. The proposed addition of managed lanes to I-35 also represents an opportunity for extended express peak-period transit service from Schertz to serve central San Antonio, and raises the opportunity for express reverse-commute service to Schertz from the southwest and potential for a tie-in or advance services for regional rail operations.

Analyses of traffic operations under full build-out of the city points to a need for additional capacity from existing access points to/from I-35 in order to relieve projected demands on FM 3009 and FM 1103. Capacity can be expanded along parallel routes, such extension of north-south connector and expansion of Old Wiederstein road, which provide additional routes to I-35, as well as the planned expansion of FM 1103, which will simultaneously serve the community of Cibolo as well as Schertz. Improvements to the access road, such as ramp reversals near overpasses, to improve flow and consistency are currently in planning stage from approximately FM 1103 to the Guadalupe River.

Access from a park-and-ride to and from the I-35 managed lanes at Wiederstein Road, or a park-and-ride situated near the general lane access to the managed lanes currently planned for east of FM 1103, would also provide direct benefit to projected area traffic operations. This plan recommends an area for a potential site generally between FM 1103 and FM 3009 that would provide a synergy for transit partnership with VIA (*p264, FONSI*). As Schertz continues to grow to the north (coupled with southward growth towards I-10), reconfiguration of the FM 2252 interchange should be considered as it relates to design of the I35Nex lanes, as well as the connection of Dean Road to FM 2252 as a north-south connector.

I-10

South of I-35, I-10 is another nationally important freeway route that serves east-west traffic to the south of Schertz. Current volumes on the main lanes of I-10 are approximately 40,000 average annual daily trips east of Loop 1604. Like I-35, a project is in the study phase to add lanes from San Antonio to Seguin to accommodate future growth. As southern Schertz grows, operations will change the two-way frontage road to one way, similar to I-35, to accommodate higher volumes and reduce higher speed traffic conflicts

from turning vehicles, as well as reduce head-on conflicts from vehicles exiting the main lanes. Providing a backage road on either side of the freeway is one method to ensure long-term quality operations for mobility while retaining more efficient access for the traffic demands on this corridor. Though not entirely within the City of Schertz, the critical regional mobility provided by the freeway network is important for the city. As such the city recommends for provisions of Texas U-turns, or an alternate scheme for traffic efficiency, should also be made as bridges are configured at Loop 1604, FM 1518, and Trainer-Hale Road.

SH-Loop 1604

West of Schertz, SH Loop 1604 is a major regional circulator for the San Antonio region and highest capacity north-south connector in the Schertz plan area. The northern portion of the 95-mile-long facility is a divided highway, but the section south of I-10 is currently more rural in character, and still maintains a two-lane, undivided section. The section immediately west of Schertz is currently under construction to create a divided section. This corridor facilitates major movements in the area, including the commuting patterns for access to Randolph Air Force Base (AFB). The base is in the planning process of relocating their southern gate to the west of the facility, which would alleviate some delay on Lower Seguin Road and remove the gate from the runway clear zone.

Arterial Roadways

The grid of arterial roadways, spaced between approximately 1-mile intervals for north-south corridors and larger spacing for east to west, is disrupted by natural and man-made features, including the Union Pacific Railroad and the downtown grid that is aligned with the railroad, the Cibolo Creek, and Randolph AFB. These features constrain and channelize area traffic connectivity to the dominant arterial corridors.

North-South Connectivity

From a regional mobility and connectivity perspective, the significant north-south arterial routes in Schertz are:

- Schertz Parkway
- FM 3009
- FM 1518
- FM 1103

These arterial roadways provide the backbone of automobile volume service. Future traffic growth should be planned for on these vital routes and improvements should be implemented to maintain acceptable level of service (LOS) for vehicle users travelling across the city.



Figure 2. Schertz Area Arterial Roadway Network

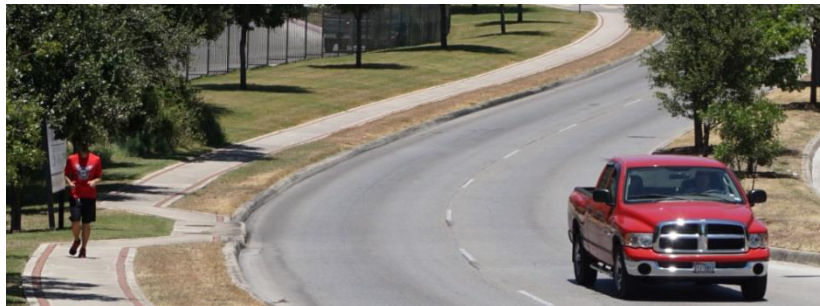


Roy Richard Drive, with recent sidewalk improvements

While trips along the outside edges of the city are currently being served through planned expansions to serve more regional and long-distance trips, there are a number of facilities that have current needs for capacity improvements to better serve local trips. Near the downtown area, the collective arterial capacity of FM 3009 and Schertz Parkway do not provide enough north-south capacity for origins-destinations planned for south of FM 78, and any north-south connectivity is interdependent on the east-west capacity of FM 78, since the north-south movement must currently also spend a portion of the trip moving east-west on FM 78. This is a significant cause of delay in this portion of the network.

With limited ROW on each of these corridors, widening for capacity would have significant effect on the community character of many of the corridors. Also, Schertz Parkway is limited from extension south by dedicated parkland, existing residential neighborhood, and complicated by proximity to landfill.

Schertz Parkway is a four-lane, divided principal arterial roadway connecting the center of Schertz from FM 78 to the I-35 corridor. It provides north-south mobility for the city, but also access to many neighborhoods and commercial areas. With lower speeds and greater capacity than other



parallel routes, it provides significant capacity for the community, but at a reduced average speed. A popular shared-use path adjacent to the northbound travel lanes provides space for pedestrians and people on bikes. The parkway features a planted median, and a matured landscape buffer outside of the roadway ROW that adds significantly to the character of the corridor.

Roy Richard Drive (FM 3009) is a four-lane, divided principal arterial connecting central Schertz from FM 78 to the City of Garden Ridge, with the I-35 corridor in the center. It provides the key north-south mobility for the city as well as connection to the regional network. With higher speeds and greater capacity than other parallel routes it provides major mobility for Schertz, as well as regional connectivity for Garden Ridge and a significant portion of Cibolo. FM 3009 also provides a key corridor for adjacent commercial land uses, with neighborhood oriented uses further south in the corridor, and larger uses near I-35. Recent improvements have been made to add sidewalks to the roadway by TxDOT, providing safe pedestrian passage and recognizing the changing nature of the needs and use of corridor.

FM 1518 north of FM 78 has a constrained existing ROW, but may offer more opportunity for expansion as it has fewer land uses on the west side; however, full section expansion may be limited due to the geography of Cibolo Creek, floodplain and floodway, and dedicated parkland. FM 1518 should be considered for adding the overall system capacity needed, and in the near term, adding dedicated turn lanes at major intersections over the long term, adding a median, and reducing curve radii would improve safety and provide a buffer.



FM 1518 south of FM 78 is nearing capacity as a two-lane roadway. South of FM 78, FM 1518 provides the core mobility corridor for developing southern Schertz similar to how FM 3009 serves central and northern Schertz. FM 1518 is projected to exceed acceptable levels of service within 5–8 years and is the priority project from the City of Schertz for consideration for regional partnership for capacity expansion. Efforts to expand the roadway, and secure funding to do so, are currently underway, led by TxDOT and the city. Funding for the initial phase of improvements includes input from the city (\$5 million voter-approved bond measure), TxDOT (\$5 million contribution), and federal funds allocated by the Alamo Area Metropolitan Planning Organization (AAMPO) (\$9 million). As part of the expansion, consideration for the opportunity to make a direct connection to the section of FM 1518 north of Cibolo Creek and FM 78 is also being explored. A direct connection of the two segments of FM 1518 may be difficult due to environmental and man-made constraints. But such a connection would be useful, and could provide partial relief for FM 3009 as well as relieve travel time between northern and southern Schertz. The connection may be possible, but further detailed analysis is required with additional public outreach needed to determine if it is feasible and wanted. This plan leaves open the possibility for such a connection and recognizes an ongoing feasibility engineering study by TxDOT for determination.



FM 1518 intersection with FM 78

FM 1103 is a principal arterial roadway connecting the City of Cibolo to I-35. The roadway is currently built to rural FM standards and heavily used for commuting. The City of Schertz and the City of Cibolo have partnered with TxDOT to make capacity improvements to the roadway. These are being coordinated with improvements to the junction with I-35 to modify the bridge in advance of the expansion projects. Plans are currently in the schematic phase but anticipated to move forward prior to 2020. Separately from TxDOT efforts, the City of Cibolo is also considering an extension of the FM 1103 corridor south to I-10 as a public-private partnership with a company to deliver a major roadway.



Morning Commute, FM 1103 south of I-35

East-West Connectivity

At a regional mobility and connection level, the major east-west highways noted above provide for higher volume automobile service, especially at the edges and the narrow geographic center of the city. More local east-west arterial routes are limited due to geographic features – Cibolo Creek, Randolph AFB, and existing neighborhoods. The clear zones extending from the Randolph AFB are also limiting to the types of uses that are encouraged there, and activities should remain limited due to the proximity. Apart from several residential and mixed developments (in various stages of planning to completion), which are close to the FM 1518 corridor, much of the anticipated growth in the area south of Randolph AFB is expected to be low density. Future traffic growth and demand should be planned for on the remaining viable routes and improvements should be implemented to maintain acceptable conditions for vehicle users travelling across the city.

Significant east-west major arterial routes within Schertz are:

- FM 78
- Old Wiederstein Road and Lower Seguin Road
- Binz-Engleman Road to Trainer-Hale Road

FM 78 is a vital route providing a mixture of mobility and access through central Schertz. The offset intersection of FM 78 with FM 1518 currently serves as the only connection within the city between northern Schertz and southern Schertz. FM 78 is a key access point for the Schertz community, as well as serving regional, east-west mobility. Maintaining FM 78 as a viable regional transportation alternative for trips travelling to, from, and through the geographic center of Schertz should remain a priority. However, the city should partner with regional agencies to provide north-south connections that do not also require a segment of east-west movement in a limited corridor.

Old Wiederstein Road and Lower Seguin Road were both determined to have segments operating at a current LOS D or worse based on daily traffic volumes during PM peak traffic conditions. Given their critical positions in the network and growing importance in accommodating longer-distance east-west trips

within the city, additional capacity may need to be accommodated for these facilities so that they will meet future user demand.

The growth in both northern and southern Schertz, coupled with the growth of the Cibolo community to the east, and the lack of east-west connections across the Cibolo Creek and Randolph AFB in the plan area, indicate the need for consideration to upgrade east-west corridors, particularly in southern Schertz. However, the significant floodplain along the Cibolo Creek complicates a connection and may eventually require reconfigurations of bridge crossings at Schaefer Road/RAF-Burnette, Lower Seguin Road, and a new structure for the Trainer-Hale Road extension.

The **Binz-Engleman Road and Trainer-Hale Road** corridor will be increasingly important to the growth of Schertz, as the only new east-west corridor connection to neighboring communities to the east and west when these areas develop. Despite the area in the Randolph APZ zones remaining relatively low density, over time this connection will be needed to form a functional grid in southern Schertz, provide access and mobility primarily for Schertz residents and economic activity just north of the I-10 corridor. Preservation of the corridor connectivity will enable the communities to make a connection across southern Schertz in a way that is not possible in the area of Schertz between I-35 and FM 78, which presently makes for longer and more circuitous trips on the remaining east-west corridors.



Local Mobility and Safety

Traffic Volumes and Congestion

The performance of the local roadways and resulting congestion can be linked to a host of contributing elements, including the number of vehicles using them and at what times, number of lanes, speed limit, daily traffic volumes, adjacent land uses, traffic signal parameters, driver types, signage, pavement conditions, road design elements, access controls, and more. In this section, a few elements — demographics, mode splits, and average traffic volumes are reported to track average conditions at the time of the plan.

According to U.S. Census data, approximately 94 percent of all work trips in the City of Schertz are automobile based, with an average commute time of 27 minutes; 13 percent of trips are carpool based, with 6 percent of respondents walking, biking, or working from home. The percentage of people driving to work alone has been increasing slightly, from 80 percent in 2000 to 82 percent for most of central and northern Schertz in 2013. For those not working at home, the commute time varies based on the length of trip, destination, and chosen route.

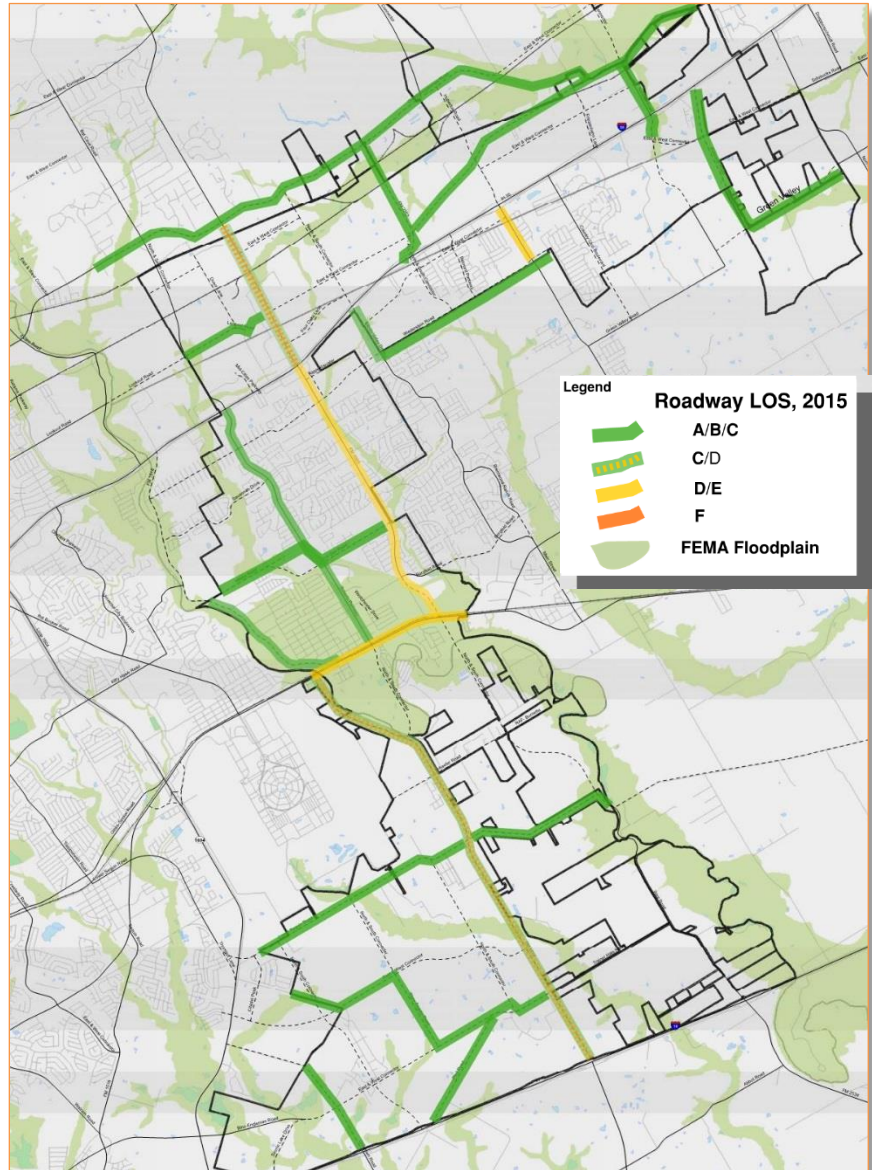


Figure 3. Daily Level of Service, 2015. Source - GRAM traffic counts

The roadway network should provide for safe mobility and access to properties in and around Schertz, just as it does for the longer-distance trips discussed under the Regional Mobility and Connection section earlier in this chapter. This section focuses on the qualitative analysis that can include arterials, collectors, and local connections. At lower levels of the functional classification system, providing access becomes prioritized over higher travel speeds and the service of larger traffic volumes. Typically, fewer lanes are

required, lower speeds are expected, and on-street parking is allowable on local and some collector streets.

