# *CITY OF WILLIS, TEXAS*

*2014-2035*


*Housing*

*Population*

*Land Use*

*Street System*

*Thoroughfare System*

*Water System*

*Wastewater System*

*Storm Drainage*

*Economic Development*

*Annexation Study*

*Capital Improvements Program*

Public Management

# THE CITY OF WILLIS, TEXAS

## *2014-2035 Local Planning*

*1-Housing*
*2-Population*
*3-Land Use*
*4-Street System*
*5-Thoroughfare System*
*6-Water System*
*7-Wastewater System*
*8-Storm Drainage*
*9-Economic Development*
*10-Annexation Study*
*11-Capital Improvements Program*

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Public Management

# ACKNOWLEDGEMENTS

*In addition to many citizens, the following elected and appointed officials and City staff gave their time to participate in numerous meetings and workshops and played very important roles in the development of the 2014-2035 Comprehensive Plan for the City of Willis.*

***City Council***

*Mayor Leonard Reed*
*Councilmember #1-Tamara Young*
*Councilmember #2-John F. Lovelady*
*Councilmember #3-Thomas Belinoski*
*Councilmember #4-Anna F. Ross*
*Councilmember #5-Bill Van Alstyne*

***Planning and Zoning Commission***

*Tom Lester*
*Robby Odell*
*Pam George*
*Bill Buller*
*Luther Powell*
*Mary Williams*
*Taylor Robertson*
*Kenneth Vornsand*

***Community Development Corporation (Willis CDC)***

*Mary Reed*
*Mike Davis*
*James Patrick*
*Jay Hrivnatz*
*Bridgett Anderson*
*Rod Broussard*
*Josey Billnoske*
*Sharon Lester*

***Economic Development Corporation (Willis EDC)***

*Billy Click*
*B.J. Spence*
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*Sharon Stone*

***City Staff***

***Administration-General***

*Hector Forestier-City Manager*

*Brenda Burns-City Secretary*

*Marissa Quintanilla-Human Resource/Finance Director*

*Marge Littleton-Asst. City Manager for EDC & CDC*

*Rick Valdez Director of Finance-HR*

***Community Development***

*John Mangiameli-Director of Community Development*

***Public Works Department***

*Pat Riley-Public Works Director*

*Arthur Faiello-Former Public Works Director*

***Police Department***

*James Nowak-Police Chief*

***Municipal Court***

*Chrissy Dahse-Court Administrator*

*Special thanks is given to the Willis Independent School District and specifically to Cannan Elementary students for their presentation to the Willis Economic Development Board. The students presented three (3) ideas for business development in Willis which included a Rainbow Ice Cream Palace, Willis Museum and Zoo, and Super Aquarium.*

# MISSION STATEMENTS

Public Management

# *MISSION STATEMENTS*

## CITY MISSION STATEMENT

*The mission of the City of Willis is to provide high quality services, accountability and professional commitment to our citizens. We pledge to provide those who live, work and visit our City an effective government that is open and responsive to the needs and values of the community.*

## CITY VISION STATEMENT

*It is the City Council's resolve that the city's mission statement will instill a sense of pride and accomplishment in its citizens and that the City will be known as a progressive, innovative, balanced and environmentally sensitive community while preserving the foundation of our past.*

## CITY VISION STATEMENT FOR ECONOMIC DEVELOPMENT

*Willis is a beautiful and mobile city, ready for future growth with a strong business environment that promotes a higher quality of life for our residents and businesses.*

## CDC MISSION STATEMENT

*The mission of the Willis Community Development Corporation is to provide leadership in developing and maintaining a quality living and working environment for people who live, work, visit and patronize our city.*

## EDC *MISSION STATEMENT*

*The mission of the Willis Economic Development Corporation is to empower the local Willis economy, through the expansion and retention of the business community, with infrastructure assistance, and to promote business opportunities in the market area that enhances the quality of life.*

## OFFICIAL POLICY STATEMENT

*The Willis 2014-2035 Comprehensive Plan is the City's official statement of policies concerning desirable future physical development and the direction of growth through the various elements that make up the plan. While the Comprehensive Plan document has no regulatory or 'police powers' to enforce listed actions, the document's true power is that it identifies those tools a community has to regulate growth and development in a manner consistent with local values based on community input.*

*The community values and desires expressed through community meetings and discussions of Willis' elected and appointed leaders serve as the foundation of the Comprehensive Plan. This foundation serves as a collective vision, providing guidance for decision makers based on community input. This vision is expressed through a set of goals, objectives, and policies that reflect known conditions and incorporate the values and desires of the community. Decisions by City staff and elected and appointed officials should be based on such goals, objectives, and policies. In cases where some goals have conflicting needs, it will be up to the elected and appointed officials to give weight and timeliness of one goal in relation to another goal. The decision makers turn to the Comprehensive Plan concerning the distribution and relationships of various land uses throughout the community. Upon receipt of application submittals for future developments, the City should use the Plan to determine how such developments conform to the local values and desires captured in the Comprehensive Plan. Decision makers should consult the Comprehensive Plan when considering regulatory tools and agreements impacting growth and development, such as zoning ordinances, development agreements, and annexations. Through a planning process, where information is provided to solicit resident input, various issues in the community are brought into focus, thereby establishing a framework for discussing, understanding, and reaching a consensus regarding the choices for Willis' growth and development. As an educational resource, the Comprehensive Plan guides Willis' elected and appointed leaders and City staff about how growth should be addressed. The Plan document is composed of text that is supported by maps, photographs, tables, and charts. The information in*

*the Comprehensive Plan provides guidance so residents and investors can make informed decisions. The Plan should be easily available to everyone in the community and should promote public discussion and involvement.*

*The Willis Comprehensive Plan serves as a tool for managing the community growth and development based on the community values and desires. It is a long-range plan intended to direct growth and physical development of a community for 20 to 30 years or longer. Ideally, (and if feasible), it is appropriate to prepare a plan for the ultimate development of the community. The Comprehensive Plan identifies actions to achieve desired and necessary improvements. Once adopted, the Comprehensive Plan is not set in stone. Instead, it is an active plan that should be reviewed and refined annually to address changes impacting the community.*

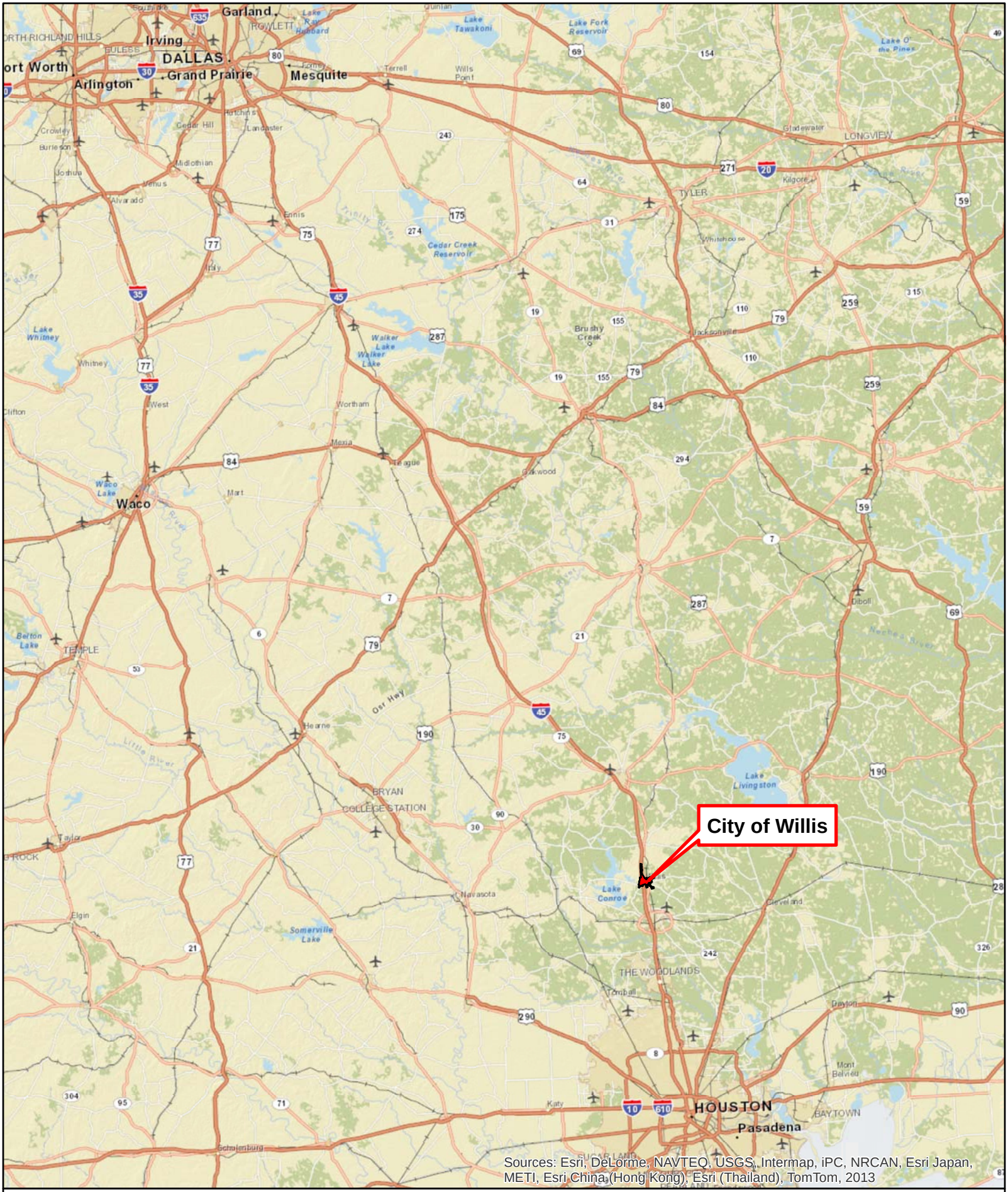


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**Exhibit A**
**2013**
**CITY OF WILLIS, TEXAS**
**LOCATION MAP**


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N
W E
S

Feet
0 650 1,300 2,600 3,900 5,200
1 inch = 1,300 feet

**Exhibit B**
**2011**
**CITY OFWILLIS, TEXAS**
**BASE MAP**

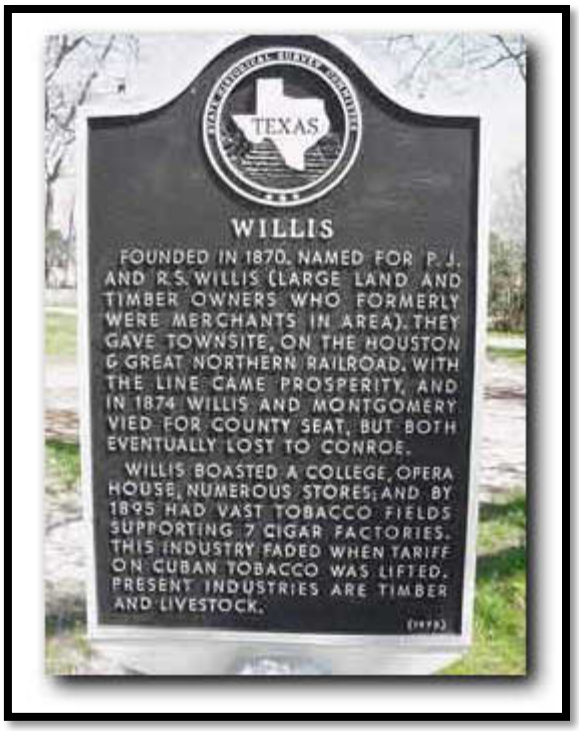
# INTRODUCTION

Public Management

# INTRODUCTION

## EARLY COMMUNITY DEVELOPMENT

*Willis, Texas, started as a lumbering and agricultural market town on the Missouri Pacific Railroad eight miles north of Conroe in north central Montgomery County. In 1870, as the Houston and Great Northern Railroad began surveying Montgomery County's first rail line, Galveston merchants Peter J. and Richard S. Willis, donated a townsite to the railroad along the proposed route. By that time a number of black farmers in the vicinity had already organized a Methodist congregation, which became the first church in the community of Willis. By 1872 the rail line had been extended through the town, and most of the businesses and residents of Danville, Montgomery, and Old Waverly had begun moving to the new town. That same year, a post office was established. In 1874 citizens of the burgeoning new community launched a prolonged but unsuccessful struggle to transfer the county seat from rival Montgomery to Willis. A weekly newspaper, the Willis Observer, began publication as early as 1875. By the late 1870s Willis had become a prosperous shipping point for timber and agricultural commodities and a center for the manufacture of lumber products, wagons, and agricultural implements. In the early 1880s a three-story building was erected to house the Willis Male and Female College which, until its*



*demise in 1901, functioned as a semi-private boarding school for students in elementary grades through college.*

*By 1884, in addition to its various schools and churches, Willis boasted several steam-powered saw and grist mills, two cotton gins, a brickyard, a saloon and gambling house, a Grange hall, numerous grocery and dry-goods stores, and a population of 600. By 1890 population had climbed to 700, and three hotels and a second weekly newspaper, the Willis Index, were in operation. During the late nineteenth century the Willis area became the leading tobacco growing region in the state; before the lifting of the tariff on Cuban tobacco killed the boom in the early twentieth century. Willis supported as many as seven cigar factories. As tobacco culture declined, a boom in the production of timber and agricultural products kept the town's economy thriving. Although population fell somewhat to an estimated 500 in 1892.*

## THE TWENTIETH CENTURY

*By 1904 the population had increased to an estimated 832 and continued to climb slowly for the next two decades. The Willis State Bank was established in 1911. In 1913 there were 271 pupils enrolled in the Willis Independent School District. By 1914 yet another weekly newspaper, the Willis Star, had appeared, and a telephone exchange was in operation.*

*The town's growth came to a temporary halt, however, with the onset of the Great Depression and the resulting slump in local timber production. From an estimated 900 in 1929, population fell to*

*an estimated 750 by 1931. But an oil boom in central Montgomery County that began southeast of Conroe in 1931 soon spread its effects to the Willis area, bringing renewed economic activity and an influx of population. Further stimulus was provided by the completion of U.S. Highway 75 through the town in the early 1930s. Then, during World War II, the lumber industry and agricultural activity revived. By 1933 the town's population had climbed again to an estimated 900, but it remained at this level for more than three decades, standing at an estimated 891 in 1968. The extension of Interstate Highway 45 through Willis in the early 1960s helped integrate the community into a regional economy and provided a corridor through which both industrial and suburban development could penetrate the area. Finally, in the late 1960s and early 1970s, Willis's growth resumed as construction of Lake Conroe began five miles to the west on the West Fork of the San Jacinto River.*

## THE SEVENTIES AND BEYOND

*Population jumped to an estimated 1,457 in 1970, then increased slowly for a decade and a half before another growth spurt began in the 1980s. The Willis area was at last benefiting from the spillover effects of the postwar booms of Houston and Conroe, but the economy remained based on lumbering and agriculture. By 1981 1,850 students were enrolled at the four campuses of the Willis Independent School District. From an estimated 1,674 in 1986, Willis's population climbed to an estimated 2,110 in 1990, and by 1992 the figure had grown to an estimated 2,764. In 2000 the population reached 3,985. The most current U.S. Census was conducted in 2010 and the City's population was recorded at 5,662 persons. It is estimated that City is approaching, or has surpassed 6,000 persons by 2014 and that the City Limit population may swell to 12,500 by 2035. It is also estimated that the surrounding area population, which includes the City's extraterritorial jurisdiction and a three (3) mile planning area, may exceed 25,000 by the year 2035.*

## PURPOSE OF PLANNING

*From small towns to large cities, communities have to cope with growth and decline, new development and redevelopment, while maintaining and enhancing those local values that make the community special. Such public entities are always facing a cycle of change that can influence*

*an area's economic, social, and physical conditions. Trying to stay ahead of the cycle without a 'blueprint' for direction can be a challenge. To take stock of their current situation and anticipate future events many local governments have used comprehensive planning as an effective way to manage growth and development.*

***Comprehensive planning:***

- *Defines the identity and role of the town or city*
- *Establishes a future direction*
- *Guides decision making processes*
- *Formulates and recommends policies, programs, and regulations*
- *Provides basis for implementation of these programs and regulations*
- *Requires monitoring and provides for revisions*
- *Minimizes conflicts*
- *Achieves more efficient use of funds*
- *Copes with growth and decline*
- *Preserves unique and historical aspects*
- *Coordinates development and redevelopment*
- *Establishes the legal foundation for regulations*
- *Guides rational decisions.*

## PREVIOUS PLANNING EFFORTS

*In 1995, the City received funding through a Texas Community Development Grant from the U.S. Department of Housing and Urban Development, Department of Housing and Community Affairs of the State of Texas to develop a comprehensive plan. The planning activities included mapping and text along with goals and objectives in the areas of housing, population, land use, economic development, street system, thoroughfare system, water system, wastewater system, storm drainage, capital improvements program and subdivision regulations. The City accomplished many of the goals and objectives outlined in the plan. In addition, the City completed many of the capital improvement projects listed in the plan. In 1995, it was estimated that City population had reached 3,633 persons, based on the occupied housing survey. Just 5 years earlier, the U. S.*

*Census had estimated the population at 2,944, which was an increase of 23%. Even at that time, the City was showing tremendous growth.*

*In 2000, the City once again received funding through a Texas Community Development Grant from the U.S. Department of Housing and Urban Development, Department of Housing and Community Affairs of the State of Texas to develop a plan. This time, the plan was more strategic in nature and only included planning in the areas of street system, parks and recreation, water system, wastewater system and annexation and growth management. By that time, the population had increased to 3,985, according to U. S. Census. Once again, the City accomplished many of the goals and objectives outlined in the plan and completed many of the capital improvement projects listed in the plan. Specifically, the City built two (2) neighborhood parks and completed multiple annexations.*

## RECENT ACCOMPLISHMENTS

*The following table outlines projects that are currently ongoing or have been recently completed.*

| Water | Title | Description | Status |
|---|---|---|---|
| | Catahoula Wells No. 1 & 2 | Catahoula wells at Pin Oak Water Plant and Police Department Water Plant | Construction Complete |
| | Water Plant No. 1 Rehabilitation | Remove 50,000 gallon EST and replace with (2) 10,000 gallon HPTs. | Under Construction |
| | Utility Relocations along FM 1097 | Widen FM 1097 and relocate/upsize utilities as a part of the project. | In Design |

| Sewer | Title | Description | Status |
|---|---|---|---|
| | Infiltration and Inflow Improvements | Televising and rehabilitation of old sanitary sewer line within Willis city limits. | Complete on Rogers, Paddock, and S Campbell |
| | Hill Street Lift Station Modification | Construct a new lift station at North Danville and Hill Street. | Construction Complete |
| | Proposed Calhoun Street Lift Station | Construct a new lift station on Calhoun Street. | Construction Complete |
| | 1097 East Lift Station Rehabilitation | Construct a new lift and modify the old lift station to be a functional manhole. | Awaiting Agency Approval |
| Roads | Title | Description | Status |
| | South Campbell St | Remove/replace pavement and update utilities. | In Design |
| | Martin Luther King | Remove/replace pavement and update utilities. | In Design |
| | Paddock | Remove/replace pavement and update utilities. | In Design |
| | Rogers Rd | Remove/replace pavement and update utilities. | In Design |
| | West Side Loop | Remove/replace pavement and update utilities. | In Design |
| | Calhoun St | New road to replace dirt road | In Design |
| | Calvary Rd | Remove/Replace pavement | In Design |
| Drainage | Title | Description | Status |
| | Young Street | Constructing new drainage system. | In Design |

## CURRENT PLANNING EFFORTS

*The 2014-2035 Willis Comprehensive Plan is based on community values and expectations and establishes a foundation concerning long-term growth and physical development in Willis. The document serves as the City's official statement of policies regarding long-term growth, development, and redevelopment. City staff, investors, citizens, and Willis' appointed and elected officials turn to the comprehensive plan to guide their decisions concerning local planning activities.*

*There are 11 chapters and several sections in the 20014-2035 Willis Comprehensive Plan. These sections are listed below:*

*Acknowledgements*
*Mission Statements*
*Introduction*
*Implementation*
*1-Housing*
*2-Population*
*3-Land Use*
*4-Street System*
*5-Thoroughfare System*
*6-Water System*
*7-Wastewater System*
*8-Storm Drainage*
*9-Economic Development*
*10-Annexation Study*
*11-Capital Improvements Program*

# IMPLEMENTATION

Public Management

# *IMPLEMENTATION*

*The purpose of the Implementation chapter is to provide direction and recommendations for implementation of the Comprehensive Plan and for continued planning. Planning is a continuous process. Completion of the Comprehensive Plan is by no means an end in itself; rather, it is a new beginning. Adoption of the Comprehensive Plan is the initial steps in achieving the vision articulated in the planning process. Early in the process, key community issues were identified and now serve as the basis of goals, objectives, and actions, the foundation of the Plan. The Comprehensive Plan is the City's guide for government officials and citizens in making decisions regarding land use, thoroughfare development, community facilities construction, infrastructure improvements and extensions, park enhancements, and downtown revitalization. In addition to the goals, objectives, and actions, plan implementation includes the following tools. The Zoning Ordinance and Subdivision Regulations use the Future Land Use Plan as a general guide for decision-making in zoning cases and subdivision plat review approvals to ensure that development and redevelopment are consistent with the policies of the City's Comprehensive Plan. The Capital Improvements Plan (CIP) addresses street, storm drainage, water and sewer infrastructure, and facility improvements. The Annual Budget looks at the general operations and maintenance of city facilities, and the repair of rights-of-way for street and highway improvements. Special programs and new initiatives may be used to put recommendations into action.*

## NEEDS ASSESSMENT

*a. Housing*

- *An increased number of new affordable single-family and multi-family units are needed.*
- *The implementation of a rental unit (single-family and multi-family) safety inspection program is needed.*
- *The implementation of an owner-occupied rehabilitation program(s) is needed;*
- *Neighborhood conservation-continued strong code enforcement is needed in order to protect older neighborhoods.*

*b. Roadways*

- *Annual budget funds are needed for seal-coating, crack-sealing and reclaiming of local streets.*
- *Existing and potential collectors with inadequate right-of-way are in need of repair.*
- *Quality thoroughfares in future development areas are needed.*

*c. Water System*

- *Waterline extensions needed in various parts of the City.*
- *Waterline upsizing needed in various parts of the City.*
- *Water plant improvements needed at Police Department Water Plant.*
- *Water plant improvements needed at Pin Oak Water Plant.*
- *Wells will need upgrading.*

*d. Wastewater System*

- *The central part of the City contains aged sanitary sewers.*
- *Annual budget funds are needed, perhaps $500,000 every 3-years, for the rehabilitation and replacement of aging sanitary sewers.*
- *Also, as growth occurs, it will be necessary to construct sanitary sewer improvements to serve new development.*
- *Planned future lift station facilities are needed. Further analysis of the lift stations will be required as development takes place to determine what modifications are needed based on changing demands.*

*e. Storm Drainage System*

- *Existing channels need to be cleared. Some are overgrown with silt.*
- *Storm water tends to pond on certain roadways.*
- *Some existing culverts corroded*

- *Planned future lift station facilities are needed. Further analysis of the lift stations will be required as development takes place to determine what modifications are needed based on changing demands.*

*f. Parks and Recreation*

- *Natural areas and greenbelts needed throughout the city.*
- *Indoor recreation center needed.*
- *A large municipal park facility will be needed.*
- *More neighborhood pocket parks needed.*
- *Hiking/biking trails that link the existing parks needed.*

*g. Public Facilities*

*Due to the fact that the City's population is likely to double over the next twenty (20) years, many of the City's public facilities will need to be rehabilitated or replaced. These facilities include City Hall, Public Works Facility, Police Station, and Municipal Court. In addition to population increases inside the City, population increases will be occurring in the City's ETJ and broader planning area. The people in those areas rely on the City's facilities as well.*

- *Over the course of the planning period, a new police station facility will be needed in order to meet future needs. Timeline: (2015-2018)*
- *A new Public Works facility will also be needed. Timeline: (2019-2024)*
- *A new city hall/municipal court facility will be needed. Timeline: (2025-2030)*

*h. Staffing*

*As discussed above, the population increases inside the City, ETJ and broader planning area will impact the City's existing public facilities in a negative manner. In addition to that, the City's staffing needs will also increase due to the growth. City residents will expect a certain level of service from the City in regards to police response, street repairs, water and sewer infrastructure repairs, bill paying, municipal court proceedings, and other City services. The*

*list below illustrates the number of employees within each department that the City currently has and the number of staff that may be needed prior to the end of this planning period.*

| ***DEPARTMENT/CURRENT STAFFING LEVEL*** | ***ADDITIONAL POSITIONS*** |
|---|---|
| | |
| ***ADMINISTRATION-GENERAL*** | |
| *City Manager* | *Assistant City Manager-1* |
| *City Secretary* | *Clerks-3* |
| *Assistant City Secretary* | *Receptionist-1* |
| *Director of Finance/HR* | *City Attorney-1* |
| *Asst. City Manager for EDC&CDC* | *Human Resources Director-1* |
| | |
| ***COMMUNITY DEVELOPMENT*** | |
| *Building Official/Code Enforcement* | *Director of Planning-1* |
| *Animal Control* | *Planner-1* |
| *Permit Tech* | *Animal Control-1* |
| | *Code Enforcement Officer-1* |
| | *Building Inspector-1* |
| | |
| ***ADMINISTRATION-UTILITY*** | |
| *Utility Billing Clerk II* | *Utility Billing Clerk 1* |
| *Utility Billing Clerk I* | |
| | |
| ***POLICE DEPARTMENT*** | |
| *Police Chief* | |
| *Lieutenant* | *Captain-1* |
| *Sergeant/Detective* | *Court Officer-1* |
| *Sergeant* | |
| *Detective* | |
| *Sergeant* | |
| *Patrolman-9* | *Community Services Officer-1* |
| *Clerk* | *Patrolman-8* |

| | |
|---|---|
| | |
| ***COURT DEPARTMENT*** | |
| *Court Clerk* | *Deputy Clerk-1* |
| | *Part-time Judge-1* |
| | |
| ***PUBLIC WORKS DEPARTMENT*** | |
| *Public Works Director* | *Assistant Director-1* |
| *Supervisor* | *Secretary-1* |
| *Foreman* | *Assistant Foreman-1* |
| | |
| ***STREET DIVISION*** | |
| *Street Supervisor* | |
| *Groundskeeper* | |
| *Laborer-4* | *Laborer-2* |
| | |
| ***WATER DIVISION*** | |
| *Operator* | *Water Division Supervisor-1* |
| *Laborer* | *Laborer-4* |
| *Laborer* | |
| | |
| ***SEWER DIVISION*** | |
| *Chief Operator* | *Sewer Division Supervisor-1* |
| *Laborer* | *Laborer-3* |
| | |
| ***PARKS AND RECREATION*** | |
| | *Head Groundskeeper-1* |
| | *Laborer-3* |

## GOALS AND OBJECTIVES

*a. Housing*

***Goal 1: Improve the quality of living for Willis residents by upgrading the quality of the housing stock.***

*Objective 1: Continue the use of the HOME program (administered through the Texas Department of Housing and Community Affairs TDHCA) in an effort to repair dilapidated housing units throughout the community.*

*Objective 2: Continue efforts to rid the City of vacant dilapidated structures.*

*Objective 3: Consider the implementation of a rental unit (single-family and multi-family) safety inspection program.*

***Goal 2: Assist residents in the procurement of safe, affordable housing in a fair and equitable manner.***

*Objective 1: Continue to further fair housing opportunities in Willis by encouraging reputable developers to offer a variety of residential housing in mixed-use developments (ongoing).*

*Objective 2: Give incentives to developers for developing projects on vacant lots or lots that have abandoned dilapidated structures.*

*Objective 3: Consider the use of the TDHCA HOME Housing Tax Credit Program to construct or rehabilitate apartment buildings.*

*Objective 4: Consider the use of TDHCA HOME Multi-family funding to rehabilitate existing apartment buildings.*

***Goal 3: Preserve existing, older neighborhoods.***

*Objective 1: Utilize the existing zoning ordinance to prevent non-residential uses from encroaching upon traditional neighborhoods.*

*Objective 2: Increase code enforcement efforts in at-risk neighborhoods.*

***Goal 4: Assure quality development of new subdivisions both inside the corporate limits and in the City's Extra Territorial Jurisdiction (ETJ)***

*Objective 1: Update the City's subdivision regulations and consider larger lot sizes.*

*Objective 2: Strictly enforce the City's subdivision ordinance.*

*b. Roadways*

***Goal 1: Provide for the safe movement of traffic and to provide roadways that will require little or no maintenance costs.***

*Objective 1: Complete the street system capital improvements schedule as outlined in Table 6.1.*

*Objective 2: Consider the long-range capital improvements as outlined in Table 6.3.*

*Objective 3: Continue routine maintenance and minor repairs on streets not listed in the Capital Improvements Schedule.*

*Objective 4: Continue to enforce the City's roadway design standards.*

*Objective 5: Continue to enforce the city's subdivision ordinance so that design standards are met in new developments.*

***Goal 2: Develop future roadways that will enhance economic development opportunities for both current and future local business owners***

*Objective 1: Consider the recommendations listed in the City's thoroughfare plan.*

***Goal 3: Provide for better traffic flow through the downtown region.***

*Objective 1. Utilize the existing street and highway facilities in order to provide future thoroughfares within the corporate limits of Willis.*

***Goal 4: Provide future quality thoroughfares both within the current ETJ and broader planning area.***

*Objective 1: Consider the proposed thoroughfares as outlined in Table 5.2 below.*

*c. Water System*

***2015 – 2016 $2,500,000***

*Extending 12" waterline north along I-45 from Longstreet to Calvary Rd, then east to Hwy 75, then South along Hwy 75 to the boundary of the 2010 annexation, then west to I-45, tying into existing city line on Hwy 75. Waterline upsizing along W Powell Street (FM 2432/County Line Rd). Completing the 12" Rogers Rd and FM 1097 E waterline loop. Extend the 12" waterline north from Calvary Rd along I-45 and Hwy 75 out to Pollard Rd. Waterline extensions from FM 1097 W extending southeast to Old Montgomery Rd.*

***2016 – 2017 $1,500,000***

*Waterline upsizing along W Montgomery Street from I-45 to Hwy 75, part of TxDOT widening project. Extend the 12" waterline north from Pollard Rd along I-45 and Hwy 75 to Shepard Hill Rd.*

*Police Department Water Plant – Add 2nd GST, cooling tower, and booster pumps.*

***2017 – 2018 $2,800,000***

*Waterline upsizing along Runnels St, Daniel St, Longstreet Rd, Mopac St, Cross St, Straughter St, E Watson St, Lindley Dr, S Cochran St, Wooded Oak Ct, and 1st St. Waterline looping from Turner Dr to Philpot St, N Campbell St, W Powell St, and W Montgomery St.*

*Pin Oak Water Plant – Add GST, cooling tower, and booster pumps.*

***2018 – 2019 $1,500,000***

*Waterline upsizing along Watson, Turner Dr, Felder St, and Philpot St, W Stewart St, and FM 1097 E (beyond Business Park Dr). Waterline extension along Hwy 75 from Rogers Rd past African Hill Rd.*

