AMARILLO area

IN MOTION

EXISTING CONDITIONS

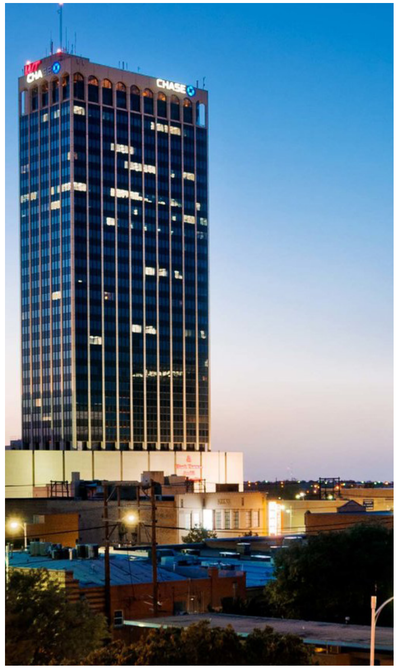
AMARILLO REGIONAL MULTIMODAL TRANSPORTATION PLAN

Prepared by

Kimley»Horn

Expect More. Experience Better.

ATG ALLIANCE TRANSPORTATION GROUP



1. HISTORY OF PAST PLANS

INTRODUCTION

The Amarillo MPO Regional Multimodal Transportation Plan (RMTP) is a strategic mobility plan that will integrate and modernize the region's mobility network into one comprehensive document. This Multimodal Transportation Plan will integrate the goals and recommendations from the previous transportation plans dedicated to specific modes such as: The 2017-2021 Regionally Coordinated Public Transportation Plan, The Amarillo Urban Mobility Plan, The Amarillo and Canyon Comprehensive Plans, Downtown Master Plans, College Master Plans, and Neighborhood Plans.

The Amarillo RMTP plan will take a systematic look at the region's street network and develop corridor multimodal cross sections to accommodate vehicles, trucks, pedestrians, bicyclists, and transit.

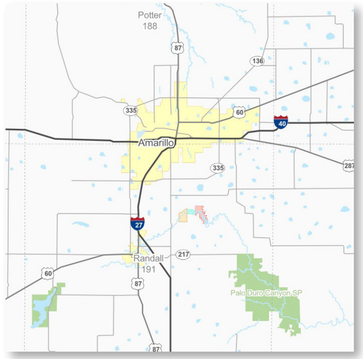
This first section of the document will take a look at the scope of the region as well as the most recently adopted plans relevant to multimodal transportation in the Amarillo MPO.

MPO OVERVIEW

The Amarillo Metropolitan Planning Organization (MPO) is located in the Panhandle Region of Texas and encompasses about 594 square miles of land around the cities of Amarillo and Canyon, TX. The MPO includes areas within two different counties in Texas: Potter County and Randall County. The Amarillo MPO was established in 1973 as an organization to manage regional transportation needs with given federal requirements. The original Urban Area Boundary (UAB) for the MPO was originally located just around the City of Amarillo but was later amended to also include the City of Canyon and the surrounding area.

The City of Amarillo is located around the intersection of two interstate highways: IH-40 and IH-27. State highways 87 and 287 connect the City to the rest of the region, and Loop 335 provides increased mobility around the City. The City of Canyon was developed around the intersection of SH-87 and SH-60. Interstate Highway 27 acts as the major spine connecting these two cities. **Figure 1** shows state and federally owned highways as well as natural features within the study area.

Figure 1: Regional Map of Amarillo



REVIEW OF PAST PLANS

REGIONALLY COORDINATED PUBLIC TRANSPORTATION PLAN (2017)

Developed by the Panhandle Regional Planning Commission (PRPC) in 2017, the Regionally Coordinated Public Transportation Plan was the third iteration of public transportation plans created for the region. The two plans that preceded it were drafted in 2007 and 2011, but all three plans have the same overall vision, "Equal Access to Transportation for All."

The 2017 updated plan has a five-year horizon, meaning it is in effect from 2017-2021. The latest planning process conducted by the PRPC identified six goals to help the region improve public transportation access for the region:

1. **Increase reliable access to low income residents regionally in the most convenient form possible.**
2. **Increase reliable access to elderly individuals reporting transportation as a barrier by 25% by 2021.**
3. **Establish more accessible routes & entry points for disabled individuals to access stops & pickups**
4. **To continue to seek financial opportunities for all areas of public transportation and keeping the status quo at a minimum with a desired increase in funding to expand existing public options.**
5. **To increase regional public awareness of the regional public transportation resources and reduce the feelings of lack of trust in the public transportation resources.**
6. **To establish a stable and reliable regional pool of drivers to meet public transportation needs.**

TEXAS BICYCLE TOURISM AND TRAILS STUDY (2018)

The purpose of the Bicycle Tourism Trails Study (BTTS) was to investigate the development of a statewide bicycle tourism trail network. The study was initiated in January 2017 by the Texas Department of Transportation's (TxDOT's) Public Transportation Division (PTN) Bicycle and Pedestrian Program in response to the 2005 Texas Bicycle Tourism Trails Act.

The final document summarized the deliverables created as a result of the study and outlines: the stakeholder engagement process, the benefits of bikeways and bicycle tourism in Texas, the BTTS Example Network, and the bikeway design recommendations and estimated costs per mile. For the Amarillo Area region, spines along the example network were identified along IH-40, IH-27, and SH-217. For these proposed facilities, the example bikeway type was identified as either a shared-use path or shoulder improvement. With these routes in place, the Amarillo area of Texas would be connected well to the rest of the state. The BTTS Example network should be consulted in order to determine which regional multimodal routes would serve the Amarillo Area best for bicyclists and tourism.

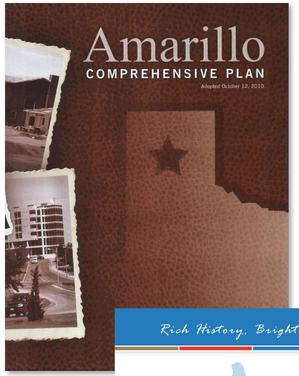
Figure 2: BTTS Example Network by Bikeway Type

AMARILLO URBAN MOBILITY PLAN (2006)

The Texas Urban Mobility Plan (TUMP) is an initiative created to address the growing traffic congestion in the 17 urban areas in the State of Texas, and is formed in partnership with the Texas Department of Transportation (TxDOT). The 2006 Amarillo Urban Mobility Plan was created by the Amarillo MPO as a document to identify the needs of all modes of transportation into one cohesive document. It is worth noting that since this plan's adoption, the UAB for the Amarillo MPO has since expanded to include the Canyon area.

