City of Taylor

2017 Strategic Facility Plan

December 29, 2017

Prepared by:

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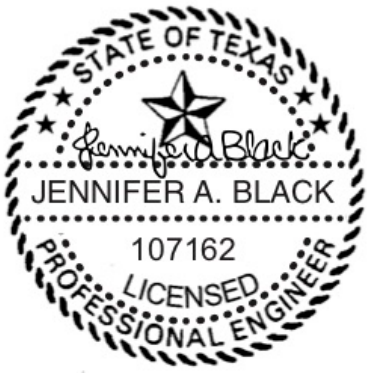

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ABBREVIATIONS

AAG	Average Annual Growth
Ac	Acre
ac-ft/yr	acre feet per year (or acft/yr)
ADA	Americans with Disability Act
ADF	Average Daily Flow
ALD	Airport Layout Drawing
ALP	Airport Layout Plan
AMI	Advanced Mater Infrastructure
AMR	Automatic Meter Reading
Ave	Avenue
Avg	Average
AWOS	Automated Weather Observing System
BLVD	Boulevard (or Blvd)
BOD	Biochemical Oxygen Demand
BRA	Brazos River Authority
CAD	Computer-Aided Design
$CBOD_5$	Carbonaceous Biochemical Oxygen Demand
CCN	Certificate of Convenience and Necessity
CDBG	Community Development Block Grant
CET	Composite Elevated Tank
CF	cubic feet (or cf)
cfs	cubic feet per second
CFU	Colony Forming Unit
CI	Cast Iron
CIP	Capital Improvement Plan
CIR	Circle (or Cir)
CIU	Categorical Industrial User
COT	City of Taylor
CR	County Road
CV	Cove (or Cv)
CWSRF	Clean Water State Revolving Fund
DCP	Drought Contingency Plan
DO	Dissolved Oxygen
DI	Ductile Iron
DMP	Downtown Master Plan
DR	Drive (or Dr)
DWSRF	Drinking Water State Revolving Fund
DWG	Digital CAD file
E	East
EA	Each (or ea)
EOC	Emergency Operation Center
EPA	Environmental Protection Agency
EST	Elevated Storage Tank
ETJ	Extra Territorial Jurisdiction

FAA	Federal Aviation Administration
FBO	Fixed Based Operator
FEMA	Federal Emergency Management Agency
FM	Farm-to-Market
FOD	Foreign Object Damage
FOG	Fats, oils and grease
FOP	Flushing Optimization Plan
fps	feet per second
Ft	Feet (or ft or ‘)
FY	Fiscal Year
Gal	Gallons (or GAL)
GIS	Graphic Information System
gpcpd	gallons per capita per day
gpd	gallons per day
gpd/sf	gallons per day per square feet
gpm	gallons per minute
GPS	Global Positioning System
GST	Ground Storage Tank
HMAC	Hot Mix Asphaltic Concrete
Hp	Horesepower
Hr	Hour
HSPS	High Service Pump Station
HVAC	Heating, Ventilation, and Air Conditioning
I/I	Infiltration / Inflow
In	Inch (or “)
kmz	Keyhole Markup Language (Google Earth Data file)
kva	kilo-volt-ampere
KW	Kilowatt
ISD	Independent School District
ISP	Internet Service Provider
Lb	pound (or lb)
LED	Light Emitting Diode
LF	Linear Feet (or lf or Lf)
LLC	Limited Liability Corporation
LN	Lane
LOMR	Letter of Map Revision
LS	Lump Sum
LS	Lift Station
MDUS	Municipal Drainage Utility System
MG	Million Gallons
MGD	Million Gallons per Day
mg/L	milligrams per liter
MIRLs	Medium Intensity Runway Lights
MPN	Most Probably Number
MSL	Mean Sea Level
N	North

NH_3N	Ammonia Nitrogen
No.	Number (or #)
O_2	Oxygen
PAPI	Precision Approach Path Indicator
PCI	Pavement Condition Index
PDF	Portable Document File
P.E.	Professional Engineer
PE	Polyethylene
PMR	Pavement Management Report
ppd	pounds per day
PRE/DIR	Prefix and or Direction (used in street PCI table)
PS	Pump Station
PVC	polyvinyl chloride
PW	Public Works
PWS	Public Water System
R^2	Coefficient of determination
RAS	Return Activated Sludge
RD	Road (or Rd)
S	South
SCADA	Supervisory Control and Data Acquisition
SCS	Soil Conservation Service
SD	Standard Deviation
SE	Sledge Engineering, LLC (or Sledge Engineering or Sledge)
SF	Square Feet (or sf)
SFP	Strategic Facility Plan
SGMP	Streets and Grounds Maintenance Plan
SH	State Highway
SIU	Significant Industrial User
Sledge	Sledge Engineering, LLC
SSES	Sanitary Sewer Evaluation System
SSO	Sanitary Sewer Overflow
ST	Street
SUD	Special Utility District
SWTP	Surface Water Treatment Plant
SY	Square Yard (or sy)
TAC	Texas Administrative Code
TBPE	Texas Board of Professional Engineers
TCEQ	Texas Commission on Environmental Quality
TDLR	Texas Department of Licensing and Regulation
TIA	Traffic Impact Analysis
TIF	Thoroughfare Impact Fee
TP	Total Phosphorus
TPDES	Texas Pollutant Discharge Elimination System
TRL	Trail (or Trl)
TRPSC	Taylor Regional Park Sports Complex
TSL	Texas State Library

TSS	Total Suspended Solids
TUF	Transportation User Fee
TWDB	Texas Water Development Board
TX	Texas
TxDOT	Texas Department of Transportation
US	United States
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UV	Ultraviolet
VFD	Variable Frequency Drive
W	West
WAS	Waste Activated Sludge
WCP	Water Conservation Plan
WQ	Water Quality
WSC	Water Supply Corporation
WWTP	Wastewater Treatment Plant
w/	With
Yr	Year (or yr)

DISCLAIMER

Sledge Engineering, LLC (Sledge) prepared this report for the City of Taylor. The collective site visits, documentation review, and detailed work are summarized in this 2017 Strategic Facility Plan (SFP).

The costs presented herein are estimates based on the professional opinions of the contributing authors. The construction cost estimates are in 2017 dollars as based on current market rates of labor and material furnished for similar projects. Other considerations for the costs contained herein include:

- A reasonable allowance for contractor overhead and profit is included in all cost estimates.
- Total cost includes environmental reports, permitting, engineering/design, management, survey, geotechnical, office/lab suppliers/equipment, inspection, and similar non-construction costs.
- A reasonable allowance for contingencies is included for current market conditions (contingency typically equals 15% of hard costs).
- The costs presented herein do not include budget impacts to staffing, operational, and new equipment/vehicles that may be required in operating budgets to fully operate and maintain some of the capital improvements identified.

Prior to implementing any project or developing detail budgets for financing, all costs should be reviewed and adjusted based on the project elements to be included, size of the resulting project, and proper inflation factors.

While priority has been assigned where appropriate, the City of Taylor should use this guide as a means to develop a long-range Capital Improvement Plan (CIP) specific to the City's infrastructure needs. The CIP information presented in this SFP are included for illustrative purposes only. The various CIP's provided are intended to represent a 5-year approach to the addressing the Priority 1 projects listed in this plan. The City's 5-year CIP should be adjusted to incorporate as many Priority 1 projects as possible as funding will allow. The 5-year CIP should be updated annually as part of the budget process.

This report and associated documentation are provided for the exclusive use of the City of Taylor, Texas for use in association with the long-term planning for infrastructure needs. Staffing evaluation of various departments were not included in the scope of study for the SFP.

1. INTRODUCTION

The City of Taylor requested a complete assessment of all City facilities by Sledge Engineering, LLC. The infrastructure assessment is summarized in this 2017 Strategic Facility Plan. The purpose of this 2017 Strategic Facility Plan is to evaluate the City of Taylor's infrastructure and provide recommendations for improvements including short term (such as projects that can be included in a 5-year CIP or Capital Improvement Plan) and long-term (20-year) objectives. Infrastructure included in the assessment include:

a. Streets
b. Sidewalks
c. Airport
d. Drainage
e. Water
f. Wastewater
g. Wastewater Treatment Plant
h. Parks
i. Buildings (all departments such as City Hall, Fire, Police, Etc.)

Standards used in the evaluation process generally include various state and federal agencies, associations, and industry standards. Previous studies of various departments were referenced were appropriate. In addition, Sledge Engineering local knowledge of the City of Taylor infrastructure was also used and incorporated in the SFP.

The scope of work for this study includes the following *general* items:

1. Prepare project schedule with estimated timeline to complete scope of work
2. Review data provided by Owner. Anticipated data required by Owner:
    a. List of contacts (Department Heads, Key Staff, and others)
    b. Procedures for Sledge staff to visit sites
    c. Previous studies and reports that may be applicable (such as inventories, Demographic Studies, Older Reports, etc.)
    d. Inventory list of facilities that may be available from GIS or other similar sources.
    e. Construction Plans and Floor plans for major projects or buildings (if available)
    f. Inventory list of various infrastructure as may be maintained by staff (such as physical components with age and model numbers where applicable)
    g. Surveys completed by key staff (survey forms to be provided by Sledge)
3. Summarize applicable population projections for City of Taylor and

ETJ based on previously completed reports (such as TWDB Regional Water Plan). A Demographic Study is ***not*** included in this scope of work.

4. Conduct site visits to assess the system components identified in the "Facilities Included" section.
5. Summarize all pertinent data for each area in tables to be included in final report.
6. Prepare an aerial infrastructure/site plans for use in illustrating the existing sites and planning future improvements as applicable (aerial images from Google Earth or other sources shall be used).
7. List deficiencies and general observations for each infrastructure/facility/site in summary tables.
8. Identify capital improvement cost (including construction and non-construction costs) to correct identified deficiencies and to address future growth and educational program as applicable. 5-year CIP and 20-year Plan shall be provided. (*Note: CIP work included for the SFP are for illustrative purposes and generally include Priority 1 projects; CIP should be adjusted each year as part of the budget process.*)
9. Prioritize overall costs into three priority categories and summarize for budget planning for improvements.
10. Summarize financial information obtained from staff concerning budget, bonds, current rates, current fees, impact fees, tax rate, etc. Recommend applicable rate studies that the City needs to conduct in the future. A detailed Financial Audit/Analysis is NOT included in the current scope of work. Rate Studies or Fee Reviews are NOT included in the current scope of work.
11. Coordinate with Owner during course of work including:
    a. Report status to owner on monthly basis for project
    b. Work with owner's appointed staff
    c. Support owner's communication and dialogue with local community
    d. Coordinate with other entities that may impact future improvements at the City of Taylor such as BRA, Taylor ISD, City of Hutto, Noack WSC, Southwest Milam WSC, Manville WSC, EDC, TxDOT, Williamson County, etc.

The following infrastructure and associated scope of work for each listed infrastructure is included in the facility planning:

1. Streets

a. Summarize previous studies or Master Plans completed in regards to streets (such as Downtown Master Plan, 2012 Pavement Management Report, etc.).
b. Visit select streets and update 2012 street condition inventory based on observed conditions and scoring. Re-

inspection of 105 miles of city street is not included but streets from each City Council District will be observed with a focus on streets that were near failure at the time of the 2012 Study. Physical dimension such as street width, right-of-way width, presence of curb and gutter or ditches, impacts of utilities on streets, etc. will not be reexamined as these are assumed unchanged from the previous assessment. Focus shall be on current conditions.

c. Photograph example street conditions.
d. Update PCI (Pavement Condition Index) list and illustrate on City Maps as needed to best illustrate the existing conditions.
e. Upgrade City Street Inventory Map(s) to current known conditions. Mapping is anticipated to include:
    i. Maintenance Plan
    ii. Rehabilitation Plan (with Categories such as Category 1, 2, 3)
    iii. Rip/Chip Plan
    iv. Maps to show Plans per year for 5-year CIP.
    v. Maps to show City Council Districts.
f. Recommend street maintenance and rehabilitation as part of 5-year CIP plan and long-term plan. Recommendations for the funding of the maintenance program can be developed based on the City's expectations of street conditions. The 5-year CIP will focus in part and include the following:
    i. CR101 funding actual match
    ii. CR366 design match and construction match
    iii. 2017 TUF - Edmond St
    iv. TUF - PW Dept. - Maintenance
    v. 2018 TUF verification to be assigned to 3rd St Street

    The 5-year CIP will include a Focused Plan for Street Maintenance and Street Rehabilitation and will consider funding options such as:
    i. Pay as you go option
    ii. Bond Option(s)
    iii. TUF
    iv. Grants (CDBG)
g. Incorporate funding mechanism options specific to streets such bonds and potential tax rate increase (in consultation with City's Financial Advisor).

2. <u>Sidewalks</u>

a. Visit each Council District and sample select sidewalks for evaluation. Trails considered part of park system to be evaluated as part of Parks scope.
b. Evaluate sidewalks for TDLR/ADA standards, structural

integrity,

c. Identify need for additional sidewalks for access to key areas such as schools, businesses, government buildings, etc.
d. Review City standards for developer sidewalk construction and recommend upgrades. Changes to the City's Engineer's Manual is not this scope of work.
e. Meet with staff and Council to vision and develop comprehensive goals.
f. Prepare map(s) of the City illustrating existing and proposed improvements.
g. Estimate cost for improvements.
h. Prepare 5-year CIP and long term plan for improvements.

3. Airport

a. Review and Summarize TxDOT – Aviation Master Plan for airport
b. Recommend applicable changes based on local input.
c. Summarize CIP impacts of proposed improvements with focus of city portion of funding provided by TxDOT – Aviation (example of 90% state/10% local).

4. Drainage

a. Review and summarize previous Drainage Studies completed for City of Taylor.
b. City provide new problem areas from the 2015 flooding (from previous Halff Associates study).
c. Review Federal Emergency Management Agency (FEMA) flood plain maps for the City of Taylor and recommend changes to City Base Map based on any applicable changes.
d. Review City drainage criteria
e. Summarize key drainage problems in each City Council District.
f. Evaluate areas of concerns and recommend option(s) for improvements with particular focus on regional impacts.
g. Prepare 5-year CIP and long-range plan for drainage improvements.
h. Identify drainage specific funding mechanisms such as MDUS projects, 2017 TUF, local funding, etc.
i. Illustrate scheduled improvements on City Base map(s).
j. Recommend need for area specific hydrology and hydraulic studies.

5. Water

a. Review and summarize previous Water System Studies completed for City of Taylor.
b. Review City Base Map for Water System and illustrate known changes since last update based on Sledge Engineering specific

knowledge. Summarize size and pipe material type.

c. Review current and future wholesale needs and any potential issues; identify and discuss with applicable officials.
d. Review and evaluate SCADA system and recommend upgrades as applicable.
e. Contact and discuss with BRA enhanced involvement in water distribution points from water sources such as BRA owning and operating new ground storage deliver tanks.
f. Summarize CCN updates needed based on known growth patterns and current issues/conflicts with TCEQ's CCN.
g. Assess condition based on all available data such as recently completed projects, leak reports from City, previous studies, and local knowledge of system.
h. Identify future needs based on demand projections.
i. Identify cost for improvements based on priority needs in water system.
j. Develop 5-year plan specific for water system and develop long-term plan.
k. Illustrate improvements for CIP on Water System Maps.
l. Recommend need for upgrade to Water Distribution Modeling and schedule for implementation.

