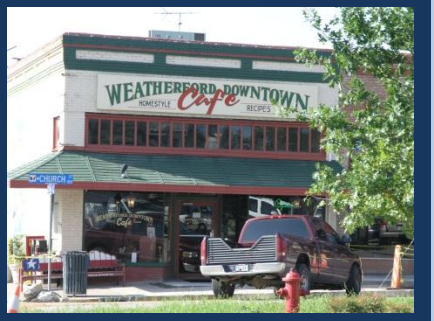
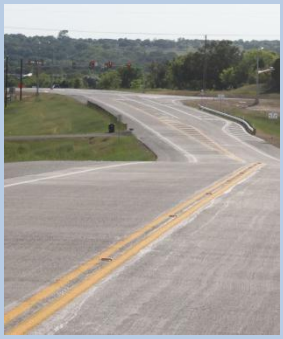
Department of Transportation
and Public Works

2013 City of Weatherford

THOROUGHFARE PLAN





FREESE AND NICHOLS

Adopted: April 9, 2013
Ordinance No.: 616-2013-10

CITY OF WEATHERFORD

ORDINANCE 616-2013-10

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF WEATHERFORD, TEXAS, AMENDING THE 2002 COMPREHENSIVE PLAN BY ADOPTING THE 2013 THOROUGHFARE PLAN, TO BECOME EFFECTIVE UPON ITS PASSAGE AND APPROVAL, REPEALING ALL ORDINANCES OR PARTS OF ORDINANCES IN CONFLICT; PROVIDING A SAVINGS CLAUSE.

WHEREAS, the City Council of the City of Weatherford, Texas, retained a professional Planning Consultant to assist in the preparation of a new Thoroughfare Plan for the City of Weatherford; and

WHEREAS, the Transportation Advisory Board reviewed and studied recommendations made by the Planning Consultant for the 2013 Thoroughfare Plan; and

WHEREAS, the Transportation Advisory Board conducted a public hearing on February 28, 2013, and after all persons were given an opportunity to present testimony, did consider and make recommendations to adopt a new 2013 Thoroughfare Plan; and

WHEREAS, the Transportation Advisory Board recommended approval of the 2013 Thoroughfare Plan to the City Council; and

WHEREAS, the City Council received and reviewed the Transportation Advisory Board's recommendation to approve the 2013 Thoroughfare Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WEATHERFORD, TEXAS.

Section 1: That the 2013 Thoroughfare Plan, and all the maps and elements, contained therein is hereby adopted by the City Council as a long-range planning guide for the City, and it supersedes any previously existing Thoroughfare Plan.

Section 2: That this Plan is intended to constitute the Thoroughfare, or Master Plan of the City of Weatherford, Texas, for all matters related to long-range guidance relative to zoning decisions, land subdivision, thoroughfare construction, and growth management.

Section 3: That the Transportation Advisory Board shall review this Plan annually and shall make recommendations that the City Council may or may not adopt.

Section 4: That the Mayor of the City of Weatherford shall affix his signature on an appropriate page of the 2013 Thoroghfare Plan, that page to be determined by him, below the words" Official Plan," below which will be placed the seal

of the City of Weatherford.

Section 5: That it is hereby officially found and determined that the meeting at which this Ordinance is passed was duly noticed and has been open to the public as required by law.

Section 6: That this Ordinance shall become effective on and after its passage and approval.

The foregoing ordinance was introduced, read, and passed and adopted by a vote of 5 ayes and 0 nays at a regular meeting of the City Council of the City of Weatherford, Texas, held on the 9th day of April 2013.

Dennis Hooks, Mayor

ATTEST:

Malinda Nowell

Malinda Nowell, TRMC, City Secretary

APPROVED AS TO FORM:

Zellers & Zellers, City Attorney

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Acknowledgements

City Council Members

Dennis Hooks, Mayor
Jeff Robinson, Place 1
Heidi Wilder, Place 2
Waymon Hamilton, Place 3
Craig Swancy, Place 4, Mayor Pro-Tem

Transportation Advisory Board

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Jan Barton, Vice Chair
Brad Felmey
Richard Simmons
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Chapter 1: Introduction

The thoroughfare system forms one of the most visible and permanent elements of the community. It establishes the framework for community growth and development and, along with the Future Land Use Plan, forms a long-range statement of public policy. As the alignment and right-of-way of major transportation facilities are established and adjacent property developed, it is difficult to facilitate system changes without significant financial impacts. However, by incorporating programmed land uses and densities of the Future Land Use Plan, strategies can be developed that maximize the land use/transportation relationship thereby increasing the community's chances in achieving its overall economic development goals.

> *"…the streets and sidewalks are the social glue that binds the place together."*
>
> Hinshaw, Mark. "Great Neighborhoods." *Planning*, Jan 2008, page 7.

The changing social and economic climate dictates that an integrated network of transportation systems be considered to support and sustain viable long-term growth. In addition to vehicular mobility, many communities have expanded transportation planning to include a broader range of considerations for transit, bike and pedestrian initiatives. The City has begun making strides towards this growth model through the development of the Bikeway Plan and cooperative planning with the North Central Texas Council of Governments (NCTCOG) for potential long-term commuter rail and general aviation airport planning in the Weatherford area.

The context of the community and adjacent land through which the roadway network traverses is also being considered. Context Sensitive Solutions (CSS) seeks to balance mobility with other community desired outcomes including; the creation of vital public spaces, preservation of special, historic and neighborhood areas, environmental stewardship, and economic development. Further, in response to the auto-centric design of transportation networks, transportation corridors are now being viewed to provide for a more "complete" travel system and encompass all users and modes of travel. This "complete streets" movement entails many of the CSS principles as well as pedestrian, bicycle and transit movements to improve overall system mobility.

The Transportation Plan will provide individual, yet integrated, modal strategies for vehicular, commuter transit, pedestrian and bicycle, and capital projects planning that will serve as a blueprint for future investment related decisions into the transportation system. Several key principles were recognized in the preparation of the Plan and include:

- The community should have convenient internal circulation between neighborhoods, core community assets, and special districts.
- Through traffic should be minimized to specific facilities designed to accommodate non-local and regional traffic. Transportation facilities should define rather than split residential areas in order to preserve neighborhood integrity.
- A safe pedestrian/bikeway system should provide connectivity between homes, community facilities and retail areas.

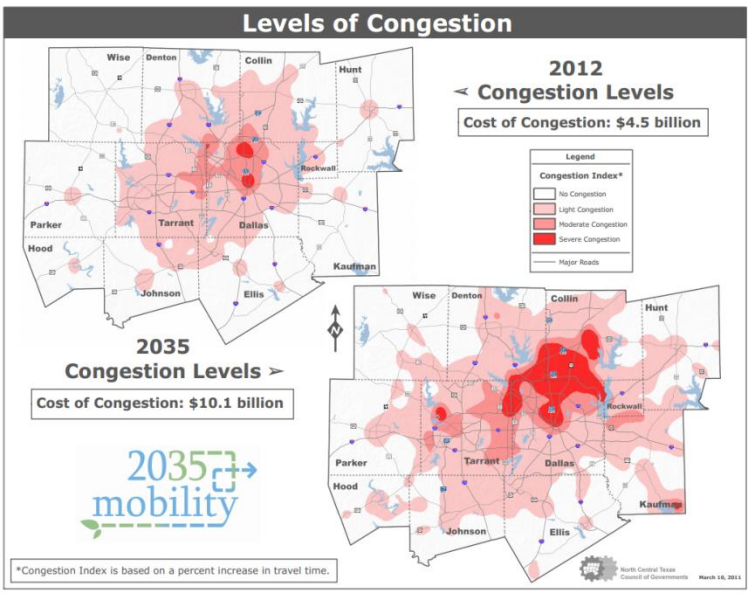
- The Plan is one element of a coordinated transportation system to address long-term multi-modal transportation needs of the City. Strategic growth planning aimed at augmenting travel needs, such as planning for regional commuter rail connectivity and a general aviation airport, should also be considered.
- The plan should monitor regional growth implications in order to proactively address mobility and accessibility issues to and from Weatherford.

Input from the community, garnered through the Transportation Advisory Board, public and stakeholder, and city staff input was used to derive planning principles from which the plan was prepared.

This Transportation Plan is divided into several sections. The first section is a general discussion of issues affecting Weatherford both from a regional and local perspective. Next are the Goals and Objectives of the Thoroughfare Plan. These policies, in conjunction with the Thoroughfare Plan Map, will guide long-term transportation decision making. Third is an overview of thoroughfare planning, with the concept of context-sensitive solutions (CSS) outlined. Existing roadway conditions are then discussed followed by a discussion of travel forecast modeling and how this analytical tool is used in the testing of thoroughfare alternatives. Based on travel forecast output, recommendations for the Thoroughfare Plan are discussed. A capital improvement plan identifying key short and long-term roadway improvements is also included.

Issues Affecting Weatherford

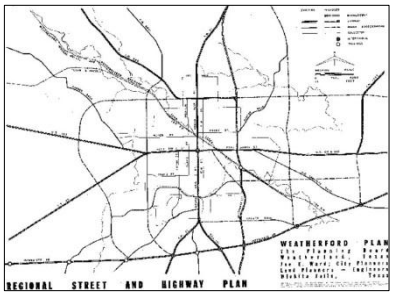
The Plan is aimed at addressing the dynamic and changing needs that have occurred in Weatherford since the last Transportation Plan. From a regional perspective, several transportation related initiatives stand to positively affect the City. Locally, peak hour congestion, transportation linkages/improvements, development activity, and roadway design considerations are key issues to be addressed.



Regional Initiatives

As part of the greater Dallas/Fort Worth Metropolitan Area, Weatherford is directly impacted by issues occurring at the regional level. Mobility 2035 indicates that, even with improvements to transportation facilities, congestion is expected to significantly increase within the metropolitan area. In 2012, only the immediate Weatherford area is depicted as having light congestion. By 2035, much of eastern Parker County will likely be experiencing increased levels of traffic congestion. It is important that the City continue to be aware of regional initiatives that are aimed at improving circulation and mitigating congestion.

The following are regional initiatives that should be considered as future land use and transportation decisions are made. Planned highway improvements for the Weatherford Outer Loop and Interstate-20 Improvements will offer residents and businesses with enhanced regional accessibility to and from the City. Additionally, regional rail initiatives within the North Texas region should be examined in order to determine how such initiatives may impact land use and transportation decisions within the City.

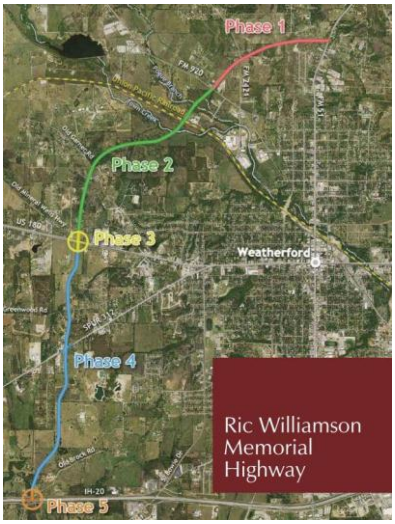


Ric Williamson Memorial Highway

The concept of a bypass loop has been documented in City planning initiatives dating back to early 1960's and subsequently in 1969, 1974, and 1982. Most recently, a general alignment was identified in the 2001 Comprehensive Plan and the 2006 Thoroughfare Plan Update. Also referred to as the Weatherford Loop, this regional facility would generally extend from IH 20 near Old Brock Road in the western portion of the city to IH 20 near Center Point Road to the east. This concept was aimed at relieving commuter and truck traffic congestion within the downtown area.

Planning and design for the northern section of the loop (north of IH 20) began in earnest with a feasibility study for a portion between IH 20 and FM 51 in 2004. Due to cost and right-of-way implications for a four-lane freeway, a scaled down version of the facility was designed and built in 2007.

Implemented as part of the 2008 Parker County Bond Program, the first phase of the Ric Williamson Memorial Parkway between FM 51 at Eden Road and FM 920 west of Zion Hill Road was completed 2011. Initiated as a two-lane rural highway within a right-of-way of 200 feet, there is adequate room for facility expansion to a four-lane highway, should traffic demands warrant needs. The second phase, between FM 920 and Mineral Wells Highway, is currently under construction and is slated for completion in early 2013. This segment will include a grade separated crossings with the Union Pacific Railroad and US 180. At the initial opening of this segment, an at-grade signalized intersection with US 180 will exist.



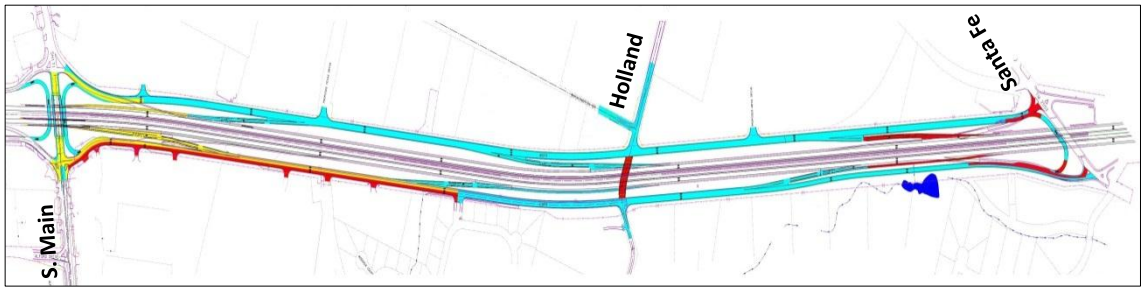
Environmental documentation and design are currently under way for the extension and completion of the western portion of the Ric Williamson Memorial Parkway between US 180 to IH 20. At IH 20, enhancements will be made to the interchange as well as improvements to the frontage roads for direct access to the loop. Also Included as part of this project will be the realignment and reconfiguration of Old Brock Road to both the north and south of IH-20. This segment of the by-pass loop is slated for completion in 2014.

Initial planning and schematic design are currently under way for the extension of the Eastern Loop extending 6.5 miles from FM 51 to IH 20 at Center Point Road. Also to be initially built as a two-lane rural highway, right-of-way will exist for expansion as needed. Between US 180 and IH 20, this portion of the loop is envisioned as an urban section. The current schedule is

to have the project ready for letting by summer 2014 and completed in 2016.

IH 20 Improvements

The implementation of improvements on IH-20 between Main Street (SH171) and Santa Fe Drive (FM 2552) in 2010 has provided significant improvement to access and circulation of commercial and residential development not only along this stretch of corridor, but also within the central portion of the community. This major project included; the construction of eastbound and westbound frontage roads, widening of the SH 171 bridge, installation of U-turn bridges at SH 171 (east and westbound U-turn) and Santa Fe (westbound U-turn), and construction of an overpass at Holland Lake Drive.



Other improvements associated with IH 20 include connections with the Ric Williamson Memorial Parkway. Conceptual planning for connections and frontage roads for the eastern segment near Center Point Road are currently under way.

Parker County Bond Program

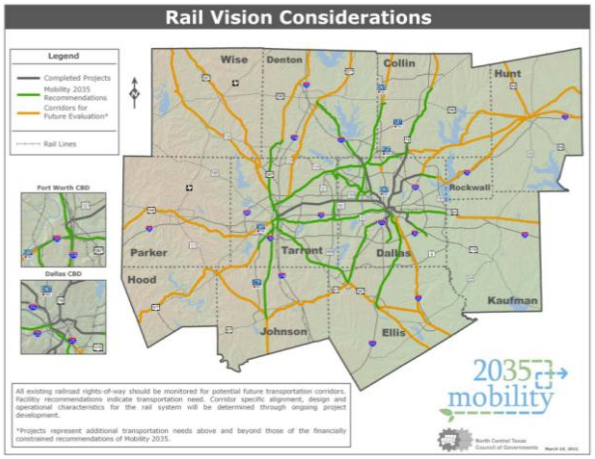
In November 2008, Parker County voters overwhelmingly approved an $80 million bond election for program planning, development and rapid delivery of strategic transportation projects throughout the county. Funded in Spring 2009, the program has acquired more than $26M in additional funding from the Texas Department of Transportation and North Central Texas Council of Governments. The program has also benefitted from additional funding and cooperation from Union Pacific Railroad, Regional Transportation Council and the cities and independent school districts of Weatherford, Aledo and Springtown.

PARKER COUNTY TRANSPORTATION BOND *Driving Forward*

To date, 60% of the total bond funds have been expended, another 15% are committed to completing projects currently in construction, and the remaining 30% was recently assigned to other remaining projects within the county. Projects in the program include; new road construction, expansion/upgrading of existing facilities, and intersections and bridges within the County. Key among these projects is the implementation of the Ric Williamson Memorial Parkway. Through the Transportation Bond Program, Parker County is proactively improving area-wide transportation infrastructure.

Regional Rail Initiatives

The North Central Texas Council of Governments (NCTCOG) has identified a number of future commuter rail lines for possible implementation by 2035. Generally, NCTCOG has organized future commuter rail recommendations into two categories; Mobility 2035 Recommendations and Corridors for Future Evaluation. At the present time, the Union Pacific railroad through Parker County is classified as a "Corridor for Future Consideration" although no specific funding, station or ridership studies have been conducted.

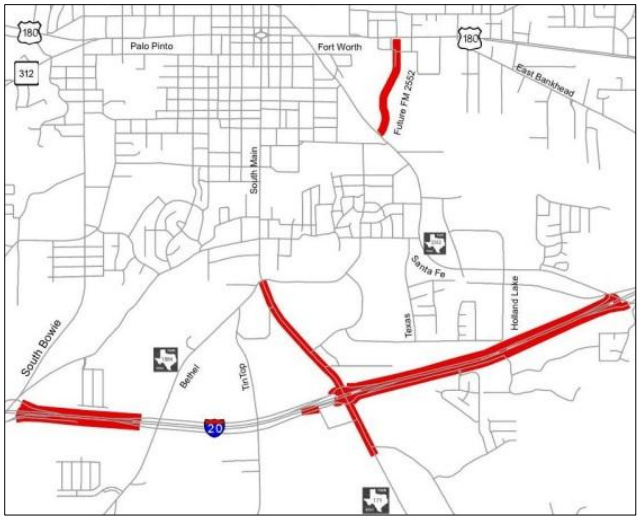


As Parker County continues to experience rapid population growth, commuter rail to the west of Fort Worth may become a more viable opportunity. Weatherford should proactively monitor changes and considerations to the commuter rail plan and express support for a possible commuter rail station within Weatherford.

Community Initiatives

Pass Through Toll Program

Funding for many recent improvements to state facilities have been implemented through the Pass Through Toll (PTT) program. This program initiated by TxDOT enables cities to fund improvements on state managed roads and then be reimbursed by the state upon based upon usage of the facility. Prior to the implementation of this funding mechanism, the state would fund street improvements on a "pay-as-you-go" basis and limited state funds prevented improvements to many TxDOT owned roadways.



In 2005, Weatherford secured several PTT projects with TxDOT. This approach has been successful in implementing projects and to date, all projects have been either completed or are under design. These projects are listed below.

Pass Through Toll Initiatives	
• IH 20 EB & WB F.R. (SH171 – FM2552)	• SH 171 S. Main (IH20 – FM1884/Park)
• IH 20 EB & WB U-turn at SH 171	• IH 20 EB & WB F.R. (Bowie – FM1884)
• IH 20 EB Exit Ramp at SH 171	• IH 20 EB & WB F.R. (Bowie – FM1884)
• IH 20 WB U-turn at SH 2552	• FM 2552/Jack Borden Bridge
• IH 20 Holland Rd. Overpass	

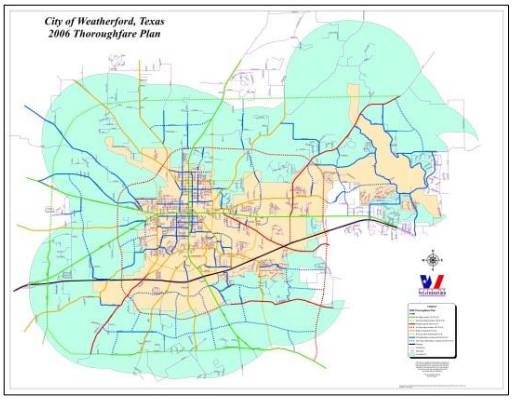
2003 Capital Improvements Plan

The 2002 Comprehensive Plan included a Thoroughfare Plan element which not only established alignment and type (functional class and associated design standards) of key roadways, but also identified key system improvements to address growth and development of the city. From that plan, 11 system recommendations were developed. Another 11 thoroughfare priorities were also identified. Of these recommendations and priorities, virtually all have been completed. Only one project has yet to be initiated and was were due to high cost.

Previous Planning Efforts

2006 Thoroughfare Plan

This Plan provided an update to the 2001 Thoroughfare Plan with key changes to the alignment and configuration of several roadways within the city, among which included; realignment of the Weatherford loop in many areas as well as connection points along IH 20, revisions to alignment of an outer loop (loop beyond the Weatherford loop), downgrade in functional classification of several streets from “minor arterial” to “collector” status (Brock, Charles, Russell and Eureka Streets), realignment and connection of discontinuous facilities (Mesa/Shady and several streets to the southeastern sector of the city), extension of Fourth Street east of Denton to Mesa/Shady, and connection/extension of a roadway from FM 730 at US 180 south to IH 20. This Plan has served the city to this current transportation planning initiative.



U.S. 180 Corridor Plan

In 2011, the City adopted the US 180 Corridor Vision Plan. The purpose of the Vision Plan was to focus on the eastern portions of the City of Weatherford, specifically the land use and transportation relationship. US 180 serves as a significant entry point into the City and therefore

aesthetic improvements and enhancements were a significant component of the planning process.

The project assessed the impacts of the existing land use patterns, particularly how existing land use patterns impacted the area's traffic circulation. The process considered the area's future needs and established an identity to the US 180 Corridor, particularly important due to its regional significance and visibility.

Final recommendations from the US 180 Corridor Vision Plan included strategies for land use, gateway elements, pedestrian connectivity, access management and aesthetic enhancements reflective of the City's heritage.

Key Roadway Improvements

Several key roadway improvements have been identified by the City and coordinated with TxDOT and NCTCOG to address growth and community access and circulation. Capital improvement projects from the 2011-2014 Transportation Improvement Plan (TIP and the 2013-2016 STIP) are listed on Page 8.

Community Issues for Plan Update

At the outset of this plan process, several key issues were identified to be addressed as part of this Transportation/Thoroughfare Plan update. The plan should;

- Provide plan goals and objectives,
- Provide strategies and polices designed to support the goals and objectives,
- Provide evaluation of projected growth patterns and future land use scenarios,
- Provide updated roadway function, classification and alignment,
- Provide updated roadway standards,
- Provide for bike and pedestrian trails and movement,
- Provide for public input,
- Provide for agency coordination – NCTCOG/ Parker County/ TxDOT,
- Provide future roadway needs using travel demand modeling, and
- Provide a Capital Improvement Program (CIP) for the next ten years with project cost estimates.

2011-2014 TIP	Details	Year	Total	CSJ
Western Loop/West side of Weatherford	construct interchange consisting of earthwork, concrete pavement, asphalt pavement, bridge structures, traffic signals	2011	$53,865,765	0008-02-069
Bowie Drive to FM 1884	Reconstruct and extend eastbound 0 to 2 lane frontage to FM 1884 and reverse entrance and exit ramps	2012	$4,142,471	0314-07-037
Bowie Drive to FM 1884	Construct 0 to 2 lane westbound frontage road to connect roadways, reverse existing entrance and exit ramps	2012	$4,142,126	0314-07-038
FM 1884 to Interstate 20	Reconstruct and widen from 2 lane to 4 lane curb and gutter section	2012	$9,250,494	0365-01-041
Western Weatherford Loop at IH 20	Construct Interchange	2014	$8,000,000	0314-07-040

2013-2016 STIP	Details	Year	Total	CSJ
US 180 at Western Loop West side of Weatherford	Construct interchange consisting of earthwork, concrete pavement, asphalt pavement, bridge structures, traffic signals	2011	$53,865,765	0008-02-069
US 180 at Western Loop West side of Weatherford	Construct interchange consisting of earthwork, concrete pavement, asphalt pavement, bridge structures, traffic signals	2013	$2,000,000	0008-02-069
IH 20 From Bowie Drive to FM 1884	Construct 0 to 2 lane westbound frontage road to connect roadways, reverse existing entrance and exit ramps.	2013	$4,142,126	0314-07-038
US 377 from Johnson/Hood County Line to South of SH 171	Construct new 4 lane divided roadway with interchange at US 377 and BU 377 and grade separation at FWWR and SH 171	2013	$29,087,763	

Chapter 2: Goals and Objectives

The Goals and Objectives section of the Plan reflects the ideology and aspirations that Weatherford desires of its transportation system. Goals are philosophical in nature and serve as a vision of what transportation should be within the community in 2035. The objectives discussed in this section are action oriented and are intended to form the framework for specific actions for achieving the stated goals.