The four key elements of every Urban Mobility Plan are the "Needs-Based" scenario, the Texas Congestion Index (TCI), Category 3 Urban Mobility Funds, and alternative funding initiatives. In addition to these four essential elements, the Urban Mobility Plan seeks to achieve five main goals:

1. **Reduce congestion.**
2. **Enhance safety.**
3. **Expand Economic Opportunity**
4. **Improve Air Quality**
5. **Increase the Value of Transportation Assets**



AMARILLO COMPREHENSIVE PLAN (2010)

The City of Amarillo's current comprehensive plan was adopted in 2010. The mobility chapter in the document helps to identify the ongoing problems in their transportation systems today as well as the opportunities for improvement the City would like to implement in the future.

As part of the planning process, the City included information from the previous comprehensive plan, adopted in the 1980's, to help set a baseline for the new plan. The City identified several strengths in the previous plan and its implementation including designing a grid street network, completion of the Loop 335 around the City, elimination of unpaved streets, and upgrades to Rick Husband International Airport.

While working with these strengths, the City also identified more opportunities where mobility improvements should be prioritized in the future. These identified opportunities included implementing an access management policy for arterials, constructing grade separations for rail crossings, creating land use controls around the airport, restoring passenger rail service to the region, and expanding bicycle & pedestrian mobility for more than recreational purposes.

With the strengths and opportunities of the previous comprehensive plan identified, the City of Amarillo developed a mobility strategy that was centered around four main goals:

1. Improved corridor management – preparing for future expansion with right-of-way purchases, new N-S corridor west of Soncy Rd, widening of IH-27 from 2 to 3 lanes, access along Soncy Rd.

2. More attention to non-vehicular circulation – retrofit existing streets into complete streets, continued development of off-street networks that serve more than a recreational function, increase awareness of non-vehicular circulation.

3. Emphasis on safety – design roads that do not need traffic calming after the fact, school circulation safety concerns, SRTS opportunities, IH-40 frontage roads and ramps, rail crossings, access management.

4. Dealing with the transit dilemma – "chicken or egg" challenge of transit, spread-out nature of city makes transit difficult, funding allocation challenges once the City reaches 200,000 population.

CANYON COMPREHENSIVE PLAN (2018)

The City of Canyon's Comprehensive Plan was adopted recently in 2018. The implementation plan for its transportation chapter came in the form of an updated thoroughfare plan, as well as a system of goals and actions to achieve long term improvements to the City's transportation network. This implementation plan and its actions were centered around four goals for improvements:

1. Update and streamline thoroughfare documents.

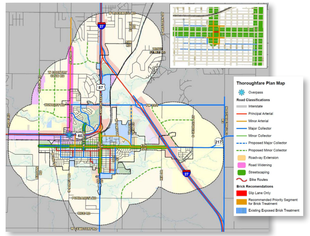
2. Continue to address traffic and transportation issues within the community.

3. Incorporate Complete Street treatments in future projects.

4. Coordinate thoroughfare planning with regional and state agencies.

One of the major elements on the mobility side of the comprehensive plan was the Master Thoroughfare Plan update (**Figure 2**). The most notable update to this MTP was the additional planning for sidewalks and bicycle routes. Each of the six road classifications was updated to include sidewalks or trails as well as a recommended bicycle facility type to match the road's context. On the network map, new bicycle routes were recommended to help connect the gaps between neighborhoods and destinations throughout the City.

Figure 2: Canyon TX Master Thoroughfare Plan



AMARILLO COLLEGE MASTER PLAN (2019)

The new master plan for Amarillo College that was completed in January 2019 explored the school's economics, workforce, facilities, technology, and parking systems. These analyses produced reports of the existing campus and also a plan for improvements. The overall implementation plan consisted of $99 million worth of capital projects to be completed in four phases by the year 2026.

As part of this improvements list, the following transportation projects were identified in the master plan:

- East Campus
  - Connection for SSC Parking Lot to 15th Ave
  - ADA Grade Improvements at Academic Classroom
  - Campus Gateway Entries
- West Campus
  - Vehicular Drive, Dropoff & Entry Improvements
  - Campus Vehicular Wayfinding
- Washington Street Campus
  - Parking Improvements (378-space total): Parking Lot 9 Reconfiguration, Lot 10 Extended Service Parking, East Housing Demo for Surface Lot, & Memorial Park Shared Parking Expansion
  - Raised Crosswalks on 22nd & 24th Ave
  - Reconfiguration for Right Turn at Jackson & 22nd

Figure 3: Proposed Downtown Innovation Center Rendering

WEST TEXAS A&M CAMPUS MASTER PLAN (2018)

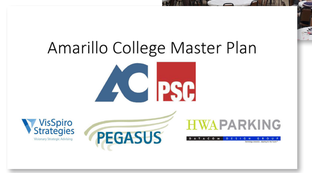
The updated West Texas A&M (WTAMU) Campus Master Plan was completed in 2018, 8 years after its 2010 predecessor. It is a visionary and strategic document that designed the university's campus with three goals in mind:

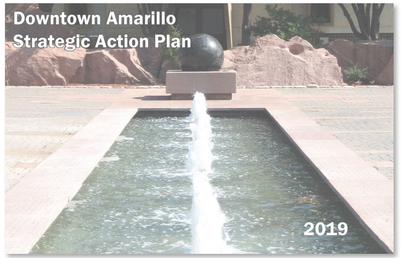
1. Create Russell Long Boulevard as a Campus Seam - With the new facilities north of the campus core, Russell Long is the seam that will stitch these areas together. This street has been reimagined as a complete street that enhances walkability, bikeability, and vehicular safety along its entire length.

2. Connect and integrate the Campus Core to North Campus - With new projects under construction and in design in the northern portion of campus, it is imperative to create connection to this area from the campus core. The projects underway must be thoughtfully integrated into the existing campus south of Russell Long.

3. Pedestrianize the Campus Core - The WTAMU campus core is the hub of activity for the university, and has great architectural and natural assets that make it a truly memorable and desirable place. The design framework redoubles efforts to make the core of the campus a pedestrian-friendly environment through closing unnecessary streets, landscape interventions, and reorganizing parking lots.

In order to realize these goals, the campus master plan created a list of proposed multimodal and streetscape improvement projects that include a redesign of 4th Avenue in Canyon. These improvements include wider sidewalks, on-street bicycle lanes, and more street trees.





AMARILLO DOWNTOWN STRATEGIC ACTION PLAN (2008, UPDATED 2019)

The Amarillo Downtown Strategic Action Plan was first drafted and adopted in 2008. It consisted of four sections, and involved public input after each part was drafted. These sections were:

- Background Research & Market Analysis
- Existing Conditions Analysis
- Downtown Plan, Development Goals, and Design Guidelines
- Action Steps & Implementation Strategy

On the transportation side, the biggest action item created in the 2010 plan was the implementation of urban design and open space design standards to ensure that Downtown is a beautiful and comfortable area for all the residents and visitors. The Downtown Amarillo Urban Design Standards will be reviewed in the next section.

