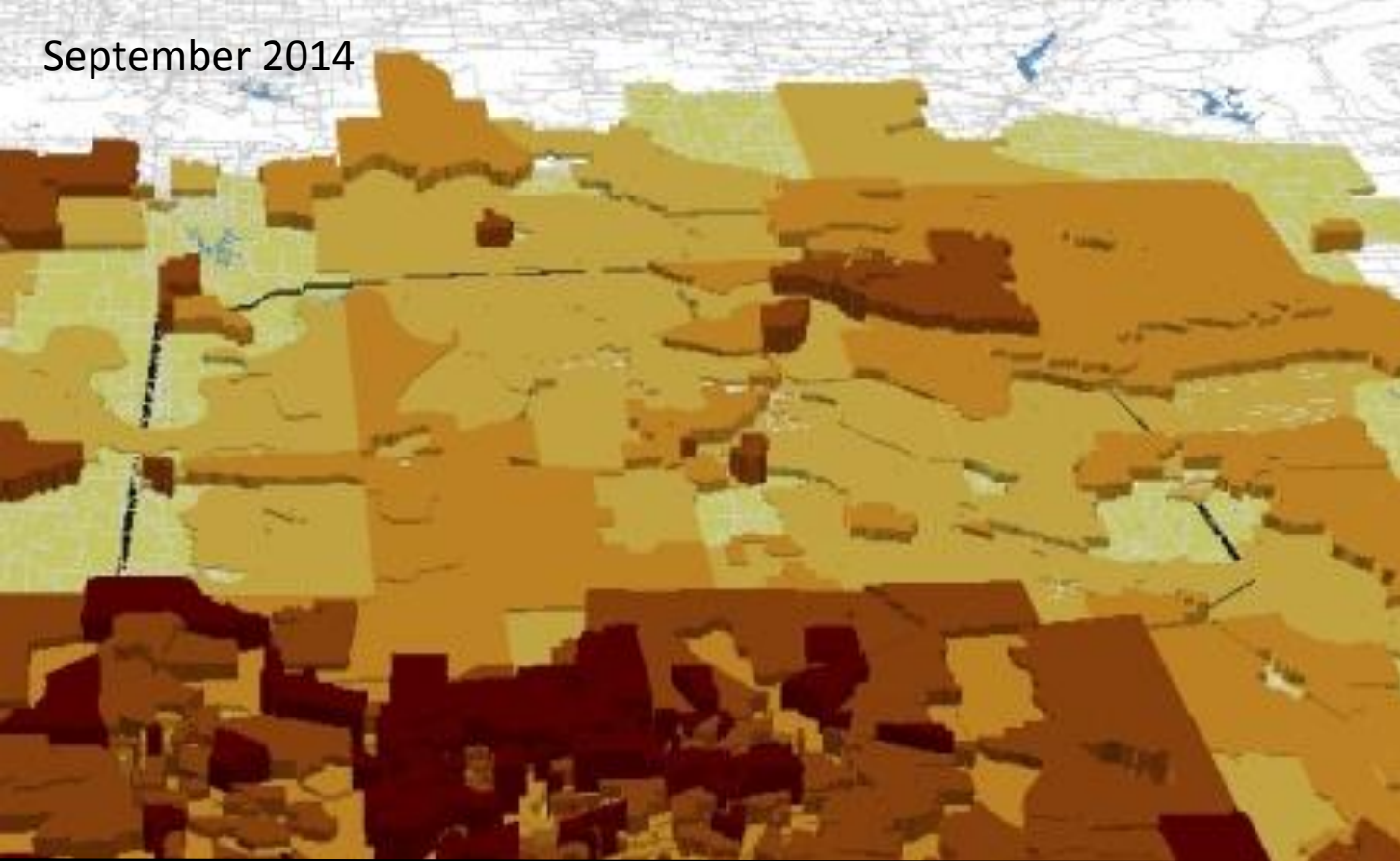


September 2014



# GRAYSON COUNTY THOROUGHFARE PLAN



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## EXECUTIVE SUMMARY

The Grayson County Thoroughfare Plan focuses on the thoroughfare hierarchy and roadway system character throughout the entirety of Grayson County. The thoroughfare plan is long-range, planning for thoroughfare needs for the next 25 years. To ensure the Thoroughfare Plan's success, the planning process focused on soliciting public input and fostering cooperation with local cities and towns.

Public input was a key aspect of the planning process used to update this plan. Public input opportunities consisted of stakeholder interviews - including discussion with owners of large development tracts throughout the county, an interactive community forum, information from local cities and towns, and Regional Mobility Commission presentations.

In addition to community input, the study team accessed thoroughfare plans approved by citizens and elected officials in Sherman, Denison, Argyle, and Gunter, as well as county-wide thoroughfare plans for adjacent counties and plans generated by the Sherman-Denison MPO. Along with a tour and analysis of the existing roadway system, these plans formed the baseline for planning the countywide thoroughfare plan for Grayson County.

The study team prepared projections for future population growth at the county and census tract levels. In

addition, the team looked at the likely effect of regional growth patterns on future development in Grayson County.

In order to better determine future roadway demands, the planning team, under the direction of Dr. Ardeshir Anjomani of the School of Urban and Public Affairs at the University of Texas at Arlington, undertook a sophisticated, proprietary analysis of future development potential. (Details of the analysis steps are included in the Modeling and Analysis chapter of this report.)

The resultant development potential map, combined with results of community input, population and employment projections form the basis for the final Thoroughfare Plan Map. In addition, two alternate alignments for the Grayson County Tollway are included. Also included are a functional classification system and example roadway cross sections.

These scenarios were presented at a public meeting of the Grayson County Regional Mobility Authority in August, 2014 for comment. Revisions to the map arising from comments on the scenarios resulted in the final thoroughfare plan, presented in September, 2014.



## INTRODUCTION

A Thoroughfare Plan is a policy guide and a tool used by local government entities that anticipates both future developments and travel needs in order to provide an efficient road system. It is used for uniform and coordinated decisions to be made by public officials, developers, land owners etc. The plan focuses on soliciting public input and fostering cooperation with local cities.

The Thoroughfare Plan is intended to provide orderly development, reduce travel and transportation costs by ensuring effective service for both through and local traffic, and minimizing disruption and displacements of people and businesses by providing long range planning for major roads. An additional purpose is to reduce environmental impacts on air-quality, wetlands, historic sites, parks, endangered species, neighborhoods etc. Generally, Thoroughfare Plans serve as planning tools within the guiding goals and objectives, which are used to bring balance between ease of travel and the land use impact of the road network, with the overall objective of improving future development within Grayson County.

Grayson County signed a contract to carry out research and development of a Grayson Thoroughfare Plan with the Institute of Urban at the University of Texas at Arlington. The Agreement was effective from September 1<sup>st</sup>, 2013 and the research project ran through September 30, 2014. The project

involved collecting and analyzing the past and present demographic and economic data and projecting future growth and these analyses were then incorporated into the proposed thoroughfare network.

### BACKGROUND- GRAYSON COUNTY

Grayson County is located in north central Texas, and bordered on the north by Marshall County northeast by Bryan County, and northwest by Love County, all located in Oklahoma. It is bordered on the south by Collin County, and in southwest by Denton County, all of which are located in Texas. It is also bordered on the east by Fannin County and on the West by Cooke County. Grayson County has a total land area of 934 square miles, with about 4.7 percent of it covered by water. It also has an elevation ranging from 600 to 800 feet above sea level and a generally level terrain with some low hills. In general, the portion of the county east of US highway 75 has more rolling terrain than does the western portion of the county. The County is part of the Sherman-Denison Metropolitan Statistical Area, and has its seat located in Sherman, which is located 65 miles north of Dallas.

It is anticipated that Grayson County will experience strong growth in the rapidly growing North Texas region. Since the 2000 Census, Grayson County added 10,282 people, which



represents a 9.3 percent increase. Grayson County's location immediately north of one of the fastest growing major metropolitan regions in the nation will likely strongly affect future population growth.

Sherman is the County Seat city, with a 2012 population of 39,122. Other large cities in the County are Denison, Van Alstyne, Whitesboro, and Gunter with populations of 22,668, 3,079, 3,818, and 1,514 respectively.

Personal income (labor earnings and non-labor income) increased by 19.3 percent between 2000 and 2010, an indication of a growing economy. From 1970 to 2010, non-labor income increased by 371 percent. A growth in non-labor income can be an indication that Grayson County is an attractive place to live and retire.

The southern part of the County will likely experience stronger growth that will quickly change the character of the County. Residential rooftops, schools, churches, and commercial developments are already springing up on land that once held farms and ranches. County roads that were once sufficient for a rural population and economy will not be capable of handling the increased traffic burdens generated by newly urbanized and suburbanized communities. To address the County's growth pressures on the thoroughfare system, the

Grayson County Thoroughfare Plan will aid in identifying current deficiencies and future thoroughfare needs.