***2019 – 2020 $1,850,000***

*Waterline looping along S Campbell St, W Mink St, and S Woodson St. Waterline extensions from Standing Oak Dr to Longstreet Rd W and I-45 from 1097 south, then east to Hwy 75. Waterline Extension along E Worsham St.*

*Upgrade Catahoula wells 1 & 2 from 1200 gpm capacity to 2400 gpm capacity each.*

***2020 – 2021 $1,700,000***

*Waterline extensions along I-45 from FM 1097 W to Longstreet Rd, along Longstreet Rd from I-45 to Hwy 75, and along Lincoln Ridge. Waterline extension along African Hill Rd and several side streets in Phase 1 annexation.*

***2021 – 2022 $250,000***

*Waterline Extension for Phase 2 future annexation along Rogers Rd from Grand Oaks to Frontier Rd.*

***2023 – 2024 $1,100,000***

*Waterline extension for Phase 3 future annexation creating a loop starting at I-45 and Shepard Hill Rd going north to W Danville Rd, west to Old Danville Rd, south to Shepard Hill Rd, back to I-45.*

***2024 – 2025 $1,600,000***

*Waterline extension for Phase 3 future annexation creating a loop starting at I-45 and W Danville Rd going north to the boundary of the Phase 3 annexation, west to Old Danville Rd, south to W Danville Rd, tying into the existing loop.*

***2025 – 2026 $1,700,000***

*Waterline extension for Phase 4 future annexation along Shepard Hill Rd and Blackland Rd, both extending from the Phase 3 extensions to the boundary of the Phase 4 annexation.*

***2026 – 2027 $1,500,000***

*Waterline extension for Phase 4 future annexation along the western boundary of the annexation from Shepard Hill Rd north east to the boundary with the Phase 3 annexation, creating a loop.*

***2027 – 2028 $1,200,000***

*Waterline extension for Phase 5 future annexation along the southern boundary of the annexation from I-45 to the western boundary of the annexation and along Frank Novark Rd from Shepard Hill Rd to to the southern boundary of the annexation.*

***2028 – 2045 $1,400,000***

*Waterline extension for Phase 7 future annexation along the northern annexation boundary from I-45 to Hwy 75, then south to Buckner Rd, on the west side of Hwy75.*

*d. Wastewater System*

***2014 – 2015 $800,000***

*East Stewart lift station including approximately 2,450 LF of 8" sanitary sewer extension and 1,550 LF of 6" force main.*

***2015 – 2016 $3,100,000***

*Emerald Lake lift station including approximately 8,600 LF of 12" sanitary sewer extension and 8,400 LF of 6" force main. Longstreet West lift station including approximately 2,450 LF of 8" sanitary sewer extension and 3,300 LF of 6" force main. Televise sanitary sewer lines in the area bound by I-45, Hwy 75, 1st St, and Longstreet.*

***2016 – 2017 $2,600,000***

*Hwy 75 North lift station, near the intersection of Hwy 75 and Coaltown, including approximately 2,850 LF of 8" sanitary sewer extension and 2,100 LF of 6" force main. 8" sanitary sewer extension along I-45 from Powell to FM 1097. First half of sanitary sewer rehabilitation between I-45 and Hwy 75, within Willis city limits. FM 1097 - Cannan lift station including approximately 1,700 LF of 8" sanitary sewer extension and 1,760 LF of 6" force main. 8" sewer line extension starting at FM 1097 E lift station and extending 450 LF east.*

***2017 – 2018 $2,300,000***

*Lincoln Ridge lift station including approximately 4,400 LF of 12" sanitary sewer extension and 5,700 LF of 6" force main. Second half of sanitary sewer rehabilitation between I-45 and Hwy 75, within Willis 2014 city limits.*

***2018 – 2019 $1,100,000***

*Modify Big North Forest lift station including approximately 4,000 LF of 6" force main. Televise sanitary sewer lines east of Hwy 75 within Willis 2014 city limits.*

***2019 – 2020 $2,300,000***

*Phase 1 annexation lift station including approximately 7,600 LF of 8" sanitary sewer extension and 3,000 LF of 6" force main. First half of sanitary sewer rehabilitation east of Hwy 75, within Willis 2014 city limits.*

***2020 – 2021 $900,000***

*Second half of sanitary sewer rehabilitation east of Hwy 75, within Willis 2014 city limits.*

***2021 – 2022 $1,400,000***

*Phase 2 annexation lift station, near the northest corner of the 2010 annex. Approximately 6,400 LF of 12" sanitary sewer extension, from the northeast corner of the 2010 annex north to Rogers Rd, then extending northeast to the boundary of the annexation. Approximately 1,600 LF of 6" force main, tying into the 2010 annexation's gravity line.*

***2023 – 2024 $3,900,000***

*Phase 3 annexation lift station, near Hwy 75 and Esperanza Rd, including approximately 30,200 LF of 12" sanitary sewer extension and 7,250 LF of 6" force main, tying into the 75 North sanitary sewer gravity line.*

***2025 – 2026 $3,400,000***

*Phase 4 annexation lift stations (2), located on Blackland Rd and Shepard Hill Rd, including approximately 18,100 LF of 12" sanitary sewer extension and 7,000 LF of 6" force main, tying into the Phase 3 sanitary sewer extensions.*

***2027 – 2028 $2,300,000***

*Phase 5 annexation lift station, along the southern boundary of the annexation near Pollard Rd, including approximately 13,300 LF of 12" sanitary sewer extension and 3,500 LF of 6" force main, tying into the 1012 annexation sanitary sewer.*

***2028 – 2045 $900,000***

*Phase 7 annexation sanitary sewer line extension along Hwy 75 and the northern boundary of the annexation, between I-45 and Hwy 75. Approximately 7200 LF of 12" sewer line, tying into phase 3 lift station.*

*e. Storm Drainage System*

***The goal of the Willis storm drainage system plan is to provide a guide for flood control and the improvement of drainage facilities in an economical manner.***

*Objective 1: Phase I Improvements: Clean out the debris and sediments in the drainage culvert along Kennedy.*

*Objective 2: Phase II Improvements: Drainage culvert improvements along Mink St.*

*Objective 3: Phase III Improvements: Drainage culvert improvements along Gerald, Cypress and Mill Sts.*

*Objective 4: Phase IV Improvements: Drainage culvert improvements along Danville*

*Objective 5: Phase V Improvements: Drainage culvert improvements along Worsham, Pine Circle and Cannon Sts.*

*Objective 6: Implement a maintenance program with scheduled rotations, so that all the City's drainage facilities undergo regular maintenance at least once every two years and monthly mowing/inspection.*

*Objective 7: Restrict or prohibit subdivision of lands for uses which are dangerous to health, safety or property in times of flood or which, with reasonably anticipated improvements, will cause excessive increases in flood heights or velocities. Continue to enforce the city's subdivision ordinance.*

# HOUSING

Public Management

# HOUSING

## SECTION 1.1-INVENTORY

*Public Management, Inc made a survey of all the housing units and the land use in the City of Willis, extraterritorial jurisdiction and the larger planning area. Exhibit C shows the location and classification of all the buildings in Willis. The following definitions explain the meanings of classifications. The following tables show the stock of buildings and the classification given to each structure:*

a. *Definitions*

*Single-Family Structure--a permanent structure which is used by individuals and/or families for living purposes. It is detached from other housing units.*

*Multi-Family Unit--a permanent structure which is used by individuals and/or families for living purposes. It is attached to other housing units in single level or multiple level structures.*

*Manufactured Home, HUD Code--means a structure constructed on or after June 15, 1976, according to the rules of the United States Department of Housing and Urban Development, transportable in one or more sections, which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning and electrical systems.*

*Figure 1.1- Manufactured Home.*

*Commercial Structure--a permanent structure that is used for purposes other than living such as the conduct of business, government, and education activities.*

*Church--a permanent structure that is used for the conduct of religious activities.*

*Standard--a structure that has deteriorated less than ten percent (10%) of it highest value. An observation of such a structure may reveal no physical problems or minor items of needed repair such as flaking paint.*

*Figure 1.2-Standard Single Family Unit.*

*Deteriorated--a structure that has deteriorated from ten percent (10%) to fifty percent (50%) of its highest value. An observation of such a structure may reveal physical problems ranging from rotted siding and roof deterioration to foundation problems and limited structural damage.*

*Figure 1.3-Deteriorated Single Family Unit.*

*Dilapidated--a structure that has deteriorated more than fifty percent of its highest value. An observation of such a structure may reveal a number of physical problems consisting of severe foundation problems, extensive structural damage, roof deterioration, rotted siding, electrical problems, and plumbing problems.*

*Figure 1.4-Dilapidated Single Family Unit.*

EXHIBIT C
EXISTING STRUCTURES-CITY LIMITS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT C-1
EXISTING STRUCTURES-CITY LIMITS & ETJ

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT C-2
EXISTING STRUCTURES-CITY LIMITS, ETJ & PLANNING AREA

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

**Table 1.1[1]**
**Inventory and Classification of Housing Stock (City Limits)**

| Classification | Total | Percentage |
|---|---|---|
| | | |
| Standard Single-Family Structure | 477 | 25.9 |
| Deteriorated Single-Family Structure | 320 | 17.4 |
| Dilapidated Single-Family Structure | 27 | 1.5 |
| Standard Manufactured Home | 281 | 15.3 |
| Deteriorated Manufactured Home | 337 | 18.3 |
| Dilapidated Manufactured Home | 39 | 2.11 |
| Standard Multi-Family Unit | 214 | 11.6 |
| Deteriorated Multi-Family Unit | 131 | 7.1 |
| Dilapidated Multi-Family Unit | 0 | 0.0 |
| Vacant Standard Single-Family Structure | 1 | 0.1 |
| Vacant Deteriorated Single-Family Structure | 4 | 0.2 |
| Vacant Dilapidated Single-Family Structure | 8 | 0.4 |
| Vacant Standard Manufactured Home | 0 | 0.0 |
| Vacant Deteriorated Manufactured Home | 0 | 0.0 |
| Vacant Dilapidated Manufactured Home | 2 | 0.1 |
| | | |
| Total Residential and Manufactured Home | 1,841 | 100.0 |

**Table 1.2[2]**
**Inventory and Classification of Housing Stock (Extraterritorial Jurisdiction)**

| Classification | Total | Percentage |
|---|---|---|
| | | |
| Standard Single-Family Structure | 737 | 50.4 |
| Deteriorated Single-Family Structure | 157 | 10.8 |
| Dilapidated Single-Family Structure | 28 | 1.9 |
| Standard Manufactured Home | 246 | 16.8 |
| Deteriorated Manufactured Home | 217 | 14.9 |
| Dilapidated Manufactured Home | 54 | 3.7 |
| Standard Multi-Family Unit | 0 | 0.0 |
| Deteriorated Multi-Family Unit | 0 | 0.0 |
| Dilapidated Multi-Family Unit | 0 | 0.0 |
| Vacant Standard Single-Family Structure | 0 | 0.0 |
| Vacant Deteriorated Single-Family Structure | 0 | 0.0 |
| Vacant Dilapidated Single-Family Structure | 12 | 0.8 |
| Vacant Standard Manufactured Home | 0 | 0.0 |
| Vacant Deteriorated Manufactured Home | 2 | 0.1 |
| Vacant Dilapidated Manufactured Home | 8 | 0.6 |
| | | |
| Total Residential and Manufactured Home | 1,461 | 100.0 |

[1] Source: Housing Unit Survey, Public Management, Inc.

[2] Source: Housing Unit Survey, Public Management, Inc.

**Table 1.3[3]**
**Inventory and Classification of Housing Stock (Planning Area)**

| Classification | Total | Percentage |
|---|---|---|
| | | |
| Standard Single-Family Structure | 269 | 39.0 |
| Deteriorated Single-Family Structure | 139 | 20.2 |
| Dilapidated Single-Family Structure | 15 | 2.2 |
| Standard Manufactured Home | 100 | 14.5 |
| Deteriorated Manufactured Home | 11 | 16.1 |
| Dilapidated Manufactured Home | 44 | 6.4 |
| Standard Multi-Family Unit | 0 | 0.0 |
| Deteriorated Multi-Family Unit | 0 | 0.0 |
| Dilapidated Multi-Family Unit | 0 | 0.0 |
| Vacant Standard Single-Family Structure | 0 | 0.0 |
| Vacant Deteriorated Single-Family Structure | 1 | 0.2 |
| Vacant Dilapidated Single-Family Structure | 7 | 1.0 |
| Vacant Standard Manufactured Home | 0 | 0.0 |
| Vacant Deteriorated Manufactured Home | 1 | 0.2 |
| Vacant Dilapidated Manufactured Home | 2 | 0.2 |
| | | |
| Total Residential and Manufactured Home | 689 | 100.0 |

**Table 1.4[4]**
**Inventory and Classification of Commercial Buildings**

| Classification | Total | Percentage |
|---|---|---|
| | | |
| Standard Commercial Structure | 134 | 61.8 |
| Deteriorated Commercial Structure | 64 | 29.5 |
| Dilapidated Commercial Structure | 3 | 1.3 |
| Vacant Standard Commercial Structure | 4 | 1.8 |
| Vacant Deteriorated Commercial Structure | 6 | 2.8 |
| Vacant Dilapidated Commercial Structure | 6 | 2.8 |
| | | |
| Total Commercial | 217 | 100.0 |

[3] Source: Housing Unit Survey, Public Management, Inc.

[4] Source: Housing Unit Survey, Public Management, Inc.

## SECTION 1.2-ANALYSIS

*a. Census Data*

*According to Census data, approximately 52% of the City's occupied housing units are owner occupied, compared with 74% for Montgomery County. In general, there are a higher percentage of rental units within Willis, as opposed to the unincorporated areas of Montgomery County. This can probably be attributed to the percentage of low-to-moderate persons living in the city limits of Willis. The 2010 percentage is estimated to be over 70%. It is sometimes more difficult for low to moderate income persons to become homeowners and renting is a better alternative.*

**Table 1.5[5]**
**Occupied Housing Unit Types**

| Type | Number (Willis) | % of Total | Number (Montgomery County) | % of Total |
|---|---|---|---|---|
| | | | | |
| Owner Occupied | 939 | 52.7% | 120,007 | 73.8% |
| Renter Occupied | 843 | 47.3% | 42,523 | 26.2% |
| | | | | |
| Total | 1,782 | 100.0% | 162,530 | 100.0% |

*According to Census data, approximately 11% of the City's housing units are vacant, compared to 8.5% for Montgomery County. The 2011 Housing Unit Survey, conducted by Public Management, Inc., however revealed that the City currently has 1,826 occupied units, which is a 529 unit increase over the 200 Census.*

[5] Source: 2010-United States Census

**Table 1.6[6]**
**Occupancy Status**

| Type | Number (Willis) | % of Total | Number (Montgomery County) | % of Total |
|---|---|---|---|---|
| | | | | |
| Occupied Units | 1,782 | 88.8% | 139,258 | 89.8% |
| Vacant Units | 224 | 11.2% | 15,900 | 10.2% |
| | | | | |
| Total | 2,006 | 100.0% | 155,158 | 100.0% |

**Table 1.7[7]**
**Low-to-Moderate Income Status**

| County | Place | Tract | Block Group | # Lowmod | Total | % Lowmod |
|---|---|---|---|---|---|---|
| | | | | | | |
| Montgomery | Willis | 694100 | 1 | 535 | 768 | 69.66 |
| Montgomery | Willis | 694100 | 2 | 1,041 | 1,437 | 72.44 |
| Montgomery | Willis | 694100 | 3 | 692 | 997 | 69.41 |
| Montgomery | Willis | 694100 | 4 | 625 | 826 | 75.67 |
| Montgomery | Willis | 694100 | 2 | 0 | 0 | 0.00 |
| | | | | | | |
| Total | | | | 2,893 | 4,036 | 71.68 |

*b. Extent of Problems and Identification of Housing Needs*

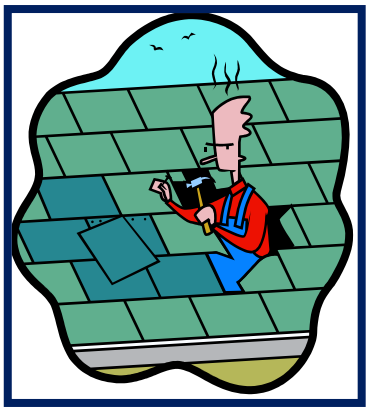
*Extent of Problems*

- *Deteriorated and dilapidated owner-occupied units owned by low to moderate income persons with little or no resources available for home repair;*
- *Vacant, dilapidated and deteriorated residential and commercial structures;*
- *Neighborhood conservation-older neighborhoods are being inundated by traffic and non-residential development;*
- *Preservation of low-density housing-new growth areas tend to develop housing on smaller lots;*

[6] Source: 2010 United States Census Bureau

[7] Source: Texas Department of Rural Affairs

*The Role of Housing Rehabilitation*



*Residential housing units (includes residential structures, manufactured homes and rental units) fall primarily in the categories of standard (52.9%) and deteriorated (43.0%). These two categories make up a substantial amount (95.9%) of the residential units in the City. However, there are two seventy-six (76) units in the City that are dilapidated and constitute the remainder of the housing stock (4.1%). In addition to the seventy-six (76) units in the city limits that are dilapidated, there are also one hundred seventy (170) units in the City's extraterritorial jurisdiction and larger planning area that are dilapidated. Although the dilapidated units make up only a small percentage of the overall units, it is the percentage of deteriorated units that give cause for concern. Deteriorated units can easily turn into dilapidated units in a relatively short time if not maintained. How do these units go from mild deterioration to severe dilapidation? The answers are many. Given the percentage of low-to-moderate persons discussed above, it is unlikely that income is being diverted to home maintenance, rather it is being used for food and clothing. Sometimes the unit is neglected for long periods of time and the thought of repairing the unit becomes too overwhelming for the homeowner. Another answer is that some units undergo a change in occupancy. Given the state of the economy overall, some homeowners are forced to rent an existing unit because the market dictates that selling the unit is not feasible. While this discussion is not intended to offend renters, the condition of the housing unit tends to decline when it is renter-occupied as opposed to owner-occupied. With this being said, it is recommended that the City continue to participate in the Texas Department of Housing and Community Affairs HOME programs.*


T*here are some concentrations of dilapidated units within the corporate limits of Willis, specifically as follows:*

* *Perkins Ave, north of MLK Blvd. (approximately 6 units).*
* *Philpot St, Felder St and Turner Dr, north of MLK Blvd. (approximately 5 units).*
* *West Stewart St (approximately 4 units).*
* *MLK Blvd (approximately 5 units).*
* *East Watson St., Industrial Park Ln. and Carolyn Ln. area (approximately 10 units).*

*Identification of Housing Needs*

* *The implementation of additional owner-occupied rehabilitation program(s) is needed;*
* *An increased number of affordable single-family units are needed.*
* *Neighborhood conservation-strong code enforcement is needed in order to protect older neighborhoods.*

*The Role of Code Enforcement*

*In addition to housing rehabilitation assistance, another way to upgrade the condition of the housing stock is to stay active with code enforcement. Neighborhood deterioration occurs over a period of many years. Without proper code enforcement, housing units fall into a state of disrepair, or the properties become cluttered with junk and overgrown weeds. This is a tireless job for the code enforcement officer, but one that must be done with vigilance. The City has the following housing-related codes and ordinances to assist the code enforcement officer:*

* *Subdivision Regulations-1996;*
* *Unsafe or Substandard Buildings-2003;*
* *Manufactured Housing-2006;*
* *Zoning Ordinance-2009;*
* *Health and Sanitation;*
* *Flood Damage Prevention-2009;*
* *Electrical, Plumbing, Gas, and Building Codes-1997.*

*The City's code enforcement program is administered by the Community Development Director. The Director is responsible for issuing permits, conducting building inspections and investigating complaints. In addition, the Director is responsible for enforcing the provisions of the building, residential, electric, gas, mechanical, plumbing, property maintenance and other related codes as well as the city's zoning ordinance. Prior to 2005, the City employed part-time officers to carry out the duties of code enforcement. In general, code enforcement consisted of officers responding to complaints and was reactive as opposed to proactive. This is understandable given the size of the community. Since that time, the City's code enforcement program has evolved into a full-time endeavor. The code enforcement officer is both reactive with regards to complaints, but is also proactive with regards to property inspections. A full-time officer is better equipped to issue notices to property owners before weeds and dilapidated units become a problem. Since 2000, the City has updated many of its codes and ordinances, as well as adopting a comprehensive zoning ordinance. The City has been making strides to upgrade the condition of the housing stock. The process of changing the overall condition of the housing stock takes time. The Code Enforcement Officer will play an important role in the implementation of this housing plan, because many of the objectives are code-related.*

*There are generally two (2) types of structures that present problems for any city's code enforcement office; vacant and occupied dilapidated structures. In general, vacant dilapidated structures should be safely removed so that they don't become a nuisance for the surrounding neighborhood. Vacant, dilapidated structures can be both a safety hazard and a health hazard.*

*Small children are curious and could eventually see the vacant structure as play area. If the unit is structurally unsafe, the roof and walls could collapse. In addition, vacant structures tend to attract rodents. Rodents are known to spread diseases and if people are entering the vacant unit, disease could be spread through the rodents and thus into the community at large. The city has a procedure for removing vacant structures that requires notifications and publications. The occupied dilapidated structures are a more difficult problem. The 2005-2009 American Community Survey-5-Year Estimates conducted by the United States Census Bureau indicates that the median household income for Willis is $29,341. In addition, approximately 22% of the city's families live below the poverty line. The average rate for the United States is 9.9%. This indicates that property maintenance is secondary to food and clothing. With that in mind, the housing stock tends to suffer as the neglect to minor housing maintenance will lead to dilapidation over time. The City is doing all that it can to assist families with housing needs, based on its current budget.*

c. *Previous Implementation Actions*

*In 2005, the city was awarded an owner-occupied housing assistance grant from Texas Department of Housing and Community Affairs. The city rehabilitated/reconstructed six (6) units with these funds. In 2009, the city was again awarded funds from The Texas Department of Housing and Community Affairs and rehabilitated/reconstructed two (2) unit(s) with these funds. The City is currently participating in a grant from The Texas Department of Housing and Community Affairs and is hoping to assist many units with these funds. In addition, the City annually participates in fair housing activities. On March 16, 2010, the City Council proclaimed April as "Fair Housing Month" by virtue of a signed proclamation at the City Council meeting. On March 17, 2010, the City published an advertisement in the local newspaper recognizing April as fair housing month.*

d. *Local Administrative and Legal Capacity Available to Overcome Housing Related Problems*

*In recent years, the City has made great strides in the area of code enforcement. A full-time officer was brought on board in 2005 and the results are showing. The City's other housing related obstacle is the need to repair, or remove dilapidated structures. A majority of the*

*City's housing related problems originate from owner-occupied units. The City does not have the ability to offer assistance to those in need because funds are limited. Given this scenario, it is recommended that the City continue to seek assistance from the Texas Department of Housing and Community Affairs' Owner-Occupied HOME Program.*

## SECTION 1.3-HOUSING PLAN (GOALS AND OBJECTIVES)

*Goal 1:* *Improve the quality of living for Willis residents by upgrading the quality of the housing stock.*

*2014-2020*

*Objective 1: Continue the use of the HOME program (administered through the Texas Department of Housing and Community Affairs TDHCA) in an effort to repair dilapidated housing units throughout the community. (Probable Costs: $10,000.00 per unit)*

*Objective 2: Continue efforts to rid the City of vacant dilapidated structures.*

*A. Aggressively acquire properties that are in tax trust or have delinquent taxes;*

*B. Sell these properties for minimal cost to redevelopers, with the stipulation that affordable new housing be constructed on the lot within a certain time period.*

*Objective 3: Consider the implementation of a rental unit (single-family and multi-family) safety inspection program. The program requires annual and semi-annual inspections and also requires inspections when units are vacated and rented to another tenant. A sample inspection form is found in Appendix "A".*

*Goal 2:* *Assist residents in the procurement of safe, affordable housing in a fair and equitable manner.*

*2014-2017*

*Objective 1: Continue to further fair housing opportunities in Willis by encouraging reputable developers to offer a variety of residential housing in mixed-use developments (ongoing).*

*Objective 2: Give incentives to developers for developing projects on vacant lots or lots that have abandoned dilapidated structures. Incentives could include waivers of building permit and tap fees as well as providing tax trust properties at a minimum cost to the developer.*

*Objective 3: Consider the use of the TDHCA HOME Housing Tax Credit Program to construct or rehabilitate apartment buildings. The tax credits provide investors of affordable rental housing with a benefit that is used to offset a portion of their federal tax liability in exchange for the production of affordable rental housing. Each qualified tax credit development must include a minimum percentage of rent restricted units to be set aside for eligible tenants.*

*Objective 4: Consider the use of TDHCA HOME Multi-family funding to rehabilitate existing apartment buildings.*

*Probable Costs: $8,000 (application fee)*

*Goal 3:* *Preserve existing, older neighborhoods.*

*2015-2030*

*Objective 1: Utilize the existing zoning ordinance to prevent non-residential uses from encroaching upon traditional neighborhoods.*

*Objective 2: Increase code enforcement efforts in at-risk neighborhoods. At-risk neighborhoods are defined as those with at least 25% of all housing units considered deteriorated or dilapidated.*

*Goal 4: Assure quality development of new subdivisions both inside the corporate limits and in the City's Extra Territorial Jurisdiction (ETJ)*

*2015-2030*

*Objective 1: Update the City's subdivision regulations and consider larger lot sizes.*

*Objective 2: Strictly enforce the City's subdivision ordinance.*

*Objective 3: Implement the land use ideas developed in the City's newly established Tax Increment Reinvestment Zone (TIRZ) in order to fully develop and plan for the future growth in the zone.*

*Long-Term Initiatives (2015 and Beyond)*

- *Continue to enforce all housing related codes and ordinances.*
- *Continue efforts to secure funding for housing related projects.*
- *Continue to further fair housing opportunities by encouraging developers to offer residents a variety of housing options.*
- *Continue efforts to protect the City's older neighborhoods.*

# POPULATION

Public Management

# POPULATION

## SECTION 2.1-CENSUS DATA

*Willis is located in Montgomery County and is the county seat. The following graphics show the census tracts and block groups and population density for the city according to 2010 United States Census Data.*

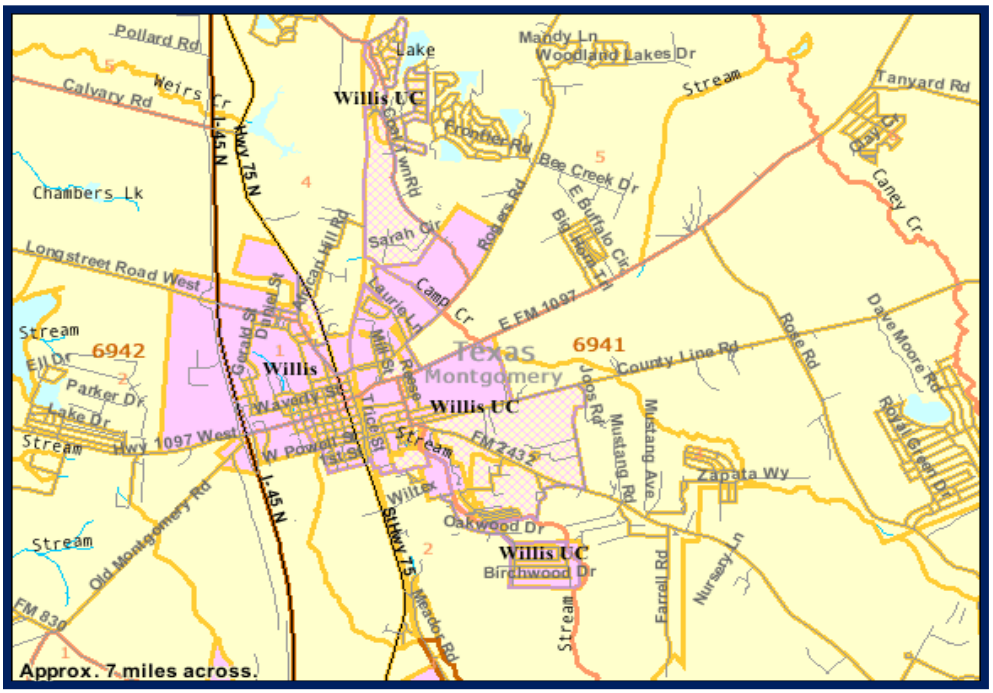



*Figure 5 Willis Census Tracts*

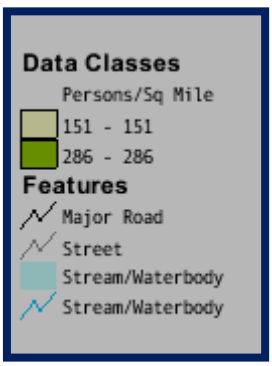
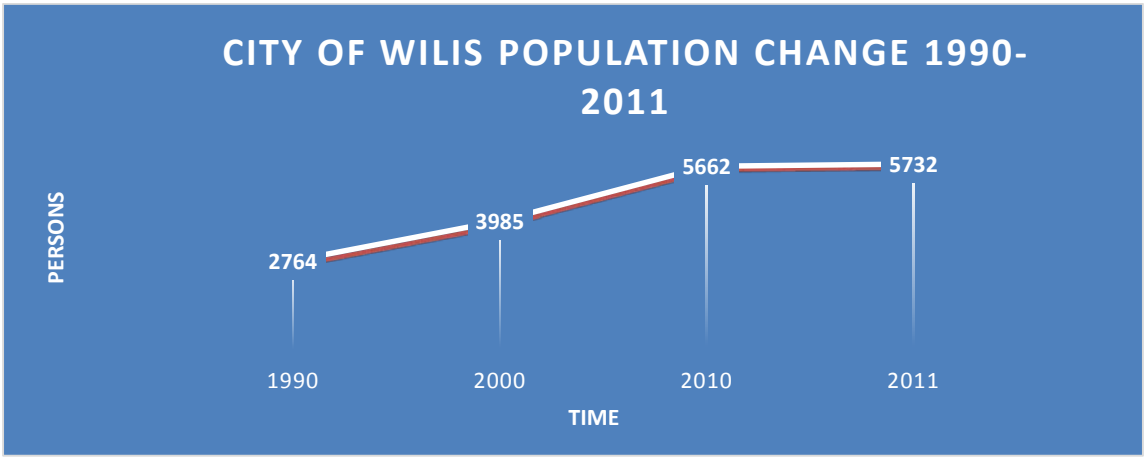




*Figure 6 City of Willis Population Density*

*As indicated in Chart 2.1 below, the city has been experiencing significant population increases since 1990.*

**Chart 2.1**
**Population Change (1990-2011)**




*As shown in the chart above, the population grew by 2,968 persons between the years 1990 and 2011. It is very likely that this trend will continue due to the significant growth in the region. Table 2.1 below gives a detailed composition of the Hispanic and non-Hispanic population groups by race.*

**Table 2.1[8]**
**2010 Hispanic/Non-Hispanic by Race**

| Race | Non-Hispanic | Hispanic Ethnicity also | Total |
|---|---|---|---|
| | | | |
| White | 2.381 | 832 | 3,213 |
| Black/African American | 1,007 | 22 | 1,029 |
| Asian | 21 | 0 | 21 |
| American Indian/Alaskan Native | 13 | 39 | 52 |
| Native Hawaiian/Pacific Islander | 5 | 0 | 5 |
| Other Multi-Racial | 83 | 1,259 | 1,342 |
| | | | |
| | | Grand Total | 5,662 |