Input from the public, the Transportation Advisory Board and City Staff served as the basis for defining specific goals and objectives concerning the transportation system. Subsequent analysis of the various modal components of the system served to supplement the development of specific actions. The goals and objectives presented herein are adapted from 2002 Comprehensive Plan effort but have been reorganized and amended to fall into the following goals:

- Mobility
- Preservation of Existing Infrastructure
- A Special Place to Live
- Fiscal Stewardship

Transportation Plan Guiding Principle:
Transportation in Weatherford is envisioned to be comprised of a range of transportation choices to effectively serve current and future travel needs within and throughout the region. Transportation systems are envisioned as a multi-modal network that will provide connections between destinations and neighborhoods throughout the city and region and offer opportunities to drive, walk, bike and take transit. Transportation will be managed for safety and efficiency, and be context sensitive of natural resources and adjacent land uses in order to maximize the economic vitality of the community. A vibrant community in 2035 will be achieved by ensuring that transportation and infrastructure investments focus on provision of mobility choice, and supports strong neighborhoods, employment centers and activity centers.

Mobility:
- Integrated system of transportation options and solutions
- An emphasis on system connectivity, operations and management, and context sensitivity
- Range of convenient, multi-modal transportation choices that provide connections between neighborhoods and destinations

Goal 1: To provide a transportation system that will effectively and economically serve the existing and projected travel needs of the community in a safe and efficient manner.

Objectives:

1.1 Maintain a hierarchy of thoroughfare classifications that will provide for safe and convenient flow of traffic throughout the community. Maintain a thoroughfare

planning process to ensure efficient and desirable connections between major arterials and other thoroughfares.

1.2 Maintain roadway design standards in conformance with a functional street system classification. Develop alternative standards to walkable environments in special areas within the community.

1.3 Maintain a process of assessing efficient access and circulation, and the identification of network deficiencies. Program improvements to existing transportation network linkages to enhance system safety, carrying capacity, and reduced congestion.

1.4 Maintain a proactive capital improvements program (CIP) process to provide regular project scheduling and funding to ensure substantial completion of transportation system improvements.

1.5 Promote a balanced relationship between land use development and the transportation system.

GOAL 2: Provide continuity of traffic flow within and between neighborhoods and throughout the community.

Objectives:

2.1 Ensure that the thoroughfare and circulation system provides for the connectivity to regional circulation systems.

2.2 The transportation system should offer efficient accessibility to all residential neighborhoods and minimizes negative impacts of regional or cut-through traffic.

2.3 Preserve existing rights-of-way, and facilitate connections between adjacent subdivisions.

2.4 Design and place traffic control devices so as to maximize efficient traffic flow and minimize the impedance of traffic flow.

2.5 Coordinate/manage corridor access to enhance the long-term corridor viability through coordinated driveway sharing, cross access easements, intersection control and as applicable, coordinated median applications or spacing.

2.6 Maximize network continuity to provide for the free flow of people, goods and services, and to ensure minimum response time for emergency vehicles.

GOAL 3: Monitor regional transportation system or other agency planning efforts to ensure a proactive community response to issues affecting the city.

Objectives:

3.1 Coordinate with the regional MPO, for planning coordination, proactive problem solving, and funding assistance of projects to enhance transportation system improvements within the city and ETJ.

3.2 Coordinate with the Texas Department of Transportation (TXDOT) on improvements to the state highway system. As appropriate, consider land use, economic benefit and community implications to planning initiatives.

3.3 Coordinate with Parker County and/or adjacent cities to ensure appropriate transportation system connections and as necessary, coordinated response to system needs.

3.4 Coordinate with the Weatherford ISD on transportation system implications of proposed school facility expansion/needs. Establish proactive planning dialogue and coordination to optimizing traffic operations and school safety to specific site issues.

Multi-Modal Consideration:

GOAL 4: To optimize mobility and decrease dependency upon the automobile by encouraging transportation alternatives.

Objectives:

4.1 Expand multi-modal transportation opportunity, specifically the bike and pedestrian pathways/trail system, to key destinations and neighborhoods within the city.

4.2 Continue expansion of the Town Creek Hike and Bike Trail/community-wide system. Develop a coordinated system of connected trails within the city as growth occurs. Utilize existing major watersheds and/or other open space connections for promoting system connectivity or expansion.

4.3 Provide a safe and effective means to accommodate pedestrian traffic and prioritize sidewalk improvement areas based upon type of street and adjacent land use.

4.5 Provide a means for safe pedestrian crossing of major thoroughfares and other high traffic volume streets.

4.6 Promote land use patterns that reduce the number and length of auto trips and support walking and bicycling. Encourage friendly, walkable environments within key destination areas of the community.

4.7 Assist other agencies with coordination or planning of other transit services for community residents and/or other target segment populations within the city.

GOAL 5: To plan and implement regional mobility options for residents commuting to and from the city to the Metroplex.

Objectives:

5.1 Continue proactive planning with NCTCOG and/or other interested agencies to further advance the extension of regional commuter rail to the City. Charge the Transportation Advisory Board with developing actions aimed at promoting commuter rail opportunity to the City.

5.2 Identify and promote a specific commuter rail station to serve Weatherford. Ensure that a station location would provide opportunity for economic vitality to established districts within the city, such as the Downtown area.

5.3 Work with the Union Pacific Railroad to advance the planning of shared right-of-way use for regional commuter rail connectivity with the Metroplex. Promote active dialogue for long-term investment within or adjacent to the existing rail corridor.

GOAL 6: Promote the development of a general aviation airport within/near the City.

Objectives:

6.1 Continue proactive planning with NCTCOG for the identification and promotion of optimal locations for an additional general aviation airport within or adjacent to the City. Partner with the County or other adjacent agencies to further advance the planning of such a facility.

6.2 Initiate proactive land planning to identify and secure optimal area for an airport site. Develop land planning policies that would enhance airport viability through supporting adjacent or ancillary land uses, proximity to support economic development initiatives and accessibility to key roadways/major area corridors.

GOAL 7: Reduce truck traffic through the City.

Objectives:

7.1 Identify optimal routes to facilitate truck traffic through Weatherford and remove such traffic through the Downtown area. Develop and coordinate a signing program with TXDOT or other agencies for advance noticing to restrict through truck traffic to specific corridors within the city.

7.2 Work with TxDOT to reclassify and re-route truck routes from US180 through Downtown to: 1) IH-20, Ric Williamson Memorial Parkway and, the Mineral Wells Highway for east-west traffic and, 2) SH 51, FM 730 or other state routes with Ric Williamson Memorial Parkway for north-south travel.

Preservation of Existing Infrastructure:

- Priority on maintenance, rehabilitation, safety and reconstruction
- Neighborhood viability through maintaining streets, sidewalks, utilities, storm water systems and other infrastructure facilities
- Investments that balance transportation needs of the community and local neighborhoods

GOAL 8: Upgrade and improve existing street infrastructure to enhance system carrying capacity, reduce congestion and minimize accidents.

Objectives:

8.1 Maintain a continuous, coordinated transportation planning process that addresses long-term needs while emphasizing short-term problem solving.

8.2 The thoroughfare network should adequately accommodate and encourage though traffic on the arterial system, leaving local trips on the collector system.

8.3 Through the development process, secure additional right-of-way at critical intersections to enable the implementation of channelized turn movements.

8.4 Implement a pavement inventory to establish the condition of city streets. Identify critical pavement index thresholds to ensure maintenance of streets in poor operational/maintenance condition and establish an annual or bi-annual schedule to maintain currency of the inventory.

8.5 Enhance capacity of key corridors through the development process, coordination of driveways, cross/shared access, and enhanced driveway standards near critical intersections and as applicable, coordinated median openings.

GOAL 9: Upgrade and improve existing street infrastructure to meet or exceed minimum standards by Year 2035.

Objectives:

9.1 Identify and define minimum design and construction standards to be met by Year 2035.

9.2 Maintain implementation priorities for all street improvements through a capital improvements planning process.

9.3 Identify funding alternatives and resources available for roadway maintenance implementation.

Special Place to Live:

- Vibrant community in 2035
- Transportation and Infrastructure focus on both people and places
- Enhanced transportation choices and accessibility
- Create a unique place with lasting value
- Blends seamlessly with the character of city neighborhoods, employment centers and activity centers

GOAL 10: Promote a more livable city and high quality of life through incorporation of urban design practices and a proactive approach to aesthetic quality of key transportation corridors.

Objectives:

10.1 Develop streetscape/urban design standards to enhance the City's visual/aesthetic appeal (e.g., design guidelines for consistent streetscape, landscaping, signage, entryway treatments, etc.) of roadways/specific corridors within the City.

10.2 Create visual "gateways" at principal entry points to establish a design "theme" or other coordinated visual for the city.

10.3 Incorporate the natural and built environment into the design process of the transportation system.

10.4 Develop "pedestrian-friendly" access to key community resources and areas. Employ traffic calming techniques as necessary, to moderate speeds and traffic volumes, particularly on residential streets.

10.5 Consider alternative traffic intersection designs, such as bulb-outs, chicanes, mid-block treatments and traffic circles or roundabouts for enhancing street aesthetics, as well as provide for targeted operational enhancements.

10.6 Encourage public/private participation and cooperation in beautification efforts. Explore utilizing assistance that may be available from private/volunteer groups to perform urban design related projects and to help maintain enhanced public areas (e.g., street medians, small landscaped areas, intersection corners, etc.).

10.7 Use the development review process to evaluate private projects and their contributions to urban design initiatives or their compliance with adopted studies/guidelines.

Fiscal Stewardship:

- Provide a detailed roadmap of actions for transportation and infrastructure improvements
- Investments maximize the benefits for multiple user groups in a way that is fiscally and environmentally responsible
- Input from the community-at-large and ongoing dialogue with stakeholders
- Promotes economic growth while using resources in an efficient and effective manner
- Supports a diverse, vibrant local economy with a strong tax base
- Reduces the fiscal burden on residents to provide city services

Goal 11: Optimize the use of city funds and leverage additional funding for transportation to maximize public return on investment in transportation infrastructure and operation.

Objectives:

11.1 On an ongoing basis, identify and pursue private, regional, state and federal revenue sources for funding multi-modal transportation improvements.

11.2 On an ongoing basis, 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 the city.

11.3 On an ongoing basis, plan for and preserve rights-of-way and other real property for future multimodal transportation and supporting infrastructure investments in advance of economic development.

11.4 Develop a policy and programs for city consideration of private/public partnerships and donations to fund transportation infrastructure, amenities and aesthetics.

11.5 Identify funding mechanisms to support transportation and supporting investments and/or improvements associated with special initiatives.

11.6 Leverage transportation investments to enhance land use and economic benefit decisions within the city. For example, implement backage roads where possible along both sides of IH-20 to enhance land use/economic benefit to the community.

Chapter 3: Transportation Planning

Weatherford's Thoroughfare Plan is built upon traditional thoroughfare planning concepts, which focuses on functionality in providing mobility and accessibility for vehicular traffic. In order to address the community's goals of providing multi-modal options to residents, it will be important to incorporate concepts of context-sensitive solutions (CSS) that consider the automobile as one element, among other users of the thoroughfare. To that end, the potential long-term implementation of regional rail to the City offers opportunity for regional connectivity and potential transit-oriented development (TOD) that encourages pedestrian orientation among multi-modal urban design concepts.

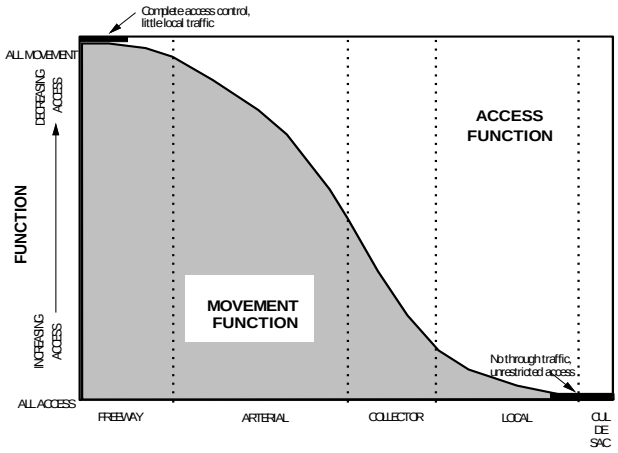
Functional Street Classification

Functional street classification recognizes that streets are part of a system having diverse origins and destinations. A typical trip involves the following stages:

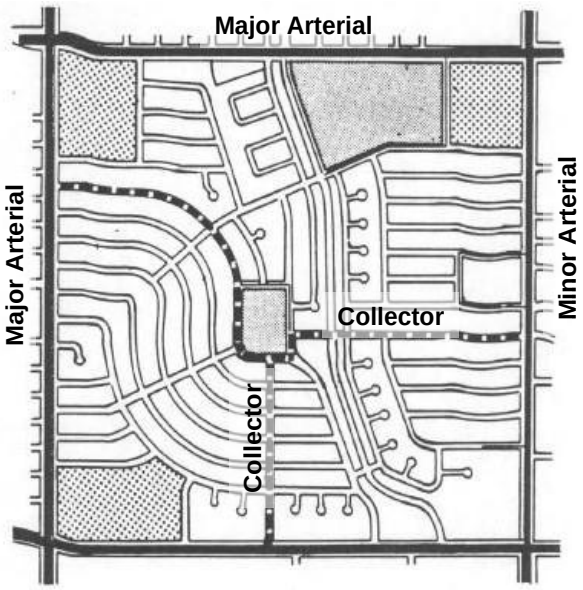
- Primary Movement,
- Transition,
- Collection/Distribution,
- Access, and
- Termination.

Functional classifications also describe and reflect a set of characteristics common to all roadways within each class. Functions range from providing mobility for through traffic and major traffic flows, to providing access to specific properties. Characteristics unique to each classification include the degree of continuity, general capacity and traffic control characteristics. The relative role of each classification and its intended use is illustrated to the right.

Roadway Hierarchy and Function



In short, the functional classification of streets provides for the circulation of traffic in a hierarchy of movement from one classification to the next. Functional classes can be subdivided further into major and minor designations to further detail their role in the community. For each classification, there is typically a recommended set of operational and design criteria.



Weatherford's Thoroughfare Plan recognizes four general classes of roadways that are based on a hierarchical function and include:

- **Freeways**—High capacity facilities in which direct access from adjacent properties is eliminated or significantly reduced, and where ingress and

egress to the traffic lanes is controlled by widely spaced access ramps and interchanges (i.e., IH-20);

- **Major Thoroughfares or Arterials**—Provides for cross-town movement and continuity and designed to carry higher volumes of traffic between major activity centers such as commercial and employment centers, and neighborhoods, etc. (i.e., US 180, Main Street, FM 730, etc.);

- **Collector Streets**—Collects and distributes traffic from local access streets, as in residential neighborhoods or commercial developments, to the major arterial network. Examples include Park, Bowie, Bethel and Santa Fe; and
- **Local Residential Street**—Internal streets within a neighborhood that provide access to residential lots and building sites and should be arranged to discourage most through traffic, except that which is directly related to the area.

Functional Street Classification Characteristics

Type of Roadway	Function	Spacing (Miles)	Direct Land Access	Roadway Intersection Spacing (3)	Volume Ranges (Veh./Day)	Speed Limit (MPH)	Parking	Comments
Freeway/ Tollway	Traffic Movement; long distance travel.	5-Apr	None	1 mile	45,000 to 125,000	55-70	None	Supplements capacity of arterial street system and provides high speed mobility.
Major Arterial	Moderate distance inter-community, intra-metro area, traffic movement. Serves long trip lengths.	½ -1 ½ (2)	Restricted – some movements may be prohibited; number and spacing of driveways controlled.	1/4 mile	36,000 to 45,000	40-55		"Backbone" of the street system.
Minor 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	20,000 to 34,000	30-45		Provides route and spacing continuity with major arterials.
Major Collector	Primary – collect / distribute traffic between local streets and arterial system. Secondary – land access; inter-neighborhood traffic movement.	¼ -½ (2)	Safety controls; limited regulation.	300 feet	12,000 to 28,000	30-40	Limited	Through traffic should be discouraged.
Minor Collector	Primary – internal to one neighborhood; serves short trip lengths. Secondary – land access.				1,000 to 15,000	30-35	Limited	
Local	Land access.	2 lot lengths	Safety control only.		200 to 1,500	20-30	Permit ted	

(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.

Context Sensitive Solutions

Context Sensitive Solutions (CSS) is the practice of developing transportation projects that serve all users and meet the needs of the neighborhoods through which they pass. It is a collaborative process that involves all stakeholders in developing street designs that fit into the character of surrounding neighborhoods while maintaining safety and mobility. The key is that elements of the street should complement the context of surroundings or adjacent development to generate a "roadway experience" and therefore take on certain characteristics to support adjacent development (i.e., vehicular and pedestrian realms, specific on-street parking areas, etc.). The process of designing CSS Roadways is similar to the process of designing traditional thoroughfares in that automobile traffic is considered with traffic counts, traffic demand and level of service information-gathering efforts. The difference is that automobile traffic is only one element considered, among other users, in the utilization of roadway corridors.

Context Sensitive Principles

- **Satisfies purpose and needs as agreed to by a full range of stakeholders**
- **Safe facility for user and community**
- **Project in harmony with community, preserves natural, aesthetic, historic and natural resource values of the area**
- **Project exceeds the expectations of designers and stakeholders—achieves a level of excellence.**
- **Project involves efficient and effective use of resources**
- **Designed and built with minimal disruption to community**
- **Project seen to have lasting value to the community**

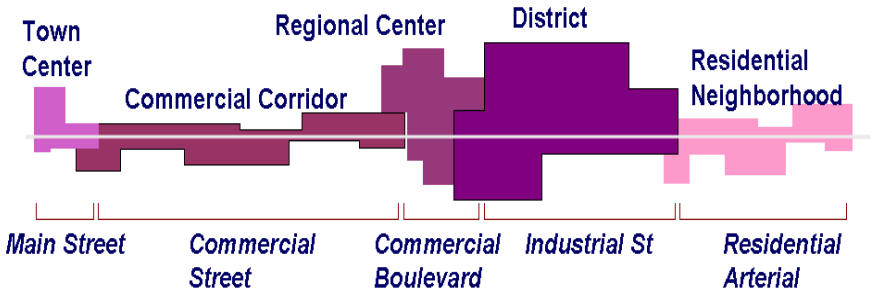
An ITE Recommended Practice: Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities (2006)

The most notable publication and guidebook for CSS is *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach,* published by the Institute of Transportation Engineers (ITE) in conjunction with Congress for the New Urbanism (CNU). This publication includes information on balancing the transportation needs of the community with adjacent land uses. In particular, the CSS approach recommends designing thoroughfares based upon:

- Community Objectives
- Functional Classes
- Thoroughfare Type
- Adjacent Land Use

In order to design accordingly, decision makers must understand the key relationship between transportation and land use, particularly the flexibility that may be needed in roadway design in order to accommodate a thoroughfare to differing land uses within the community. For example, a cross-town arterial may take on varying cross-sections depending on the part of the community which it traverses. Understanding key community objectives for land use within the community is also important in order to ensure that public infrastructure investments are in step with ultimate land use objectives.

Roadway Transecting Several Districts



Complete Streets

Complete Streets is a relatively new initiative that aims to maximize the utilization of public rights-of-way for all transportation users, regardless of age, or ability. This method uses high-level policy direction to influence everyday decision-making processes in roadway design, rather than design prescription. Complete Streets is not about special projects, but about changing the approach to projects on all streets. It is an incremental approach aimed for long-term results. These policies utilize the entire right-of-way while focusing on safety, comfort, and convenience as well as cohesiveness with the context of the community. Complete Streets make it easier to cross the street, walk to shops, and bicycle to work which in turn makes the town a better place to live.

Benefits

Complete Streets improve safety, provide choices, reduce costs, and lead to better health and stronger economies. By considering the many different users of the roadway, streets can be designed to accommodate everyone and improve the livability of the community.

- Improve Safety – Reduced travel speed which lowers risk to pedestrians and cyclists as well as include pedestrian infrastructure such as sidewalks, bicycle lanes, crossings, median islands, and curb extensions.
- Provide Choices – By building safe, comfortable, and convenient infrastructure for other modes of transportation, residents are more willing to use them.
- Reduced Costs – By reevaluating the needs of the residents and incorporating community input at the beginning of the project, the schedule, scope, and budget can often be reduced. Narrowing the pavement area will also reduce costs.
- Better Health – With an aging population, older adults look to be more active. This demographic, along with kids and teens, cannot drive and look for pedestrian and bicycle facilities to become more active and independent.
- Stronger Economies – Areas that provide safe and comfortable walkability have lower commercial vacancies and higher home and office space values.

Economic Benefit

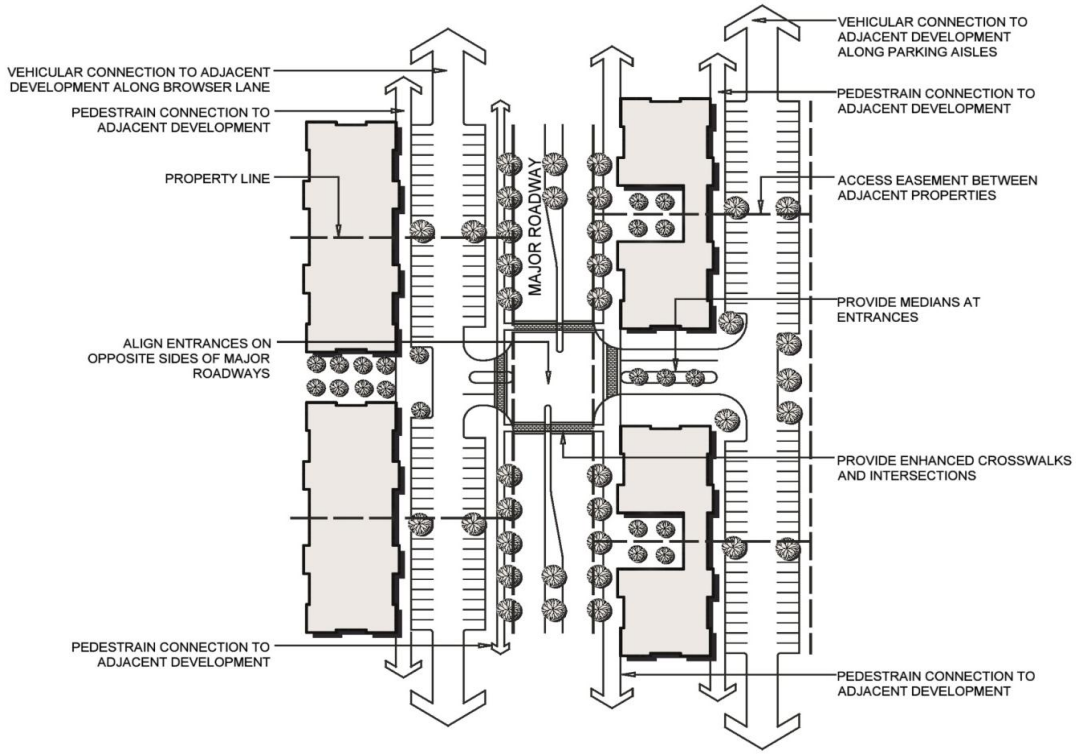
Complete Streets affect the local economy in various ways. By providing convenient alternatives to driving, such as transit, walking, or biking, residents and visitors save money on transportation costs which can then be used in other ways, such as housing, restaurants, and entertainment. Congestion costs can also be reduced if residents use alternative modes.