In early 2019, a committee was created to review progress, identify aspects of the plan that were no longer relevant, and articulate any new goals and strategies. The committee included membership from City Council, Planning and Zoning, Center City, Center City TIRZ, Downtown Amarillo Inc. and the Landmarks, Historic Districts and Downtown Design Review Board.

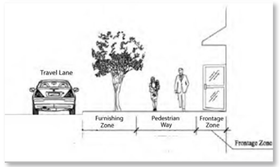
During its latest update, it was determined that the Downtown Amarillo Urban Design Standards were a successful step forward in making downtown a more comfortable and walkable environment. To add onto this success, the 2019 update included a greenspace plan to add bikeability and connection to green space as part of the downtown urban experience.

DOWNTOWN AMARILLO DESIGN STANDARDS (2010, UPDATED 2014)

The City of Amarillo updated its downtown roadway design standards in 2010 as part of their initiative to incorporate complete streets principles in their downtown master plan design. The new standards established urban streetscape zones (**Figure 4**) to determine what requirements should be implemented on new downtown construction projects.

The plan created updated standards for sidewalk width and materials, updated requirements to include the regular planting of street trees in the "furnishing zone", and updated the lighting standards to provide a more pedestrian friendly environment for users.

Figure 4: Urban Streetscape Zones Diagram



In addition to sidewalk characteristics, the updated design standards looked at parking and circulation as ways to incorporate smart design principles. The primary parking option for downtown visitors is designed to be in parking garages that are constructed to blend in to the high-rise building landscape. They must have enough architectural articulation or other building ornaments to mitigate any adverse visual effect of the parking garage to the pedestrians and adjacent properties. Additionally, new construction of parking lots must adhere to walkway, screening, security, and other standards. For vehicle circulation, it is recommended the multiple block developments do not close or span existing streets in order to maintain a grid street network that is uninterrupted.

NEIGHBORHOOD PLANS

As part of the City of Amarillo's 2010 Comprehensive Plan, six neighborhoods were identified as areas that would benefit most from a neighborhood plan. Since its adoption, three neighborhood plans, North Heights, Barrio, and San Jacinto, have been added as amendments to the original comprehensive plan. The following section summarizes the implementation plans for each of these neighborhoods and how they plan to improve upon the current transportation network.

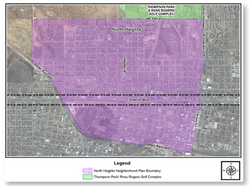
North Heights Neighborhood Plan (2017)

The North Heights Neighborhood Plan was the first of the neighborhood plans to be adopted in 2017. The implementation plan for the document was focused on three main goals for the area:

- Maintain a Strong, Vibrant Neighborhood
- Economic Development / Redevelopment
- Improve Transportation and Mobility Systems

A handful of strategies were chosen to provide tangible results to the broader overarching goals. After that, several actions were identified for each strategy as well as timeframe, responsible party, and priority level for each action. For the third, transportation-centric, goal the following strategies were implemented.

Figure 5: North Heights Neighborhood



1. Improve public rights-of-way facilities by inventorying and reconstructing neighborhood sidewalks and improving ADA accessibility at all intersection crossings.

2. Increase lighting along neighborhood thoroughfares by inventorying and evaluating neighborhood lighting along streets, at intersections, and public transit facilities.

3. Improve multimodal transportation routes to provide connectivity. by expanding and improving the efficiency of transit, working with TxDOT to improve streetscape elements, and evaluating multimodal transportation improvements around the neighborhood.

San Jacinto Neighborhood Plan (2020)

The San Jacinto Neighborhood Plan is the newest addition, adopted as an amendment to the comprehensive plan in 2020. In addition to a similar framework of goals and actions, the plan also created a vision and action statement to drive the planning process.

Vision

"San Jacinto is a welcoming and diverse community where people of different cultures, incomes, and generations celebrate the neighborhood's historic significance and its eclectic mix of people and businesses. It is a clean, safe, walkable neighborhood that is healthy, sustainable, and unique."

The implementation portion of the plan focused heavily on land use and economic-based actions to improve upon the existing neighborhood. Specifically, an emphasis around the preservation of the historic 6th Street area. This street is home to many historic commercial properties that have been around since Amarillo was first established in 1888. To help encourage prosperity in this area, the neighoborhood plan suggests the creation of a Public Improvement District (PID), to help fund streetscape improvements.

Barrio Neighborhood Plan (2018)

The Barrio Neighborhood Plan was adopted just one year after the North Heights Plan in 2018. Its implementation plan was organized into themes, strategies, goals, and actions. In total there were six main themes used to organize the goals and actions. Each action was also assigned a timeframe and a priority level (from low to high) to help guide the plan's implementation.

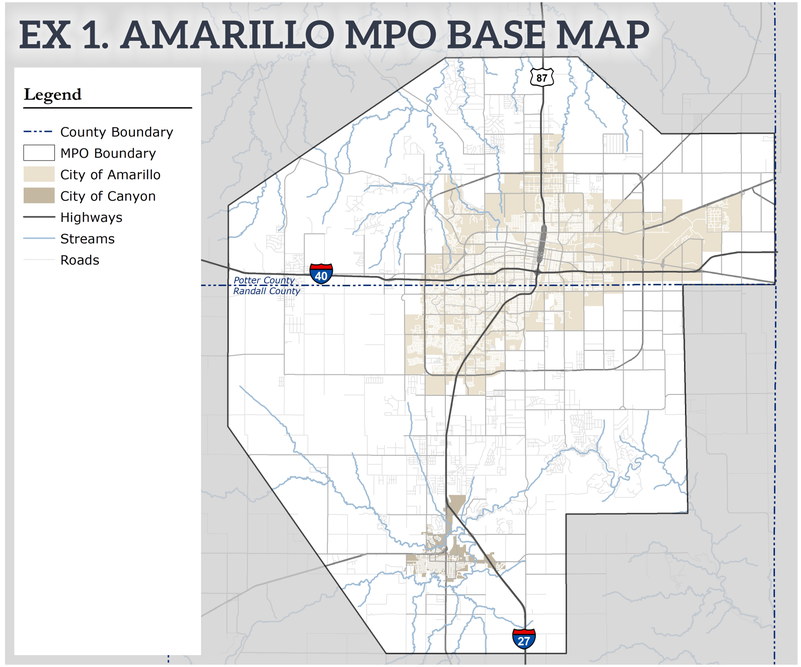
The following goals and themes were determined to be most important to the future of the transportation in the neighborhood are:

- **Infrastructure** - improve inadequate alleys, introduce opportunities for multimodal transportation
- **Neighborhood Identity & Amenities** - establish gateways
- **Neighborhood Safety** - address traffic safety

In addition to these goals and actions, other transportation-related opportunities for improvement were analyzed in the existing conditions section. The sidewalk network in particular was identified as needing major connectivity improvements (**Figure 6**) by streamlining the existing sidewalk and filling in the frequent gaps between existing segments.