6. <u>Wastewater</u>

a. Review and summarize previous Sanitary System Studies completed for City of Taylor.
b. Review City Base Map for Wastewater System and illustrate known changes since last update based on Sledge Engineering specific knowledge. Summarize size and pipe material type.
c. Review and evaluate SCADA system and recommend upgrades as applicable.
d. Assess condition based on all available data such as recently completed projects, leak reports from City, previous studies, and local knowledge of system.
e. Identify potential regional wastewater opportunities.
f. Summarize CCN updates needed based on known growth patterns and current issues/conflicts with TCEQ's CCN.
g. Identify future needs based on demand projections.
h. Identify cost for improvements based on priority needs in wastewater system.
i. Develop 5-year plan specific for wastewater system and develop long-term plan
j. Illustrate improvements for CIP on Wastewater System Maps.
k. Recommend need and timing for complete Sanitary Sewer System Evaluation (SSES) including smoke testing, leak detection, drainage basin metering, etc.
l. Recommend need for Sanitary Sewer Hydraulic Modeling and

schedule for implementation.

7. **Wastewater Treatment Plant**
   a. Summarize previous study completed titled "Wastewater Treatment Plant – 2016 Strategic Facility Plan" dated October 28, 2016
   b. Summarize improvements being completed under the "2017 Emergency Improvements" project.
   c. Re-prioritize the remaining project identified in the Plan
   d. Discuss cost and option for future treatment plant capacity expansion.

8. **Parks**
   a. Review and summarize previous park planning efforts for City of Taylor (such as 2016 Parks and Recreation Master Plan). Vision and long range plan established.
   b. Evaluate select existing park facilities to verify previous findings including Robinson, Doak, Murphy, Hike & Bike Trail, TRPSC, Cemetery Grounds, Heritage, Gano, West End, Jason. Approximate 240 acres of park land.
   c. Develop focused 5-year plan specific for park system and develop long-term plan based on items not included in 5-year CIP.

9. **Buildings**
   a. Conduct site visits to assess the existing building sites (City Hall, Library, Police Department, Fire Stations/Admin, City Hall Annex, Utilities Department, Moody Museum, Animal Shelter, WWTP Buildings, TRPSC Buildings, Givens Community Center, Bull Branch, Robinson Park Restroom/pavilion, Murphy Park Restroom/pavilion – approximate 100,000 SF of buildings)
      i. Accessibility
      ii. Grounds
      iii. Outside areas
      iv. Drainage
      v. Parking
      vi. Traffic (as applicable but full Traffic Impact Analysis is not this scope of work)
      vii. Structural
      viii. Mechanical / Electrical
      ix. Finishes
      x. Safety / Security
      xi. Office Spaces
      xii. Specialized Spaces
      xiii. Support Spaces
      xiv. Energy Efficiency

xv. Technology
   a) Network diagrams
   b) Network inventory
   c) Network configurations
   d) Wireless inventory
   e) Building plans (PDF or .dwg) - With Telecommunication Room and Security System head-end locations
   f) Current ISP contract

b. Provide summary information on energy (HVAC, lighting, and controls).
c. Estimate capacity of building based on permanent general and designated spaces.
d. Describe existing technology and plan for future improvements.
e. Summarize existing building information in graphs and tables as applicable (building age, square footage of buildings on site, weighted age, roof age, HVAC age, etc.).

The deliverables to be provided to the City of Taylor include:

1. 2017 Strategic Facility Plan (this report) including site layout plans, cost estimates, summary, and recommendations (digital copy of report to be provided in PDF format; hardcopies are not included)
2. Provide 5-year CIP (Capital Improvement Plan). (*Note: CIP work included for the SFP are for illustrative purposes and generally include Priority 1 projects; CIP should be adjusted each year as part of the budget process.*)

Data and information presented in this Plan was gathered through onsite observations, key staff interviews, and review of available data. The data and input provided by City staff is hereby gratefully acknowledged.

The information provided herein has been reviewed with City Staff and City Council to 1) gain input, 2) review interim and final findings, and 3) provide understanding of final 2017 Strategic Facility Plan.

2. POPULATION AND WATER PROJECTIONS

Taylor is located in Williamson County. The population in the Year 2010 census was 15,191. (For comparison, Year 2000 population was 13,575). The current population is served by city services such as fire, police, etc. and also provides utilities (water and wastewater) by the City of Taylor. A map showing the current city limits and Extra Territorial Jurisdiction (ETJ) for the City is provided in **Figure 2-1**.

A key aspect of any Facility Plan (or Master Plan) is the prediction of future population as it will directly impact the city services provided and the resulting need for improved and/or expanded facilities to support those services. A twenty-year planning horizon is sufficient for planning for any future water treatment or wastewater treatment plant expansions that may be required based on population or industrial growth. Planning for new buildings or expansion to water sources should be based on a longer time horizon (typically, 40 to 50 years). This section provides population projections and estimated water and wastewater flows that will be referenced throughout this 2017 SFP.

2.1 Population Projections

Table 2-1 and **Figure 2-2** provides the historical population for Taylor according to the census.

Table 2-1. Taylor Census Data

Year	Population	Decade Change	Population Annual Change	Average Annual Growth
1980	10,619			
1990	11,472	+853	85	0.78%
2000	13,575	+2,103	210	1.70%
2010	15,191	+1,616	162	1.13%

Two items of note in regard to the historical data:

- The average annual growth (AAG) rate is 1.2%. This is very low compared to other higher growth areas in Williamson County. The "wave of growth" may hit Taylor within the next 20 years so population trends should be verified on a regular basis (at minimum once every two years).
- The census population has been very linear. The "equation" of year vs population is shown in **Figure 2-2**. This shows a typical equation with "x" being numbering of decades (i.e., 1980=1, 1990=2, etc.) and "y" being population. The R^2 value below the equation is 0.98. The R^2 value is the coefficient of determination that indicates how close the data fits into the resulting equation. A R^2 of 1.0 represents a perfect correlation. This equation can be used to determine future population; however, it does not factor in outside influences that may lead to more accelerated growth (i.e., industrial or commercial growth or Austin area growth impacts).

Figure 2-1. Taylor City Limits and Council Districts

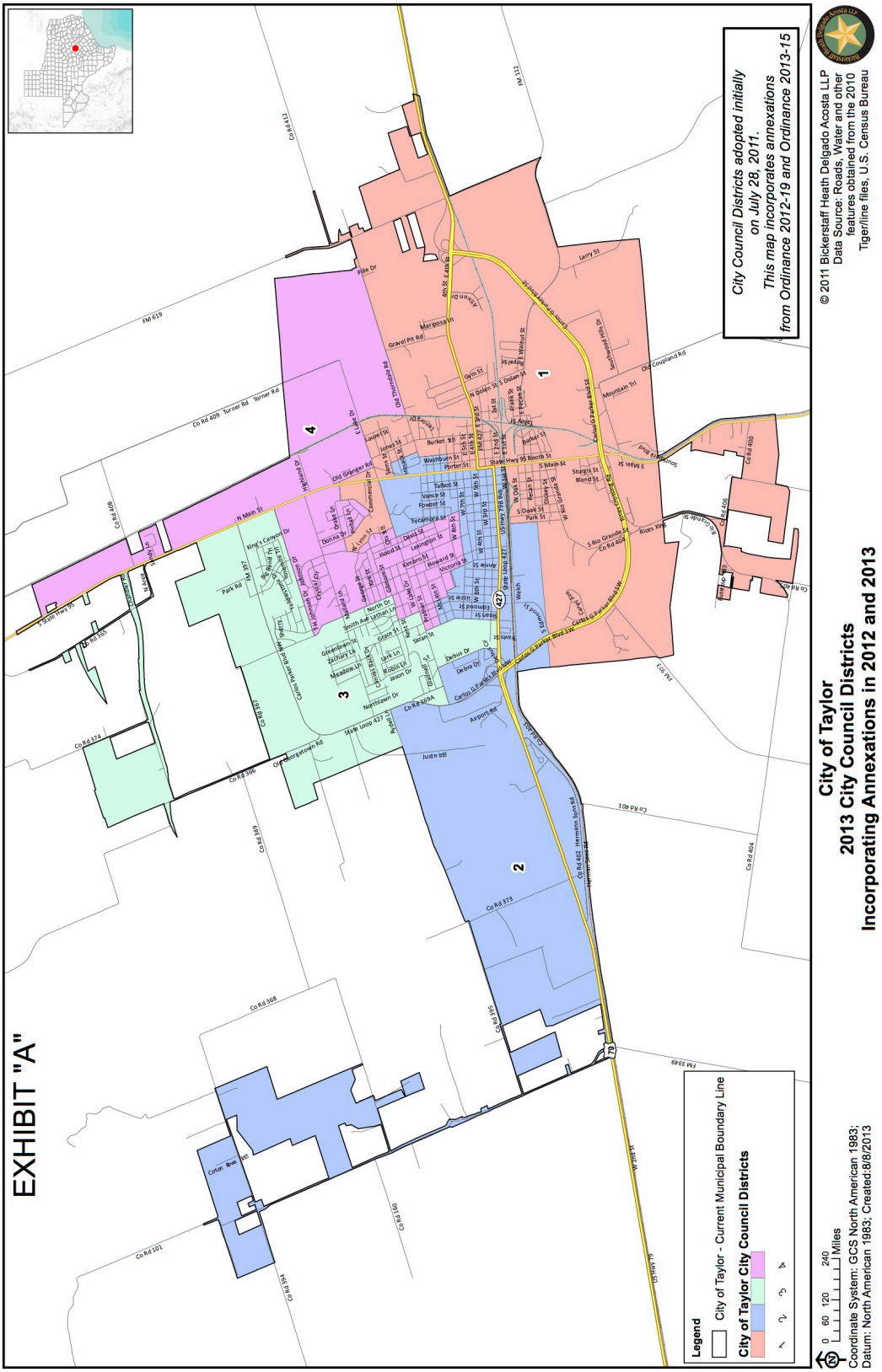
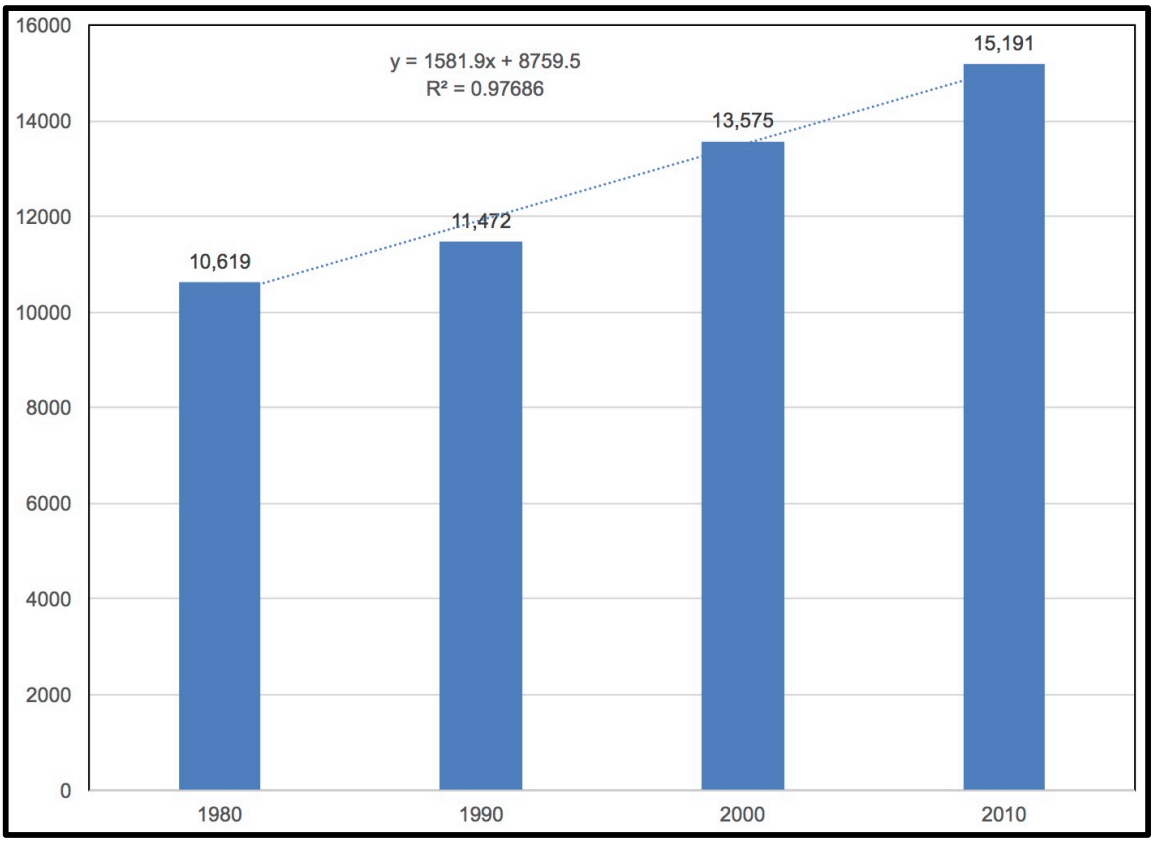


Figure 2-2. Taylor Census Population



Four (4) scenarios are used for population projections and are summarized in **Table 2-2**:

1. Linear equation developed in **Figure 2-2**

2. City of Taylor Water and Wastewater System Master Plan by Freese and Nichols, Inc. dated December 2001. Projections were made from 2000 to 2020; *years beyond 2020 shown herein are based on exponential growth*.

3. Hybrid growth scenario with 2% average annual growth (AAG) through the Year 2040 and 1% AAG thereafter.

4. TWDB 2021 and Current DRAFT Regional Water Plan (projections available for State of Texas, Williamson County, and City of Taylor; City data only presented herein). The previous water plan and the current DRAFT population projections for Taylor are essentially identical.