Local businesses see the benefits in improving access to people traveling by foot or bicycle. By increasing pedestrian and bicycle activity, businesses often see increased sales. Bicycle infrastructure can often create jobs directly through increased tourism, bicycle manufacturing, sales and repair, bike tours, and other activities.

Complete Streets also spur private investment by improving the public space and making it more pedestrian- and cyclist-friendly. By revitalizing parts of the community with pedestrian-only plazas, wider sidewalks, landscaping, and traffic calming, private investors are more willing to build or redevelop residential, retail, and office buildings. In addition to private investments, property values increase with the walkability of a neighborhood. Today's young college graduates, who comprise a workforce that can further add to economic growth, prefer walkable urban neighborhoods.

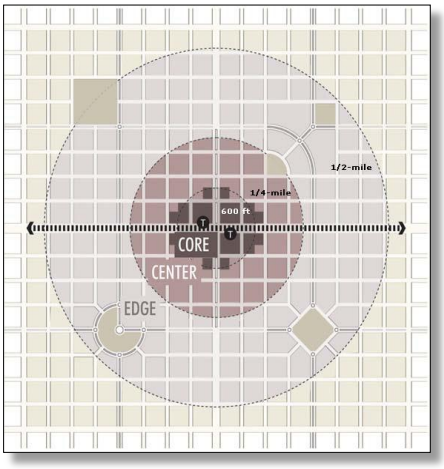
Access and Corridor Management

Access management refers to the practice of coordinating access connection points onto a roadway by considering specific design criteria for the location, spacing, design and operation of driveways, median openings and intersections. Generally, as the mobility and capacity of a roadway are increased, the access to a specific facility is decreased in order to maintain the roadway efficiency and enhance traffic safety. Access management provides a significant benefit to the mobility and function of the roadway, and more importantly, reduces the potential for accidents by minimizing speed differentials between vehicles and turning movements. Research has shown that accident rates increase consistently with an increase in the number of roadway access points, while accident rates decrease with the construction of raised medians and controlled signalized cross access.



Transit Oriented Development

Transit Oriented Development (TOD) is a concept that has evolved out of a need to balance residential communities, retail divisions and employment locations by integrating the transition between locations via the most efficient and accessible means. TOD has been defined as a set of urban design and land use characteristics conducive to generating non-automotive trip making. In addition to reducing vehicular dependence, TOD creates a sustainable environment through mixed land uses and pedestrian orientation.



A key component of TOD is an understanding of the relationship between building form/density and walkability. Generally, the closer the proximity to the transit station, the higher the building density should be. This utilizes a one-quarter mile walking distance derived from various studies indicating that most persons are willing to walk if the destination is within that distance, or 10 minutes.

A 2005 TOD study prepared by the Center for Transportation Training and Research at Texas Southern University identified several successful design features to TOD:

- Contiguous and direct physical linkages between activity centers
- Ground-floor retail and varied building heights, textures and facades that enhance walking experience
- Integration of major commercial centers with transit facility
- Grid-like street patterns for connectivity and walkability
- Minimizing off-street parking; utilization of parking structures, rear parking
- Pedestrian amenities such as landscaping, sidewalks, street furniture, urban art, screening of parking, safe street crossings
- Convenient sitting of transit shelters, benches, and route information,
- Creating public open spaces and pedestrian plazas convenient to transit.

Potential application of TOD within Weatherford could be associated with a commuter rail station.

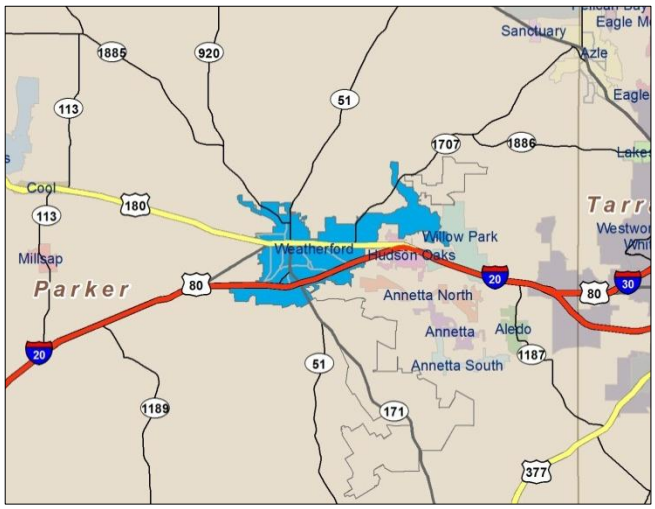
Chapter 4: Existing Conditions

An evaluation of Weatherford's existing transportation system was performed to serve as a basis in the development of the Thoroughfare Plan. Topic areas addressed in this analysis include; the existing roadway framework, other modal components to the transportation system and an assessment of the existing thoroughfare plan. Physical conditions of the roadway system and travel patterns were identified from field reconnaissance and available information obtained from the City, TxDOT, and the North Central Texas Council of Governments (NCTCOG).

Existing Transportation Framework

Roadway Network

Weatherford's roadway network consists of two distinct features found in most Texas communities; a classic grid network in the old town area and a curvilinear network serving generally self-contained newer suburban development. Along the edges of the city, low density suburban and rural style development accessed via discontinuous and meandering streets exist. What began as a compact community situated around the County Courthouse and the former Texas and Pacific Railway, expanded with the use of the automobile to outlying parts of Parker County. Access to the downtown area was originally facilitated via (today's) Fort Worth Highway/Palo Pinto Street (US180) and Main Street (SH 51/SH171). From that point, a variety of other local and state roadways emerged to facilitate area circulation. Community development has expanded from these two key routes.



In the 1960's, Interstate 20 was designated and constructed to replace and/or run parallel to US Route 80 (eventually US 180) and today serves to provide primary access to and from Weatherford. While a bulk of east-west regional travel is handled on IH 20, US 180 retain a significant amount of traffic to accommodate travel to Mineral Wells and beyond. Other critical linkages to/from the city include: SH 51/SH171, FM 2552, Spur 312, FM 730, FM 920, FM 2421 and FM 1884. Internal to the city, a series of other key facilities serve to provide internal access and circulation and include:

- Northeastern area: E. 1st, Denton, Upper Denton, Azle Highway, Dicey
- Southeastern area: Bankhead, Santa Fe, Jack Borden, Eureka, Park
- Southwestern area: Tin Top, Bethel, BB Fielder, Park, Bowie, Old Dennis
- Northwestern area: Water, W. 4th/Peaster Highway, Zion Hill, Ric Williamson Memorial Highway.

Current Traffic Volumes

Traffic volumes over the years 2004 to 2012 (color coded by year) were compiled at select locations to better understand traffic circulation patterns within the city. Traffic count information was compiled from data by the City, TxDOT and newly collected data as part of this study. Directional counts were collected in March 2012 at 20 locations to supplement existing volume data. A comparison of traffic volume count data from 2004 revealed annual increases ranging from 2-9 percent. The data revealed heavier increases in traffic along key corridors, and more typical annual increases of 2-3% throughout the remainder of the City.

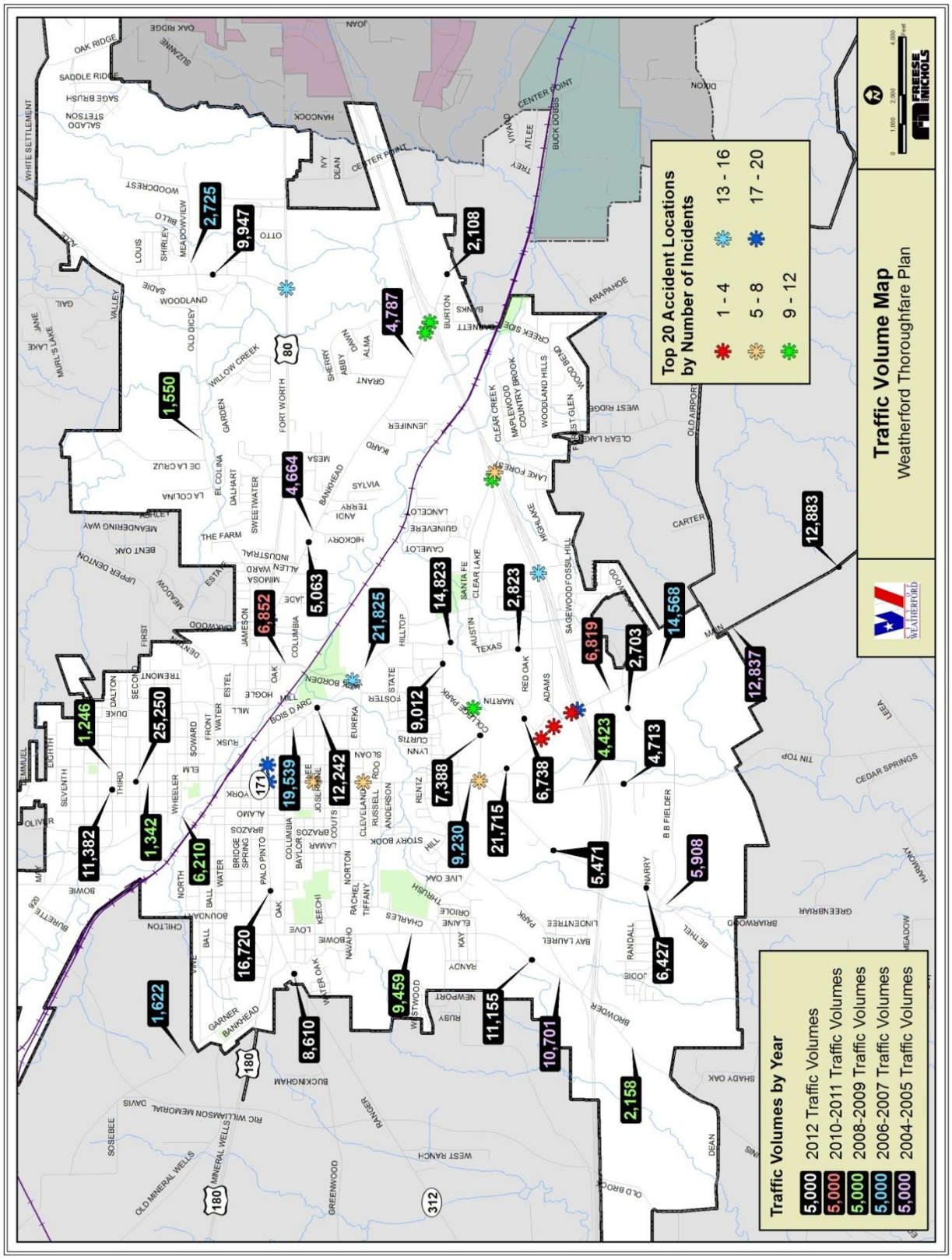
Average annual daily traffic (AADT) data from TXDOT on key highways reveal heavier traffic volumes in the eastern portion of the city over those on west. This is indicative of the commute patterns towards Fort Worth and the loading of facilities by Weatherford residents. Daily volumes on IH 20 in the eastern and western edge of the city range from 44,000 to 34,000 vehicles, respectively. Similarly on US 180, volumes range from 24,000 to 16,000 from the eastern and western edges of the city. For north-south facilities, daily volume on the periphery of the community range from 7,000 to 14,000 and increase within the core of the city. SH 51 carries the highest level of traffic ranging from 14,000 at the periphery to 25,000 in the heart of city near the Courthouse Square. Relatively steady traffic growth has occurred on IH 20 and key state facilities since 2007.

Accident Data

Accident data was reviewed to gain an understanding of congestion and/or operational issues within the city. The 2012 Accident Summary Report, compiled by the Weatherford Police Department, revealed 630 accidents to have occurred in 2012. The top five contributing factors included; driver inattention (190 accidents), speeding (186), failed to yield right-of-way-left-turn accidents (75), failed to yield right-of-way-stop sign accidents (46), followed too closely (35).

Top 20 High Accident Locations			
1	171 / ADAMS (21)	11	2552 / 80 (7)
2	171 / MARTIN (18)	12	COLLEGE PARK / MARTIN (7)
3	171 / PARK (15)	13	20 SERVICE / BETHEL (6)
4	171 / 20 SERVICE (12)	14	2552 / HOLLAND LAKE (6)
5	171 / LEE (10)	15	2552 / JACK BORDEN (6)
6	20 / 2552 (8)	16	80 / 730 (6)
7	171 / COLLEGE PARK (7)	17	80 / BANKHEAD (6)
8	171 / EUREKA (7)	18	80 / ELM (6)
9	20 / BANKHEAD (7)	19	20 / 171 (5)
10	20 SERVICE / BANKHEAD (7)	20	51 / PALO PINTO (5)

In terms of location, key accident prone corridors included; South Main (between IH 20 and the traffic circle at the Courthouse Square, US 180 (between Main and FM 730), and at key intersections with IH20. Data of the Top 10 Accident Locations revealed 6 of the 10 to be on South Main with the highest locations at Adams Street (1), followed by Martin (2), Park (3), IH 20 Westbound Frontage Road (4), Lee (5), College Park/Bethel (7), and Eureka (8). Examination of the data on South Main (top four locations) revealed many of the accidents to have occurred during the time while the segment between IH 20 and Park was under reconstruction. Prior to reconstruction, contributing factors can be tied to heavy operations (running at capacity for two lanes of travel) and the presence of a significant number of driveways, It is anticipated that upon completion of expansion (from two to four lanes), this segment will operate significantly better.


Traffic Volume Map
Weatherford Thoroughfare Plan
Top 20 Accident Locations by Number of Incidents
1 - 4
5 - 8
9 - 12
13 - 16
17 - 20
Traffic Volumes by Year
5,000 2012 Traffic Volumes
5,000 2010-2011 Traffic Volumes
5,000 2008-2009 Traffic Volumes
5,000 2006-2007 Traffic Volumes
5,000 2004-2005 Traffic Volumes
2,725
9,947
2,108
4,787
1,550
4,664
5,063
6,852
21,825
14,823
2,823
12,883
6,819
2,703
14,568
12,837
1,246
25,250
9,012
4,423
4,713
1,342
19,539
12,242
7,388
6,738
11,382
6,210
9,230
21,715
5,471
5,908
16,720
9,459
11,155
6,427
1,622
8,610
10,701
2,158

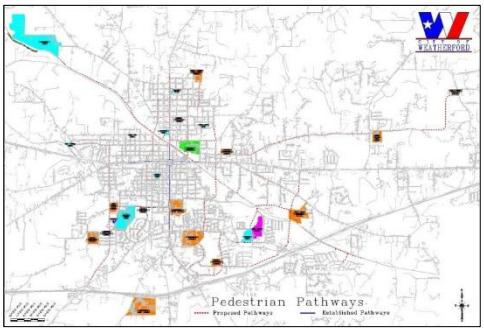
Public Transportation

Currently limited public transit exists within Weatherford except for a county-wide service provide by Public Transit Service (PTS). Operations by PTS span Palo Pinto, Jack, and Parker County and are generally a demand response service used primarily for job access, educational, and medical purposes. The transit agency also provides county to county transportation and occasionally provides transportation to and from the Dallas/Fort Worth airports. Service is provided between 8 a.m. to 5 p.m. Monday through Friday, except on holidays. Extended hours are available upon request for medical appointments or job commutes.

Another transit provider Community Transit is currently exploring opportunities for developing a connector service between the communities of Springtown, Azle and Weatherford. At this point, service is not operational but is proposed to run under the acronym Parker County Area Transit.

Non-Motorized Network

In December 2002, A Pedestrian Pathways Program was added as an addendum to the 2002 Comprehensive Thoroughfare Plan. This program was aimed at enhancing and expanding sidewalks along key corridors within the community. The program also aimed at connecting key corridors with schools facility in order to provide children safe opportunity to walk to/from school.



The Pedestrian Pathways Plan also identified a key recreational corridor along the Union Pacific Railroad. In Jun 2011, the Town Creek Hike and Bike Trial became a reality by linking Holland Lake Park and Ikard Elementary School with the First Monday Trade Days area and Weatherford Chamber of Commerce. The 10-foot wide trail currently meanders and extends almost 3.2 miles. Plans call for the trail to extend north connecting the Town Creek system into the Lake Mineral Wells State Trailway trailhead located near Sunshine Lake in northwestern Weatherford.

The US 180 Corridor Vision Plan, adopted in 2011, recommended targeted improvements for pedestrian connections within the corridor in order to induce a more walkable environment. Specific recommendations included; continuous pedestrian access between Bankhead Highway and the Downtown Square area, decorative crosswalks at Santa Fe and Jock Borden, and further pedestrian connections from downtown north to a possible entertainment district and commuter rail station.

Rail Service

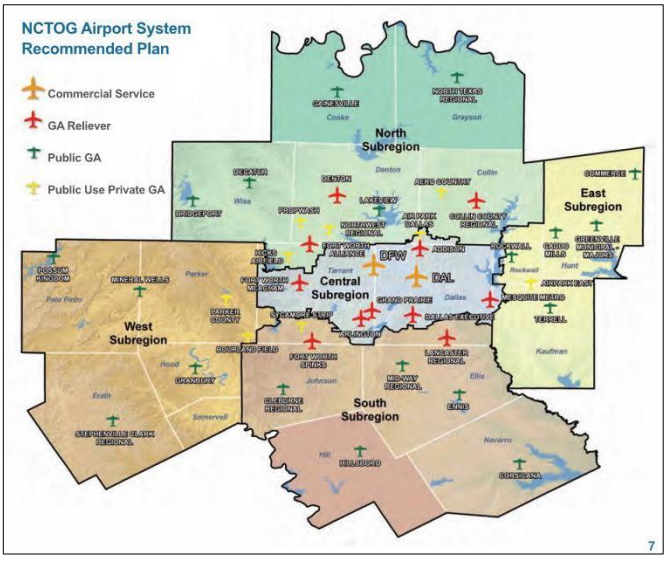
Other than freight rail traffic, there is currently no passenger or commuter rail serve within Weatherford. As late as 2001, the Amtrak National Rail Passenger Service provided service thru Weatherford, however it currently not provided. Commuter rail to Weatherford is currently a vision, as identified by NCTCOG's Mobility 2035 Plan. The Regional Rail initiative identified the Union Pacific Railroad as a "Corridor for Future Consideration" although no specific study has been conducted for this line. A potential rail station could be the Texas and Pacific Railroad Station located at Water and North Main Streets.

The City of Weatherford has one major railroad which is owned by Union Pacific. The railroad enters the city limits around Cartwright Park, runs adjacent to Town Creek, then exits city limits on the south side of Interstate 20. Major rail crossings for this line include; Ric Williamson Memorial Highway, Main Street, Fort Worth Highway, and Jack Borden Way. Of these locations, all but Main Street are grade separated crossings. A grade separated crossting also exists at Franklin Street. Although the rail line is owned by Union Pacific, BNSF also has rail cars traveling along the line. The railroad carries about 22 trains per day.

Air Service

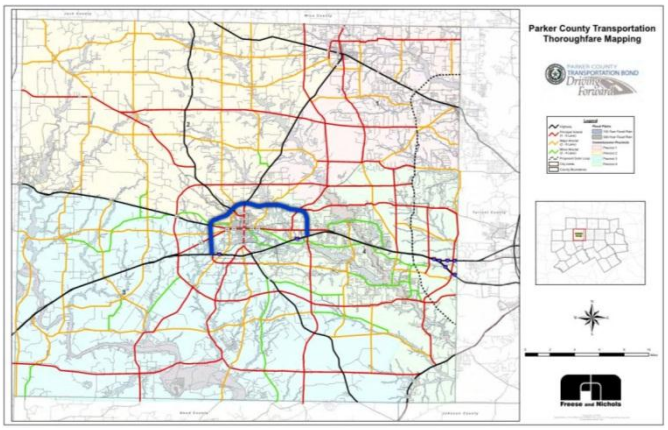
Currently, there are no airports in the city and the nearest general aviation airport is located in Mineral Wells (Mineral Wells Airport) located south of US 180 on FM 1195. While none exist today, plans were prepared and federal funding secured for a general aviation airport to be situated in the southern sector of the city (south of BB Fielder). Local opposition halted the initiative, and millions of dollars in secured funds were returned to the federal government.

In 2006, NCTCOG initiated preparation of the North Central Texas General Aviation and Heliport System Plan - Horizon 2035 to analyze and evaluate the current aviation environment, both General Aviation and Vertical Flight facilities with the 16-county region with the purpose of updating the System Plan. Contributing to development of the plan were TxDOT and NCTCOG's Air Transportation Technical Advisory Committee. Published in July 2012, the plan provides recommended initiatives, by sub-region, to ensure adequate and strategic regional aviation capacity to meet future demand requirements.



Based on current trend and future need, the Plan recommends a development of a public use private general aviation airport somewhere in the northwestern sector of the Metroplex, or in Parker County. While the Plan did not specify timing, advance planning for such a facility is necessary due to physical and environmental planning and documentation needs with the Federal Aviation Administration and federal and state resource agencies.

Other Agency Plans



Adjacent city and Parker County thoroughfare plans were reviewed to coordinate plan connection points, facility functional class and roadway sizing to ensure system continuity. Heads-up review of aerial imagery was also undertaken to consider new growth and development as well as, environmental constraints. Emphasis was placed on other planning initiatives related to regional facilities. For example, design is currently underway for the eastern portion of the Ric Williams Memorial Highway from SH 51 to IH 20 at Center Point Road. Thoroughfare coordination with regard to facility alignment, location of crossing streets, potential intermediate access points, and interchange/ramping at IH 20 was also examined.

Assessment of the Existing Thoroughfare Plan

Given the current implications of growth and development of the community and the growing pains of temporary congestion while key capital improvements are constructed, the current Thoroughfare Plan and its associated capital improvements plan has functioned quite well. From a functional layout standpoint, the grid network within the core of the city has operated well. However, there are limited system connections beyond the core grid which has then led to limited internal connectivity and pinch points to IH 20. The following general needs have been identified from analysis of existing conditions:

- In the eastern sector of the city, north-south mobility remains constrained due to the UPRR. Another north-south roadway facility is needed between Jack Borden/Denton Road and FM 730.
- There are internal connection needs that could enhance east-west mobility Main and Ric Williamson Memorial Parkway.
- Backage roads along IH 20 and Ric Williamson Memorial Parkway would help to accessibility to commercial and industrial uses anticipated for these corridors.
- Ramp reversals into an “X” configuration would enhance carrying capacity of interchange locations with IH 20 as well as, add to area economic benefit.
- Additional access points to the High School would help to relieve peak hour operational burdens on Bethel Road.
- Driveway coordination along key corridors is needed to reduce conflict points.
- Removal of truck traffic from US 180 to an alternate route would benefit downtown.
- System expansion of the Pathway Plan to new growth areas.

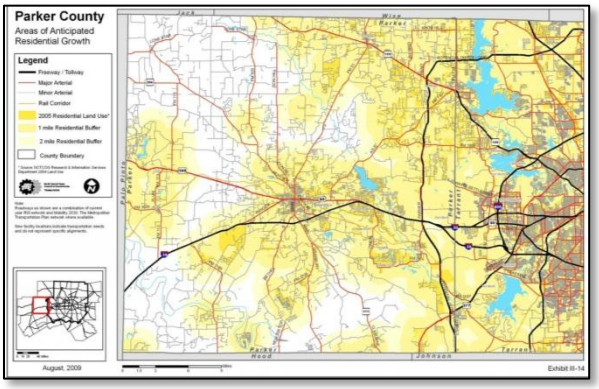
Chapter 5: Growth Factors and Projected Conditions

This chapter examines the factors affecting growth to Weatherford, short and long-term growth anticipated within the City, the travel forecast modeling process, and year 2035 travel projections based on the anticipated growth within the City.