[8] Source: 2010 United States Census

*Table 2.2 below provides a demographic profile, according to the 2000 United States Census Data.*

**Table 2.2[9]**
**2000 and 2010 Census Demographic Profiles**

| General Characteristic (2010 US Census) | Number | Percent |
|---|---|---|
| | | |
| Male | 2,704 | 47.8 |
| Female | 2,958 | 52.2 |
| Median Age (years) | 29.1 | |
| Under 5 years | 557 | 9.8 |
| 18 years and over | 3,775 | 66.7 |
| 65 years and over | 460 | 8.1 |
| Average household size | 3.10 | |
| | | |
| Social Characteristics (200 US Census) | | |
| | | |
| Civilian veterans (civilian pop >18) | 347 | 12.7 |
| High school Graduate or higher (pop 25 and >) | 1,502 | 62.8 |
| Bachelor's degree or higher (pop 25 and >) | 184 | 7.7 |
| | | |
| Economic Characteristics | | |
| | | |
| Median household income | $28,260.00 | |
| Per Capita income | $11,122.00 | |
| Families below poverty level | 190 | 17.8 |
| Individuals below poverty level | 843 | 20.8 |
| | | |

*The most significant factors in the table above are the percentage of individuals and families below poverty level. The percentages are 17.8% for families and 20.8% for families. The state averages for these factors are 13.3% and 16.9% respectively. The numbers indicate that families are having trouble finding work, or are taking jobs with low pay. In addition to the poverty factors, only 62.8% of the population, ages 25 and over, has achieved the high school graduate, or equivalency status. The average percentage for the state is roughly 76%. With regards to education, it should be noted that many of the City's high school graduates move on to bigger cities after graduation and are thus are counted in their city of residence, not Willis.*

[9] Source: 2000 United States Census

*These numbers still indicate the great need for education and housing assistance programs within Willis. A great percentage of the city's disabled population live in older housing units that do not meet current acceptable standards for new construction. Older homes and manufactured homes typically have smaller doorways and restrooms that make mobility difficult for individuals in wheelchairs. In addition, there may not be ramps installed, as needed for easy access. Therefore, it is imperative that the city continue to participate in housing rehabilitation programs.*

## SECTION 2.2-EXISTING POPULATION ESTIMATES

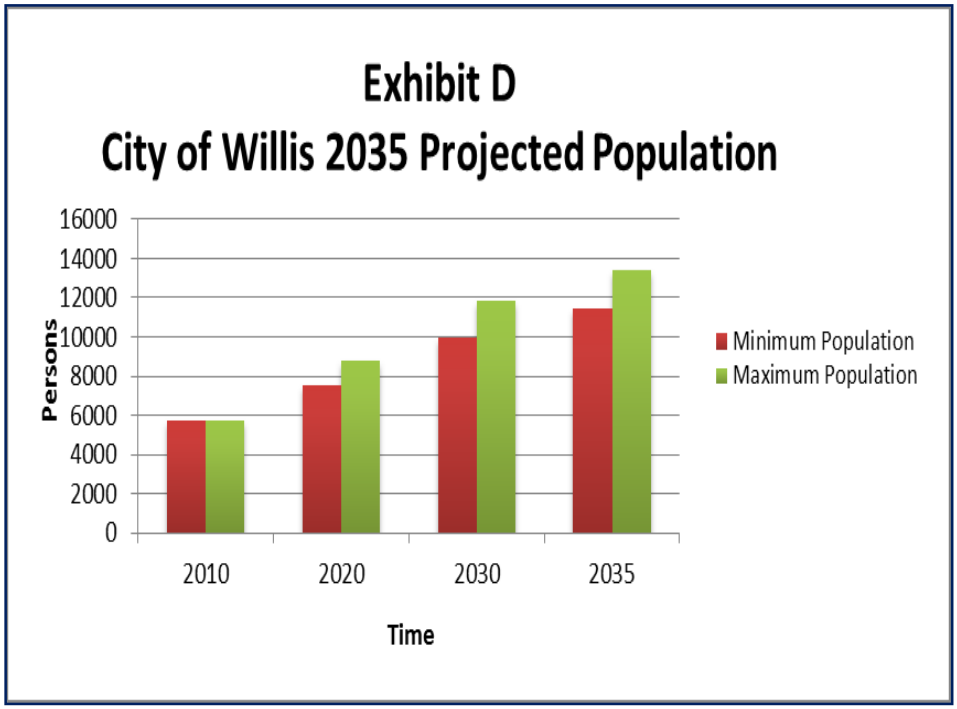
*During the months of April and May of 2011, Public Management, Inc. made a survey of all the housing units and the land use in Willis and in the extraterritorial jurisdiction. The city presently has 1,826 occupied dwelling units. There are a total of 1,841 dwelling units in the City. The 2005-2009 American Community Survey-5-Year Estimates conducted by the United States Census Bureau estimated that the city had 1,297 occupied housing units. The 2011 Housing Unit Survey, conducted by Public Management, Inc., however revealed that the City currently has 1,826 occupied units, which is a 529 unit increase. Using the figure of 3.11 persons per household from the 2000 census and multiplying it by 1,826 occupied dwelling units reveals the current population of Willis.*

*1,826------occupied dwelling units*
*X 3.11--persons per household*
*=5,679*
*+ 53--in group quarters*
*=5,732--2011 population of Willis*

## SECTION 2.3-FUTURE POPULATION

*The future population projections for the City of Willis within its current boundaries are shown on the graph in Exhibit D. The population pattern for the city over the last twenty years has been characterized by periods of steady growth, then significant increase. These increases are likely due to the expansion of the Houston area. Another factor that could affect growth is the city's annexation policies. The city has been expanding in recent years due to annexations. It is likely*

*that the City's annexation policies will continue through the foreseeable future and the population increases should remain steady.*

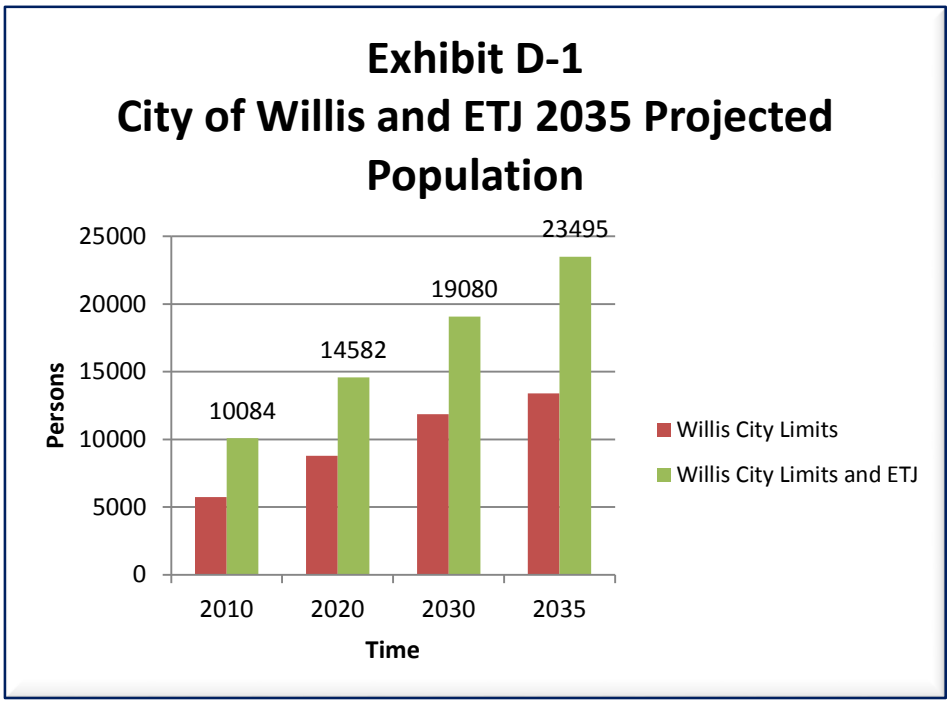


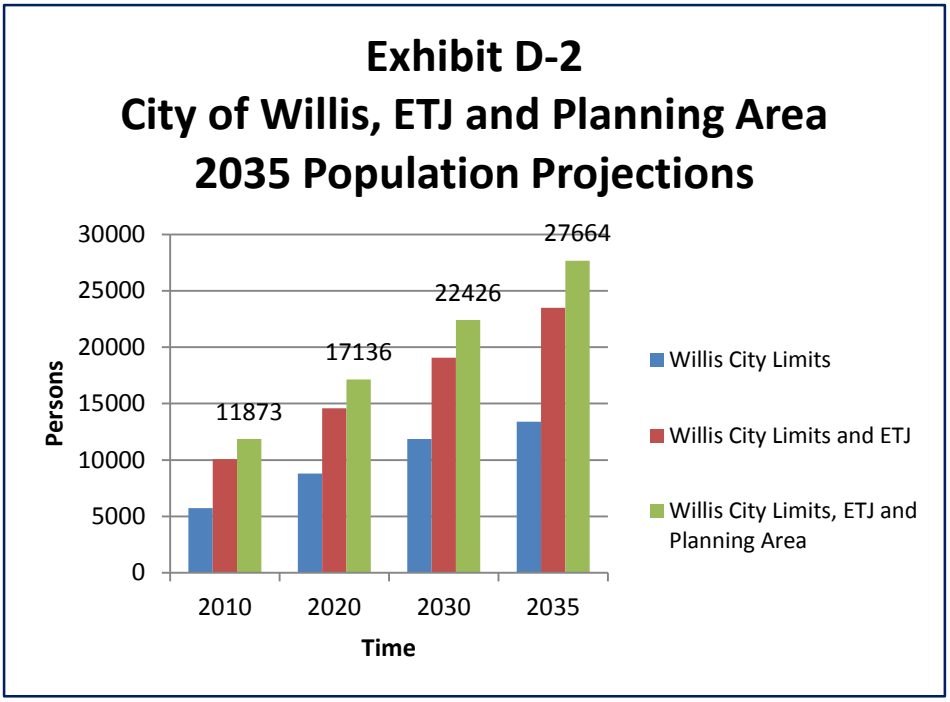

*Future population was determined by two methods. The first method was a linear progression of the population growth rate in the years 1990-2011. This rate was used year by year through the year 2035 to determine the maximum population growth for the City of Willis as shown on Exhibit D. The second method of determining future population was the use of the "2035 Regional Growth Forecast" put forth by the Houston-Galveston Area Council. The projections for this method showed compound annual growth rate for Montgomery County of 2.8% from 2005 to 2035. This rate was used to determine the minimum anticipated population growth for Willis as shown on Exhibit D.*

*Realistically, the population for Willis will probably fall somewhere between these two scales.*

*This population projection method does not recognize the possibilities of annexation or an anomaly of a major subdivision development, or apartment complex with high density housing which would skew the population curve upward. Given the annexation policies of the community, it is likely that the numbers will skew the population upward.*

*According to the 2011 Housing Unit Survey, there are more than 1,400 occupied units in the existing ETJ and an additional 575 occupied units in the larger planning area that are not part of the current population for the City of Willis. Potentially, another 6,000 people could be added to the population of Willis by the end of the planning period.*



# LAND USE

Public Management

# LAND USE

## SECTION 3.1-INVENTORY

*Willis, Texas, which lies in Montgomery County in the southeastern part of Texas, is in the land resource area of the East Texas Timberlands, Texas Blackland Prairie and Gulf Coast Prairies. The northern and western parts of the county, which includes Willis, are undulating; the south and southeastern parts are level to gently sloping. The region lies within the humid, subtropical belt that extends northward from the Gulf of Mexico during spring summer and fall. Winters are mild; summers are hot and humid. Average annual rainfall in the area is about 47.44" and elevation ranges from 79' above sea level to about 330' above sea level10.*

*a. Tabulation*

*The following table shows the existing land use in Willis by category of use.*

**Table 3.1[11]**
**Existing Land Use**

| Land Use | Acres | Percentage of Total Acres | Acres per 100 persons |
|---|---|---|---|
| **Vacant/Undeveloped** | **1,628.1** | **66.4** | **28.4** |
| **Residential Activities-Single Family** | **264.9** | **10.8** | **4.6** |
| **Residential Activities-Manufactured Housing** | **186.8** | **7.6** | **3.3** |
| **Residential Activities-Multi-Family** | **21.5** | **0.9** | **0.4** |
| **Shopping, Business or Trade** | **188.4** | **7.7** | **3.3** |
| **Industrial, Manufacturing** | **14.4** | **0.6** | **0.2** |
| **Social/Institutional** | **147.6** | **6.0** | **2.6** |
| **TOTAL** | **2,451.7** | **100%** | **42.8** |
| **Undeveloped** | **1,628.1** | **66.4** | |
| **Developed** | **823.6** | **33.6** | |

[10] United States Department of Agriculture Soil Conservation Service, "Soil Survey of Montgomery, Texas" 1972

[11] Source: 2011 Housing Unit Survey, Public Management, Inc.

*The overall "Acres per 100 persons" figure indicates that the City has room for growth within the current corporate limits. There is significant undeveloped acreage in the form of vacant lots and raw land. In general, the vacant lots are equipped with City services and located within existing neighborhoods. The best idea for these lots is to convert them to improved lots, thus increasing the city's ad-valorem tax income. As discussed in the housing section of this plan, some of these lots may have been abandoned and placed in tax trust. It would be beneficial to encourage, through incentives, development of these lots in order to place them back onto the active tax roll.*

*In addition to the areas within the corporate limits, there is also significant room for expansion within the City's current Extraterritorial Jurisdiction (ETJ) and the larger planning area. In recent years, the City has expanded several times through annexation. In 2010, the City expanded east along FM 1097 from Business Park Dr. to Caddo Village, just south of Mustang Ranch, and north along the east frontage of IH 45 from the existing city limits to Calvary Rd. in between IH 45 and US 75. As a result, the City's ETJ has also expanded. These annexations occurred as a result of the planning that was done in 2001. The annexation study that was prepared in 2001 recommended five (5) areas of annexation the City could pursue under its general law status at the time. At the time of this report, three (3) of those areas have already been annexed and the City has achieved Home Rule status. As part of this current planning effort, a new annexation study will be prepared with an emphasis on expanding north along both sides of IH 45, north along US 75, between the US 75 and Rogers Rd. and further east along FM 1097.*

## SECTION 3.2-ANALYSIS

a. *Occupied Dwelling Units*

   *Presently, the City of Willis has 1,826 occupied dwelling units and 15 vacant units, which constitutes a 99.1% occupancy rate. Many of the vacant units are dilapidated residential structures. These units should be demolished, or rehabilitated if possible, because these units*

*could lead to fire and health hazards. In the event a structure is removed on a lot that is in trust due to back tax problems, the City could negotiate with the School District and County and offer the lot to a local developer that would agree to build another house on the lot. This would help all taxing entities because the lot would be converted from a negative cash flow item to an improved lot. Occupied dwelling units that are in standard condition generally do not affect land use because a standard residential structure could have a life expectancy in excess of 50 years.*

*b. Existing land use*

*The existing land use pattern for Willis is typical for this size community. The commercial and light industrial land uses are generally adjacent to the major highways. Residential, light commercial, and public land uses are near the central city, in traditional downtown Willis. Agricultural uses and rural residential uses extend beyond the City's corporate limits and into the ETJ. The most significant factor that is affecting land use in Willis is the growth that is taking place along Interstate 45. Recently, the City established a Tax Increment Reinvestment Zone (TIRZ) in the area, in order to fully develop and plan for the future growth in the zone. The plan is to develop commercial areas, along with both single-family and high-density housing. It is important that this region is developed properly because the City's current housing stock cannot support the drastic population increases that are occurring in the region. Other significant land use changes that could occur over time are the emergence of additional residential subdivisions in traditional agricultural areas, especially in the City's outer corporate limits and current ETJ. As indicated in City's "Existing Land Use Map", there is still significant undeveloped land in the City's ETJ and larger planning area.*

*c. Thoroughfares*

*The major thoroughfares affecting land use within the city are Interstate Highway 45 and to a lesser degree, U. S. Highway 75. These highways serve as the arterials for the city. In addition to these highways, the city also has several farm-to-market roads that serve as collectors. They provide access to other communities and help bring goods and persons to and from the arterials. These arterials and collectors provide access to the city's commercial and cultural*

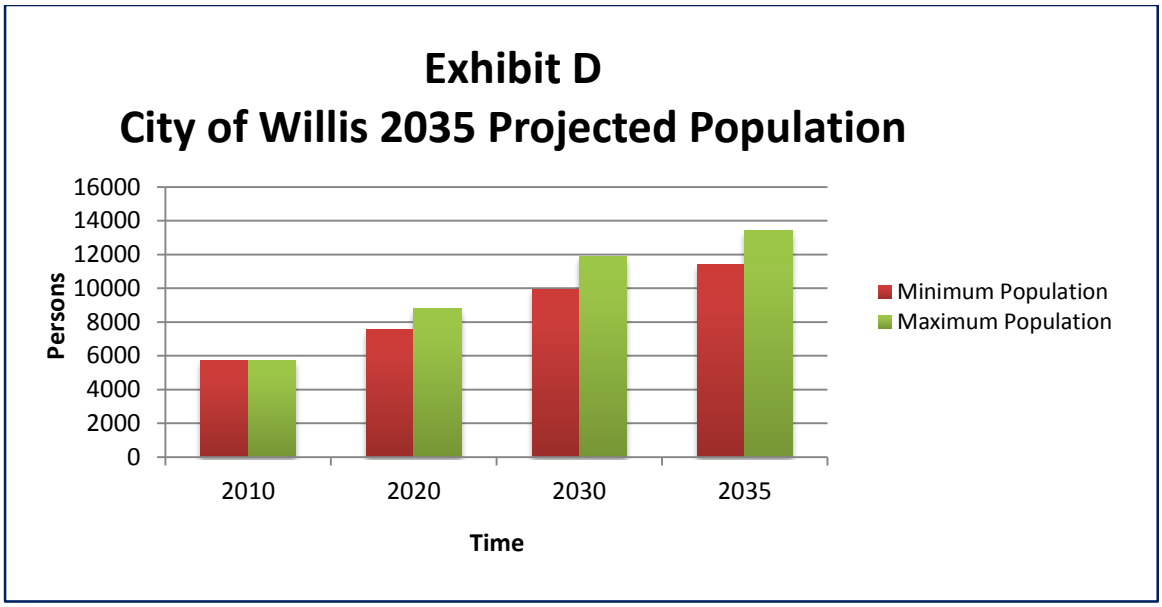
*centers for both local residents and potential customers. The impact of Interstate 45 and U. S. Highway 75 on land use within the City is that many of the commercial land uses within the city have formed along these highways. Thoroughfare development likely will have the biggest impact on the City's future land use. As discussed above, the City established a Tax Increment Reinvestment Zone (TIRZ) along Interstate 45. Included in the development plan for the TIRZ is a proposed loop on the west side of Interstate 45 from Old Montgomery Road in the south to Calvary Road in the north. It is likely that additional development will occur along the proposed loop. A more detailed thoroughfare plan will be presented as a part of this overall planning effort.*

d. *Existing and anticipated population*

*Using the figure of 3.11 persons per household from the 2000 census and multiplying it by 1,826 occupied dwelling units reveals the current population of Willis.*

*1,826------occupied dwelling units*
*X 3.11--persons per household*
*=5,679*
*+ 53--in group quarters*
*=5,732--2011 population of Willis*

*The future population projections of Willis are shown on the graph in Exhibit D. The population pattern for the City over the last twenty years has been characterized by periods of steady growth, then significant increase. These increases are likely due to the expansion of the Houston area. Another factor that could affect growth is the City's annexation policies. Willis has been expanding in recent years due to annexations. It is likely that the City's annexation policies will continue through the foreseeable future and the population increases should remain steady.*




*e. Soils characteristics as related to development*

*Soil is one of the most important resources for Montgomery County. The soils are, in general, excellent for the production of pine timber, woodland grazing of cattle, cotton, corn and other crops. Oil and gravel for construction are also obtained in various parts of the county*

**Table 3.2[12]**
**Soil Characteristics**

| Soil Name | Symbol | Building Site Development-Structures | Recreational Development | Wildlife Habitat Potential |
|---|---|---|---|---|
| Conroe gravelly loamy fine sand | CnC | Slight | Moderate: sandy texture | Fair |
| Pryor sandy clay loam | PrB | Severe: high shrink-swell | Moderate: slopes | Fair |
| Tonio fine sandy loam | TnB | Slight | Moderate: slopes | Fair |

[12] United States Department of Agriculture Soil Conservation Service, "Soil Survey of Montgomery, Texas" 1972

*f. Adequacy of public utilities*

*For existing developed land, utilities are available. Some capital improvements to City utilities will need to be made, as shown in the water, wastewater, streets and storm drainage elements of this plan, in the next five (5) to twenty (20) years to meet local demands. Historically, the City has been able to use Texas Community Development Block Grant Funds to help offset the costs of these improvements. It is anticipated that these funds will be available to the City in the future.*

*g. Adequacy of public facilities*

*Due to the fact that the City's population is likely to double over the next twenty (20) years, many of the City's public facilities will need to be rehabilitated or replaced. These facilities include Police Station, Public Works Facility and a City Hall/Municipal Court Building. In addition to population increases inside the City, population increases will be occurring in the City's ETJ and broader planning area. The people in those areas rely on the City's facilities as well. In addition to increased space, the City will need to consider staff increases to account for higher volumes.*

*h. Storm drainage problem areas*

*Please see the Storm Drainage System element of this plan for further discussion and representation of these problem areas.*

*i. Natural and man-made constraints*

*The following features are considered natural and man-made constraints to development in the Willis area:*

- *The 100-year floodplain and the City's corresponding floodplain ordinance restrict the possibility of development in certain parts of the City.*
- *Missouri-Pacific Railroad.*
- *East Fork-Crystal Creek*
- *IH 45 and US 75*

## SECTION 3.3-LAND USE PLAN

***Goal 1: Improve infrastructure to accommodate the current corporate limits, extra territorial jurisdiction (ETJ) and larger planning area.***

*Objective 1: Follow the recommendations in the water, wastewater, streets thoroughfares and storm drainage elements of this comprehensive plan.*

*Timeline for completion: (3-15 years)*

*Objective 2: Pursue methods of financing these infrastructure improvements.*

*Timeline for completion: (1-5 years)*

*A. Texas Community Development Block Grant Program (TxCDBG)-The City has used these throughout the years for infrastructure improvements. The Program is now administered through the Office of Rural Affairs within the Texas Department of Agriculture (TDA)*

*B. Texas Water Development Board-These funds have also been used by the City and remain an option for future projects.*

*C. Texas Capital Fund-These funds are administered by the Texas Department of Agriculture and are currently being used to fund the road improvements for "Love's Travel Stop" project near IH 45. This project will bring approximately thirty (30) jobs to the community.*

*D. General obligation Bond Sales*

*E. Texas USDA Rural Development*

*Objective 3: Implement the land use ideas developed in the City's newly established Tax Increment Reinvestment Zone (TIRZ) in order to fully develop and plan for the future growth in the zone.*

***Goal 2 Expand the City's existing corporate limits.***

*Objective 1: Follow the recommendations in the new annexation study that is a part of this plan. The plan should consider expanding north along both sides of IH 45, north along US 75, between the US 75 and Rogers Rd. and further east along FM 1097.*

*Timeline for completion: (5-15 years)*

***Goal 3: Encourage the development of commercial businesses along IH 45 and US Highway 75.***

*Objective 1: Establish rapport with potential developers.*

*Timeline for completion: (ongoing)*

*Objective 2: Provide incentives such as tax breaks and grant assistance to encourage businesses to invest in Willis*

*Timeline for completion: (ongoing)*

***Goal 4: Promote an aesthetically pleasing, durable and safe living environment for present and future residents.***

*Objective 1: Continue to implement the City's Code Enforcement Program.*

*Timeline for completion: (ongoing)*

*Objective 2: Strictly enforce the City's zoning ordinance.*

*Timeline for completion: (ongoing)*

*Objective 3: Strictly enforce the City's subdivision regulations.*

*Timeline for completion: (ongoing)*

*Objective 4: Clear unsightly and dilapidated buildings and/or cluttered lots that are fire hazards and eyesores, and encourage the restoration of older buildings and houses that are in good condition.*

*Timeline for completion: (2-5 years)*

***Goal 5: Preserve open spaces within the current corporate limits and the existing extraterritorial jurisdiction.***

*Objective 1: Strictly enforce the City's subdivision ordinance and ensure that future developments provide provisions for public spaces.*

*Timeline for completion: (ongoing)*

*Objective 2: Designate natural areas for use as nature parks and greenbelts, throughout the city.*

*a) Identify available properties. Sources should include tax trust properties, current city inventory, and lots with dilapidated structures.*

*b) Develop these vacant lots as passive parks. The parks could include interpretive trails, butterfly gardens, xeriscape displays, and wildlife.*

***Goal 6: Continue to follow the recommendations outlined in the City's 2000 recreation and open space plan.***

*Objective 1: Construct new, or covert an existing facility for use as an indoor recreation center. Provide recreational programs for all ages at the recreation center.*

*Timeline for completion: (2015-2020)*

*Objective 2: Develop a large municipal park of at least 15-20 acres. The City has approximately 30 acres on Rogers Road at the site of the old landfill.*

*Timeline for completion: (2015-2025)*

*Objective 3: Continue to provide neighborhood pocket parks in all areas of Willis.*

*Timeline for completion: (2015-2035)*

*Objective 4: Install hiking/biking trails throughout the community that link the existing parks.*

*Timeline for completion: (2015-2035)*

***Goal 7: Encourage the development of other projects that provide beneficial economic opportunities for local residents without destroying the existing physical environment.***

*Objective 1: Follow the recommendations in the economic development portion of this comprehensive plan.*

*Timeline for completion: (2015-2020)*

*Objective 2: Promote public and private sector economic development projects on the vacant undeveloped land and/or agricultural land.*

*Timeline for completion: (ongoing)*

*Objective 3: Require that developers inform the City Council of the development's impact on the physical environment i.e. drainage, air quality, water quality, soils, noise, traffic, water usage and sewer usage etc. before approval of building permits and possibly approval of water and sewer service.*

*Timeline for completion: (ongoing)*

EXHIBIT E
EXISTING LAND USE-CITY LIMITS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT E-1
EXISTING LAND USE-CITY LIMITS, ETJ & PLANNING AREA

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT F
FUTURE LAND USE-CITY LIMITS & TIRZ

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT F-1
FUTURE LAND USE- CITY LIMITS, ETJ & PLANNING AREA

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

# Streets System

Public Management

# *STREET SYSTEM*

## SECTION 4.1-INTRODUCTION

*One of the principal daily activities of life and progress in any city is the transportation of people and goods in all forms. The residents of Willis should be able to reach their desired destinations with ease and comfort and should not be exposed to delay caused by inadequate facilities. Sometime soon, the City will be undergoing a painful, yet necessary construction project along FM 1097 from SH 75 to IH 45. The Texas Department of Transportation plans to widen the roadway and add turn lanes and sidewalks. In addition, there are plans to resurface SH 75 in the near future. These projects will cause delays and disruption of normal daily life, but the improved roadways will assist the City in its growth and development for many years to come.*

*Streets are one of the most important physical parts of any city and, if adequate facilities are constructed, will represent the largest single required expenditure of the city. Thoroughfare right-of-ways occupy a significant amount of Willis's total developed area and allow for circulation between all areas within the city. In addition to the movement of traffic, streets provide access to and drainage for abutting properties, open space between buildings, and right-of-way for various utilities. A street system plan is an essential guide to ensure that the future growth and development of Willis will be accomplished in a uniform, orderly manner. The purpose of this planning effort is to provide a guide for the future rehabilitation and reconstruction of existing roadways.*

## SECTION 4.2-STREET SYSTEM SURVEY

*Willis has had limited studies conducted regarding the street system. The system is analyzed annually by the Texas Department of Transportation (TxDOT). TxDOT annually collects, on average 82,000 short-term traffic counts, 1,000 manual traffic counts and more than 300 long-term counts. The Department collects data 24 hours a day, 365 days a year to support federal, state, regional and local transportation entities. District Traffic maps show the Annual Average*

*Daily Traffic (AADT) counts on TxDOT-maintained roads. Twenty-four-hour counts, with truck and seasonal factors, are applied. They are organized by the 25 districts and by the year collected.*

Willis is part of the Houston District. In general, traffic counts increased significantly along US 45 and SH 75 between the years 2010 and 2011. Traffic counts increased by about 19% along IH 45 and by about 13% along SH 75 during that time frame. This makes since due to the increase in population shown in the City's population study that is a part of this plan.