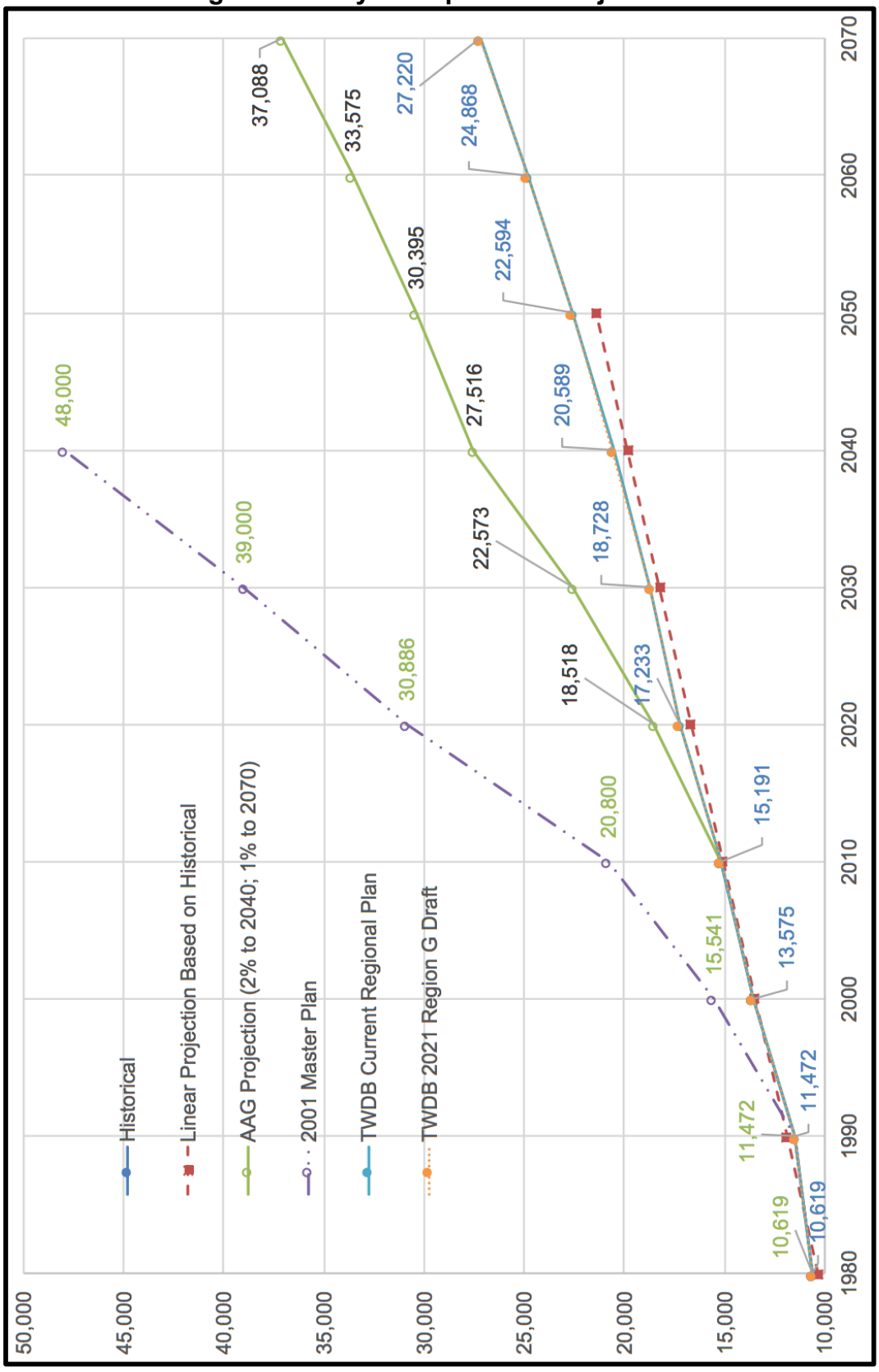
Population projections are shown in **Figure 2-3**.

Table 2-2. Taylor Population Projections

Year	Historical	Linear Growth	AAG Projection [1]	2001 Master Plan	TWDB Current Regional Plan	TWDB 2021 Region G Draft
1980	10,619	10,341		10,619	10,619	10,619
1990	11,472	11,923		11,472	11,472	11,472
2000	13,575	13,505		15,541	13,575	13,575
2010	15,191	15,087	15,191	20,800	15,191	15,191
2020		16,669	18,518	30,886	17,209	17,233
2030		18,251	22,573	*39,000*	18,702	18,728
2040		**19,833**	**27,516**	***48,000***	**20,561**	**20,589**
2050		21,415	30,395		22,563	22,594
2060		22,997	33,575		24,834	24,868
2070		24,579	**37,088**		**27,182**	**27,220**

[1] AAG Projection based on 2% AAG from 2020 to 2040 and 1% from 2040 to 2070

Figure 2-3. Taylor Population Projections



For purposes of this 2017 SFP, the "AAG Projection" will be utilized (Year 2040 population = 27,516 and Year 2070 population = 37,088).

One potential funding agency for any required water and wastewater improvements is the TWDB (such as DWSRF or CWSRF loans). The TWDB requires their projections be used for funded projects. Since the TWDB population projections are used for regional water planning, the City would need to engage in the water planning process and seek amended population projections in the next water plan if the "AAG Projection" is realized. The key input in this model will be census number for 2020. It is imperative that the City actively participate in this process to ensure the most accurate count as possible.

2.2 Water Use Projections

Water use projections are useful when planning for future water supply needs (typically 50-year planning horizon) and also future treatment or water delivery systems (typically 20-year planning horizon). **Table 2-3** and **Figure 3-4** shows projections of water use based on the previously described population projections. Projections are based on total annual use (generally expressed in acre-feet/year) but converted to an equivalent average day flow for ease in comparison.

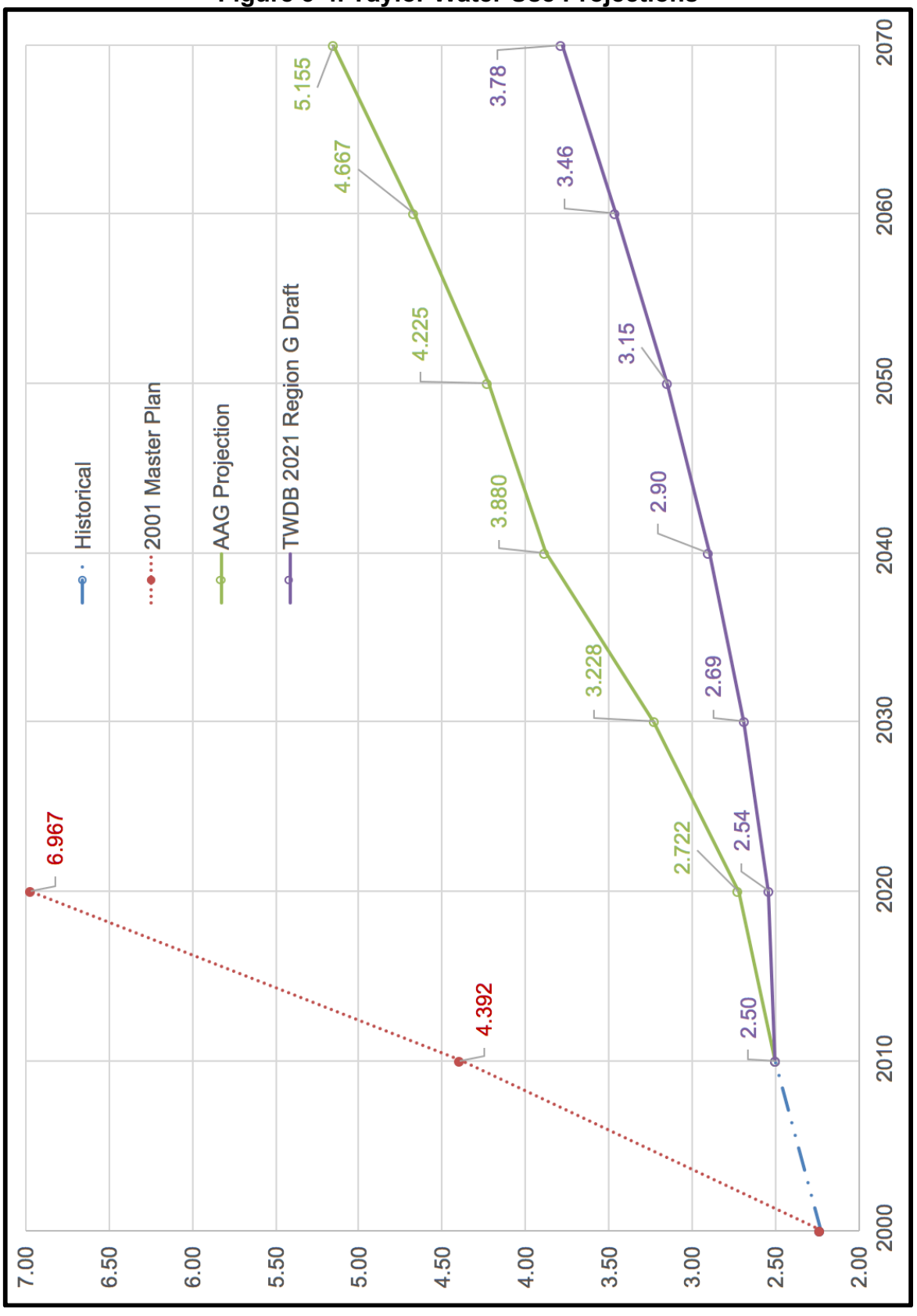
Table 2-3. Taylor Average Day Water Use Projections (MGD).

Year	Historical [1]	2001 Master Plan	AAG Projection	TWDB Regional Plan	TWDB gpcpd [2]
1980	*1.59*				
1990	*1.72*				
2000	2.23	2.228		*2.23*	
2010	*2.50*	4.392		*2.50*	150
2020		6.967	2.722	2.54	147
2030			3.228	2.69	143
2040			**3.880**	**2.90**	**141**
2050			4.225	3.15	139
2060			4.667	3.46	139
2070			**5.155**	**3.78**	**139**

[1] Historical 2010 flows estimated based on flows in adjacent years and not specific to Year 2010.

[2] TWDB gpcpd represents the gallons per capita per day of water flow predicted as part of the Regional Water Plan. As shown, the TWDB assumes water conservation practices are successful to reduce the amount of water used. As noted, the current 150 gpcpd use has a goal to reduce usage to 139 gpcpd by the Year 2050.

Figure 3-4. Taylor Water Use Projections



As with population, the water use projections from the TWDB Region Water Planning must be used if TWDB funding is sought in the future for water or wastewater needs. It is believed that the 20-year and 50-year projections will more closely follow the "AAG Projection" scenario. The critical water and wastewater faciliites will be compared to both projections in the applicable sections of this 2017 Strategic Facility Plan.

The average day flows shown do not account for peak months, days or hour demands. Historically in Taylor, maximum day periods are twice the average day usage (Year 2040 maximum day = 7.76 MGD for AAG Projection or 5.78 MGD for TWDB Projection). They also do not account for peak demands that typically occur during the day (generally in summer days with high peak hour demand times). These peak flows are important since peak hour water flows tend to be during irrigation or fire flow demand; however, they are not as critical to the wastewater flow since irrigation or fire demands do not result in water in the sewer collection system.

Another item to note in regard to the average daily flows shown is that they are intended to account for all users including:

- Municipal
- Wholesale
- Industrial
- Water loss in system

These uses and their potential impact to system needs will be explored in the Water and Wastewater sections.

2.3 Commercial and Industrial Water Use

The commercial and industrial users have an impact on the City of Taylor water and wastewater systems. **Table 2-4** shows the 2016 breakdown of meters (2016 was used based on a full year worth of data).

Table 2-4. Taylor 2016 Water Meter Breakdown by TCEQ Class

Type	# of Meters	% of Total
Residential	5,167	87.6%
Residential Multi User	42	0.7%
Institutional	*173*	*2.9%*
Commercial	*387*	*6.6%*
Industrial	*28*	*0.5%*
Agricultural/Sprinklers	92	1.6%
Other – Bulk Meters	10	0.2%
Total Meters	**5,899**	**100%**

For comparison, the 2009 meters totaled 5,59. This represents a 6% total increase or approximately 1% per year. This growth is similar to the population AAG rate of 1.2% indicating consistency in growth predictors.

The nature of the commercial and industrial users can have a wide variety of impacts on the water system and sanitary sewer system. In particular, industrial users on the wastewater system can be high water users but relatively low generators of wastewater. Industrial users can also be lower flow generators of wastewater but have high pollutant loadings. Typically, wholesale customers will use water but generate no wastewater flow back to the City. It is important for the City of Taylor to carefully understand the nature of all large users and their potential impacts on the utility system (water and sewer).

With the currently Industrial Users on the wastewater system, there are those that generate more than just domestic type waste from on-site restroom facilities. The City has prepared a Pre-treatment Program as mandated by the TCEQ. Any new industry in Taylor should be evaluated based on water needs and also on type and quantity of wastewater produced. Pre-treatment of wastewater will be likely.

This current Strategic Facility Plan assumes that all current commercial and industrial users are adequately accounted for based on historical records.

2.4 TWDB Regional Water Plan Coordination

The population and water use projections presented are based on TWDB's current Regional Water Plan. There is no basis to challenge these projections based on the data available at this time. As growth continues in Taylor, the population and water use projections should be revisited. If necessary, amendments to the TWDB Water Plan may become applicable to the City of Taylor. A demographic study could be considered by the City to better estimate current population. Factors that could be considered include:

- Water meters (by class)
- Electric meters (by type)
- School district enrollment trends
- Address and/or Lot count of new subdivisions
- Current development plans.
- Impacts to County growth
- City limits expansion planned into ETJ

The TWDB is currently working on the 5th Planning Cycle (2017-2021). The City should continue its participation and be prepared for the 6th Planning Cycle (2022-2026) to seek population projection revisions if appropriate.

2.5 Wastewater Flow Projections

The water use projections shown in **Section 2.2** are dramatically higher from the "City of Taylor Water and Wastewater System Master Plan" (dated December 2001) when compared to the "AAG Projection" or the "TWDB Regional Water Plan". This is driven by the population growth assumptions used in 2000 to project a much higher population for Taylor then has actually been experienced to date. The recession in 2007 and beyond certainly had an impact on slower growth. In spite of population being much lower than projected, the methodology used to project water and wastewater flows based on gallons per capita day is very sound and reasonable and was based on detail water and wastewater flows. Some key points from the 2001 Master Plan remain relevant today:

- Water use per capita use is approximately 160 gpcpd (gallons per capita per day)
- Water use maximum day to average annual day is 2:1 ratio
- Water use peak hour demands to maximum day demands is 2:1 ratio (or 4:1 compared to average annual day)
- The WWTP attenuates peaks in the wastewater flow discharge measurements; therefore, the effluent flow is not representative of sanitary sewer inflow to the plant.
- Flow monitoring was accomplished as part of the 2001 Master Plan (and also with the SSES at a later date). The dry weather flows indicate that 65% of the water use reaches the wastewater plant.
- I/I was identified as a significant issue. As a result, a partial system SSES was completed and some sanitary sewer system rehabilitation was accomplished as a result.
- Wastewater flows from the 2001 Plan based on 2000 flows recorded indicated the following flows:
  - Average day dry weather wastewater flow = 1.35 MGD
  - Peak 2-Hour wet weather wastewater flow = 8.65 MGD
  - Ratio of Peak 2-Hour to Average day flow = 6.4:1
- The plants average daily flow of 4 MGD would be adequate through Year 2020 (without any buffer) but the peak 2-hour flow would be exceeded by 2015. These flows projections have not come to be realized to date.

Since the wastewater system and users has not dramatically changed, a similar methodology can be applied now but using the current AAG Projection and TWBD 2016 Regional Water Plan population projections.

2.6 Estimated Average Day Wastewater Flows

Typically water use can be employed to predict wastewater flows by utilizing the historical per capita water use and the historical dry weather wastewater to water use ratio. **Table 2-5** summarizes the per capita wastewater projection based on population and water use projections from **Section 2.2**.

Table 2-5. Predicted Average Day Wastewater Flow (TWDB Regional Plan)

Year	TWDB Regional Plan Population	Per Capita Water (gpcpd)	Water Use (gpd)	Ratio Wastewater to Water Flow	Average Day Wastewater Flow (MGD)	30-Day Max Flow (1.5*Avg) (MGD)
1980	10,619	160	1.70	0.65	1.10	1.66
1990	11,472	160	1.84	0.65	1.19	1.79
2000	13,575	160	2.17	0.65	1.41	2.12
2010	15,191	170	2.58	0.65	1.68	2.52
2020	17,209	180	3.10	0.65	2.01	3.02
2030	18,702	180	3.37	0.65	2.19	3.28
2040	**20,561**	**180**	**3.70**	**0.65**	**2.41**	**3.61**

As shown in **Table 2-5**, the per capita use does not assume the declining gpcpd as provided as a goal in the TWDB Regional Plan; instead, an increasing gpcpd is used to provide a more conservative estimate of wastewater flows. The WWTP's current annual average flow of effluent of 4.0 MGD appears adequate to meet both the Year 2040 "average day wastewater flow" of 2.41 MGD and "30-day max flow" of 3.61 MGD. The Year 2040 is predicted to be within the 75% rule whereby planning for plant expansion will need to occur and also at the 90% level that triggers actual plant construction. Of course, this will be predicated on actual wastewater flows experienced at the plant.