### PURPOSE FOR A NEW THOROUGHFARE PLAN

Considering the current and anticipated physical growth happening in and around the Grayson County, as well as the anticipated population and economic growth, there is the need for County officials to begin planning to accommodate likely resulting future transportation needs. Therefore, the purpose of this thoroughfare plan is to assist Grayson County to provide for this anticipated future transportation. This plan will recommend a countywide thoroughfare network for the overall development of Grayson County.

The Grayson County Commissioners' Court recognized the tremendous amount of growth potential in the County within and surrounding the established incorporated cities. Typically the individual cities will have a thoroughfare plan and associated policies and ordinances to ensure the thoroughfare system is built in an efficient manner that respects the land uses of an area. Outside of the incorporated portions of the County, development pressures are both driven by and influence thoroughfare decisions. Having a county-wide thoroughfare plan is essential to the orderly development of the remainder of the county.



Together with a coordinated land use element, the future thoroughfare system grows as the community grows. Some development patterns lead to inefficiencies in the thoroughfare system. It is important to make sure the thoroughfare vision matches closely with the growth vision of Grayson County.

The Grayson County Thoroughfare Plan provides elected officials, County staff, residents, and investors a document that identifies mobility needs, identifies a thoroughfare hierarchy, and a framework for identifying and protecting the County's character. Along with the Grayson County Thoroughfare Plan Map, this document includes text describing the planning process and plan graphics ranging from conceptual connections to typical roadway cross sections. This document will help decision-makers anticipate future growth in the County, and serve both residents and investors in fostering economic growth within the County. Besides being a resource for the County staff in their coordination with Grayson County cities and towns, the countywide plan is an important tool in discussions with state agencies, neighboring counties, interested investors, and regional planning agencies.

Most long-range plans typically look at foreseeable changes over a 10-20 year timeframe. This thoroughfare plan considers an even longer-range perspective to 2040. Since right-of-way

is typically easier to acquire when an area is undeveloped, as is the case in portions of Grayson County, the sooner that potential right-of-way is identified and acquired, the more likely costs will be minimized and projects can be eventually implemented.

This plan will help guide Grayson County's future development by looking at the economic and demographic, land use and transportation issues in the next twenty five years. The plan will also serve as a policy guide for funding thoroughfares, transportation infrastructure, future right-of-way (R-O-W), and growth management.







## CITIZEN ENGAGEMENT

### PROCESS

Citizen input is a crucial aspect of plan development. Citizen engagement commenced on November 14<sup>th</sup>, 2013 with the Grayson County Regional Mobility Authority Committee, elected officials and other government officials all interviewed by the Institute of Urban Studies to gain a sense of the County's needs, values, and challenges. The stakeholders' responses provided planners a better understanding of the growth and development issues impacting Grayson County as well as highlighted the qualities of the County's character valued by residents.

The second meeting held on February 20<sup>th</sup>, 2014 at the Grayson County Courthouse in Sherman gathered owners of more than 500 acres to discuss: current concerns, current use of land and future use of land (if any planned). The future land use plans were aggregated and analyzed to project future demand.

On February 27, 2014, a public input meeting was held at Grayson County Community College. The meeting agenda consisted of three main activities seeking to gain a more exact pattern of the population's everyday travel, popular destinations, routes & alternate routes to work and identification of safety concerns. Additionally,

recommendations were made by the public regarding expansion, resurfacing and realignment of specific roadways to be upgraded to relieve the north-south and east-west congestion.

On April 3, 2014, IUS team members presented to the Grayson County RMA in order to update them on the completion of initial public input and progress in development of thoroughfare plan scenarios.

On August 14, 2014, IUS team members presented findings and alternative Tollway scenarios to the Grayson County RMA for comment and input. Changes suggested at this meeting were included in the final thoroughfare plan, presented on October 9, 2014.

#### MEETING DATES:

November 14, 2013: RMA and County Officials

February 20, 2014: Property Owners

February 27, 2014: General Public

April 3, 2014: RMA and Public

August 14, 2014: RMA and Public comment

FIGURE 1: PUBLIC AND STAKEHOLDER MEETING DATES

## KEY IDENTIFIED ISSUES

Citizens identified a number of current and potential concerns during the input process. These issues all involved the perceived need to appropriately accommodate and facilitate expected growth within Grayson County over the next several decades.



*Additional public engagement results are in the Appendix.*

### KEY ISSUES

- Accommodating projected growth in the county, especially growth in the south and southwestern portions of the county driven by northward development of the Dallas-Fort Worth region.
- Aligning with approved thoroughfare plans of cities within the county.
- Accommodating expected economic development associated with the North Texas Regional Airport.
- Providing adequate east-west connectivity, especially in the southern and central portions of the county.
- Aligning the thoroughfare grid with surrounding counties.
- Identifying alternative routes or bypasses around congested urbanized and highway areas
- Providing for greater regional access
- Providing for likely access and mobility needs from specific future development projects

FIGURE 2: KEY IDENTIFIED ISSUES FROM PUBLIC ENGAGEMENT



## GOALS AND OBJECTIVES

While they are not adopted in any formal manner, the following goals and objectives have been developed from the information and identified issues provided by stakeholders and citizens during stakeholder interviews and public meetings

1. Provide for improved connectivity.
  - a. Ensure adequate alternatives for North-South connectivity to Collin and Grayson County employment centers.
  - b. Ensure adequate East-West connectivity to accommodate in-County trips and connect to neighboring counties.
2. Accommodate future potential regional growth
  - a. Facilitate the economic development potential of North Texas Regional Airport.
  - b. Ensure efficient traffic flow to and from new residential and employment centers, especially in areas of highest expected future development.
3. To preserve adequate ROW for future long range transportation system improvements.
  - a. Whenever possible, utilize existing roadway network and ROW for proposed thoroughfare system routing.
  - b. Identify potential new needed routes.
4. To coordinate thoroughfare locations with recently adopted plans.
  - a. Ensure that plans of the municipalities within the county are appropriately incorporated within the County's overall thoroughfare plan
  - b. Ensure appropriate connections with thoroughfare plans of neighboring counties.
  - c. Coordinate with and include proposed improvements in the Metropolitan Transportation Plan.
5. Appropriately align thoroughfare network with NTTA Tollway alignment.



## CURRENT THOROUGHFARE SYSTEM

### ROADWAYS

Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind. Freeways have directional travel lanes usually separated by some type of physical barrier, and their access and egress points are limited to on- and off-ramp locations or a very limited number of at-grade intersections. Like Interstates, these roadways are designed and constructed to maximize their mobility function, and they do not directly serve abutting land uses.

There are no Interstates that travel through Grayson County; however, Interstate 35 is located to the west in Cooke County and travels North/South. U.S. Highway 75 travels North/South through Grayson County providing drivers routes between Dallas and the state of Oklahoma. Other major transportation facilities that provide regional connection to Grayson County are US 69, US 82, US 377, SH 5, SH 11, SH 56, SH 91, SH 160, and SH 289.

Major Arterials serve major centers of metropolitan areas, provide a high degree of mobility and can also provide

mobility through rural areas. Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts, and offer connectivity to the higher Arterial system. In rural settings, Minor Arterials should be identified and spaced at intervals consistent with population density, so that all developed areas are within a reasonable distance of a higher level Arterial.

Rural areas of Grayson County are served by Farm to Market Roads. The Farm to Market road system was initially developed in Texas in the 1930s, and served to connect agricultural areas with service centers and markets, as well as providing connections to the broader roadway network. As areas of the county develop, FM roads can be upgraded to facilitate that increased travel demand. In addition, some existing county roads will assume a greater role as principal arterials as portions of Grayson County urbanize.