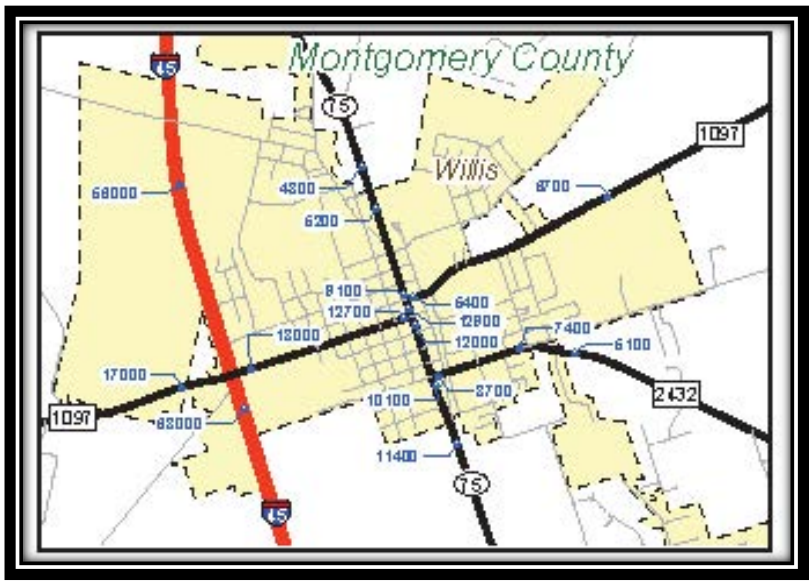



*Figure 4.1-2011* TxDOT AADT counts

*An inventory of the street system has been collected and a summary prepared for analysis in this study. The inventory includes information for each street including the right-of-way width, pavement width, roadway type and roadway condition. The Texas Department of Transportation has jurisdiction over certain roadways in and around Willis. These roadways are IH 45, SH 75, FM 1097 and FM 2432. The City is not responsible for improvements to these roadways.*

## SECTION 4.3-ANALYSIS

a. *Inventory from Field Survey*

*Local roadways within Willis vary in pavement width from 10' to 40' in some areas. The paved city streets are both asphalt and concrete with some curb and gutters, open drainage channels and limited underground drainage. In addition to the paved streets, the City still has a percentage of unpaved streets, mainly gravel; but some dirt.*

*b. Street Deterioration and Causes*

*In the case of Willis, premature deterioration is attributed mainly to severe weather. The City of Willis is located near the Gulf Coast and therefore must deal with occasional hurricanes. Although located somewhat inland, the City still feels the power of these storms in terms of wind and rainfall. The result of the severe weather on the street system is that the water tends to pond on the roadway and eventually seeps underneath the asphalt, thus causing the base to break down or wash away.*

*In addition to severe weather caused by rain and wind, the City's street system is also exposed to extreme temperatures. The temperatures in this region easily reach 100 degrees during the summer. When an asphalt pavement is exposed to sun, wind and water, the asphalt hardens, or oxidizes. This causes the pavement to become more brittle. As a result, the pavement will crack because it is unable to bend and flex when exposed to traffic and temperature changes.*

*Another cause of premature deterioration of a City's street system is increased traffic volumes. As indicated in the population study, the City's population is likely to increase by as much as twenty-five percent (25%) over the next ten (10) years. The increased traffic volumes cause the streets to deteriorate at a faster rate than the City can keep up with the maintenance. Therefore, the City may need to consider complete reconstruction of some streets, rather than just sealing.*

*Without the benefit of financial aid, it is not economically feasible for the city to install expensive flood prevention or storm drainage infrastructure at this time, so the best way to combat the premature deterioration of the streets is through proper design. The city can build the base material up before paving and ensure proper crowning in the center of the streets. In general the street system is in fair condition and is adequate in its ability to meet the city's current needs.*

*c. Types of Street Improvements*

- *Point Repairs-excavation of failed pavement sections to a depth of eight inches (8"), back-filled with eight inches (8") of crushed limestone stabilized with two percent (2%) cement, primed and sealed with a coarse surface treatment. (used to treat potholes and other imperfections and roadway hazards)*
- *Level-up-leveling of depressions in pavement with hot mix asphaltic concrete (HMAC) or hot/cold laid asphaltic concrete. (used to even out roadway surface)*
- *Seal-Coat-application of asphalt cement and covered with pre-coated aggregate at one (1) cubic yard of aggregate per ninety (90) square yards. Aggregate is rolled after application. (ideally used once every three (3) to five (5) years to maintain streets and forestall more costly repairs)*
- *Overlay-depending on the severity of the wear, approximately one inch (1") of surface is milled off the existing roadway. The remaining surface material is then overlaid with a minimum of one and one-half to two inches (1.5" to 2") of hot mix asphaltic concrete (HMAC) or hot mix/cold laid asphaltic concrete, followed by a surface treatment. (used to completely replace the surface material of a street to address pavement deterioration and extend street life)*
- *Reclaim-Mill existing base and asphalt materials to a depth of six inches (6"), add water-based emulsified asphalt to create a recycled asphalt-enhanced roadway base. A two-course surface treatment or asphalt cement is then applied and covered with pre-coated aggregate. The aggregate is rolled after each application. (streets receiving this treatment will last twelve to twenty (12-20) years, depending on the traffic load and environmental conditions)*

*The City is committed to meeting its street repair and maintenance needs through the budgetary process. The type of improvements will be crack-sealing and seal-coat application(s), with a small amount of reclaims. The repairs will be outsourced to a construction company. If the need arises to do major street repairs, those funds would need to come from grants or bond issuances.*

*A list and ranking of street system problems are as follows:*

*A. Poor riding surface on some roadways;*

*B. Limited budget for repairs and maintenance;*

*C. Narrow pavement widths on some streets.*

*Exhibit "K" along with its accompanying table shows all of the streets within the Willis corporate limits together with the width of traveled surface, type of surface, and general condition. Street condition classifications can generally be defined as follows:*

"Good"-relatively smooth surface, without major potholes, well maintained, and well drained.

"Fair"-rough surface, potholes patched during periodic maintenance, less stable sub grade associated with poorer drainage, but can be traveled comfortably at a reasonable speed.

Poor"-very rough or unpaved surface, open potholes, unstable sub grade associated with poor drainage or lack of maintenance, and cannot be traveled comfortably.

## SECTION 6.4-STREET SYSTEM PLAN

*Goal 1: Provide for the safe movement of traffic and to provide roadways that will require little or no maintenance costs.*

*Objective 1: Complete the street system capital improvements schedule as outlined in Table 6.1. The estimates provided below only reflect construction costs and it is assumed that the work will be outsourced to a construction company.*

*(Timeline: 2013-2017)*

*Objective 2: Consider the long-range capital improvements as outlined in Table 6.3. The long-range capital improvements include the reclamation and paving of unpaved roadways as well as additional seal coat projects.*

*(Timeline: 2018-2022)*

*Objective 3: Continue routine maintenance and minor repairs on streets not listed in the Capital Improvements Schedule.*

*(Timeline: 2013-2035)*

*Objective 4: Continue to enforce the City's roadway design standards.*

*(Timeline: 2013-2035)*

*Objective 5: Continue to enforce the city's subdivision ordinance so that design standards are met in new developments.*
*(Timeline: ongoing)*

*Goal 2: Develop future roadways that will enhance economic development opportunities for both current and future local business owners*

*Objective 1: Consider the recommendations listed in the City's thoroughfare plan.*
*(Timeline: 2015-2035)*

**Table 4.1**
**Street System Capital Improvements**
**(2015-2022)**

## *FY 2014/2015 (Phase I)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Business Park Lane | Rogers-FM 1097 | 1,113.00 | LF | Crack Seal | $946.05 |
| Peggy Ln. | ALL | 3,550.00 | SY | Seal Coat | $11,537.50 |
| Little Bill Ln. | ALL | 1,500.00 | SY | Seal Coat | $4,875.00 |
| Libby Circle | ALL | 4,000.00 | SY | Seal Coat | $13,000.00 |
| Laurie Ln. | Rogers-Little Bill Ln. | 6,386.00 | SY | Seal Coat | $20,754.50 |
| Mopac St. | ALL | 2,556.00 | SY | Seal Coat | $8,307.00 |
| Mill St. | Mopac-FM 1097 | 3,676.00 | SY | Seal Coat | $11,947.00 |
| Cross St. | Mill St.-Church St. | 1,067.00 | SY | Reclaim | $16,805.00 |
| Church St. | ALL | 1,360.00 | SY | Reclaim | $21,420.00 |
| | | | | | |
| TOTAL | | | | | $109,592.05 |

## *FY 2015/2016 (Phase II)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Industrial Park Ln. | Trice-Paddock | 1,564.50 | LF | Crack Seal | $1,329.83 |
| E. Watson | S. Cochran-Paddock | 2,118.00 | SY | Reclaim | $33,358.50 |
| S. Cochran | E. Watson-Powell | 1,164.00 | SY | Reclaim | $18,333.00 |
| Lindley Dr. | Trice-Paddock | 2,866.00 | SY | Seal Coat | $9,314.50 |
| S. Shirley Ln. | ALL | 5,058.00 | SY | Seal Coat | $16,438.50 |
| N. Shirley Ln. | ALL | 3,368.00 | SY | Seal Coat | $10,946.00 |
| Cemetery Ln. | FM 1097-N Shirley | 2,613.00 | SY | Seal Coat | $8,492.25 |
| Cemetery Rd. | Paddock-Cemetery Ln. | 800.00 | SY | Seal Coat | $2,600.00 |
| Reese | FM 1097-Cemetery Rd. | 1,522.00 | SY | Seal Coat | $4,946.50 |
| | | | | | |
| TOTAL | | | | | $105,759.08 |

## *FY 2016/2017 (Phase III)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Campbell | Hill St.-FM 1097 | 3,000.00 | LF | Crack Seal | $2,550.00 |
| Willwood | Powell-East Dr. | 1,080.00 | SY | Reclaim | $17,010.00 |
| East Dr. | ALL | 597.00 | SY | Reclaim | $9,402.75 |
| West Dr. | ALL | 1,248.00 | SY | Reclaim | $19,656.00 |
| Janet St. | ALL | 3,570.00 | SY | Seal Coat | $11,602.50 |
| Rebecca Ln. | ALL | 4,032.00 | SY | Seal Coat | $13,104.00 |
| Wooded Oaks Ct. | ALL | 902.00 | SY | Seal Coat | $2,931.50 |
| Pine Circle Dr. | Oak Woods Dr.-City Limits | 3,929.00 | SY | Seal Coat | $12,769.25 |
| Birchwood Dr. | ALL | 5,133.00 | SY | Seal Coat | $16,682.25 |
| | | | | | |
| TOTAL | | | | | $105,708.25 |

## *FY 2017/2018 (Phase IV)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Philpot St. | MLK-Marlin St. | 450.00 | LF | Crack Seal | $382.50 |
| Stewart St. | West of Kennedy | 230.00 | SY | Crack Seal | $195.50 |
| Maple Ridge Dr. | West of I 45 | 300.00 | SY | Crack Seal | $255.00 |
| Lincoln Ridge | Gerald-I 45 | 900.00 | SY | Crack Seal | $765.00 |
| N. Forest Dr. | ALL | 10,307.00 | SY | Seal Coat | $33,497.75 |
| Cedarwood Dr. | ALL | 3,681.00 | SY | Seal Coat | $11,963.00 |
| Applewood Dr. | ALL | 2,333.00 | SY | Seal Coat | $7,582.25 |
| First St. | ALL | 3,285.00 | SY | Seal Coat/partial overlay | $17,246.25 |
| Avenue A | ALL | 1,560.00 | SY | Seal Coat | $5,070.00 |
| W. Powell St | West of US 75 | 4,882.00 | SY | Seal Coat/partial overlay | $25,630.50 |
| | | | | | |
| TOTAL | | | | | $102,587.75 |

## *FY 2018/2019 (Phase V)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Monroe St. | East of I 45 | 180.00 | LF | Crack Seal | $153.00 |
| Young St. Phase 1 & 2 | Lincoln Ridge-Perkins | 850.00 | SY | Crack Seal | $722.50 |
| Longstreet | West of I 45 feeder | 900.00 | SY | Crack Seal | $765.00 |
| Gerald St. | Young St.-Campbell | 2,500.00 | SY | Crack Seal | $2,125.00 |
| Mink St. | ALL | 5,223.00 | SY | Seal Coat/partial overlay | $27,422.00 |
| W. Watson | ALL | 3,803.00 | SY | Seal Coat/partial overlay | $19,965.75 |
| Worsham St. | ALL | 7,250.00 | SY | Seal Coat | $23,562.50 |
| Woodson St. | Marlin-Mink | 5,133.00 | SY | Seal Coat | $16,683.33 |
| Wood St. | Marlin-Mink | 4,525.00 | SY | Seal Coat | $13,820.63 |
| | | | | | |
| TOTAL | | | | | $105,219.71 |

## *FY 2019/2020 (Phase VI)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Thomason | Mink-Old US 75 | 7,781.00 | SY | Seal Coat | $25,290.42 |
| Stewart | Kennedy-N. Bell | 6,160.00 | SY | Seal Coat | $20,020.00 |
| Marlin | Philpot-N. Bell | 9,625.00 | SY | Seal Coat | $31,281.25 |
| Turner | ALL | 1,153.00 | SY | reconstruct/widen | $18,165.00 |
| John F Kennedy | ALL | 1,153.00 | SY | reconstruct/widen | $18,165.00 |
| | | | | | |
| TOTAL | | | | | $112,921.67 |

## *FY 2020/2021 (Phase VII)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| W. Rogers Rd. | US 75-Campbell | 2,728.00 | SY | Seal Coat | $8,866.00 |
| Golden St. | ALL | 3,581.00 | SY | Seal Coat | $11,636.63 |
| Maple Ridge Dr. | ALL | 3,622.00 | SY | Seal Coat | $11,772.22 |
| Falling Oak Dr. | ALL | 2,080.00 | SY | Seal Coat | $6,760.00 |
| Standing Oak Dr. | ALL | 2,090.00 | SY | Seal Coat | $6,792.50 |
| Oaken Timber Ln. | ALL | 500.00 | SY | Seal Coat | $1,625.00 |
| Aspen Way | ALL | 2,200.00 | SY | Seal Coat | $7,150.00 |
| Cedar Ridge Ct. | ALL | 1,840.00 | SY | Seal Coat | $5,980.00 |
| Oak Hill Dr. | ALL | 3,400.00 | SY | Seal Coat | $11,050.00 |
| Cypress Dr. | ALL | 3,600.00 | SY | Seal Coat | $11,700.00 |
| Live Oak Trl. | ALL | 3,600.00 | SY | Seal Coat | $11,700.00 |
| Jayton Wood Way | ALL | 980.00 | SY | Seal Coat | $3,185.00 |
| | | | | | |
| TOTAL | | | | | $98,217.35 |

## *FY 2021/2022 (Phase VIII)*

| Street Name | Location | Quantity | Unit | Type of Repair | Estimated Cost |
|---|---|---|---|---|---|
| | | | | | |
| Calhoun | ALL | 1,293.00 | SY | Reclaim | $20,370.00 |
| Rayford | ALL | 1,034.00 | SY | Reclaim | $16,285.50 |
| Lamar | ALL | 1,034.00 | SY | Seal Coat | $3,360.50 |
| Bybee | ALL | 901.00 | SY | Seal Coat | $2,929.33 |
| Daniel St. | ALL | 2,824.00 | SY | Seal Coat | $9,178.00 |
| Runnels | ALL | 1,800.00 | SY | Seal Coat | $5,850.00 |
| TOTAL | | | | | $57,973.33 |

**Table 4.2**
**Street System Capital Improvements-2013 Bond Issue**

| Street Name | Location | Estimated Costs |
|---|---|---|
| | | |
| South Campbell St | Southbend-FM 1097 | $758,034.00 |
| MLK | IH 45 to US 75 | $764,141.00 |
| Paddock | ALL | $1,105,674.00 |
| Rogers Rd. | US 75 to Laurie Lane | $1,055,700.00 |
| TOTAL | | $3,683,549.00 |

**Table 4.3**
**Street System Capital Improvements-Future Projects**

| Street Name | Location | Estimated Costs |
|---|---|---|
| | | |
| Young Street | Gerald St.-MLK Blvd. | $881,454.00 |
| North Danville St. | ALL | $2,670,383.00 |
| Cannan Rd. | ALL | $1,208,921.00 |
| N. Holland St. | W. Marlin-MLK Blvd. | $316,544.00 |
| Bell St. | FM 2432-Rogers | $104,094.00 |
| Total | | $5,181,396.00 |

EXHIBIT G
EXISTING STREET CONDITIONS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT H
PROPOSED STREET IMPROVEMENTS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

# THOROUGHFARES

Public Management

# THOROUGHFARE SYSTEM

## SECTION 5.1-INTRODUCTION

*The basic principle involved in thoroughfare planning is that traffic moving on local streets is generally intersected by a system of collector thoroughfares that carry local traffic through the neighborhood to the arterial thoroughfares. The arterial thoroughfares then provide the means of access to other neighborhoods or distant points within the urban area or provide access to the freeways and highways leading to other communities.*

***Arterial thoroughfares (Major)** create the boundaries of the various neighborhoods throughout the community, and should avoid cutting through established residential areas. These thoroughfares should extend a considerable distance and have continuous alignments, wide right-of-way, thick and wide roadway surfaces, few intersections with local streets, and no intersections with railroads at grade. If the arterial thoroughfares are properly located, convenient access can be provided to existing commercial developments and unnecessary traffic can be removed from local streets.*

***Collector thoroughfares** are usually located approximately midway between arterials, dividing the community as nearly as possible into quadrants. Collectors are usually shorter in length than arterial thoroughfares. Also, collector rights-of-way are not as wide and do not require as thick a paving as do the arterial thoroughfares. Collector thoroughfares intersect more frequently with the local streets than do the arterial thoroughfares, and have a continuous alignment within the neighborhood. In commercial areas, traffic volumes build up too rapidly for efficient use of collectors, and the local access streets should therefore connect directly with the arterials. In large industrial areas, a collector street may be needed only occasionally.*

***The local or residential streets** of the neighborhood lead to the collectors. These local streets are*

*curvilinear, sometimes discontinuous, in order to discourage all traffic except that which may originate in or have a destination within the neighborhood. Most of the homes of a community face on the local streets; therefore, these streets represent the greatest percentage of the total community street system. Residential or local street rights-of-way may be less in width than arterial or collector thoroughfare rights-of-way, and the continuous routing of local thoroughfares is not always necessary. Cul-de-sacs and sweeping or reverse curves are permitted. The basic design and layout of local street system facilitates local traffic movement and discourages through traffic or fast moving traffic.*

**Table 5.1**
**Thoroughfare Standards**[13]

| Thoroughfare Type | Right-of-Way Width | Pavement Width |
|---|---|---|
| | | |
| Principal Arterial 6 lane (Divided) | 120’ | 2 x 36’ |
| Minor Arterial 6 lane (Divided) | 100’ | 2 x 33’ |
| Minor Arterial 4 lane (Divided) | 100’ | 2 x 24’ |
| Minor Arterial 4 lane (Undivided) | 65’-75’ | 44’ |
| Collector 4 lane (Undivided) | 65’-75’ | 44’ |
| Collector 2 lane (Undivided) | 60’-75’ | 36’-40’ |
| Residential | 50’-60’ | 22’-24’ |

*This network of arterials should provide adequate and convenient connection between areas or neighborhood cells, as they are often termed, and would serve as carriers of the heaviest flow of traffic.*

*The location of thoroughfares has traditionally influenced the development and value of urban property. Land along high volume traffic arterials is customarily considered to have higher commercial and industrial values than similar property on arterials carrying less traffic.*

[13] Texas Department of Transportation (Houston District)

*One of the main purposes of circulation planning or thoroughfare planning is to secure faster, safer, and more pleasant travel as limited by the financial ability of the urban community to pay for such improvements. Since circulation systems are permanent and are expensive to build and operate, the greatest care and foresight is needed to develop plans for them. Specialized goals must be balanced at all times with the overall goals of city planning, and there must be a sound estimate of future needs as well as present problems.*

## SECTION 5.2-INVENTORY AND ANALYSIS OF MAJOR AND COLLECTOR STREETS

*An inventory of the existing arterial and collector thoroughfares within the City of Willis has been completed. The existing roadways that should be considered arterial thoroughfares in the City of Willis are: Interstate Highway 45 (Principal) and U.S. Highway 75(Minor). The existing roadways that could be considered collector thoroughfares within the City of Willis are: Rogers Rd. F.M. 1097, F.M. 2432 and Campbell St.*


*Figure 5.1-Existing Thoroughfares-Willis, Texas*

*A review of the City of Willis existing thoroughfare inventory indicates that the roadways that would be considered arterial thoroughfares, Interstate Highway 45 and U.S. Highway 75 are owned and maintained by the Texas Department of Transportation (TxDOT). In general, these arterials are in good repair and currently are satisfactory in widths. In addition, TxDOT is responsible for the maintenance and repairs to F.M. 1097 and F.M. 2432. The rights-of-way and pavement widths are determined by their design criteria and are not governed by the City of Willis. The other roadways are the responsibility of the City of Willis. As indicated in the street system study, the City already has improvement plans for Rogers Rd. and Campbell.*

*In addition to the maintenance and repairs of these existing roadways, thought has been given to future roadways outside of the City's current jurisdiction. During the City's review of future land use, a 3-mile planning was established for use in planning infrastructure. It is the purpose of this plan to provide for future roadways for the City's current corporate limits, existing ETJ and a broader planning area that extends outside the ETJ. As development occurs, it will be necessary to construct major thoroughfare streets to accommodate growth, provide circulation and alleviate heavy traffic areas in the City.*

## SECTION 5.3-LIST AND RANK OF PROBLEMS

1. *Congested traffic flow through downtown region*
2. *Existing and potential collectors with inadequate right-of-way, and in need of repair*
3. *Lack of quality thoroughfares in future development areas*

## SECTION 5.4-THOROUGHFARE PLAN

*Goal 1: Provide for better traffic flow through the downtown region.*

*Objective 1. Utilize the existing street and highway facilities in order to provide future thoroughfares within the corporate limits of Willis.*

*Objective 2.* *Consider the recommendations as outlined in the City street system plan. The completion of the City's street system 8-year capital improvement program will have a positive impact on the City's local roadways.*

*Goal 2:* *Provide future quality thoroughfares both within the current ETJ and broader planning area.*

*Objective 1:* *Consider the proposed thoroughfares as outlined in Table 5.2 below. (Timeline: 2015-2035)*

**Table 5.2**
**Proposed Thoroughfares**

| Priority | Description |
|---|---|
| **Priority No. 1** | A. Future Road Extension From Fm 1097 Running southeasterly To I-45. Funding From Tirz<br>B. Widening Of Paddock Street From County Line Rd To Fm 1097 E. |
| **Priority No. 2** | Future Road Extension From County Line Road Southerly To Fm 2432 |
| **Priority No. 3** | Future Road Extension From Fm 1097 W. Northward Crossing Longstreet Rd And Ending At Calvary Road. Funding From Tirz |
| **Priority No. 4** | Future Road From The South End Of Moran St Running South And Easterly, Crossing Hwy 75 And The Railroad And Ending At South Cochran At The Intersection Of Oak Woods Dr. Funding By Tirz |
| **Priority No. 5** | Future Road From Fm 1097 E. At Cannan Rd, Running Northerly To Rogers Road At The Intersection Of Coaltown Rd. |
| **Priority No. 6** | Future Road From Fm Calvary Road (4000 Ft West Of I-45) Going Northward To Shepard Hill Road At Old Danville Rd. |
| **Priority No. 7** | Future Road From Coaltown Rd At The Intersection Of Turquoise Trail Northward To The Intersection Of Hwy. 75 And Esperanza Road |
| **Priority No. 8** | Future Road From Fm 1097 E. (W Of Running Bear) And Going Northwest To Rogers Road At The Intersection Of Frontier Road |

## SECTION 5.5-FUNDING SOURCES

*All state and federal highways are constructed, improved, and maintained by Texas Department of Transportation on a regional basis.*

*Assistance may also be available from:*

- *A joint program between the State, County, and City could provide partial funding and maintenance to thoroughfares as City expansion dictates.*
- *The construction and improvements of major thoroughfares in the City could be accomplished by a Capital Improvements Program through General Obligation (Tax) Bonds extended over a period of years.*
- *The Willis Community and Economic Development Corporations.*
- *The Texas Capital Fund (TCF) primarily for the improvement of local streets in specific areas.*

EXHIBIT I
EXISTING THOROUGHFARE CONDITIONS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT J
FUTURE THOROUGHFARE IMPROVEMENTS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

# Water System

Public Management

# WATER SYSTEM

## SECTION 6.1-POPULATION

*Existing and projected population data was determined through the year 2035 as indicated below:*

*a.* Existing Population and System Connections

*According to the 2014-2035 Housing Population Land Use Report prepared by Public Management, the City was estimated to have a population of 5,732 persons as of 2011 with an annual growth rate of 2.8%. Projecting from December 2011 to April 2013 using the annual growth rate of 2.8% results in a population of 5,950. As of March 31, 2013, the City had 2,052 active water connections and 1,743 active sanitary sewer connections. This produces ratios of approximately 2.9 people per water connection and 3.4 people per sewer connection.*

*b.* Future Population and System Connection Projections

*The Public Management report estimated population growth through 2035 using an approximate annual growth rate of 2.8%. Using this growth rate, we have calculated the anticipated population for a few key years and summarized the results in Table 6.1 below. The projection is for the City limits only, and does not account for annexation, which the report states could add an additional 6,000 people by the year 2035. Projections for the anticipated water and sewer connections are also presented in Table 6.1. Connections are based on the previously-discussed ratios of 2.9 people per water connection and 3.4 people per sewer connection.*

**Table 6.1: Population and Connection Projections**

| | 2014 | 2017 | 2021 | 2035 |
|---|---|---|---|---|
| **Population** | **6,077** | **6,781** | **7,585** | **11,225** |
| **Water Connections** | **2,096** | **2,339** | **2,616** | **3,871** |
| **Sewer Connections** | **1,783** | **1,987** | **2,225** | **3,292** |

*The information on this table can be used as a tool to evaluate the capacity of both existing and future infrastructure capacity. These water and sewer connection projections should also be considered when evaluating potential annexations.*

## SECTION 6.2-EXISTING WATER SYSTEM

*a.* Existing Water Plant Facilities

*The City owns and maintains three groundwater supply plants and one remote well within the City limits. All of the City's water supply comes from the groundwater supply facilities which produce water from the Gulf Coast Aquifer. The existing facilities are detailed in Table 6.3. The City's three (3) water plants are: Police Station Water Plant ("WP1"), Gerald Street Water Plant ("WP2"), and Pin Oak Water Plant ("WP3"). These water plants are shown on the overall water system map included as Attachment A. Of these water plants, the Pin Oak Water Plant is the newest at 6 years old, the Gerald Street facility is approximately 30 years old. The Police Station Water Plant is over 70 years old, however the Police Station well and the well at City Hall are both approximately 65 years old.*

*A County-wide 30% reduction in Gulf Coast Aquifer use will go into effect at the beginning of 2016. This reduction has been mandated by the Lone Star Groundwater Conservation District ("LSGCD") in the District Regulatory Plan Phase II(B). The City is part of a joint Groundwater Reduction Plan ("GRP"), sponsored by the San Jacinto River Authority*

*("SJRA"). However, under this plan, the cost for the SJRA to provide an alternate water source for the City is significant. Therefore, the City plans to produce their own alternate water with the two (2) Catahoula wells, which will much more cost effective than participation in the SJRA plan.*

*The additional Catahoula wells will augment the system's total design well capacity to 4,900 gpm (8,166 connections). However, the City has indicated they intend on regularly operating only the two Catahoula wells. With a combined capacity of 2,400 gpm (4,000 connections), the Catahoula wells will be the main source of water for the City, while the existing Gulf Coast wells will be used as back-ups to augment the supply. When the cooling towers are installed, the Jasper wells will be placed in back up mode. If a Catahoula well is taken offline, then the Jaspers will be used to make up the difference in production. When the city is using the Catahoula wells, the Jasper wells will need to be cycled once per month, for a short period of time, to keep the wells functioning properly. When the production levels of the Police Station Water Plant and City Hall Water Plant drop to the pump level, then the well would have to be plugged.*

*Table 6.2 below summarizes the well capacities along with the maximum number of connections that may be served per TCEQ requirements. This table indicates there is sufficient water plant capacity to serve the 3,871 connections estimated for the year 2035.*

**Table 6.2: Water Well Capacity**

| | *gpm* | *Connections* * |
|---|---|---|
| ***Current Capacity*** | *2,500* | *4,166* |
| ***Catahoula Capacity*** | *2,400* | *4,000* |
| ***Total Capacity*** | *4,900* | *8,166* |

**Two or more wells having a total capacity of 0.6 gallons per minute per connection must be provided according to TCEQ Rules.*

*Table 6.3, shown below, summarizes the existing water plant components at each water plant and their associated capacities based on the Texas Commission on Environmental Quality ("TCEQ") requirements, which can be found in Chapter 290 of the Texas Administrative Code.*

**Table 6.3: Water Plant Components – Existing**

| Plant | Equipment | Capacity | Connections per Allocated Capacity |
|---|---|---|---|
| WP1 | Water Well No. 1 | 0 gpm (abandoned) | |
| | Water Well No. 2 (Gulf Coast Aquifer) | 300 gpm | 500 |
| | Remote Water Well No. 3 (Gulf Coast Aquifer) | 250 gpm | 416 |
| | Water Well No. 7 (Catahoula Well) | 1200 gpm | 2000 |
| | Ground Storage Tank | 210,000 gal | 1,050 |
| | Pressure Tanks | 2 x 10,000 gal | 1,000 |
| | Booster Pumps | 3 x 400 gpm | 600 |
| WP2 | Water Well No. 4 (Gulf Coast Aquifer) | 750 gpm | 1,250 |
| | Ground Storage Tank | 125,000 gal | 625 |
| | Elevated Storage Tank | 75,000 gal | 375 (storage) 750 (pressure) |
| | Pressure Tank | 1 x 10,000 gal 1 x 5,000 gal | 750 |
| | Booster Pumps | 3 x 500 gpm | 750 |

| | | | |
|---|---|---|---|
| **WP3** | **Water Well No. 5 (Gulf Coast Aquifer)** | **1,200 gpm** | **2,000** |
| | **Water Well No. 6 (Catahoula Well)** | **1200** | **2000** |
| | **Elevated Storage Tank** | **300,000 gal** | **1,500 (storage) 3,000 (pressure)** |

*Table 6.4, below, summarizes the combined system totals for each type of component. The table indicates that there is currently sufficient water plant capacity to serve the existing 2,052-water connections. As growth and annexations occurs, the water plant components will need to be monitored to ensure there is sufficient capacity to serve the active number of water connections.*

**Table 6.4: Existing Combined System Total**

| *Component* | | *Planned Capacity* | *Connections per Capacity* | |
|---|---|---|---|---|
| ***Well Capacity (Gulf Coast Aquifer)*** | | *2,500 gpm* | *4,166 (1)* | |
| ***Catahoula Well Capacity*** | | *2400 gpm* | *4000 (1)* | |
| ***Storage (Ground and Elevated) Capacity*** | | *760,000 gal* | *3,550 (2)* | |
| ***Service Capacity*** | *Pumps (Firm)* | *1,800 gpm* | *900 (3)* | *Total: 4,650* |
| | *EST* | *375,000 gal* | *3,750 (4)* | |
| ***Pressure Capacity*** | *HPT* | *15,000 gal* | *750 (4)* | *Total: 4,500* |
| | *EST* | *375,000 gal* | *3,750 (4)* | |

*Notes:*

1. *Two or more wells having a total capacity of 0.6 gallons per minute per connection must be provided according to TCEQ rules.*

2. *According to TCEQ rules, a total storage capacity of 200 gallons per connection must be provided.*

3. *Each pump station or pressure plane shall have two or more pumps that have a total capacity of 2.0 gallons per minute per connection, or shall have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service according to TCEQ rules.*

4. *According to the TCEQ Rules, pressure tanks shall have a capacity of 20-gallons per connection. A pressure tank capacity of 30,000 gallons is sufficient for up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections.*

*Storage and Pressure Capacity: The City currently has 335,000 gallons of Ground Storage Tank ("GST"), 425,000 gallons of Elevated Storage Tank ("EST") capacity and 15,000 gallons of Hydropneumatic Pressure Tank ("HPT") capacity. However, the 50,000 gallon EST at Water Plant No. 1 is in poor condition, and the City is in the process of removing it, reducing the system's total EST capacity to 375,000 gallons. Two (2) 10,000 gallon pressure tanks are being installed in its place. Table 6.5 below summarizes the planned combined system totals for each type of water plant component, as well as the maximum number of connections that may be served per TCEQ requirements.*

**Table 6.5: Planned Combined System Totals**

| *Component* | | *Planned Capacity* | *Connections per Capacity* | |
|---|---|---|---|---|
| ***Catahoula Well Capacity*** | | *2,400 gpm* | *4,000 (1)* | |
| ***Other Well Capacity*** | | *2,500 gpm* | *4,166 (1)* | |
| ***Storage (Ground and Elevated) Capacity*** | | *710,000 gal* | *3,550 (2)* | |
| ***Service Capacity*** | *Pumps (Firm)* | *1,800 gpm* | *900 (3)* | *Total:* |
| | *EST* | *375,000 gal* | *3,750 (4)* | *4,650* |
| ***Pressure Capacity*** | *HPT* | *35,000 gal* | *2,500 (4)* | *Total:* |
| | *EST* | *375,000 gal* | *3,750 (4)* | *6,250* |

*Notes:*

1. *Two or more wells having a total capacity of 0.6 gallons per minute per connection must be provided according to TCEQ Rules.*
2. *According to TCEQ Rules, a total storage capacity of 200 gallons per connection must be provided.*
3. *Each pump station or pressure plane shall have two or more pumps that have a total capacity of 2.0 gallons per minute per connection, or shall have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service according to TCEQ Rules.*
4. *According to the TCEQ Rules, pressure tanks shall have a capacity of 20-gallons per connection. A pressure tank capacity of 30,000 gallons is sufficient for up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections.*