A similar analysis was completed based on the population in the "AAG Projection" scenario. The Year 2040 "average day wastewater flow" equals 3.22 MGD and "30-day max flow" is 4.83 MGD. The average day is within the current annual average flow of 4 MGD (per permit). The 30-day max flow may prove problematic to adequately treat based on the current treatment units.

There are many factors that dramatically alter the time line for WWTP expansion such as:

- Increased I/I from sanitary sewer collection system deterioration
- Rapid population increase
- Large industrial users added to the system
- Construction of future plant detention pond to reduce peak flows
- EPA/TCEQ rule changes

For the purposes of this report, it is assumed that the current annual average plant capacity of 4.0 MGD does not require expansion over a 20-year period. Capacity expansion should be revisited in 5 year increments (with each permit renewal cycle). This 2017 SFP provides an option for WWTP expansion if higher flows occur.

2.7 Estimated 2-Hour Peak Wastewater Flows

The Year 2000 ratio of 2-hour peak to average day dry weather flow was 6.4 to 1. Since 2010 – May 2016, the 2-hour peak to annual average flow resulted in average of 1.5 to 1 and maximum of 5.8 to 1. These readings are based on effluent readings and not influent flow measurements so they are not truly reflective of the incoming peak flows. The predicted peak to average annual flow ratio is 3 to 1 based on the effluent flows from 2010 – 2016.

The 2001 Master Plan recommended a 4 to 1 ratio based on anticipated sanitary sewer system improvements to reduce I/I. The current TCEQ Chapter 217 rules require that the peak 2-hour equal 4 times the permitted average flow. In Taylor's case, the 4 to 1 ratio equates to a 2-hour peak flow of 16 MGD (or 11,111 gpm). Taylor's current permit does not have this requirement since the 2-hour peak is limited to 6,944 gpm (or 10 MGD on an equivalent day basis).

It is recommended that the influent flow meter be recorded on a daily basis to start having better track record of incoming daily flows and 2-hour peak flows. In addition to the open channel meter, an ultrasonic flowmeter was installed on the discharge forcemain from the main plant influent lift station in late 2017. This information will be very useful in the future to predict true 2-hour peak flows and should be revisited during the 2018 permit renewal cycle.

For the purposes of this SFP, it is assumed that the current 2-hour peak plant capacity of 6,944 gpm (10 MGD) does not require expansion by the Year 2040 if the low growth scenario holds. If higher flows are realized, then the peak two-hour flow should be expanded to an equivalent daily flow 16 MGD (or 11,111 gpm).

Peak capacity determination should be evaluated prior to each permit renewal cycle (such as the next permit renewal that occurs in 2018).

2.8 General Recommendations

The following recommendations should be noted by the City in regard to future population and water use planning:

1. Monitor future population, especially the results of future census counts and as the Austin area continues to expand into east Williamson County. This information will be needed to update the population predictions used by the TWDB as part of the regional planning process. In addition, other non-population growth indicators should be updated annually to capture a more accurate estimation of population. These include water connections, total City water use, electric meters, and school enrollment. A detailed Demographic Study may be warranted in the future.

2. Analyze any new industrial users and their potential impacts on the utility system needs (in particular water and sewer flows).

3. Continue to record and monitor the City's water use and WWTP influent and effluent flows in the future as they dictate when higher water and wastewater capacity is needed.

4. Continue participation in the TWDB Regional Water Planning Process (provide input on population and water use with each planning cycle conducted by the Brazos G Region).

3. STREETS

The City of Taylor has approximately 105 miles of paved streets. Per the 2012 Pavement Management Report, there are 35 miles of water main under pavement, 10 miles of wastewater main under pavement and 57 miles of street with concrete curb on both sides. The purpose of this section of the 2017 Strategic Facility Plan is to summarize previous planning efforts in regards to the streets, update pavement management condition, and recommend long-term improvements.

3.1 Previous Studies

Some of the past planning efforts are summarized below in regards to the City's Street System:

1. 2017 Streets and Grounds Maintenance Plan (SGMP)

   City of Taylor Publics Works Staff prepared the Streets and Grounds Maintenance Plan in March of 2017. This plan provides information on amount and type of maintenance typically completed annually by City crews. Additionally, it provides a recommendation on how to use City crews for maintenance in the future and how to prioritize streets for maintenance, rehabilitation and reconstruction.

2. Transportation User Fee (TUF)

   In 2016, the City instituted a Transportation User Fee (TUF) to cover street maintenance costs within the City limits. Reference should be made to the City's website for current fee structure.

3. 2015 Downtown Master Plan (DMP)

   The firm "DesignWorkshop" completed the Taylor Downtown Master Plan in April of 2015. The plan focuses on a comprehensive branding of downtown to include sidewalks, trees, banners, signage, and parking.

4. 2012 Pavement Management Report

   Sledge Engineering completed the previous City of Taylor Pavement Management Report (PMR) in 2012. The Pavement Management Report included analysis of every segment of City streets and data related to utilities under the existing street pavements. The database established allowed for prioritization of street maintenance and improvements. The report rated the pavements based on their condition using a Pavement Condition Index (PCI).

3.2 Street Assessment Summary

Re-inspection of 105 miles of city street was not included in the current 2017 SFP; however, streets from each City Council District was observed with a focus on streets that were near failure at the time of the 2012 Study. The previous 2012 effort provided detailed information pertaining to:

- Physical dimension of streets such as width, right-of-way width, and length
- Presence of curb and gutter
- Presence of ditches or other drainage features
- Impacts of utilities on streets.

These items were not re-examined as these are assumed unchanged from the previous assessment (except for few major street reconstruction projects completed since 2012 such as the Jones-Burkett project).

The 2017 SFP focus on current conditions. The current effort allows for an update of the City's PCI and ranking list for failed or near failed streets.

3.3 Photographs of Example Street Conditions – Taylor, September 2017

Examples of current street conditions follow:

Poor Condition Pavement Example (Street with recent seal but failed section evident)

Poor Condition Pavement Example

Poor Condition Pavement Example

Good Condition Pavement Example - Fair Street overlay project

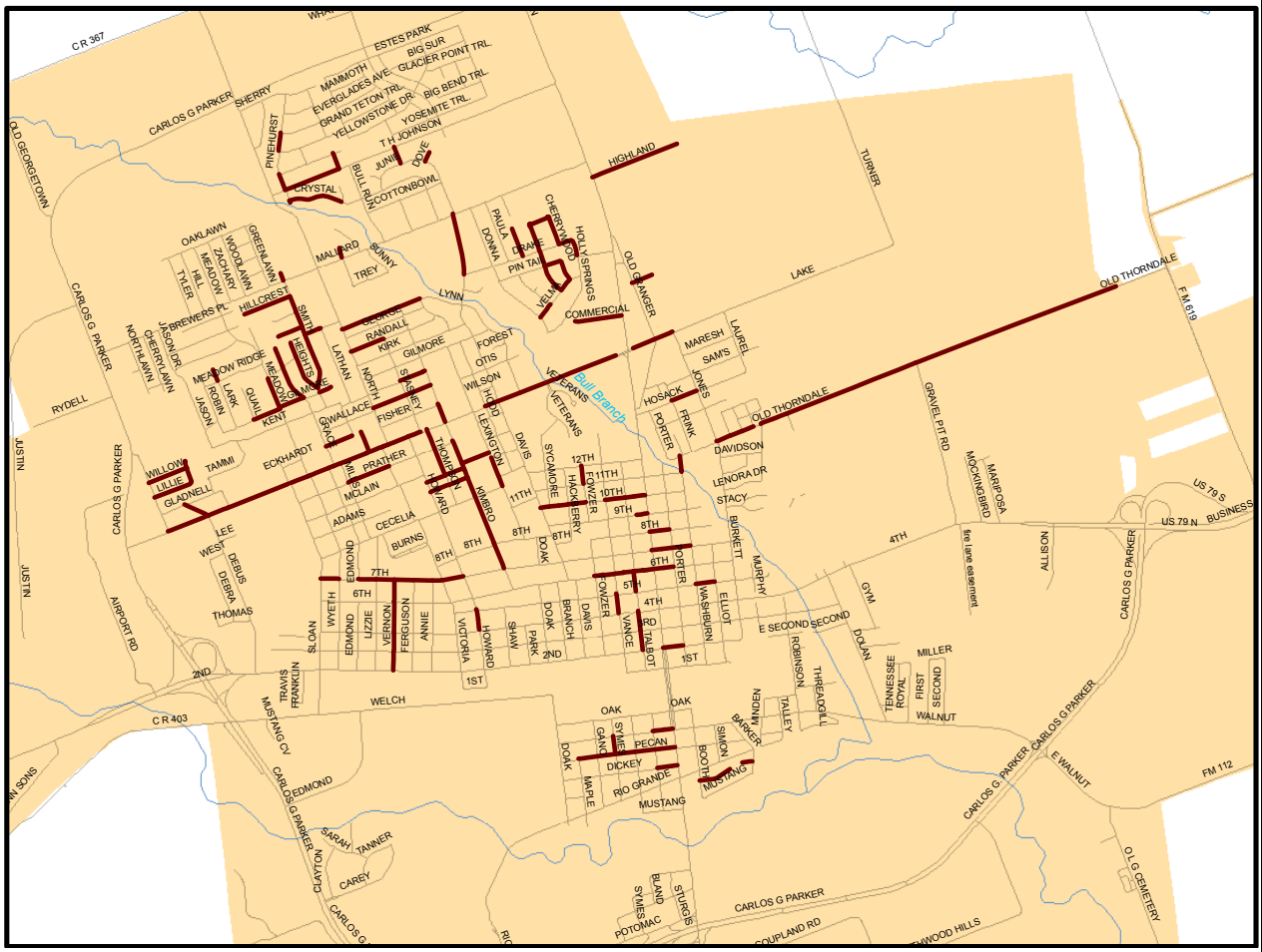
3.4 Pavement Condition Index

The 2012 PMR used Pavement Condition Index (PCI) scores of 0 to 100 for each segment of pavement in Taylor. A PCI of 100 indicates pavement with no distress (i.e., like new, excellent condition). The categories used for the PCI are:

- Poor (PCI 0-59)
- Fair (60-69)
- Good (70-89)
- Excellent (90-100).

Sledge Engineering staff conducted an inspection of some of the pavement areas in each Council District that were at the low end of fair condition per the 2012 PMR. All fair condition streets received an overlay as part of the Fair Streets Project. (A 2014-2015 CDBG Grant also funded Jones-Burkett street rehabilitation project.) A map of the fair streets that received an overlay is shown in **Figure 3-1**. Most of the rehabilitated streets observed were in good condition with a few segments of some in fair condition.

Figure 3-1. Fair Streets With Overlay in 2014/2015



A general assumption regarding status of streets 5 years after the 2012 PMR was completed to aid in cost estimating. For estimating purposes in this current Plan, the fair streets rehabilitated in the 2014-2015 project were assumed to be in the following condition:

- Mostly good condition if they had a PCI of 62 or higher in 2012
- Fair streets that were between 60-62 are assumed in fair condition
- Poor streets and excellent streets were assumed to have stayed in poor and excellent condition since 2012, respectively
- Good streets rated between 70-72 were assumed to have slipped to fair condition while the rest of the streets rated good remained in good condition.

Additional changes to the 2012 PMR PCI ratings included updates to the streets that have been reconstructed since the report. These include:

- Jones & Burkett (2013-2014 CDBG Project)
- 4th Street Rehabilitation (2014-2015 CDBG Project)

- Edmond and Mills St (Drainage Project that includes pavement reconstruction-currently under construction).

The 2017 adjusted PCI based on above mentioned assumptions are listed in **Table 3-1**. As previously noted, it was not part of this SFP to evaluate every segment of the City's streets so the assumptions listed are important to understand. The adjusted PCI are based on general knowledge of pavement degradation with time (5 years since the PMR was completed) and spot checks of various streets in each Council District throughout Taylor (visual check that did not include re-measurements but condition observation only).

Table 3-1. Adjusted Street Segment PCI values

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
2ND	W	ST	Debus	644ft	**98**
2ND	W	ST	Travis	644ft	**98**
2ND	W	ST	Doak	329ft	**98**
2ND	W	ST	Branch	329ft	**98**
2ND	W	ST	Branch	331ft	**98**
2ND	W	ST	Davis	331ft	**98**
2ND	W	ST	Fowzer	342ft	**98**
2ND	W	ST	Fowzer	342ft	**98**
SLOAN		ST	Prather	McLain	**98**
2ND	W	ST	Vance	Talbot	**98**
2ND	W	ST	Talbot	Main	**98**
2ND	W	ST	Fowzer	Vance	**98**
SLOAN		ST	Lake	Prather	**98**
2ND	W	ST	Park	Doak	**98**
SLOAN		ST	Adams	Cecilia	**98**
SLOAN		ST	McLain	Adams	**98**
2ND	W	ST	Edmond	Lizzie	**98**
2ND	W	ST	Sloan	Wyeth	**98**
2ND	W	ST	Howard	Shaw	**98**
2ND	W	ST	Shaw	Park	**98**
SLOAN		ST	Cecilia	7th	**98**
2ND	W	ST	Franklin	Sloan	**98**
SLOAN		ST	3rd	2nd	**98**
2ND	W	ST	Wyeth	Edmond	**98**
2ND	W	ST	Lizzie	Vernon	**98**
2ND	W	ST	Vernon	Ferguson	**98**
2ND	W	ST	Ferguson	Annie	**98**
SLOAN		ST	Garden Lane	3rd	**98**
SLOAN		ST	6th	4th	**98**
SLOAN		ST	6th		**98**
2ND	W	ST	Victoria	Howard	**98**
2ND	W	ST	Travis	Franklin	**98**
2ND	W	ST	Annie	Victoria	**98**
4TH	W	ST	Annie	430ft	**98**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
4TH	W	ST	Wyeth	331ft	**98**
4TH	W	ST	Edmond	331ft	**98**
4TH	W	ST	Lizzie	333ft	**98**
4TH	W	ST	Vernon	333ft	**98**
4TH	W	ST	Vernon	323FT	**98**
4TH	W	ST	Ferguson	323ft	**98**
4TH	W	ST	Ferguson	347ft	**98**
4TH	W	ST	Annie	347ft	**98**
4TH	W	ST	Victoria	430ft	**98**
4TH	W	ST	Victoria	Howard	**98**
EDMOND		ST	3rd	2nd	**98**
EDMOND		ST	4th	3rd	**98**
4TH	W	ST	Sloan	Wyeth	**98**
EDMOND		ST	6th	4th	**98**
4TH	W	ST	Edmond	Lizzie	**98**
MUSTANG CV		CV	Welch	150ft	**95**
OLD GEORGETOWN		RD			**94**
CR 366					**94**
OLD GEORGETOWN		RD			**94**
CHANDLER		RD	CR 365	Texas 95	**93**
2ND	E	ST	349ft	Washburn	**93**
2ND	E	ST	porter	349ft	**93**
8TH	W	ST	Fowzer	680 ft	**93**
8TH	W	ST	680 ft	Vance	**93**
2ND	E	ST	Washburn	Elliot	**93**
ELLIOT		ST	2nd	3rd	**92**
JASON DR.			Whistling Way	Wren	**91**
JASON DR.			Canvas Back Drive	Whistling Way	**91**
JASON DR.			Mallard	Canvas Back Dr	**91**
CANVAS BACK DR.			Jason Dr		**91**
CANVAS BACK DR.			Jason Dr	Meadow Lane	**91**
CANVAS BACK DR.			Meadow ln		**91**
WHISTLING WAY			Jason Dr	ft	**91**
WHISTLING WAY					**91**
MEADOW LANE					**91**
WHISTLING WAY			Meadow lane	451ft	**91**
BREWERS			Meadow Lane	470ft	**91**
EDMOND	S	ST	Welch	Carlos G Parker	**91**
BOYER			Robin	Lark	**90**
CANVAS BACK					**90**
3RD	E	ST	Washburn	350ft	**90**
3RD	E	ST	350ft	Elliot	**90**
BREWERS PL			Meadow Lane		**89**
BREWERS PL					**89**
GREAT BASIN			Yellow Stone Dr	Yosemite Trl	**89**
GLACIER POINT CV.					**89**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
GLACIER POINT TRL.					89
NORTHPARK BLVD.					89
GRAND TETON TRL.			Wind Cave Drive	Hot Springs Drive	89
WIND CAVE DR.					89
MEADOW LANE					89
DAVIS		ST	12th	11th	89
DAVIS		ST	12th	127 ft	89
STURGIS		ST	Oak	Walnut	88
ZION		AVE			88
BIG BEND TRL.					88
HOT SPRINGS DR			Estates Park	Yellow Stone Dr	88
YELLOWSTONE DR.					88
DAVIS		ST	8th	7th	88
DAVIS		ST	8th	8th	88
DAVIS		ST	10th	342 ft	88
DAVIS		ST	9th	342 ft	88
HOWARD		ST	Cecilia	8th	88
DAVIS		ST	11th	10th	88
DAVIS		ST	11th	11th	88
DAVIS		ST	Lake	Burns	88
DAVIS		ST	Otis	Wilson	88
HOWARD		ST	James	Cecelia	88
HOWARD		ST	8th	7th	88
DAVIS		ST	9th	8th	88
AIRPORT RD			2nd		88
DAVIS		ST	7th	6th	87
DAVIS		ST	6th	346ft	87
DAVIS		ST	Burns	Huff	87
DAVIS		ST	Wilson	Lake	87
HOWARD		ST	Alexander	Mclain	87
HOWARD		ST	Speegle	Alexander	87
NORTHPARK BLVD.					86
HOWARD		ST	Alexander	James	86
HOWARD		ST	Lake	Speegle	86
NORTH		DR	Kirk	Gilmore	86
ZACHARY		LN			86
MEADOW		LN	Oak Lawn	Mallard	86
HILL		LN	Oak Lawn	Mallard	86
TYLER		LN	Oak Lawn	Mallard	86
YOSEMITE TRL.					85
JONES		ST	Hosack	318ft	85
JONES		ST	318 ft	Oscar	85
BURKETT			Stacy	615ft	85
BURKETT			615ft	7th	85
LORAX		LN			85
O L G CEMETERY		RD	FM 112	WWTP	85
JONES		ST	Sams	Hosack	85