Safety

As a part of the MTP update process, crash data on Schertz streets were analyzed to gauge roadway safety throughout the city. According to analysis of Texas Motor Vehicle Crash Data, between 2012 and 2015, approximately 1,950 crashes occurred on city streets, 210 of which resulted in injury. An analysis was performed to determine the most common crash locations as well as the corridors with the highest crash rates. Comparisons were also made to other communities of similar size in Texas. Detailed information regarding the collision data is also provided in Appendix D.

Vehicle crashes are a source of considerable personal anguish, disruption, and loss of personal property and time and can result in personal injury and in the worse cases, death. Analysis of crashes recorded over the prior 3-year period of available data was conducted to determine if patterns were prominent (Figure 4). Rates of crashes on roadways were also compared to cities of similar size. Analysis showed that, generally, arterials in Schertz have a similar number of crashes per year compared to communities of similar size in Central Texas, such as Seguin, Leander, and Kyle.

For the 3-year period, an average of 650 crashes per year were reported, with 3 crashes resulting in fatalities in 2014. Despite increases in vehicle safety technology such as airbags and crumple zones, generally higher speeds and speed differential between vehicles involved leads to increasing severity of crash outcomes. For the period analyzed, 55 out of 1,950 total crashes reported resulted in incapacitating injury. Of the crashes resulting in incapacitating

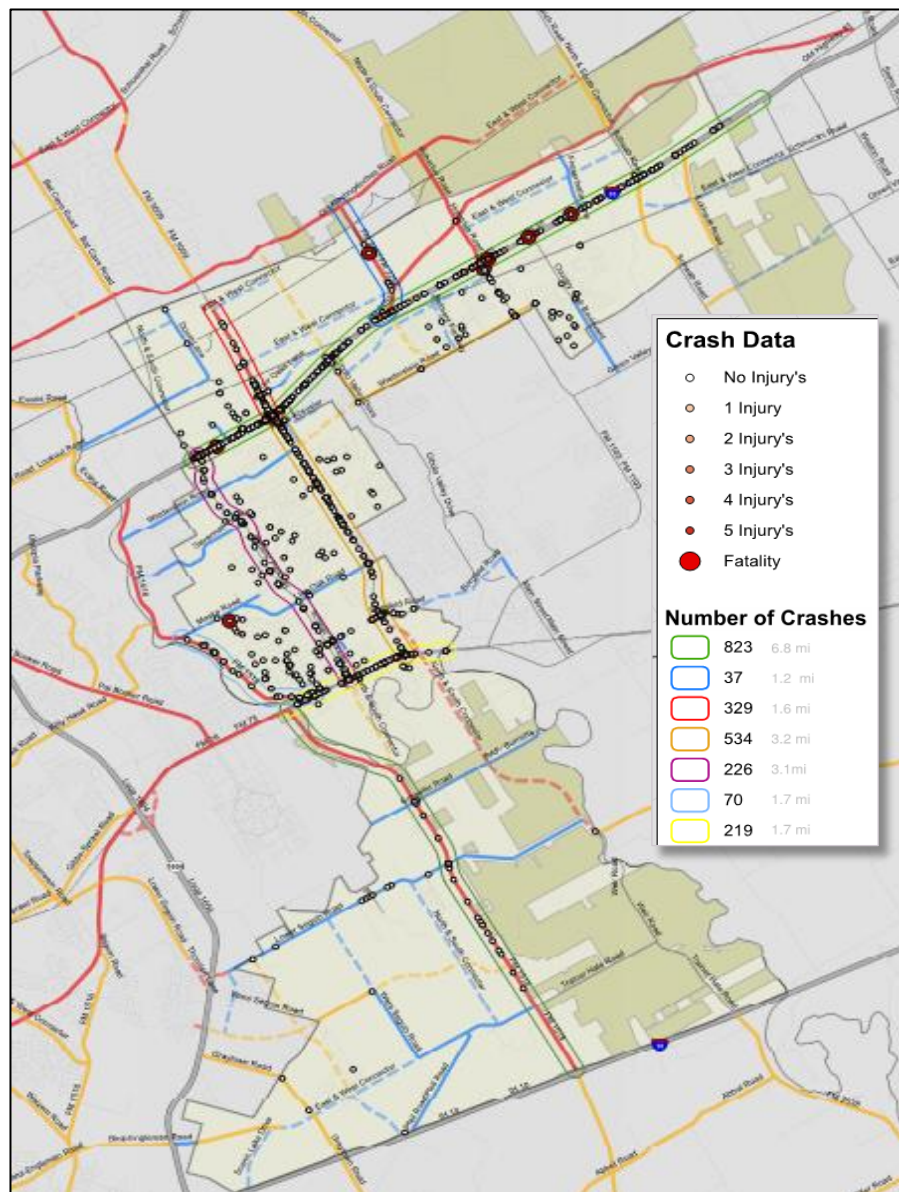


Figure 4. Crash Rates, 2012-2014. Source TxDOT CRIS

injury, 80 percent occurred on roads with a posted speed limit of 45 miles per hour or higher: 35 percent of the crashes resulting in significant injury and six of the eight fatalities occurred on I-35 or its frontage road. Three of the eight fatal crashes occurred at or near I-35 and FM 1103.

Weight differential can often also be a significant contributing factor. However, in Schertz, commercial vehicles as a subset of vehicle types were involved with a limited number of crashes overall in the period analyzed. Only 8 percent of crashes resulting in injuries involved commercial vehicles, and of those, all but four were located on I-35 or its frontage roads. Still, commercial vehicles were a factor in half of the crashes resulting in fatalities. All but one of the fatal crashes involving commercial vehicles were located on I-35 or frontage road.

Table 1. Crashes, Key Corridors, 2012–2014

Key Arterial and Principal Arterial Roadways	Average Crashes/Year	Rate/Mi	Rate/Vol
FM 1518 (South of Lower Seguin Road)	9	1.8	0.002
FM 1518 (North of FM 78)	23	13.7	0.009
FM 78	73	42.9	0.007
Schertz Parkway	75	24.3	0.016
FM 3009 (South of I-35)	178	55.6	0.023
FM 3009 (North of I-35)	110	68.5	0.014
FM 2252	12	10.3	0.008
I-35 (for comparison only)	274	40.3	0.007

Source: TxDOT CRIS 2015

Neither time of day nor weather conditions appeared to be disproportionately contributing factors for fatal crashes for the period of time studied. Overall, 24 percent of crashes occurred at night, which is lower than other similarly situated communities studied.

Mitigation Measures

Measures that could be implemented in an attempt to reduce crash rates on FM 3009 and others include more active access management techniques, which could include the construction of a raised median along portions of the corridor, right-in/right-out commercial driveways, closure of driveways/streets on high-crash segments, consolidation of driveways, incentives supplied for cross-lot access additions, and other treatments. The continued control and limitation of future access points near busy intersections and along high-crash corridors should also be given consideration. The periodic retiming of signal corridors to increase vehicle platooning may help traffic entering the roadway from a driveway or cross street successfully identify an appropriate gap in traffic. Deeper analysis of FM 3009 may also be warranted to determine specific measures to bring crash rates to within the city average.

Lowering posted speeds on roadway segments can also help with severity and frequency of crashes, but typically is more effective when accompanied by striping or physical changes to the roadway that reduce the perception that a driver has room to speed, otherwise mismatches in vehicle speed can persist, where some drivers exhibit disregard for posted speed limits, given the wider lanes.

FM 78 has a combination of high volume use and poorly defined access to adjacent businesses, with growing through-volumes. It could be a good candidate for an access management study by TxDOT to determine the appropriate detailed improvements to make, with additional opportunity for community involvement in development of any corridor scaled improvements.

The policy implications for the City of Schertz are that speed differentials between crash vehicles increase crash severity, and lower speeds are more appropriate for residential areas, with enforcement and education of speed risks an ongoing concern. Additionally, road design features such as narrower lanes and reduced turn radii at intersections can be visual clues to slow traffic on arterial roadways. The results illustrate that the city's practices regarding access management and commercial vehicles generally appear to be positive and are to be commended and continued.

Non-Auto Considerations

Bicycling and Walking

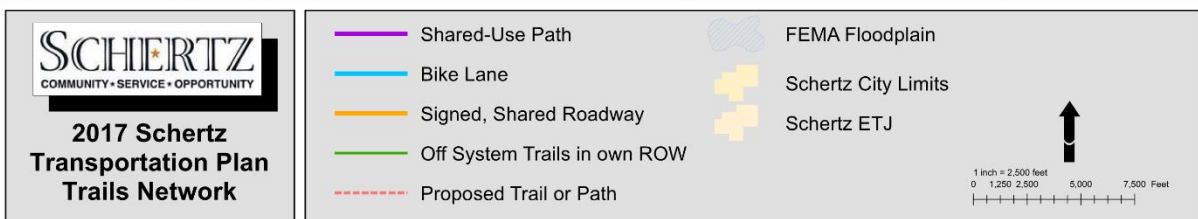
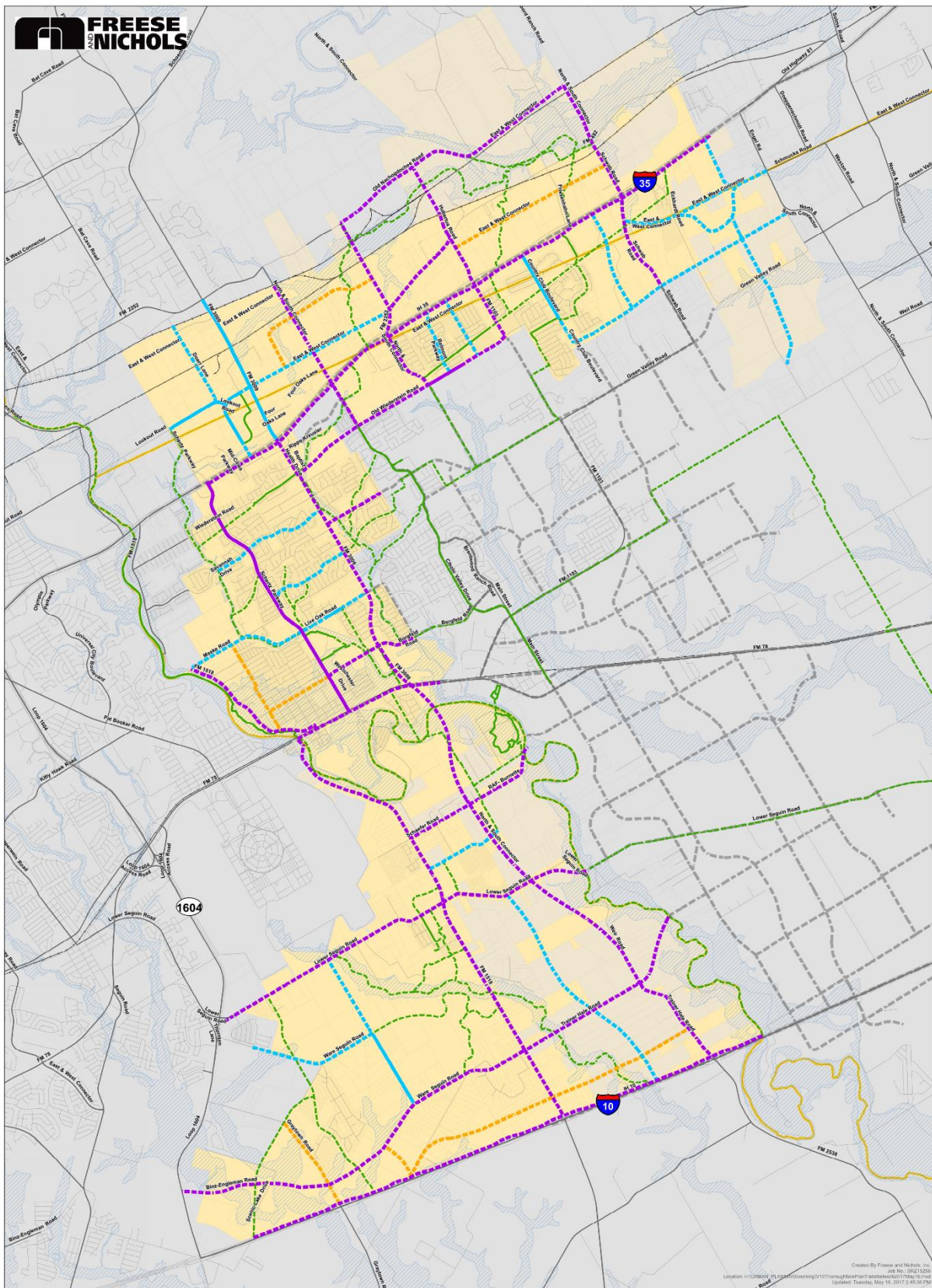
The bicycle and pedestrian system for Schertz includes the pedestrian access routes along roadways and shared-use paths, dedicated bike lanes, shared-use paths (also known as multi-use or hike-and-bike paths), and travel lanes shared with bikes on roadways. The paths for these non-auto modes are not only amenities for recreation, they are functional transportation routes that intentionally offer healthy transportation alternatives. For example, those could include the students at Samuel Clemens High School and local residents of Schertz that make use of bicycling and walking as modes of transportation and recreation. They would be increasingly served by a more extensive pedestrian and bicycle facilities network that provides access to desired destinations. Walking should be further encouraged by landscaping and other enhancements to the travel way and at least 3 feet of separation from moving traffic. Bicycling should be further encouraged by the provisions of bicycle parking accommodations at popular destinations. The Thoroughfare Trails, Bicycle and Recreation map is shown on Figure 5.



On-Street Bicycling

Local bicycling for utilitarian purposes should target the accommodation of bicyclists on routes that make as direct as possible connections between origin and destination. An example of such facilities would be the planned east-west connector parallel to I-35, which would provide a direct connection from the retail node at FM 3009 to residential developments 1 and 2 miles to the east, an easy biking distance. In many cases, the suitability of the route for bicycling can be improved by the provision of striped bicycle lanes through narrowing lane widths to 11 or even 10 feet in width, within the guidelines set by the Institute of Transportation Engineers, or in select cases, eliminating one or more travel lanes (sometimes referred to as right-sizing a road), or other treatments. Several of the existing Schertz bike lanes on collector roadways are in place from striping existing roadways, such as Woodland Oaks Drive and Savannah Drive, both of which serve as residential collector streets.





A “bicycle boulevard” can be created by the connection of local streets with a shared-use path, trail segment or other treatment, creating a through passage for bicyclists and pedestrians but not for motor vehicles, for example, by combining a shared use path on Old Wiederstein Road with the planned trail connection in a utility corridor east of FM 1103 and making a connection across all of northern Schertz but also separated from I-35 by 3,000 feet. The Schertz Master Plan Bicycle & Pedestrian Walkway map, created in 2003, forms the core of the planned network for the city, and has since been expanded to include existing and proposed bike routes, bike lanes and shared-use paths. Off road trails, some of which may be natural surface, are also included for illustration, though those trails are not directed by the MTP.