Road Number	Location	Certified Mileage	Designated Year
FM 84	Grayson County	8.861	1943
FM 120	Grayson County	20.33	1945
FM 121	Grayson County	33.088	1945
FM 131	Grayson County	7.333	1945
FM 151	Grayson and Fannin Counties	7.758	1945
FM 406	Grayson County	3.878	1945
FM 691	Grayson County	5.302	1946
FM 697	Grayson County	14.749	1946
FM 814	Grayson and Fannin Counties	3.875	1948
FM 898	Grayson and Fannin Counties	20.861	1948
FM 901	Grayson County	25.526	1948
FM 902	Cooke and Grayson Counties	41.455	1948
FM 922	Montague, Cooke, and Grayson Counties	40.652	1948
FM 996	Grayson County	2.021	1948
FM 1310	Grayson County	1.817	1949
FM 1417	Grayson County	17.598	1949
FM 1753	Grayson and Fannin Counties	21.923	1951
FM 1897	Grayson County	5.581	1951
FM 2729	Grayson County	9.09	1962
FM 3133	Grayson and Collin Counties	8.814	1968
FM 3356	Grayson and Collin Counties	4.395	1976

FIGURE 3: FARM TO MARKET ROADS IN GRAYSON COUNTY

Major Roadways in Grayson County	
Road Name	Functional Classification
US 69	Major Arterial
US 75	Highway
US 82	Major Arterial
US 377	Minor Arterial
SH 5	Minor Arterial
SH 11	Minor Arterial
SH 56	Minor Arterial
SH 91	Major Arterial
SH 160	Minor Arterial
SH 289	Minor Arterial

FIGURE 4: MAJOR ROADWAYS IN GRAYSON COUNTY

The Grayson County RMA is examining the possible construction of the Grayson County Tollway from FM 121 west of Gunter to US 75 near Denison. The project would extend the proposed Tollway 33 miles and provide traffic relief to US 75. Dallas-Fort Worth is projected to expand north and this project would accommodate that shift, provide an alternative for truck traffic and provide easier access to Sherman, Denison and Lake Texoma. The project will also increase regional mobility and connect the Sherman-Denison metropolitan planning area with the Dallas-Fort Worth metropolitan area.



This proposed Tollway significantly impacts future growth potential for Grayson County. An examination of the history of urban growth in the Dallas-Fort Worth metropolitan area reveals that the strongest growth axis for the past 30 years has been the area between SWH 289/Preston Road and the Dallas North Tollway. The extension through Grayson County will undoubtedly induce increased growth in the same corridor.

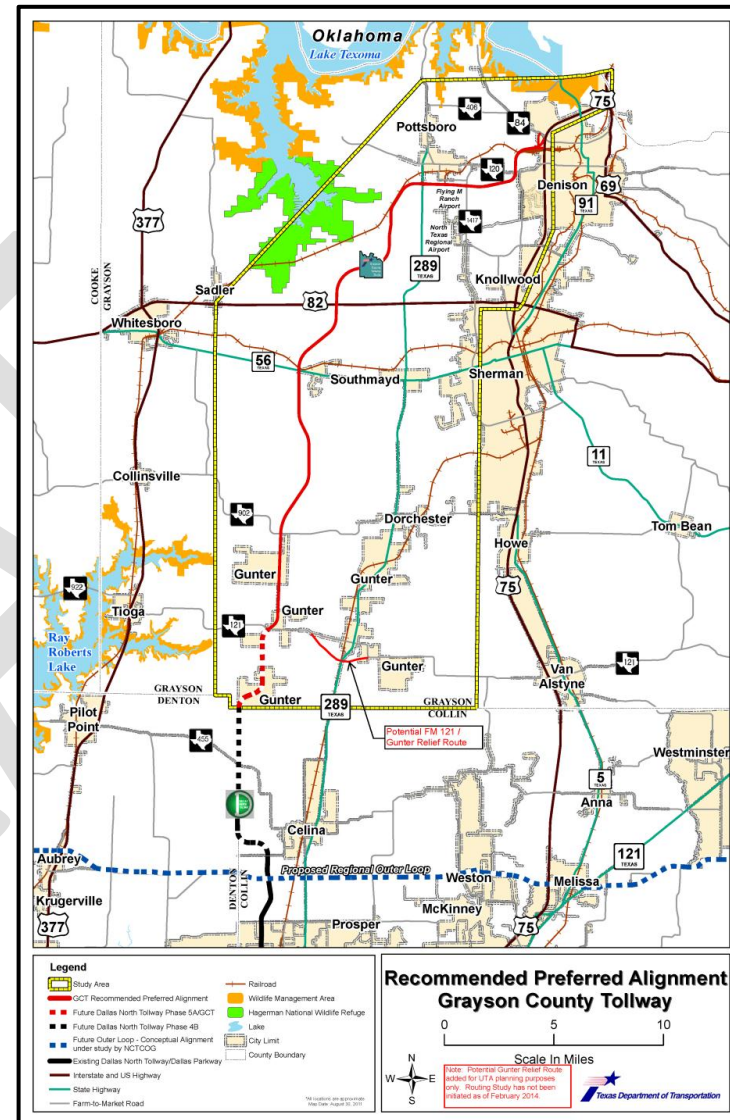


FIGURE 5: RECOMMENDED PREFERRED TOLLWAY ALIGNMENT



## MOBILITY VS. ACCESS

For purposes of this plan, mobility is defined as the ease with which a person can travel from one place to another. Access describes the connections from the thoroughfare system to adjacent properties and developments. A thoroughfare system has a balance of needs in terms of mobility and access. In general, the higher the measure of mobility of a particular roadway, the lower the access will be. Likewise, roadways having a high degree of access will have a very low degree of mobility. The following graph illustrates this principle for different roadway types or functional classes:

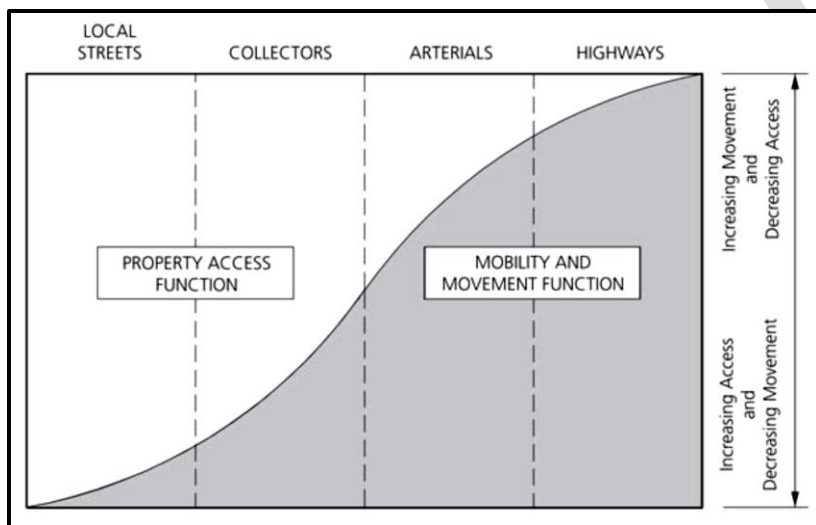


FIGURE 6: MOBILITY VS. ACCESS

Mobility and access are also closely related to the components of speed, capacity, safety, and efficiency. While these principles are all used to functionally classify the existing roadway network, they also inform the planning process regarding the development of new roadway locations.

## LAND USE AND FUTURE DEVELOPMENT

A well planned thoroughfare network should support an area's future development and economic growth. Land use shares a relationship with the thoroughfare network as a result of the built in connection/attraction between where people live, where they work, and where they conduct other activities in their lives, like shopping and recreation. The system of links between these different areas, in terms of automobile and truck connections, is the thoroughfare network.

In addition to accommodating growth, the thoroughfare network, especially the larger functional classifications, can encourage growth. This can be seen in Grayson County through the residential and accompanying commercial growth along the US75 and Preston Road corridors. As described in the Modeling and Analysis chapter, this plan evaluates the likely future development potential for all areas of Grayson County in order to better identify where thoroughfare links

will be needed, as well as the likely effects on growth of improved thoroughfare links.

In addition to overall future growth potential, some key economic drivers and projects are important factors to consider in evaluating needed changes to the current thoroughfare system. These include the Grayson County

Regional Airport and the future Tollway, as well as the specific development plans identified through the meetings with owners of larger Grayson County properties.