Figure 6: Lots Without Sidewalks in the Barrio Neighborhood

EX 1. AMARILLO MPO BASE MAP



2. STATE OF THE REGION

INTRODUCTION

The state of the region chapter explores nine topics that will guide the Amarillo RMTP's development. These topics, chosen by observing common themes from the previously explored past plans, will be analyzed in this chapter. These nine topics of study are:

- Master Thoroughfare Plan,
- Population Growth,
- Safety,
- Equity,
- Schools,
- Bicycle Network,
- Pedestrian Network,
- Transit, and
- Freight.

EXISTING CONDITIONS

MPO THOROUGHFARE PLAN

As mentioned in the previous section, the City of Amarillo is located around the intersection of IH-40 and IH-27. State highways 87 and 287 connect the City to the rest of the region, and Loop 335 provides increased mobility around the City. The City of Canyon is located around the intersection of SH-87 and SH-60. Interstate Highway 27 acts as the major spine connecting these two cities. **Exhibit 1** shows the MPO, city, and county boundaries along with these major highways.

The goal of a thoroughfare plan is the classify roads into classifications and plan for future expansions. As right-of-way (ROW) increases, the classification of the roadway carries more traffic for longer distances in a shorter amount of time. The Amarillo MPO Thoroughfare Plan was created during the MPO's transportation plan development. It established six road classifications: freeways, expressways, primary arterials, secondary arterials, collectors, and local roads. **Table 1** shows the cross section standards for each road classification including ROW widths, number of lanes, and other design notes.

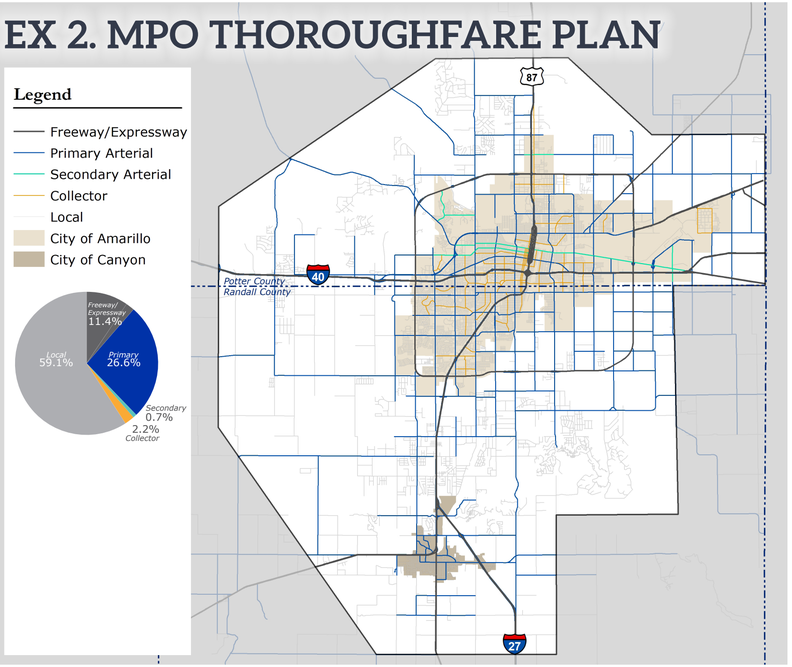
Exhibit 2 shows the thoroughfare network map for the study area as well as a chart showing the percent of road miles by classification. Most of the arterials in the network are primary arterials, with only 0.7% being secondary. This is largely due to the fact that the City of Amarillo utilizes all road classes in their network while the City of Canyon relies on a simpler network of just primary arterials and local roads.

Table 1: Design Characteristics by Road Classification

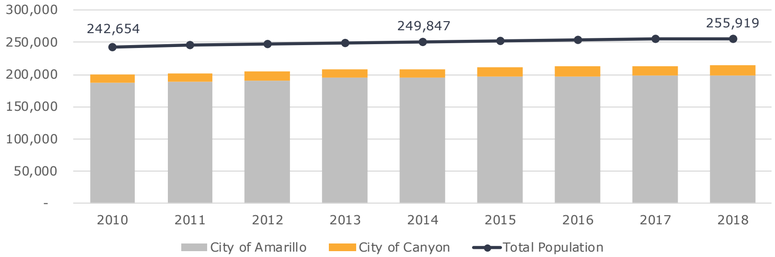
Classification	ROW	Lanes	Notes
Freeway	> 300'	4 - 6	Above grade crossings
Expressway	150 - 300'	4 - 6	At-grade crossings (except at railroads), may have frontage roads
Primary Arterial	120'	5 - 7	25,000-40,000 vehicles per day (vpd) capacity
Secondary Arterial	80 - 120'	4 - 5	10,000-25,000 vpd capacity
Collector	50 - 80'	2 (with parallel parking lanes)	2,000-6,000 vpd capacity
Local	50 - 70'	2 (with parallel parking lanes)	> 2,000 vpd capacity

Source: Amarillo MPO Thoroughfare Plan

EX 2. MPO THOROUGHFARE PLAN



EX 3. POPULATION GROWTH



POPULATION TRENDS

Population growth and density are important trends to understand when planning regional transportation systems. Areas of higher population density are most functional when planned to be accessible by multiple transportation modes. When more people walk or bike to their destination, traffic congestion caused by vehicles goes down. By examining where people live within the study area, and where growth is occurring, decisions can be made of where multimodal facility investment could be best spent to help the most number of people.

Population Growth

Table 2 shows how population has changed since 2010 within the cities of Amarillo and Canyon, TX. Both cities have seen smaller but steady rates of population growth. From 2010-2015, Amarillo's population was growing at a steady rate of around 1,900 people, or 1.0%, each year. The following three years showed a slow down in that population growth with 2017 being the smallest increase of 253 people, or 0.1%. The City of Canyon, while smaller in population size, has experienced a faster rate of growth than its partner city. Particularly between the years 2013-2014, the City nearly doubled its growth rate increasing from 1.1% in 2013 to 2.1% in 2014. Since then, Canyon's growth rate has stayed mostly above 2.0%.

Exhibit 3 shows population growth since 2010 for both Potter and Randall counties combined, along with Amarillo and Canyon populations representing their portions of the overall study area.

In 2010, the combined population of Potter and Randall Counties was 242,654. Of this total, about 83% of the population lived within Amarillo or Canyon city limits. The City of Amarillo's total population made up 77% of the total study area with 187,225 people, and the City of Canyon's 2010 population accounted for 5% of the study area at 13,103 residents.

By 2018, the combined population of Potter and Randall Counties was 255,919. Of this total, about 84% of the population lived within Amarillo or Canyon city limits. The City of Amarillo's total population made up 78% of the total study area with 198,773 people, and the City of Canyon's 2018 population accounted for 6% of the study area at 15,182 residents.