Higher-speed facilities are better served through separated bicycle accommodations, such as a shared-use paths, which separate bicycles from the higher speed traffic. The advisory group agreed and recommended to use these to form the backbone of the bike network for the plan.

Shared-use path

Shared-use paths, sometimes referred to as multi-use or hike-and-bike trails, encourage healthy and active lifestyle options for Schertz residents as well as serve bicycles not only as recreation, but as transportation facilities. Trails located near residential areas and local parks can see very high levels of usage, especially if designed with good sightlines to points of interest and with routing and amenities placed with a variety of user groups in mind. Local examples include the very popular Schertz Parkway shared-use path and the gravel trail along Forest Ridge Park. Paths along utility easements can also provide linkages in linear ROW that already exist, and in many cases provide a car-free semi-natural green context to travel in. A long-range plan for trails in Schertz is also included in the 2014 Schertz Parks Master Plan.

Paths adjacent to roadways but within the ROW can be more cost effective to provide or construct, though as with the example of Schertz parkway, can benefit one side of the roadway over the other. It will be important to develop a prioritized and coordinated implementation plan for a network of trails and on-street bicycling facilities so that the community can get the optimal return on its investment.

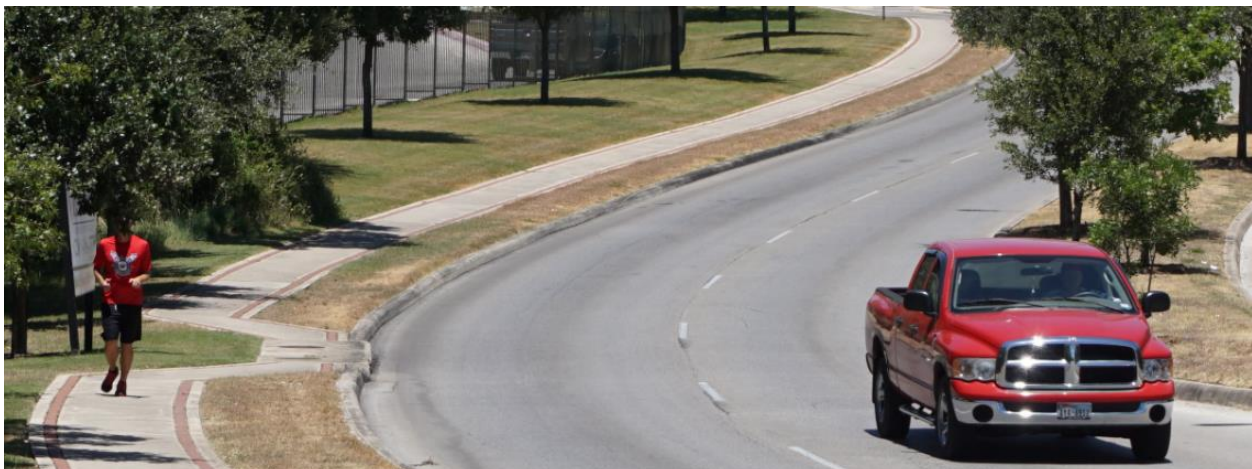


Cyclist using sidewalk similar to a shared-use path along Old Wiederstein Road

Sidewalks

The city generally offers excellent sidewalk coverage for city-maintained roadways and newer developed neighborhoods, though there are some gaps in the existing sidewalk system, particularly along undeveloped parcels along major arterials. Some of the gaps are more critical than others. The city recently benefitted from TxDOT's construction of sidewalks along both sides of FM 3009, providing a significant safety improvement over pedestrians walking along the road's shoulders.

A city's walkability is determined by the availability of pedestrian connections and proximity of residential and retail land uses. For example, the traditional center of Schertz has an exceptionally high level of walkability due to its short blocks and grid pattern of local streets. More recently constructed neighborhoods are well served by sidewalks internally, but they are typically separated from other uses, which promote vehicular use. By creating better connectivity between neighborhoods and other uses with both vehicular and pedestrian facilities, residents have healthier options for completing daily tasks. With neighborhood support services incorporated within neighborhoods, citizens can walk or bike to a grocery store, restaurant, or convenience store. Alternative options to vehicular use allows for cost savings on gas and improved air quality. Sidewalks should continue to be included throughout neighborhoods and provide connections to parks, schools, amenities and other neighborhoods. Design and future construction of significant arterials should, unless they are serving an area intended to remain rural, include pedestrian accommodation along the corridor.



Regional Transit

The following regional transit assessment is based on an evaluation of concurrent plan processes.

Rail

Regional partners are studying a regional rail alternative that would connect the San Antonio metropolitan area to Georgetown, north of Austin. Development of this regional connection concept would provide an additional, reliable alternative to travel on I-35, and provide direct, quick connection to other development nodes along the corridor.

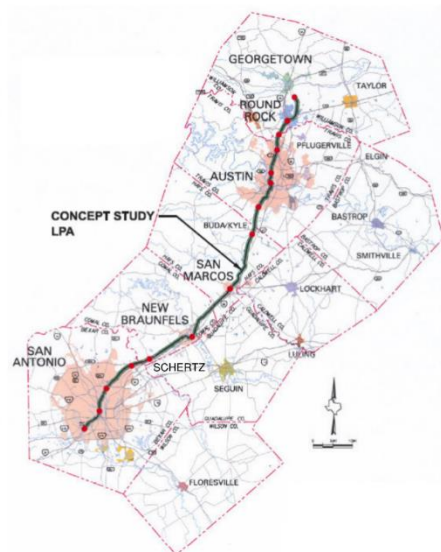
Alamo Regional Transit

The Alamo Area Council of Governments provides a demand-responsive transit service of the Alamo Regional Transit (ART). ART provides demand responsive public transit service, curb-to-curb services in the Schertz area and counties surrounding San Antonio. These services are typically used for adult day care, medical appointments, seniors, shopping, and the general public. One-way fares range from \$2 to \$12, depending on destination, and rides require scheduling a day in advance.

Express Bus and Vanpool

VIA Metropolitan Transit, or VIA, offers non-stop service to major employment centers such as downtown, and vanpool services to serve lower density areas at the periphery of its service area. Through VIA, people can also share rides to work while splitting monthly cost of van rental and fuel in a vanpool.

The express bus service provides an alternative to private automobile travel to downtown San Antonio. However, since the bus currently operates in mixed traffic, and for a large portion of its route travels on I-35, it is subject to the same congestion delays experienced by commuters traveling by car. A park and ride is a location that people drive to for the first portion of their trip, park their car, then carpool, vanpool, or bus for the remainder of the trip. Park-and-ride facilities provide opportunity for commuters living in low-density areas to gather at points to access express and vanpool services, and to utilize high-occupancy vehicle and managed lanes in emerging corridors — lanes that are intended to avoid the congestion experienced during peak travel periods. Park and rides can also serve as feeder locations for future rail service, as conceived for the potential future Lone Star Rail, and the managed lanes along I-35 South. VIA develops new transit facilities as part of its 5-year capital program and is currently planning a northeast park and ride in the I-35 South corridor. Partnership with Schertz would allow for a more



accelerated implementation of transit alternatives in Schertz, and shorter trips for residents. This plan recommends an area that would be useful as park-and-ride location in partnership with VIA. The site location would be generally centered around the intersection of I-35 and FM 1103, with access to the planned express lanes on I-35.

Forecast Transportation Conditions

Future Land Use Conditions

Development of the Schertz MTP utilized the future land use plan from the 2001 Schertz Comprehensive Land Plan and the subsequent 2013 Sector Plan, and 2015 Joint Land Use Study (JLUS) for Randolph AFB. Conditions beyond the city were represented by the regional transportation model and land use projections maintained by the AAMPO.

The future land use map of the adopted Schertz Comprehensive Plan, the 2013 Sector Plan update, and the compatibility considerations of the 2015 Randolph AFB JLUS Study were used to form the land use basis of the transportation analysis and near-term needs. These adopted and recognized plans were used for locations of prevailing and planned land uses, residential, commercial, and institutional locations and densities. The prevailing land uses were overlaid with the existing and previously planned thoroughfare network to form an initial basis for transportation network capacity evaluation through a transportation model.

The information gathered results in a growth projection generally described as follows:

- Residential growth anticipated in southern Schertz to the west of FM 1518 and within a half mile east of FM 1518 at traditional subdivision densities, (assumed to range from three to five homes/acre), with the APZ zones south of Randolph AFB remaining with very low development densities compatible with flight operations.
- Multifamily development focused more in the northern sector plan area located north of I-35, and an overall residential growth rate of approximately 3.5 percent per year for the near term.
- Expansion of retail/commercial development focused along I-10 and I-35, generally.
- Development of a rail-transit corridor station area in north-central Schertz, with associated transit oriented development.
- Continued expansion of light industrial and warehousing industries north of I-35.

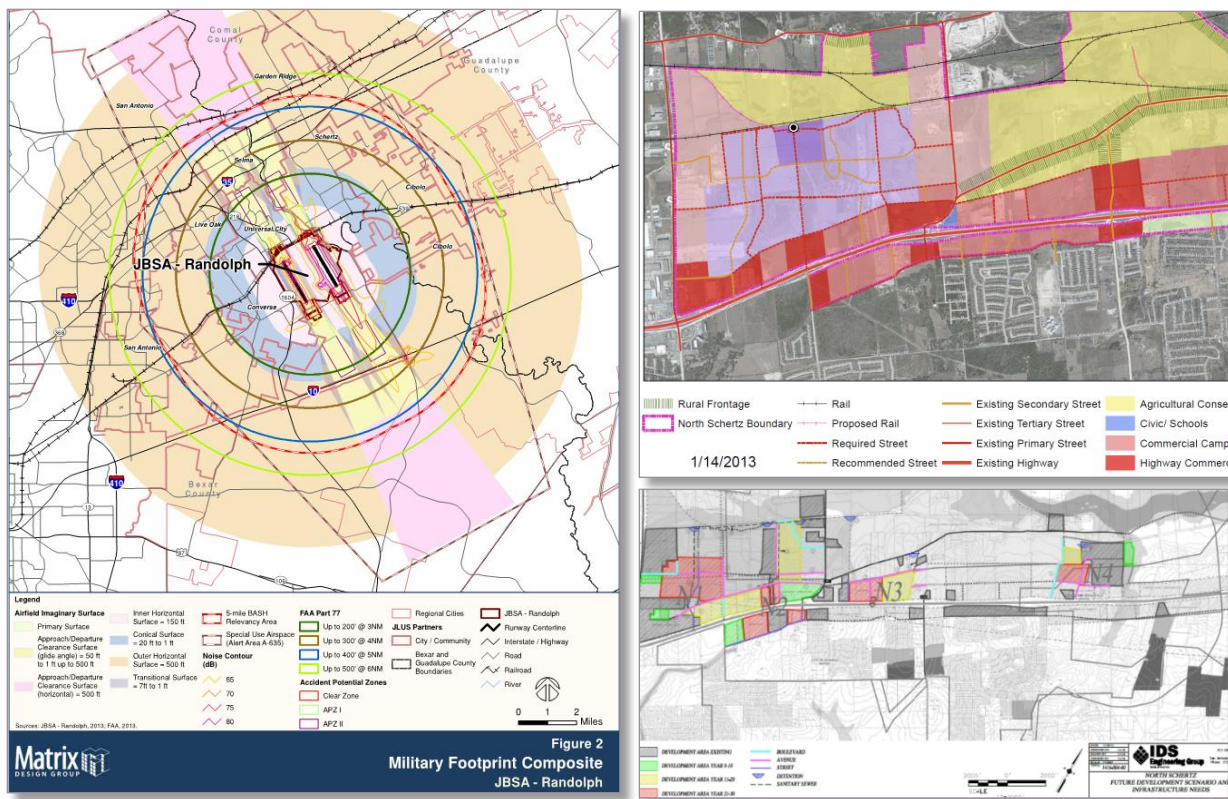


Figure 6. Representative Land Use related plans incorporated, including clockwise from left: Randolph AFB JLUS Study and APZ zones, Schertz Sector Plan, Near-term Land Use changes study.

Projected Growth and Travel Need

The population of Schertz grew at a quick rate of 4.2 percent, annually, between 2000 and 2010, but in more recent years has slowed to a rate closer to 1.7 percent per year since 2010, with an estimated 2016 population of close to 36,000 (U.S. Census). Periods of growth offer the opportunity to consider what is needed to support that growth, and the conversation on how the community wants to grow. The growth projections and results of the conversation form the core of the plan recommendation, and are supported by analysis of the network to support the plan recommendations.

In order to assess the capacity of the transportation network and evaluate the potential to accommodate growth, the existing network was analyzed with a transportation model. For the analysis, existing and future land use plans were combined and a travel demand model was developed based on them, with different transportation scenarios tested. The results inform the recommendations on road classifications, number of lanes in a corridor, and needs for additional network connections.

AAMPO 2040 Model with Schertz Land Uses

During the development of the region's long-range transportation planning efforts led by the AAMPO, City of Schertz staff worked with AAMPO modeling staff to help incorporate Schertz land use plans, and approximate growth rates and patterns and refinements, into the regional travel demand model for development of regional plan consideration. AAMPO works with other regional partners to develop and

update its regional transportation model, which is used to compare regional policy alternatives. Use of the regional model by the MTP update allows for the team to “grow” the network and development outside of Schertz in order to consider the effects on the network within Schertz, while also considering how the city’s growth will impact the network.

Anticipated growth outside of the city area was also used as an input for the transportation model. For areas outside of the city, the team relied on approved projections from AAMPO. A collaborative meeting was held with senior staff from the Schertz Engineering, Public Works, and Planning Departments at the onset of the MTP development effort. This meeting was held to review whether the land uses incorporated into AAMPO’s travel demand model for the Schertz area continued to be valid. Maps of residential and non-residential land uses and densities were produced from the provided AAMPO model and reviewed at this collaborative meeting. The participants at the meeting generally concurred that the land uses represented in the AAMPO 2035 travel demand model were a good representation of the current status of future land use planning within the City of Schertz, and modified them where they were considered significantly different.

The AAMPO model was adapted for use in the examination of the transportation needs and the testing of the implications of potential transportation improvements in the Schertz area. Some adaptations were made to reflect recently adopted Sector Plans, outcome of the JLUS with Randolph AFB, and recently approved major developments, including:

- The regional rail district, located in northern Schertz between FM 3009 and FM 2252 was considered to be mostly lower density in the AAMPO model. More recent plans codified in the 2013 Schertz Sector Plan indicate that the area will include Transit Oriented Development, with mixed land use realized by the 2040 forecast year.
- Southern Schertz, the area south of Lower Seguin Road, was mostly undeveloped in the AAMPO model. The JLUS study recommends that densities west of FM 1518 should remain at lower densities compatible with the AFB operations. The model assumes retail commercial development along I-10 and subdivision development between that area and Lower Seguin Road by 2040. The currently approved development west of FM 1518 is assumed to be largely built out by 2025.
- The AAMPO model assumes significant redevelopment of central Schertz by 2040. Upon discussion with city staff, and considering the limited ability for redevelopment under existing zoning, this was not assumed to be more limited in its extent for the 2040 model.