*More information on the development suitability analysis is in Chapter 6 and the Appendix.*

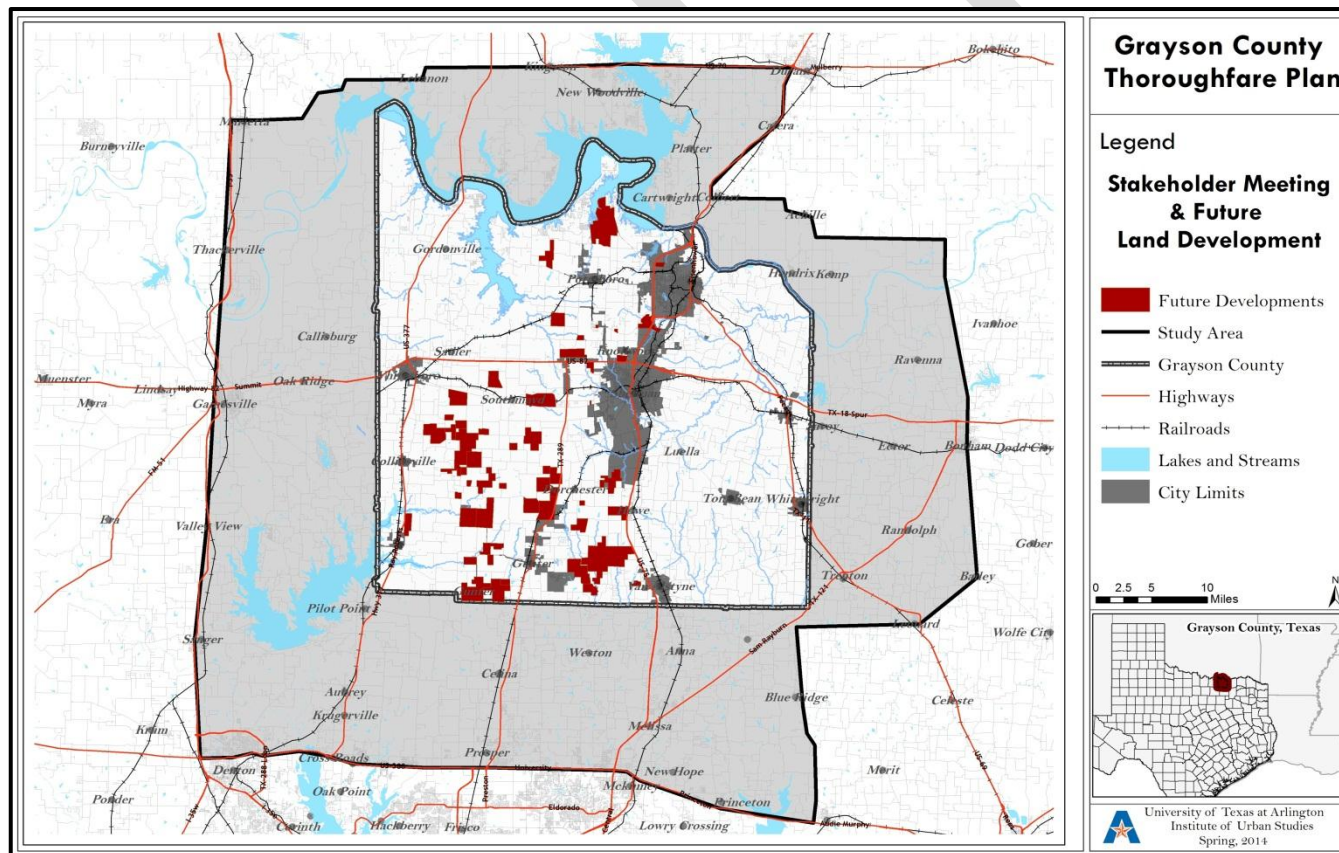


FIGURE 7: FUTURE LAND DEVELOPMENT - LARGE PARCELS





## COORDINATION WITH CITIES' AND COUNTIES' THOROUGHFARE PLANS

A key step in the plan development process was to ensure that the Grayson County Thoroughfare Plan took into consideration existing municipal thoroughfare plans. Plans were obtained for the cities of Denison, Sherman, Van Alstyne, and Gunter, as well as Collin and Denton counties.

Municipal level thoroughfare plans create roadway networks that stop at jurisdictional boundaries. Similarly, adjacent county thoroughfare plans either stop at the county line, or propose continuation of roadways into Grayson County. As part of the overall planning process, key connection points between cities within Grayson County as well as neighboring counties were identified and solutions recommended to provide through-county and regional connectivity.

## MODELING AND ANALYSIS

### DEFINING THE STUDY AREA

It is vital to consider not only Grayson County, but the surrounding region when analyzing and predicting future growth. The greater Dallas/Fort Worth metropolitan area greatly affects growth patterns within Grayson County.

Therefore, the study group gathered data and projections for Grayson County and the Dallas/Fort Worth region. Further, the study area for the plan includes portions of surrounding counties. The data gathered for the study area included factors such as: future thoroughfare plans of various cities within Grayson County, commuting patterns, and the

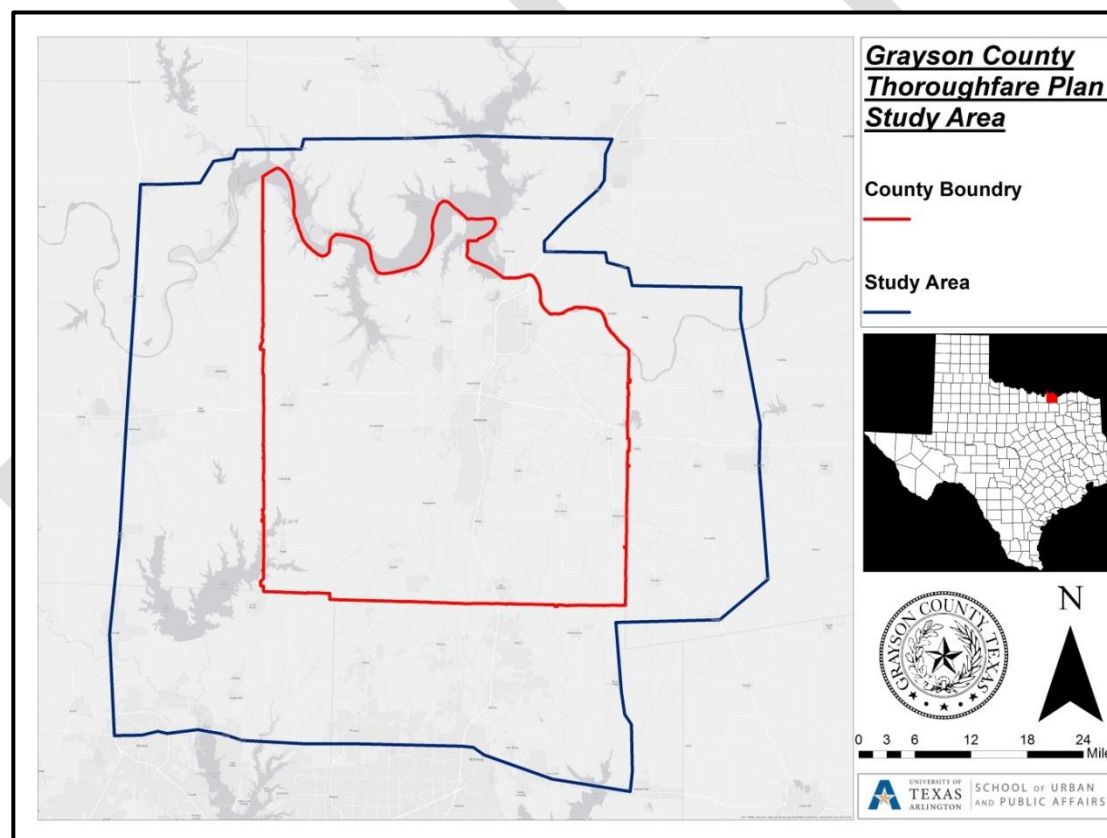


FIGURE 8: GRAYSON COUNTY THOROUGHFARE PLAN STUDY AREA

Dallas/Fort Worth area's predicted growth.

## SPATIAL DATA

In understanding the factors that shape the region, it is essential to analyze existing and projected demographic data at all levels and assess how these projections may be relevant to future development in Grayson County. Data gathering included demographic, environmental, transportation,

economic, and housing. The data was gathered from various sources such as: U.S. Census, North Texas Council of Governments, County Tax Assessor, city officials, and stakeholder interviews.