Over the course of this nine year period, there has been a steady amount of growth happening in the two counties as a whole, with the exception of 2018 which saw a minor 0.3% decrease in population. Additionally, the distribution of residents living within Amarillo and Canyon compared to those living in the county area did not change by more than 1% since 2010. This shows that the population growth in the study area is stable, therefore allowing the MPO to focus on improving access to alternative modes of transportation, because resources do not need to be reserved for growth management.

Table 2: Population in Amarillo and Canyon, TX (2010 - 2018)

Year	Amarillo Population	Change *Amount (%)*	Canyon Population	Change *Amount (%)*
2010	187,225	-	13,103	-
2011	189,132	+ 1,907 (1.0%)	13,254	+ 151 (1.2%)
2012	191,118	+ 1,986 (1.1%)	13,452	+ 198 (1.5%)
2013	193,153	+ 2,035 (1.1%)	13,601	+ 149 (1.1%)
2014	194,930	+ 1,777 (0.9%)	13,882	+ 281 (2.1%)
2015	196,571	+ 1,641 (0.8%)	14,248	+ 366 (2.6%)
2016	197,570	+ 999 (0.5%)	14,533	+ 285 (2.0%)
2017	197,823	+ 253 (0.1%)	14,809	+ 276 (1.9%)
2018	198,773	+ 950 (0.5%)	15,182	+ 373 (2.5%)

Source: American Community Survey (2010-2018)

Population Density

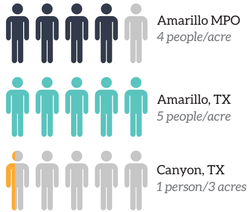
The study area overall has an average population density of about 4 persons per acre. When looking just within City limits, the population density is 5 people per acre in Amarillo and 1 person per 3 acres in Canyon (**Figure 7**).

Exhibit 4 shows population density within the MPO by Census block from the 2010 Census.

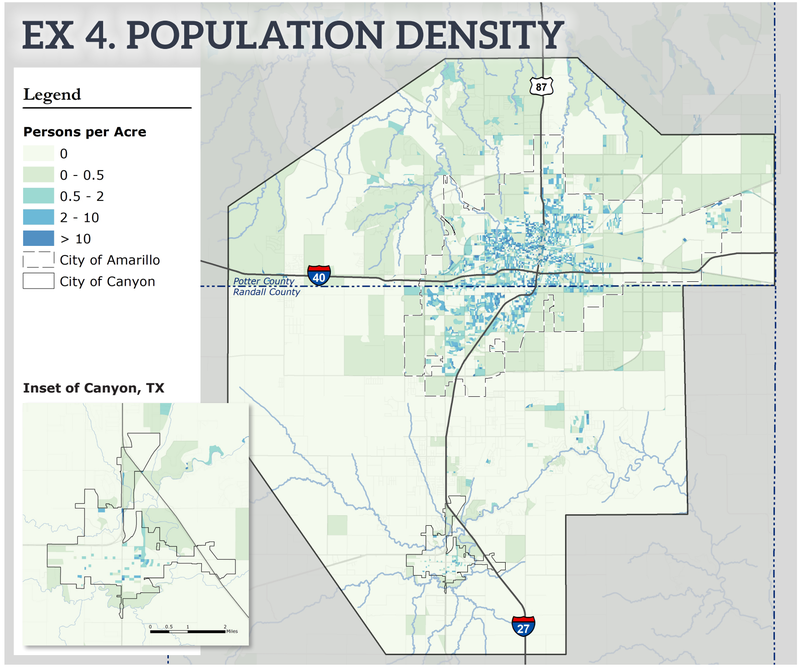
While the City of Amarillo's population is not uniformly spread out across the City, the patches of density seem to favor a specific section of its limits. The population in Amarillo is clustered more densely in the west and southwest area of the city, becoming less dense as you approach the airport to the east.

The City of Canyon is significantly less dense than the City of Amarillo overall. The most dense blocks in the City are located south of SH 60 and extend just northeast of the city limits. It is worth noting that since any population data gathered from full-time students may be recorded in their home city, rather than in their school city. This is relevant to the City of Canyon because West Texas A&M University had an attendance of nearly 10,000 students in 2019. While **Exhibit 4** shows the more dense areas of Canyon are around the university, it cannot be confirmed whether this accounts for all students who live on or near campus.

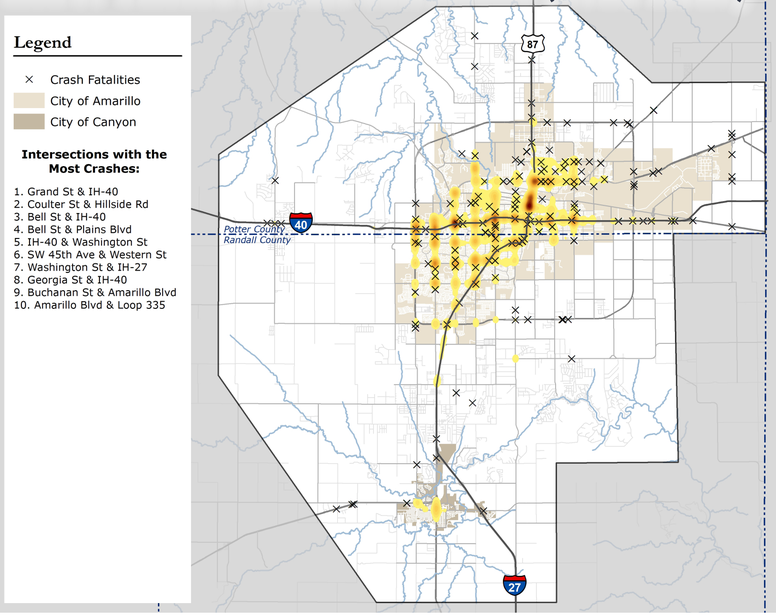
Figure 7: Population Density within the Amarillo MPO



EX 4. POPULATION DENSITY



EX 5. VEHICULAR CRASHES (2015-2019)



SAFETY

Safety is always a primary concern when planning for multimodal transportation systems. Most users will choose not to use alternative modes of transportation if they feel the facilities are not safe enough non-vehicular users. For these reasons, special attention will be given to roads that have been identified as safety concerns throughout the study area. In order to better understand where safety improvements should be prioritized in the study area, data from TxDOT's Crash Records Information System (CRIS) were compiled from the last five years. **Table 3** shows the number of crashes and fatalities by year from 2015 - 2019.

Table 3: Vehicular Crashes & Fatalities (2015-2019)

Year	Crashes	Fatalities *Amount (%)*
2015	5,747	34 (0.6%)
2016	5,883	43 (0.7%)
2017	5,798	39 (0.7%)
2018	5,997	32 (0.5%)
2019	6,739	44 (0.7%)
Total	30,164	192 (0.6%)

Source: TxDOT Crash Records Information System (CRIS)

In total, 30,164 crashes occurred in the last five years. Of these crashes, 192 resulted in a fatality making up 0.6% of the total. For the majority of the five years, the number of crashes has remained the same, staying between 5,000 to 6,000. The exception to this trend is in 2019 when it spiked up to nearly 7,000. For all five of these years, the percent of fatal crashes held stable between 0.5 to 0.7%.