Growth Factors

Regional Growth

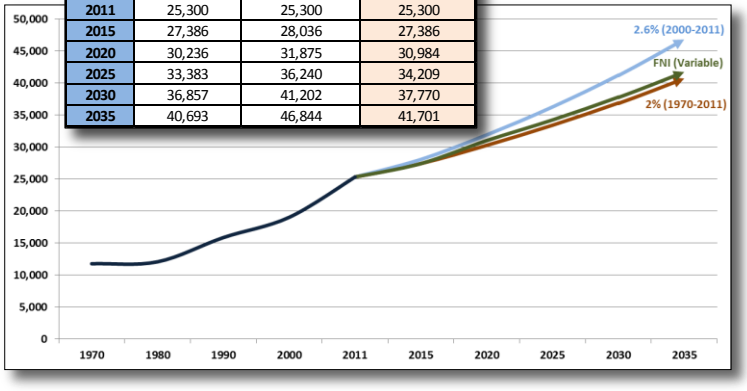
NCTCOG projections for the North Texas region indicate continued growth with population forecasted to increase from 6.5 to 9.8 million persons and represents a compound annual growth rate (CAGR) of 1.89% through the year 2035. The corresponding employment growth is expected to increase from 4.2 to 6.2 persons (1.76% CAGR) during the same period. Within Parker County, population and employment growth is projected to increase from 118,600 to 193,730 persons and 51,407 to 101,685 employees, respectively. The associated county growth annual rates are 2.26% for population and 2.56% for employment.



Parker County will experience continued growth in the eastern portion of the county as Ft. Worth continues to expand westward. Several large scale developments such as the Walsh Ranch and Dean Ranch are programming residential development to accommodate over 50,000 people alone. For Weatherford, the residential growth is envisioned to occur predominantly in the southwest and northeast, but with some level of growth in the north, northwest and infill areas within the community. Non-residential growth is envisioned to occur along IH 20 and Ric Williamson Memorial Highway.

Population in Weatherford grew 2.6% annually between 2000 and 2011 and added 6,300 residents. The current 2012 population is estimated to be 25,440. City growth is projected to remain about 2.5% for the next several years but then taper back to about 2% annually. The projected 2035 population is estimated to be 41,700.

	2% (1970-2011)	2.6% (2000-2011)	FNI (Variable)
2011	25,300	25,300	25,300
2015	27,386	28,036	27,386
2020	30,236	31,875	30,984
2025	33,383	36,240	34,209
2030	36,857	41,202	37,770
2035	40,693	46,844	41,701



Major employers within the city include; Weatherford Regional Medical Center, the City, Parker County, Weatherford College, Jamak Fabricators and Wal-Mart.

Future Land Uses

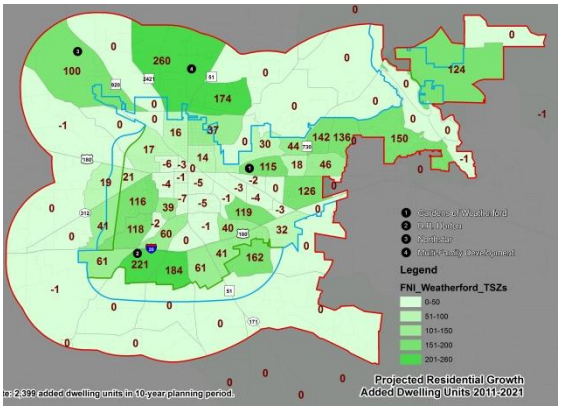
A planning workshop with City Staff was held to discuss community growth and to gain an understanding of the intensity and direction of growth for both the short and long-term time frames. This information will serve as a basis to travel forecast modeling for transportation plan development.

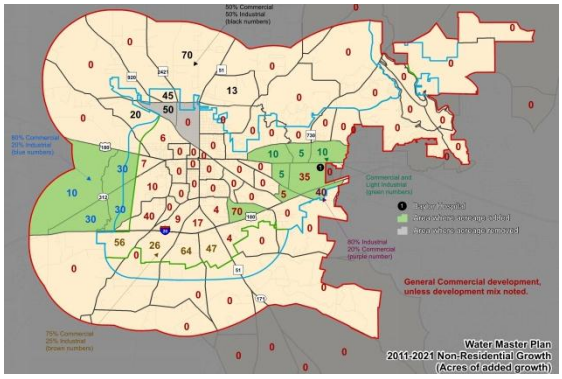
Data of population growth, building permit data and NCTCOG socio-demographic data of the city was compiled to serve as a basis for understanding development trends within the city. Data from the recently completed Water Master Plan was also incorporated into the discussion as this plan contained data that was compiled in 5 year increments as well as, by analysis zones consistent with NCTCOG modeling protocols. Additionally, as this data was based on very detailed data of the city, a comparison to data contained in the NCTCOG travel forecast model could be undertaken. It was determined that data contained in data sets from the Waster Master Plan process was more definitive to forecast data prepared by NCTCOG.

Land Use Projections

Demographic data from the water master planning process was used to serve as a basis for allocating growth over the 10 and 20-year within the city and ETJ. Population growth was discussed in terms of added dwelling units to the area and, employment growth in terms of non-residential acreage added.

Year	Population Growth	Dwelling Units	Units Added	Units Per Year	Non-Residential Acreage	Acreage Added
2011	25,300	10,242	-	-	1,463	-
2021	31,604	12,641	2,399	239	1,827	363
2035	41,701	16,680	4,039	268	2,337	510





Growth trends indicate 10-year residential growth to occur predominantly in the southwest and northeast, but with some level of growth in the north, northwest and infill areas within the community. Illustrated at left is anticipated 10-year dwelling unit growth by traffic survey for the city and the ETJ area. Areas highlighted denote level of development intensity.

Non-residential growth in the initial 10-years is envisioned to occur primarily along IH 20, portions of Ric Williamson Memorial Highway, and to the east along US 180. Most of the activity is envisioned as a mix of predominantly commercial and industrial type activity.

Twenty-year residential growth is projected to primarily occur in the north/northeast and south/southwest. Commercial and industrial growth will continue along portions of IH 20 in the east and west as well as, along Ric Williamson Memorial Highway. The anticipated opening of the Eastern Loop will change the dynamics of growth in the northeast along the Loop, IH 20 and US 180.

Travel Forecast Modeling

Methodology

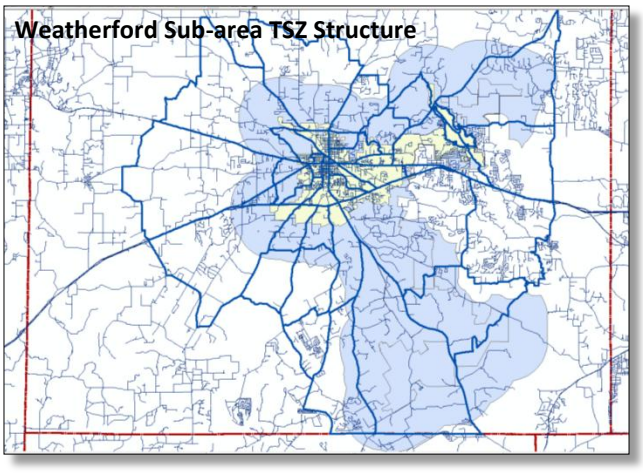
A sub-area travel forecast model for Weatherford was developed as part of the transportation planning process. The sub-area model was built from the regional model developed and maintained by NCTCOG. This approach enables the ability to capture the regional impacts of programmed improvements in and around the city, while at the same time incorporating local land use patterns detailed through the planning workshop described earlier.

The Study Team met with NCTCOG to coordinate model development, incorporation of sub-area demographics into the regional model and associated forecast, adjustment of network zonal connections, and output trip tables for use in sub-area modeling. A review of "existing plus committed" roadway improvements within the Weatherford area was also conducted to ensure key regional linkages were present in the model.

Basic Model Theory

By creating and using a travel model, one is attempting to produce a mathematical representation of an individual's decision-making process as to when to make a trip, and what route to follow to complete the trip.

These individual choices are then combined so that the aggregate impacts on the roadway network can be determined. As projects are added or modified to the system, the model can be used to make planning level decisions regarding future transportation needs. Models are also used to answer questions such as the number of lanes required along a given roadway or the need for a new roadway or interchange. Travel models are best suited to provide a comparison between horizon years or alternatives with traffic projections showing general travel trends over time or between alternatives. The travel model is but one element - of many - that should be considered in decisions regarding transportation improvements.



Weatherford Sub-area TSZ Structure

Sub Area Model

The NCTCOG travel model spans the twelve county MPO planning area and has a focused approach on the region's major arterial and highway network, its proposed roadway improvements programmed through the year 2035, and associated supporting demographics. In order to replicate traffic patterns within the City, adjustments were made to the regional model for more roadway detail typically not included in the regional model. The addition of this detail enhances the ability to replicate traffic loading (according to local patterns) onto the adjacent roadway system. Land use information, in the form of population and employment, is entered into the model at the traffic survey zone (TSZ) level. TSZs represent the smallest area for which land use activity that generates and/or attracts trips.

Four Step Modeling Process

The modeling process is comprised of a series of mathematical algorithms that simulate travel on the transportation system. This macroscopic process encompasses four (4) primary steps taken to estimate travel demand from a given set of land uses and a transportation network. The four steps in this approach are;

- *Trip Generation* – the estimation of the number of trip-ends for each zone. More detail on the trip generation process is included in the following section.
- *Trip Distribution* – the estimation of the number of trips between each zonal pair.
- *Modal Split* – the prediction of the number of trips made by each mode of transportation between each zone pair.
- *Traffic Assignment* – the amount of travel (or number of trips) that is loaded onto the transportation network through path-building and is used to determine network performance.

Land Use Data

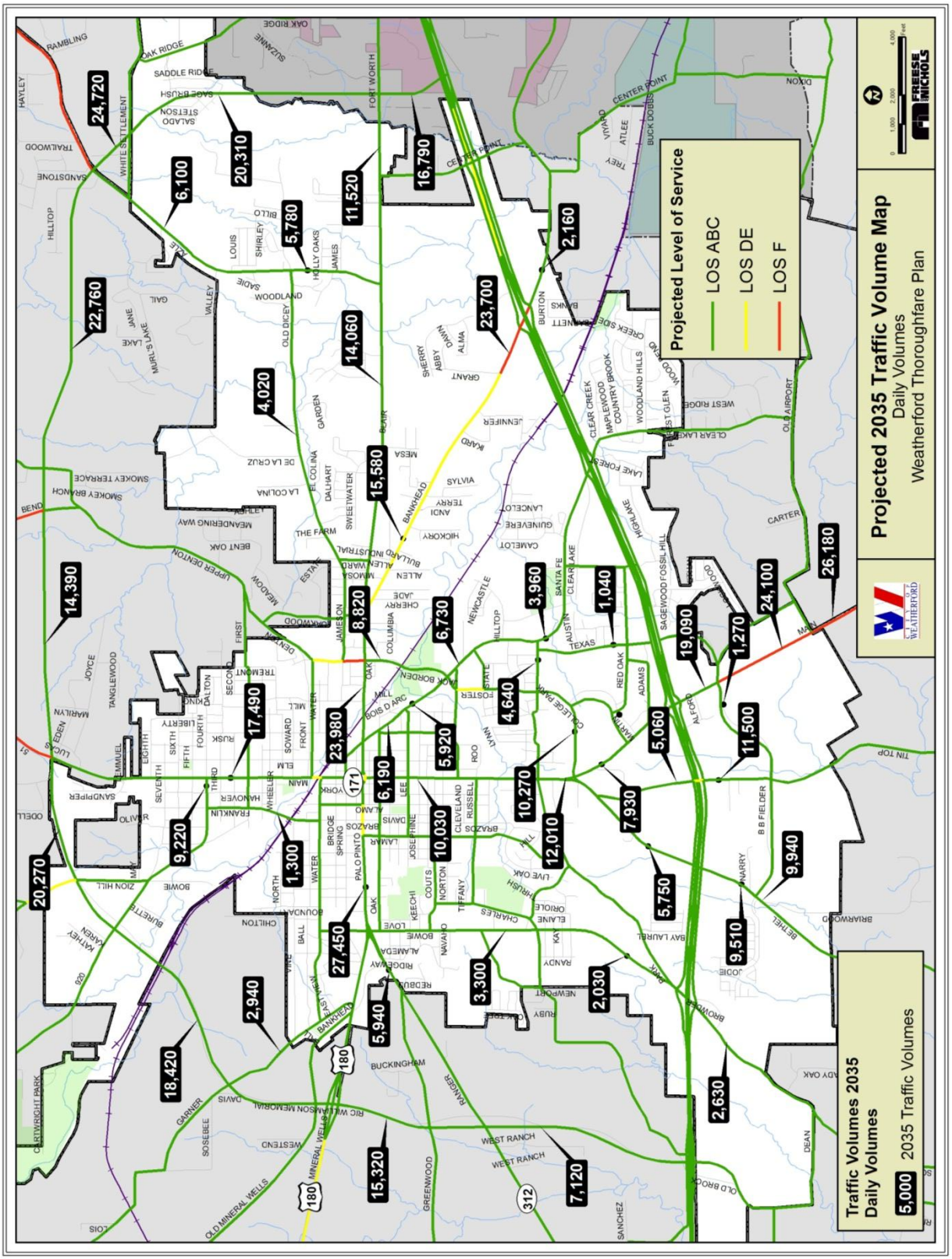
Outside of the City, NCTCOG regional data was used for land use and demographic data for both existing and future models. Demographic data and land uses forecasted by NCTCOG for future study years are based on trends in development and historic growth patterns. The basis for the land use information comes from each city and their corresponding future land use plans.

Within Weatherford, data garnered through the planning workshop was used to alter demographics consistent with the projected growth patterns identified earlier. The revised demographics were input into corresponding traffic survey zone attribute tables for inclusion into the traffic forecasting process.

Projected Traffic Volumes

Following the update of network revisions and entry of demographic data, a model run was prepared to test the ability of the current thoroughfare network to accommodate 2035 traffic volume data. The initial run revealed the roadway system to handle quite well. Examination of traffic forecast volumes revealed general increases throughout the system. Of particular note was the ability of the Ric Williamson Memorial Highway to accommodate east-west traffic volume from US 180. Traffic volumes on US 180 remained between 14,000 and 27,000 (appropriate volume range for a four-lane facility), while the loop accepted 14,000-25,000 between IH 20 at Center Point Road and Mineral Wells Highway. Between Mineral Wells and IH 20 (west), volumes reduce to between 7,000-15,000. A four-lane highway facility will accommodate projected volumes satisfactorily on the loop.

The associated level of service, or the operational condition of the system, revealed generally acceptable conditions throughout the network and few “hot spot” areas. Only in a few locations were there some poor operational conditions and include; Bankhead near IH 20, S. Main south of BB Fielder, Denton Drive between US 180 and Jameson Street, and approach links to the loop. A majority of these issues could be addressed by providing for channelized intersections at critical intersections and, investing in stronger access coordination policies through shared driveways and/or use of cross access easements for reducing the number of drives on key corridors. The benefit is enhanced carrying capacity of the corridor.


Projected 2035 Traffic Volume Map
Daily Volumes
Weatherford Thoroughfare Plan
Projected Level of Service
LOS ABC
LOS DE
LOS F
Traffic Volumes 2035
Daily Volumes
5,000 2035 Traffic Volumes

Chapter 6: Transportation Plan

The recommended plan builds upon the principles established as part of the 2007 Thoroughfare Plan and study goals and objectives as identified in Chapter 2. Several modifications have been made aimed at enhancing system functionality, aesthetic character, and alternative mobility options and include;

- Building upon the existing roadway functional street classification system,
- Alignment of specific corridors for mobility and/or economic benefit,
- Provision for operational improvements at key intersections,
- Identification of corridors for context sensitivity and gateway treatments,
- Expansion of the Bike/Pedestrian system,
- Identification of a potential regional rail station,
- Identification of a potential general aviation airport.

The Transportation Plan consists of multiple considerations as identified above, and aims to provide for increased mobility and connectivity and reduce reliance on the automobile. Transportation Plan considerations are not all inclusive and as needs change, the plan should be amended to maximize system investments to the community. Transportation planning initiatives should be coordinated with other infrastructure investments within the city and/or, with other agencies to leverage financial resources and implementation timeframes. Figure 6.1 illustrates the recommended Thoroughfare Plan.

Thoroughfare Plan

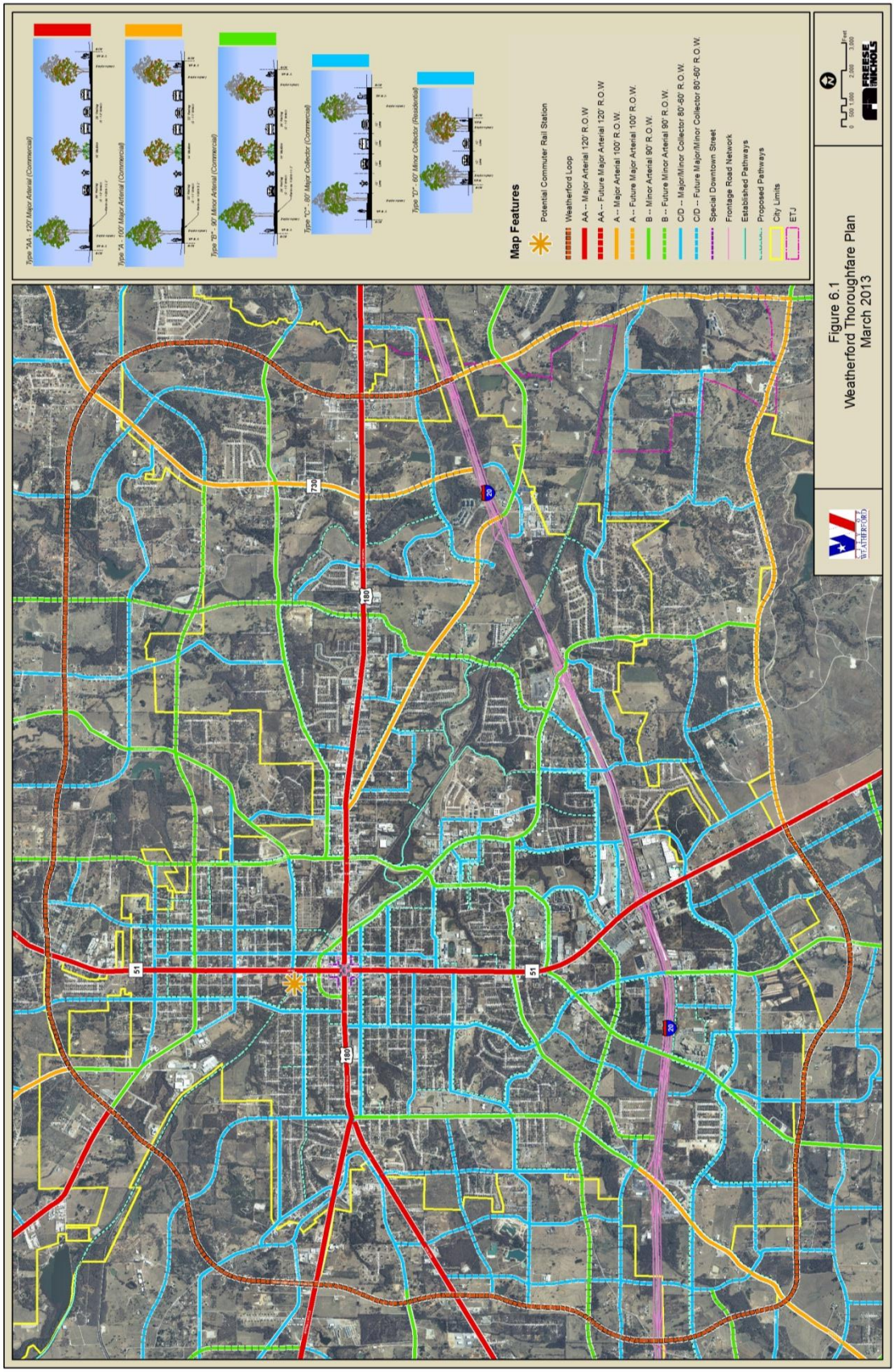
Figure 6.1 illustrates the recommended Thoroughfare Plan. Travel forecast modeling of the existing Thoroughfare Plan revealed the basic roadway system to operate satisfactorily under projected Year 2035 conditions. Key strategies to the thoroughfare network include;

- Internal connections and introduction of key mobility corridors,
- Roadway network support to the Ric Williamson Memorial Highway and IH-20,
- Identification of key intersections for traffic operations,
- Access coordination/management of driveways on key corridors,
- Special area planning to enhance accessibility and economic benefit.

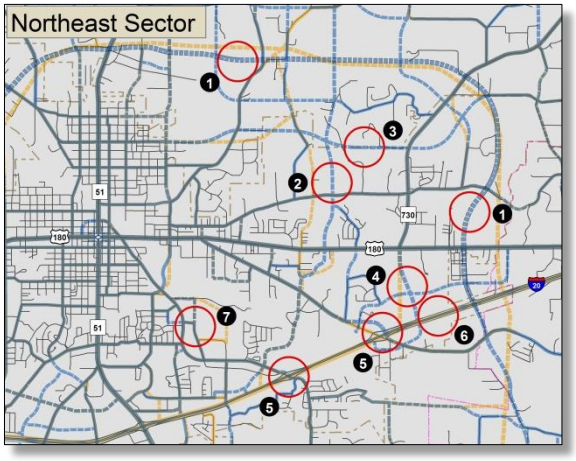
Changes to the thoroughfare system are described below.

Ric Williamson Memorial Highway

This loop facility remains a critical component to the development of the network. The implementation of this facility between SH 51 and IH 20, and soon the extension from SH 51 east to IH 20, will provide key changes to travel patterns within the community. South of IH 20, this roadway is envisioned to continue as a highway type facility to S. Main/SH 51. From this point, it is envisioned as an arterial class facility between S. Main and IH 20 at Center Point Road due to the low density of the area. In this area, the existing roads of Old Airport, Dixon and Center Point Roads are envisioned to comprise the loop with only minor alignment shifts/alignment changes needed to address roadway curvature needs.

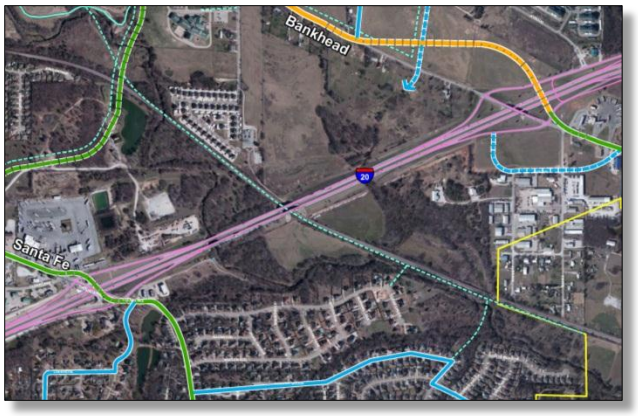

Type "AA - 120' Major Arterial (Commercial)
Type "A - 100' Major Arterial (Commercial)
Type "B" - 90' Minor Arterial (Commercial)
Type "C" - 80' Major Collector (Commercial)
Type "D" - 60' Minor Collector (Residential)
Map Features
Potential Commuter Rail Station
Weatherford Loop
AA -- Major Arterial 120' R.O.W
AA -- Future Major Arterial 120' R.O.W
A -- Major Arterial 100' R.O.W.
A -- Future Major Arterial 100' R.O.W.
B -- Minor Arterial 90' R.O.W.
B -- Future Minor Arterial 90' R.O.W.
C/D -- Major/Minor Collector 80'-60' R.O.W.
C/D -- Future Major/Minor Collector 80'-60' R.O.W.
Special Downtown Street
Frontage Road Network
Established Pathways
Proposed Pathways
City Limits
ETJ
Figure 6.1
Weatherford Thoroughfare Plan
March 2013
FREESE NICHOLS
20
51
180
730

Northeast Sector



1. Alignment shifts to conform to current planning and intersection at Center Point Road/IH 20.
2. Realignment and extension of "Washington Drive" through the Eastern Loop to Old Spring Town via Dillingham and Deer Path Lane; upgrade to minor arterial class through the Eastern Loop.
3. Extend 4th Street to FM 730 near Valley Lane; extend to White Settlement Road.
4. Realign new "Willow Creek Parkway" from FM 730 at US 180 to the east to take advantage of developable area and access points to IH 20 frontage road ramping.
5. Realign Bankhead Road at IH 20 to create 90-degree crossing; align with Bankhead to the north.
6. Reconfigure westbound frontage road ramps to facilitate access to new IH 20 entry ramp.
7. Downgrade Eureka and Hilltop to local; extend Hilltop from Santa Fe to Pecan Drive along southern edge of county complex site.