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
JONES		ST	Lake	Maresh	**85**
BURKETT			Davidson	Sabrina	**85**
BURKETT			Lenora Dr	Stacy	**85**
BURKETT			Old Thorndale	Davidson	**85**
JONES		ST	Oscar	Old Thorndale	**85**
JONES		ST	Maresh	Sams	**85**
BURKETT			Sabrina	Lenora Dr	**85**
BURKETT		ST	7th	6th	**85**
BURKETT		ST	6th	5th	**85**
BURKETT		ST	5th	4th	**85**
STURGIS		ST	Walnut	Pecan	**85**
TIMBER CREST			Sherry	Cypress Trl	**85**
DAVIS		ST	McClure	Brown	**85**
NORTH		DR	Wallace	Fisher	**85**
NORTH		DR	Kent	Wallace	**85**
NORTH		DR	Gilmore	Kent	**85**
DAVIS		ST	Drake	Brookwood	**85**
VICTORIA		ST	8th	7th	**85**
OAKLAWN		DR			**85**
OAKLAWN		DR	Tyler	116ft	**85**
OAKLAWN		DR			**85**
OAKLAWN		DR	Hill	Meadow	**85**
MOSCOVY CV					**84**
MOSCOVY CV			Meadow		**84**
MUSCOVY DR.					**84**
BIG SUR			Yellow Stone Dr	Kings Canyon Dr	**84**
KING'S CANYON DR					**84**
WASHBURN		ST	3rd	2nd	**84**
DAVIS		ST	6th	5th	**84**
DAVIS		ST	4th	3rd	**84**
NORTH		DR	Marshall	Dellinger	**84**
DAVIS		ST	Huff	McClure	**84**
DAVIS		ST	Gilmore	Otis	**84**
NORTH		DR	Mallard	Marshal	**84**
HOWARD		ST	7th	401ft	**83**
HOWARD		ST	6th	401ft	**83**
HOWARD		ST	3rd	359ft	**83**
HOWARD		ST	2nd	359ft	**83**
6TH	W	ST			**83**
CYPRESS TRL			Pinehurst	Timber Crest	**83**
JUSTIN		LN			**83**
WASHBURN		ST	4th	3rd	**83**
NORTH		DR			**83**
DAVIS		ST	Brookwood	Lynn	**83**
J.M. CUBA			Sherry	North	**83**
JUSTIN					**83**
NORTH		DR	Fisher	Lake	**82**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
NORTH		DR	Randall	Kirk	**82**
NORTH		DR	George	Randall	**82**
PINEHURST		DR	Willowbrook	Cypress Trl	**82**
T H JOHNSON		DR	Davis	Bull Run	**81**
GRACE		AVE	Fisher	Lake	**81**
GRACE		AVE	Kent	Wallace	**81**
PINEHURST					**81**
DAVIS		ST	5th	4th	**80**
STURGIS		ST	Pecan	Dickey	**80**
GRACE		AVE	Wallace	Fisher	**80**
GRACE		AVE	Gilmore	Kent	**80**
HOWARD		ST	6th	5th	**80**
HOWARD		ST	4th	3rd	**80**
THOMAS			Debra	568ft	**80**
DAVIS		ST	3rd	2nd	**79**
T H JOHNSON		DR			**79**
T H JOHNSON		DR	Duck Lane	Main	**79**
BURNS		ST	Hood	Davis	**79**
HUFF		ST	Lexington	Hood	**79**
LEXINGTON		AVE	Huff	McClure	**79**
BURNS		ST	Lexington	Hood	**79**
MEADOW		LN			**79**
T H JOHNSON		DR	North	Pinehurst	**79**
THOMAS			Debra	Debus	**79**
KELLY		DR			**78**
NORTH		DR	T H Johnson	Mallard	**78**
SHERRY			Timber Crest	172ft	**78**
WALLACE		ST	Gabriel	North	**78**
VICTORIA		ST			**78**
BRANCH		ST	4th	3rd	**78**
BRANCH		ST	3rd	2nd	**78**
SHERRY			North	J.M. Cuba	**78**
MALLARD		LN	Zachary	Woodlawn	**78**
MALLARD		LN	Meadow	Zachary	**78**
MALLARD		LN	North Law	Cherrylawn	**78**
ROBIN		LN	Boyer	Meadow Ridge	**78**
LEXINGTON		ST	11th	8th	**77**
NORTH		DR	Sherry	Carlos G Parker	**77**
SHERRY			J.M.Cuba	Pinehurst	**77**
NORTH		DR	J.M.cuba	T H Johnson	**77**
NORTH		DR	Sherry	J.M. Cuba	**77**
MALLARD		LN	Jason Dr	Tyler	**77**
TREY		DR			**76**
MALLARD		LN	Paula	Medical Pkwy	**76**
MALLARD		LN	Donna	Paula	**76**
MALLARD		LN	Crystal	Davis	**76**
MALLARD		LN	Davis	Donna	**76**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
WALLACE		ST	Grace	Gabriel	**76**
LATHAN		ST	Marshal	Kent	**76**
GLADNELL		DR	Tammi	Ellen	**76**
DEBRA			Thomas		**75**
TALBOT		ST	9th	8th	**75**
OAKLAWN		DR	Zachary		**75**
TALBOT		ST	10th	9th	**75**
TALBOT		ST	8th	7th	**75**
VANCE		ST	7th	6th	**75**
PORTER		ST	7th	6th	**75**
LEXINGTON		ST	Brown	11th	**75**
LEXINGTON		ST			**75**
KIMBRO		ST	Wallace	Fisher	**75**
KENT		ST	Grace	Smith	**75**
STASNEY		ST			**75**
OAKLAWN		DR			**75**
QUAIL		CV	Hidden Meadow	606ft	**75**
MALLARD		LN	Carlos G Parker	Northlawn	**75**
KENT		ST	Tammy	Meadow	**75**
CR 408			Texas 95	Cr 409	**74**
VICTORIA		ST	8th	415 ft	**74**
VICTORIA		ST			**74**
KENT		ST	Smith	Gabriel	**74**
KENT					**74**
KENT		ST	Jason	Tammy	**74**
MALLARD		LN	Medical Pkwy	Main	**74**
MALLARD		LN	Bull Run	Possum	**74**
SHERRY			Pinehurst	Timber Crest	**74**
KENT		ST	Meadow	Grace	**74**
10TH	W	ST	Fowzer	Vance	**74**
MALLARD		LN	Possum	Crystal	**74**
KIMBRO		ST	Kent	Wallace	**74**
KENT		ST	Lathan	North	**74**
KENT		ST	Lathan	Gabriel	**74**
SMITH		AVE	Gilmore	Kent	**74**
NORTHLAWN		DR			**74**
MALLARD		LN	Hill	Meadow	**74**
CHERRYLAWN		DR			**74**
CHERRYLAWN		DR	Malard		**74**
NORTHLAWN					**74**
NORTHLAWN		DR			**74**
MALLARD		LN	Tyler	Hill	**74**
NORTHLAWN		DR			**74**
LILLIE			Willow	126ft	**74**
GLADNELL		DR	Tammi	Lake	**74**
GLADNELL		DR	Ellen	Old Georgetown	**74**
LILLIE		LN	Willow		**74**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
TALLEY		ST	Pecan	Rio Grande	**73**
ROBIN		LN	Wren	Hidden Meadow	**73**
JASON		DR	Wren	Kent	**73**
MALLARD		LN	Smith	North	**73**
DAHLBERG		BLVD	Holly Springs	Main	**73**
COTTONBOWL		DR	Possum	Crystal	**73**
HUFF		ST	Hood	Davis	**73**
STASNEY		ST			**73**
STASNEY		ST			**73**
STASNEY		ST			**73**
MALLARD		LN	Monika	Sunny	**73**
MALLARD		LN	Kelly	Monika	**73**
MALLARD		LN	North	Kelly	**73**
MALLARD		LN	Woodlawn	Greenlawn	**73**
MAPLELAWN		ST			**73**
CYPRESS COVE		CV			**73**
WREN		WAY			**73**
PINE LAWN					**73**
PINE LAWN					**73**
TAMMI		LN	Kent	Gladnell	**73**
BATTLEGROUND CV					**70**
BATTLEGROUND CIR					**70**
CR 394		CR			**70**
HOWARD		ST	5th	369ft	**70**
HOWARD		ST	4th	369ft	**70**
6TH	E	ST	361ft	porter	**70**
6TH	E	ST	Main	361ft	**70**
7TH	E	ST	353 ft	Porter	**70**
7TH	E	ST	Main	353 ft	**70**
6TH	W	ST	talbot	363ft	**70**
6TH	W	ST	363ft	main	**70**
10TH	W	ST	Hackberry	323ft	**70**
10TH	W	ST	Fowzer	323ft	**70**
10TH	W	ST	Vance	350 ft	**70**
10TH	W	ST	350 ft	Talbot	**70**
9TH	W	ST	370 ft	main	**70**
MCLURE		ST	Kimbro	Lexington	**70**
FISHER		ST			**70**
ELLEN		ST	Gladnell	Lake	**70**
LAKE	W	DR	Old Georgetown	Ellen	**70**
LAKE	W	DR	Ellen	Gladnell	**70**
MILDRED		DR			**70**
CHERRYWOOD		CIR	Drake	1394ft	**70**
HOLLY		LN	Drake	520	**70**
KIMBRO		ST	Cecelia	8th	**70**
CRYSTAL		CIR	Crystal 582	Pinehurst	**70**
T H JOHNSON		DR	Pinehurst	Timber Crest	**70**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
GILMORE		ST	Meadow	Grace	**70**
GRACE		AVE	Blackland	Gilmore	**70**
SUMMIT		CIR	Smith		**70**
LAKE	E	DR	406	Old Granger	**70**
HOSACK		ST	Frink	Jones	**70**
GRACE LN			Old Granger	380 ft	**70**
LAKE	E	DR	Old Granger	Jones	**70**
WASHBURN			Old Thorndale	11th	**70**
BARKER					**70**
AVERY		ST	Booth	595	**70**
AVERY					**70**
VANCE		ST	5th	4th	**70**
TALBOT		ST	3rd	2nd	**70**
2ND	E	ST	Main	Porter	**70**
TALBOT		ST	4th	3rd	**70**
PECAN	W	ST	Symes	Bland	**70**
WALNUT	W	ST	Sturges	361ft	**70**
SYMES		ST	Walnut	Pecan	**70**
PECAN	W	ST	Gano	Symes	**70**
PECAN	W	ST	Maple	Gano	**70**
5TH	E	ST	main	porter	**70**
TALBOT		ST	6th		**70**
5TH	E	ST	Washburn	Elliot	**70**
BLAND		ST			**70**
TIMBER CREST		DR			**70**
COTTONBOWL		DR	Crystal	Davis	**70**
ARBOR OAK		DR	Sagewood	Stone Ridge	**70**
DAVIS		ST	T H Johnson	Junie/ Davis	**70**
DOVE		CV	Davis	184ft	**70**
VELMA		DR	Donna	Carolyn	**70**
MILDRED		DR			**70**
PIN TAIL		LN	Donna	Carolynn	**70**
PIN TAIL		LN	Donna	Carolynn	**70**
LAKE	W	DR	Davis	Lynn	**70**
LEXINGTON		ST	Brown	Cecelia	**70**
LEXINGTON		ST	McClure	brown	**70**
LAKE	W	DR	Hood	Davis	**70**
THOMPSON		ST	Speegle	520 ft	**70**
JAMES		ST	Howard	Thompson	**70**
KIMBRO		ST	Kirk	Gilmore	**70**
KIMBRO		ST	Randall	Kirk	**70**
WALLACE		ST	Stasney	Kimbro	**70**
KIMBRO		ST	George	Randall	**70**
KENT		ST	Stasney	Kimbro	**70**
DELLINGER		DR	Kimbro	Bel-Air	**70**
KIMBRO		ST	Dellinger	George	**70**
LAKE	W	DR	North	Howard	**70**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
LAKE			Victoria	North	**70**
DELLINGER		DR	Stasney	Kimbro	**70**
LAKE	W	DR	Castlewood	Victoria	**70**
CASTLEWOOD		CT			**70**
RANDALL		ST	North	Stasney	**70**
DELLINGER		DR	North	Stasney	**70**
LAKE	W	DR	Mills	Castlewood	**70**
KELLY CV		CV			**70**
LAKE	W	DR	Grace	MILLS	**70**
GILMORE		ST	Smith	230ft	**70**
SMITH		AVE			**70**
LAKE	W	DR	Meadow	Grace	**70**
MARSHALL		ST	Smith	Lathan	**70**
SMITH		AVE	Marshal	Heights	**70**
SMITH		AVE			**70**
SMITH		AVE	Kingston	Summit	**70**
LAKE	W	DR	Sloan	Meadow	**70**
HEIGHTS		BLVD	Backland	254ft	**70**
VELMA		DR	Mildred	Pin Tail	**70**
PIN TAIL		LN	Mildred	Velma	**70**
10TH	W	ST	Davis	Sycamore	**70**
LAKE	W	DR	Howard	Stasney	**70**
KIMBRO		ST	Fisher	Lake	**70**
LAKE	W	DR			**70**
7TH	W	ST	Victoria	Howard	**70**
7TH	W	ST	Lizzie		**70**
7TH	W	ST	Edmond	Lizzie	**70**
7TH	W	ST	Annie	Victoria	**70**
7TH	W	ST	Sloan	Wyeth	**70**
7TH	W	ST	Vernon	Ferguson	**70**
VERNON		ST	3rd	2nd	**70**
VERNON		ST	4th	3rd	**70**
VERNON		ST	6th	4th	**70**
VERNON		ST			**70**
PINEHURST		DR			**70**
CRYSTAL					**70**
PINEHURST		DR	Stone Ridge	T H Johnson	**70**
HILLCREST		DR	Smith	869ft	**70**
SMITH		AVE	Mallard	142ft	**70**
GRACE		AVE	Blackland	347ft	**70**
MEADOW		LN	Gilmore	Blackland	**70**
LAKE	W	DR	Gladnell	Sloan	**70**
HIDDEN MEADOW		DR	Quail	Meadow	**70**
3RD	E	ST	329ft	Murphy	**69**
3RD	E	ST	Burkett	329ft	**69**
5TH	E	ST	349ft	Burkett	**69**
5TH	E	ST	Elliot	349ft	**69**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
11TH	W	ST	Davis	486ft	69
MONIKA		LN			69
VELMA		DR	Holly Springs	Pin Tail	69
WILLOWBROOK		TRL	Pinehurst	Timber Crest	69
WOODLAWN		DR			69
MEADOW		LN	Kent	Eckhart	69
BLACKLAND		DR			69
KINGSTON		CIR	Smith		69
GREENLAWN		DR			69
HOLLY SPRINGS		DR			69
3RD	E	ST	Murphy	Robinson	69
BOOTH		ST	Rio Grande	Avery	69
TALLEY		ST	Walnut	Pecan	69
PORTER		ST	6th		69
VANCE		ST	9th	8th	69
VANCE		ST	6th	5th	69
VANCE		ST	3rd	2nd	69
BLAND		ST	Pecan	Dickey	69
VANCE		ST	8th	7th	69
TALBOT		ST	7th	6th	69
SAGEWOOD		DR			69
WILLOWBROOK					69
TIMBER CREST			Cypress Trl	Willowbrook	69
TIMBER CREST		DR	Willobrook	Sagewood	69
SAGEWOOD		DR	Arbor Oak	Timber Crest	69
DAVIS		ST	Cottonbowl	Mallard	69
DAVIS		ST	Dove	CottonBowl	69
DAVIS		ST	Davis	Dove	69
MEDICAL PKWY		CIR	Mallard	409ft	69
MCCLURE		ST	Lexington	Hood	69
LEXINGTON		ST	Burns	Huff	69
LEXINGTON		ST	Lake	Burnes	69
LAKE	W	DR	Kimbro	Lexington	69
LAKE	W	DR	Thompson	Kimbro	69
KIMBRO		ST	Gilmore	Kent	69
STASNEY		ST			69
STASNEY		ST			69
STASNEY		ST			69
STASNEY		ST			69
KENT		ST	North	Stasney	69
MALLARD		LN	Sunny	Bull Run	69
MARSHALL		ST	Lathan	North	69
GILMORE		ST	Heights/Smith	Grace	69
BLACKLAND		DR			69
LAKE	W	DR	Lexington	Hood	69
JULIE					69
LAKE	W	DR	Stasney	Thompson	69