Exhibit 5 shows a crash heat map for the region as well as the location of crashes resulting in a fatality. The areas with the highest density of crashes are located in the City of Amarillo near IH-40 and SH-87. In particular, the area along SH-87 and SE 10th Ave in downtown Amarillo is the largest hotspot for crashes.

EQUITY

While having an automobile-oriented design of a city is efficient for some, it can create barriers for many as well. Owning an personal car is a large expense for a household to maintain when factoring in loan payments, gas costs, and other maintenance. For households that live under the poverty threshold, owning a car is not always a luxury that can be afforded.

It is important to take into account areas where housing values are lower than average, because residents in these areas that cannot afford a car will experience major mobility challenges. Increasing multimodal accessibility in these areas, and connecting them to major destinations around the study area, will help break down these barriers and create a more equitable city.

Low-income households, the elderly and persons with disabilities also experience the same difficulties of not owning a car. **Table 4** breaks down each of these characteristics by county in the study area and compares them to the state of Texas overall.

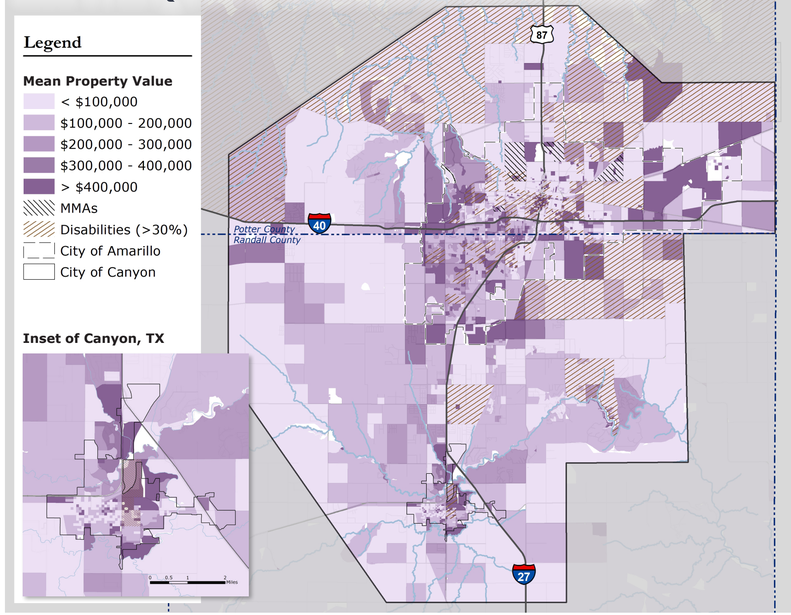
Exhibit 6 shows the average residential property values from 2018 as well as majority-minority areas (MMAs) and areas with greater than 30% of households having a person with a disability. The map shows that the wealthier pockets of the study area are located mostly north of and inside Amarillo city center. The areas with the largest amount of impoverished households are located mostly south of IH-40 and around the southwestern portion of Canyon.

Table 4: Equity Characteristics

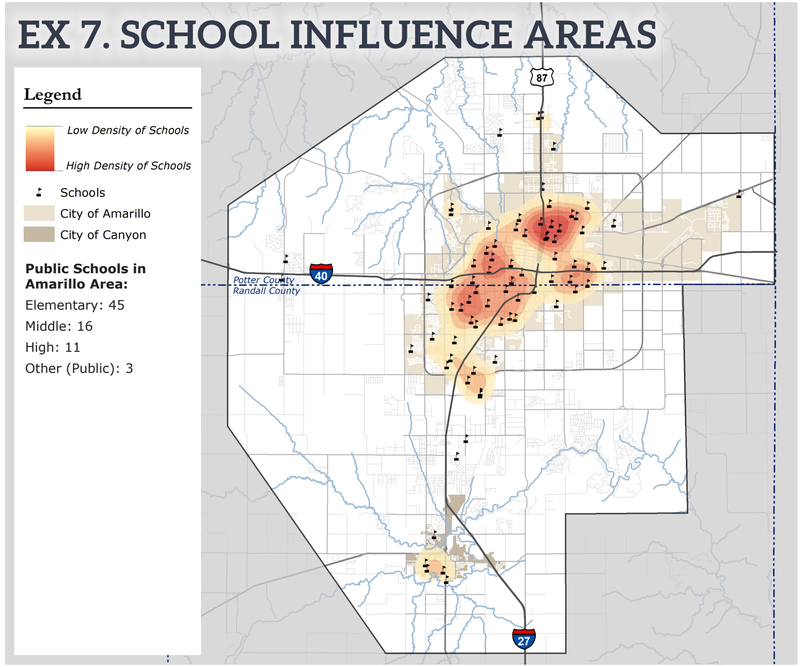
Characteristics	Randall County	Potter County	Texas
Households below poverty	8.5%	19.7%	14.9%
Commute - no car available	0.5%	3.5%	2.0%
Persons with disabilities (%)	10.2%	11.4%	12.6%
Aging population (%)	15.6%	12.9%	12.9%

Source: American Community Survey (2018 1-Year Estimates)

EX 6. EQUITY CHARACTERISTICS



EX 7. SCHOOL INFLUENCE AREAS



SCHOOLS

For areas wishing to expand their multimodal transportation network, schools are a great place to start. There are many benefits that come with making schools and their surrounding neighborhoods walkable, the primary result being that more children are encouraged to walk or bike to school. The long term benefits of this include lower traffic congestion around schools during pick up and drop off time, increased health and activity for children, and lower cases of asthma caused by car pollution.

To help cities reap the benefits of increased walkability and bikeability around schools, US Congress created the Safe Routes to School (SRTS) Program. Since its inception in 2005, SRTS has helped communities fund construction projects that are centered around increasing safety and mobility around schools in the US.

Exhibit 7 shows the locations of all public and private schools in the study area. A heat map was created to show where these types of mobility improvements would have the strongest impact, or "school influence areas". The area with the highest density of schools is located north of downtown Amarillo around SH-87 and Amarillo Blvd around Palo Duro High School. The next two highest school influence areas are located around Wills Elementary and Ridgecrest Elementary School in Amarillo.

Making improvements within these school influence areas, and around other major schools, can help residents in the Amarillo MPO enjoy the many long term benefits increased walkability around schools provide.

SIDEWALK DATA COLLECTION

To get a full picture of pedestrian connectivity throughout the city, a full inventory of sidewalks within Amarillo and Canyon was conducted. The inventory was an initiative to create a comprehensive database of the sidewalk network features within the urbanized area of the Amarillo MPO which includes the location and quantity of existing sidewalks and the gaps in the network.