Other considerations:



- With the western section of the Ric Williamson Memorial Highway virtually complete, re-routing of truck traffic from US 180 to IH 20 and reconnecting with the Mineral Wells Highway via the loop. The removal of pass-thru truck traffic would reduce congestions levels by increasing operational efficiencies.
- To reduce westbound to northbound truck traffic, consider using E. Spring Street as a by-pass to the Courthouse Square circle.
- Realign Santa Fe Road at IH 20 to create a 90-degree crossing. Investigate options to minimize impacts to existing development which exists on all quadrants.

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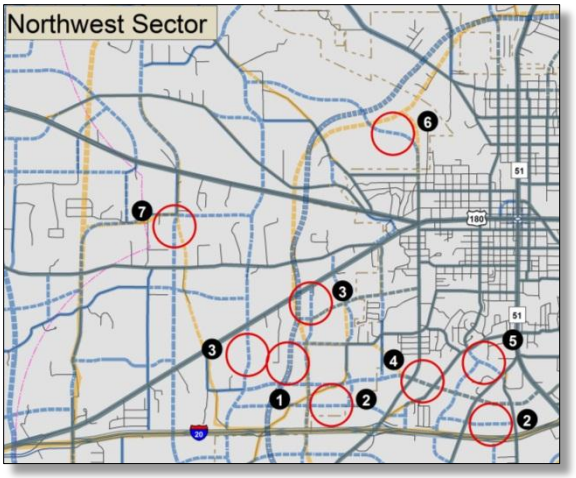
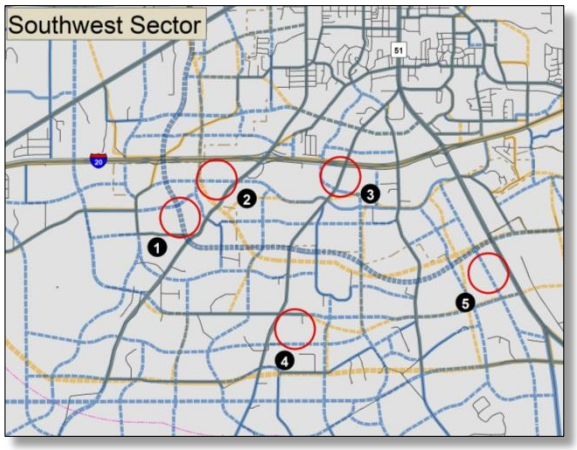
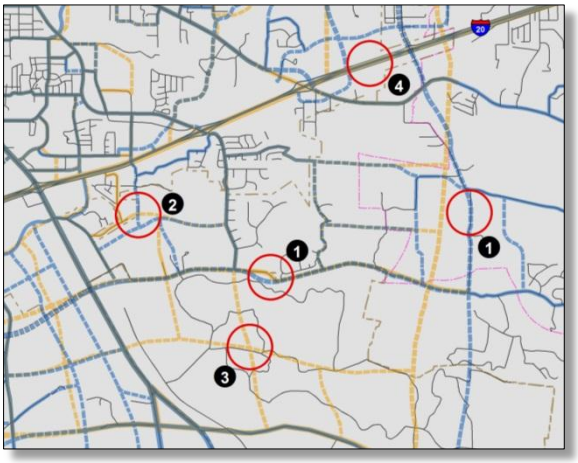


Northwest Sector

1. Alignment shifts to loop to conform to facility implementation.
2. Implement backage roads to IH 20 to support commercial area development.
3. Implement backage roads to RWMP to support anticipated industrial area development.
4. Realign W. Martin and extend from S. Main to RWMP and beyond to a new north-south collector.
5. Realign and extend Tin Top to intersect with S. Lamar.

6. Extend N. Bowie Drive northwest to cross RWMP between the UPRR and Garner Road; extend beyond to Garner Road near Sosebee Bend Road.
7. New north-south arterial extending from FM 920 to Old Dennis Road in southwestern Weatherford; with grade separated crossing at IH 20; part of grid network to facilitate long-term area development.





Southwest Sector

1. Extend and realign loop further to the south; extend eastward from Old Dennis near Dean Road and intersect SH 51 south of Old Airport Road.
2. Extend BB Fielder west and intersect with Dean Road; backage road support to IH 20 development.
3. Provide secondary access to High School from BB Fielder; create IH 20 eastbound frontage road connection with BB Fielder; formalized new intersection on Bethel; new IH 20 ramping between Bethel and Tin Top Road.
4. General street network to support long-term area development.
5. Backage road to SH 51; support of potential long-term corridor commercial development.

Southeast Sector

1. Reduction in loop to arterial class facility between S. Main and IH 20.
2. Extend Fossil Hill Road south to new east-west collector class facility south of Lockwood Lane; connect Causbie Road with Clear Lake Road.
3. Reduction in roadway network due to anticipated low development density of area and nearby conservation area.
4. Implementation of IH 20 frontage road improvements between Bankhead and extension of loop at Center Point Drive.

Regional Thoroughfare Plan

Planning for thoroughfare facilities in the extra-territorial jurisdiction was conducted to provide for long-term area wide connectivity, connection points with IH 20 and a supporting grid network of roadways. Another importance was for potential corridor identification for an Outer Loop and supporting thoroughfare network. The significance of this facility is the provision of countywide mobility and access to eastern Parker and Tarrant County. This regional loop would extend from FM 730 north of Weatherford Lake, around the Weatherford ETJ and connect with SH 5 at Muir Road.

Another key consideration was accessibility to a potential general aviation airport situated in the southwest at Old Brock and Dennis Roads. The provision of a regional connection would help to facilitate any supporting and ancillary land uses associated with such a site.

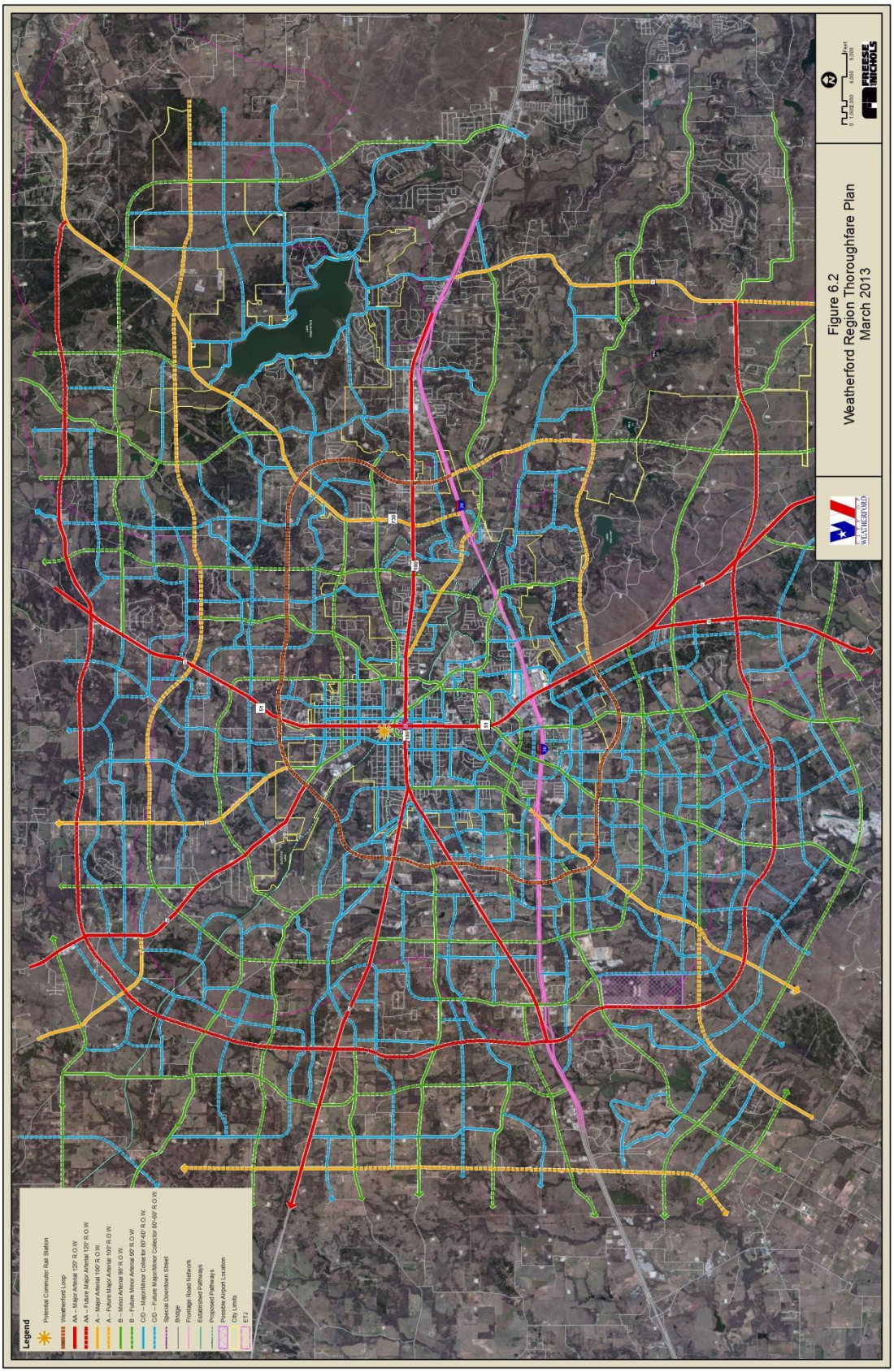


Figure 6.2
Weatherford Region Thoroughfare Plan
March 2013
Legend
Potential Commuter Rail Station
Weatherford Loop
AA – Major Arterial 120' R.O.W.
AA – Future Major Arterial 120' R.O.W.
A – Major Arterial 100' R.O.W.
A – Future Major Arterial 100' R.O.W.
B – Minor Arterial 90' R.O.W.
B – Future Minor Arterial 90' R.O.W.
C/D – Major/Minor Collector 80'-65' R.O.W.
C/D – Future Major/Minor Collector 80'-65' R.O.W.
Special Downtown Street
Bridge
Frontage Road Network
Established Pathways
Proposed Pathways
Possible Airport Location
City Limits
ETJ

IH 20 Enhancements

Recent improvements to interchanges and the frontage road system between S. Main and Santa Fe have provided tremendous benefit to accessing IH 20. Continued further improvements should consider enhancement of remaining interchanges through Weatherford with U-turns to maximize the carrying capacity of these intersections.

Other enhancements to maximize the economic benefit of development along the corridor are the conversion of ramping from "diamond" to an "X" ramp configuration. In this scheme, traffic enters highway main lanes in advance of an upcoming intersection and exits just past the intersection. This configuration offers enhanced operational capacity at arterial crossings and removes weave/merge maneuvers from the frontage roads. Most importantly, it offers enhanced economic development opportunity for parcels fronting along the corridor.

Key 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 should be provided at key major and minor arterial intersections. To determine the exact dimensional requirements of specific intersections, a traffic analysis should be conducted at the time of facility implementation.

As currently defined, divided roadways have the ability to accommodate a separate left-turn lane. By adding 22 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 provide sufficient roadway width for turn movements.

Fifty-seven intersections have been identified as "critical intersections" and fall primarily on major and minor arterial facilities. At these intersections, the City should require additional right-of-way via the platting process (where possible) to allow for additional turn lanes that may be needed in the future.

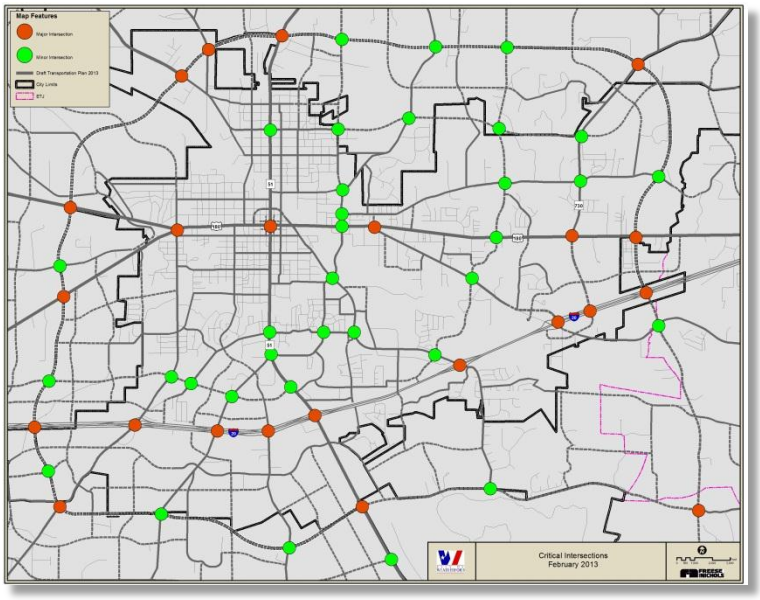


Table 6.1 identifies necessary distances by roadway class for storage and transition requirements. The distances identified allow for minimum turn-lane storage and lane transitions. In high intensity development areas, a traffic analysis should be conducted to determine appropriate intersection requirements. Figures 6.3 and 6.4 illustrate intersection right-of-way requirements at critical locations.

Table 6.1 Critical Intersection Right-of -Way Requirements				
Roadway	**Major Arterial**	**Minor Arterial**	**Major Collector**	**Minor Collector**
Major Arterial	350’	350’	300’	260’
Minor Arterial	300’	300’	260’	260’

Figure 6.3 Major Intersection Detail

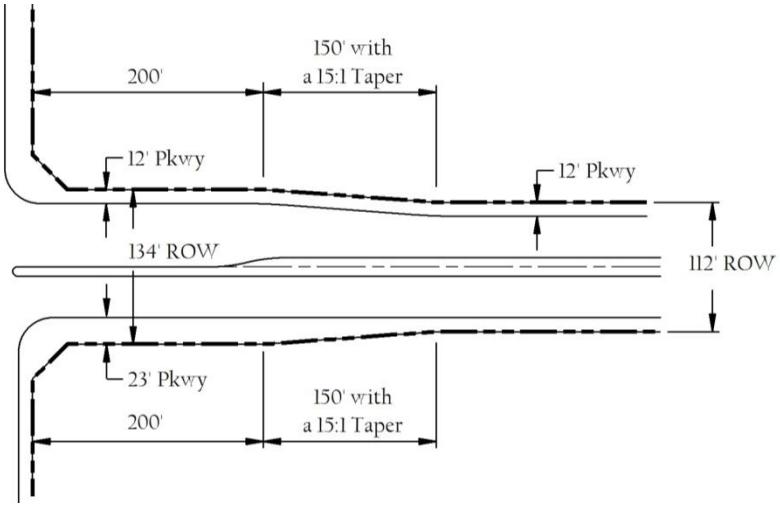
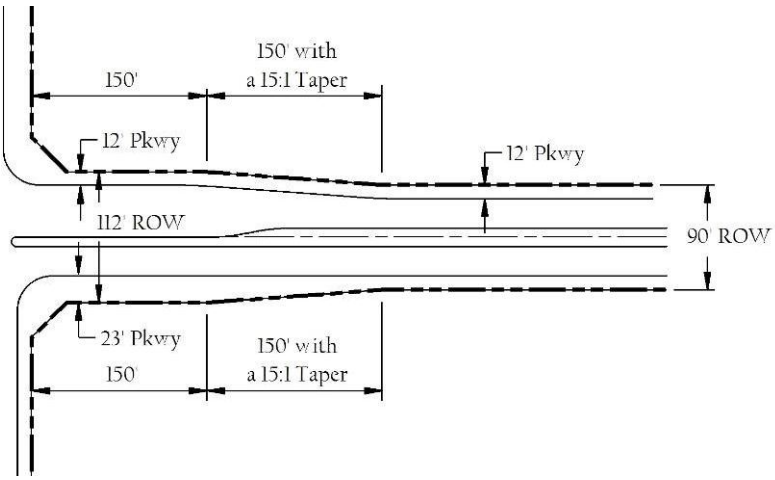


Figure 6.4 Major Intersection Detail



Audible Signaling Devices

The use of audible devices at pedestrian crosswalks to assist the visually impaired across intersections is gaining popularity to meet the requirements of the Americans with Disabilities Act (ADA). Audible pedestrian devices are wired to the walk light, and as soon as the walk light is energized, the audible device will sound. The fact that these devices can increase the speed of most pedestrians across intersections, has also generated a great deal of interest.

Basic Crosswalk Device Types

- ***Vibrotactile*** devices require that the person find and touch the apparatus to gain the needed information. This could be something as simple as a vibration to tell the user that it is safe to cross.
- ***Transmitting*** devices use transmitters and receivers to send detailed verbal instructions to the user. This could include the street corner name and which direction it is safe to cross. One drawback to both vibrotactile and transmitting products is that they are relatively expensive to buy and install.
- ***Audible*** devices generate an audible sound to alert people that it is safe to cross. While the audible sound can be a simple tone or a more complex voice message, distinct birdcalls are also commonly used (Canada and California). Audible devices are most frequently specified for intersections because they are simple to install, use, and are inexpensive.

Thoroughfare Design Standards

Thoroughfare classification reflects the intended function of specific roadways that serve as part of the street and highway network, the cross section of a roadway is related to traffic volume, design capacity, and Level of Service. Standard roadway cross-sections for the different classes of thoroughfares are listed in Table 6.2 and illustrated in Figure 6.5. Standards for highways are the responsibility of TxDOT or other agencies, and therefore not presented. In developed areas, varying design standards may be implemented to accommodate existing conditions.

The general roadway cross-sections used throughout the city have not changed since being identified as part of the 2002 Comprehensive Plan effort. The only exception is for intersections, where an additional 10-20 feet should be included to accommodate potentially needed channelized turn movements such as a second left-turn or right-turn lane. To determine the exact dimensional requirements of each intersection, a traffic analysis should be conducted at the time of facility implementation. At a minimum, each general roadway cross-section has the ability to accommodate a separate left-turn lane. The right-of-way for minor arterial roadways is also designed to allow for left-turn lanes at the intersection with major arterial facilities.

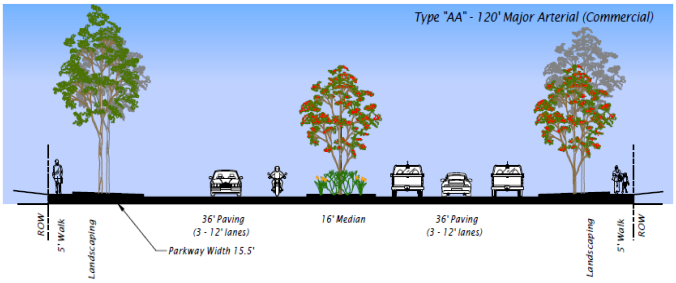
Figure 6.5 illustrates the thoroughfare plan roadway sections and associated key characteristics of each functional class street type.

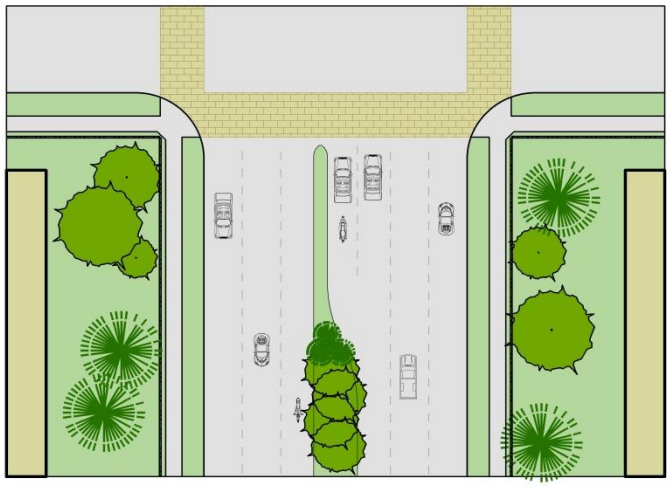
Table 6.2 Roadway Design Standards

Roadway Design Element	Roadway Section				
	Major Arterial 6-lane Divided (Type AA)	Major Arterial 4/6-lane Divided (Type A)	Minor Arterial 4-lane Undivided (Type B)	Major Collector 2/4-lane Undivided (Type C)	Minor Collector 2-lane Undivided (Type D)
ROW	120'	100'	90’	80’	60’
Pavement Width (face-to-face)	2 @ 36'	2/3 @ 33’	2@ 13''	48’	24’
Lane Width	12'	11’	11.5’	12’	12’
Left-Turn Lanes	1 @ 12'	1 @ 11'	1@11’	1@12’	--
Median Width	16’	14'	14’	--	--
Sidewalks	Both	Both	Both	Both	Both
Parking	None	None	None	Limited	Permitted
Parkway Width	15.5'	9.5'	11.5’	15.5’	10’

Figure 6.5 Roadway Sections

Type AA Major Arterial

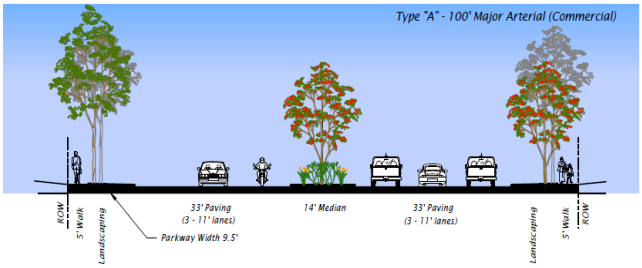


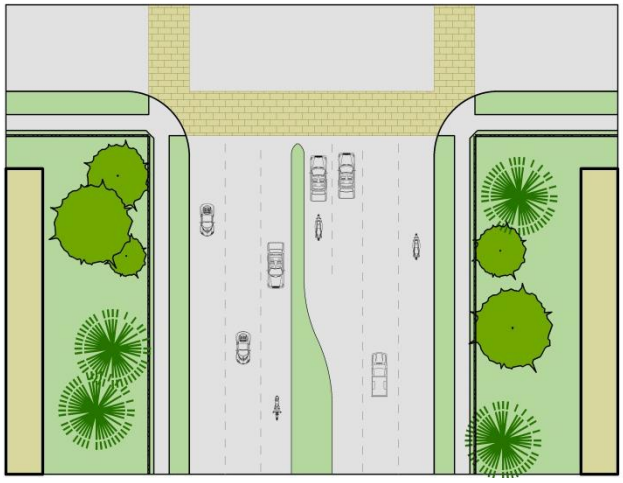


General Characteristics

- High Degree of regional mobility, traffic volumes and higher operational speeds
- Connected to regional arterial plan
- Access is carefully managed
- 6 Lane divided roadway with median
- Examples in Weatherford include Highway 180/Fort Worth Highway and Highway 171/Main Street.

Type A Major Arterial

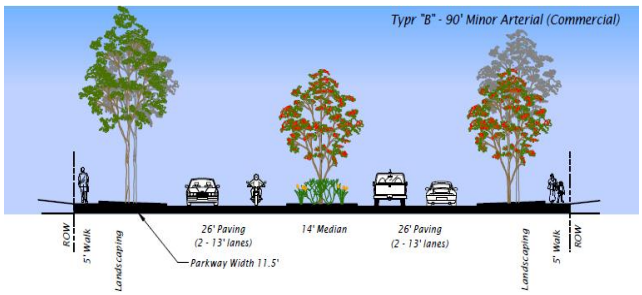




General Characteristics

- High Degree of regional mobility, traffic volumes and higher operational speeds
- Connected to regional arterial plan
- Access is carefully managed
- 4/6 Lane Divided Roadway with Median
- Examples in Weatherford include FM 740/Azle Highway, E. Bankhead Drive and Old Airport Road once the roads are expanded or constructed.