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
VICTORIA		ST	Cecilia	Burns	**69**
SLOAN		ST	2nd	Welch	**69**
PINEHURST		DR	Stone Ridge	Sagewood	**69**
MEADOW		LN	Gilmore	Kent	**69**
MALLARD		LN	Greenlawn	Smith	**69**
BLACKLAND		DR	Meadow	Grace	**69**
GREENLAWN		DR			**69**
MEADOW		LN	Blackland	Meadow Ridge	**69**
GREENLAWN		DR			**69**
GREENLAWN		DR			**69**
CEDARLAWN		ST			**69**
WOODLAWN		DR			**69**
WOODLAWN		DR			**69**
WOODLAWN		DR			**69**
JASON		DR	Whistling Way	Wren	**69**
ROBIN		LN	Meadow Ridge	Wren	**69**
WILLOW		LN	Lillie		**69**
7TH	E	ST	Washburn	342ft	**62**
7TH	E	ST	Porter	342ft	**62**
6TH	W	ST	Vance	351ft	**62**
6TH	W	ST	Talbot	351ft	**62**
10TH	W	ST	Talbot	370 ft	**62**
10TH	W	ST	370 ft	Main	**62**
CHERRYWOOD		DR	Holly Springs	1394ft	**62**
OLD THORNDALE		RD	Gravel Pit Rd		**62**
DAVIS		ST	Mallard	Drake	**62**
HOLLY SPRINGS		DR	Dahlberd	Cherrywood	**62**
OLD THORNDALE					**62**
OLD THORNDALE		RD			**62**
HIGHLAND		DR			**62**
OLD THORNDALE					**62**
FOWZER		ST	12th	11th	**62**
DICKEY		ST	Surges	Main	**62**
PECAN	W	ST	Sturges	Main	**62**
HEIGHTS		BLVD	Blackland	Smith Fork in road	**62**
PINEHURST		DR	Sagewood	Willowbrook	**62**
10TH	W	ST	Sycamore	336ft	**61**
10TH	W	ST	Hackberry	336ft	**61**
ALEXANDER		ST	Howard	Thompson	**61**
SMITH		AVE	Heights		**61**
LARK		LN	Boyer	Meadow Ridge	**61**
8TH	E	ST	353ft	Porter	**60**
8TH	E	ST	main	353ft	**60**
6TH	W	ST	Fowzer	349ft	**60**
6TH	W	ST	Vance	349ft	**60**
HIDDEN MEADOW		DR	Robin	Lark	**60**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
LAKE	W	DR	Map	Lake971,1312 ft	**60**
DONNA		DR	Mallard	Drake	**60**
SMITH		AVE	Hillcrest	Kingston	**60**
COMMERCIAL		DR	Main	838	**60**
OLD THORNDALE		RD	Lenora		**60**
OLD THORNDALE		RD			**60**
OLD THORNDALE		RD			**60**
OLD THORNDALE		RD			**60**
OLD THORNDALE		RD	Jones		**60**
BOOTH		ST	Oak	Walnut	**60**
PECAN	W	ST	Bland	Sturges	**60**
LAKE	W	DR	Lynn	Veterans	**60**
DONNA		DR	Drake	Pintail	**60**
KIMBRO		ST	James	Cecelia	**60**
KIMBRO		ST	Mclure	James	**60**
KIMBRO		ST	Mclure	Alexander	**60**
KIMBRO		ST	Speegle	Mclure	**60**
JAMES		ST	Howard	Thompson	**60**
ALEXANDER		ST	Thompson	Kimbro	**60**
THOMPSON		ST	Lake	Speegle	**60**
WALLACE		ST	North	Stasney	**60**
PRATHER		ST	Mills	Victoria	**60**
MILDRED		DR			**60**
DONNA		DR	Velma	Holly Springs	**60**
DONNA		DR	Velma	Pintail	**60**
KIMBRO		ST			**60**
KIMBRO		ST	8th	7th	**60**
7TH	W	ST	Annie	Ferguson	**60**
MEADOW RIDGE		DR	Robin	Lark	**60**
MEADOW RIDGE		DR	Meadow	Lark	**60**
SUNNY		LN			**59**
PAULA		LN	Mallard	Drake	**59**
OSCAR		ST	Jones	435ft	**59**
SOUTH PARK BLVD			Industrial Dr	236ft	**59**
MUSTANG	W	ST	Sturges	Main	**59**
KIRK		ST	Stasney	Kimbro	**59**
KIRK		ST	North	Stasney	**59**
KIRK		ST	Kimbro	Bell-Air	**59**
KIRK		ST	Bell-Air	Davis	**59**
COTTENROWS LN		LN			**58**
BLAND		ST	Oak	Walnut	**58**
CR 395					**58**
6TH	E	ST	353ft	Washburn	**58**
6TH	E	ST	porter	353ft	**58**
6TH	W	ST	Davis	348ft	**58**
6TH	W	ST	Fowzer	348ft	**58**
CECELIA		ST	Kimbro	518 ft	**58**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
CECELIA		ST	Lexington	518 ft	**58**
SAGEWOOD		DR	Pine Hurst	Arbor Oak	**58**
OLD THORNDALE		RD	Jones	Frank	**58**
OLD THORNDALE		RD			**58**
MCCLURE		ST	Hood	Davis	**58**
CECELIA		ST	Thompson	Kimbro	**58**
KIMBRO			Lake	Speegle	**58**
FISHER		ST	Stasney	Kimbro	**58**
DRAKE		LN	Mildred	Cherrywoodd	**58**
BROOKWOOD		CIR			**58**
LARK		LN	Meadow Ridge	Hidden Meadow	**58**
CR 368					**57**
4TH	W	ST			**57**
CRYSTAL		CIR	June	CottonBowl	**57**
VELMA		DR	Carolyn	Mildred	**57**
3RD	E	ST	344ft	Burkett	**56**
3RD	E	ST	Elliot	344ft	**56**
BULL RUN			CottonBowl	Mallard	**56**
STONE RIDGE		DR	Pinehurst	Arbor Oak	**56**
CRYSTAL		CIR	CottonBowl	Mallard	**56**
CRYSTAL		CIR	Crystal 582	Bull Run	**56**
CRYSTAL		CV	Crystal	292ft	**56**
CR 101					**55**
5TH	W	ST	Vance	349ft	**55**
5TH	W	ST	349ft	Talbot	**55**
11TH	E	ST	Washburn	339ft	**55**
11TH	E	ST	Porter	339ft	**55**
11TH	W	ST	Lexington	486ft	**55**
INDUSTRIAL DR					**55**
INDUSTRIAL DR					**55**
LEXINGTON		ST	Otis	626 ft	**55**
BEL-AIR		DR			**55**
BEL-AIR		DR			**55**
BEL-AIR		DR	Kirk		**55**
SMITH		AVE	Mallard	Hillcrest	**55**
SOUTH PARK BLVD			Main	Industrial Dr	**53**
POSSUM		TRL			**53**
HIDDEN MEADOW		DR	Lark	Quail	**53**
MUSTANG	W	ST	Bland	Sturges	**52**
TREY		DR			**52**
FOWZER		ST	11th	10th	**52**
STONE RIDGE		DR	Arbor Oak	Timber Crest	**52**
STONE RIDGE		DR	Timber Crest	152ft	**52**
BULL RUN			TH Johnson	Crystal	**52**
BULL RUN			Crystal	Cotton Bowl	**52**
SANDY LN		LN	Texas 95	Sandy Ln	**51**
SAM'S		CIR			**49**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
11TH	W	ST	Davis	Sycamore	**49**
VICTORIA		ST	Prather	McLain	**49**
BLAND		ST	Rio Grande	Mustang	**48**
5TH	E	ST	354ft	Washburn	**48**
5TH	E	ST	Porter	354ft	**48**
7TH	W	ST	Talbot	370 ft	**48**
7TH	W	ST	370ft	Main	**48**
4TH	W	ST	Davis	345ft	**48**
4TH	W	ST	Fowzer	345ft	**48**
GANO		ST	Pecan	331ft	**48**
GANO		ST	Walnut	331ft	**48**
11TH	W	ST	Hackberry	326ft	**48**
11TH	W	ST	Fowzer	326ft	**48**
ECKHARDT		ST			**48**
LAUREL		ST	Lake	Maresh	**48**
MARESH		ST	Jones	Laurel	**48**
11TH	W	ST	Fowzer	Vance	**48**
OLD GRANGER		RD	Sams	Main	**48**
WASHBURN		ST	6th	5th	**48**
FRANK		ST	Robinson	Threadgill	**48**
WASHBURN		ST	5th	4th	**48**
3RD	E	ST	Robinson	Dolan	**48**
PORTER		ST	3rd	2nd	**48**
RIO GRANDE	W	ST	Sturges	Main	**48**
BLAND		ST	Dickey	Rio Grande	**48**
DICKEY		ST	Bland	Sturges	**48**
WALNUT	W	ST	Symes	Bland	**48**
SYMES		ST	Oak	Walnut	**48**
GANO		ST	Oak	Walnut	**48**
SYMES		ST			**48**
CRYSTAL		CIR	Bull Run	June	**48**
COTTONBOWL		DR	Bull run	Possum	**48**
DRAKE		LN	Holly	Mildred	**48**
DRAKE		LN	Donna	Paula	**48**
THOMPSON		ST	James	Cecilia	**48**
THOMPSON		ST			**48**
SPEEGLE			Kimbro	Thompson	**48**
FISHER		ST	North	Stasney	**48**
DOAK	S	ST	Welch	Oak	**48**
3RD	W	ST	Vernon	Ferguson	**48**
SLOAN		ST	Eckhardt	Lake	**48**
SLOAN		ST			**48**
OLD GEORGETOWN					**48**
3RD	E	ST	363ft	Porter	**47**
3RD	E	ST	Main	363ft	**47**
4TH	W	ST	Talbot	360ft	**47**
4TH	W	ST	360ft	Main	**47**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
DOLAN	N	ST	Second	Price	**47**
OLD GEORGETOWN			Gladnell	Lake	**47**
LAUREL		ST			**47**
LAUREL		ST			**47**
12TH		ST	Talbet	Main	**47**
FRANK		ST	Talley	Robinson	**47**
ELLIOT		ST			**47**
PECAN	E	ST	Booth	Simon	**47**
PORTER		ST	4th	3rd	**47**
BLAND		ST	Walnut	Pecan	**47**
WALNUT	W	ST	Bland	Sturges	**47**
CAROLYN		DR			**47**
DRAKE		LN	Paula	Holly	**47**
HOOD		ST	Lake	Burns	**47**
VICTORIA		ST	Lake	Prather	**47**
CAROLYN COVE					**47**
DOAK	S	ST	Oak	Walnut	**47**
CR 405					**46**
3RD	W	ST	Ferguson	346ft	**46**
3RD	W	ST	Annie	346ft	**46**
FRANK		ST	Minden	Talley	**46**
WALNUT	W	ST	Doak	663ft	**46**
WALNUT	W	ST	Gano	663ft	**46**
7TH	W	ST	Vance	351ft	**46**
7TH	W	ST	351ft	Talbot	**46**
4TH	W	ST	Fowzer	349ft	**46**
4TH	W	ST	349ft	Vance	**46**
4TH	W	ST	Vance	350ft	**46**
DICKEY		ST	Gano	331ft	**46**
DICKEY		ST	Symes	331ft	**46**
ROBINSON	S	ST			**46**
DOLAN	N	ST	3rd	2nd	**46**
11TH	W	ST	Vance	351 ft	**46**
11TH	W	ST	351 ft	Talbot	**46**
11TH	W	ST	Sycamore	333ft	**46**
11TH	W	ST	Hackberry	333ft	**46**
SYMES		ST	Dickey	Rio Grande	**46**
SAM'S		ST	Jones		**46**
WALNUT					**46**
ELLIOT		ST	6th	5th	**46**
WASHBURN		ST	7th	6th	**46**
PORTER		ST	4th	5th	**46**
STURGIS		ST	Dickey	Rio Grande	**46**
GANO		ST	Pecan	Dickey	**46**
DICKEY		ST	Maple	Gano	**46**
POTOMAC		ST			**46**
GILMORE		ST	North	Stasney	**46**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
OLD GEORGETOWN					**46**
OLD GEORGETOWN					**46**
6TH	W	ST	Wyeth	343 ft	**45**
6TH	W	ST	Edmond	343ft	**45**
VICTORIA		ST	2nd	1st	**45**
HOWARD		ST	2nd	1st	**45**
DICKEY		ST	Doak	333ft	**45**
DICKEY		ST	Maple	333ft	**45**
8TH	E	ST	340 ft	Washburn	**45**
8TH	E	ST	Porter	340 ft	**45**
11TH	W	ST	Talbot	370 ft	**45**
11TH	W	ST	370 ft	Main	**45**
LAUREL		ST			**45**
OLD THORNDALE		RD	Washburn	Porter	**45**
LAKE	E	DR	Laurel	Turns into Turner	**45**
DOLAN	N	ST	Price	Scott	**45**
GANO		ST	Dickey	Rio Grande	**45**
12TH		ST	Hackberry	Fowzer	**45**
RICES CROSSING		RD			**45**
LAKE	E	DR	Jones	Laurel	**45**
12TH		ST	Fowzer	Vance	**45**
12TH		ST	Vance	Talbot	**45**
					45
ELLIOT		ST	7th	6th	**45**
PORTER		ST	2nd	1st	**45**
DOLAN	N	ST	3rd		**45**
TALLEY		ST	Frank	Walnut	**45**
ROBINSON	S	ST	Walnut	Frank	**45**
BARKER			Rio Grande	236ft	**45**
DICKEY		ST	Symes	Bland	**45**
PECAN	E	ST	Main	Booth	**45**
RICES CROSSING					**45**
12TH		ST	Sycamore	Hackberry	**45**
12TH		ST	Davis	Sycamore	**45**
SPEEGLE		ST	Howard	Thompson	**45**
PRATHER		ST	Victoria	Howard	**45**
DAVIS		ST	Kirk	Gillmore	**45**
3RD	W	ST	Howard	Shaw	**45**
3RD	W	ST	Victoria	Howard	**45**
TANNER			Carey	Sarah	**45**
BEECH		ST	Wabask	Beech	**44**
ANNIE		ST	3rd	347ft	**44**
ANNIE		ST	2nd	347ft	**44**
4TH	W	ST	Doak	332ft	**44**
4TH	W	ST	Branch	332ft	**44**
7TH	W	ST	350ft	Vance	**44**
7TH	W	ST	Fowzer	350ft	**44**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
4TH	W	ST	Branch	332ft	**44**
4TH	W	ST	Davis	332ft	**44**
VANCE		ST	2nd	1st	**44**
STURGIS		ST	Rio Grande	Mustang	**44**
MAPLE		ST			**44**
DOLAN	S	ST	Carolina St	Walnut	**44**
HOSACK		ST	Main	Porter	**44**
7TH	E	ST	Washburn	Elliot	**44**
FRANK		ST	Threadgill	428ft	**44**
BARKER			Mustang	795ft	**44**
FOWZER		ST	7th	6th	**44**
SYMES		ST	Pecan	Dickey	**44**
OTIS		ST	Lynn	Davis	**44**
3RD	W	ST	Annie	Victoria	**44**
SANDY LN		LN			**43**
ANNIE		ST	7th	382ft	**43**
ANNIE		ST	6th	382ft	**43**
1ST					**43**
PECAN	W	ST	Doak	332ft	**43**
PECAN	W	ST	Maple	332ft	**43**
8TH	W	ST	Talbot	370ft	**43**
8TH	W	ST	370ft	main	**43**
3RD	W	ST	Vance	351ft	**43**
3RD	W	ST	351ft	Talbot	**43**
SABRINA		DR	Burkett	Davidson	**43**
SIMON		ST	Rio Grande	Pecan	**43**
RIO GRANDE	E	ST	Main	Rio Grande	**43**
THREADGILL		ST	Frank	Walnut	**43**
RIO GRANDE	W	ST	Bland	Sturges	**43**
MAPLE		ST			**43**
TALBOT		ST	5th	4th	**43**
PECAN	E	ST	Simon	Barker	**43**
RIO GRANDE					**43**
RIO GRANDE	W	ST			**43**
HOOD		ST	McClure	Brown	**43**
GILMORE		ST	Lexington	Hood	**43**
9TH	W	ST	Hackberry	Davis	**43**
WYETH		ST	3rd	2nd	**43**
ANNIE		ST	6th	4th	**43**
FERGUSON		ST	7th	6th	**43**
RIO GRANDE	S	ST			**43**
HERMANN SONS					**43**
ALLISON		DR			**42**
7TH	W	ST	Davis	538 ft	**42**
7TH	W	ST	538 ft		**42**
3RD	W	ST	Lizzie	334ft	**42**
3RD	W	ST	Vernon	334ft	**42**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
4TH	W	ST	Park	334ft	**42**
4TH	W	ST	Doak	334ft	**42**
MINDEN		ST	Frank	Walnut	**42**
7TH	E	ST	Burkett	339ft	**42**
7TH	E	ST	Elliot	339ft	**42**
7TH	W	ST	Fowzer	538 ft	**42**
FOWZER		ST	8th	7th	**42**
8TH	W	ST	Vance	353 ft	**42**
8TH	W	ST	353 ft	Talbot	**42**
5TH	W	ST	Fowzer	352ft	**42**
5TH	W	ST	352ft	Vance	**42**
3RD	W	ST	Fowzer	349ft	**42**
3RD	W	ST	349ft	Vance	**42**
BOOTH		ST	Pecan	329ft	**42**
BOOTH		ST	Walnut	329ft	**42**
HOSACK		ST	Jones		**42**
MOCKINGBIRD					**42**
FOWZER		ST	10th	9th	**42**
BOOTH					**42**
WINDY RIDGE RD		RD			**42**
MOCKINGBIRD					**42**
VANCE		ST	4th	3rd	**42**
MAPLE		ST			**42**
GILMORE		ST	Hood	Davis	**42**
LEXINGTON		ST	Gillmore	Otis	**42**
DAVIS		ST	Lynn	Kirk	**42**
7TH	W	ST	Kimbro	Doak	**42**
3RD	W	ST	Edmond	Lizzie	**42**
6TH	W	ST	Sloan	Wyeth	**42**
FENWICK		DR			**42**
OAKLAWN		DR	Green Lawn		**42**
HERMANN SONS					**42**
RICK		ST	Maple	332ft	**41**
RICK'S		ST	Doak	332ft	**41**
PORTER		ST	Oscar	Old Thorndale	**41**
BARKER		ST	Pecan	Rio Grande	**41**
FOWZER		ST	5th	4th	**41**
WALNUT	W	ST	Gano	Symes	**41**
HACKBERRY		ST	9th	8th	**41**
DOAK	S	ST	Walnut	Pecan	**41**
6TH	W	ST	Edmond	Lizzie	**41**
WINDY RIDGE RD		CR			**40**
WINDY RIDGE RD					**40**
TRAVIS		ST	2nd	1st	**40**
8TH			Victoria	383ft	**40**
8TH			Howard	383ft	**40**
8TH	W	ST	Howard	723ft	**40**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
8TH	W	ST	Kimbro	723ft	**40**
7TH	W	ST	Kimbro	739 ft	**40**
6TH	W	ST	Ferguson	342ft	**40**
6TH	W	ST	Annie	342ft	**40**
ANNIE		ST	4th	3rd	**40**
ANNIE		ST	3rd	339ft	**40**
9TH	W	ST	Talbot	370 ft	**40**
TURNER		RD	Lake	6392ft	**40**
MARIPOSA					**40**
RIO GRANDE	W	ST	Symes	Bland	**40**
HERMANN SONS		RD			**40**
HOSACK		ST	Porter	Frink	**40**
PORTER		ST	Hosack	Oscar	**40**
FOWZER			Old Thorndale		**40**
BARKER		ST	Walnut	Pecan	**40**
6TH	E	ST	Washburn	Elliot	**40**
POTOMAC		ST			**40**
POTOMAC		ST			**40**
POTOMAC		ST			**40**
POTOMAC		ST			**40**
RICES CROSSING		RD			**40**
JUNIE		LN	Davis	466ft	**40**
JUNIE		LN	Crystal	221ft	**40**
BROWN		ST	Hood	Davis	**40**
BROWN		ST	Lexington	Hood	**40**
HOOD		ST	Huff	McClure	**40**
DRAKE		LN	Davis	Donna	**40**
PRATHER		ST	Fairgrounds	grace	**40**
3RD	W	ST	Wyeth	Edmond	**40**
7TH	W	ST	Doak	Davis	**40**
PARK		ST	3rd	2nd	**40**
7TH	W	ST	Edmond	Wyeth	**40**
3RD	W	ST	Sloan	Wyeth	**40**
CAREY		AVE			**40**
CAREY		AVE			**40**
CAREY		AVE			**40**
DOAK	S	ST	Ricks	Rio Grande	**40**
RICES CROSSING		RD	Windy Ridge Rd	Westchester	**40**
WINDY RIDGE RD	S	ST			**40**
LAKE	W	DR	Carlos G Parker	Old Georgetown	**40**
HERMANN SONS					**40**
CR 373					**40**
E BUTTERCUP ROAD		CR			**39**
7TH	W	ST	Howard	739 ft	**39**
SIMON		ST	Pecan	328ft	**39**
SIMON		ST	Walnut	349ft	**39**
DOLAN	S	ST	Scott	Carolina ST	**39**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
DAVIDSON		DR	Sabrina	Lenora Dr	**39**
RIO GRANDE	E	ST	Simon	Barker	**39**
RIO GRANDE	E	ST	Booth	Simon	**39**
BEAVER CIRCLE		CIR	Junie	FT+	**39**
8TH	W	ST	Lexington	Kimbro	**39**
6TH	W	ST	Davis	Branch	**39**
3RD	W	ST	Shaw	Park	**39**
DOAK	S	ST	Pecan	Dickey	**39**
BLACK WAXY ROAD	S	ST			**38**
RIO GRANDE	W	ST	Doak	Maple	**38**
6TH	W	ST	Vernon	334ft	**38**
6TH	W	ST	Ferguson	334ft	**38**
6TH	W	ST	Doak	333ft	**38**
6TH	W	ST	Branch	333ft	**38**
5TH	W	ST	360ft	main	**38**
5TH	W	ST	Davis	344ft	**38**
5TH	W	ST	Fowzer	344ft	**38**
5TH	W	ST	Talbot	360ft	**38**
RIO GRANDE	W	ST	Gano	Symes	**38**
RIO GRANDE	W	ST			**38**
VICTORIA		ST	McLain	Cecilia	**38**
DOAK	S	ST	Dickey	Ricks	**38**
CRESTVIEW					**38**
CRESTVIEW					**38**
LENORA		DR	Old Thorndale	Davidson	**38**
ELLIOT		ST	4th	3rd	**38**
BOOTH		ST	Avery	Mustang	**38**
POTOMAC		ST			**38**
HOOD		ST	Burns	Huff	**38**
CAROLYN		DR			**38**
GILMORE		ST	Kimbro	Lexington	**38**
WYETH		ST	4th	3rd	**38**
CR 400		CR			**37**
6TH	W	ST	Lizzie	331ft	**37**
6TH	W	ST	Vernon	331ft	**37**
SHAW		ST	3rd	360ft	**37**
SHAW		ST	2nd	360ft	**37**
9TH	W	ST	Vance	353 ft	**37**
9TH	W	ST	353 ft	Talbot	**37**
DAVIDSON		DR	Burkett	Sabrina	**37**
PECAN		ST			**37**
FOWZER		ST			**37**
FOWZER		ST	3rd	2nd	**37**
OTIS		ST	Lynn	240ft	**37**
ROBINSON	S	ST	Givens	Frank	**36**
BOOTH		ST	Pecan	Rio Grande	**36**
BURNS		BLVD			**36**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
CR 365			Texas 95		**35**
WABASH		ST			**35**
3RD	W	ST	Park	336ft	**35**
3RD	W	ST	Doak	336ft	**35**
6TH	E	ST	349ft	Burkett	**35**
6TH	E	ST	Elliot	349ft	**35**
3RD	W	ST	Davis	342ft	**35**
3RD	W	ST	Fowzer	342ft	**35**
3RD	W	ST	Talbot	360ft	**35**
3RD	W	ST	360ft	Main	**35**
CAROLINA ST		ST			**35**
9TH	W	ST	Hackberry	330ft	**35**
9TH	W	ST	Fowzer	330ft	**35**
ROYAL		ST			**35**
SAM'S		ST	Frink	Jones	**35**
LENORA DR			Burkett		**35**
MUSTANG	E	ST	Booth	Barker	**35**
9TH	W	ST	Fowzer	Vance	**35**
FOWZER		ST	4th	3rd	**35**
GILMORE		ST	Stasney	Kimbro	**35**
RANDALL		ST	Stasney	Kimbro	**35**
8TH	W	ST	Lexington	Doak	**35**
PARK		ST	4th	3rd	**35**
4TH	W	ST	Shaw	Park	**35**
4TH	W	ST	Howard	Shaw	**35**
6TH	W	ST	Victoria	Howard	**35**
CAREY		AVE			**35**
CAREY					**35**
MILLER		ST	Tennessee	227ft	**34**
PRATHER		ST	Sloan	Fairgrounds	**34**
6TH	W	ST	Kimbro	Howard	**34**
FIRST		AVE			**33**
MILLER		ST	Royal	Tennessee	**33**
9TH	E	ST	353 ft	porter	**33**
9TH	E	ST	main	353 ft	**33**
WELCH		ST	Mustang Cv	Sloan	**33**
WILSON		ST			**33**
GEORGE		ST	North	Stasney	**33**
FOREST		CT	Lynn	258ft	**33**
GRACE		AVE	Prather	Main	**33**
8TH	W	ST	Davis	Doak	**33**
WESTCHESTER		RD	Rices Crossing	Fenwick	**33**
WEST		ST			**32**
5TH	W	ST	Branch	333ft	**32**
5TH	W	ST	Doak	333ft	**32**
6TH	W	ST	Kimbro	478ft	**32**
6TH	W	ST	Doak	478ft	**32**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
ROYAL		ST			**32**
8TH	E	ST	Washburn	407ft	**32**
GRACE		AVE	Lake	Prather	**32**
RICES CROSSING		RD	Westchester	Fenwick	**32**
6TH	W	ST	Annie	319ft	**31**
6TH	W	ST	Victoria	319ft	**31**
3RD	E	ST	349ft	Washburn	**31**
3RD	E	ST	Porter	349ft	**31**
3RD	W	ST	Branch	332ft	**31**
3RD	W	ST	Davis	332ft	**31**
SECOND		AVE			**31**
WESTCHESTER		RD	Fenwick	487ft	**31**
TENNESSEE		ST			**31**
OAK	E	ST	Booth	160	**31**
WASHBURN		ST	8th	7th	**31**
SYCAMORE		ST	11th	10th	**31**
SYCAMORE		ST	12th	11th	**31**
HOOD		ST	Gilmore	Otis	**31**
SYCAMORE			Veterans	12th	**31**
BRANCH		ST	6th	5th	**31**
BRANCH		ST	5th	4th	**31**
SHAW		ST			**31**
BURNS		BLVD			**31**
EDMOND		ST	Cecilia	7th	**31**
VICTORIA		ST	6th	5th	**31**
5TH	W	ST	Shaw	672ft	**30**
5TH	W	ST	Doak	672ft	**30**
VANCE		ST	10th	9th	**30**
WASHBURN		ST	11th	10th	**30**
TALBOT		ST	2nd	1st	**30**
FAIRGROUNDS		AVE	Prather	McLain	**30**
VICTORIA		ST	5th	4th	**30**
WYETH		ST	6th	4th	**30**
LEE		ST			**30**
VICTORIA		ST	6th	410ft	**29**
VICTORIA		ST	7th	410ft	**29**
VICTORIA		ST	4th	3rd	**29**
VICTORIA		ST	3rd	336ft	**29**
SHAW		ST	5th	369ft	**29**
SHAW		ST	4th	369ft	**29**
3RD	W	ST	Doak	331ft	**29**
3RD	W	ST	Branch	331ft	**29**
9TH	E	ST	340 ft	Washburn	**29**
9TH	E	ST	Porter	340ft	**29**
GABRIEL		ST			**29**
HOLLY SPRINGS		DR	Donna	Velma	**29**
GEORGE		ST	Stasney	Kimbro	**29**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
FAIRGROUNDS		AVE	Lake	Prather	**29**
HACKBERRY		ST	12th	11th	**29**
5TH	W	ST	Howard	Shaw	**29**
FAIRGROUNDS		AVE	Cecilia	Adams	**29**
BURNS					**29**
WYETH		ST	Cecilia	7th	**29**
WELCH		ST	Edmond	Doak	**29**
VICTORIA		ST	3rd	357ft	**28**
VICTORIA		ST	2nd	357ft	**28**
FRANK		ST	Hosack	328ft	**28**
FRANK		ST	Oscar	328ft	**28**
11TH	E	ST	352 ft	Porter	**28**
11TH	E	ST	Main	352 ft	**28**
DEBUS		DR			**28**
OLD GRANGER		RD			**28**
WASHBURN		ST	9th	8th	**28**
FAIRGROUNDS		AVE	McLain	Adams	**28**
MCLAIN		ST	Sloan	Fairgrounds	**28**
ADAMS		ST	Mills	519 ft	**28**
OSCAR		ST	Porter	Frank	**28**
OLD GRANGER		RD	Map	Grace Ln	**28**
OLD GRANGER		RD			**28**
OLD GRANGER		RD	Grace Ln	Lake	**28**
TALBOT		ST	12th	11th	**28**
VANCE		ST	11th	10th	**28**
STACY		DR	Burkett	Private(908/915)	**28**
PORTER		ST	8th	7th	**28**
HACKBERRY		ST	11th	10th	**28**
RANDALL		ST	Kimbro	Bell-Air	**28**
DOAK	N	ST	4th	3rd	**28**
DOAK	N	ST	3rd	2nd	**28**
BURNS		BLVD			**28**
WYETH		ST	6th		**28**
5TH	W	ST	Howard	Victoria	**28**
WELCH		ST	Sloan	Edmond	**28**
DEBUS		DR	Thomas		**28**
DEBUS		DR			**28**
DOAK	N	ST	7th	8th	**27**
OAK	W	ST	Doak	244ft	**27**
OAK			Sturgis	244ft	**27**
2ND	E	ST	Elliot	701ft	**27**
2ND	E	ST	701ft	turns into Burkett	**27**
PORTER		ST	9th	8th	**27**
OAK	W	ST	Gano	421ft	**27**
FRANK		ST	Sams	Hosack	**27**
WASHBURN		ST	10th	9th	**27**
OSCAR		ST	Frank	Jones	**27**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
MILLS		AVE	Prather	McLain	**27**
GABRIEL		ST			**27**
MILLS		AVE	Lake	Prather	**27**
BURNS					**27**
CLAYTON			Carey	Sarah	**27**
DEBUS		DR	Thomas	2nd	**27**
5TH	W	ST	Branch	330ft	**26**
5TH	W	ST	Davis	330ft	**26**
MILLS		AVE	McLain	Adams	**26**
PORTER		ST	9th	10th	**26**
FRANK		ST	Oscar	Old Thorndale	**26**
TALBOT		ST	11th	10th	**26**
OAK	W	ST	Gano	Smyes	**26**
GEORGE		ST	Kimbro	Bell-Air	**26**
DOAK	N	ST	5th	4th	**26**
ADAMS		ST	Grace	Fairgrounds	**26**
GRACE		AVE	Adams	Cecelia	**26**
LIZZIE		ST	Cecelia	7th	**26**
FERGUSON		ST	6th	4th	**26**
SARAH		CV	Clayton	332ft	**26**
BLAND		ST	Mississippi	San Gabriel	**25**
CAREY		AVE			**25**
MCLAIN		ST	Mills	786ft	**25**
MCLAIN		ST	Victoria	786ft	**25**
NORTH		DR	Co. Rd 367	Carlos G Parker	**25**
PRICE		ST	Dolan	Price	**25**
OLD COUPLAND RD		RD	Main	Southwood Hills	**25**
PORTER		ST	11th	181ft	**25**
PORTER		ST	11th	10th	**25**
OAK	W	ST	Symes	Bland	**25**
MCLAIN		ST			**25**
OTIS		ST	Hood	Davis	**25**
CECELIA		ST	Howard	Thompson	**25**
MCLAIN		ST	Grace	Mills	**25**
ADAMS		ST	Sloan	Fairgrounds	**25**
FERGUSON		ST	3rd	2nd	**25**
RYDELL		LN	Carlos G Parker	Justin	**25**
TANNER		LP	Sarah	Carey	**24**
MILLER		ST			**24**
VANCE		ST	12th	11th	**24**
MURPHY					**24**
1ST	W	ST	Talbot		**24**
SYMES		ST	Wabash	Potomac	**24**
WABASH		ST			**24**
HOOD		ST	Wilson	Lake	**24**
LYNN	N	ST	Otis	Lake	**24**
ADAMS		ST	Grace	Mills	**24**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
MILLS		AVE	Adams	Cecilia	**24**
SARAH		CV			**24**
10TH	E	ST	352 ft	Porter	**23**
10TH	E	ST	main	352ft	**23**
10TH	E	ST	340 ft	Washburn	**23**
HACKBERRY		ST	10th	331ft	**23**
HACKBERRY		ST	9th	331ft	**23**
9TH	E	ST	Washburn	275ft	**23**
VANCE		ST	12th	734ft	**23**
MCLAIN		ST	Victoria	Howard	**23**
MCLAIN		ST	Fairgrounds	Grace	**23**
VERNON					**23**
CECELIA		ST			**23**
CECELIA		ST			**23**
CECELIA		ST	Fairgrounds	Grace	**23**
FERGUSON		ST	4th	3rd	**23**
LIZZIE		ST	4th	3rd	**23**
LIZZIE		ST	6th		**23**
8TH	W	ST	Hackberry	Davis	**22**
SAN GABRIEL		ST			**22**
CECELIA		ST	Vernon/ Lizzie	623 ft	**22**
CECELIA		ST	Victoria	623 ft	**22**
CECELIA		ST	Victoria	383 ft	**22**
CECELIA		ST	Howard	383 ft	**22**
GYM		ST	Price		**22**
SOUTHWOOD HILLS		DR	Old Coupland Rd		**22**
BURKETT		ST	4th	3rd	**22**
WABASH		ST			**22**
HOOD		ST	Otis	Wilson	**22**
PRATHER		ST	Grace	Mills	**22**
LYNN	N	ST	Gilmore		**22**
CECELIA					**22**
CECELIA		ST	Sloan	Fairgrounds	**22**
CECELIA		ST	Grace	Mills	**22**
CECELIA		ST	Mills	Vernon/ Lizzie	**22**
LIZZIE		ST	3rd	2nd	**22**
LIZZIE		ST	6th	4th	**22**
SARAH		CV	Tanner	300ft	**22**
SYMES		ST	San Gabriel	Wabash	**21**
1ST					**21**
RIO GRANDE	E	ST	Walnut	Robinson	**21**
10TH	E	ST	Porter	340 ft	**21**
GRAVEL PIT RD					**21**
GRACE		AVE	McLain	Adams	**21**
SCOTT		ST	Dolan	765ft	**21**
WASHBURN			Old Thorndale	402ft	**21**
OTIS		ST	Hood	Lexington	**21**