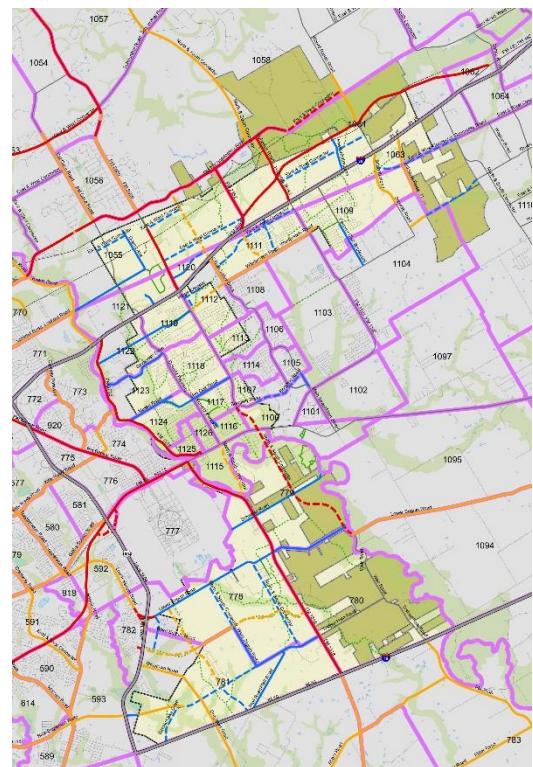


Figure 7. Model Traffic Area Zones (TAZs)

The land use assumptions were subsequently presented and discussed with the CIAC as part of the land use assumptions. The CIAC then also agreed that the land uses and allocations of growth were approximately representative enough to use for modeling purposes. A map of land use intensity, representing approximate densities of population and employment, and how they are represented as growing between 2010 and 2040 is shown as Figures 8 and 9.

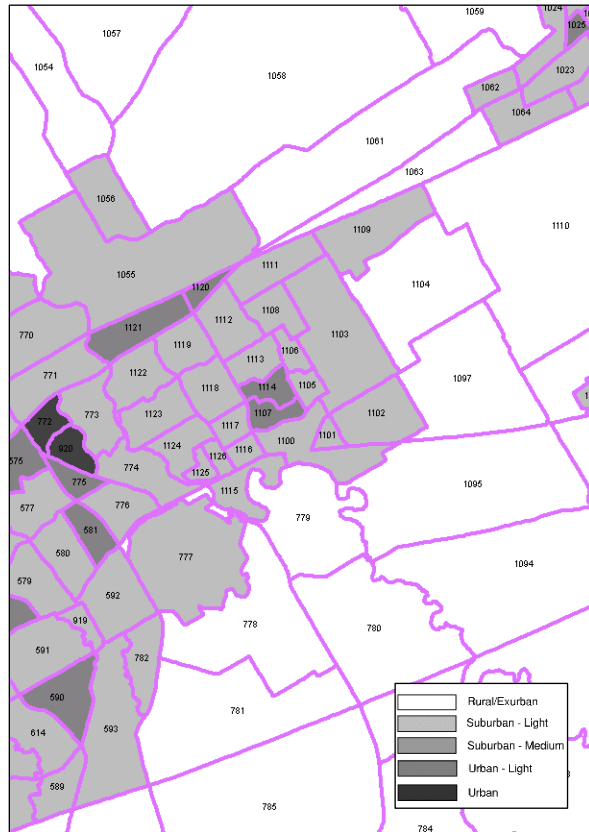


Figure 8. Land Use Intensity, 2010

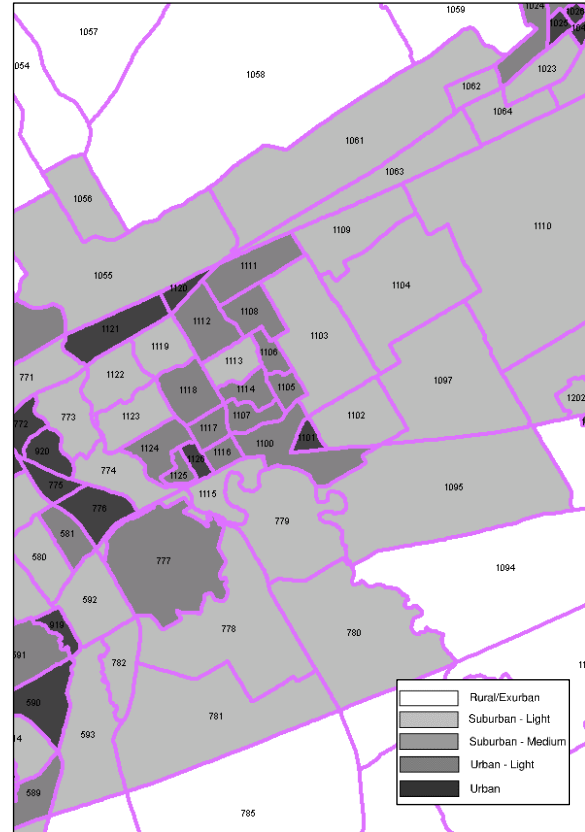


Figure 9. Land Use Intensity, 2040

Transportation Model and 2040 Network

The travel demand forecasting process includes two levels of analysis. The regional demand forecast model is used to develop forecast travel demand results for weekday travel. This is a four-step model consisting of:

- Trip generation: the number of person trips generated by given types and densities of land uses within each Traffic Area Zone (TAZ),
- Trip distribution: how many of the person trips generated in each TAZ will travel to each of the other TAZs in the metropolitan area,
- Mode Split: which mode of travel the person trips will use, including single occupant auto, transit where available, and in some cases non-motorized mode such as walking or bicycling, and
- Trip assignment: determining the roadways that will be used for vehicular travel between TAZs.

This regional model incorporates land use and transportation assumptions for the Alamo Area region using algorithms for air quality conformity analysis. Figures 8 and 9 show the Schertz study area in the context of the traffic area zones of the larger regional travel demand network, featuring the coding of street network to reflect the general level of development density and network connectivity. Roadway improvements from the existing MTP and known projects or regional impact were modeled to reflect the corridors with congested conditions.

The TAZs within the study area were taken from the regional model along with the land uses and amount of development assumed at the regional level for the future modeled year. The TAZs were then each analyzed in relation to the adopted comprehensive plan, sector plan, adjusted as noted above, and confirmed with the city and plan advisory group as approximately representative of future conditions for location of residential and commercial uses as well as approximate development intensity. The confirmed TAZs were then used to calculate vehicle trips which were then loaded on to the network of thoroughfares from the 2011 adopted MTP (Figure 10), as a basis of analysis.

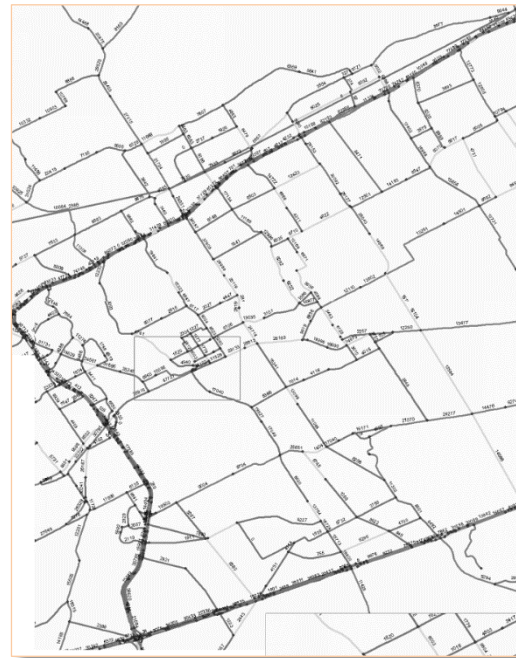


Figure 10. 2011 Comprehensive Plan based Transportation Network - AAMPO

2040 Modeled Results

To assist in the review of the 2040 Schertz travel demand forecast results, which showed number of total lanes, daily traffic volumes, as well as LOS information based on volume-to-capacity (V/C) ratios. Analyses results, as shown on Figure 11 is reflective of the areas anticipated to generally experience delay due to congestion, with subsequent recommendations to address the limitations.

The 2040 Schertz results allowed for a look at the system deficiencies. They also allow an opportunity to assess alternative ways to address those deficiencies — informing recommendations on the network. The network showed significant congestion at the periphery of the city limits, at the edges of the local network, and where the network tied in to I-35 and FM 78. The areas internal to northern, central, and southern Schertz reflected lighter use, more local use, and less congestion. In general, areas with grid networks, or more connectivity options, are shown to function better.

The results point to the importance of additional connections to the regional network, as well as additional capacity on select regional arterials, such as I-35, FM 78, and I-10. Also notable in the results is the adequacy of the transit-oriented-development area north of I-35, which was representing a much higher density of jobs and households than any other part of Schertz, but also a supporting, denser network of streets and a transit node. The results also point to the importance of the connections to and from the I-35 corridor as the area to the east of FM 3009 develops, and the general lack of east west connectivity alternatives to FM 78 — a condition impacted necessarily by the size and operation of the AFB, but also existing developments and Cibolo Creek to the west of Central Schertz. Lastly, the results point to the importance of a second connection to southern Schertz south of FM 78, so that local north-south trips are not required to also travel for a portion on east-west FM78, which eventually becomes very limiting.

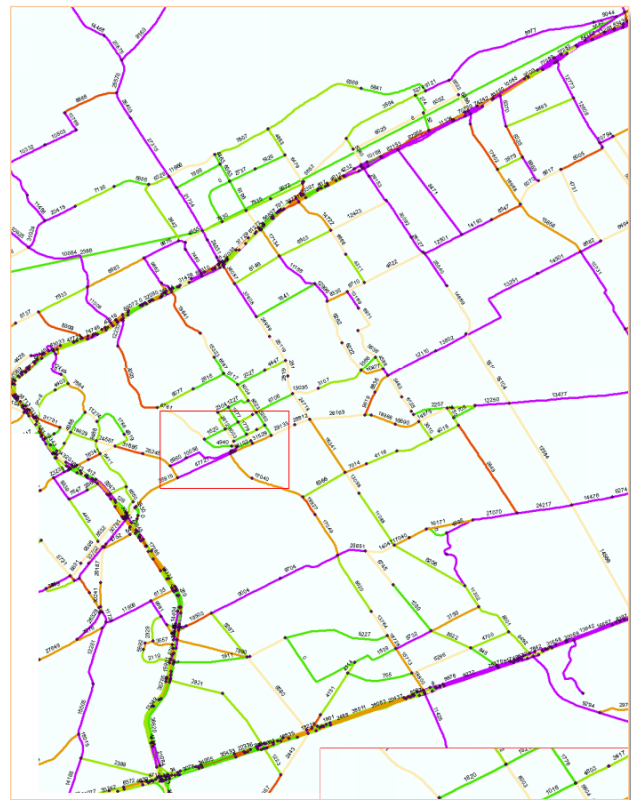


Figure 11. Schertz Network Modeled Result

Transportation Needs and Plan Recommendations

The thoroughfare network is implemented in segments over time. It is envisioned that the majority of the network is provided through the development process, by developers at the time of subdivision using this document as a plan, dedicating ROW and using typical standards to construct roadways. Some roadways may be initially constructed with fewer lanes to meet near term needs, but the ultimate ROW is still preserved for the future need to expand the roadway for future growth. However, the plan effort is also an opportunity to examine near term needs that can be implemented to address current needs and needs anticipated in the near term. This section addresses priority projects that arose through the planning process or were already under way as the project began.

As seen in the modeling analysis, while the currently committed projects listed above address some of the roadway needs, there are a number of current and short range needs for roadway, transit, bicycle and pedestrian modes of transportation that are yet unmet, as discussed earlier in this chapter. The following paragraphs discuss specific facility needs for each of the modes. Some of these improvement projects address the specific deficiencies noted in the modeling results described above.

Identified Short Range Needs

Short-range needs address currently identified capacity, safety and network gap issues and those anticipated to arise within the next 5 to 10 years. Many of these short-range needs were identified during meetings with the plan's advisory committees.

The Advisory Committee identified the following current and pending needs:

- Improve FM 1518 from FM 78 to I-10 from a two-lane undivided roadway to a four-lane divided roadway section, with landscaped median, a shared-use path on one or both sides, and sufficient turn bays at intersections with other arterials.
- Improve access and mobility in central Schertz and FM 78 by proceeding with a Purpose and Need and preliminary design for a grade separated intersection of FM 78 and FM 3009, bridging the UP Railway corridor.
- Partner with the City of Cibolo and TxDOT to support their efforts to improve and enhance FM 1103 as the arterial roadway of choice for traffic movements between I-35 and I-10.
- Improve Elbel/Borgfeld Road, between Schertz Parkway and Gutierrez Park with a shared-use path to accommodate non-auto modes. Elbel Road would be a good connection to make due to the large numbers of students accessing and egressing Samuel Clemens High School at once.
- Expand the network of shared-use paths throughout Schertz to provide increased opportunities for utilitarian as well as recreational riding.
- Create bike lanes and other designated facilities for the mobility of basic (average) bicyclists within the core of Schertz with low cost options like pavement striping and added bicycle signage, targeting specific road classifications like residential collector streets where there is surplus pavement, good connectivity to other off-street trails, and good connectivity to civic destinations such as schools and the Schertz library.
- Roadway design standards call for minimum 5-foot-wide sidewalks on all roadways classified in the MTP, separated from travel lanes by three feet.

A list of short-, medium-, and long-range needs and general timing of network implementation is included in Appendix B.

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Chapter 3. Thoroughfare System Plan



The Master Thoroughfare Plan

The recommended plan builds on the transportation principles established in the city's Comprehensive Plan and the goals and objectives of the first chapter of this MTP, the coordination with neighboring cities, TxDOT, AAMPO, and input obtained throughout the planning process. Key features of this MTP update of the city's Comprehensive Plan include:

- Building on the prior roadway functional classification system – addition of collector classification subtypes, and rural sections to provide context sensitive elements
- Modifying the conceptual alignments for unbuilt roadways – to establish a functional basis for corridor preservation for needed links
- Network connections and continuity additions
- Expanding the shared-use path (AKA hike-and-bike trail) and active recreation system to connect between existing and planned community assets, and provide for transportation alternatives

Thoroughfare Network

The MTP provides for the long term increased mobility and connectivity needs, and a reduced dependency on the automobile. The MTP recommendations are part of a continuity of plan efforts, and as needs change, the plan should be amended to reflect updated information for the preservation of long-term community needs. Transportation planning initiatives should be coordinated with other infrastructure investments and priorities within the community and with other agencies to leverage the financial resources and implementation. Figure 12 illustrates the recommended MTP network.