*This table indicates there is currently sufficient water plant capacity to serve the existing 2,052-water connections. As growth occurs, the water plant components will need to be monitored to ensure there is sufficient capacity.*

*b.* Existing Water Distribution Facilities

*The City's existing water distribution system was evaluated using the most current maps available and compared with TCEQ's minimum waterline sizes table in Chapter 290.44(c). A map of the existing water distribution system is included in Attachment A. The majority of the undersized water lines are located in the center of town. The undersized water lines are shown in solid orange with black border in Attachment B. It should be noted that all water lines 2-inches and smaller were highlighted for replacement with a larger size line. Many water lines in the City are also deteriorating due to age, and should be replaced to prevent leaking and*

*infiltration. Recommended replacement lines are shown in dashed green in Attachment B, along with additional proposed water lines to improve water circulation. The recommendations are not necessarily exhaustive, and a more intensive study may reveal more lines that are in need of replacement.*

**Table 6.6: TCEQ Minimum Water Line Sizes**

| *Maximum Number of Connections* | *Minimum Line Size (inches)* |
|---|---|
| ***10*** | *2* |
| ***25*** | *2.5* |
| ***50*** | *3* |
| ***100*** | *4* |
| ***150*** | *5* |
| ***250*** | *6* |
| ***>250*** | *8 and larger* |

*TCEQ rules require a minimum pressure of 35 psi at all points within the distribution system. The City's system is completely on one pressure plane, and pressures vary system-wide from approximately 46 psi to 90 psi. The City currently does not have any issues with pressure maintenance; however, in the future, as significant development occurs, the system should be modeled to locate any potential issues.*

## SECTION 6.3-PROPOSED WATER SYSTEM IMPROVEMENTS

*a. Proposed Water Distribution Facilities*

*In addition to replacing undersized lines and adding water lines for circulation as mentioned earlier in this report, it will be necessary to extend water lines to recently annexed areas, especially those areas where growth and development are anticipated to occur. A map showing proposed water lines, shown in dashed red, is included in Attachment B. The primary areas of anticipated growth are to the north along the I-45 and US 75 corridors. To serve these areas, large water mains are proposed along both I-45 and US 75 to the north, with*

*several interconnections between the mains to help with circulation. Increased water availability around the City may also encourage faster growth.*

*In an effort to promote growth on the west side of Willis, a Texas Increment Reinvestment Zone (TIRZ) was created to fund major water, sewer and road infrastructure. TIRZ funding will generate money from a portion of tax revenue from property within the TIRZ. The proposed major water infrastructure to be financed by TIRZ is shown on the Proposed Water Map (Attachment B).*

b. *Priorities for Water Plant and Water Distribution Improvements*

***2015 – 2016 $2,500,000***

*Extending 12" waterline north along I-45 from Longstreet to Calvary Rd, then east to Hwy 75, then South along Hwy 75 to the boundary of the 2010 annexation, then west to I-45, tying into existing city line on Hwy 75. Waterline upsizing along W Powell Street (FM 2432/County Line Rd). Completing the 12" Rogers Rd and FM 1097 E waterline loop. Extend the 12" waterline north from Calvary Rd along I-45 and Hwy 75 out to Pollard Rd. Waterline extensions from FM 1097 W extending southeast to Old Montgomery Rd.*

***2016 – 2017 $1,500,000***

*Waterline upsizing along W Montgomery Street from I-45 to Hwy 75, part of TxDOT widening project. Extend the 12" waterline north from Pollard Rd along I-45 and Hwy 75 to Shepard Hill Rd.*

*Police Department Water Plant – Add 2nd GST, cooling tower, and booster pumps.*

***2017 – 2018 $2,800,000***

*Waterline upsizing along Runnels St, Daniel St, Longstreet Rd, Mopac St, Cross St, Straughter St, E Watson St, Lindley Dr, S Cochran St, Wooded Oak Ct, and 1st St. Waterline looping from Turner Dr to Philpot St, N Campbell St, W Powell St, and W Montgomery St.*

*Pin Oak Water Plant – Add GST, cooling tower, and booster pumps.*

***2018 – 2019 $1,500,000***

*Waterline upsizing along Watson, Turner Dr, Felder St, and Philpot St, W Stewart St, and FM 1097 E (beyond Business Park Dr). Waterline extension along Hwy 75 from Rogers Rd past African Hill Rd.*

***2019 – 2020 $1,850,000***

*Waterline looping along S Campbell St, W Mink St, and S Woodson St. Waterline extensions from Standing Oak Dr to Longstreet Rd W and I-45 from 1097 south, then east to Hwy 75. Waterline Extension along E Worsham St.*

*Upgrade Catahoula wells 1 & 2 from 1200 gpm capacity to 2400 gpm capacity each.*

***2020 – 2021 $1,700,000***

*Waterline extensions along I-45 from FM 1097 W to Longstreet Rd, along Longstreet Rd from I-45 to Hwy 75, and along Lincoln Ridge. Waterline extension along African Hill Rd and several side streets in Phase 1 annexation.*

***2021 – 2022 $5,250,000***

*Waterline Extension for Phase 2 future annexation along Rogers Rd from Grand Oaks to Frontier Rd.*

*Water Plant 4 (to be located north of Calvary Road), including the well, booster pumps, ground storage tank, pressure tank, and generator.*

***2023 – 2024 $1,100,000***

*Waterline extension for Phase 3 future annexation creating a loop starting at I-45 and Shepard Hill Rd going north to W Danville Rd, west to Old Danville Rd, south to Shepard Hill Rd, back to I-45.*

***2024 – 2025 $1,600,000***

*Waterline extension for Phase 3 future annexation creating a loop starting at I-45 and W Danville Rd going north to the boundary of the Phase 3 annexation, west to Old Danville Rd, south to W Danville Rd, tying into the existing loop.*

***2025 – 2026 $1,700,000***

*Waterline extension for Phase 4 future annexation along Shepard Hill Rd and Blackland Rd, both extending from the Phase 3 extensions to the boundary of the Phase 4 annexation.*

***2026 – 2027 $1,500,000***

*Waterline extension for Phase 4 future annexation along the western boundary of the annexation from Shepard Hill Rd north east to the boundary with the Phase 3 annexation, creating a loop.*

***2027 – 2028 $1,200,000***

*Waterline extension for Phase 5 future annexation along the southern boundary of the annexation from I-45 to the western boundary of the annexation and along Frank Novark Rd from Shepard Hill Rd to to the southern boundary of the annexation.*

***2028 – 2045 $1,400,000***

*Waterline extension for Phase 7 future annexation along the northern annexation boundary from I-45 to Hwy 75, then south to Buckner Rd, on the west side of Hwy75.*

*Note: Construction estimates are based on September, 2014 construction prices and do not take into account inflation*

EXHIBIT K
EXISTING WATER SYSTEM

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT L
WATER SYSTEM IMPROVEMENTS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

# Wastewater System

Public Management

# WASTEWATER SYSTEM

## SECTION 7.1-EXISTING SANITARY SEWER SYSTEM

*a. Existing Wastewater Treatment Facilities*

*The City's existing wastewater treatment plant is located on the west side of Highway 75, approximately 2 miles south of the City. The City's wastewater treatment plant is operated under TPDES Permit No. WQ 0010315001 from the TCEQ. This permit allows the City to treat an average of 800,000-gallons per day and will expire on July 1, 2018. The new permit application has been submitted to the TCEQ and is being processed for renewal. The TCEQ will generally recognize historical data for establishing design standards for plant sizing. It has been our experience that a flow value of 300 gallons per day per connection is the minimum allowable for plant sizing. At 300 gallons per day per connection (or 100 gallons per day per capita), the existing wastewater treatment plant could serve approximately 2,666 equivalent connections.*

*The TCEQ has specific regulations related to the average daily flow for wastewater treatment plants. In the event that the wastewater treatment plant average daily flow for three (3) consecutive months exceeds 75% of the permitted average daily flow (or 600,000-gallons per day), the permittee must initiate engineering and financial planning for expansion and/or upgrading of the wastewater treatment facility. If the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee may apply for a waiver of this requirement. At 90% of the permitted average daily flow (or 720,000-gallons per day), the permittee must obtain necessary authorization from the TCEQ to commence construction of additional treatment facilities. Table 7.1 summarizes the historical flows over the past five years while Table 7.2 summarizes the number of months that flows have exceeded the 75% and 90% milestones (or 75/90 Rule).*

*To ensure that the City has adequate wastewater treatment capacity, the City entered into an agreement to reserve wastewater treatment capacity from the City of Conroe. According to the*

*terms of the agreement, the City of Conroe will receive up to 200,000 gallons of wastewater per day from the City of Willis. This agreement with Conroe does not expire, however if the City desires to increase this volume, then the agreement will have to be renegotiated. For planning purposes, regarding the 75/90 Rule, the City has the option to purchase additional capacity from the City of Conroe, expand its current wastewater treatment plant, or construct a new wastewater treatment plant. If the wastewater treatment plant site is not used for 6 months the property then reverts back to the Morans. If the plant's capacity is increased to over 1.0 MGD, the regulations change, increasing costs significantly. These changes include, but may not be limited to, an on-site lab testing ever hour and 24 hour operations crew consisting of 3 eight hour shifts.*

**Table 7.1: Historical Annual Wastewater Flows**

| Year | Population | Total Annual Flow (MG) | Daily Average Flow (MG) | Average Peak Flow (MG) | Average Daily Flow Per Capita (GPD/Person) |
|---|---|---|---|---|---|
| 2012 | 5,827 | 202.71 | 0.5538 | 1.66 | 94 |
| 2011 | 5,732 | 209.53 | 0.5741 | 1.72 | 99 |
| 2010 | 5,499 | 221.49 | 0.6068 | 1.82 | 111 |
| 2009 | 5,265 | 229.92 | 0.6299 | 1.89 | 120 |
| 2008 | 5,032 | 206.38 | 0.5639 | 1.69 | 111 |

**Table 7.2: Monthly Wastewater Flow**

| Year | Number of Events Where Average Daily Flow for 3 Consecutive Months Exceeded 75% Permitted Flow | Number of Events Where Average Daily Flow for 3 Consecutive Months Exceeded 90% Permitted Flow |
|---|---|---|
| 2012 | 0 | 0 |
| 2011 | 0 | 0 |
| 2010 | 0 | 0 |
| 2009 | 2 | 0 |
| 2008 | 0 | 0 |

*Based on the permitted capacity of 800,000 gallons per day and the 200,000 gallons per day from the City of Conroe, the City of Willis currently has 1,000,000 gallons per day of wastewater treatment capacity. At 300 gallons per day per connection (or 100 gallons per day per capita), the City has the wastewater treatment capacity to serve approximately 3,333 equivalent connections.*

b. *Existing Sanitary Sewer Collection System*

*A map showing the City's wastewater collection facilities is included in Attachment C. The existing wastewater collection system contains existing sanitary sewer lines ranging from 6"-24" in diameter. The capacities of the main sanitary sewer lines were analyzed to determine the impact on future growth. Table 7.3 is a summary of the capacities of critical sanitary sewer mains. A peaking factor of four (4) is applied to account for peak wet weather flows. The number of connections that can be served by each line has also been calculated.*

**Table 7.3: Critical Sanitary Sewer Main Capacities**

| Location | Line Size (inches) | Slope (%) | Capacity (GPM) | No. of Connections at 300 GPD |
|---|---|---|---|---|
| Trunk Line to Sewer Plant (across Moran Tract) | 24 | 0.12 | 3,526 | 4,231 |
| Highway 75 Trunk Line | 24 | 0.12 | 3,526 | 4,231 |
| Mink Street | 12 | 0.85 | 1,478 | 1,774 |
| Powell Street | 6 | 2.00 | 357 | 428 |
| Powell Street | 6 | 0.50 | 178 | 214 |
| Woodson Street | 10 | 1.37 | 1,154 | 1,385 |
| Woodson Street | 10 | 0.63 | 782 | 938 |
| Woodson Street | 10 | 0.41 | 631 | 757 |
| Woodson Street | 8 | 1.23 | 603 | 724 |
| Woodson Street | 8 | 1.47 | 659 | 791 |
| Woodson Street | 8 | 0.39 | 339 | 407 |
| Campbell Street | 8 | 0.40 | 344 | 413 |
| Montgomery St. | 8 | 0.40 | 344 | 413 |
| Montgomery St. | 6 | 0.85 | 233 | 280 |

*The elevation change within the City severely limits the ability to collect and convey the City's wastewater using only gravity sewers. This necessitates the use of sanitary sewer lift stations, which collect wastewater at low points in the system and pump it to other locations.*

*c.* Existing Sanitary Sewer Lift Stations

*Table 7.4 below, is a summary of the City's sanitary sewer lift stations. It was created based on available information and conversations with the City.*

**Table 7.4: Lift Station Facilities**

| | Lift Stations | Location | Rated Pumping Capacity (GPM) | Pumps |
|---|---|---|---|---|
| **Existing Lift Stations** | | | | |
| 1. | 1097 West (1) | FM 1097 West | 363 @ 96' Head | 2 |
| 2. | 1097 East (2) | FM 1097 East | | 2 |
| 3. | Back North Forest | | | 2 |
| 4. | Best Western | Western Drive | 163 @ 31.45 Head | 2 |
| 5. | Big County Line (1) | County Line | 1,000 @ 49' Head | 3 |
| 6. | Big North Forest | Pine Circle @ Wooded Oaks Court | 280 @ 83' Head | 2 |
| 7. | Big Pin Oak | Cypress Drive | | 2 |
| 8. | Cannan (Little County Line) | Cannan @County Line | 26 @ 85' Head | 2 |
| 9. | Danville | Danville North | | 2 |
| 10. | Hill Street (2) | Hill Street @ Danville | 230 @ 38' Head | 2 |
| 11. | Kroger (1) | Kroger | 320 @ 95' Head | 2 |
| 12. | Little North Forest | Wooded Oaks Court | 26 @ 85' Head | 2 |
| 13. | Little Pin Oak | Standing Oak Drive | | 2 |
| 14. | Rodgers Road | Rodgers Road East | 125 @ 50' Head | 2 |
| 15. | South Bend | South Bend | | 2 |
| 16. | Wastewater Treatment | Wastewater Treatment Plant | | 3 |
| 17. | Willwood | Willwood @ Will Street | | 1 |

*Notes:*

1. *These lift stations were constructed or rehabilitated within the past five-years*
2. *These lift stations are either in design or construction.*

## SECTION 7.2-PROPOSED SANITARY SEWER COLLECTION SYSTEM IMPROVEMENTS

a. *Proposed Sanitary Sewer Collection System Improvements*

*The central part of the City contains aged sanitary sewers. These old lines can cause inflow and infiltration from ground water and/or storm water runoff. The result is that the sewer can reach capacity and potentially overflow or cause higher wastewater treatment costs. We recommend the City budget money, perhaps $500,000 every 3-years, for the rehabilitation and replacement of aging sanitary sewers. This rehab will include televising each line segment and making any necessary repairs or replacement.*

*Also, as growth and annexation occurs, it will be necessary to construct sanitary sewer improvements to serve new development. Proposed sanitary sewer improvements are shown on Attachment D.*

b. *Proposed Sanitary Sewer Lift Station Improvements*

*Planned future lift station facilities are detailed in Table 7.5. Further analysis of the lift stations will be required as development takes place to determine what modifications are needed based on changing demands.*

**Table 7.5: Future Lift Station Facilities**

| | Lift Stations | Location |
|---|---|---|
| 1. | 1097-Cannan | 1097 @ Cannan |
| 2. | 75 North | South of Hwy 75 & Coal Town Road |
| 3. | Calhoun | Calhoun Street |
| 4. | East Stewart | East Stewart (FM 1097 East) |

| | | |
|---|---|---|
| **5.** | **Emerald Lake** | **North of Hwy 75 & Calvary Intersection** |
| **6.** | **Lincoln Ridge** | **I-45 North @ Lincoln Ridge** |
| **7.** | **Longstreet West** | **I-45 South @Longstreet West** |

*Some of the existing lift stations will need to be modified to meet future demands. The specific requirements for the lift station rehabilitations will depend on the proposed land use upstream of the lift stations.*

c. *Priorities for Sanitary Sewer Collection System and Lift Stations*

*The map included as Attachment D indicates proposed improvements with associated priorities. These improvements generally include sanitary sewer infiltration and inflow improvements, lift station improvements, sanitary sewer replacement and sanitary sewer extensions. As funding becomes available, the City should address the proposed improvements based on priority. Planned sanitary sewer improvements are listed below in order of priority with the highest priority being listed first.*

***Infiltration and inflow improvements Cost: $500,000 every 3-years***

*Consists of ongoing televising and rehabilitating or replacing old sanitary sewer primarily in the central part of the City which are responsible for inflow and infiltration of groundwater and/or storm water runoff.*

***2014 – 2015 $800,000***

*East Stewart (FM 1097 East) lift station including approximately 2,450 LF of 8" sanitary sewer extension and 1,550 LF of 6" force main.*

***2015 – 2016 $3,100,000***

*Emerald Lake (US 75 North) lift station including approximately 8,600 LF of 12" sanitary sewer extension and 8,400 LF of 6" force main. Longstreet West lift station including approximately 2,450 LF of 8" sanitary sewer extension and 3,300 LF of 6" force main. Televise sanitary sewer lines in the area bound by I-45, Hwy 75, 1st St, and Longstreet.*

***2016 – 2017 $2,600,000***

*Hwy 75 North lift station, near the intersection of Hwy 75 and Coaltown, including approximately 2,850 LF of 8" sanitary sewer extension and 2,100 LF of 6" force main. 8" sanitary sewer extension along I-45 from Powell to FM 1097. First half of sanitary sewer rehabilitation between I-45 and Hwy 75, within Willis city limits. FM 1097 - Cannan lift station including approximately 1,700 LF of 8" sanitary sewer extension and 1,760 LF of 6" force main. 8" sewer line extension starting at FM 1097 E lift station and extending 450 LF east.*

***2017 – 2018 $2,300,000***

*Lincoln Ridge (IH 45 and Lincoln Ridge) lift station including approximately 4,400 LF of 12" sanitary sewer extension and 5,700 LF of 6" force main. Second half of sanitary sewer rehabilitation between I-45 and Hwy 75, within Willis 2014 city limits.*

***2018 – 2019 $1,100,000***

*Modify Big North Forest lift station including approximately 4,000 LF of 6" force main. Televise sanitary sewer lines east of Hwy 75 within Willis 2014 city limits.*

***2019 – 2020 $2,300,000***

*Phase 1 annexation lift station including approximately 7,600 LF of 8" sanitary sewer extension and 3,000 LF of 6" force main. First half of sanitary sewer rehabilitation east of Hwy 75, within Willis 2014 city limits.*

***2020 – 2021 $900,000***

*Second half of sanitary sewer rehabilitation east of Hwy 75, within Willis 2014 city limits.*

***2021 – 2022 $1,400,000***

*Phase 2 annexation lift station, near the northeast corner of the 2010 annex. Approximately 6,400 LF of 12" sanitary sewer extension, from the northeast corner of the 2010 annex north to Rogers Rd, then extending northeast to the boundary of the annexation. Approximately 1,600 LF of 6" force main, tying into the 2010 annexation's gravity line.*

***2023 – 2024 $3,900,000***

*Phase 3 annexation lift station, near Hwy 75 and Esperanza Rd, including approximately 30,200 LF of 12" sanitary sewer extension and 7,250 LF of 6" force main, tying into the 75 North sanitary sewer gravity line.*

***2025 – 2026 $3,400,000***

*Phase 4 annexation lift stations (2), located on Blackland Rd and Shepard Hill Rd, including approximately 18,100 LF of 12" sanitary sewer extension and 7,000 LF of 6" force main, tying into the Phase 3 sanitary sewer extensions.*

***2027 – 2028 $2,300,000***

*Phase 5 annexation lift station, along the southern boundary of the annexation near Pollard Rd, including approximately 13,300 LF of 12" sanitary sewer extension and 3,500 LF of 6" force main, tying into the 1012 annexation sanitary sewer.*

***2028 – 2045 $900,000***

*Phase 7 annexation sanitary sewer line extension along Hwy 75 and the northern boundary of the annexation, between I-45 and Hwy 75. Approximately 7200 LF of 12" sewer line, tying into phase 3 lift station.*

*Note: Construction estimates are based on September, 2014 construction prices, and do not take into account inflation*

EXHIBIT M
EXISTING WASTEWATER SYSTEM

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

EXHIBIT N
WASTEWATER SYSTEM IMPROVEMENTS

PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.

# DRAINAGE

Public Management

# DRAINAGE SYSTEM

## SECTION 8.1-INVENTORY

*a. Introduction*

*The protection of the City's population from the hazards and inconvenience associated with storm water runoff, both present and future, depends upon the provision of adequate drainage facilities. The public has come to expect that no damage will result to property from storm drainage or high water, and gives no thought to the location of neighborhoods in relation to ground elevation drainage flows, etc., all of which directly affect the surface storm drainage immediately adjacent to homes or business structures. Storm drainage facilities for the City of Willis include culverts, bridges, natural drainage channels, and creeks.*

*It should be noted that any plan is subject to change with changing economic and growth conditions and frequent evaluations should be made in order to prevent the plan from being outdated. Revisions, additions, and deletions should be made as conditions warrant. The following storm frequencies used as the basis of design in this report have been arrived at for the City of Willis.*

***Table 8.1-Storm Drainage System Design Frequencies***

| *Storm Drainage Facilities* | *Design Frequency* |
|---|---|
| *Channel improvements and drainage structures for primary Creeks* | *100 year* |
| *Channel improvements and drainage structures for secondary tributaries* | *25-50 year with emergency 100 year overflow* |
| | |

*Source: Federal Emergency Management Agency*

*b. Relevant climatologic data*

*Willis County is located in Montgomery County within the Gulf Coastal Plains Region of East Texas, bordered by Harris, Waller, Grimes, Walker, San Jacinto and Liberty Counties. Montgomery County has a humid subtropical climate. Summers are hot, and winters are somewhat mild. Willis County gets approximately 47 inches of rain per year. The U.S. average is 37. Snowfall is 0 inches. The average U.S. city gets 25 inches of snow per year. The number of days with any measurable precipitation is 85. On average, there are 206 sunny days per year in Montgomery County. The July high is around 95 degrees. The January low is 39.*

*c. Previous studies*

*The City received funding from the Texas Community Development Block Grant Program in 1985 and again in 1995 to study the storm drainage system. The only other known study conducted on the storm drainage system is the Flood Insurance Administration Maps, done by the Federal Emergency Management Agency. The effective date of the survey is December 19, 1996. The purpose of the survey is to define and illustrate special flood hazard areas. Generally, people with homes in special flood hazard areas are required to purchase flood insurance as a condition of financial assistance.*

*d. Existing Drainage Facilities*

*A survey of the existing drainage system to determine problem areas was performed by City of Willis personnel. The natural topography of the area does not require a continuous network of drainage piping and structures. The majority of the drainage system consists of open ditches and roadway culverts. The limits of the 100 year flood plain as defined by FEMA are isolated and only affect limited areas within the city limits. The major drainage channel systems that serve the City of Willis are the East Fork of Crystal Creek and Camp Creek. Each one of these systems have several tributaries that collect stormwater from areas of the City.*

## SECTION 8.2-ANALYSIS

*Storm culverts at creek crossings were evaluated by field inspection. These culverts, descriptions and deficiencies are depicted on a map included in Attachment E. Common problems encountered included overgrowth, debris, and erosion and sedimentation. Left unmaintained, vegetation overgrowth can impede the flow of stormwater in ditches, creeks, and culverts. Debris such as trash, fallen logs, and unearthed vegetation also collect and impede flow, and often block culverts. Erosion can damage pavement and structures, and leads to sedimentation downstream. Sediment collected in stormwater from erosion is deposited in channels and culverts, impeding flow and blocking culverts. These deficiencies can be addressed by removing overgrowth, excavating ditches where sediment has accumulated, and jetting culverts to remove debris and silt. Riprap, grass cover, and geotextile mats can also be utilized to reduce erosion. After the initial deficiencies have been addressed, we recommend that a maintenance program be implemented with scheduled rotations, so that all the City's drainage facilities undergo regular maintenance at least once every two years and monthly mowing/inspection. Table 8.2 below shows the City's culverts, including their type and size, as well as notes on their condition. Culverts shown in bold were to be repaired during the year 2013. Culverts shown in italics are owned and maintained by TxDOT.*

**Table 8.2: Culvert Information**

| No. | St. Name | Description | Notes/Deficiencies |
|---|---|---|---|
| **1** | **Young St.** | **2 - 24" Steel - Steel corroded** | **Steel culverts are very corroded; more than half pipe silted; overgrowth; ditch needs to be cleaned out; planned remove and replace** |
| **2** | **S. of Hines** | **3 - 30" RCP in Creek. Private driveway but shown for drainage** | **Planned remove and replace** |
| **3** | **Golden St.** | **36" RCP - Planned remove/replace** | **Heavy overgrowth with silt in pipe** |
| **4** | Kennedy | 18" RCP | Overgrowth with silt |
| **5** | Mink | 2 - 48" HDPE w/ concrete headwall | Water (or sewer) line crossing in front of upstream opening; downstream channel needs cleaning |

| | | | |
|---|---|---|---|
| **6** | Powell | 2 - 60" HDPE | Good condition |
| **7** | Danville | 4'x4' RCP Box Culvert w/ concrete headwall, wingwalls | Sanitary line crosses flowline of culvert; overgrown downstream; lots of erosion downstream |
| **8** | Gerald | 3 - 24" RCP | Pipes half silted |
| **9** | Worsham | 72" Steel | Overgrowth |
| **10** | Pine Circle | 3 - 42" HDPE | Overgrowth |
| **11** | Cannon | Pipe size not documented | Overgrowth |
| **11 A** | County Line Rd | 18" RCP | |
| **12** | Business Park | 1 - 48" HDPE; 1 - 48" Steel | Overgrowth; debris |
| **13** | Maple Ridge | 2 - 48" HDPE w/ concrete headwall | Overgrown downstream |
| **14** | Cypress | 2 - 24" HDPE | Upstream overgrown and silted |
| **15** | Oak Hill | 2 - 24" HDPE | |
| **16** | Rogers Road | 2 - 60" HDPE | |
| **17** | Aspen | 2 - 36" HDPE | |
| **18** | FM 1097 | 4 - 48" RCP w/ concrete headwall | (TXDOT) |
| **18 A** | FM 1097 | Box culvert crossing | (TXDOT) |
| **19** | FM 1097 | 3 - RCP Box Culverts 9' Wide x 5' Tall | (TXDOT) |
| **19 A** | FM 1097 | Culvert crossing FM 1097 East | (TXDOT) |
| **20** | FM 1097 | 3 - 30" RCP w/ concrete headwall | (TXDOT) - Silted a little downstream; log, debris upstream |
| **21** | HWY 75 N. | Box Culvert crossing Hwy 75 just south of Calhoun | (TXDOT) |
| **22** | Mill | 3 - 24" HDPE | Filled with debris and silt; overgrown |
| **23** | S of FM 1097 | 72" Steel Culvert on Crystal Creek south of FM 1097 and West of Holland St | |
| **24** | Danville | Box culvert at Camp Creek crossing | Overgrown upstream and downstream |
| **25** | HWY 75 N. | Box culvert crossing Hwy 75 at Camp Creek | (TXDOT) |
| **26** | Longstreet Rd | 18" culvert adjacent to east R.O.W. I-45 | |

## SECTION 8.3-STORM DRAINAGE PLAN

*The goal of the Willis storm drainage system plan is to provide a guide for flood control and the improvement of drainage facilities in an economical manner.*

*Objective 1:* *Phase I Improvements: Clean out the debris and sediments in the drainage culvert along Kennedy.*
*(Timeline 2014-2015)*
*Probable Costs: $7,500.00*

*Objective 2:* *Phase II Improvements: Drainage culvert improvements along Mink St.*
*(Timeline 2015-2016)*
*Probable Costs: $25,000.00*

*Objective 3:* *Phase III Improvements: Drainage culvert improvements along Gerald, Cypress and Mill Sts.*
*(Timeline 2016-2017)*
*Probable Costs: $16,500.00*

*Objective 4:* *Phase IV Improvements: Drainage culvert improvements along Danville*
*(Timeline 2017-2018)*
*Probable Costs: $10,000.00*

*Objective 5:* *Phase V Improvements: Drainage culvert improvements along Worsham, Pine Circle and Cannon Sts.*
*(Timeline 2018-2019)*
*Probable Costs: $15,000.00*

*Objective 6:* *Implement a maintenance program with scheduled rotations, so that all the City's drainage facilities undergo regular maintenance at least once every two years and monthly mowing/inspection.*
*(Timeline 2014-2035)*
*Probable Costs: $250,000.00.*

*Objective 7:* *Restrict or prohibit subdivision of lands for uses which are dangerous to health, safety or property in times of flood or which, with reasonably anticipated improvements, will cause excessive increases in flood heights or velocities. Continue to enforce the city's subdivision ordinance.*
*Timetable (2015-2035)*

*SOURCES OF FUNDING*

*In some cases, it may be possible to obtain some assistance from the Texas Department of Transportation for drainage improvements in conjunction with their major thoroughfares inside the corporate limits. Federal funds might be available through the (FEMA) Flood Mitigation Assistance program. Eligible work includes: Acquisition of insured structures and real property; relocation or demolition of insured structures; dry flood proofing of insured structures; elevation of insured structures; minor, localized structural projects that are not fundable by state or other federal programs.*

*EXHIBIT O*
*FLOODPLAIN AND CULVERT IMPROVEMENTS*

*PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.*

# Economic Development

Public Management

# ECONOMIC DEVELOPMENT

## SECTION 9.1-HISTORIC DEVELOPMENT AND GENERAL CHARACTERISTIC ANALYSIS

*a. Coordination with Previously Developed Plans, including State and Regional Plans*

*The City of Willis is a member of the Houston-Galveston Area Council, which is a region-wide voluntary association of local governments in the 13-county Gulf Coast Planning region of Texas. H-GAC supports a broad spectrum of Community and Economic Development programs that oversee federal and state grant programs to address waste water and drinking water grants in rural communities and small cities, support regional workforce initiatives, downtown revitalization, and community beautification projects. H-GAC also partners with the Gulf Coast Small Business Finance Corporation and the Gulf Coast Economic Development District to provide community investment grants, support a rural enterprise revolving loan fund, conduct economic impact assessments, and provide a regional perspective via a monthly economic digest. The City of Willis utilizes these resources to the fullest extent possible. The development of this plan was coordinated with previously developed State and Regional plans.*

***Willis Economic Development Corporation***

*The Willis Economic Development Corporation was approved by the voters on November 2, 1999. The mission of the Willis Economic Development Corporation (EDC) is to enhance and strengthen the local economy of Willis through the support and expansion of local businesses and the attraction of new businesses that will increase the basis of the local area, which is defined as land within the City limits and within one mile outside the City limits.*

***City Vision Statement for Economic Development***

*Willis is a beautiful and mobile city, ready for future growth with a strong business environment that promotes a higher quality of life for our residents and businesses.*