Both population and employment data are important for understanding the county's future thoroughfare needs. Grayson County's major employment areas have been along US75, especially though the Sherman/Denison area, with some additional employment centers along US377 in the

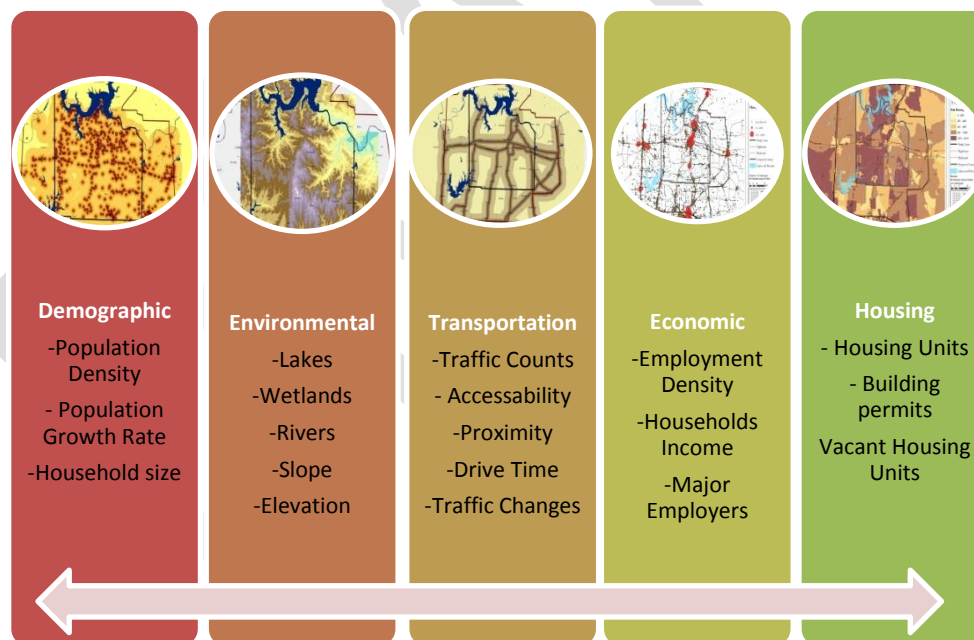


FIGURE 9: EXAMPLES OF COLLECTED SPATIAL DATA

Western edge of the county, in and near the regional airport, and in the Gunter and Van Alstyne areas. Employment is expected to grow in the and around the same areas of the county, with additional growth along and near the route of the Grayson County Tollway. The greater Dallas/Fort Worth area is also a large employment destination for Grayson county residents.

Maintaining and enhancing connectivity for commuters is an important aspect of the overall thoroughfare plan. Population growth projections for Grayson County show likely increases in population concentrated in the southern section of the county along the border with Collin and Denton counties.

Much of this growth is likely to occur as a result of the northward expansion of population from the greater Dallas/Fort Worth area. Employment growth is expected to be strong in Collin County, and demand for housing will undoubtedly accompany the growth in employment centers. Much of this growth is also projected to occur between the proposed Tollway extension and US75 and south of US82.

Additional population growth is projected around the Lake Texoma area and in Sherman and Denison. Much less growth is projected for far eastern Grayson County and for the

northwest portion of the County north of US82 and west of the Tollway.

*Details on population and employment projections for Grayson County and the nearby areas of the Dall/Fort Worth metropolitan area are in the Appendix.*

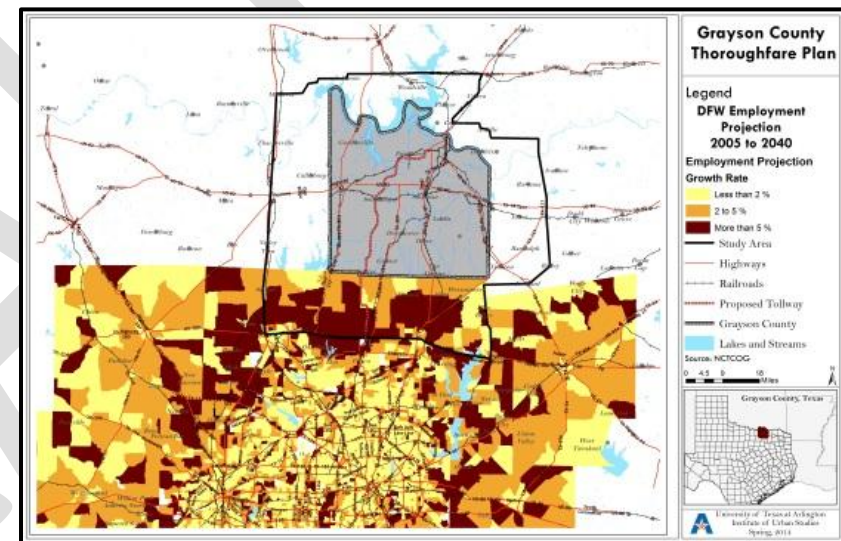


FIGURE 10: REGIONAL EMPLOYMENT GROWTH IS AN IMPORTANT FACTOR IN FUTURE GRAYSON COUNTY GROWTH

In order to deal with the projected growth within Grayson County, appropriate transportation connections between Grayson and Collin and Denton counties must be maintained and enhanced. The existing highway system provides good connectivity between counties, especially when the proposed

Tollway is considered. However, as population increases, the level of congestion on the highways will increase, necessitating development of alternative north-south routes and connection of arterial level thoroughfares across county lines. In addition, adequate arterial level in-county east-west connections must be developed to provide appropriate access to the highway network and to relief routes. Recommended distances and spacing of arterials is covered in the functional classification portion of the recommendations chapter.

### SUITABILITY ANALYSIS

Land-use suitability analysis is utilized to identify the most suitable places for future land-use allocation. Suitability analysis is vital in producing a spatial allocation of future urban activities and open space with consideration of all relevant factors. Thus, land suitability analysis involves the ecologically sensitive allocation and planning of land resources in the course of land-use analysis and planning.

Selection of the suitability factors depends upon the characteristics of the planning area. Every region has unique natural and built environmental features. Natural environments include features such as: water resources, soil types, and slopes. Built environments include features such as: highways and major intersections, employment centers,

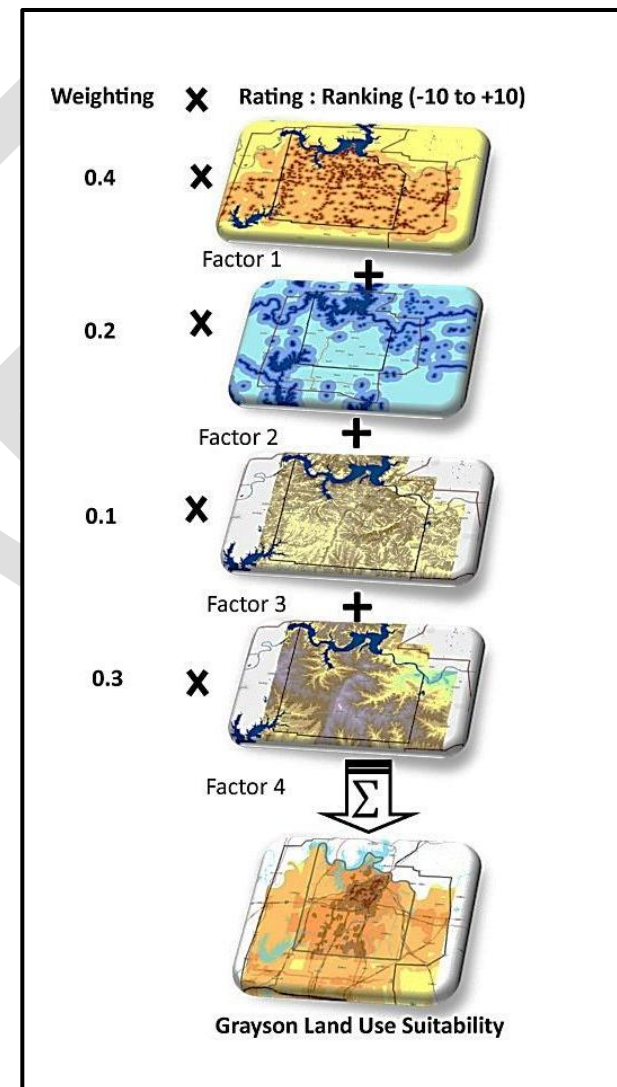


FIGURE 11: SUITABILITY ANALYSIS PROCESS

airports, and shopping centers. The entire region surrounding Grayson County was analyzed using a GIS layer format.

The suitability score is a numerical value indicating a location's overall suitability for a land use type when all related factors are considered. The suitability score for a particular zone is

determined by multiplying the zone's factor rating for each factor by the corresponding factor weight and summing up these products. Suitability scores are computed for all zones and all development or land uses under consideration. GIS layers were overlaid based on their weight to predict potential for future growth in Grayson County and its surrounding