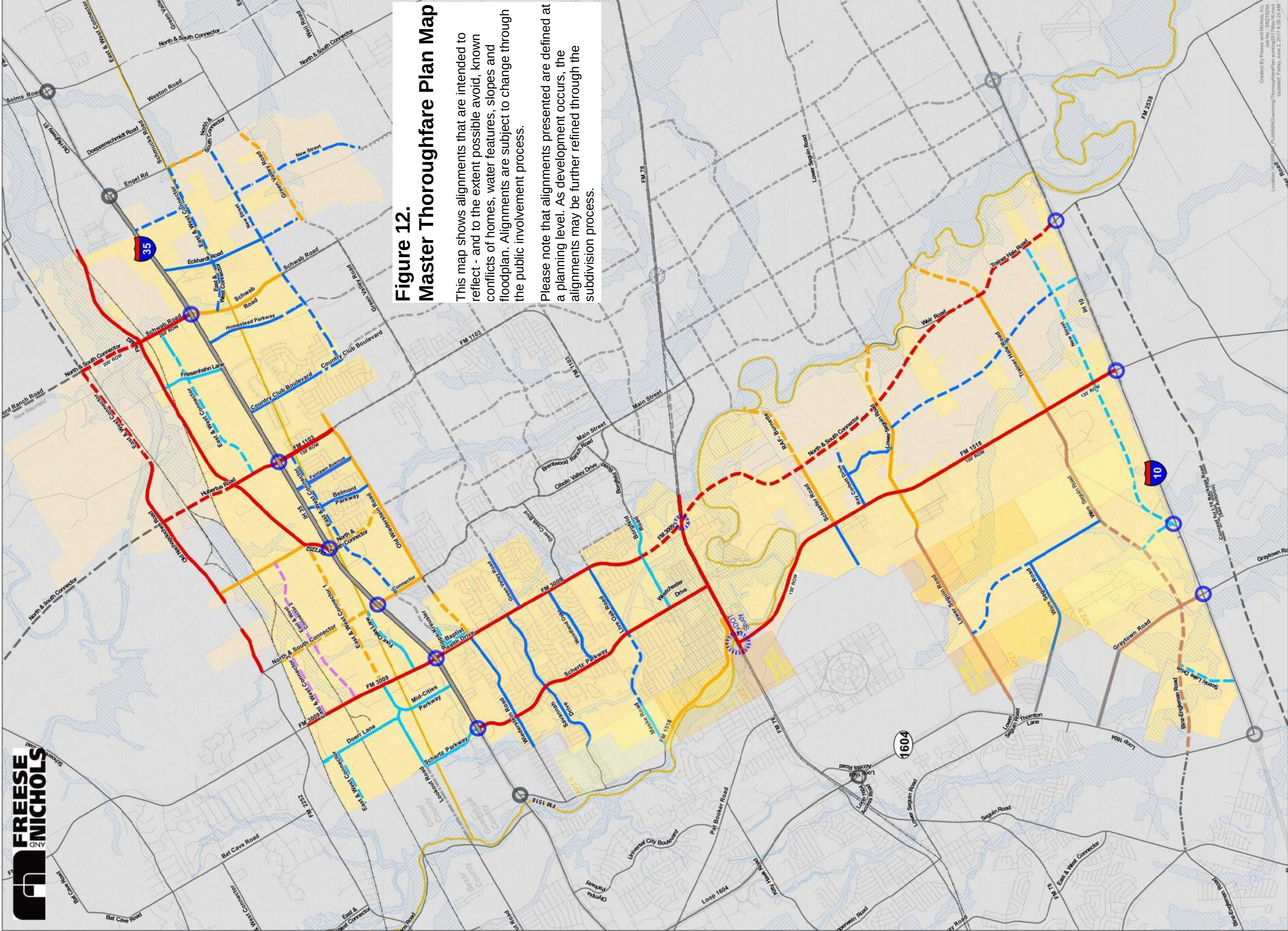
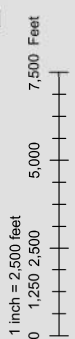


**Figure 12.
Master Thoroughfare Plan Map**

This map shows alignments that are intended to reflect - and to the extent possible avoid, known conflicts of homes, water features, slopes and floodplain. Alignments are subject to change through the public involvement process.

Please note that alignments presented are defined at a planning level. As development occurs, the alignments may be further refined through the subdivision process.

- Freeway
- Principal Arterial / Planned (120' - 130' ROW)
- Secondary Arterial / Planned Secondary (90')
- Secondary Rural Arterial / Planned Secondary (90')
- Residential Collector / Planned Collector (70' ROW)
- Commercial Collector A / Planned Collector (70' ROW)
- Commercial Collector B (TOD) / Planned (70' ROW)
- Other City Roads / Other City MTP Planned Roads
- Grade Separation
- Proposed Grade Separation
- Proposed Grade Separation/ Other Jurisdiction
- FEMA Floodplain
- City
- ETJ



Created By Freese and Nichols, Inc.
Job No. 190215056
Location: 190215056 - PLANNING/Working Thoroughfare Plan
Updated: Friday, June 2, 2017 9:25:59 AM

Street Functional Classifications and Design

Functional street classifications are the hierarchy of streets organized in to a network. Functional classifications not only create a framework of mobility and connection for regions and cities, but also provide for minimum design standards according to their intended function. The combination of design elements of the roadway and associated spaces result in certain ROW widths needed to accommodate them adequately. These ROW widths are then targets for corridor preservation through county, city, and state actions to enable the planned infrastructure and respond to growth when it occurs. The following section outlines the targeted details and function of each of the classifications:

Freeways – The freeway network includes the interstate, U.S. and state highway roadways controlled by TxDOT. Limited access roadways are those that control access to the facility at designated locations, typically at other freeways and arterial streets.
Principal Arterials – Principal arterial roadways carry traffic across major segments of the city, with a primary function of throughput, rather than access. Driveway access onto principal arterials is often limited by spacing requirements, and parking is prohibited. Some principal arterials are on the TxDOT system of roadways (typically FM roadways).
Secondary Arterials – Arterial roadways also carry traffic across major segments of the city, with a primary function of throughput, rather than access. Driveway access onto minor arterials is not as constrained as on principal arterials, and parking is prohibited. Occasionally a TxDOT system roadway may meet the secondary arterial classification (FM 1518 north of FM 78).
Collectors – The function of collector roadways is to connect between local roadways and the network of arterial streets, providing access to neighborhoods and businesses. Collector streets are differentiated from arterial streets by their length and degree of access to adjacent development. Collector streets are typically contiguous across one or more arterial roadways, but seldom more than 1 or 2 miles in length. Driveway access onto collector roadways is seldom limited in commercial areas and on-street parking is sometimes allowed. Collector roadway cross sections can range from two-lane streets to three-lane sections for commercial areas. Collector roadways are often good candidate streets for accommodating bicycles, either in shared lanes or separate bike lanes. Many configurations of use and lanes are possible for context sensitive solutions to the needs of the adjacent development, including one-way streets, bike lanes, parallel parking, or no parking on one or both sides near key developments such as a regional rail station.
Local Streets – Local roadways will typically be two-way streets, one lane in each direction, with curbside parallel parking typically on both sides except for adjacent to intersections. This typical classification provides for minimal traffic flow accommodations.

Freeways, Limited Access

The freeway is typically uninterrupted with grade separations at intersections and ramped entries and exits to and from the crossroads as on I-35. However, limited access freeways may also be interrupted for signalized arterial roadway crossings. Freeways typically operate at free flow speeds over 55 mph and have two or more lanes in each travel direction. Freeways are typically barrier or median separated, or in the example of the managed lanes under design for I-35, can be grade separated from the rest of the corridor where ROW is constrained. The managed lanes element is intended to help maintain a free-flow speed, even during times of peak congestion on adjacent facilities. Freeways, especially controlled access, are typically paralleled by service roads that serve as the interface between the freeway and the adjacent community's arterial and collector street network.

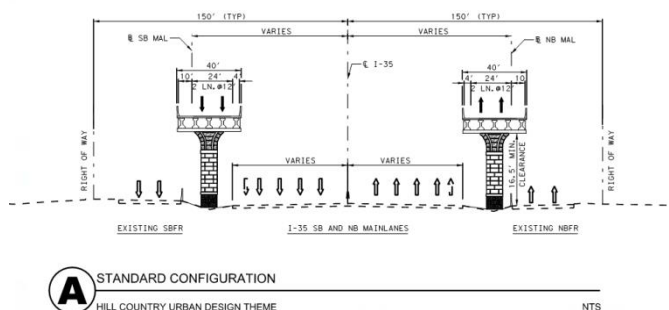


Figure 13. I-35 Managed lanes illustrative – View from Schertz Parkway. Source: I-35 EIS

Principal Arterials

The recommended ROW for principal arterials ranges from 120 to 130 feet. The ROW is intended to accommodate higher volumes and levels of mobility, providing substantial regional access and statewide travel. A ROW of 120 feet allows for four travel lanes and associated spaces. Where six travel lanes are needed, a typical section of 130 feet can be used.

Urban principal arterial roadways provide the predominant passageways through the urbanized portions of the community and connect to the regional freeway network, typically providing for curb and gutter drainage. Intersections are provided at all arterial, collector and local roadways and as needed allowing for local land access directly to the facility. Intersections with arterial roadways are typically signalized and provisions made for one or more left turn lanes and occasionally right-turn lanes to facilitate the through movements along the arterial. Principal urban arterial roadways provide at least two travel lanes in each direction plus a center median area for separations of traffic. The median area may be used to provide channelized left-turn lanes, continuous left-turn lanes, and/or streetscape. Where traffic operational

analyses support the need for greater throughput capacity, a six-lane section may be considered — as is the case for the ultimate build out of FM 1518 south of FM 78.

Access management practices should be employed to minimize the impacts of property access (i.e., driveways) on the principal arterial facility. Sidewalks, five to ten feet in width, should be provided along either sides of the roadway, buffered from travel lanes. A divided median is key for this classification of roadway, and a median width minimum of 16 feet is included. A divided median of sufficient width allows area for dedicated left turn lanes at intersections and provides access management for fewer turning conflicts, and preservation of traffic flow. The median may be raised, or surfaced depending on the adjacent land use. Driveway access onto principal arterials should be limited by access management and spacing requirements, and parking along arterial roadways is generally prohibited. The illustrations below show typical sections for four and six travel lanes with surfaced medians.

- High degree of regional mobility, higher traffic volumes, and operational speeds
- Access is carefully managed
- Curb and gutter section with underground stormwater utilities and drainage

Examples include Roy Richard Drive (FM 3009), FM 78, FM 1103, and FM 1518 south of FM 78.

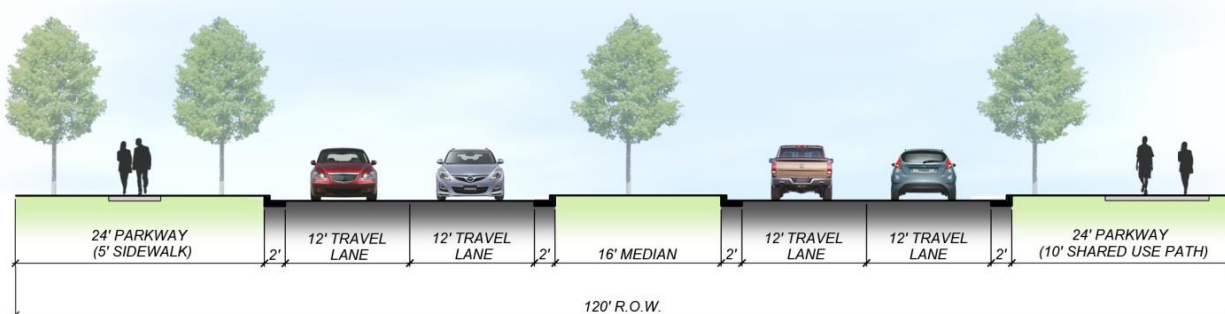


Figure 14. Four-Lane Principal Arterial Section

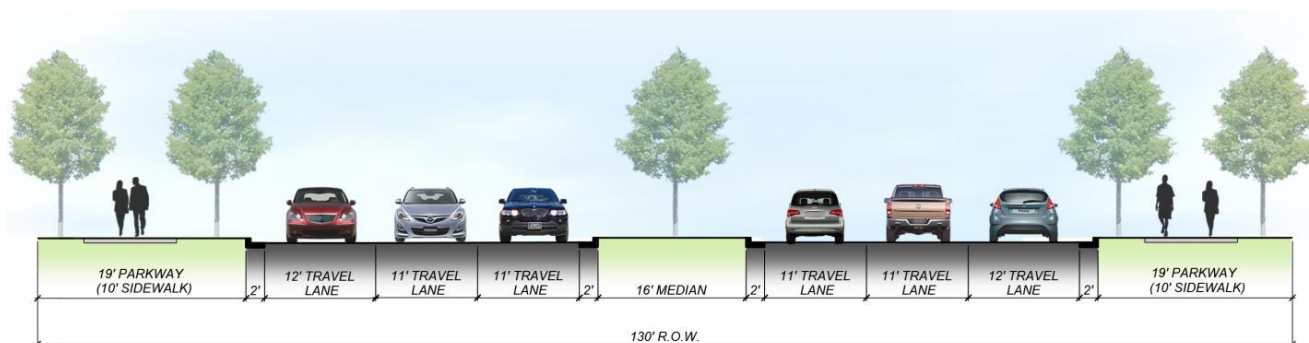


Figure 15. Six-Lane Principal Arterial Section

Secondary Arterial

The ROW for a secondary arterial in Schertz is 90 feet wide. The arterial is intended to accommodate medium volumes and local mobility, and provide for connections to neighboring communities. Secondary arterial roadways are intended for local trips, so design speeds should also be notably lower than principal arterials. A ROW of 90 feet allows for four travel lanes and space to buffer different travel modes. A divided median is also important for this classification of roadway, allowing some area for reduced width left-turn lanes at minor intersections and provides access management for fewer turning conflicts. Additional ROW may be preferred at major intersections. Driveway access to secondary arterials should also be guided by access management and spacing requirements. Parking along secondary arterial roadways is generally prohibited, unless parallel parking bays are provided in addition to travel lanes, which may be desirable in a potential mixed-use transit oriented district north of I-35. Bicycle accommodation is intended to be provided on a shared-use path (or hike-and-bike path), buffered from the roadway.

- Cross-town mobility
- Accommodates medium traffic volumes and operational speeds
- Managed access
- Four-lane divided
- Curb and gutter drainage

Examples include Lower Seguin Road east of FM 1518, Wiederstein/Old Wiederstein Road, and the east-west portion of Trainer Hale Road.

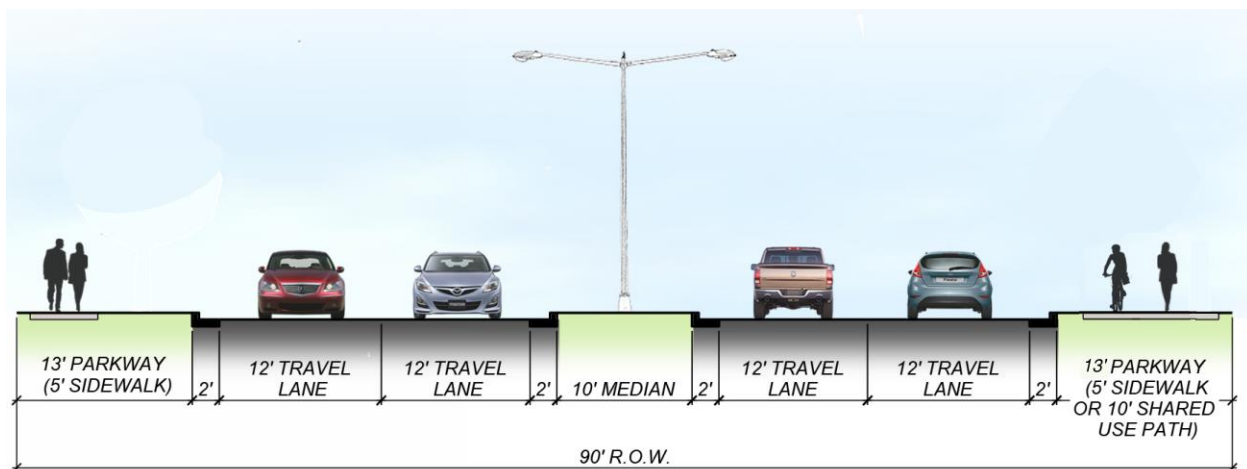


Figure 16. Secondary Arterial Section – Wiederstein Road

Secondary Rural Arterial

Rural Secondary Arterial roadways carry traffic across significant segments of the city, connect principal arterials to collectors, and accommodate moderate volumes at higher speeds. This section is intended for use where adjacent, planned land uses are lower intensity, and access points fewer than the urban section would provide. The recommended ROW for Secondary Rural Arterials is 90 feet and is intended to include a three-lane section, with two travel lanes and a surfaced median. Travel lanes should be 12 feet wide with 6- to 8-foot-wide shoulders to accommodate emergency parking, extended site lines, and bicycles. Wide areas at the edge of paved shoulders provide for stormwater drainage and buffer from the roadway from adjacent property. Where sidewalks are provided, they should be between the drainage channel and the edge of the ROW. Driveways should still be guided by access management principles. A two-way left-turn lane in the center of the section provides buffer distance from oncoming traffic and left-turn opportunities without obstructing the through-movement. An adjacent 20-foot-wide trail easement allows for accommodating pedestrians and bicycles on a shared-use path (or hike-and-bike path) sufficiently buffered from the travel way and opportunities for tree growth.