***Community Development Corporation (CDC) Mission Statement***

*The mission of the Willis Community Development Corporation is to provide leadership in developing and maintaining a quality living and working environment for people who live, work, visit and patronize our city.*

***Economic Development Corporation (EDC)* Mission Statement**

*The mission of the Willis Economic Development Corporation is to empower the local Willis economy, through the expansion and retention of the business community, with infrastructure assistance, and to promote business opportunities in the market area that enhances the quality of life.*

*b. Factors Contributing to Present Development*

***Development of the economy***

*Willis became a community when the Great Northern Railroad decided to run a track from Houston to Chicago, and the Willis brothers donated their land in 1870 to the railroad. Willis grew in population after the trains began to travel through the town. There were hotels, dry good stores, and many other successful businesses in the 1870s and 1880s. The tobacco industry played a vital role in Willis' growth and development during that time. Other cash crops of cotton, watermelons, and tomatoes were an important part of the economy through the years. The timber industry, which still plays a role in Willis' economic growth, has been its most stable economic engine for over one hundred years. Since the 1980s, Willis has seen its economic base change from agriculture to services, retail, and manufacturing. It is the gateway to Lake Conroe. Willis is also a central location for many places of recreational interest in Southeast Texas. Lake Conroe, the Sam Houston National Forest, Huntsville State Park, and golf courses are only some of the attractions.*

***Physical growth of the community***

*Willis is a city in Montgomery County, Texas, located eight miles north of Conroe in north central Montgomery County. Interstate 45 bisects the community. One mile east, U.S. Highway 75 and the Atchison, Topeka and Santa Fe rail services run parallel to Interstate 45. The George Bush Intercontinental Airport is 35 miles south of Willis. The Montgomery County Airport is 10 miles east of Willis.*

***Transportation Facilities***

*An inventory of the existing arterial and collector thoroughfares within the City of Willis was completed and is part of the City's "Thoroughfare Plan". The existing roadways that should be considered arterial thoroughfares in the City of Willis are: Interstate Highway 45 (Principal) and U.S. Highway 75(Minor). The existing roadways that could be considered collector thoroughfares within the City of Willis are: Rogers Rd. F.M. 1097, F.M. 2432 and Campbell St.*

## *SECTION 9.2-ECONOMIC BASE, "BARRIER ANALYSIS"*

*a. Inventory of the Social, Economic, Governmental and Industrial Elements*

### *Table 9.1-Civilian Employed Persons 16 years and Over By Occupation*

| *Occupation* | *Number* | *Willis %* | *Statewide %* | *U.S. %* |
|---|---|---|---|---|
| *Agriculture, forestry, fishing, hunting and mining* | *70* | *3.5%* | *3.0%* | *1.9%* |
| *Construction* | *164* | *8.2%* | *8.1%* | *6.5%* |
| *Manufacturing* | *340* | *17.0%* | *9.5%* | *10.6%* |
| *Wholesale Trade* | *107* | *5.4%* | *3.1%* | *2.8%* |
| *Retail Trade* | *115* | *5.8%* | *11.6%* | *11.6%* |
| *Transportation and Warehousing, and utilities* | *84* | *4.2%* | *5.6%* | *5.0%* |
| *Information* | *43* | *2.2%* | *1.9%* | *2.2%* |
| *Finance, Insurance, Real Estate* | *36* | *1.8%* | *6.7%* | *6.7%* |
| *Professional, Science, Management and Waste Management* | *153* | *7.8%* | *10.7%* | *10.7%* |
| *Educational, Health Care and Social Services* | *254* | *12.7%* | *21.5%* | *22.9%* |
| *Arts, Entertainment, Recreation, Accommodation and Food Services* | *255* | *12.8%* | *8.5%* | *9.2%* |
| *Other Services* | *240* | *12.0%* | *5.3%* | *5.0%* |
| *Public Administration* | *135* | *6.8%* | *4.5%* | *4.9%* |

**Source: U.S Census Bureau , 2008-2012 American Community Survey**

### *Table 9.2-City of Willis Commercial and Industrial Facilities*

| *Type of Facility* | *Facilities with 1-4 employees* | *Facilities with 5-9 employees* | *Facilities with 10-19 employees* | *Facilities with 20-49 employees* | *Facilities with more than 50 employees* |
|---|---|---|---|---|---|
| *Agriculture, forestry, fishing and hunting* | *1* | *0* | *1* | *0* | *0* |
| *Mining, Quarrying, Oil and Gas Extracting* | *0* | *0* | *0* | *0* | *0* |
| *Utilities* | *0* | *0* | *1* | *1* | *0* |
| *Construction* | *15* | *4* | *2* | *1* | *0* |
| *Manufacturing* | *6* | *4* | *1* | *2* | *5* |
| *Wholesale Trade* | *6* | *1* | *0* | *2* | *1* |
| *Retail Trade* | *13* | *7* | *7* | *2* | *1* |
| *Transportation and Warehousing* | *2* | *2* | *1* | *1* | *0* |
| *Information* | *2* | *0* | *0* | *0* | *0* |
| *Finance, Insurance, Real Estate* | *2* | *2* | *2* | *0* | *0* |
| *Professional, Science, Management and Waste Management* | *3* | *2* | *0* | *0* | *0* |
| *Educational, Health Care and Social Services* | *5* | *5* | *1* | *2* | *1* |
| *Arts, Entertainment, Recreation, Accommodation and Food Services* | *2* | *5* | *8* | *5* | *1* |
| *Other Services* | *4* | *4* | *1* | *2* | *0* |

**Source: United States Census Bureau, 2011 Zip Code Business Patterns**

| ***Table 9.3-Occupational Employment and Wage Estimates- Houston-Sugarland-Baytown MSA*** | | | |
|---|---|---|---|
| *Occupational Title* | *Estimated Employment* | *Average Hourly Wage* | *State Average Hourly Wage* |
| | | | |
| *Management* | *138,010* | *$57.76* | *$51.32* |
| *Business & Financial Operations* | *121,390* | *$37.37* | *$33.53* |
| *Computer & Mathematical* | *69,940* | *$39.75* | *$37.75* |
| *Architecture & Engineering* | *86,380* | *$48.88* | *$41.92* |
| *Life, Physical & Social Sciences* | *28,430* | *$43.91* | *$35.39* |
| *Community & Social Services* | *20,350* | *$22.79* | *$21.34* |
| *Legal Occupations* | *19,540* | *$56.90* | *$45.33* |
| *Education, Training & Library* | *155,440* | *$24.64* | *$22.97* |
| *Arts, Design, Entertainment, Sports & Media* | *24,730* | *$21.51* | *$22.05* |
| *Healthcare Practitioners & Technical* | *127,920* | *$36.66.* | *$33.83* |
| *Healthcare Support* | *53,200* | *$13.53* | *$12.64* |
| *Protective Service* | *63,340* | *$18.31* | *$19.32* |
| *Food Preparation & Related* | *217,480* | *$9.75* | *$9.52* |
| *Building & Grounds Cleaning & Maintenance* | *76,680* | *$10.41* | *$10.53* |
| *Personal Care & Service* | *78,370* | *$10.27* | *$10.01* |
| *Sales & Related* | *281,970* | *$20.28* | *$18.16* |
| *Office & Administrative Support* | *431,470* | *$16.75* | *$15.82* |
| *Farming, Fishing & Forestry* | *1,360* | *$11.67* | *$11.78* |
| *Construction & Extraction Operations* | *154,610* | *$19.26* | *$18.12* |
| *Installation, Maintenance & Repair* | *114,890* | *$20.71* | *$19.61* |
| *Production Occupations* | *182,900* | *$18.24* | *$16.37* |
| *Transportation & Material Moving* | *192,230* | *$17.53* | *$15.67* |
| | | | |
| ***Source: Labor Market & Career Information Department, Texas Workforce Commission, Texas Metropolitan Statistical Area (MSA) Wages, Occupational Employment Statistics Program, 2012*** | | | |

| ***Table 9.4-Tax Rates for State and Local Governments*** | |
|---|---|
| *Ad Valorem Taxes* | |
| *City of Willis* | *$0.6077* |
| *Willis .I.S.D.* | *$1.3900* |
| *Montgomery County* | *$0.4767* |
| *Montgomery County Hospital* | *$0.0725* |
| *Lone Star College* | *$0.1081* |
| *Montgomery County ESD* | *$0.1000* |
| ***Total*** | *$2.7550* |
| *Sales Tax* | |
| *State, City, County Combined* | *8.25%* |
| **Source: Texas Comptroller of Public Accounts** | |

| *Table 9.5-City of Willis Utility Rates* | |
|---|---|
| *ELECTRICITY* | *Customer Charge* |
| | |
| *Entergy and Sam Houston Electric Co-op* | *$7.00*<br>*6.177¢ per kWh* |
| | |
| *TELEPHONE* | *There are multiple providers in the City with differing rates.* |
| | |
| *SOLID WASTE (City)* | *Monthly Charge* |
| | |
| *Type of Service* | |
| *Residential*<br>*Commercial/Heavy* | *$10.77*<br>*Contact City of Willis* |
| *NATURAL GAS (Centerpoint Energy)* | *Minimum Charge* |
| | *$15.29*<br>*$0.0308 per Ccf* |
| *WATER (City)* | |
| | *Residential (City Limits)* |
| *Base Fee up to 3,000 gallons*<br><br>*3,001 gallons-11,000 gallons*<br>*11,001 gallons-25,000 gallons*<br>*25,001 gallons and greater* | *$18.45*<br><br>*$2.20 per/1,000 + base fee*<br>*$2.50 per/1,000 + base fee*<br>*$2.80 per/1,000 + base fee* |
| | *All Users (Outside City Limits)* |
| *Base Fee up to 3,000 gallons*<br><br>*3,001 gallons-11,000 gallons*<br>*11,001 gallons-25,000 gallons*<br>*25,001 gallons and greater* | *$36.90*<br><br>*$5.05 per/1,000 + base fee*<br>*$5.65 per/1,000 + base fee*<br>*$5.95 per/1,000 + base fee* |
| | |
| *SEWER (City)* | |
| | *Residential (City Limits)* |
| *Base Fee up to 3,000 gallons*<br><br>*3,001 gallons-11,000 gallons*<br>*11,001 gallons-25,000 gallons*<br>*25,001 gallons and greater* | *$18.45*<br><br>*$2.20 per/1,000 + base fee*<br>*$2.50 per/1,000 + base fee*<br>*$2.80 per/1,000 + base fee* |
| | *All Users (Outside City Limits)* |
| *Base Fee up to 3,000 gallons*<br><br>*3,001 gallons-11,000 gallons*<br>*11,001 gallons-25,000 gallons*<br>*25,001 gallons and greater* | *$36.90*<br><br>*$5.05 per/1,000 + base fee*<br>*$5.65 per/1,000 + base fee*<br>*$5.95 per/1,000 + base fee* |
| ***Source: City of Willis*** | |

*b. Conclusions*

*In general, the business development cost factors for Willis compared favorably to surrounding communities and the State of Texas. The cost of doing business with the City is not a barrier to economic expansion. The main barrier the City faces in the coming years is the condition and capacities of the existing infrastructure comparative to the rate that the City is growing. It is becoming increasingly more challenging for the City to keep up with repairs and maintenance to its infrastructure as exponential growth continues. The City is making strides in this area however, as evidenced by the utility plans set forth in this document.*

*In terms of operating condition factors, Willis compares favorably to surrounding communities and the State of Texas, with some exceptions. The city's biggest advantage is found in the areas of natural resources, community receptivity, quality of life and local laws. The city must strive to market the quality of life for residents of Willis. There is vacant property for residential and commercial development both within the city limits and the existing extra-territorial jurisdiction. The City is always in need of additional revenue sources and the most viable options are increased sales tax revenues and increased ad-valorem revenues. Sales tax revenues increase when new businesses locate to Willis, or when existing businesses experience growth. Ad-valorem revenues increase when vacant lots are converted to improved lots.*

## SECTION 9.3-PLAN

*The Boards of Directors of the Willis Economic Development Corporation (EDC), Community Development Corporation (CDC), City Manager, Director of Economic Development and other staff met in a planning retreat to discuss, develop, and prioritize short and long term strategies for the City's economic development programs. The following list of goals represents the strategies that were agreed upon at the retreat.*

***ECONOMIC DEVELOPMENT CORPORATION (EDC) GOALS***

*Goal 1: Seek to retain and expand existing businesses/employers and visit all new businesses/employers.*

*Objectives:*

1. *Conduct a visitation program to existing employers in the local area. EDC Directors will make attempts to visit each business in Willis once each year.*

*Goal 2: Actively recruit potential businesses to be located in the local area.*

*Objectives:*

1. *Visit with potential employers, provide information and offer assistance in locating in Willis.*
2. *Intervene in cases where an employer appears likely to relocate out of the local area.*
3. *Encourage the location of hotels and Bed & Breakfast businesses in Willis.*

*Goal 3: Promote or develop new or expanded business enterprises.*

*Objectives:*

1. *Assist with the financing of public infrastructure or services that may be needed by business enterprises.*
2. *Encourage the development of affordable housing by private developers that will benefit employees of local area business enterprises.*
3. *Heavily recruit additional restaurants/dining establishments.*

*Goal 4: Assist existing and potential employers with site acquisition and development.*

*Objectives:*

1. *Maintain adequate budgetary amounts for infrastructure assistance to existing and potential employers.*
2. *Obtain and develop a site for an industrial park.*

*Goal 5: Business façade grant program.*

*Objectives:*

1. *Create a program for a matching grant for businesses to update the façade of their building.*

*Goal 6: Assist existing and potential employers with employee training.*

*Objectives:*

1. *Maintain adequate budgetary amounts for training assistance to existing and potential employers.*
2. *Work with Lone Star College to explore grant-funding opportunities.*
3. *Continue to open lines of communication with employers about needs.*

***COMMUNITY DEVELOPMENT CORPORATION (CDC) GOALS***

*Goal 1: Develop and maintain an aesthetically pleasing living environment.*

*Objectives:*

1. *Improve and maintain public property, right-of-ways, easements, open space etc. so that they are functional yet aesthetically pleasing.*
2. *Provide assistance to private property owners in the form of loans or grants to demolish existing dilapidated structures.*
3. *Work to provide murals on buildings in town depicting our history, as well as provide for the arts and culture.*

*Goal 2: Provide opportunities for community and recreation related activities by developing appropriate public facilities.*

*Objectives:*

1. *Develop a major municipal outdoor recreation park with a diversified group of activities.*
2. *Continue to pursue the latest "fad" within the park.*

*Goal 3: Provide park improvements to neighborhood and regional parks throughout the area inside the City limits.*

*Objectives:*

1. *Make landscaping improvements; install playground equipment and/or concrete basketball courts with goals in neighborhood and regional parks.*

*Goal 4: Work with the county on improving the library system in Willis.*

*Objectives:*

1. *Meet with County officials on future improvements to the library system and convey needs of the community.*
2. *Help to share the services already available at the library to residents.*

*Goal 5: Improve mobility for our residents*

*Objectives:*

1. *Work on grant funding for sidewalks on city streets.*
2. *Communicate with TXDOT the need for sidewalks and bike lanes on TXDOT roads.*
3. *Work on transportation issues for the elderly to doctor's appointments etc.*
4. *Work on a bicycle rental program for residents to use in town.*

*Goal 6: Improve community involvement.*

*Objectives:*

1. *Create a Willis 101 class that seeks to educate the public in a classroom setting on all the day-to-day activities in Willis.*
2. *Create a Mayor's Advisory Youth Council.*
3. *Work on helping the Lions Club grow in Willis.*

*Goal 7: Have infrastructure in place in order to prepare for new housing opportunities.*

*Objectives:*

1. *Plan for and ensure extensions of utilities services into areas that are prime for housing development in both the city limits and the ETJ.*

***Other financing sources and incentives***

*a. The Texas Capital Fund*

*This program is administered by the Texas Department of Agriculture through an interagency agreement with the Texas Department of Rural Affairs (TDRA). The TCF program encourages business development, retention, or expansion by providing funds to eligible applicants. Funds will be awarded for the express purpose of assisting in the creation of new permanent jobs or retention of existing permanent jobs, primarily for low and moderate income persons. In order to comply with the national goal of expanding economic opportunities for LMI persons, a minimum of 51 percent or more of all the jobs created or retained by the business must benefit persons who qualify as LMI.*

# ANNEXATION AND GROWTH MANAGEMENT

Public Management

# ANNEXATION AND GROWTH MANAGEMENT

## SECTION 10.1-REVIEW AND ANALYSIS

*There are many factors that affect a municipality's decision to annex areas into its corporate limits. The City must consider all elements (economics, social impact, state laws, political implications and environmental concerns) before undertaking the important decision to annex. The pros and cons of annexation with regards to these factors are discussed later in this Study.*

*Annexation plans are now being required for some municipalities. There are certain types of annexation that are exempt from the planning process such as areas that contain fewer than 100 residential tracts. In addition the City may annex areas that the City owns, navigable streams, exchanged areas between adjacent cities, areas where landowners petition to be annexed, and areas the City determines annexation is necessary to protect because of imminent destruction of property, injury to persons, or a condition that constitutes a public or private nuisance.*

a. *Evaluation of State Laws*

*Annexation law in Texas has become complicated over the last several years. Specific annexation issues must have very detailed responses from municipalities. Willis, as a home rule municipality, has the ability to annex property without the property owner's permission but specific actions and future plans must be provided to that property owner in a public hearing before annexation. For the sake of brevity, a few relevant parts of the code as they relate to the annexation strategy are given below:*

- *The City has a one-mile extraterritorial jurisdiction (ETJ) outside its city limits.*
- *The City can only annex property in its ETJ.*
- *The City must annex property with a minimum 1,000 linear feet width.*
- *The City must have an annexation plan to provide relevant services to the property within a three year time period.*

- *The City can only annex ten percent of its current area in a one year period with the exception of accumulating annexation percentages from continuous non annexing years up to an amount of thirty percent of its current area.*
- *Only involuntary annexation is included with the aforementioned ten percent rule. Voluntary annexations are not included in the ten percent rule and can be unlimited.*

*In addition, Senate Bill 89, adopted by the 76th Texas Legislature, changed certain aspects of the Annexation Act.*

- *ETJ-If a City annexes an area it owns that is not contiguous to City boundaries, the ETJ will no longer expand.*
- *Grandfathered Uses-The City may not prohibit the continued use of land in an annexed area if the use was in existence on the date proceedings were instituted and was legal before annexation or; beginning a use of a land in an annexed area that was planned before the 90th day before the effective date of the annexation if a completed application for any required governmental authorizations was submitted before the date annexation proceedings were instituted.*
- *Areas adjacent to strips-The City may not annex an area that is in its ETJ only because said area is contiguous to a previously annexed strip that was less than 1,000 feet in width at its narrowest point.*

*These are some of the highlights of Senate Bill 89. One of the major changes is that cities may no longer annex narrow strips of land adjacent to a highway. The law requires that the tract of land be at least 1,000 feet in width at its narrowest point.*

*Some of the pros and cons of annexation are as follows:*

*b. Pros*

*Economic Factors (Revenue versus cost of providing utilities and services)*

*Like all other Texas cities, Willis relies on property taxes and sales taxes to provide the bulk of its income for the general fund. The enterprise fund, consisting of primarily water and sewer*

*utility revenue, is self-sustaining and profitable. The general fund generally provides services that are not fee based such as police, fire and emergency medical services. Therefore, an ever-expanding tax base is desirable to keep up with the services needed by population growth. Residential properties, through property taxes, generally do not provide a revenue stream sufficient to pay for services from the general fund. Therefore, it is not usually in a municipality's best interest to annex residential properties that will not pay their way. There are exceptions to this rule of thumb, and that is when the value of the property is high enough to pay for services, or the location of the property is such that the resulting expansion of the ETJ will offer protection to landowners from annexation into a neighboring City or its ETJ.*

*The obvious pros to annexation are the benefit of property and sales tax revenues. Because the City has adopted both the 4a and 4b sales taxes, the City's benefit is much greater for commercial properties. The location of the areas in question plays the biggest role in determining the cost of providing utilities and services. It should be the City's policy to concentrate annexation in potential commercial areas. Also, the commercial areas should be considered prior to residential areas unless there is a significant health, or safety issue within a residential development, necessitating the need for annexation.*

*Social Factors*

*Certain residential developments may be in serious need of protection through City ordinances, or services such as water and wastewater utilities. In these cases, the City may feel pressured to incorporate the above mentioned areas in order to improve the quality of living for those residents. The pro is that the City will benefit from the property taxes, but the con is that the City may inherit significant costs in providing services to that tract of land. The City will also have to bear the cost of street improvements within the development once annexation occurs. If the streets are in the jurisdiction of the County, the City could ask for improvements prior to annexation.*

*Environmental Factors*

*From time to time, it may be necessary for the City to annex areas of environmental importance. Environmentally sensitive areas need protection, and incorporation into the City can provide that protection through City ordinances. In general, the City does not significantly benefit economically from this type of annexation, but the City may benefit in terms of public relations. Most of these areas can be used for parks, nature areas, etc, providing recreational opportunities for its citizens.*

*Threats to Area-wide Jurisdiction*

*Another reason to consider annexation is the significance of a threat to the City's influence and jurisdiction by the consistent march of larger cities. By virtue of its ETJ, the City of Conroe ETJ line is adjacent to the Willis ETJ line in several areas. Every time that Conroe does an annexation, it extends its ETJ, where applicable. By strategically annexing properties to the north and east, the City could protect future influence and jurisdiction as well as protect important economic development areas for enhancing the tax base.*

*Such a strategy also prevents the establishment of special districts for utilities and development that may impede the community and economic growth of the City. By having these areas in its ETJ, the City not only protects its future tax base but also controls jurisdiction over the development of utilities and other infrastructure. Special districts would have to get permission from the City to go into business and at the same time, the City could demand pre-development agreements from them so that it would have control over the developed infrastructure at a future date.*

*Control of Community Development*

*It is no secret that in the triangle of Texas constituting Houston—Dallas-Ft. Worth—Austin-San Antonio, population growth has been exponential over the last several years. It is expected to continue. Willis is on the edge of this triangle. Population growth of this magnitude will perpetuate community development pressures. Orderly development of housing and related*

*infrastructure enhances the quality of life for all persons and protects communities from crime, disease, and general sociological breakdown. However, orderly development is elusive outside municipalities in Texas. Most Texas counties have minimum development standards and environmental protection. Conversely, most municipalities are much stricter with enforcement of development through subdivision ordinances, building codes, development codes and environmental codes.*

*It is in the best interests of the City to extend its influence into a large ETJ where at least the City's subdivision ordinance would be enforced by City Staff. There has been recognition by City Staff over the last several years that enforcement of development; building and environmental codes has a positive effect on the future of the community. With the ability to extend its enforcement powers through annexation, the City could eliminate poorly developed subdivisions, shoddy building practices, dangerous and dilapidated mobile homes, junk cars, piled up debris, and environmental hazards. Beyond economic development and threats to area-wide jurisdiction, annexation will have long term incremental enhancement to the quality of life in Willis.*

*c. Cons*

*Political implications*

*The political ramifications of annexation can sometimes be tied into the above mentioned factors. Pressure can come from many sources; the media, high ranking officials, other jurisdictions, etc. It is important for the City to show demonstrate sound planning principals for annexations when making decisions. Otherwise, the City's decisions may be viewed as arbitrary, or politically motivated. The economic, environmental, social and community development factors should all be considered prior to annexation.*

*Legal Factors*

*As mentioned above, annexation laws have changed and the City must be aware of the changes. It is the responsibility of the City Attorney to guide the City through the legal process of annexing new properties.*

d. *Criteria for Boundary Adjustment*

*The following factors should be at the top of list of determining boundary adjustments:*

1. *Request from local landowners*
2. *Proximity to existing infrastructure*
3. *Revenue benefits versus anticipated costs*
4. *Social Need*
5. *Control of Community Development*
6. *Historical or environmental significance*

e. *Current and possible proposals for boundary adjustment*

1. *Phase I-African Hill Rd. area.*
   *The City already services this area with water.*
   *(Timeline 2015)*
2. *Phase II-Rogers Road-East area.*
   *The result of this annexation would push the City's ETJ further east.*
   *(Timeline 2016)*
3. *Phase III-I45-Shepard Hill Rd. area*
   *The result of this annexation would push the City's ETJ further north.*
   *(Timeline 2017)*
4. *Phase IV-Blackland Rd. area*
   *(Timeline 2018)*
5. *Phase V-I45-Pollard Rd. area*
   *(Timeline 2019)*

*f. Rank and List of Problems for current proposals for boundary adjustment*

1. *Revenue benefits versus anticipated costs-It is difficult to tell how long it would take for the City to recoup its investment on any annexation.*
2. *Street maintenance-The City would need to take over maintenance of annexed streets, formerly maintained by the County.*
3. *Other City services-The City would now be providing police protection, as well as other services to the areas that are annexed in as full services annexations.*

## *SECTION 10.2-PLAN*

***The goal of the annexation study is to provide guidelines for the City to use when considering boundary adjustments through annexation***

*a. Policies for Boundary Adjustment*

1. *The City will actively seek local landowners wishing to request annexation into the corporate limits.*
2. *The City will actively seek to annex tracts located within close proximity to current infrastructure.*
3. *The City will actively seek to annex tracts that have potential for community and economic development.*
4. *The City will be sensitive to those residents living in substandard conditions and needing City services, or protection offered by City ordinances.*
5. *The City will be sensitive to those tracts that have historical and/or environmental significance.*

*b. Prioritized Recommendations*

1. *Aggressively explore ways to expand the current corporate limits through voluntary annexation.*
   *Timeline for completion: (2015-2035)*
2. *Phase I-African Hill Rd. area*
   *(Timeline 2015)*

3. *Phase II-Rogers Road-East area*
   *(Timeline 2016)*
4. *Phase III-I45-Shepard Hill Rd. area*
   *(Timeline 2017)*
5. *Phase IV-Blackland Rd. area*
   *(Timeline 2018)*
6. *Phase V-I45-Pollard Rd. area*
   *(Timeline 2019)*
7. *Consider the long term annexations as illustrated on the Proposed Annexations Map that is a part of this study.*

*EXHIBIT P*
*PROPOSED ANNEXATION POSSIBILITIES*

*PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.*

# Capital Improvements

Public Management

# CAPITAL IMPROVEMENTS PROGRAM

## SECTION 11.1-FINANCIAL ANALYSIS

a. *Past, Present, and Anticipated Sources and Amounts of Income; Annual Budgets; and Operating Costs*

*Sources of income for the general fund in Willis are revenues from ad valorem taxes, sales taxes, franchise taxes, occupancy taxes, fines, fees, license and permits, service revenues, penalties and late payments, interest and miscellaneous revenues. Sources of income for the proprietary fund (Utility System) are revenues from the water system and administrative.*

*The following tables show the past, present, and anticipated income and expenses of the general fund for the Willis. The city adopts an annual budget each year.*

***Table 11.1[14]***
***City of Willis***
***Actual Income and Expenditures for Prior Years-General Fund***

| *Fiscal Year* | *Revenues* | *Expenditures* | *Fund Balance* |
|---|---|---|---|
| | | | |
| *2011-2012* | *$2,924,957* | *$3,234,392* | *$925,138* |
| | | | |
| *2012-2013* | *$4,128,305* | *$3,518,867* | *$768,194* |

***Table 11.2[15]***
***City of Willis***
***Anticipated Income and Expenditures for FY 2013-2014-General Fund***

| *Fiscal Year* | *Total Estimated Revenues* | *Total Appropriations* |
|---|---|---|
| | | |
| *2013-2014* | *$3,039,203* | *$3,670,100* |

[14] City of Willis Finance Department

[15] City of Willis Finance Department

b. *Outstanding Debt*

*As of September 2013, the City of Willis, Texas had $17,322,668 in outstanding debt. This was a net increase of $6,078,509 from the previous year. New debt of $6,600,000 was issued and $521,491 was paid. Current debt schedules call for payments through 2043.*

***Table 11.3[16]***
***City of Willis Outstanding Debt***

| *Type* | *Amount Owed as of 2013* |
|---|---|
| *Utility Meter Program* | *$468,588* |
| *Bond-Series 2001* | *$555,000* |
| *Bond-Series 2006* | *$1,235,000* |
| *Bond-Series 2012* | *$775,000* |
| *Bond-Series 1995-A* | *$25,000* |
| *Bond-Series 1995-B* | *$285,000* |
| *Bond-Series 2003* | *$2,290,000* |
| *Bond-Series 2005* | *$425,000* |
| *Bond-Series 2007* | *$168,080* |
| *Bond-Series 2010* | *$1,345,000* |
| *Bond-Series 2012* | *$3,150,000* |
| *Bond-Series 2013* | *$5,800,000* |
| *Bond-Series 2013-A* | *$800,000* |

c. *Public Improvements Financing Practices*

*Willis has historically financed its public improvements through cash reserves, utility fund surpluses, certificates of obligation, loans and intergovernmental grants.*

d. *Recommended Standards Concerning Debt Limitations*

*Per the Texas Administrative Code, home rule cities and general law cities of over 5,000 population shall have a total tax allowable of $2.50 and shall have a bond allowable of $1.50 per $100 valuation (unless city charter provides less). The City Charter for Willis does not*

[16] City of Willis Finance Department

*provide further limitations; as such $1.50 has been compared to the debt services taxes assessed annually.*

## *SECTION 11.2-CAPITAL NEEDS LIST*

a. *The Capital Needs List consists of the capital items that are a part of this study and are under the jurisdiction of the City i.e. water, wastewater, drainage, streets and thoroughfares. These items have been specifically recommended and prioritized under the water, wastewater and street system plans previously set forth in this document. These are given in Table 11.4 in summary form.*

b. *Report of possible effects of members of protected classes under Federal Fair Housing Laws.*

   1. *Affordable fair housing opportunities*

      *The City is striving to create fair housing opportunities throughout the City, but especially outside of areas of geographic concentration of protected classes. The City of Willis' housing plan goal 2 states: "Assist residents in the procurement of safe, affordable housing in a fair and equitable manner". In addition, Objective 1 states: "Continue to further fair housing opportunities in Willis by encouraging reputable developers to offer a variety of residential housing in mixed-use developments, especially outside of areas of geographic concentration of protected classes".*

   2. *Target area and city-wide projects*

      *The proposed target area projects in areas of geographic concentration of protected classes are the street improvement projects, water line replacements and sewer line replacements. These projects will have a positive impact on the residents of these areas. The street improvement projects will provide smoother and safer streets. The water line replacement projects will provide larger lines and therefore will increase fire protection in the areas. The sewer line replacement projects will replace obsolete lines and therefore reduce the risk of raw sewage contaminating water supplies. The proposed city-wide projects will not be located in areas of geographic concentration of protected classes*