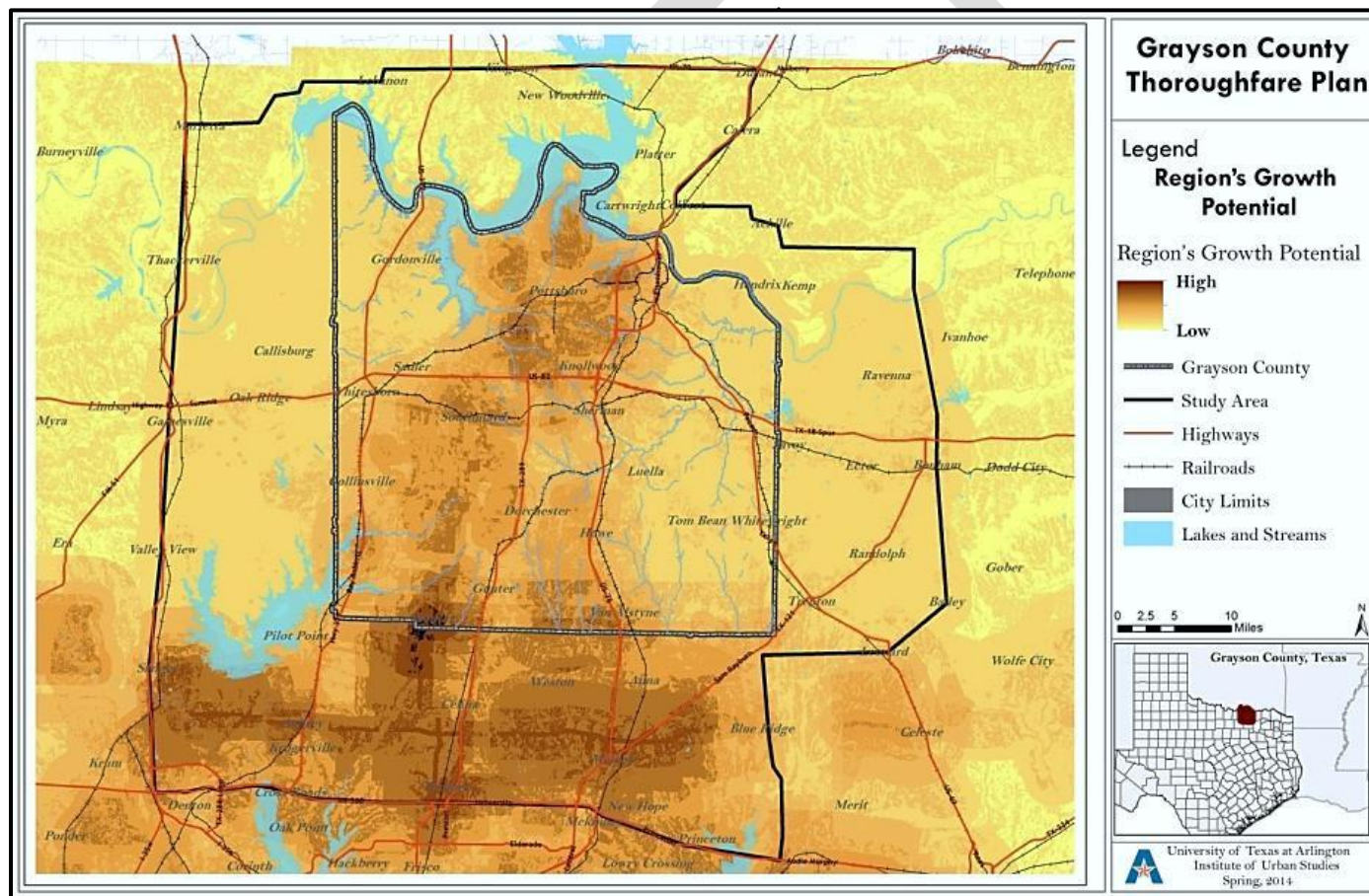


FIGURE 12: SUITABILITY ANALYSIS – OVERALL GROWTH POTENTIAL

study area. Results show that south and southwest of Grayson County have high potential for growth according to various factors such as: accessibility to jobs, good north-south connectivity to the greater Dallas/Fort Worth area, and location along the primary growth vector for the Dallas/Fort

Worth metropolitan area between US75 and the Dallas North Tollway.

Adding an additional layer to account for the planned

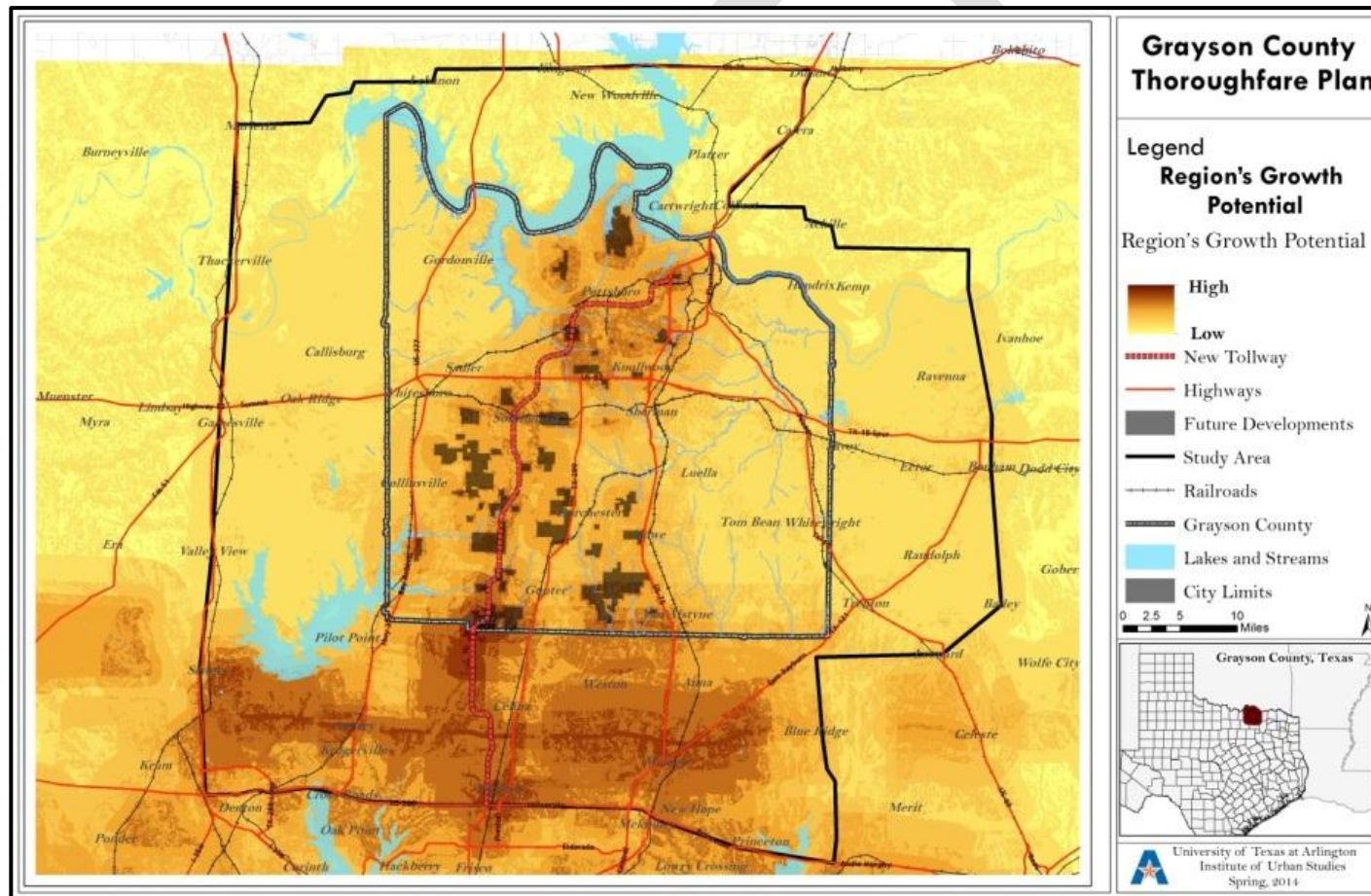


FIGURE 13: SUITABILITY ANALYSIS -GROWTH POTENTIAL WITH LARGE DEVELOPMENT PARCELS LAYER



development of large development parcels in the County reinforces the analysis. Note that the majority of the parcels are located in the southern and southwestern portions of Grayson County, in proximity to US75, SH289/Preston Road, and the Grayson County Tollway. Additional growth and large development parcels highlight expected growth in and around the North Texas Regional Airport and in resort communities on Lake Texoma.

There is projected to be much less development potential in eastern and far northwestern portions of Grayson County. This reinforces information gathered from stakeholders and the public.

*Additional demographic data, population projections, and suitability analysis layers are included in the Appendix.*





## RECOMMENDATIONS

### FUNCTIONAL CLASSIFICATION SYSTEM

Most travel occurs through a network of interdependent roadways, with each roadway segment moving traffic through the system towards destinations. The concept of functional classification defines the role that a particular roadway segment plays in serving this flow of traffic through the network. Roadways are assigned to one of several possible functional classifications within a hierarchy according to the character of travel service each roadway provides. Planners and engineers use this hierarchy of roadways to properly channel transportation movements through a highway network efficiently and cost effectively.

This plan integrates existing municipal level thoroughfare plans for incorporated cities in Grayson County. Note however, that municipal thoroughfare plans will have a much finer network of roadway facilities identified than will the Grayson County Thoroughfare Plan, as they will typically include the lowest of functional classifications, collectors and local streets. Grayson County's thoroughfare plan is focused on the identification and designation of more significant

roadway facilities such as the highway, major, and minor arterial classifications. Recommended spacing is an important element of this plan, especially in areas of higher anticipated development. By locating arterial roadway facilities at or near recommended spacing, a functional thoroughfare grid can operate to most efficiently and effectively strike a balance between mobility and access.