- Cross-town mobility
- Accommodates medium traffic volumes and higher operational speeds
- Access is managed
- Two-lane divided
- Open section drainage

Examples include Lower Seguin Road west of Hollering Vine and adjacent to Randolph AFB, and Ware Seguin Road west of FM 1518.

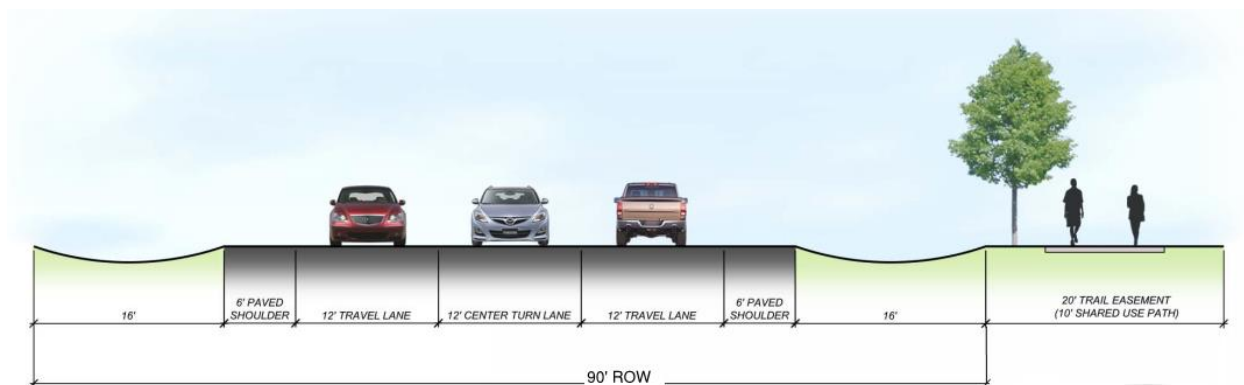


Figure 17. Secondary Rural Arterial Section – Ware Seguin Road.

Collectors

Collector roadways serve to provide access to higher functional class facilities, access to residential areas, and provide access and circulation to commercial areas. They are designed for short trips, lower speeds, and connections between residential and commercial areas. They are differentiated from arterial streets by their length and degree of access to adjacent development where driveway access is seldom limited. The recommended ROW for Collector roadways is 70 feet wide. The pavement width of 40 feet is wide enough to provide different layouts of lane striping to accommodate adjacent uses – whether it is on street parking, or bike lanes, or a center-turn lane, the width is intended to be flexible over time as needs change. Three typical sections are provided: one residential section with on street bike lanes, one commercial section with a middle turn lane for frequent driveways and turn-movements, and one commercial section with on street parking.

- Collection and distribution of traffic
- Speeds and volumes dependent on adjacent land uses and neighborhoods served
- Access to development and neighborhoods
- Connectivity to arterial and residential collector streets

Typical Residential Collector – 70-foot ROW: 7-foot buffered bike lanes accommodate bicycles of all comfort levels. Examples include Ray Corbett Drive, Live Oak Road, Wiederstein Road west of FM 3009, Country Club Boulevard, Eckhardt Road, and segments of Ware Seguin Road.

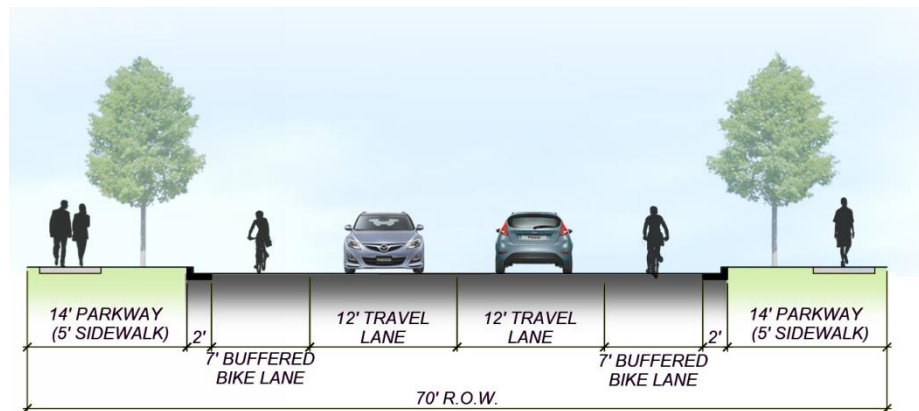


Figure 18. Residential Collector – Example: Savannah Drive

Typical Commercial Collectors – 70-foot ROW – applicable in Southern Schertz near I-10 and northern Schertz near I-35. The 12-foot-wide outside lanes can accommodate more experienced bicycles. A shared-use path on one side accommodates less experienced bicycles.

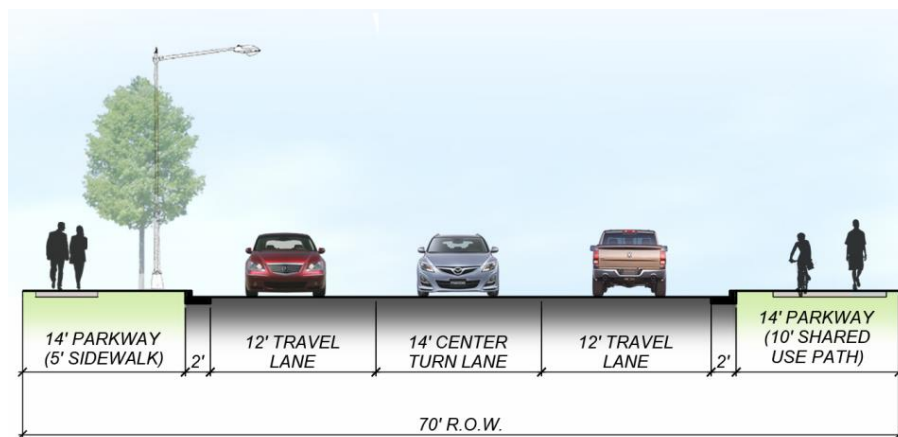


Figure 19. Commercial Collector - Example: Four Oaks Lane

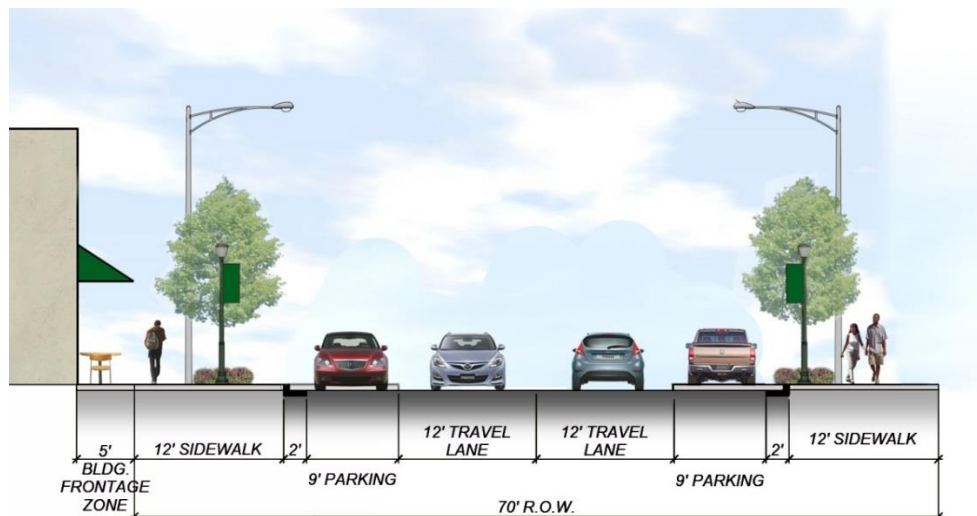


Figure 20. Commercial Collector (TOD) - Example: New Streets in TOD area

Local Residential and Commercial/Industrial Streets

The primary function of local streets is to provide access to and from properties. Local streets feed to and from the collector street network, but occasionally may tie directly to arterial streets. The urban local residential street is described in the Schertz Unified Development Code as a 30-foot pavement width, with curb-and-gutter drainage and minimum 5-foot-wide sidewalks on each side of the street, buffered from the curb. Local residential streets have a 50-foot-wide ROW. Local commercial/industrial streets are described as 42 feet of pavement, with curb and gutter drainage, 5-foot sidewalks, and a 60-foot-wide ROW. Local streets are not illustrated on the MTP map, but are encouraged to be developed to increase connectivity, lessen block lengths, and encourage active and non-auto modes of travel for people on foot, pedestrians in wheelchairs, and people on bike.

Type of Roadway	Function	Spacing (Miles)	Direct Land Access	Roadway Intersection Spacing ⁽³⁾	Volume Ranges (Veh./ Day)	Speed Limit (mph)	Parking	Comments
Highways and Freeways	Traffic move-ment; long distance travel	1–5	Provided by on/off ramping schematics to continuous frontage roads	1 mile	30,000 to 125,000	55–70	None	Supplements capacity of arterial street system and provides high speed mobility
Principal Arterial	Moderate distance inter-community, intra-metro area, traffic move-ment; serves long trip lengths	½–1 ½ ⁽²⁾	Restricted – some movements may be prohibited; number and spacing of driveways controlled	1/4 mile	20,000 to 46,000	40–55		Provides higher mobility and speeds; “backbone” of the street system
Secondary Arterial	Mobility function is primary; access function is secondary; serves moderate trip lengths		May be limited to major generators; number and spacing of driveways controlled	1/8 mile	7,000 to 34,000	30–45		Provides route and spacing continuity with major arterials
Collector	Primary – collect/distribute traffic between local streets and arterial system; serves short trip lengths; provides land access and inter-neighbor-hood traffic movement	¼–½ ⁽²⁾	Safety controls; limited regulation	300 feet	2,000 to 18,000	30–40	Limited	Through traffic should be discouraged
Local Street	Land access	2 lot lengths	Safety control only	125–200 feet	200 to 1,500	20–30	Permitted	
(1) Spacing determination should also include consideration of (travel within the area or corridor based upon) ultimate anticipated development.								
(2) Denser spacing needed for commercial and high-density residential districts.								
(3) Spacing and intersection design should be in accordance with state and local thoroughfare standards.								

Design Guidelines and Special Considerations

There are established standards for design that are utilized by communities across the United States that have been established based on research and local experience. These are the anticipated guidelines for implementation of the transportation system plan:

For Roadways:

- American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*, latest edition
- Transportation Research Board (TRB) *Highway Capacity Manual*, latest edition
- Texas *Manual on Uniform Traffic Control Devices*, latest edition
- City of Schertz Unified Development Code

For Bikeways:

- AASHTO *Guide for the Design of Bicycle Facilities*
- National Association of City Transportation Officials *Urban Bikeway Design Guide*

For Sidewalks and Paths:

- AASHTO *Guide for the Planning, Design and Operation of Pedestrian Facilities*

For Transit Facilities:

- TRB *Transit Capacity and Quality of Service Manual*

In addition to these established design standards, there are additional guidelines for design applications to best suit the current and anticipated conditions along the street corridor.

Complete Streets

One of the planning concepts Schertz should consider to incorporate in future roadway design on key corridors is a complete streets initiative. The focus of a complete streets initiative is to consider all modes during the planning, design, construction, operation, and maintenance of the city's street network. Effective complete streets policies help communities routinely create safe and inviting road networks for everyone, including bicyclists, drivers, transit users, and pedestrians of all ages and abilities. Instituting a complete streets policy ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind. For the complete streets policy to be effective, a program of supporting policies and procedures need to be put in place in the city which could include a program of land use planning guidelines, project development checklists, established responsibilities for addressing modal issues, and more specific design and operating standards for implementation and maintenance. All of the roadways in Schertz have the potential to be complete streets.

Context Sensitive Solutions

Though a roadway corridor on the MTP may be of a particular functional class designation, whether it is a principal arterial, secondary arterial, or collector, its typical section may transition along its corridor depending upon the traffic volumes and relation to the adjacent land uses. In many cases, an arterial roadway may pass through rural into urban and sequentially commercial into residential settings and back again within a segment of the corridor. The typical sections to be considered for these roadways should

be sufficiently adaptable to the context of its current surroundings and potential development. Similarly, the development of land adjacent to arterial roadways should be sensitive to the mobility function of the corridor. Thus, for each of the roadway classifications in the MTP, multiple typical sections are proposed for potential application to the corridor context, with multiple possible combinations.

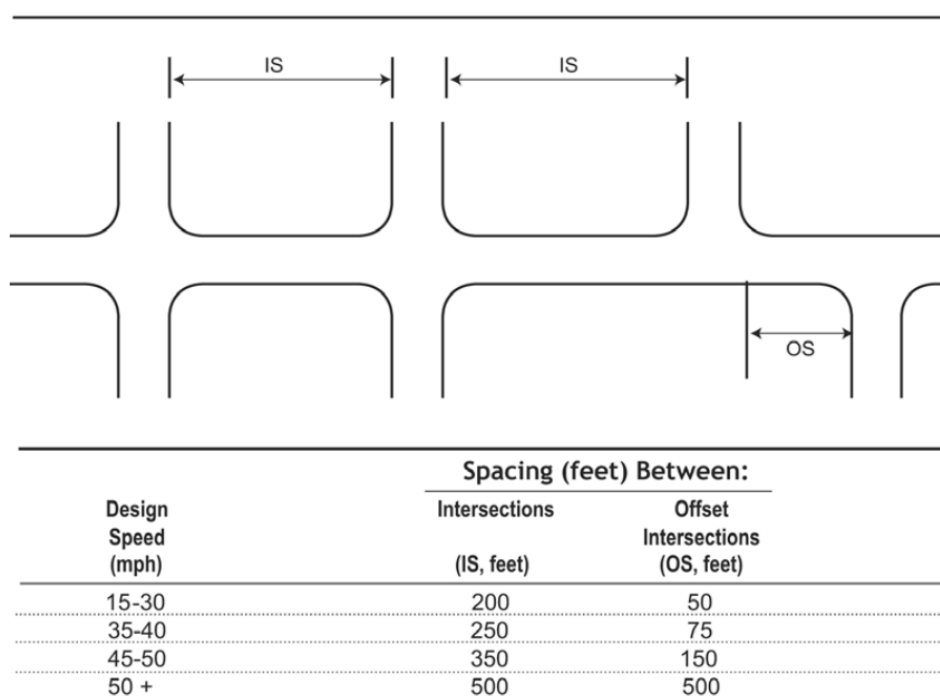
Corridor and Access Management

Access management refers to the practice of coordinating access points to a roadway by considering specific design criteria for the location, spacing, design and operation of driveways, median openings, and intersections. The goal of access management is to safely balance access to land development while maintaining efficiency of the transportation system. This is accomplished through influencing, and in some cases controlling, the location, spacing, design, and operation of driveways, median openings, and street connections to a roadway. In general, arterial streets in Schertz show positive access management, with limited driveways access points and spacing between them, and residential developments accessed through collector roadways intersecting the arterials at signal controlled intersections. The city deserves credit for the implementation of many of these practices, and should continue, to the benefit of the community. The options below are intended to expand the considerations available, and may be applied to some arterials over time, that have duplicative and/or wider driveways that decrease system efficiency.