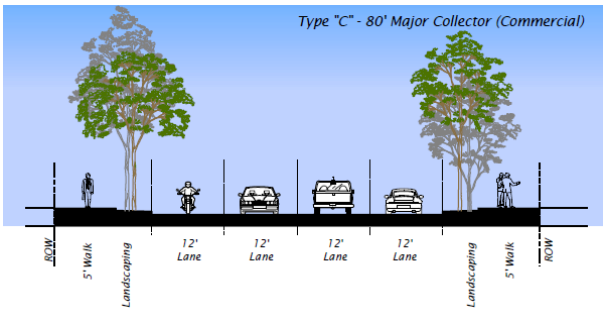
Type B Minor Arterial

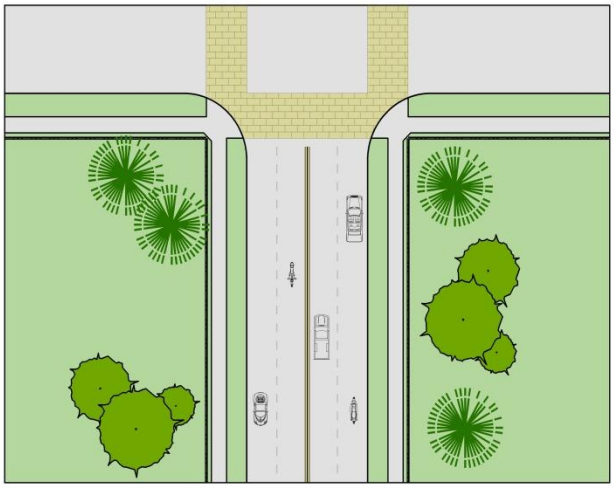


General Characteristics

- High degree of inter-city mobility
- Secondary to Major Arterials but containing higher operational speeds and volumes
- Access is carefully managed
- 4 Lane Divided Roadway
- Examples in Weatherford include Santa Fe Drive, Jack Borden Way, FM 1884/Bethel Road and Tin Top Road.

Type C Major Collector

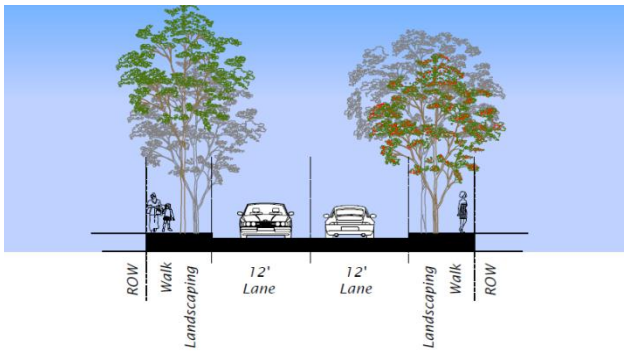


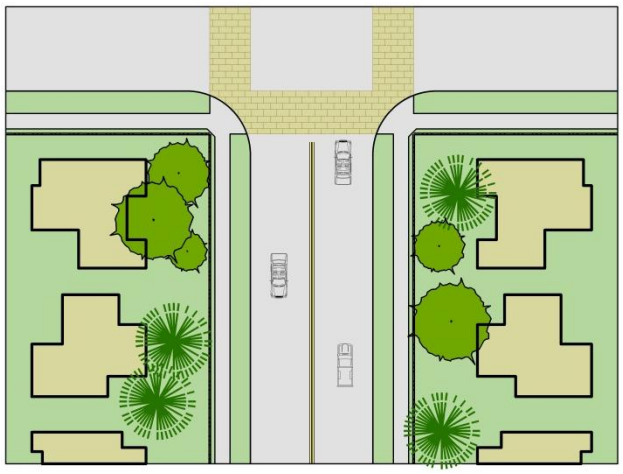


General Characteristics

- Connections between Arterials and local streets
- Collect and distribute traffic to arterial network
- Border or traverse residential areas
- 4 lane undivided roadway
- Examples in Weatherford include Franklin Drive, First Street, Seventh Street, Rusk Street and Oak Street.

Type D Minor Collector

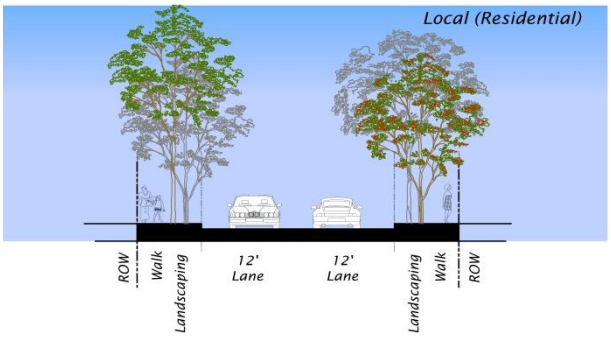


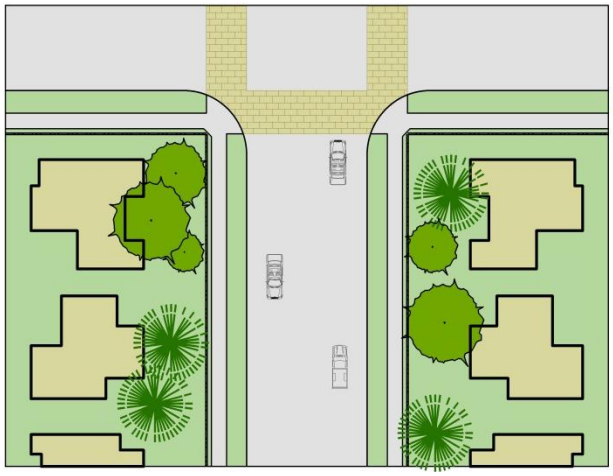


General Characteristics

- Connections between Arterials and Local streets
- Traverse residential areas and often serve as entrances to a neighborhood or subdivision
- Two lane undivided roadways

Local Residential





General Characteristics

- Provide direct access to residences from the collector and arterial network
- Two-lane roadways typically accompanied by on-street parking on one or both sides, depending on width
- Examples include all residential streets in Weatherford not classified as an Arterial or Collector roadway

Transit

Currently no large-scale transit service is provided other than demand response systems operated in Parker County. To provide an alternative to transit dependent or needy, the City should assist by providing planning coordination or support, as necessary. If transit becomes desirable by Weatherford residents, a feasibility study should be conducted to determine system viability and funding. If determined to be viable, the City should pro-actively engage the community for service support, type operations, funding mechanisms and timetable for system implementation.

Commuter Rail

There appears to be growing desire for a commuter rail extension to Weatherford. Such notion was identified in the Rail Vision Plan of Mobility 2035, with the identification of the UP Railroad as a "corridor for future consideration" although no specific study has been conducted at this time for this rail corridor.

The former Texas and Pacific Railroad Station near the intersection of Water and North Main Streets would serve as an ideal location for a commuter rail station. Its close proximity to downtown, connectivity with roads and trail system, and the presence of available land for development and/or redevelopment opportunity presents a compelling case for this location.

The City should continue to proactively plan with NCTCOG and/or other interested agencies to further advance the idea for such a connection to the city. Further, the Transportation Advisory Board should proactively develop actions aimed at promoting commuter rail opportunity to the City. Finally, the City should dialogue with Union Pacific Railroad to advance the planning of shared right-of-way use for regional commuter rail connectivity with the Metroplex. Promote active dialogue for long-term investment within or adjacent to the existing rail corridor.

With the optimal location of the Texas and Pacific Railroad Station, adjoining road and non-motorized connectivity, and proximity to the downtown area, this potential site could serve a dual purpose as an intermodal hub. This hub would also be used to connect potential transit service throughout the community. As the need arises for a transit system feasibility study, additional analysis should be undertaken to determine the optimal location for a transit center.

Figure 6.6 illustrates the location of the potential commuter rail station, its associated 1/4 and 1/2 mile service area, area trail connections and key area institutional facilities.

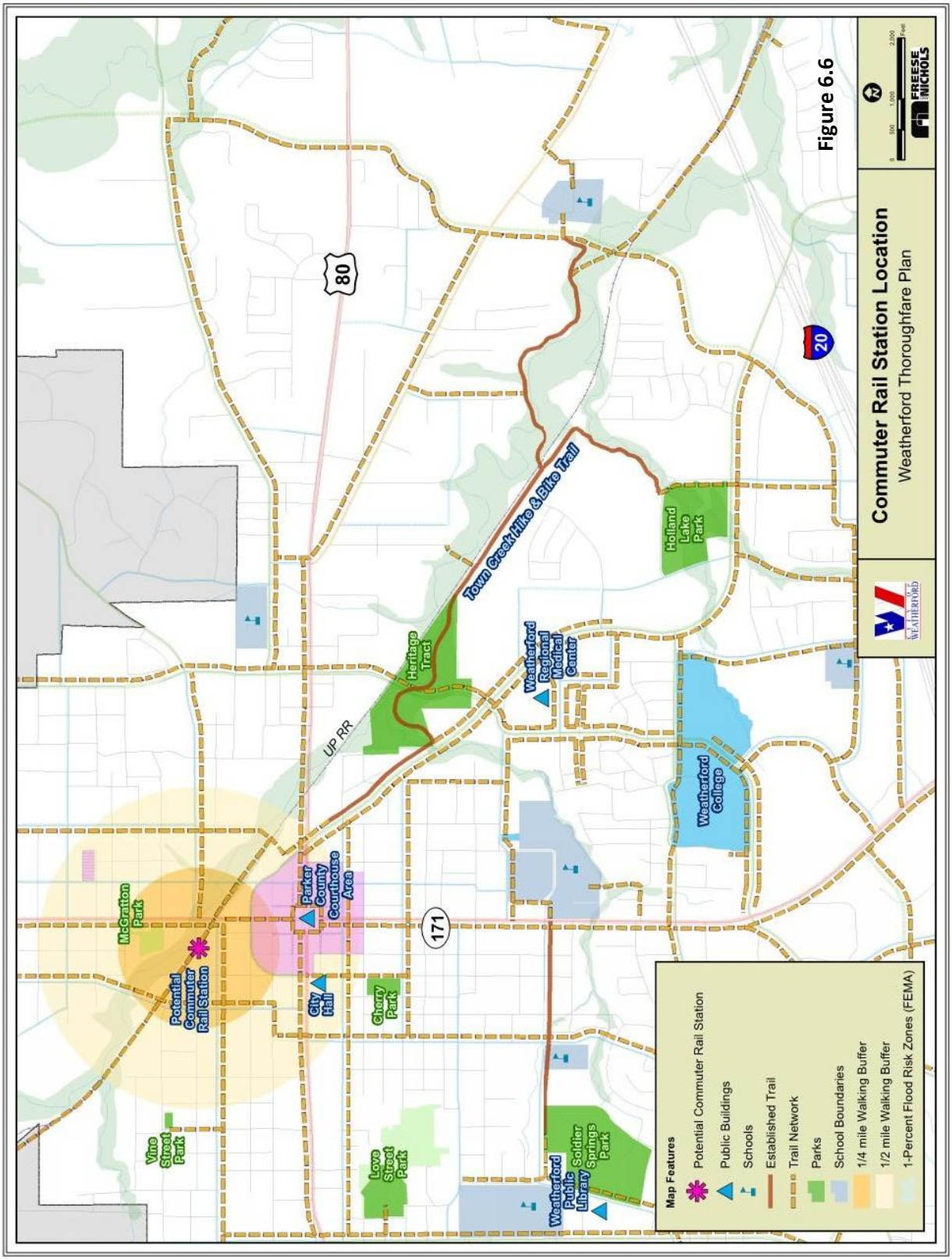

Commuter Rail Station Location
Weatherford Thoroughfare Plan
FREESE NICHOLS
Map Features
Potential Commuter Rail Station
Public Buildings
Schools
Established Trail
Trail Network
Parks
School Boundaries
1/4 mile Walking Buffer
1/2 mile Walking Buffer
1-Percent Flood Risk Zones (FEMA)
Potential Commuter Rail Station
McGratton Park
Parker County Courthouse Area
City Hall
Cherry Park
Vine Street Park
Love Street Park
Weatherford Public Library
Soldier Springs Park
Weatherford College
Weatherford Regional Medical Center
Heritage Tract
Holland Lake Park
Town Creek Hike & Bike Trail
UP RR
80
20
171

Figure 6.6

Bike/Pedestrian Integration

The Pedestrian Pathways plan has been expanded to include new areas of anticipated development located in the east and southern sectors of the city. The plan was also expanded to ensure that parks, schools, institutional facilities, key commercial areas, and future new residential areas were served. While the Bike/Pedestrian Network is limited to key facilities, it is anticipated that as the development process continues, connections to the primary pathways are facilitated. While general alignments are identified, specific area considerations should be incorporated as part of the implementation process.

The bike/pedestrian system may take the form of multi-purpose pathways or simply be a segmented series of sidewalks. Further, bike facilities may be off-street as part of multi-purpose pathways or trails or, they may be situated on-street due to specific area considerations or limited rights-of-way.

The ideal bike/pedestrian system would consist of widths of 6-8', or even 10'. System improvements may be situated on one or both sides. Segments with facilities situated on one side should be carefully planned to cross street connections, as necessary.

The Town Creek Hike & Bike Trail, serves as an exceptional example for connecting community amenities. Where possible, neighborhood connections to the trail and/or any other pathway corridor identified on the plan), should be facilitated. The planned extension to the Mineral Wells State Trailway trailhead will offer expanded opportunity for area connectivity. Figure 6.7 illustrates the Bike/Pedestrian Network for Weatherford.

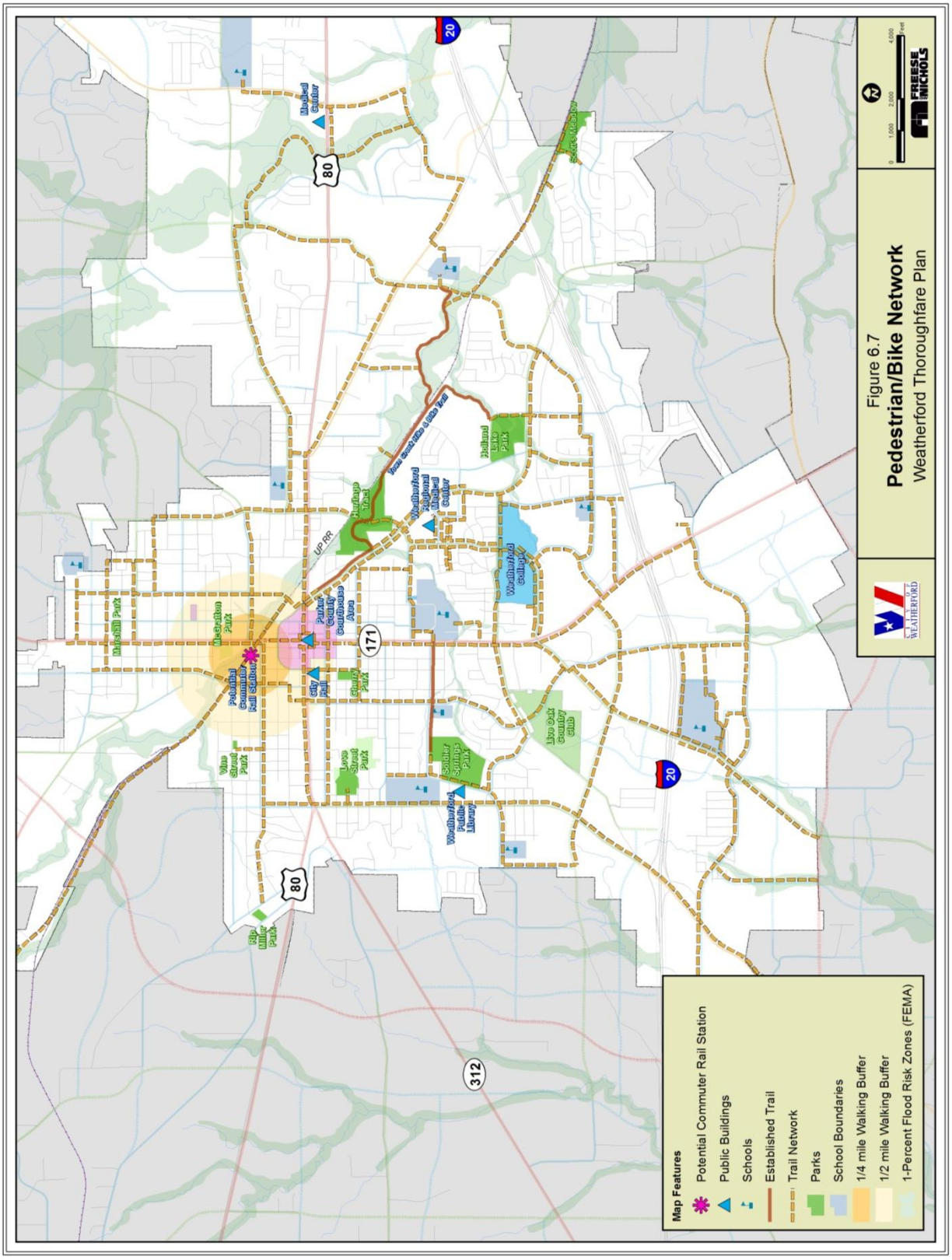
General Aviation Airport

The Weatherford Region Thoroughfare Plan (Figure 6.2) illustrates the location of a possible general aviation (GA)airport at the intersection of Old Brock and Dennis Road in the southwestern sector of the city. Several key considerations point to this site as opportune and include;

- Adjacent to (future) major mobility corridor,
- Close proximity to IH 20 and other direct linkages to the city,
- Approach/departure routes not over the city,
- General land availability for supporting and ancillary airport uses,
- Generally conducive area physical factors.

NCTCOG identified an need for a future general aviation airport to the west of the Metroplex. To determine the viability of this site, the City should conduct an initial high level assessment with respect to physical and environmental factors to determine if any fatal flaws exist. A community survey should also be conducted to gauge feedback on public support, economic and physical impacts of a GA airport.

Figure 6.7 Pedestrian/Bike Network



Subject to litmus of these first items, the following steps need to be undertaken in order to build an airport;

1. **Secure an airport sponsor.** To be eligible for public funding, every airport that is proposed to be part of Texas public airport system must be sponsored by a grant-eligible public agency. Ultimately, a proposed airport must be publicly owned and must be available for public use to be eligible for federal and state funding.
2. **Feasibility Study.** A proposed airport must be included in the Texas Aviation System Plan (TASP) to be eligible for state funding and in the National Plan of Integrated Airport Systems (NPIAS) to be eligible for federal funding. Prior to entry into the TASP and/or the NPIAS, a feasibility study must be completed by the sponsor.
3. **TASP and NPIAS.** Entry into the Texas Aviation System Plan (TASP) and corresponding eligibility to receive state funds. Entry into the FAA National Plan of Integrated Airport Systems (NPIAS) is approved by the FAA ASW Fort Worth District Office.
4. **Airport Site Selection and Preliminary Planning**. A key federal and state requirement is a site selection study that not only evaluates the aeronautical suitability of the site, but also examines impacts of the proposed facility on the social and natural environments.
5. **Facility Planning**. The airport sponsor must develop an airport master plan and an airport layout plan to detail near-term and long-range facility needs, justification, cost estimates and construction schedules.
6. **Local Government Planning.** Prior to proceeding with airport development, the airport sponsor must have the airport master plan incorporated into the local government comprehensive plan.
7. **Environmental Impact Analysis.** The environmental analysis will result in any environmental impact statement that will specify the acceptability of the proposed projects and any required environmental mitigations.
8. **Airport Construction.** Construction of airport development projects described in the airport master plan and layout plan are accomplished according to the airport master plan schedule, but within the funding constraints of the sponsor, state and federal budgets.


Chattanooga General Aviation Airport

As a potential airport could be located in at other sites within or adjacent to Weatherford, the City should proactively work with other affected agencies to position the best possible scenario for the city.

Special Area Planning

Five areas were identified for a closer assessment of local access and circulation and included:

- Downtown/Courthouse Square area
- Medical Center area
- Weatherford College area
- Weatherford High School area
- Eastern Weatherford Loop Terminus area

Other items examined include context sensitive corridors, access and corridor management

standards, traffic operations and parking criteria, thoroughfare design considerations and, plan administration.

Downtown/Courthouse Square

An area roughly encompassing three blocks surrounding the County Courthouse was evaluated for motorist and pedestrian access and circulation.

Existing Conditions, Issues and Opportunities

The existing four quadrants of the Downtown Square surrounding the County Courthouse traffic circle have been established with approximately 60 parking spaces each and clockwise circulation feeding to and from the counter-clockwise courthouse traffic circle operations, with an exit to the backing local streets. The "L" segments in each of the four quadrants are walkable and can be accessed from the Square corners to adjacent area parking. The four quadrants are separated from each other by the heavily traveled legs of US 180 and Main Street. Pedestrian crossings of US 180 and Main Street are channelized and marked, but are uncontrolled. Sidewalks are not provided between the surrounding residential development and the Downtown Square.

Recommended Enhancements:

Several opportunities for enhancement of the downtown area are envisioned:

- Enlarge the area of influence of each of the four quadrants by enhancing the function and appearance of the streets one block in each direction behind the square
- Modify the character of the local and collector street network immediately surrounding the Downtown Square to focus the energy of the Downtown to the existing commercial areas and protecting the existing surrounding residential areas.
- Enhance the street network on the northeast of the Downtown square area to better accommodate the emerging travel patterns.
- Provide sidewalks and enhance streets to accommodate walking and bicycling between surrounding neighborhoods and the Downtown Square.

Staging of Downtown square Enhancements:

- Stage 1 – Extend the development potential of the Downtown Square by enhancing the backing local streets (Houston and Church on the southwest, Dallas and York on the northwest, Austin and Trinity on the northeast, and Church and College on the southeast) for a distance of one block:
  - Create one-way counterclockwise circulation
  - Maintain one travel lane, minimum 12 feet in width
  - Increase parking by changing parallel to angled parking on one side
  - Allow traffic entry from the one-way local roadways to the quadrant parking lots

Figure 6.8 illustrates a prototypical circulation and parking layout for potential reconfigured streets adjacent to the Courthouse Square.

Figure 6.8 Potential Downtown Improvements

- Stage 2 - The recently widened Santa Fe Drive has been developed to draw some of the traffic out of the Downtown Square that would traverse between north Main Street to and from the east on US 180, and potentially further south on Santa Fe, possibly tying back to south Main Street. Several opportunities are possible to enhance circulation on the northeast quadrant of downtown to facilitate this movement.
  - Create a roundabout using the existing roadways of Santa Fe, Elm and Trinity, creating a one-way counterclockwise traffic flow on these three street segments.
  - Formalize a “mini” by-pass using Spring Street from US 180 to N. Main Street.
  - Create a roundabout using the existing roadways of Elm, Bridge, Austin and Spring creating a one-way counterclockwise traffic flow on these streets
  - Allow a left turn from westbound Santa Fe to southbound Elm and allow a left turn from eastbound Spring to northbound Elm/Santa Fe

- Stage 3 – Create a bypass of the Downtown Square for westbound US 180, remove or discontinue the westbound movement through central square:
    - Using the Stage 2 modification of Spring Street,
    - Using Bridge Street,
    - Returning on Alamo Street,.
    - Two lanes along the bypass route,
    - Create traffic diverters between bypass route and residential streets.
    - Provide sidewalks within one-half mile of Downtown core.

Medical Center Area

The access and circulation conditions in the area immediately surrounding the Medical Center were reviewed for accommodation of motorized and non-motorized travel.

Existing Conditions, Issues and Opportunities:

Santa Fe Drive (FM 2552), a 5-lane minor arterial roadway carrying approximately 14,000 vehicles per day between IH 20 and US 180, provides the primary access to the Medical Center area. A recently constructed minor arterial roadway, Jack Borden Way, intersects Santa Fe from just north of the site with Foster Lane, as the continuation of Jack Borden Way to Santa Fe Drive, providing north-south access along the western edge of the Medical Center area, with residential development to the west of Foster Lane.

The Medical Center area is bounded on the south, between Santa Fe Drive and Foster Lane, by residential development, with a north south connection between the neighborhood and Medical Center via a local street, Pecan Drive. No sidewalks are provided within the Medical Center area, or within the adjacent neighborhoods to the west or south, nor in the commercial development to the east of Santa Fe Drive. A trail extends along the east side of Jack Borden Way connecting to the north side of Santa Fe Drive.

Existing traffic signals are provided on Santa Fe Drive at Jack Borden/Foster at the northern edge of the Medical Center area and at Hilltop Drive, which forms a “T” intersection from the east, at the southeastern corner of the Medical Center area. A private driveway opens into the Santa Fe/Hilltop intersection and is not controlled by the traffic signal. This section of Santa Fe Drive, from south of Hilltop to north of Foster, has driveways at 200 to 300 foot spacing on either or both sides of the roadway that contribute to a relatively high potential for turning movement collisions. Anderson Street, which runs east-west between Foster Lane and Santa Fe Drive through the middle of the Medical Center area, is signed as the Emergency Access roadway to the hospital, but does not have a signalized intersection with Santa Fe Drive.