FUNCTIONAL CLASSIFICATION	MOBILITY	ACCESS	TYPICAL SPACING
INTERSTATE HIGHWAY	Very High	Very Low	Greater than 5 miles
FREEWAY / TOLLWAY	Very High	Very Low	5 to 10 miles
MAJOR (PRINCIPAL) ARTERIAL	High	Low	1 to 5 miles
MINOR ARTERIAL	Medium	Medium	0.5 to 2 miles
COLLECTOR	Low	High	Less than 0.5 miles
LOCAL STREET	Very Low	Very High	Less than 0.25 miles

FIGURE 14: FUNCTIONAL CLASSIFICATION



## FUTURE THOROUGHFARE PLAN/TYPICAL CROSS-SECTIONS

Typical Cross-Sections depict roadway characteristics such as ROW widths, lane widths, number of lanes, type and width of medians, etc. These cross sections are offered as examples of the function of these types of facilities, rather than a strict guideline for how these facilities should look. Specific lane counts, median widths, and provision of turn lanes are subject to complete environmental and engineering review prior to building given facilities.

### FREEWAY/TOLLWAY

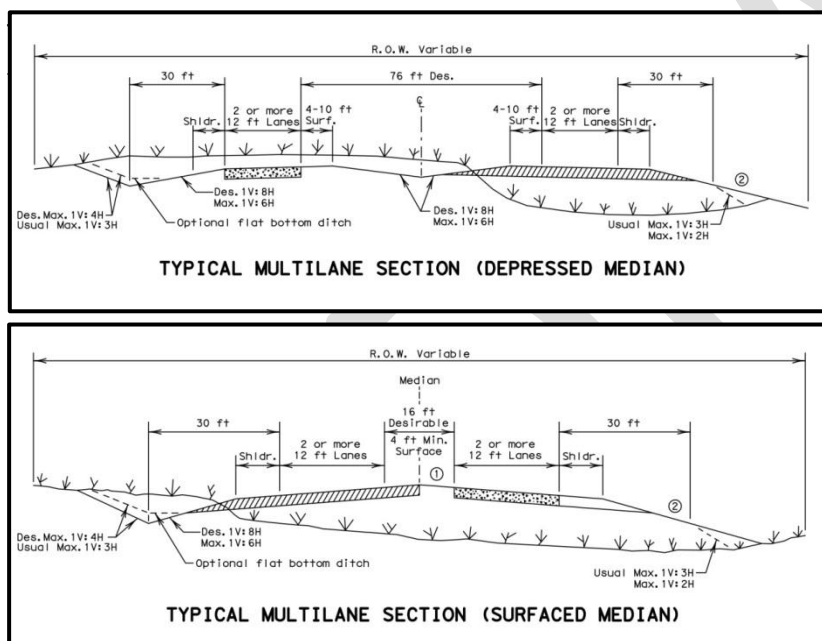


FIGURE 15: TYPICAL FREEWAY CROSS-SECTIONS

Freeways and Tollways fall under the jurisdiction of federal, regional, or state authorities, although the County does have input in how these agencies design these facilities.

FM121 through southern Grayson County is designated as a Freeway in existing MPO plans, with specific improvements to be performed within the scope of the TIP. This plan notes the need for a smoother alignment of FM121 in order to improve continuity and ability to safely handle expected future high traffic volumes.

The plan does propose two Grayson County Tollway alignment alternatives. These alternatives offer the potential for reduced development cost through possible right of way donation/dedication from interested owners of larger development parcels. In addition, the first alternative alignment offers the advantages of a smoother, straighter route with fewer major turns as well as a more consistent distance from SH289 through the majority of Grayson County. This offers a larger area of the county in the development “sweet spot” between these two major roadways.

## MAJOR ARTERIAL

The main function of major (or principal) arterials is to provide for in-County and regional connectivity to major centers of activity at high traffic volumes. Property access is a lower level concern than is high mobility.

A number of major (or principal) arterials are suggested in order to handle a higher capacity of traffic due to County growth. These major arterials also serve to connect Grayson County with neighboring counties, especially Collin and Denton counties. Wherever possible, proposed major arterials are designed to carry traffic through significant portions of Grayson County in addition to providing connections to Freeway and Tollway facilities.

These types of arterials are usually divided by a median to provide space for left turn lanes and/or right turn out lanes. Depending on traffic volumes and level of urbanization, these facilities can be four travel lanes (two in each direction) or six travel lanes (three in each direction).

Wherever possible, existing state roads, local roads, and Farm to Market roads are utilized for Major and Minor Arterial alignments in this plan.

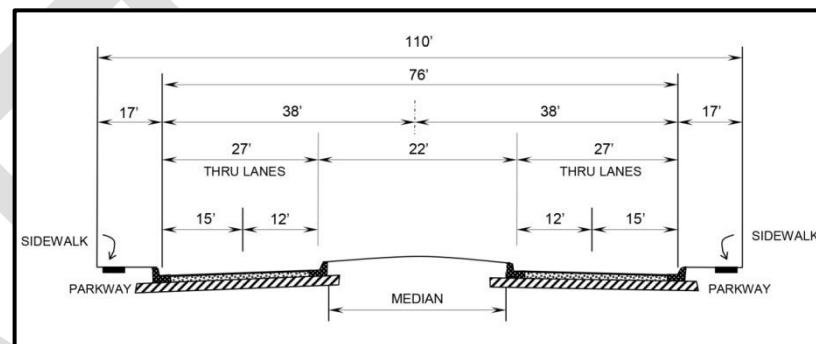


FIGURE 16: MAJOR ARTERIAL CROSS-SECTION (FOUR LANES DIVIDED)

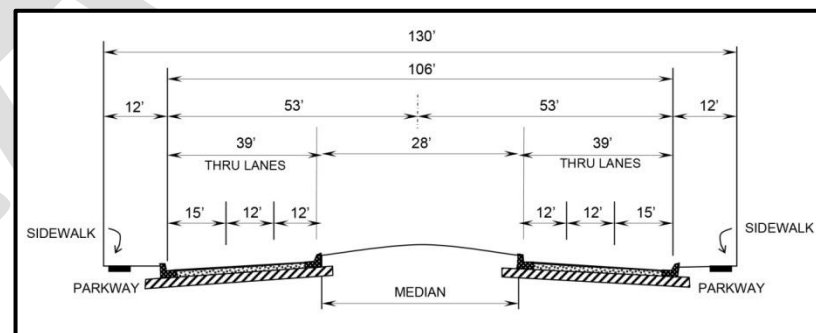


FIGURE 17: MAJOR ARTERIAL CROSS-SECTION (SIX LANES DIVIDED)



## MINOR ARTERIALS

Minor Arterials serve primarily to collect and distribute traffic from local access streets and unimproved County roads to major arterials or freeway and Tollway facilities. As with major arterials, spacing varies with population density. This class of roadways carries moderate amounts of traffic while providing limited access to adjacent properties. Access levels are higher than for major arterials.

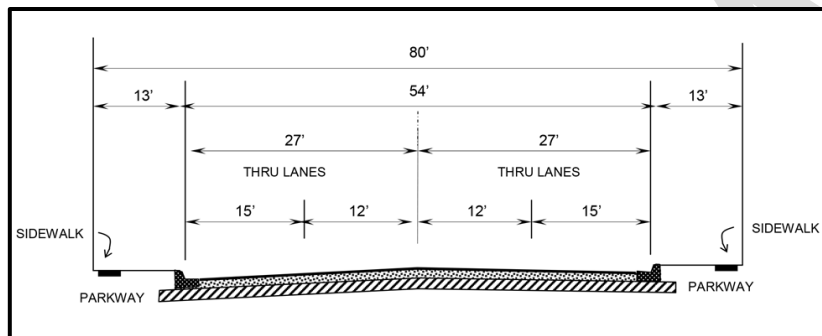


FIGURE 18: MINOR ARTERIAL CROSS-SECTION

While the cross section in Figure 18 shows a four lane undivided roadway, in more urbanized areas, minor arterials can be divided to provide for a left turn lane.

## FUTURE THOROUGHFARE MAPS

The thoroughfare maps on the following pages represent the complete proposed thoroughfare system (Figure 19) and two proposed alternative alignments for the Grayson County Tollway (Figure 20).