In general, as the access to facilities along the roadway is increased, mobility of a roadway is decreased. Access management influences this process, slowing its progress and in some cases reversing it with tangible results in order to maintain efficiency of the road and improve traffic safety. The following guidelines include specific details the city can continue to influence to do so.

Driveway Spacing

Driveway spacing guidelines limit the number of driveways along a roadway by establishing a minimum distance between driveways and non-signalized intersections (Figure 21). Spacing requirements help reduce the probability of crashes as vehicles enter and exit the roadway. The distance between two access points is measured between the closest edge of pavement of the first access and the closest edge of



Source: Adapted from Congress for the New Urbanism (CNU), AASHTO, 2005

Figure 21. Driveway and Non-Signalized Intersection Spacing Guidelines

pavement of the second access. A balance is found between allowing enough access to serve the adjacent land use, but not too much access so that it degrades the road performance. Distances can be modified depending on the intent of the roadway use, for example higher speed roads and anticipated truck traffic, to provide more time for shifting.

Raised Medians

Raised medians limit cross-street movements and improve traffic flow. They have been proven in studies sponsored by the Federal Highway Administration (FHWA) to reduce crashes by over 40 percent in urban areas and over 60 percent in rural areas. Medians also serve as a safe refuge for pedestrians and bicyclists crossing the street, especially compared to two-way left-turn lanes. The placement of the median opening depends on the type of thoroughfare system. Priority should be given to thoroughfares providing mobility and access throughout the entire community. Openings should only be provided for street intersections or major developed areas. Spacing between median openings must accommodate left-turn lanes with proper deceleration and storage lengths. Median treatments can take on many different forms, including full median openings and channelized openings.

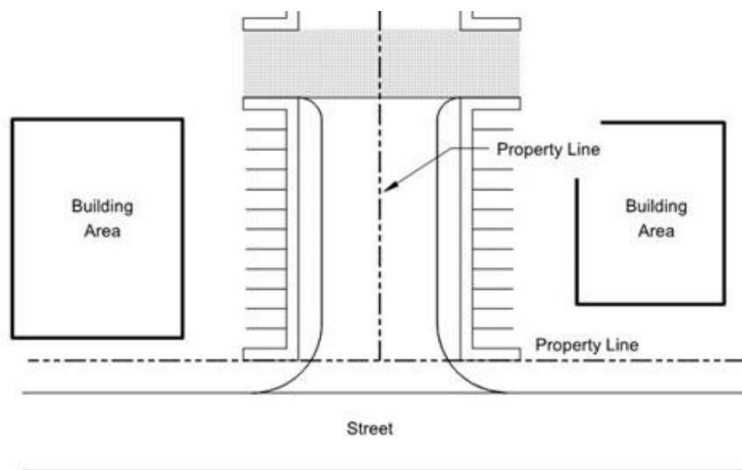


Figure 22. Example, Shared Access Easement

stakeholders, typically requiring cooperative agreements between each property owner and governing agency attempting to consolidate the driveways and in some cases share a driveway, for example, through a shared access easement. Each driveway presents a potential conflict point, thus, a safer redesign would use an internal circulation system to funnel roadway traffic through one major access point. Driveway realignment involves the relocation of driveways so they mirror or offset one another to minimize potential conflicts.

Driveway Consolidation

Research sponsored by FHWA shows that the density and design of driveways have a direct impact on roadway safety — the more access connections, the more accidents. The purpose of driveway consolidation and spacing is to limit the number of conflict points while ensuring convenient and safe access to businesses. Driveway consolidation involves the removal of existing access connections, or driveways, for the primary purpose of improving safety. This technique will impact multiple

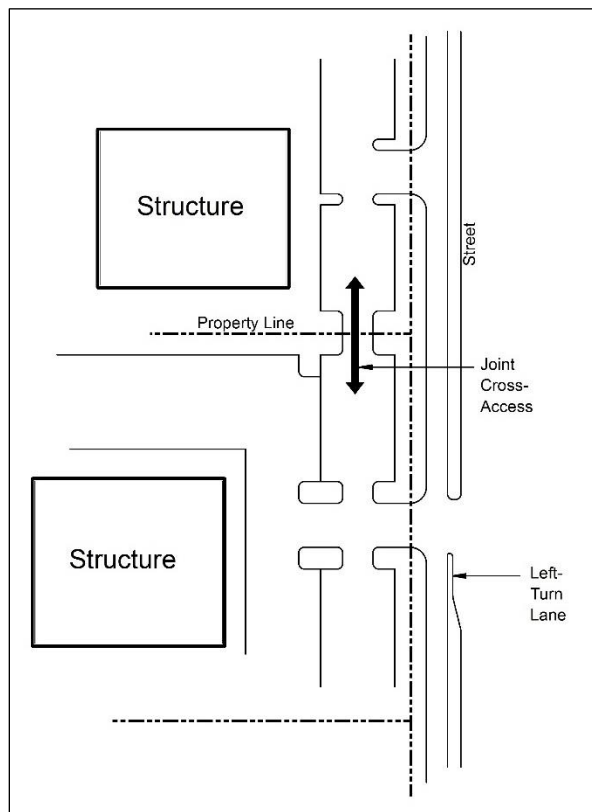


Figure 23. Example, Cross Access Easement

Auxiliary Lanes

Deceleration and acceleration lanes at major driveways can provide refuge for turning vehicles while maintaining travel speeds for traffic through lanes. Auxiliary turn lanes at intersections allow turning traffic to get out of the way of through traffic and wait to turn using gaps in opposing traffic. These treatments increase the capacity and average travel speed of the roadway, while enhancing driver safety.

Pedestrian Sidewalks/Sidepaths and Crossings

Pedestrians are a critical user group of intra-city travel, especially in urban and mixed-use centers. Well-designed pedestrian environments not only encourage walking, they separate pedestrians from vehicular traffic to increase the safety and enjoyment of this experience. Well-designed, safe, convenient, and attractive pedestrian environments will increase the viability of walking as an alternative transportation mode. Intersections are the most

dangerous pedestrian environments. The location and design of crosswalks, median rests, curb ramps, and pedestrian signals help to improve the safety and accessibility of pedestrian crossings.

Landscaping and Streetscaping

Landscaping provides functional and aesthetic benefits to the streetscape through the use of scale, shade, and color. Improvements may include shade trees, hanging flower baskets, flower boxes, decorative signage, and entry features. Planting amenities can require higher maintenance costs than hardscape and street furniture, but they offer natural beauty and a much grander scale. Landscaping is also used as a traffic calming device to reduce the speed of automobiles. When street trees are placed along the sidewalk edge or in the median, their presence creates the appearance of reduced area of the roadway available to vehicles. This influence has a traffic calming effect.

Bicycling Accommodations

Bikeway amenities alert motor vehicles and pedestrians of bicycle traffic, while also guiding cyclists to their proper location on the roadway. Bicyclists also benefit from the other access management treatments that reduce conflict points and create order and calming effects to traffic flow.

Key Mobility Intersections

The ability for the roadway network to operate effectively relies on the ability of intersections to efficiently process traffic. Operational conditions typically break down when insufficient turn lane capacity is available to remove turn movements from the traffic stream. To ensure the ability to provide channelized turn movements, such as a second left-turn or right-turn lane, an additional 22 feet of ROW should be provided at key major and secondary arterial intersections. To determine the exact dimensional requirements of specific intersections, a traffic analysis should be conducted at the time of facility implementation or coordination/approval with the City Engineer.

As currently defined, divided roadways have the ability to accommodate a separate left-turn lane. By adding approximately 20 feet of width, a second left-turn and separate right-turn bay can be added as needed to an intersection. Travel lanes of 11 feet typically provide sufficient roadway width for turn movements.

Critical mobility intersections generally fall where major and minor arterial facilities meet. At these intersections, the city should require additional ROW via the subdivision and platting process (where possible) as informed by an operational traffic impact analysis, to allow for additional turn lanes that may be needed in the future. In high intensity development areas, a traffic analysis should be conducted to determine the appropriate intersection requirements. Figure 24 illustrates intersection ROW requirements at critical locations, if not planned for other improvements that have more specific ROW needs detailed.

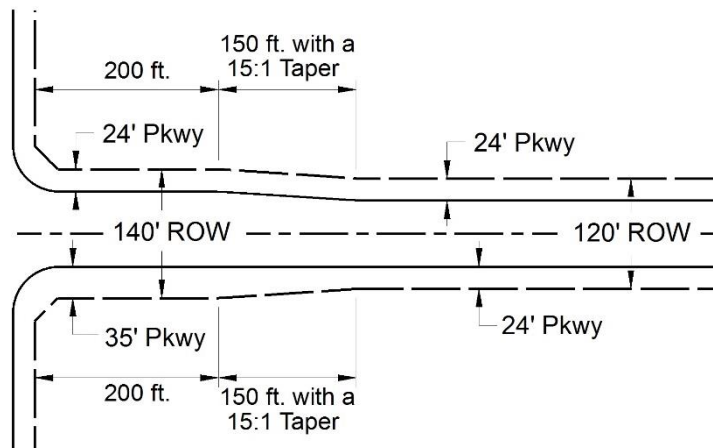


Figure 24. Major Arterial Flared Intersection ROW Dedication guidelines

Administration

In the administration and enforcement of the plan, special cases and unique situations will occasionally arise where existing physical conditions and development constraints in certain areas conflict with the need for widening of designated thoroughfares to the planned ROW width and roadway cross section. Such special circumstances require a degree of flexibility and adaptability in the administration and implementation of the plan. Acceptable minimum design criteria and special roadway cross-sections may have to be applied in constrained areas where existing conditions limit the ability to meet desirable guidelines. Where new development occurs, cross sections should be according to the MTP and Unified Development Code. For redevelopment in areas with existing, constrained ROW, a unique roadway design determination may be necessary and is subject to the approval of the City Engineer/Staff and/or the Planning and Zoning Commission. The standard roadway cross-sections should be used in newly developing areas and whenever possible, in existing developed areas subject to the prevailing ROW for the existing thoroughfare.

Conclusion

This MTP provides a framework for a transportation system to offer choices in how residents travel, and includes recommendations for corridor alignments to preserve mobility and connectivity as the community grows. This plan also serves as a blueprint for transportation investment decisions and includes opportunities to address current needs and those anticipated in the near term.

The thoroughfare network is implemented in segments over time. It is envisioned that the majority of the network laid out in this document will be provided through the development process at the time of subdivision, using this document as a guide. But the network will still need to be managed, guided and operated through shared responsibilities and partnerships between the city, counties, neighboring cities, and regional agencies such as AAMPO, VIA, and TxDOT. This plan will be incorporated in to the regional MTP maintained by AAMPO, and should be considered part of the continuous, comprehensive, and cooperative planning process nested in the context of the larger efforts.

This plan allows for key improvements, including additional turn lanes at major intersections, an extension of FM 3009, and support for improvements to FM 1103 and the intersection of FM 1518 and FM 78. These are critical points in the transportation network for the city and will support the region as it grows.

Using public resources in an efficient and effective manner includes anticipating growth and making reasonable allowances for its coordination. The city will continue to grow its network of roads and corridors as the city does, and balance expansion with maintenance and operation of the existing system in order to preserve the ability to reach desired goods, services, and activities. Select expansions to the network will increasingly provide connections and opportunities to drive, but also to walk and bike, thus reducing the future fiscal burden on residents to provide city services in areas with certain levels of activity and infrastructure. But care needs to be taken in the implementation to preserve the community character and seek balance between the need to accommodate growth, yet retain what is distinctive and best suits the Schertz community.



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Appendices

Appendix A – Advisory Group and Open House Presentations Material (Attached)

Appendix B – Implementation Timelines

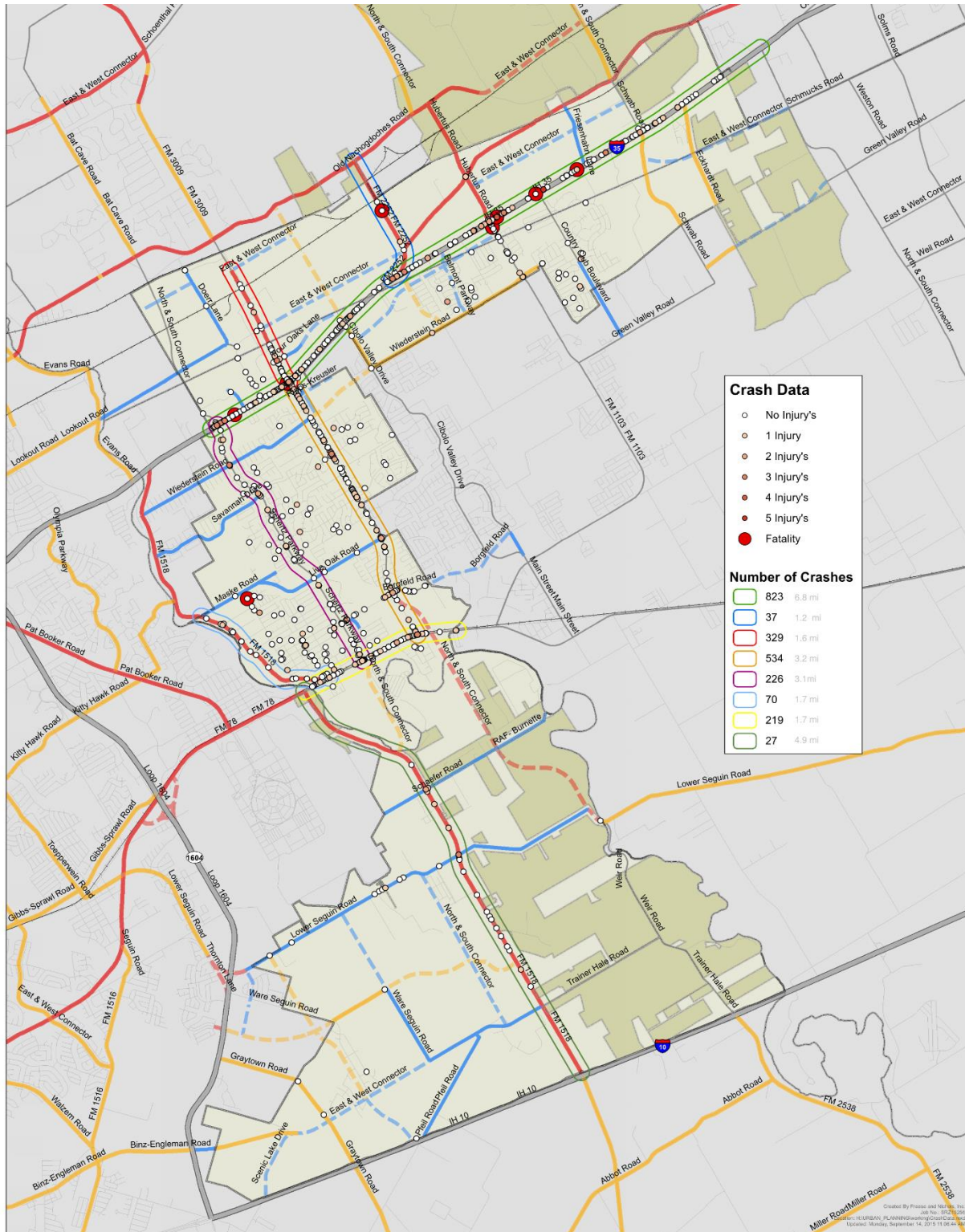
Anticipated timeframes for system improvements are outlined below. These include arterial roadways, primarily where the majority of collectors are anticipated to be delivered through development. Collectors that are listed are done so with the anticipation that the city may need to step in to make small connections not provided through general development.