Recommended Enhancements:

Several opportunities for enhancement of the Medical Center area are envisioned:

- Extend Hilltop Drive westward beyond Santa Fe Drive, at least to Pecan Drive to give greater purpose and better functionality to the Santa Fe/Hilltop intersection. Consider extending Hilltop to Foster Lane, and renaming the existing Hilltop Drive west of Santa Fe Drive.

- To enhance the safety of Santa Fe Drive, conduct an analysis of implementing raised medians on Santa Fe between IH 20 and US 180.
- Provide an extension of the sidewalks along Jack Borden Way southward along both sides of Foster Lane through the residential area.
- Provide an extension of the sidewalks along Jack Borden Way along both sides of Santa Fe Drive from Jack Borden towards IH 20.

Weatherford College

Weatherford College is growing rapidly and has a master plan for growth that includes the construction of a parking structure to accommodate the increased student and campus activity.

Existing Conditions, Issues and Opportunities:

Park Lane provides access to Weatherford College from the east via Santa Fe Drive and from the west via Main Street. The street continuum of Jack Borden Way, Foster Lane, College Park Drive and Bethel Road provides access from the north and west, and forms an edge for the main part of the college campus along the south and east sides. Martin Drive extends southward from College Park Drive curving to a terminus at Main Street, connecting to the heart of the South Main Street commercial development and providing an alternative to Main Street to access the shops and restaurants along Main Street just north of IH 20. Another roadway, Texas Drive, extends from Park Lane near Santa Fe Drive to the IH 20 westbound service road and provides connection to the South Main Street commercial development, providing another alternative to Main Street in order to access the shops and restaurants along south Main Street just north of IH 20.

The intersection of Texas Drive at Park Lane has some traffic operational issues, due in part to a conference center and drive-in bank on the south side of that T-intersection, that have caused the city to implement traffic control measures to reduce the potential for collisions. The intersection of College Park Drive/Bethel Road at Main Street is a geometrically complex configuration. There are no sidewalks along the streets in the residential or in the commercial area surrounding the Weatherford College Campus that might encourage walking between campus and nearby residential, retail and restaurant destinations. There are some large undeveloped lots along College Park Drive and Martin Drive and college property along the west die of Texas Drive that could generate addition vehicular and pedestrian traffic for this area.

Recommended Enhancements:

Several opportunities for enhancement of the Weatherford College area are envisioned:

- Install sidewalks along College Park Drive, between Martin and Main Street, to encourage students to walk to Main Street during their time at the campus.
- Install sidewalks along Main Street to encourage pedestrian access along the corridor.
- Install sidewalks along Martin Street to encourage walking from nearby apartments and further pedestrian access to the restaurant and retail destinations along south Main Street.

- Install sidewalks along Foster Lane from Martin Drive to Santa Fe Drive to provide walking connections to the Medical Center area and to connect the college campus to the hike & bike trail system at Jack Borden Way.
- Realign the north end of Texas Drive to intersect directly with Santa Fe Drive and signalize the intersection. The remnant of the roadway between the bank and conference center would remain with a T-intersection at each end.
- As traffic increases near the campus, assess the need for signalized traffic control on College Park Drive at Martin Drive and at Park Lane.

Weatherford High School

With the ever growing community, the existing High School on Main Street was converted to a Freshman Center and a new Weatherford High School was opened in 2003 as a state of the art facility that serves over 1500 students.

Existing Conditions, Issues and Opportunities:

The high school is located along the IH 20 eastbound service road, at the southeast quadrant of the interchange with Bethel Road, relatively far from the center of residential development in Weatherford. Thus, a majority of the students are bused, driven, or drive to school. Students from northwest of the school that choose Bowie to IH 20 as an access way cause excessive queuing on the eastbound IH 20 exit ramp due to a lack of eastbound continuous service road and a lack of east-west local roadway infrastructure paralleling IH 20 west of Bethel Road.

Residential subdivisions are beginning to be constructed near the high school, both north and south of IH 20. Access to and from IH 20 to the high school is not direct, as the nearest interchanges with IH 20 are at Bowie to the west and at Main Street to the east. Recent reconstruction of IH 20 has resulted in some new ramping configurations, but has not been able to improve upon the access to the high school. Continuous service roads for IH 20 are planned between Bowie Road and Bethel Road. There are no sidewalks along the streets adjacent to or leading to the high school, except at the new

subdivision just west of the high school across Bethel Road north of B.B. Fielder, which are being constructed to the city's newer standards with internal sidewalks and sidewalks along collector and arterial roadways leading to nearby development.

Recommended Enhancements:

Several opportunities for enhancement of the Weatherford High School area are envisioned:

- Provide a back-access connection from the school to BB Fielder Road.
- Install a secondary connection at the east property line to connect BB Fielder with the IH 20 eastbound frontage road.
- An X-ramp configuration is proposed for the IH 20 access ramps between Bowie Road and Bethel Road, providing good freeway access for development access connections along the service roads.
- Provide U-turns at the IH 20 interchange with Bowie Road and at the service road connections with Bethel Road (planned project via the TxDOT Pass-Thru Tolling project).

- Provide continuous frontage roads along both sides of IH 20 between Bowie Road and Bethel Road.
- Install sidewalks along B.B. Fielder, Bethel Road, and Tin Top Road as well as the eastbound IH 20 service road to a walking distance of one mile from the high school that accesses or leads to residential development.
- Extend Tin Top Road beyond its current terminus at Bethel Road to connect to Lamar Street, providing sidewalk along Tin top and Lamar Street to a one mile walking distance to the high school.
- Extend B. B. Fielder to Bowie Street and beyond to provide an alternative to IH 20 to access the high school and to traverse east-west south of IH 20.
- Add circulating roadways in the southwest and northwest quadrants of the Bethel Road underpass of IH 20 to facilitate access to and from IH 20 to the east.

Eastern Weatherford/FM 730 Area

The future roadway network needs to respond to the proposed Weatherford Loop and how development will respond to the new mobility provisions. Where the proposed loop would connect with IH 20 near Center Point Road, a relatively large area of undeveloped land is expected to be a target for development. This area is bounded roughly by US 180, the Loop, IH 20, and Bankhead Road.

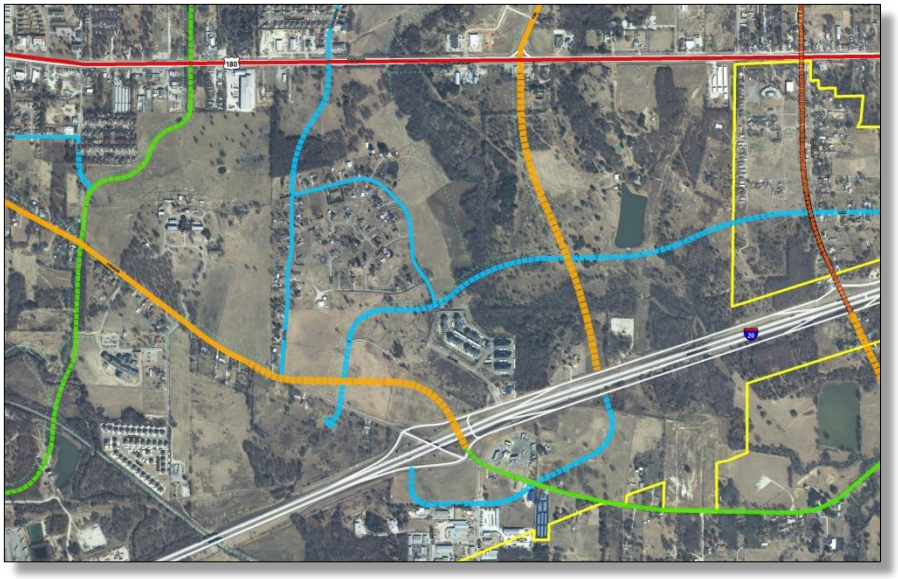
Existing Conditions, Issues and Opportunities:

No roadways currently traverse through this area within the stated boundaries. A significant amount of IH 20 frontage is starting to see piecework development and

numerous driveway access points to the IH 20 Service Road. Single point of entry developments scatters the frontage of Bankhead Road and US 180.

Recommended Enhancements:

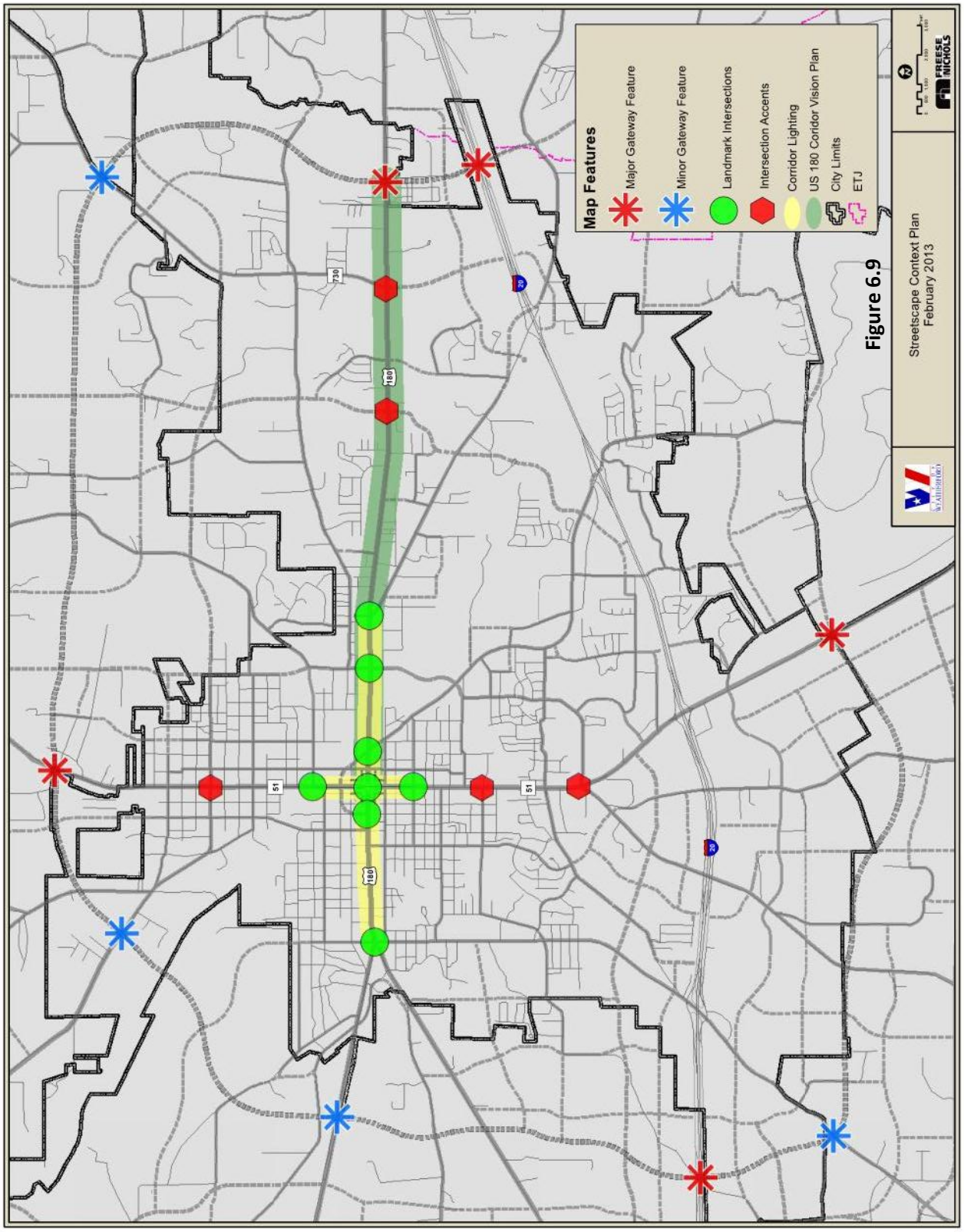
- Extend Willow Creek Avenue from FM 730 at US 180 southward as a major arterial to connect to the IH 20 westbound Service Road. Provide 4-lanes of travel from US 180 to a new east-west collector, then reduce to 3-lanes to the IH 20 frontage road.



- Provide an east-west collector roadway approximately 1000 feet north of the IH 20 westbound Service Road, extending between Bankhead Road, the Weatherford Loop, and connect with Dean Street. At Bankhead, provide a connection point for the undeveloped parcel south of Bankhead.
- Provide a north-south collector roadway between these Bankhead and US 180 an connect with Willow Creek Drive (residential area across US 180).
- Realign Bankhead at IH 20 to create a 90-degree crossing.
- Consider implementation of a traffic circle at Willow Creek Avenue and the new east-west collector street.
- Extend the bike/pedestrian trail system to provide linkage with this emerging area.

Context Corridors and Streetscaping

As described earlier, context sensitive design blends the needs of transportation and the community by incorporating environmental, scenic, aesthetic and historic value to projects through a collaborative design process. Streetscaping of key points and corridors within the city promotes identity as well as establishes welcoming features to the community. Figure 6.9 identifies key corridors and entry points for the establishment of contextual continuity and coordinated demarcation. Key corridors include US 180 and portions of Main Street approaching the Courthouse Square. Recommendations from the US 180 Corridor Vision Plan should be considered for the larger portion of the corridor. For specific portions of US 180 and Main Street, corridor lighting should be considered. Lighting could be continuous or at spot locations and use "historic themed" equipment. Key intersections for coordinated features and treatments are also identified. At landmark intersections, a greater amount of treatments and are envisioned whereas at minor locations, simple thematic elements are implemented to tie the corridor together. Similar levels of treatments are envisioned for major/minor gateways and the associated scale of treatments.


Map Features
Major Gateway Feature
Minor Gateway Feature
Landmark Intersections
Intersection Accents
Corridor Lighting
US 180 Coridor Vision Plan
City Limits
ETJ
Figure 6.9
Streetscape Context Plan
February 2013
730
180
51
51
180

Access and Corridor Management Standards

Section 6 of the city's Traffic Engineering Design Standards and Policy Guidelines contains standards and guidelines for access control and access design for driveways for property adjoining public roadway rights-of way. Essentially, the type, number and location of access points on City streets shall be approved by the City Engineer, with the driveway impacts to public streets and in particular arterials streets to be kept to a minimum and quality of roadway operations given preference over quality of property access when in conflict. Design criteria are established for width of driveways, spacing of driveways and clearance from intersections, for both residential and commercial development, on local, collector and arterial streets. One access point per property shall be permitted, with additional driveways allowed upon demonstration of need. The use of joint use (shared) driveways is encouraged for divided roadways so that one driveway on each side would line up with the median opening.

Several enhancements to the Access Control standards could be considered:

- The use of shared driveways should be considered as a standard when any more than one driveway is requested;
- Cross access between adjacent properties should be a stated standard for development, with justification required for not providing cross access.
- Shared parking provisions for reduction in parking requirements should be established as a benefit to providing cross access between parcels and shared driveways;

Traffic Operations and Parking Criteria

It was noted that the appendix materials in the Traffic Engineering Design Standards and Policy Guidelines need to be updated. The Level of Service (LOS) criteria reference the 1985 Highway Capacity Manual and should be updated to be consistent with the recent 2012 Update. The speed degradation definitions and the stopped delay definitions for LOS may need to be updated. The trip generation rates reference the 1982 values and should be updated or removed in favor of a reference to the ITE Trip Generation Manual most recent edition published in 2012. The standards, at the end of paragraph 6-34, should also make reference to the ITE Parking Generation Manual, which is currently in its 4th edition published in 2012.

Thoroughfare Design Considerations

Planning, design and construction of thoroughfares must comply with the development standards that are contained in the City's Subdivision Ordinance. Requirements for thoroughfare development should include standards and criteria governing the following characteristics of thoroughfares:

Location and Alignment of Thoroughfares – The general location and alignment of thoroughfares must be in conformance with the Master Thoroughfare Plan. Subdivision plats should provide for dedication of needed right-of-way for thoroughfares within or bordering the subdivision.

Any major changes in thoroughfare alignment that are not consistent with the plan require the approval of the Transportation Advisory Board and/or Planning and Zoning Commission and City

Council through a public hearing process. A major change would include any proposal that involves the addition or deletion of established thoroughfare designations, or changes in the planned general alignment of thoroughfares that would affect parcels of land beyond the specific tract in question.

Rights-of-Way and Pavement Width – The pavement width and rights-of-way width for thoroughfares and other public streets should conform to the standards, as specified earlier, unless a variance is granted. Plats that include or are bordered by an existing thoroughfare with insufficient rights-of-way width should be required to dedicate land to compensate for any rights-of-way deficiency of that thoroughfare. When a new thoroughfare extension is proposed to connect with an existing thoroughfare that has narrower rights-of-way, a transitional area should be provided.

Continuation and Projection of Streets – Existing streets in adjacent areas should be continued and when an adjacent area is undeveloped, the street layout should provide for future projection and continuation of streets into the undeveloped area. Where adjacent land is undeveloped, stubbed streets should include temporary turnarounds to accommodate fire apparatus.

Location of Street Intersections – New intersections of subdivision streets with existing thoroughfares within or bordering the subdivision should be planned to align with existing intersections, where feasible, to avoid the creation of offset or "jogged" intersections and to provide for continuity of existing streets, especially collectors and higher classes of thoroughfares.

Off-Set Intersections – Offset or "jogged" street intersections should have a minimum separation of 125 feet between the centerlines of the intersecting streets.

Angle of Intersections – The angle of intersection for street intersections should be as nearly at a right angle as possible. Corner cutbacks or curb radii should be required at the acute corner of the right-of-way line, to provide adequate sight distance at intersections.

Cul-De-Sac – Cul-de-sac streets should have a maximum length of no more than 600 feet measured from the connecting street centerline to centerline of radius point, with a paved turnaround pad of at least 80 feet in diameter and a right-of-way diameter of at least 100 feet in residential areas, and at least a 180 feet of pavement within a diameter of 200 feet of right-of-way diameter in commercial and industrial areas.

Residential Lots Fronting on Arterials – Wherever feasible, subdivision layout should avoid the creation of residential lots fronting on arterials, with direct driveway access to the arterial street. Lots should be accessed from collector or local/residential streets within or bordering the subdivision or an auxiliary street designed to accommodate driveway traffic.

Geometric Design Standards and Guidelines – Other requirements and guidelines for the geometric design of thoroughfares and public streets are provided in Subdivision Ordinance.

Private Streets – The Planning and Zoning Commission should not approve a plat containing private streets unless the proposal to utilize private streets has been previously approved by the City Council and adequate assurances are provided for maintenance. Private streets should be designed and constructed in conformance with City Standards. The same shall apply for gated communities, if approved. Gates for such communities shall allow for emergency access, without restriction, to authorized emergency vehicles and apparatus.

Sidewalks - Within the boundaries of a subdivision, sidewalks should be installed on both sides of arterial, collector and local/residential streets.

Plan Administration

In the administration and enforcement of the Thoroughfare 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 rights-of-way 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. Special roadway cross-sections should be determines on a case-by-case basis when a unique design is necessary and subject to the approval of City Staff, the Transportation Advisory Board 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.

Plan Amendment Process

It will be necessary to periodically consider and adopt amendments to the Thoroughfare Plan to reflect changing conditions and new needs for thoroughfare system improvements and development. A systematic procedure should be followed for making plan amendments, including a schedule for considering changes.

Typically, plan amendment requests may originate from landowners, civic groups, neighborhood associations, developers, other governmental agencies, city staff and other interested parties. Proposed revisions should be analyzed by the, City Public Works Director or Traffic Engineer, and other City Staff, and the proposed changes and staff recommendations should then be considered by the Transportation Advisory Board and/or the Planning and Zoning Commission. A public hearing on proposed plan amendments, including advanced notice of such hearing, to obtain input to proposed amendments is undertaken. The burden for proving compelling reasons for and public benefit of any proposed changes should rest with the requesting parties. Decisions and determinations should represent the best interests of the public.

Subject to Transportation Advisory Board or Planning and Zoning Commission recommendation, the revised Thoroughfare Plan, including any approved recommended plan amendments, should be submitted and considered by the City Council for adoption. The amended plan becomes effective upon adoption by the City Council.

Capital Improvement Programming

The capital improvements plan (CIP) is a multi-year flexible plan outlining key projects for implementation. Projects identified are aimed at facilitation key accessibility items within the community as well as, promoting economic benefit to the community. For the most part, the projects identified are not rehabilitation type projects, but rather new initiatives to create or promote access/circulation improvement needs.

The goal of CIP development is to outline infrastructure improvement needs in order to assist in the planning and budgeting process. Figure 6.10 graphically illustrates the projects included in the transportation CIP.

This CIP includes a summary list of improvements, its associated functional street classification, project limits, project length, project time frame, an estimated cost (2013), and an escalated cost to account for price increase over a short or long-term time frame. Short-term projects are those which are considered to occur within 10-years and long-term, those considered to occur in greater than 10-years. For escalation of costs, all projects contain a 5-year escalation factor as it is uncertain as to the true timing of project implementation. Some projects may be initiated in the initial portion of the program versus others which may occur in the latter half of the 10-year time frame. Table 6.3 and 6.4provides a listing of projects along with the associated detail cited above. It is important to note, that the project listing is not a prioritization. The Appendix contains individual project summary sheets and associated cost estimate worksheets and.