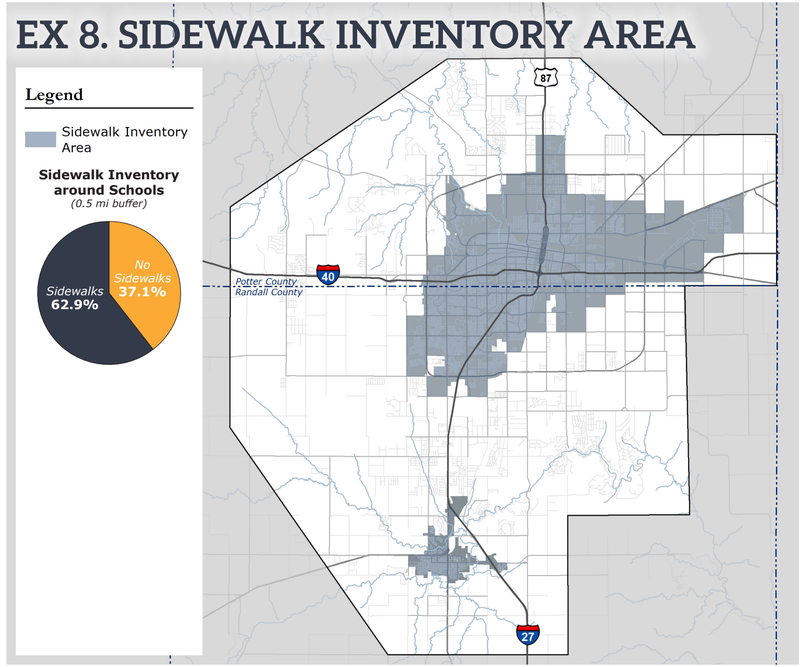
The analysis included a review of over 1,000 centerline miles of roadway and the presence of a sidewalk on both sides. The analysis was completed in Geographical Information Systems (GIS) Centerline of roadway to review sidewalk locations by following the below steps:

1. Adjusted centerline to match existing and missing sidewalks.
2. Connected at intersections and cleaned up where needed.
3. Attributes updated to include presence of sidewalk and length.

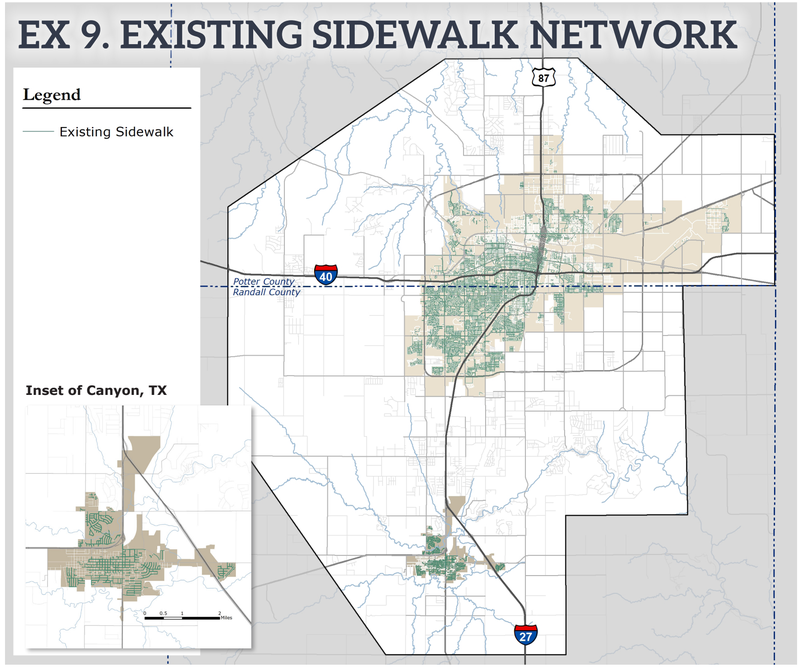
The results of the inventory indicated an even split between presence of sidewalk and missing sidewalk. As displayed in **Exhibit 9** on page 16**,** there are more than X,000 miles of missing sidewalk within the city limits. Most of these locations occurred on Primary and Secondary Arterial streets. Additionally, there are several sidewalks throughout the city that lacked consistency where new residential and commercial developments met established locations. To help track the locations of missing sidewalks, an online interactive dashboard was created to display the results of the sidewalk inventory (**Figure 8**).

Figure 8: Sidewalk Inventory Dashboard

EX 8. SIDEWALK INVENTORY AREA



EX 9. EXISTING SIDEWALK NETWORK



EXISTING SIDEWALK NETWORK

For **Exhibit 9** shows the full sidewalk inventory within Amarillo and Canyon city limits. In Amarillo 51% of the roads surveyed were built with sidewalks. The majority of this network exists in the southwest area of the City, while north of SE 3rd Ave and east of SH-87 seem to be threshold for where the sidewalk network is less continuous. In Canyon, 41% of the City's surveyed roads had sidewalks built on them.The industrial area located south of SH 60 is largely missing sidewalk, as well as the historic residential area located just south of the downtown square.

Figure 9 shows the heat map created by Strava based on user data for walking or biking in the study area. In this map, the color scale goes from blue to red where pedestrian activity is more frequent. When comparing the inventory map to the user heat map, it can be identified where sidewalk gaps should be prioritized. Specifically the area north of SE 3rd Ave and west of SH-87 shows a notable amount of user data for an area with many sidewalk gaps.

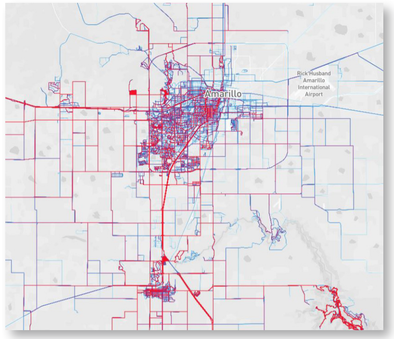
It is important to note that these heat maps only represent the data from Strava users, and they may not represent all pedestrians in the Amarillo area. Additionally, the two cities both have similar connectivity issues because of the extensive highway and railroad network that exists in the study area. When planning multimodal facilities in these areas, it is important to consider cross access over or under these barriers.