New Construction			
Project	Limits	Functional Class	Time Frame
North-South Connector (near FM 2252)	I-35 to Old Wiederstein Road	Secondary Arterial	5–10 Years
North and South Connector (S. Schertz)	Schaefer Road to Trainer Hale Road	Principal Arterial	10–15 Years
North and South Connector (S. Schertz)	FM 78 to Schaefer Road	Principal Arterial	15+ Years
East-West Connector (near Old Nacogdoches Road)	Hubertus Road to Schwab Road Extended	Principal Arterial	15+ years
New Street (near Pfeil Road)	Pfeil Road to Binz Engleman	Collector	15+ Years
RAF-Burnette	North-South Connector to Cibolo Creek (City Limits)	Secondary Arterial	15+ Years

Roadway Extension			
Project	Limits	Functional Class	Time Frame
Four Oaks Lane	FM 3009 to North-South Connector	Collector	1–5 years
Tri-County Parkway	FM 3009 to FM 2252	Secondary Arterial	10–15 Years
Country Club Boulevard	Existing terminus to City Limits	Collector	10–15 Years
Old Wiederstein Road	FM 3009 to North-South Connector	Secondary Arterial	10–15 Years
Live Oak Road	Maske Road to Schertz Parkway	Collector	15+ Years
Binz-Engleman Road	Loop 1604 (San Antonio) to Ware Seguin Road	Rural Secondary Arterial	15+ Years
Schwab Road	I-35 to City Limits	Principal Arterial	15+ Years
Trainer-Hale Road	North-South Connector to Cibolo Creek (Cibolo)	Secondary Arterial	15+ Years

Lane Additions/Expansions			
Project	Limits	Functional Class	Time Frame
I-35 Managed Lanes	San Antonio to FM 1103	Highway/Freeway	1–5 Years
FM 1518	FM 78 to I-10 (may include bridge over FM 78)	Principal Arterial	1–5 Years
FM 1103	I-35 to City Limits	Principal Arterial	5–10 Years
Connector Road	I-35 and Old Wiederstein Road	Secondary Arterial	5–10 Years
Old Wiederstein Road	North-South Connector to FM 1103	Secondary Arterial	10–15 Years
Lower Seguin Road	FM 1518 to Cibolo Creek	Secondary Arterial	10–15 Years
Lower Seguin Road	Loop 1604 (San Antonio) to FM 1518	Rural Secondary Arterial	10–15 Years
Schaefer Road	FM 1518 to North South Connector	Secondary Arterial	10–15 Years
Graytown Road	San Antonio City Limits to I-10	Rural Secondary Arterial	10–15 Years
Schwab Road	I-35 to New Street (South of I-35)	Secondary Arterial	10–15 Years
Scenic Lake Drive	I-10 to Graytown Road	Collector	15+ Years
Trainer Hale Road	FM 1518 to Trainer Hale Road/North-South Connector	Secondary Arterial	15+ Years
FM 1518	Maske Road to FM 78	Secondary Arterial	15+ Years
Green Valley Road	Eckhardt Road to Schertz ETJ limit	Secondary Arterial	15+ Years
Engel Road	East-West connector to New Street, New Braunfels ETJ	Secondary Arterial	15+ Years

Appendix C – Crash Data Exhibit Detail



SCHERTZ
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**2011 Schertz
Planned Thoroughfares
with Crash Data**

Freeway
Principal Arterial 120' ROW Typical
Minor Arterial 86' ROW Typical
Collectors 60' ROW Typical
Other Roads

City
ETJ

Data: Texas Peace Officer's Crash
Report / TxDOT Crash Records
Information System
3-year time period 1/12 - 1/15

1 inch = 2,667 feet
0 1,500 3,000 6,000 9,000 Feet

Appendix D – Alternatives Considered

A critical task for update of the MTP was assessment of existing arterial alignments and consideration additional and alternate alignments for planned roads. Connection to adjacent communities updated, adopted MTPs formed an initial screen, with connections between Cibolo, Universal City, Selma, New Braunfels, and San Antonio updated.

Additional consideration was given to the Binz-Engleman corridor connection with San Antonio, with several alternatives developed in sketch level, and a meeting was held with San Antonio staff to determine which alignment was least impactful to environmental features, existing development, and would serve the transportation corridor connection objective. This alternative was forwarded on to the plan's Advisory Group for the draft MTP that was presented to the public in the open house. Alternatives considered are included as Figure 25.

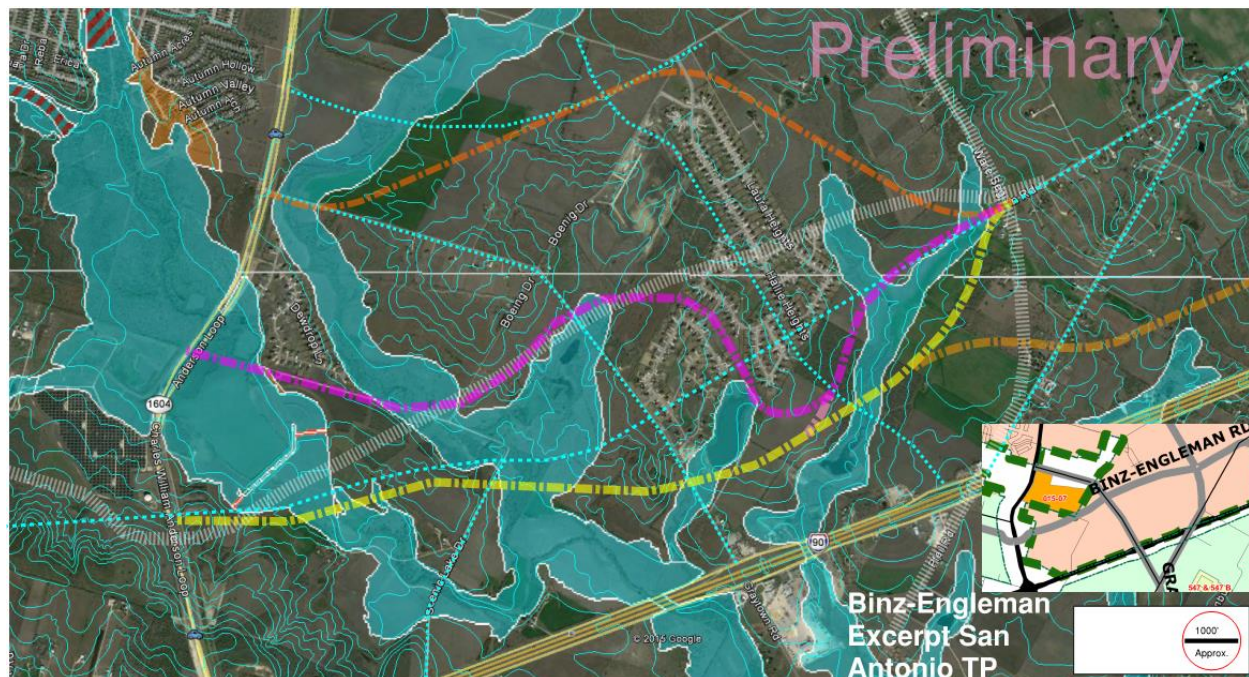


Figure 25. Binz-Engleman to San Antonio Connection Alternatives considered

Consideration was given for the planned connection of Schertz Parkway north to Batcave Road, a residential collector roadway, in the City of Garden Ridge. Analysis showed that the connection, while beneficial from a functional spacing and connectivity perspective, was not supported by a connection in plans by Garden Ridge, which would make connection difficult if not prohibited. Also, two additional at-grade crossings would be needed. It was determined that the connection was not critical for vehicular access, as Doerr Lane is one half of a mile to the east, and existing grade-separated crossings of the railroad lines located on FM 3009 just east of Doerr Lane. Figure 26 shows the alignment considered for removal.

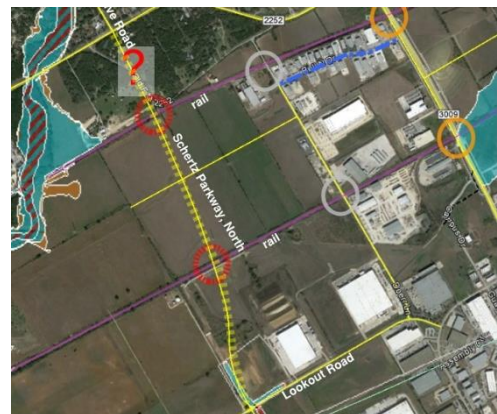


Figure 26. Schertz Parkway, North connection consideration

Given the clear-zone requirements of Randolph AFB, and the conclusions of the JLUS study, additional consideration for an alternative alignment for Lower Seguin Road was considered to realign the roadway parallel to the existing alignment, approximately 1,500 feet to the south, so as to avoid the critical clear zone of the runways. However, it was determined that the cost of such a realignment would be too costly to support acquisition of new alignment for reconstruction of the existing thoroughfare with this update.

A new connection from Central Schertz to Universal City was also considered, in the location of Maske Road, approximately. The location was determined to be in the jurisdictions between Universal City and Selma, and therefore out of the scope of this plan. However, for discussion purposes, where a connection across Cibolo Creek between I 35 and FM 78 would be useful for local and non-auto trips, it was determined that neither Selma nor Universal City have active plans to make such a connection. Further, the land use pattern on the west side of the creek, in Universal City, is predominantly existing single-family residential neighborhoods, which could be significantly disrupted by a new arterial connection.

This update also allowed for the reconsideration of the adopted alignment of the planned, new arterial connection between FM 78 and I-10. This continues a long-standing conversation regarding the connection, which has been planned for since prior to the 2002 Comprehensive Land Plan. Prior to that, connection was shown on plans by the City of San Antonio. The primary purpose of the connection in the plan update remains to preserve a feasible alignment from development, so that a connection can be made when needed. This update considered both the future need of the connection, public input, and alignment.

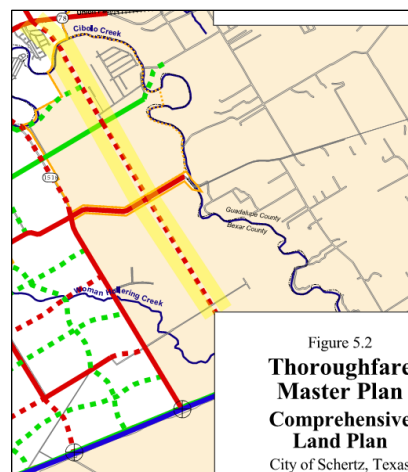


Figure 27. Excerpt, 2002 Master Thoroughfare Plan, connection illustrating the concept for extension of FM 3009. (emphasis added)



Figure 28. Excerpt of FM 3009 screened route options, FM 3009 E Study, 2007.

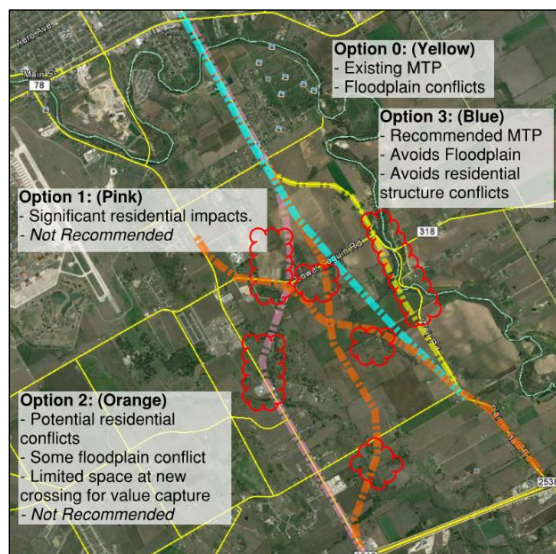


Figure 29. Route alternatives considered for Southern Schertz, preliminary, 2015



Traffic stopped for train – intersection of FM 3009 and FM 78. Illustrates the confluence of transportation modes needed to maintain mobility and connectivity in central Schertz despite increasing travel demand and rail disruption.

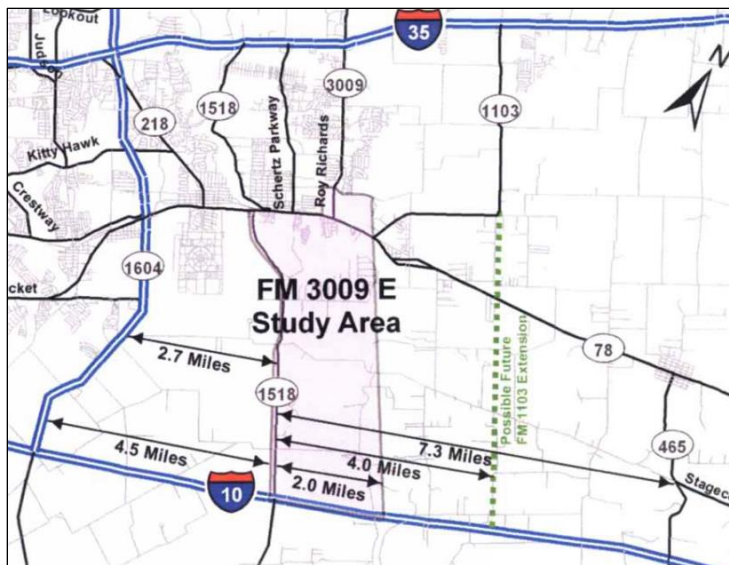


Figure 31 Arterial Spacing. Source FM 3009 E Study, 2007

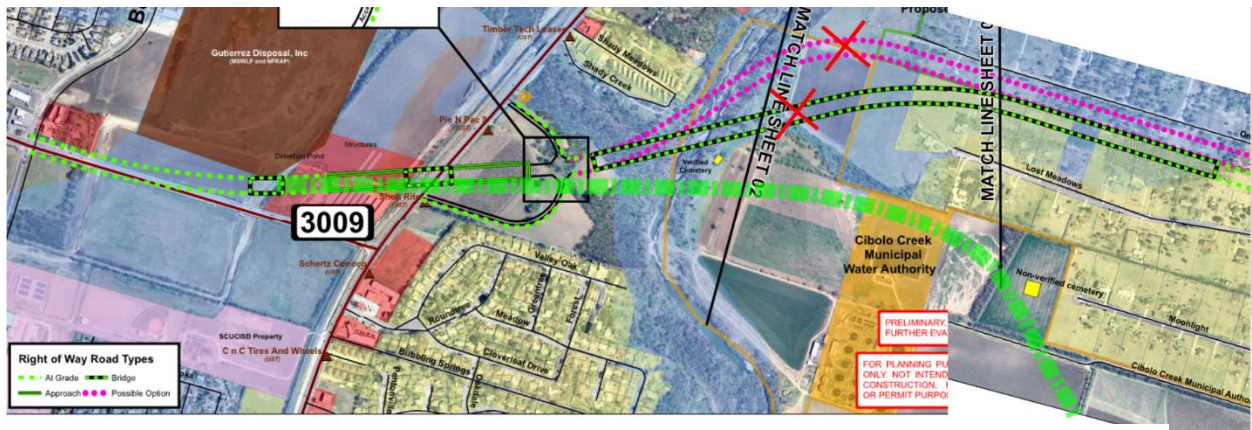


Figure 30. Alternative Alignment connection to FM 3009.
Illustrative composite modified from FM 3009 E Study, 2007.

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