***Table 11.4***
***City of Willis***
***Capital Needs List***

| *Category* | *Name* | *Location* | *Cost Estimate* | *Priority* |
|---|---|---|---|---|
| | | | | |
| *Streets* | *Business Park Ln.* | *Rogers-FM 1097* | *$946.05* | *1* |
| *Streets* | *Peggy Lane* | *All* | *$11,537.50* | *1* |
| *Streets* | *Little Bill Ln* | *All* | *$4,875.00* | *1* |
| *Streets* | *Libby Circle* | *All* | *$13,000.00* | *1* |
| *Streets* | *Laurie Ln* | *Rogers-Little Bill Ln* | *$20,754.50* | *1* |
| *Streets* | *Mopac St.* | *All* | *$8,307.00* | *1* |
| *Streets* | *Mill St.* | *Mopac-FM 1097* | *$11,947.00* | *1* |
| *Streets* | *Cross St.* | *Mill St.-Church St.* | *$16,805.00* | *1* |
| *Streets* | *Church St.* | *All* | *$21,420.00* | *1* |
| *Streets* | *Industrial Park Ln.* | *Trice-Paddock* | *$1,329.83* | *2* |
| *Streets* | *E. Watson* | *S. Cochran-Paddock* | *$33,358.50* | *2* |
| *Streets* | *S. Cochran* | *E. Watson-Powell* | *$18,333.00* | *2* |
| *Streets* | *Lindley Dr.* | *Trice-Paddock* | *$9,314.50* | *2* |
| *Streets* | *S. Shirley Ln.* | *All* | *$16,438.50* | *2* |
| *Streets* | *N. Shirley Ln.* | *All* | *$10,946.00* | *2* |
| *Streets* | *Cemetery Ln.* | *FM 1097-N. Shirley* | *$8,492.25* | *2* |
| *Streets* | *Cemetery Rd.* | *Paddock-Cemetery Ln.* | *$2,600.00* | *2* |
| *Streets* | *Reese* | *FM 1097-Cemetery Rd.* | *$4,946.50* | *2* |
| *Streets* | *Campbell* | *Hill St.-FM 1097* | *$2,550.00* | *3* |
| *Streets* | *Willwood* | *Powell-East Dr.* | *$17,010.00* | *3* |
| *Streets* | *East Dr.* | *All* | *$9,402.75* | *3* |
| *Streets* | *West Dr.* | *All* | *$19,656.00* | *3* |
| *Streets* | *Janet St.* | *All* | *$11,602.50* | *3* |
| *Streets* | *Rebecca Ln.* | *All* | *$13,104.00* | *3* |
| *Streets* | *Wooded Oaks Ct.* | *All* | *$2,931.50* | *3* |
| *Streets* | *Pine Circle Dr.* | *Oak Woods Dr.-City Limits* | *$12,769.25* | *3* |
| *Streets* | *Birchwood Dr.* | *All* | *$16,682.25* | *3* |
| *Streets* | *Philpot St.* | *MLK-Marlin St.* | *$382.50* | *4* |
| *Streets* | *Stewart St.* | *West of Kennedy* | *$192.50* | *4* |
| *Streets* | *Maple Ridge Dr.* | *West of I45* | *$255.00* | *4* |
| *Streets* | *Lincoln Ridge* | *Gerald-I45* | *$765.00* | *4* |
| *Streets* | *N. Forest Dr.* | *All* | *$33,497.75* | *4* |

***Table 11.4 (cont.)***
***City of Willis***
***Capital Needs List***

| *Category* | *Name* | *Location* | *Cost Estimate* | *Priority* |
|---|---|---|---|---|
| | | | | |
| *Streets* | *Cedarwood Dr.* | *All* | *$11,963.00* | *4* |
| *Streets* | *Applewood Dr.* | *All* | *$7,582.25* | *4* |
| *Streets* | *First St.* | *All* | *$17,246.25* | *4* |
| *Streets* | *Avenue A* | *All* | *$5,070.00* | *4* |
| *Streets* | *W. Powell St.* | *West of US 75* | *$25,630.50* | *4* |
| *Streets* | *Monroe St.* | *East of I45* | *$153.00* | *5* |
| *Streets* | *Young St.* | *Lincoln Ridge-Perkins* | *$722.50* | *5* |
| *Streets* | *Longstreet* | *West of I45 feeder* | *$765.00* | *5* |
| *Streets* | *Gerald St.* | *Young St.-Campbell* | *$2,125.00* | *5* |
| *Streets* | *Mink St.* | *All* | *$27,422.00* | *5* |
| *Streets* | *W. Watson* | *All* | *$19,965.75* | *5* |
| *Streets* | *Worsham St.* | *All* | *$23,562.50* | *5* |
| *Streets* | *Woodson St.* | *Marlin-Mink* | *$16,683.33* | *5* |
| *Streets* | *Wood St.* | *Marlin-Mink* | *$13,820.63* | *5* |
| *Streets* | *Thomason* | *Mink-Old US75* | *$25,290.42* | *6* |
| *Streets* | *Stewart* | *Kennedy-N. Bell* | *$20,020.00* | *6* |
| *Streets* | *Marlin* | *Philpot-N. Bell* | *$31,281.25* | *6* |
| *Streets* | *Turner* | *All* | *$18,165.00* | *6* |
| *Streets* | *John F. Kennedy* | *All* | *$18,165.00* | *6* |
| *Streets* | *W. Rogers St.* | *US75-Campbell* | *$8,866.00* | *7* |
| *Streets* | *Golden St.* | *All* | *$11,636.63* | *7* |
| *Streets* | *Maple Ridge Dr.* | *All* | *$11,772.22* | *7* |
| *Streets* | *Falling Oak Dr.* | *All* | *$6,760.00* | *7* |
| *Streets* | *Standing Oak Dr.* | *All* | *$6,792.50* | *7* |
| *Streets* | *Oaken Timber Ln.* | *All* | *$1,625.00* | *7* |
| *Streets* | *Aspen Way* | *All* | *$7,150.00* | *7* |
| *Streets* | *Cedar Ridge Ct.* | *All* | *$5,980.00* | *7* |
| *Streets* | *Oak Hill Dr.* | *All* | *$11,050.00* | *7* |
| *Streets* | *Cypress Dr.* | *All* | *$11,700.00* | *7* |
| *Streets* | *Live Oak Trl.* | *All* | *$11,700.00* | *7* |
| *Streets* | *Jayton Wood Way* | *All* | *$3,185.00* | *7* |
| *Streets* | *Calhoun* | *All* | *$20,370.00* | *8* |
| *Streets* | *Rayford* | *All* | *$16,285.50* | *8* |
| *Streets* | *Lamar* | *All* | *$3,360.50* | *8* |
| *Streets* | *Bybee* | *All* | *$2,929.33* | *8* |
| *Streets* | *Daniel St.* | *All* | *$9,178.00* | *8* |
| *Streets* | *Runnels* | *All* | *$5,850.00* | *8* |

***Table 11.4 (cont.)***
***City of Willis***
***Capital Needs List***

| *Category of Project* | *Location/Description* | *Priority (Type)* | *Cost* | *Priority* |
|---|---|---|---|---|
| | | | | |
| *Thoroughfares* | *Future Road Extension From Fm 1097 Running southeasterly To I-45. Funding From Tirz-Widening Of Paddock Street From County Line Rd To Fm 1097 E.* | *Desirable* | *$2,734,000.00* | *1* |
| *Thoroughfares* | *Future Road Extension From County Line Road Southerly To Fm 2432* | *Desirable* | *$1,209,000.00* | *2* |
| *Thoroughfares* | *Future Road Extension From Fm 1097 W. Northward Crossing Longstreet Rd And Ending At Calvary Road. Funding From Tirz* | *Desirable* | *$9,393,000.00* | *3* |
| *Thoroughfares* | *Future Road From The South End Of Moran St Running South And Easterly, Crossing Hwy 75 And The Railroad And Ending At South Cochran At The Intersection Of Oak Woods Dr. Funding By Tirz* | *Desirable* | *$3,947,000.00* | *4* |
| *Thoroughfares* | *Future Road From Fm 1097 E. At Cannan Rd, Running Northerly To Rogers Road At The Intersection Of Coaltown Rd.* | *Desirable* | *$2,115,000.00* | *5* |
| *Thoroughfares* | *Future Road From Fm Calvary Road (4000 Ft West Of I-45) Going Northward To Shepard Hill Road At Old Danville Rd.* | *Desirable* | *$4,585,000.00* | *6* |
| *Thoroughfares* | *Future Road From Coaltown Rd At The Intersection Of Turquoise Trail Northward To The Intersection Of Hwy. 75 And Esperanza Road* | *Desirable* | *$6,017,000.00* | *7* |
| *Thoroughfares* | *Future Road From Fm 1097 E. (W Of Running Bear) And Going Northwest To Rogers Road At The Intersection Of Frontier Road* | *Desirable* | *$3,241,000.00* | *8* |
| | | | | |

***Table 11.4 (cont.)***
***City of Willis***
***Capital Needs List***

| | | | | |
|---|---|---|---|---|
| *Wastewater* | *Infiltration and inflow improvements* | *Necessary* | *$500,000.00* | *1* |
| *Wastewater* | *Hill Street Lift Station Modification* | *Necessary* | *$446,830.00* | *2* |
| *Wastewater* | *Proposed Calhoun Street Lift Station* | *Necessary* | *$322,000.00* | *3* |
| *Wastewater* | *1097 East Lift Station Rehabilitation* | *Necessary* | *$446,700.00* | *4* |
| *Wastewater* | *Proposed Lincoln Ridge Lift Station* | *Desirable* | *$841,000.00* | *5* |
| *Wastewater* | *Modify Big North Forest Lift Station* | *Desirable* | *$750,000.00* | *6* |
| *Wastewater* | *Proposed Gravity line along I45 frontage* | *Desirable* | *$100.00.00* | *7* |
| *Wastewater* | *Proposed Future Lift Stations* | *Desirable* | *$2,300,000.00* | *8* |
| *Wastewater* | *Proposed Longstreet West Lift Station* | *Desirable* | *$1,200,000.00* | *9* |
| | | | | |
| | | | | |
| *Water* | *Catahoula Wells No. 1 & 2* | *Necessary* | *$3,000,000.00* | *1* |
| *Water* | *Water Plant No. 1 Rehabilitation* | *Necessary* | *$300,000.00* | *2* |
| *Water* | *Utility Relocations along FM 1097* | *Necessary* | *$2,400,000.00* | *3* |
| *Water* | *Distribution System Upgrades* | *Necessary* | *$1,300,000.00* | *4* |
| *Water* | *Water line extensions* | *Necessary* | *$6,750,000.00* | *5* |
| *Water* | *Catahoula Well No. 3* | *Desirable* | *$1,650,000.00* | *6* |
| | | | | |
| | | | | |
| *Storm Drainage* | *Clean out the debris and sediments in the drainage culvert along Kennedy* | *Necessary* | *$7,500.00* | *1* |
| *Storm Drainage* | *Drainage culvert improvements along Mink St.* | *Necessary* | *$25,000.00* | *2* |
| *Storm Drainage* | *Drainage culvert improvements along Gerald, Cypress and Mill Sts.* | *Necessary* | *$16,500.00* | *3* |
| *Storm Drainage* | *Drainage culvert improvements along Danville* | *Necessary* | *$10,000.00* | *4* |
| *Storm Drainage* | *Drainage culvert improvements along Worsham, Pine Circle and Cannon Sts.* | *Necessary* | *$15,000.00* | *5* |
| | | | | |
| | | | | |
| *Public Facilities* | *Police Station* | *Necessary* | *$2,600,000.00* | *1* |
| *Public Facilities* | *Public Works Facility* | *Necessary* | *$2,100,000.00* | *2* |
| *Public Facilities* | *City Hall/Municipal Court* | *Necessary* | *$3,100,000.00* | *3* |
| | | | | |

## *SECTION 11.3-CAPITAL IMPROVEMENT PROGRAM AND BUDGET*

*The following program shown in Table 11.5 will give the City a strategy to follow in planning capital improvement projects over a five-year period starting with fiscal year 2014. This program will also serve in directing capital outlays for the noted fiscal year. Exhibit "O" shows the projects by priority and location. Costs shown are estimates.*

***Table 11.5***
***City of Willis***
***Five Year Capital Improvement Program and Budget***

| *Fiscal Year* | *Category of Project* | *Priority Number (See Capital Needs List)* | *Cost* | *Type of Funding* |
|---|---|---|---|---|
| *2015* | *Streets* | *1* | *$109,592.05* | *City Budget* |
| *2015* | *Storm Drainage* | *1* | *$7,500.00* | *City Budget* |
| *2015* | *Water System* | *2* | *$300,000.00* | *Utility Fund, City Budget* |
| *2015* | *Wastewater* | *4* | *$446,700.00* | *Bond Funds, Certificates of Obligation, Utility Fund* |
| *2016* | *Streets* | *2* | *$105,759.08* | *City Budget* |
| *2016* | *Storm Drainage* | *2* | *$25,000.00* | *City Budget* |
| *2016* | *Water System* | *3* | *$2,400,000.00* | *Bond Funds, Certificates of Obligation, Utility Fund* |

***Table 11.5 (cont.)***
***City of Willis***
***Five Year Capital Improvement Program and Budget***

| | | | | |
|---|---|---|---|---|
| *2017* | *Streets* | *3* | *$105,708.25* | *City Budget* |
| *2017* | *Wastewater* | *1* | *$500,000.00* | *City Budget, Utility Fund* |
| *2017* | *Storm Drainage* | *3* | *$16,500.00* | *City Budget* |
| *2018* | *Streets* | *4* | *$102,587.75* | *City Budget* |
| *2018* | *Storm Drainage* | *4* | *$10,000.00* | *City Budget* |
| *2018* | *Water System* | *4* | *$200,000.00* | *Utility Fund* |
| *2019* | *Streets* | *5* | *$105,219.71* | *City Budget* |
| *2019* | *Water System* | *5* | *$200,000.00* | *Utility Fund* |
| *2019* | *Wastewater* | *7, 9* | *$1,300,000.00* | *Bond Funds, Certificates of Obligation, Utility Fund* |
| *2019* | *Storm Drainage* | *5* | *$15,000.00* | *City Budget* |

*EXHIBIT Q*
*CAPITAL IMPROVEMENTS PROGRAM*

*PLEASE SEE THE FULL SIZE MAP EXHIBIT. A REDUCED MAP EXHIBIT WILL BE PLACED HERE IN THE FINAL DRAFT OF THIS DOCUMENT.*

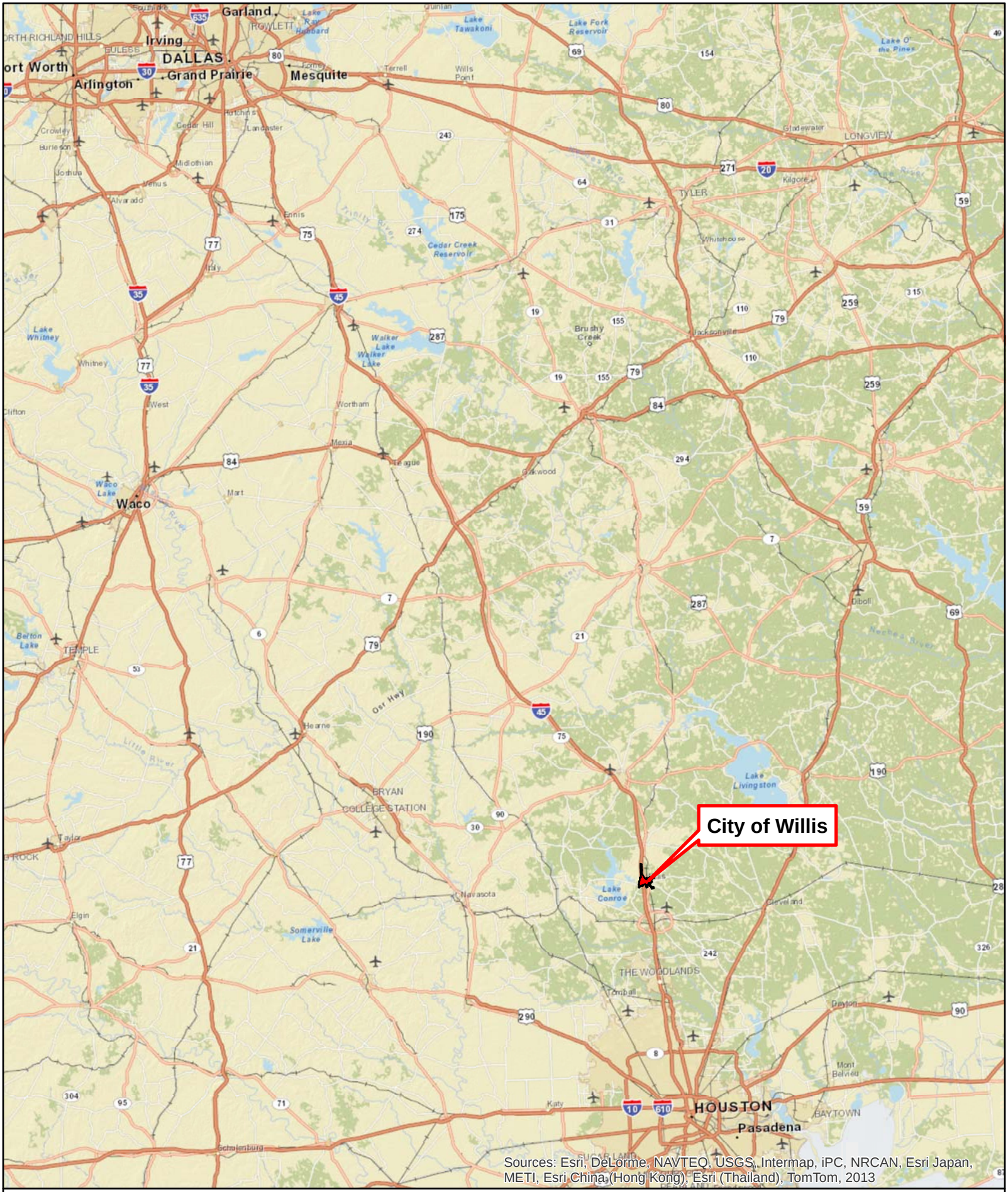



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**Exhibit A**
**2013**
**CITY OF WILLIS, TEXAS**
**LOCATION MAP**

## Legend

- 2 miles outside Willis
- Willis City Limits
- Willis_1mile_ETJ
- Conroe_ETJ
- Lot Lines


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N
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S

Feet
0 650 1,300 2,600 3,900 5,200

1 inch = 1,300 feet

**Exhibit B**
**2011**
**CITY OFWILLIS, TEXAS**
**BASE MAP**

## Legend

- Willis City Limits
- Willis ETJ
- Standard Residential Structure
- Vacant Standard Residential
- Standard Manufactured Home
- Vacant Standard Manufactured Home
- Standard Commercial Structure
- Vacant Standard Commercial
- Standard Church
- Standard Multi-Family
- Deteriorated Residential Structure
- Vacant deteriorated Residential
- Deteriorated Manufactured Home
- Vacant Deteriorated Man. Home
- Deteriorated Commercial Structure
- Vacant Deteriorated Commercial
- Deteriorated Church
- Deteriorated Multi-Family
- Dilapidated Residential Structure
- Vacant Dilapidated Residential
- Dilapidated Manufactured Home
- Vacant Dilapidated Man. Home
- Dilapidated Commercial Structure
- Vacant Dilapidated Commercial
- Dilapidated Church
- Dilapidated Multi-Fmaily
- Parcel

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**Exhibit C**
**2011**
**CITY OF WILLIS, TEXAS**
**EXISTING STRUCTURES**
**IN CITY LIMITS**

## Legend

- Willis City Limits
- Conroe ETJ
- Planning Area Boundary
- Standard Residential Structure
- Vacant Standard Residential
- Standard Manufactured Home
- Vacant Standard Manufactured Home
- Standard Commercial Structure
- Vacant Standard Commercial
- Standard Church
- Standard Multi-Family
- Deteriorated Residential Structure
- Vacant deteriorated Residential
- Deteriorated Manufactured Home
- Vacant Deteriorated Man. Home
- Deteriorated Commercial Structure
- Vacant Deteriorated Commercial
- Deteriorated Church
- Deteriorated Multi-Family
- Dilapidated Residential Structure
- Vacant Dilapidated Residential
- Dilapidated Manufactured Home
- Vacant Dilapidated Man. Home
- Dilapidated Commercial Structure
- Vacant Dilapidated Commercial
- Dilapidated Church
- Dilapidated Multi-Fmaily
- Willis_1mile_ETJ
- Parcel

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**Exhibit C-2**
**2011**
**CITY OF WILLIS, TEXAS**
**EXISTING STRUCTURES**
**FROM IN CITY LIMITS TO PLANNING AREA**

## Legend

- Willis City Limits
- Willis_1mile_ETJ
- Parcel
- Rail
- Single Family Residential
- Multi-Family Residential
- Manufactured Residential
- Commercial
- Agricultural
- Public


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Exhibit E
City of Willis, Texas
Existing Land Use
In City Limits

## Legend

- Willis City Limits
- Willis_1mile_ETJ
- Conroe ETJ
- Parcel
- Rail
- Single Family Residential
- Multi-Family Residential
- Manufactured Residential
- Commercial
- Agricultural
- Public
- Vacant_Developable
- Undevelopable

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Exhibit E-1
City of Willis, Texas
Existing Land Use - City Limits
ETJ and Planning Area

## Legend

- Willis City Limits
- Willis_1mile_ETJ
- Parcel
- Residential
- Commercial
- Institutional
- Utility
- Industrial
- Public


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**Exhibit F**
**2011**
**CITY OF WILLIS, TEXAS**
**FUTURE LAND USE**
**IN CITY LIMITS AND TIRZ AREA**

## Legend

- Willis City Limits
- Willis_1mile_ETJ
- Conroe_ETJ
- Parcel
- Industrial
- Recreation_leisure
- Commercial
- Institutional
- Residential
- Utility
- Industrial
- Public

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**Exhibit F-1**
**2011**
**CITY OF WILLIS, TEXAS**
**FUTURE LAND USE IN CITY LIMITS, TIRZ ,AND PLANNING AREA**

| STREET NAME | R.O.W. WIDTH | PVT. WIDTH | PVT. TYPE |
|---|---|---|---|
| APPLEWOOD DR. | 50 | 10 | D |
| AVE A | 50 | 20 | A |
| AVE B | 50 | 20 | A |
| BALTIC | * | * | A |
| BELL ST. | 50 | 22 | A |
| BIRCHWOOD DR. | 50 | 22 | A |
| BUSINESS PARK DR. | 80 | 26 | A |
| CALFEE DR. | 60 | 14 | A |
| CAMPBELL ST. | 55 | 28 | A |
| CAMPBELL ST. | 75 | 40 | A |
| CEDARWOOD DR. | 50 | 22 | A |
| CEMETARY LANE | 45 | 16 | A |
| CEMETARY RD. | 40 | 16 | A |
| CIRCLE | 50 | 30 | ACG |
| COCHRAN ST. | 45 | 18 | A |
| COUNTY LINE RD. | * | * | A |
| CROSS ST. | 45 | 16 | A |
| DANIEL ST. | 55 | 24 | A |
| DANVILLE ST. | 75 | 26 | C |
| DANVILLE ST. | 50 | 16 | C |
| EAST DR. | 45 | 16 | A |
| FIRST ST. | 50 | 22 | A |
| FM 1097 EAST | * | * | A |
| FM 1097 | * | * | A |
| FM 2432 | * | * | A |
| GERALD ST. | 60 | 26 | A |
| GOLDEN ST. | 45 | 22 | A |
| HILL ST. | 55 | 30 | A |
| HINES ST. | 40 | 22 | A |
| HOLLAND ST. | 50 | 24 | A |
| INDUSTRIAL PARK LANE | 50 | 18 | A |
| INTERSTATE 45 | * | * | A |
| JANET ST. | 50 | 18 | A |
| JOHN KENNEDY ST. | 45 | 18 | A |
| KENNEDY ST. | 60 | 26 | A |
| KENNEDY ST. | 45 | 20 | A |
| KILE ST. | 60 | 14 | A |
| LAMAR ST. | 55 | 26 | A |
| LAURIE LANE | 50 | 30 | ACG |
| LIBBY | 50 | 30 | ACG |
| LIBBY CIRCLE EAST | 50 | 30 | ACG |
| LIBBY CIRCLE WEST | 50 | 30 | ACG |
| LIMESTONE | * | * | A |
| LINDLEY DR. | 60 | 18 | A |
| LITTLE BILL LANE | * | * | A |
| LONGSTREET ST. | 60 | 22 | A |
| MARLIN ST. | 70 | 30 | A |
| MILL ST. | 40 | 18 | A |
| MINK ST. | 60 | 22 | A |
| MONTGOMERY ST. | * | * | A |
| MOPAC ST. | * | * | A |
| N. FOREST DR. | 65 | 30 | ACG |
| N. SHIRLEY LANE | 65 | 24 | A |
| PADDOCK ST. | 40 | 20 | A |
| PEGGY LANE | 50 | 30 | ACG |
| PERKINS AVE | 40 | 20 | A |
| PHILPOT ST. | 50 | 18 | A |
| PHILPOT | 50 | 16 | A |
| PHILPOT | 45 | 24 | A |
| PINE CIRCLE DR. | 60 | 26 | A |
| PINE CIRCLE DR. | 55 | 12 | A |
| POWELL ST. | 60 | 18 | A |
| POWELL ST. | 55 | 26 | A |
| RAYFORD ST. | 50 | 22 | A |
| REBECCA LANE | 50 | 18 | A |
| ROGERS ST. | 55 | 30 | A |
| ROGERS RD. | 50 | 24 | A |
| RUNNELS ST. | 45 | 18 | A |
| SECOND ST. | 35 | 16 | A |
| S. SHIRLEY LANE | 60 | 30 | A |
| STEWART ST. | 60 | 22 | A |
| THOMASON ST. | 50 | 20 | A |
| TRICE ST. | 45 | 18 | A |
| TRICE ST. | 40 | 16 | A |
| TURNER DR. | 45 | 22 | A |
| WATSON DR. | 40 | 18 | A |
| WATSON ST. | 70 | 20 | A |
| WAVERLY ST. | 55 | 40 | ACG |
| WAVERLY ST. | 55 | 30 | A |
| WEST DR. | 45 | 16 | A |
| WILDCAT DR. | * | * | A |
| WILL ST. | 60 | 24 | A |
| WILLOWOOD DR. | 50 | 18 | A |
| WOOD ST. | 45 | 18 | A |
| WOODEN OAKS CT. | 50 | 22 | A |
| WOODSON ST. | 55 | 22 | A |
| WORSHAM ST. | 45 | 24 | A |

## Legend

**ROAD CONDITIONS 2013**

**PAVING CONDITION**

- GOOD
- FAIR
- POOR
- Parcel
- Willis City Limits
- Willis_1mile_ETJ


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**Exhibit G**
**2011**
**2035 COMPREHENSIVE PLAN**
**EXISTING STREET CONDITIONS**

## Phase I FY13-14

| Street Name | Location | Type of Repair |
|---|---|---|
| Business Park Lane | Rogers-FM 1097 | Crack Seal |
| Peggy Ln. | ALL | Seal Coat |
| Little Bill Ln. | ALL | Seal Coat |
| Libby Circle | ALL | Seal Coat |
| Laurie Ln. | Rogers-Little Bill Ln. | Seal Coat |
| Mopac St. | ALL | Seal Coat |
| Mill St. | Mopac-FM 1097 | Seal Coat |
| Cross St. | Mill St.-Church St. | Reclaim |
| Church St. | ALL | Reclaim |

## Phase II FY14-15

| Street Name | Location | Type of Repair |
|---|---|---|
| Industrial Park Ln. | Trice-Paddock | Crack Seal |
| E. Watson | S. Cochran-Paddock | Reclaim |
| S. Cochran | E. Watson-Powell | Reclaim |
| Lindley Dr. | Trice-Paddock | Seal Coat |
| S. Shirley Ln. | ALL | Seal Coat |
| N. Shirley Ln. | ALL | Seal Coat |
| Cemetery Ln. | FM 1097-N Shirley | Seal Coat |
| Cemetery Rd. | Paddock-Cemetery Ln. | Seal Coat |
| Reese | FM 1097-Cemetery Rd. | Seal Coat |

## Phase III FY15-16

| Street Name | Location | Type of Repair |
|---|---|---|
| Campbell | Hill St.-FM 1097 | Crack Seal |
| Willwood | Powell-East Dr. | Reclaim |
| East Dr. | ALL | Reclaim |
| West Dr. | ALL | Reclaim |
| Janet St. | ALL | Seal Coat |
| Rebecca Ln. | ALL | Seal Coat |
| Wooded Oaks Ct. | ALL | Seal Coat |
| Pine Circle Dr. | Oak Woods Dr.-City Limits | Seal Coat |
| Birchwood Dr. | ALL | Seal Coat |

## Phase IV FY16-17

| Street Name | Location | Type of Repair |
|---|---|---|
| Philpot St. | MLK-Marlin St. | Crack Seal |
| Stewart St. | West of Kennedy | Crack Seal |
| Lincoln Ridge | Gerald-I 45 | Crack Seal |
| N. Forest Dr. | ALL | Seal Coat |
| Cedarwood Dr. | ALL | Seal Coat |
| Applewood Dr. | ALL | Seal Coat |
| First St. | ALL | Seal Coat/partial overlay |
| Avenue A | ALL | Seal Coat |
| W. Powell St | West of US 75 | Seal Coat/partial overlay |

## Phase V FY17-18

| Street Name | Location | Type of Repair |
|---|---|---|
| Monroe St. | East of I 45 | Crack Seal |
| Young St. Phase 1 & 2 | Lincoln Ridge-Perkins | Crack Seal |
| Longstreet | West of I 45 feeder | Crack Seal |
| Gerald St. | Young St.-Campbell | Crack Seal |
| Mink St. | ALL | Seal Coat/partial overlay |
| W. Watson | ALL | Seal Coat/partial overlay |
| Worsham St. | ALL | Seal Coat |
| Woodson St. | Marlin-Mink | Seal Coat |
| Wood St. | Marlin-Mink | Seal Coat |

## Phase VI FY18-19

| Street Name | Location | Type of Repair |
|---|---|---|
| Thomason | Mink-Old US 75 | Seal Coat |
| Stewart | Kennedy-N. Bell | Seal Coat |
| Marlin | Philpot-N. Bell | Seal Coat |
| Turner | ALL | reconstruct/widen |
| John F Kennedy | ALL | reconstruct/widen |

## Phase VII FY 19-20

| Street Name | Location | Type of Repair |
|---|---|---|
| W. Rogers Rd. | US 75-Campbell | Seal Coat |
| Golden St. | ALL | Seal Coat |
| Maple Ridge Dr. | ALL | Seal Coat |
| Falling Oak Dr. | ALL | Seal Coat |
| Standing Oak Dr. | ALL | Seal Coat |
| Oaken Timber Ln. | ALL | Seal Coat |
| Aspen Way | ALL | Seal Coat |
| Cedar Ridge Ct. | ALL | Seal Coat |
| Oak Hill Dr. | ALL | Seal Coat |
| Cypress Dr. | ALL | Seal Coat |
| Live Oak Trl. | ALL | Seal Coat |
| Jayton Wood Way | ALL | Seal Coat |

## Phase VIII FY 20-21

| Street Name | Location | Type of Repair |
|---|---|---|
| Calhoun | ALL | Reclaim |
| Rayford | ALL | Reclaim |
| Lamar | ALL | Seal Coat |
| Bybee | ALL | Seal Coat |
| Daniel St. | ALL | Seal Coat |
| Runnels | ALL | Seal Coat |


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**Exhibit H**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**PROPOSED STREET IMPROVEMENTS**

# 2035 COMPREHENSIVE PLAN EXISTING ARTERIAL AND COLLECTOR THOROUGHFARES

## Legend

- Arterials
- Collectors
- Lot Lines / Parcels
- Willis City Limits
- Willis_ETJ_2012