BICYCLE NETWORK

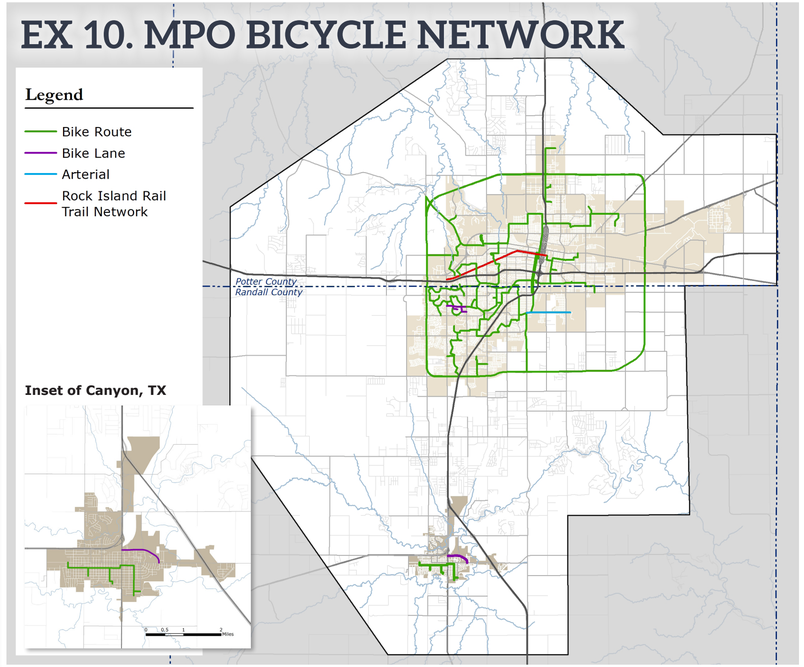
Exhibit 10 shows the existing bicycle network for the MPO. In their bicycle network, Amarillo and Canyon identify four different types of facilities: bike routes, bike lanes, arterial trails, and the Rock Island Rail Trail network. The majority of bicycle facilities in the City are bike routes, which are not separate from vehicular traffic.

When comparing this heat map in **Figure 9** against the bicycle network map, it can be seen that not many users choose to ride along the bicycle route that was created along Loop 335. Additionally, many users appear to be comfortable riding along county roads that do not have planned bicycle facilities, likely due to the lower amounts of vehicular congestion. There also appears to be lots of bicycle activity around Canyon and Palo Duro Canyon, however, there is not an extensive bike network in that area.

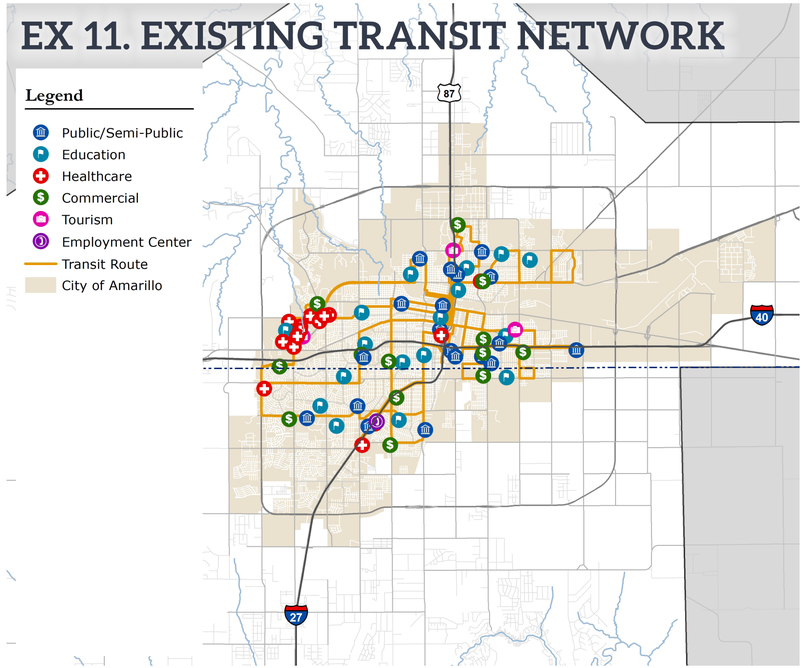
Figure 9: Strava Heat Map



EX 10. MPO BICYCLE NETWORK



EX 11. EXISTING TRANSIT NETWORK



TRANSIT NETWORK

There are two main transit programs within the study area: a system of circulatory bus routes in Amarillo, and the Pandhandle Transit program that provides demand response service to the rural areas. In previous plans it has been identified that transit ridership in the City is not as common for residents, even though the existing transit network is quite comprehensive.

Overall, the circulatory transit network in Amarillo consists of 12 bus routes that service 71 locations of varying type (**Exhibit 11**). The locations serviced on this system can be sorted into six main categories of land use:

- **Public/Semi-Public** - includes government buildings, nonprofit centers, and churches
- **Education** - schools and libraries
- **Healthcare** - hospitals, clinics, and other health-related businesses
- **Commercial** - shopping centers and big box stores
- **Tourism** - downtown centers, festival sights, and other event related locations
- **Employment center** - the regional call center

There are many ways in which the existing transit network can be improved, particularly by expanding to the south around Canyon. With West Texas A&M campus being in the south, many students would benefit from a possible commuter route that extends up to Amarillo.

In addition to adding new stops or routes, an analysis of transit facilities should be conducted to help evaluate the comfortability of the transit riding experience. These types of facility improvements can also encourage more residents to ride transit that otherwise would use a personal vehicle.

FREIGHT NETWORK

Freight transportation is essential to the economy of the Amarillo metropolitan area and has been throughout its history. The area is at the crossroads of key elements of the National and Texas Rail and Highway Freight Networks as shown in **Exhibit 12**. Continuing economic growth for the metropolitan area will mean continuing to protect and expand its freight transportation network while supporting a high quality of life for its residents.

The establishment and economic growth of the Amarillo metropolitan area have been closely tied to its location on key freight networks. Because of its location on major east-west and north-south railroads in in the 1890's, Amarillo emerged as the principal city of the Texas Panhandle and a major center for shipping cattle. What are now major lines of the Burlington Northern and Santa Fe (BNSF) Railroad still provide direct service to many major US cities, and terminate at the ports of Houston, San Diego, and Galveston. The rail line operates a large intermodal facility in Amarillo that handles about 30,000 containers and trailers each year. The Union Pacific-Southern Pacific railroad also has rights to use BNSF tracks in the Amarillo area.

Some of the key issues facing railroad operations in the Amarillo metropolitan area are congested intermodal facilities for rail-truck transfers and safety and delay at at-grade highway-rail crossings.

The location of the Amarillo metropolitan area is also at the intersection of IH-27 and IH-40 making it an important part of the nation's freight movement by truck. Both highways are parts of the National Highway Freight Network and the Texas Highway Freight Network. Interstate 27 is also a part of the high-priority Ports to Plains Trade Corridor that runs from the Mexico-Texas border to Denver, Colorado. The Ports to Plains Trade Corridor was first listed as a Congressional High Priority Corridor in Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. Also on the Texas Highway Freight Network within the Amarillo metropolitan area are US Highways 60, 87, & 287 and Texas Highways 136, 59, State Loop 335, FM 1541, FM 1719.

Key issues related to truck freight movement in the Amarillo metropolitan area are highway congestion during peak commute periods, vertical clearance at some older grade-separated interchanges and interchanges, truck impacts on roadway surfaces, and conflicts between truck operations and neighborhoods and local commercial districts.

EX 12. FREIGHT NETWORK