STREET NAME	PRE/DIR	TYPE	TO	FROM	PCI
LYNN	N	ST	Gilmore	Forest	**21**
GILMORE		ST	Davis	Lynn	**21**
LYNN	N	ST	Forest	Otis	**21**
LYNN	N	ST	Bell air	Davis	**21**
OAK	W	ST	Sturges	630ft	**20**
OLD COUPLAND		RD	Southwood Hills		**20**
ELLIOT		ST	1st	2nd	**20**
1ST	E	ST	Main	Porter	**20**
OAK			Bland	47ft	**20**
DOAK	N	ST	6th	5th	**20**
KIMBRO		ST	7th	6th	**20**
OAK	W	ST	Sturges	630ft	**19**
SAM'S			Old granger		**19**
SAM'S					**19**
1ST	E	ST	Washburn	Elliot	**19**
MISSISSIPPI		ST			**18**
FRANKLIN		ST	2nd	1st	**18**
BURKETT		ST	3rd	Turns into 2nd	**18**
3RD	W	ST	Sloan	865ft	**18**
PRICE		ST	Gym	90ft	**18**
MURPHY					**18**
WASHBURN		ST	2nd	1st	**18**
1ST	E	ST	Porter	Washburn	**18**
WABASH					**18**
WABASH					**18**
WABASH		ST			**18**
1ST			Elliot	95ft	**17**
ROBINSON	N	ST	E Second	Givens	**15**
O L G CEMETERY		RD	WWTP	End	**15**
MURPHY					**15**
ROBINSON	S	ST			**14**
ROBINSON	N	ST	3rd	E Second	**14**
MURPHY					**13**
STURGIS		ST	Wabash	Mississippi	**13**
5TH	E	ST	Burkett	Murphy	**12**
SECOND	E	ST	Dolan		**11**
5TH			murphy	331ft	**11**
ROBINSON	N	ST	3rd	300ft	**11**
STURGIS		ST	Wabash	Potomac	**11**
GIVENS		LN			**10**
RIO GRANDE	E	ST	Talley		**10**
7TH			Burkett	243ft	**10**
E SECOND		ST	Robinson	361ft	**10**
MAPLE		ST			**10**
MISSISSIPPI		ST			**10**
RIO GRANDE	S	ST			**10**
1ST	W	ST	Vance	Talbot	**5**