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**Exhibit I**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**EXISTING THOROUGHFARES**

# 2035 COMPREHENSIVE PLAN
# PROPOSED THOROUGHFARES

FUTURE ROAD PRIORITY NO. 6

FUTURE ROAD PRIORITY NO. 7

FUTURE ROAD PRIORITY NO. 8

FUTURE ROAD PRIORITY NO. 3 (TIRZ)

FUTURE ROAD PRIORITY NO. 1-A (TIRZ)

FUTURE ROAD PRIORITY NO. 4 (TIRZ AS PART OF MORAN DEVELOPMENT)

FUTURE ROAD PRIORITY NO. 5

FUTURE ROAD PRIORITY NO. 1-B REHAB EXISTING

FUTURE ROAD PRIORITY NO. 2 REHAB EXISTING & PROP EXTENSION

## Legend

- Lot Lines
- LAKE CONROE

**PLANNING PRIORITY**

- PRIORITY NO. 1
- PRIORITY NO. 2
- PRIORITY NO. 3
- PRIORITY NO. 4
- PRIORITY NO. 5
- PRIORITY NO. 6
- PRIORITY NO. 7
- PRIORITY NO. 8
- Willis City Limits
- Willis_ETJ_2012

| PRIORITY | PROPOSED THOROUGHFARES | COST |
|---|---|---|
| 1 | **A.** FUTURE ROAD EXTENSION FROM FM 1097 RUNNING SOUTHEASTERLY TO I-45. FUNDING FROM TIRZ | $ 1,628,000 |
| | **B.** WIDENING OF PADDOCK STREET FROM COUNTY LINE RD TO FM 1097 E. | $ 1,106,000 |
| 2 | FUTURE ROAD EXTENSION FROM COUNTY LINE ROAD SOUTHERLY TO FM 2432 | $ 1,209,000 |
| 3 | FUTURE ROAD EXTENSION FROM FM 1097 W. NORTHWARD CROSSING LONGSTREET RD AND ENDING AT CALVARY ROAD. FUNDING FROM TIRZ | $ 9,393,000 |
| 4 | FUTURE ROAD FROM THE SOUTH END OF MORAN ST RUNNING SOUTH AND EASTERLY, CROSSING HWY 75 AND THE RAILROAD AND ENDING AT SOUTH COCHRAN AT THE INTERSECTION OF OAK WOODS DR. FUNDING BY TIRZ | $ 3,947,000 |
| 5 | FUTURE ROAD FROM FM 1097 E. AT CANNAN RD, RUNNING NORTHERLY TO ROGERS ROAD AT THE INTERSECTION OF COALTOWN RD. | $ 2,115,000 |
| 6 | FUTURE ROAD FROM FM CALVARY ROAD (4000 FT WEST OF I-45) GOING NORTHWARD TO SHEPARD HILL ROAD AT OLD DANVILLE | $ 4,585,000 |
| 7 | FUTURE ROAD FROM COALTOWN RD AT THE INTERSECTION OF TURQUOISE TRAIL NORTHWARD TO THE INTERSECTION OF HWY. 75 AND ESPERANZA ROAD. | $ 6,017,000 |
| 8 | FUTURE ROAD FROM FM 1097 E. (W OF RUNNING BEAR) AND GOING NORTHWEST TO ROGERS ROAD AT THE INTERSECTION OF FRONTIER ROAD | $ 3,241,000 |


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**Exhibit J**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**PROPOSED THOROUGHFARES**

# 2035 COMPREHENSIVE PLAN
# EXISTING WATERLINE MAP

**Water Plant Components – Existing**

| Plant | Equipment | Capacity | Connections per Allocated Capacity |
|---|---|---|---|
| WP1 | Water Well No. 1 | 0 gpm (abandoned) | |
| | Water Well No. 2 *(Gulf Coast Aquifer)* | 300 gpm | 500 |
| | Remote Water Well No. 3 *(Gulf Coast Aquifer)* | 250 gpm | 416 |
| | Ground Storage Tank | 210,000 gal | 1,050 |
| | Elevated Storage Tank *(to be removed)* | 50,000 gal | 250 (storage)<br>500 (pressure) |
| | Booster Pumps | 3 x 400 gpm | 600 |
| WP2 | Water Well No. 4 *(Gulf Coast Aquifer)* | 750 gpm | 1,250 |
| | Ground Storage Tank | 125,000 gal | 625 |
| | Elevated Storage Tank | 75,000 gal | 375 (storage)<br>750 (pressure) |
| | Pressure Tank | 1 x 10,000 gal<br>1 x 5,000 gal | 750 |
| | Booster Pumps | 3 x 500 gpm | 750 |
| WP3 | Water Well No. 5 *(Gulf Coast Aquifer)* | 1,200 gpm | 2,000 |
| | Elevated Storage Tank | 300,000 gal | 1,500 (storage)<br>3,000 (pressure) |

**Existing Combined System Totals**

| Component | | Planned Capacity | Connections per Capacity | |
|---|---|---|---|---|
| Other Well Capacity | | 2,500 gpm | 4,166 | |
| Storage (Ground and Elevated) Capacity | | 710,000 gal | 3,550 | |
| Service | Pumps (Firm) | 1,800 gpm | 900 | Total: |
| Capacity | EST | 375,000 gal | 3,750 | 4,650 |
| Pressure | HPT | 15,000 gal | 750 | Total: |
| Capacity | EST | 375,000 gal | 3,750 | 4,500 |

TCEQ No.: 11373
TCEQ No.: 12892
TCEQ No.: 13114
TCEQ No.: 11612
TCEQ No.: 13098
TCEQ No.: 11911
TCEQ No.: 12983
TCEQ No.: 7778500
TCEQ No.: 10339

WATER PLANT #2
WELL NO. 4

REMOTE
WELL NO. 3

WATER PLANT NO. 1
WELL NO. 2

WATER PLANT #3
WELL NO. 5

Cricket Hollow Apartments

Willis First Baptist Church

**Legend**

- WATER WELL
- FH
- EXIST WATERLINE
- Willis City Limits
- Willis_1mile_ETJ
- STREET_S
- Parcels

**UTILITY OWNER**

- AQUA TEXAS INC
- C & R WATER SUPPLY I
- CAPE MALIBU WSC
- CITY OF CONROE
- CONROE BAY WATER-SEW
- CRYSTAL SPRINGS WATE
- KLIEMANN ESTATES WAT
- MONARCH UTILITIES I
- NERRO SUPPLY LLC
- ORCHARD CROSSING
- PARADISE COVE WATER
- QUADVEST LP
- RANCH UTILITIES LP
- SAN JO UTILITIES
- T & W WATER SERVICE
- TEXAS AMERICAN WATER
- TEXAS NATIONAL MUD
- WALNUT COVE INC

Feet 0 1,000 2,000 3,000 4,000

1 inch = 901 feet


**Prepared By:**
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N W E S

**Exhibit K**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**EXISTING WATERLINE MAP**

# 2035 COMPREHENSIVE PLAN
# WATERLINE MAP WITH
# PROPOSED WATERLINE EXTENSIONS,
# PROPOSED LOOPS AND UPSIZING LINES

PRIORITY #5

PRIORITY #5

PRIORITY #5

PRIORITY #5

PRIORITY #5

PROP WATERLINE (TIRZ)

PROP WATERLINE (TIRZ)

WATER PLANT #2
WELL NO. 4
(AND FUTURE CATAHOULA WELL SITE - LOW PRIORITY)
PRIORITY NO. 6

REMOTE WELL NO. 3

WATER PLANT NO. 1
WELL NO. 2
PROP CATAHOULA WELL NO. 7 (HIGH PRIORITY)
PRIORITY 1 & 2

WATER PLANT #3
WELL NO. 5
PROP CATAHOULA WELL NO.6 (HIGH PRIORITY)
PRIORITY NO. 1

PRIORITY #3
(FM 1097)

PRIORITY #4
CENTRAL PART OF CITY

Love's Truck Stop

CCN: 11373
CCN: 12892
CCN: 13114
CCN: 11612
CCN: 13098
CCN: 11911
CCN: 12983
CCN: 7778500
CCN: 10339

PROP 8"
PROP 12"

**Legend**

- Willis_ETJ_2012
- Water Well
- STREET_S
- FUTURE WL LOOPS
- Willis Future WL
- EXIST WATERLINE
- WL UNDERSIZED
- FH
- Willis City Limits
- Parcel

**NEARBY_CCN_WATER UTILITY OWNER**

- AQUA TEXAS INC
- C & R WATER SUPPLY I
- CAPE MALIBU WSC
- CITY OF CONROE
- CONROE BAY WATER-SEW
- CRYSTAL SPRINGS WATE
- KLIEMANN ESTATES WAT
- MONARCH UTILITIES I
- NERRO SUPPLY LLC
- ORCHARD CROSSING
- PARADISE COVE WATER
- QUADVEST LP
- RANCH UTILITIES LP
- SAN JO UTILITIES
- T & W WATER SERVICE
- TEXAS AMERICAN WATER
- TEXAS NATIONAL MUD
- WALNUT COVE INC

| PRIORITY | PROPOSED WATER PLANT AND WATER DISTRIBUTION IMPROVEMENTS | COST |
|---|---|---|
| 1 | **CATAHOULA WELLS (WELLS NO. 6 & 7):** CONSISTS OF CONSTRUCTION TWO CATAHOULA WATER WELLS AT WATER PLANTS NO. 1 AND 2. THIS INCLUDES PIPING AND ELECTRICAL WORK AT THE WATER PLANTS TO ACCOMMODATE THE PROPOSED WELLS. THIS WILL PROVIDE AN ALTERNATE WATER SUPPLY TO MEET THE REQUIREMENTS OF THE LSGCD REGULATORY PLAN. IT WILL ALSO REDUCE COSTS TO THE CITY OVER THE SJRA PLAN. | $3,000,000 |
| 2 | **WATER PLANT NO. 1 REHABILITATION:** CONSIST OF REMOVING THE 50,000-GALLON ELEVATED STORAGE TANK AT WATER PLANT NO. 1 AND REPLACE IT WITH TWO (2) 10,000-GALLON PRESSURE TANKS IN ITS PLACE. | $ 300,000 |
| 3 | **UTILITY RELOCATIONS ALONG FM 1097 (LOCAL):** TXDOT HAS PLANS TO WIDEN FM 1097 THROUGH THE CENTER OF TOWN BEGINNING IN MARCH 2014. THE CITY MUST RELOCATE UTILITIES ALONG THE PORTION TO BE WIDENED. THIS WILL PROVIDE AN OPPORTUNITY TO UPSIZE THE WATER LINES ALONG | $2,400,000 |
| 4 | **DISTRIBUTION SYSTEM UPGRADES:** IN THE CENTRAL PART OF THE CITY, THE DISTRIBUTION SYSTEM IS IN NEED OF LARGER LINES FOR IMPROVED SERVICE, REPLACEMENT LINES FOR OLD DETERIORATING LINES, AND ADDITIONAL CONNECTING LINES TO MAKE SYSTEM LOOPS FOR IMPROVED CIRCULATION. WORK CAN BE SPLIT UP IN PHASES OF ABOUT $200,000 AS FUNDING BECOMES AVAILABLE. | $1,300,000 |
| 5 | **WATER LINE EXTENSIONS:** WATER LINE EXTENSIONS ARE NEEDED TO SERVE DEVELOPING AREAS IN THE CITY, AREAS OF ANTICIPATED GROWTH AND EXISTING SERVICE AREA TO IMPROVE PRESSURE AND CIRCULATION. THIS WORK CAN BE PHASED AS FUNDING BECOMES AVAILABLE. | $6,750,000 |
| 6 | **CATAHOULA WELL AT WATER PLANT NO. 2:** THE PROPOSED CATAHOULA WELL IS A LOW PRIORITY AND WILL BE EVALUATED AS THE CITY GROWS TO PROVIDE ADDITIONAL ALTERNATIVE WATER SOURCE. | $1,650,000 |

Feet 0 1,000 2,000 3,000 4,000


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N W E S

**Exhibit L**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**WATERLINE MAP WITH**
**PROPOSED WATERLINE EXTENSIONS,**
**PROPOSED LOOPS AND UPSIZING LINES**

# 2035 COMPREHENSIVE PLAN
# EXISTING SANITARY SEWER MAP

#7
FUTURE 75 NORTH L.S.

#7
FUTURE EMERALD LAKE L.S.

LITTLE PIN OAK L.S.

BIG PIN OAK L.S.

KROGER L.S.

FM 1097 WEST L.S.

BEST WESTERN L.S.

NOTE: 2 SEPARATE FORCEMAINS RUN IN SINGLE STEEL CASING UNDER I-45

HILL ST L.S.

ROGERS ROAD L.S.

1097 EAST L.S.

BIG COUNTY LINE L.S.

CANNAN LIFT STATON (LITTLE COUNTY LINE L.S.)

WILLWOOD L.S.

SOUTHBEND L.S.

LITTLE NORTH FOREST L.S.

BACK NORTH FOREST L.S.

BIG NORTH FOREST L.S.

WWTP L.S.

CITY OF WILLIS WWTP

PRIVATE LIFT STATION AND FORCEMAIN

CCN: 21064

CCN: 7778500

CCN: 20135

## Legend

LIFT_STATIONS

**STRUC_TYP**

- ARV
- CO
- MH

EXIST GRAVITY LINE

EXIST FORCEMAIN

**NEARBY CCN SEWER**

- CITY OF CONROE
- RANCH UTILITIES LP
- Parcel
- Willis City Limits 2012
- Willis ETJ 2012


**Prepared By:**
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N W E S

Exhibit M
CITY OF WILLIS, TEXAS
2035 COMPREHENSIVE PLAN
EXISTING SANITARY SEWER MAP

# 2035 COMPREHENSIVE PLAN SANITARY SEWER MAP WITH PROPOSED SEWER LINE EXTENSIONS

FUTURE SEWER EXTENSION

FUTURE SEWER EXTENSION

FUTURE SEWER EXTENSION

#8

FUTURE 75 NORTH L.S.

FUTURE SEWER EXTENSION

FUTURE SEWER EXTENSION

#8

FUTURE EMERALD LAKE L.S.

#8

#8

FUTURE SEWER EXTENSION (MANNERS TRACT)

#9

FUTRE LONGSTREET WEST L.S.

FUTURE F.M. CROSSING

#9

SEWER LINES ALONG THIS AREA NEED SCHEDULED REHABILITATION

DANVILLE L.S.

FUTURE CALHOUN L.S.

#3

#3

#7

#2

HILL ST L.S.

LITTLE PIN OAK L.S.

FUTURE LINCOLN RIDGE L.S.

#7

#7

BIG PIN OAK L.S.

FUTURE SEWER (TIRZ)

KROGER L.S.

#7

#1

FM 1097 WEST L.S.

#6

FUTURE SEWER (TIRZ)

BEST WESTERN L.S.

NOTE: 2 SEPARATE FORCEMAINS RUN IN SINGLE STEEL CASING UNDER I-45

SOUTHBEND L.S.

WILLWOOD L.S.

#5

FUTURE SEWER EXTENSION

FUTURE SEWER EXTENSION

TCEQ No.: 21064

FUTURE SEWER EXTENSION

FUTURE EAST STEWART L.S.

FUTURE FM 1097 SEWER EXTENSION

ROGERS ROAD L.S.

FUTURE 1097-CANNAN L.S.

#4

1097 EAST L.S.

BIG COUNTY LINE L.S.

CANNAN LIFT STATON (LITTLE COUNTY LINE L.S.)

TCEQ No.: 7778500

#5

LITTLE NORTH FOREST L.S.

BACK NORTH FOREST L.S.

#5

BIG NORTH FOREST L.S.

WWTP L.S.

CITY OF WILLIS WWTP

PRIVATE LIFT STATION AND FORCEMAIN

TCEQ No.: 20135

## Legend

**FUTURE SEWER STRUCTURE**

- LIFT STATION
- MANHOLE
- <all other values>

**FUTURE SEWER LINE TYPE**

- FORCEMAIN
- GRAVITY LINE

**STRUC_TYP**

- ARV
- CO
- MH
- EXIST GRAVITY LINE
- EXIST FORCEMAIN

**NEARBY CCN SEWER**

**NEARBY CCN SEWER**

- CITY OF CONROE
- RANCH UTILITIES LP
- TEXAS NATIONAL MUD
- STREET_S
- Willis City Limits
- Willis_ETJ_2012

Feet 0 500 1,000 2,000 3,000 4,000

1 inch = 800 feet

| PRIORITY | PROPOSED SANITARY SEWER IMPROVEMENTS | COST |
|---|---|---|
| 1 | **INFILTRATION AND INFLOW IMPROVEMENTS:** CONSISTS OF ONGOING TELEVISING AND REHABILITATION OR REPLACING OLD SANITARY SEWER PRIMARILY IN THE CENTRAL PART OF THE CITY WHICH ARE RESPONSIBLE FOR INFLOW AND INFILTRATION OF GROUNDWATER AND/OR STORM WATER RUNOFF. | $ 500,000 EVERY 3-YEARS |
| 2 | **RELOCATE HILL STREET LIFT STATION:** CONSISTS OF CONSTRUCTING A NEW LIFT STATION ON THE EAST SIDE OF NORTH DANVILLE AT HILL STREET. THE EXISTING HILL STREET LIFT STATION WILL BE TAKEN OFFLINE ONCE THE NEW LIFT STATION IS CONSTRUCTED AND OPERATIONAL. | $ 446,830 |
| 3 | **PROPOSED CALHOUN STREET LIFT STATION:** CONSISTS OF CONSTRUCTING A NEW LIFT STATION ON CALHOUN STREET. THIS PROPOSED LIFT STATION WILL SERVE PROPERTY IN THE CALHOUN STREET AREA AND ADJACENT AREA ALONG HIGHWAY 75 WHICH CURRENTLY DOES NOT HAVE CITY SEWER SERCICE. WASTWATER FLOW FROM THE CALHOUN STREET LIFT STATION WILL BE PUMPED VIA FORCEMAIN TO THE HILL STREET LIFT STATION. | $ 322,000 |
| 4 | **1097 EAST LIFT STATION REHABILITATION:** CONSISTS OF COMPLETE REHABILITATION OF EXISTING LIFT STATION, INCLUDING NEW PUMPS, CONTROLS, AND PIPING. | $ 446,700 |
| 5 | **MODIFY BIG NORTH FOREST LIFT STATION AND PROPOSED FORCEMAIN:** CONSISTS OF REMOVING AND REPLACING EXISTING SANITARY SEWER LINE ALONG PINE CIRCLE, MODIFY NORTH FOREST LIFT STATION AND CONSTRUCT A FORCE MAIN TO U.S. HWY 75 TRUNK LINE. | $ 750,000 |
| 6 | **PROPOSED GRAVITY LINE ALONG I-45 FRONTAGE ROAD:** CONSTRUCT GRAVITY SEWER ALONG EASTERLY PORTION OF IH-45 NORTH FROM FM 1097 TO POWELL STREET. | $ 100,000 |
| 7 | **PROPOSED LINCOLN RIDGE LIFT STATION:** CONSISTS OF CONSTRUCTING A NEW LIFT STATION AT LINCOLN RIDGE AND I-45 NORTHBOUND FRONTAGE ROAD. PROPOSED GRAVITY SEWER WILL BE CONSTRUCTED AS PART OF THIS PROJECT AND WILL SERVE PROPERTY ALONG LINCOLN RIDGE AND THE I-45 NORTHBOUND FRONTAGE ROAD. WASTEWATER FLOW FROM THE LINCOLN RIDGE LIFT STATION WILL BE PUMPED VIA FORCEMAIN TO A MANHOLE ON THE I-45 NORTHBOUND FRONTAGE ROAD (JUST NORTH OF FM 1097). | $ 841,000 |
| 8 | **PROPOSED FUTURE LIFT STATIONS, FORCE MAINS AND GRAVITY LINES:** CONSTRUCT LIFT STATIONS, GRAVITY LINES AND FORCE MAINS TO SERVE THE NORTHERN AREA OF THE CITY FOR THE RECENT 2012-2013 ANNEXATIONS | $ 2,300,000 |
| 9 | **PROPOSED LONGSTREET WEST LIFT STATION, FORCE MAIN AND GRAVITY LINE:** CONSTRUCT LIFT STATION ON LONGSTREET ROAD. CONSTRUCT GRAVITY SEWER LINES ALONG LONGSTREET ROAD. CONSTRUCT FORCEMAIN ALONG LONGSTREET TO EXISTING MH ON I-45. | $ 1,200,000 |


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N W E S

Exhibit N
CITY OF WILLIS, TEXAS
2035 COMPREHENSIVE PLAN
SANITARY SEWER MAP WITH
PROPOSED SEWER LINE EXTENSIONS

# 2035 COMPREHENSIVE PLAN
# FLOODPLAIN MAP
# SHOWING CULVERTS FOR MAINTENANCE

**Drainage Culverts in Willis City Limits**

| Priority No. | Street Name | Description | Notes/Deficiencies | Preliminary Construction Budget Estimate |
|---|---|---|---|---|
| 1 | Young St. | 2 - 24" Steel - Steel corroded | Steel Culverts very corroded; more than half pipe silted; overgrowth; ditch needs to be cleaned out | Planned as part of drainage improvements project from WISD property to I-45 right-of-way. Preliminary construction cost estimate: *$360,000* |
| 2 | S. of HINES | 3 - 30" RCP in Creek. Private driveway but shown for drainage | | |
| 3 | Golden St. | 36" RCP - Planned remove/replace w/ 3 - 30" HDPE | Heavy overgrowth with silt in pipe | |
| 4 | Kennedy | 18" RCP | Overgrowth with silt | $7,500 |
| 5 | Mink | 2 - 48" HDPE w/ concrete headwall | Sanitary line (gravity or force main) crossing in front of upstream opening. Budget based on assumption of drop manhole on west side of drainageway and gravity line replacement to next manhole, if depth is adequate. | $25,000 |
| 6 | Gerald | 3 - 24" RCP | Pipes half silted | $5,000 |
| 7 | Cypress | 2 - 24" HDPE | Upstream overgrown and silted | $5,000 |
| 8 | Mill | 3 - 24" HDPE | Filled with debris and silt; overgrown | $6,500 |
| 9 | Danville | 4'x4' RCP Box Culvert w/ concrete headway, wingwalls | Sanitary line crosses flowline of culvert; overgrown downstream; lots of erosion downstream | Sanitary sewer lowering planned for future during Hill St Lift Station Design. Preliminary construction cost estimate: *$45,000*<br><br>Fill and erosion control downstream: *$10,000* |
| 10 | Worsham | 72" Steel | Overgrowth | $5,000 |
| 11 | Pine Circle | 3 - 42" HDPE | Overgrowth | $5,000 |
| 12 | Cannon | Pipe size not documented | Overgrowth | $5,000 |
| 13 | Business Park | 1 - 48" HDPE; 1 - 48" Steel | Overgrowth; debris | $5,500 |
| 14 | Maple Ridge | 2 - 48" HDPE w/ concrete headwall | Overgrown downstream | $5,000 |
| 15 | Danville | Box culvert at Camp Creek crossing | Overgrown upstream and downstream | $7,000 |
| 16 | County Line Rd | 18" RCP | Fair Condition | |
| 17 | Oak Hill | 2 - 24" HDPE | Fair Condition | |
| 18 | Rogers Road | 2 - 60" HDPE | Fair Condition | |
| 19 | Aspen | 2 - 36" HDPE | Fair Condition | |
| 20 | S of FM 1097 | 72" Steel Culvert on Crystal Creek south of FM 1097 and West of Holland St | Fair Condition | |
| 21 | Longstreet Rd | 18" culvert adjacent to east R.O.W. I-45 | Rehab in progress | |
| 22 | Powell | 2 - 60" HDPE | Good condition | |
| 23 | FM 1097 | 4 - 48" RCP w/ concrete headwall | (TXDOT) | |
| 24 | FM 1097 | Box culvert crossing | (TXDOT) | |
| 25 | FM 1097 | 3 - RCP Box Culverts 9' Wide x 5' Tall | (TXDOT) | |
| 26 | FM 1097 | Culvert crossing FM 1097 East | (TXDOT) | |
| 27 | FM 1097 | 3 - 30" RCP Pipes w/ concrete headwall | (TXDOT) - Silted a little downstream; log, debris upstream | |
| 28 | HWY 75 N. | Box Culvert crossing Hwy 75 just south of Calhoun | (TXDOT) | |
| 29 | HWY 75 N. | Box culvert crossing Hwy 75 at Camp Creek | (TXDOT) | |

**Drainage Culverts in Willis 3-Mile Planning Area**

| No. | Street Name | Description | Notes/Deficiencies | Preliminary Construction Budget Estimate |
|---|---|---|---|---|
| 30 | Shepard Hill | 96" Steel Culvert | Fair Condition | |
| 31 | Shepard Hill | 48" RCP culvert with concrete headwalls | South headwall in poor condition; heavy over growth | $12,000 |
| 32 | Old Danville | 12" HDPE culvert | Pipe in good condition | |
| 33 | Danville | 24" HDPE culvert | Pipe in fair condition; Heavy overgrowth | $8,000 |

**Legend**

- Streams/Creeks
- Willis City Limits
- Street

**FEMA FLOOD ZONES**

**FLOOD ZONE**

- 100 YR FP: NO BFE EST.
- 100 YR FP: BFE EST.
- FLOODWAY
- Willis_1mile_ETJ
- ROW
- parcel


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N W E S

Exhibit O
CITY OF WILLIS, TEXAS
2035 COMPREHENSIVE PLAN
FLOODPLAIN MAP
SHOWING CULVERTS FOR MAINTENANCE

# 2035 COMPREHENSIVE PLAN
# PROPOSED ANNEXATIONS

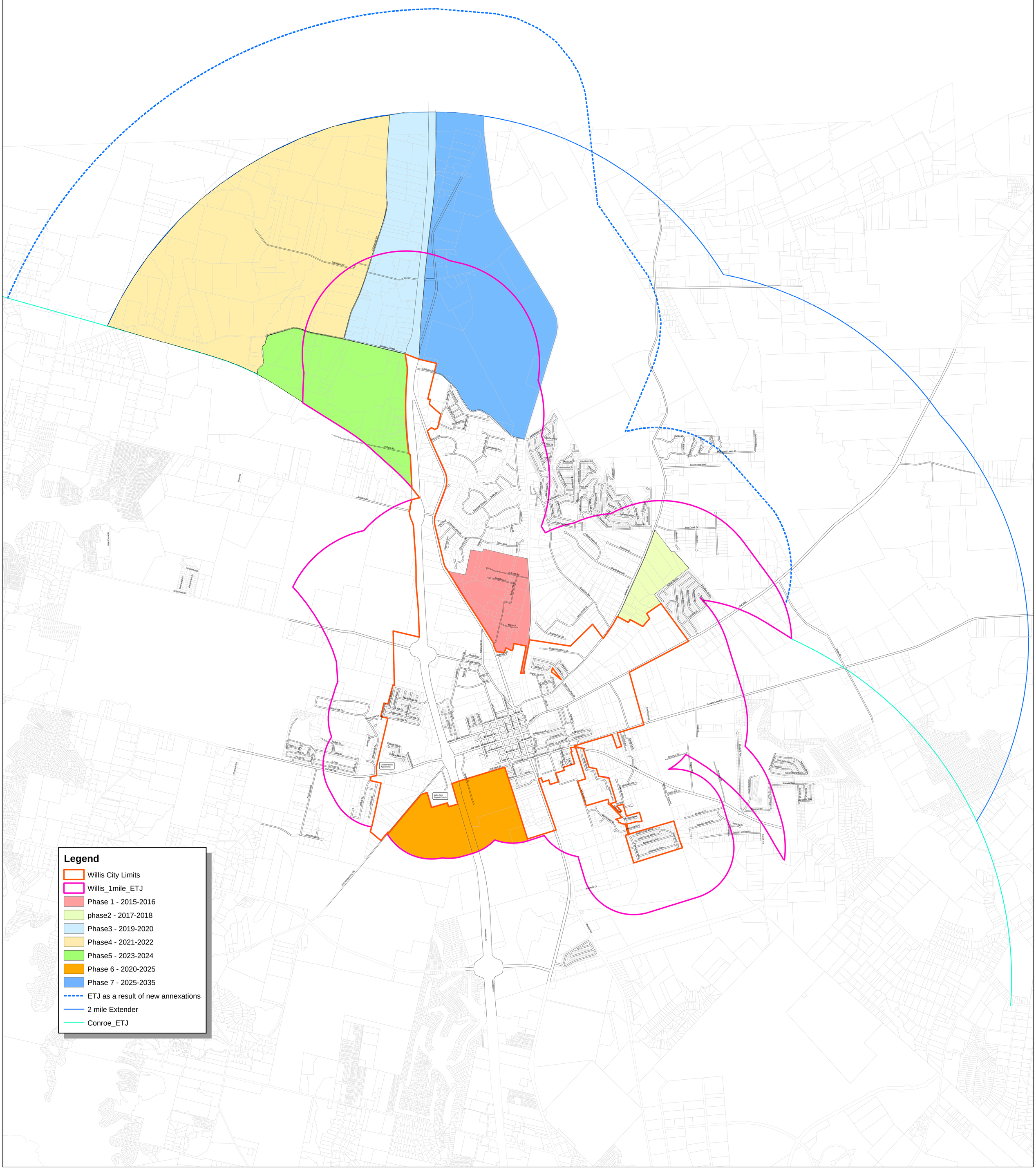



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**Exhibit P**
**CITY OF WILLIS, TEXAS**
**2035 COMPREHENSIVE PLAN**
**PROPOSED ANNEXATION**

| Year | Items | Description |
|---|---|---|
| 2015 | Streets | Crack Seal; Seal Coat; Reclaim |
| | Storm Drainage | Clean out the debris and sediment in the drainage culvert along Kennedy. |
| | Water | Water Plant No. 1 Rehabilitation |
| | Wastewater | 1097 East Lift Station Rehabilitation |
| | | |
| 2016 | Streets | Crack Seal; Seal Coat; Reclaim |
| | Storm Drainage | Drainage culvert improvements along Mink St. |
| | Water | Utility Relocations along FM 1097 |
| | | |
| 2017 | Streets | Crack Seal; Seal Coat; Reclaim |
| | Wastewater | Infiltration and Inflow improvements |
| | Storm Drainage | Drainage culvert improvements along Gerald, Cypress and Mill St. |
| | | |
| 2018 | Streets | Crack seal; Seal coat; Partial Overlays |
| | Storm Drainage | Drainage culvert improvements along Danville |
| | Water | Distribution system upgrades |
| | | |
| 2019 | Streets | Crack seal; Seal coat; Partial overlays |
| | Water | Line Extensions |
| | Wastewater | Proposed Gravity Lines along I-45 Frontage; Proposed Long Street West Lift Station |
| | Storm Drainage | Drainage culvert improvements along Worsham, Pine Circle and Cannon St. |

# Legend - Capital Improvements

- 2015 Priorities
- 2016 Priorities
- 2017 Priorities
- 2018 Priorities
- 2019 Priorities
- 2 miles outside Willis
- Willis City Limits
- Willis_1mile_ETJ
- Conroe_ETJ


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N W E S

Feet
0 415 830 1,660 2,490 3,320
1 inch = 833 feet

**Exhibit Q**
**2011**
**CITY OFWILLIS, TEXAS**
**CAPITAL IMPROVEMENTS**