Figure 6.10– Transportation Plan Capital Improvements Program

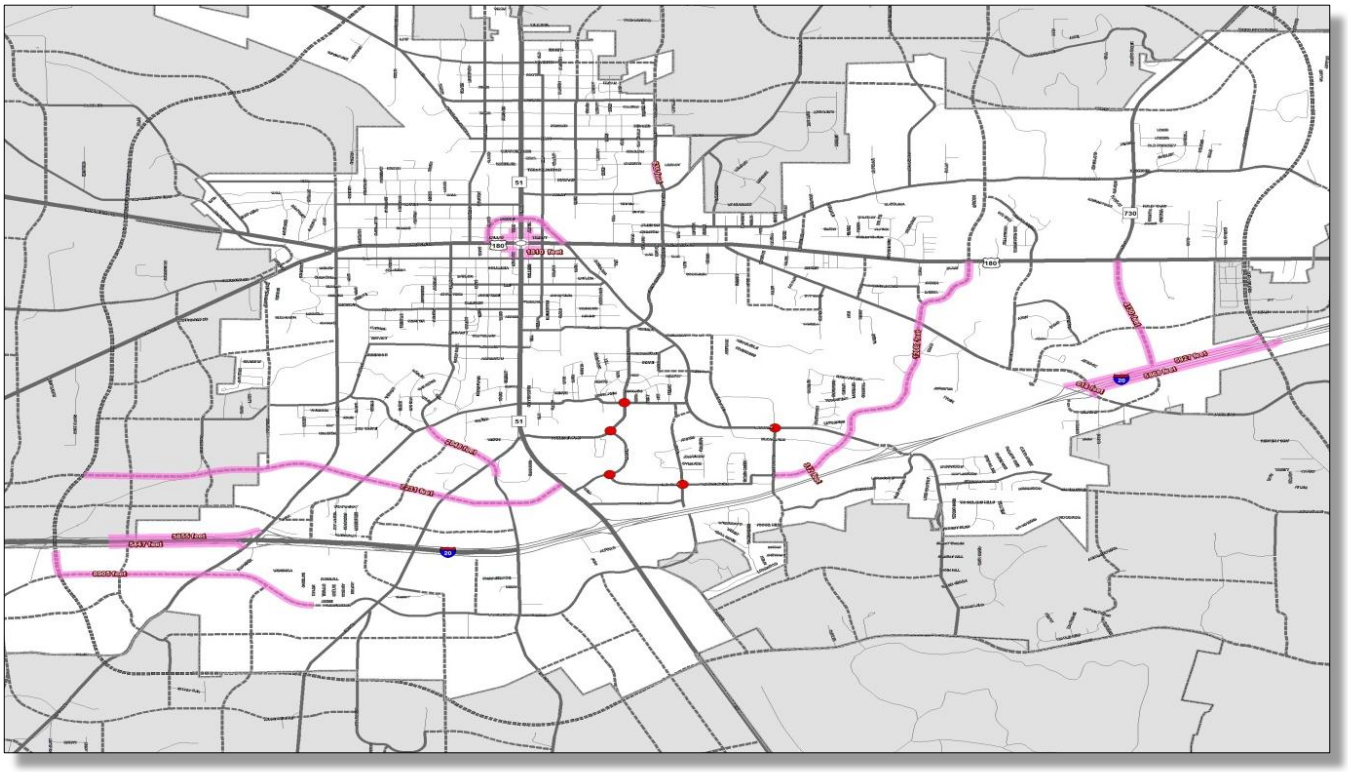


Table 6.3
CITY OF WEATHERFORD
CAPITAL IMPROVEMENT PROGRAM (2013 - 2023)
SUMMARY OF PROJECT COST

PROJECT NO.	ROADWAY	CLASSIFICATION	FROM	TO	PROJECT LENGTH	PROJECT TIMING	(Based on 2013) PROJECT COST	4.5% *ESCALATION
1	Willow Creek Ave	Type "A" Major Arterial	US 180	I-20	4320	Short-term	10,444,000	13,020,000
2a	EB Frontage I-20	Frontage Road	Centerpoint Dr	Bankhead Hwy	5100	Short-term	9,264,800	11,550,000
2b	WB Frontage I-20	Frontage Road Part 1	Centerpoint Dr	Part 2	2500	Short-term	6,967,600	8,690,000
2c	WB Frontage I-20	Frontage Road Part 2	Part 1	Bankhead Hwy	3000	Short-term	7,504,400	9,360,000
3	Washington - Phase I	Type "C" Major Collector	Holland Lake	Santa Fe Dr.	3100	Short-term	2,743,000	3,420,000
4	Washington - Phase II	Type "B" Minor Arterial	US180	Santa Fe Dr.	8420	Short-term	12,668,000	15,790,000
5a	W. Martin - Phase I	Type "B" Minor Arterial	Main St	S. Bowie Dr	7200	Long-term	8,195,000	15,860,000
5b	W. Martin - Phase II	Type "B" Minor Arterial	S. Bowie Dr	RWMH	6800	Long-term	6,300,000	12,200,000
6	Tin Top	Type "C" Major Collector	Bethel Rd	S. Lamar Street	2800	Short-term	2,934,000	3,660,000
7a	B.B. Fielder	Type "C" Major Collector	End	Western Loop	7800	Short-term	6,650,000	8,290,000
7b	Western Loop Extension	Type "A" Major Arterial	B.B. Fielder	Existing RWMH	1000	Short-term	1,070,000	1,340,000
8a	EB Frontage I-20	Frontage Road	S. Bowie Dr	RWMH	4100	Long-term	3,960,000	7,670,000
8b	WB Frontage I-20	Frontage Road	S. Bowie Dr	Western Loop	3900	Long-term	3,740,000	7,240,000
9a	Downtown Square - Phase I	Downtown Square St. Reconfiguaration	NA	NA	2250	Short-term	1,990,000	2,480,000
9b	Downtown Square - Phase II	Spring Street/ Sante Street Connection	US 180	Main Street	1700	Short-term	3,290,000	4,100,000
9c	Downtown Square - Phase III	Bridge Street/Alamo Street Connection	Main St	PaloPinto	1700	Short-term	4,150,000	5,180,000
9d	Downtown Square - Phase IV	Downtown Parking	Main St	PaloPinto	1000	Short-term	730,000	910,000
10	Tremont Street	Type "B" Minor Arterial	Narrow St	Existing Tremont	650	Short-term	630,000	790,000
I-1	Intersection	N/A	E. Park Ave	Forest	N/A	Short-term	550,000	690,000
I-2	Intersection	N/A	College Park	Martin	N/A	Short-term	550,000	690,000
I-3	Intersection	N/A	Martin	Red Oak	N/A	Short-term	550,000	690,000
I-4	Intersection	N/A	Red Oak	Texas	N/A	Short-term	550,000	690,000
I-5	Intersection	N/A	Holland Lake	Santa Fe	N/A	Short-term	550,000	690,000
						TOTAL CIP IMPROVEMENTS:	96,000,000	135,000,000

*Escalation is based on 1/2 half the project timing. For example on the 10 year CIP the escalation is estimated at 5 years

Table 6.4

City of Weatherford
CAPITAL IMPROVEMENT PROGRAM (2013 - 2023)
PROJECT COST BREAKDOWN (Based on 2013 Cost)

PROJECT NO.	ROADWAY	CONSTRUCTION	ROW	ENGINEERING	SURVEY	GEOTECH	INSPECTION	ADMIN/LEGAL	TESTING	TOTAL
1	Willow Creek Ave	$ 8,265,000	$ 772,800	$ 661,200	$ 82,700	$ 41,400	$ 495,900	$ 41,400	$ 82,700	$ 10,444,000
2a	EB Frontage I-20	$ 7,340,000	$ 310,000	$ 587,200	$ 73,400	$ 73,400	$ 734,000	$ 73,400	$ 73,400	$ 9,264,800
2b	WB Frontage I-20 Part 1	$ 5,580,000	$ 160,000	$ 446,400	$ 55,800	$ 55,800	$ 558,000	$ 55,800	$ 55,800	$ 6,967,600
2c	WB Frontage I-20 Part 2	$ 6,020,000	$ 160,000	$ 481,600	$ 60,200	$ 60,200	$ 602,000	$ 60,200	$ 60,200	$ 7,504,400
3	Washington - Phase I	$ 2,096,000	$ 290,400	$ 167,700	$ 21,000	$ 10,500	$ 125,800	$ 10,500	$ 21,000	$ 2,743,000
4	Washington - Phase II	$ 9,731,000	$ 1,281,680	$ 778,500	$ 97,400	$ 48,700	$ 583,900	$ 48,700	$ 97,400	$ 12,668,000
5a	W. Martin - Phase I	$ 5,924,000	$ 1,233,200	$ 474,000	$ 88,900	$ 29,700	$ 355,500	$ 29,700	$ 59,300	$ 8,195,000
5b	W. Martin - Phase II	$ 4,724,000	$ 739,200	$ 378,000	$ 70,900	$ 23,700	$ 283,500	$ 23,700	$ 47,300	$ 6,300,000
6	Tin Top	$ 2,000,000	$ 563,200	$ 160,000	$ 40,000	$ 10,000	$ 120,000	$ 20,000	$ 20,000	$ 2,934,000
7a	B.B. Fielder	$ 4,778,000	$ 978,800	$ 382,300	$ 95,600	$ 23,900	$ 286,700	$ 47,800	$ 47,800	$ 6,650,000
7b	Western Loop Extension	$ 798,000	$ 124,000	$ 63,900	$ 16,000	$ 4,000	$ 47,900	$ 8,000	$ 8,000	$ 1,070,000
8a	EB Frontage I-20	$ 3,240,000	$ -	$ 259,200	$ 48,600	$ 16,200	$ 324,000	$ 32,400	$ 32,400	$ 3,960,000
8b	WB Frontage I-20	$ 3,060,000	$ -	$ 244,800	$ 45,900	$ 15,300	$ 306,000	$ 30,600	$ 30,600	$ 3,740,000
9a	Downtown Square - Phase I	$ 1,672,000	$ -	$ 133,800	$ 33,500	$ 8,400	$ 100,400	$ 16,800	$ 16,800	$ 1,990,000
9b	Downtown Square - Phase I	$ 1,753,000	$ 1,173,000	$ 175,300	$ 35,100	$ 8,800	$ 105,200	$ 17,600	$ 17,600	$ 3,290,000
9c	Downtown Square - Phase I	$ 1,860,000	$ 1,905,000	$ 186,000	$ 37,200	$ 9,300	$ 111,600	$ 18,600	$ 18,600	$ 4,150,000
9d	Downtown Square - Phase I	$ 615,000	$ -	$ 49,200	$ 12,300	$ 3,100	$ 36,900	$ 6,200	$ 6,200	$ 730,000
10	Tremont Street	$ 471,000	$ 63,000	$ 37,700	$ 9,500	$ 4,800	$ 28,300	$ 4,800	$ 4,800	$ 630,000
I-1	Intersection	$ 500,000	$ -	$ 37,500	$ 4,000	$ -	$ 6,000	$ 1,500	$ 1,000	$ 550,000
I-2	Intersection	$ 500,000	$ -	$ 37,500	$ 4,000	$ -	$ 6,000	$ 1,500	$ 1,000	$ 550,000
I-3	Intersection	$ 500,000	$ -	$ 37,500	$ 4,000	$ -	$ 6,000	$ 1,500	$ 1,000	$ 550,000
I-4	Intersection	$ 500,000	$ -	$ 37,500	$ 4,000	$ -	$ 6,000	$ 1,500	$ 1,000	$ 550,000
I-5	Intersection	$ 500,000	$ -	$ 37,500	$ 4,000	$ -	$ 6,000	$ 1,500	$ 1,000	$ 550,000
	Totals:	**$ 72,430,000**	**$ 9,760,000**	**$ 5,860,000**	**$ 950,000**	**$ 450,000**	**$ 5,240,000**	**$ 560,000**	**$ 710,000**	**$ 96,000,000**

Chapter 7: Economic Benefit Analysis

An economic benefit analysis was performed on the Capital Improvements projects identified in the Thoroughfare Plan to determine overall community benefit as well as which projects were financially sustainable. This analysis focused on increased tax revenue gained by the change in land values due to development spurred by constructing the respective thoroughfares. By estimating the future value of developed properties, tax revenue for the properties could be calculated using the city's tax rate. A 10-year and 20-year sum of tax revenue was then compared to the capital cost of each project, thereby determining the financial sustainability of each project. Table 7.1 shows the list of included CIP projects analyzed, while the following figure locates the projects on a map of Weatherford.

Table 7.1 CIP Project List

CIP Project Number	Project Name/Location
1	**Willow Creek Avenue**
2	**IH-20 Frontage Roads (East)**
3	**Washington Drive Extension (Ph. I)**
	Santa Fe Dr. to Bankhead Hwy.
	Bankhead Hwy. to US 180
4	**Washington Drive Extension (Ph. II)**
5	**W. Martin Street**
	FM 51 (Main St.) to Bethel Rd.
	Bethel Rd. to Bowie Dr.
	Bowie Dr. to Ric Williamson Mem. Hwy.
6	**Tin Top Road Extension**
7	**BB Fielder Road Extension**
	Existing to Old Dennis Rd.
	Old Dennis Rd. to Ric Williamson Mem. Hwy.
8	**IH-20 Frontage Roads (West)**
9	**Downtown Improvements – Ph. I**
10	**Tremont Street**

Figure 7.1: CIP Project Locations

Data Collection

For each CIP project, the properties affected by the new roadway were identified. These are the properties that will be developed and, therefore, increase tax revenue. To estimate the future value of the properties, clusters of other properties around the city were identified as being comparable to the future growth. Each of these properties was connected to the Parker County Appraisal District's land and improvements values as well as the lot acreage. The comparison of the current property value to the comparable site's current value gave an estimate of the developed value of the properties surrounding each CIP roadway.

Locating Future Development Properties

A 1000-foot buffer on either side of the roadway constrained the properties influenced by the roadway construction and future development. Any property that was partially located within the buffer was handled one of two ways. If the property could be split and have a reasonably sized parcel outside the buffer, a percentage of the property was contributed to the developable area of the thoroughfare. Otherwise, the entire property was assumed to develop when the thoroughfare is built.

In many of the project locations, floodplains bisect the roadway and affect the properties that can develop. All projects located within a floodplain were excluded from those with the potential to develop in the future. In addition to these properties being excluded, new developments that exist within the buffer zone are not considered in the calculations of future tax revenue. These properties, such as new apartment complexes or residential neighborhoods, were assumed to remain unchanged by the construction of a roadway and therefore contribute no net increase in tax revenue for the city.

Many properties that are considered to have development potential are large tracts of agricultural land with acreages from 20 to 50 acres. When these properties develop, the entire property will not be able to develop as taxable land. Some of the land will be dedicated to an internal accessibility road network and some will be open space. It was assumed that 40% of the land will go toward these uses, so 60% will contribute to the sum of taxable land that will develop. The reduced acreage will be known as the effective acreage and result in a conservative estimate for the increase in value.

Locating Future Development Comparables

Using the Future Land Use Map and insight from City Staff about potential future development of land around the planned thoroughfares, comparable sections of properties were located. These clusters of properties varied by location throughout the city and were not necessarily adjacent to the proposed roadway. Each CIP project could also have more than one comparable site. For instance, the BB Fielder Extension from Old Dennis Road to Ric Williamson Memorial Highway was split so that the properties north of the proposed road were compared to the commercial development at the intersection of Interstate 20 and Main Street, while the properties to the south were compared to the residential neighborhood on BB Fielder Drive west of Bethel Road.

The Downtown Improvements project will be used as an example for identifying parcel groups. Figure 7.2 shows the parcel groups chosen for this project. In red are the two zones that are expected to experience development activity with the improvements to the road network. In yellow are the property types and values expected to develop in the red areas. For development at Dallas/York on the left, the entire area is expected to develop. For property east of Trinity/Austin, only half is anticipated develop giving it a 50% reduction for the effective acreage of development.

Figure 7.2: Downtown Phase I Proposed and Comparable

Analysis

Once the properties adjacent to the proposed roadway and their comparable sites were found, appraisal district GIS data of property values was used to finish the analysis. The sum of the land value and improvement value was used to assess the total taxable value of the property. For some parcels in undeveloped areas, the property was appreciated by a production market value with an agricultural loss. These properties were valued by the total assessed value which gives the taxable value of the land. This method gave an accurate representation of the tax revenue the city could receive. In addition to the tax assessment value, the size of the parcel was also used.

Values used to calculate the price per acre were based on groups of properties adjacent to the roadway. The groups adjacent to the proposed road will give a current price per acre, while the comparable sites will give the developed price per acre. Summations for the total assessed value and total acreage for each site location was found using the information from the Parker County Appraisal District. For the potential development properties, a summation of the total effective acreage was also found. The effective acreage accounts for losses in potential tax growth revenue due to internal roadways or open space, as discussed previously. Each division of future development properties, such as the north side and the south side of a project, was summed independently so that a more accurate value could be used for comparable sites. By dividing the total assessed value by the total number of acres, a price per acre was found for each group of properties.

Current and Future Value

Using the price per acre for the proposed development parcels and the comparable parcels, a current value and future value was then calculated. The current value was calculated by multiplying the proposed development group's price per acre by the effective acreage. The same was done to find the future value, except for replacing the proposed development group with the comparable group. The following equations show how these values are calculated.

$$CV = PPA_{PD} * A_e$$
$$FV = PPA_{CD} * A_e$$

$CV =$ Current Value
$FV =$ Future Value
$PPA_{PD} =$ Proposed Development Price per Acre
$PPA_{CD} =$ Comparable Development Price per Acre
$A_e =$ Effective Acreage

Tax Revenue

The current and future tax revenue for each project area was calculated by using the Parker County Appraisal District's total tax rate of $2.50095 per $100 and the current and future values found previously. This rate reflects the current tax rate for properties located within the Weatherford city limits. It was assumed that this rate covers all properties in the study area and for analysis purposes would remain constant in the future.

Various assumptions must be made to calculate the 10-year and 20-year net tax revenue increase. Since development does not occur instantly, it was assumed that straight-line growth will take place over ten years from the current value to the future value of the properties. From the ten-year mark and onward, the property values were assumed to remain stable at the estimated future value. A 3% inflation rate was assumed on the tax revenue in the future years in order to bring all values back to present dollars, 2013. The current value of existing properties was also assumed to increase at a rate of 3% per year, which accounts for appreciating land values and potential growth if the proposed roadway were not built. The 10-year and 20-year tax revenue totals represent a net increase in revenue when using the current conditions as

a baseline. The capital costs of the projects were also presented in 2013 dollars, so a benefit to cost ratio could be determined for each project at the 10-year mark and the 20-year mark.

Results

Table 7.2 shows the current and future taxable value of the land affected by the construction of each roadway, Table 7.3 shows the current and future tax revenue from the properties, and Table 7.4 shows the capital cost, 10-year and 20-year tax revenue, and benefit to cost ratio. These numbers are estimates of future values and have been rounded.

Table 7.2 CIP Project Current and Future Value of Properties

CIP Project Name/Location	Current Taxable Value	Future Taxable Value	Estimated Change in Land Value
Willow Creek Avenue	**$ 1,310,000**	**$ 30,100,000**	**$ 28,790,000**
IH-20 Frontage Road (East)	**$ 5,680,000**	**$ 48,740,000**	**$ 43,060,000**
Washington Drive Extension (Ph. I)	**$ 9,270,000**	**$ 50,730,000**	**$ 41,460,000**
Santa Fe Dr. to Bankhead Hwy	$ 5,440,000	$ 39,130,000	$ 33,690,000
Bankhead Hwy to US180	$ 3,830,000	$ 11,600,000	$ 7,770,000
Washington Drive Extension (Ph. II)	**$ 1,360,000**	**$ 18,430,000**	**$ 17,070,000**
W. Martin Street	**$ 7,150,000**	**$ 88,440,000**	**$ 81,290,000**
FM 51 (Main St) to Bethel Rd	$ 5,310,000	$ 25,630,000	$ 20,320,000
Bethel Rd to Bowie Dr.	$ 940,000	$ 44,390,000	$ 43,450,000
Bowie Dr. to RWMH	$ 900,000	$ 18,420,000	$ 17,520,000
Tin Top Road Extension	**$ 940,000**	**$ 12,620,000**	**$ 11,680,000**
BB Fielder Road Extension	**$ 3,300,000**	**$ 73,530,000**	**$ 70,230,000**
Existing to Old Dennis Rd	$ 1,140,000	$ 31,410,000	$ 30,270,000
Old Dennis Rd to RWMH	$ 2,160,000	$ 42,120,000	$ 39,960,000
IH-20 Frontage Road (West)	**$ 5,090,000**	**$ 39,850,000**	**$ 34,760,000**
Downtown Improvements - Ph. I	**$ 1,610,000**	**$ 11,440,000**	**$ 9,830,000**
Tremont Street	**$ 480,000**	**$ 23,280,000**	**$ 22,800,000**
TOTAL	**$ 36,190,000**	**$ 397,160,000**	**$ 360,970,000**

Table 7.3 CIP Project Tax Revenues from Properties

CIP Project Name/Location	Current Tax Revenue	Future Tax Revenue	Estimated Change in Tax Revenue
Willow Creek Avenue	**$ 33,000**	**$ 750,000**	**$ 717,000**
IH-20 Frontage Road (East)	**$ 142,000**	**$ 1,220,000**	**$ 1,078,000**
Washington Drive Extension (Ph. I)	**$ 232,000**	**$ 1,270,000**	**$ 1,038,000**
Santa Fe Dr. to Bankhead Hwy	$ 136,000	$ 980,000	$ 844,000
Bankhead Hwy to US180	$ 96,000	$ 290,000	$ 194,000
Washington Drive Extension (Ph. II)	**$ 34,000**	**$ 460,000**	**$ 426,000**
W. Martin Street	**$ 179,000**	**$ 2,210,000**	**$ 2,031,000**
FM 51 (Main St) to Bethel Rd	$ 133,000	$ 640,000	$ 507,000
Bethel Rd to Bowie Dr.	$ 24,000	$ 1,110,000	$ 1,086,000
Bowie Dr. to RWMH	$ 22,000	$ 460,000	$ 438,000
Tin Top Road Extension	**$ 24,000**	**$ 320,000**	**$ 296,000**
BB Fielder Road Extension	**$ 83,000**	**$ 1,840,000**	**$ 1,757,000**
Existing to Old Dennis Rd	$ 29,000	$ 790,000	$ 761,000
Old Dennis Rd to RWMH	$ 54,000	$ 1,050,000	$ 996,000
IH-20 Frontage Road (West)	**$ 127,000**	**$ 1,000,000**	**$ 873,000**
Downtown Improvements - Phase I	**$ 40,000**	**$ 290,000**	**$ 250,000**
Tremont Street	**$ 12,000**	**$ 580,000**	**$ 568,000**
TOTAL	**$ 906,000**	**$ 9,940,000**	**$ 9,034,000**

Table 7.4 CIP Project Capital Cost and Benefit/Cost

CIP Project Name/Location	Capital Cost (2013)	10 Yr Tax Revenue*	20 Yr Tax Revenue*	10 Yr Benefit/ Cost	20 Yr Benefit/ Cost
Willow Creek Avenue	$10,444,000	$ 3,180,000	$ 7,630,000	0.3	0.7
IH-20 Frontage Road (East)	$23,736,800	$ 4,620,000	$ 10,940,000	0.2	0.5
Washington Drive Extension (Ph I)	$12,668,000	$ 4,310,000	$ 10,050,000	0.3	0.8
Santa Fe Dr. to Bankhead	$ 9,131,800	$ 3,580,000	$ 8,430,000	0.4	0.9
Bankhead to US 180	$ 3,536,200	$ 730,000	$ 1,620,000	0.2	0.5
Washington Drive Extension (Ph II)	$ 2,743,000	$ 1,860,000	$ 4,450,000	0.7	1.6
W. Martin Street	$14,495,000	$ 8,850,000	$ 21,100,000	0.6	1.5
FM 51 (Main St) to Bethel Rd.	$ 4,154,000	$ 2,080,000	$ 4,820,000	0.5	1.2
Bethel Rd. to Bowie Dr.	$ 4,041,000	$ 4,840,000	$ 11,650,000	1.2	2.9
Bowie Dr. to RWMH	$ 6,300,000	$ 1,930,000	$ 4,630,000	0.3	0.7
Tin Top Road Extension	$ 2,934,000	$ 1,270,000	$ 3,040,000	0.4	1.0
BB Fielder Road Extension	$ 7,660,000	$ 7,750,000	$ 18,600,000	1.0	2.4
Existing to Old Dennis Rd.	$ 2,980,000	$ 3,350,000	$ 8,050,000	1.1	2.7
Old Dennis Rd. to RWMH	$ 4,740,000	$ 4,400,000	$ 10,550,000	0.9	2.2
IH-20 Frontage Road (West)	$ 7,700,000	$ 3,710,000	$ 8,760,000	0.5	1.1
Downtown Improvements	$10,160,000	$ 1,040,000	$ 2,460,000	0.1	0.2
Tremont Street	$ 630,000	$ 2,540,000	$ 6,110,000	4.0	9.7
TOTAL	$93,170,800	$39,130,000	$ 93,140,000	0.4	1.0

*2013 Dollars; net increase in dollars

[T] Preliminary estimate

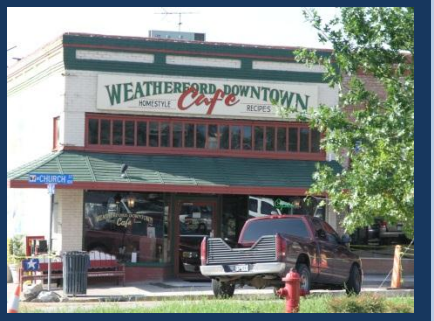
Summary

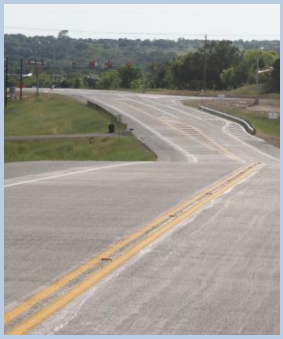
By analyzing only the potential revenue from property development, financially viable projects can be identified. The expected lifetime of new roadways is typically 20 years, so a 20-year benefit-to-cost ratio greater than one will signify a project that will have revenue in excess of the capital cost of the project. Projects that have a benefit-to-cost ratio less than one will not pay for themselves based off property value growth. Using the 20-year ratio, 7 out of the 10 projects are financially viable. Two of the projects that do not meet the breakeven point in 20 years have floodplains crossing the path of the roadway, so potential development is limited. While tax revenue generated from land values may not pay for these projects, other factors, such as city-wide mobility, may justify its viability. As a whole, if all of the projects are implemented, a benefit-to-cost ratio of 1.0 is expected in 20 years which justifies the capital expense in the short-term.

Department of Transportation
and Public Works

2013 City of Weatherford

THOROUGHFARE PLAN





FREESE AND NICHOLS

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CITY OF WEATHERFORD