Note that the proposed alignments follow existing roadways wherever possible. However, the roadway alignments shown are intended to illustrate general location and interrelation with the entire roadway system. Where possible, sharp turns are smoothed to facilitate safety and improve overall system integrity. Final roadway alignments will be decided on a case by case basis after environmental and engineering studies as well as additional public input.

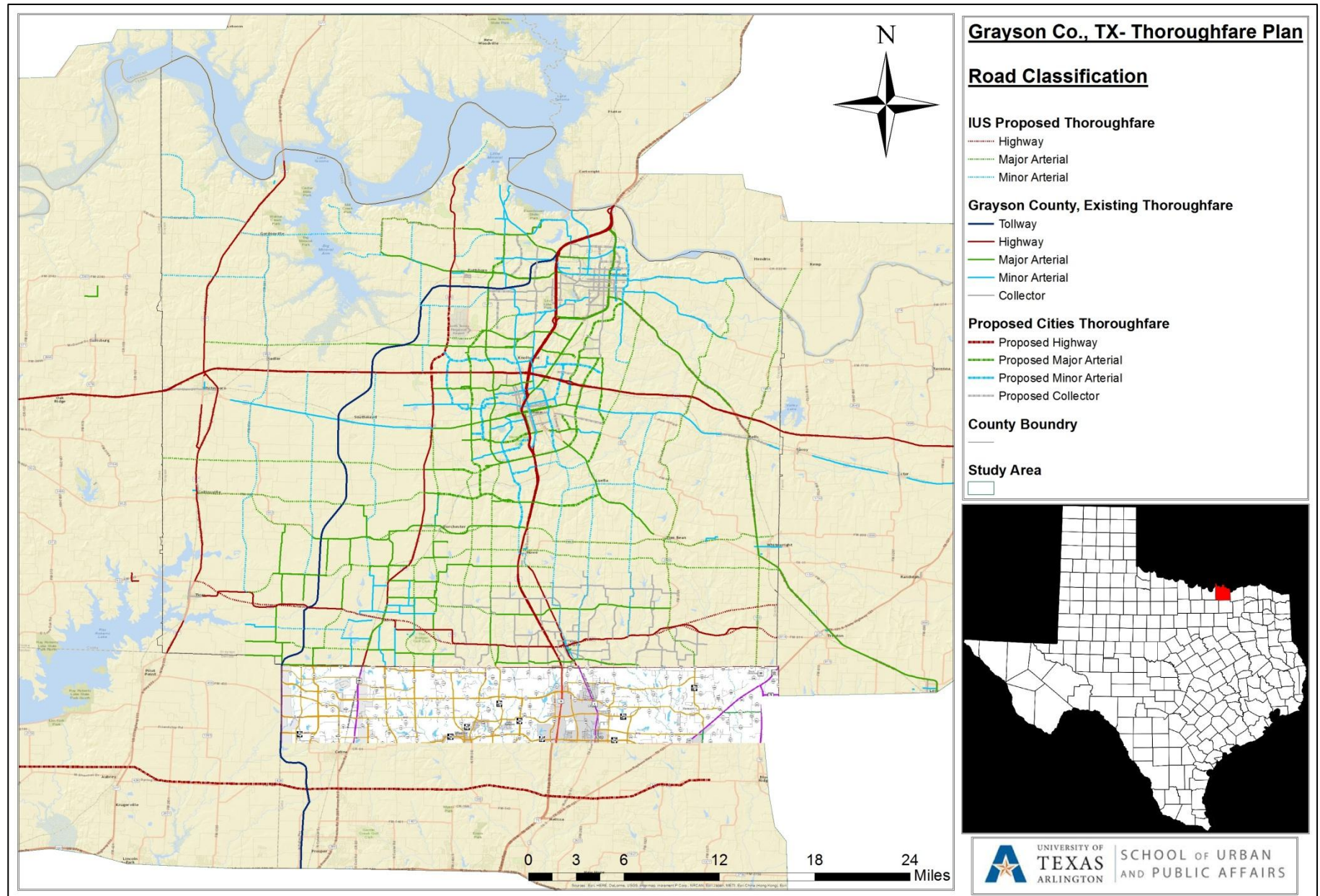


FIGURE 19: GRAYSON COUNTY, THOROUGHFARE PLAN MAP

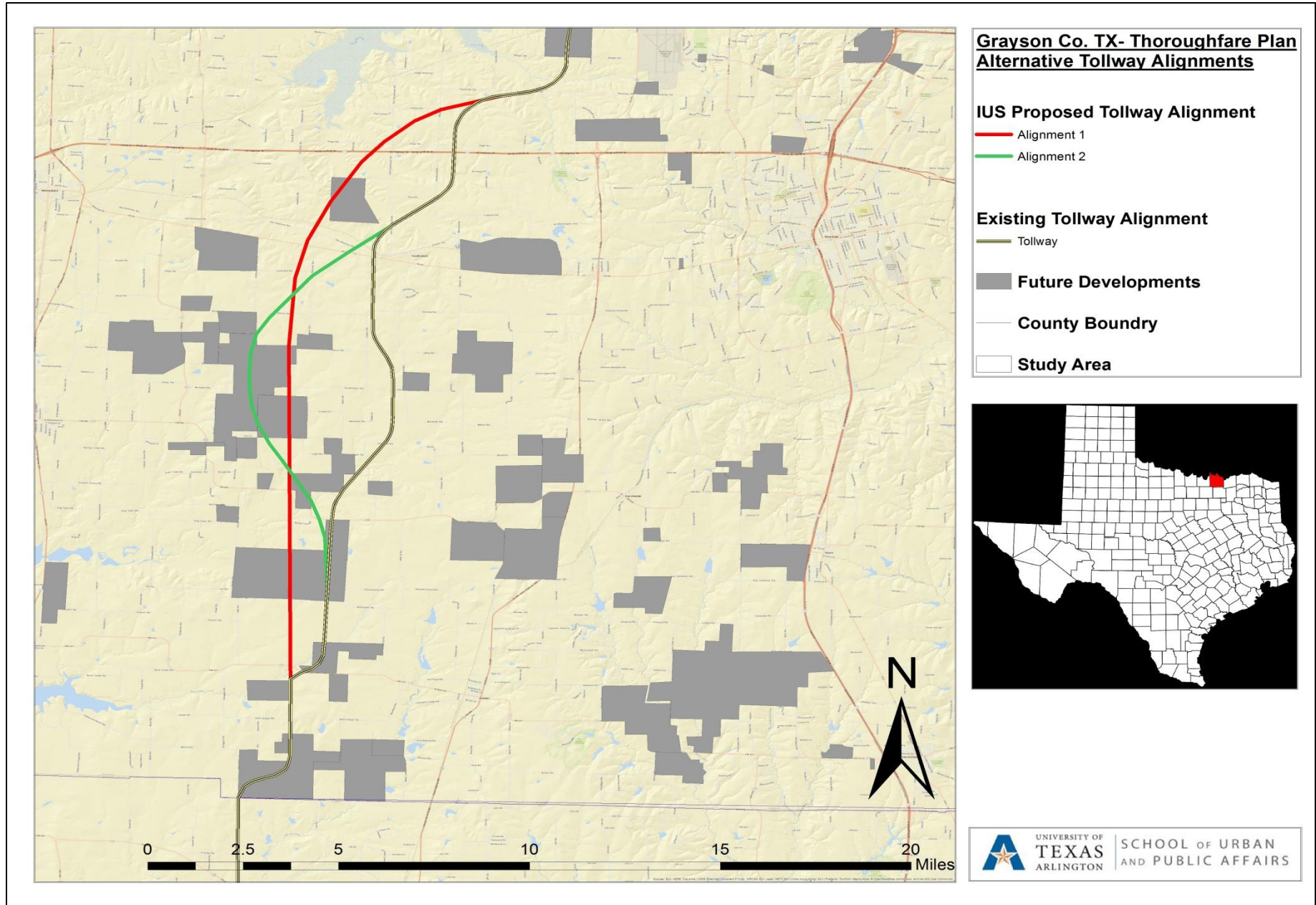


FIGURE 20: GRAYSON COUNTY, ALTERNATE TOLL way ALIGNMENT



## CONCLUSION

Public engagement and input has been an integral part of the process of developing this thoroughfare plan. Public comment is highly weighted in the resultant proposed thoroughfare system. Comments from owners of larger parcels throughout the County were especially helpful in determining specific future facility needs. This plan represents the synthesis of the needs, hopes, and future expectations for Grayson County.

The final result is a plan that seeks to satisfy expected future travel demands as well as inform future land use and development. We live in an era of rapid change, however, and it is important that this plan be kept abreast of changes in Grayson County through a program of updating and revision over time. Though the time horizon for the plan is 25 years, the plan should be revisited every 5-10 years in order to ensure its continuing relevance and effectiveness.