Using the revised PCI values, the City of Taylor streets have an average PCI of 55 and median PCI of 48. Approximately 51% of the streets in Taylor are currently considered to be in poor condition!

Figure 3-2 through **Figure 3-5** provide graphic representation of pavement conditions based on PCI values from **Table 3-1**. A comparison to the 2012 results is listed in the footnote for each figure. Some of the differences are in simply in rounding differences, but there is slight uptick in results which is mainly due to some PCI improvements from the 2014/2015 Street Improvements as previously shown in **Figure 3-1**.

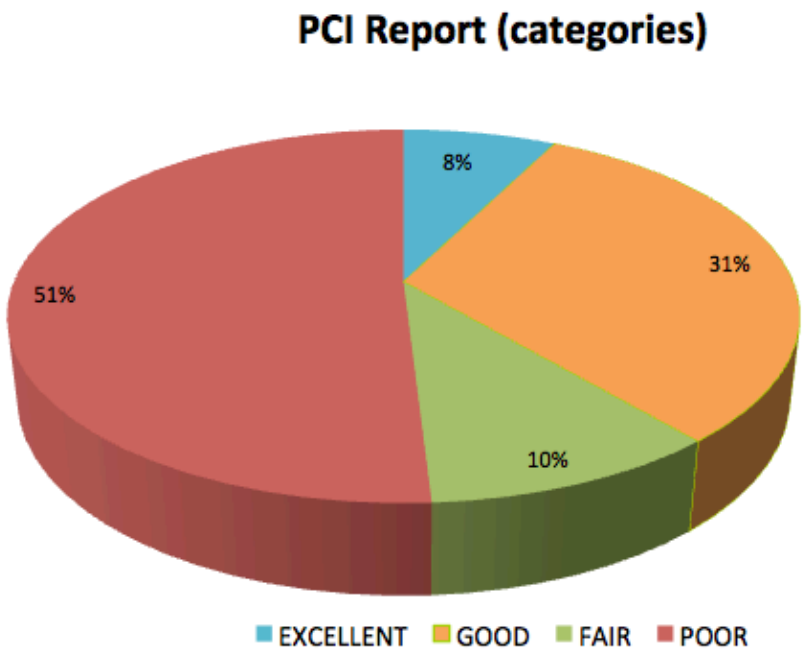
3.5 City Street Inventory Maps

The street inventory is represented by the PCI rankings. This can be graphically illustrated on the City base maps. The PCI streets are graphically shown on the following maps:

- **Figure 3-6** Streets with PCI - Excellent
- **Figure 3-7** Streets with PCI – Good
- **Figure 3-8** Streets with PCI - Fair
- **Figure 3-9** Streets with PCI - Poor

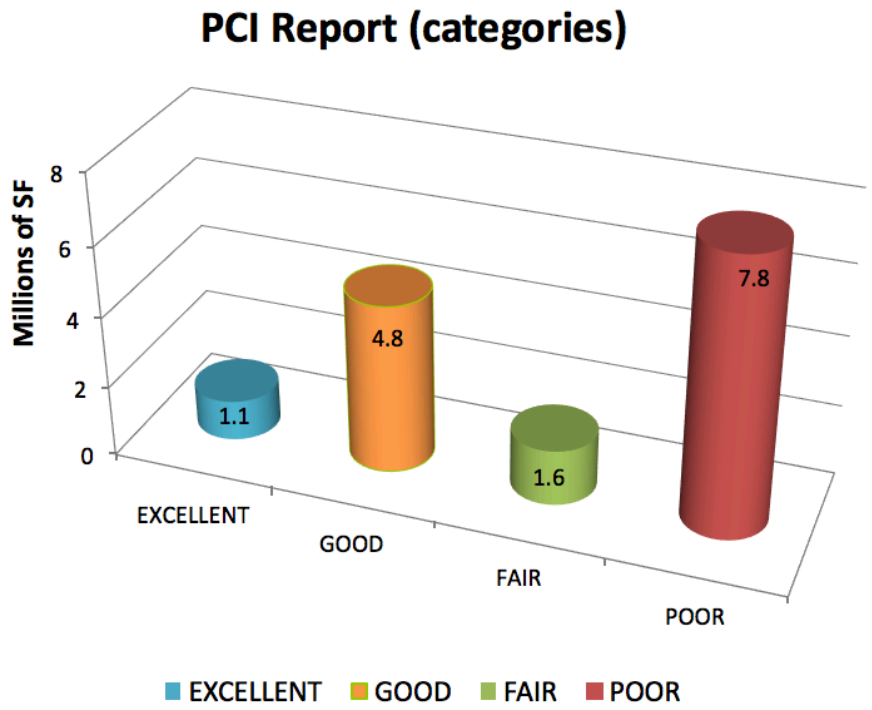
The City's Graphic Information System (GIS – database and base mapping) should be upgraded to incorporate the street PCI and information from PMP (such as street width, ROW width, curb/gutter, etc.). The GIS PCI information should be updated when the PMP is updated as annual update is considered too frequent. The GIS system and mapping will include the City Council Districts. This can be a useful overlay to include when planning for future street improvements.

Figure 3-2. Current Street Conditions per PCI Category



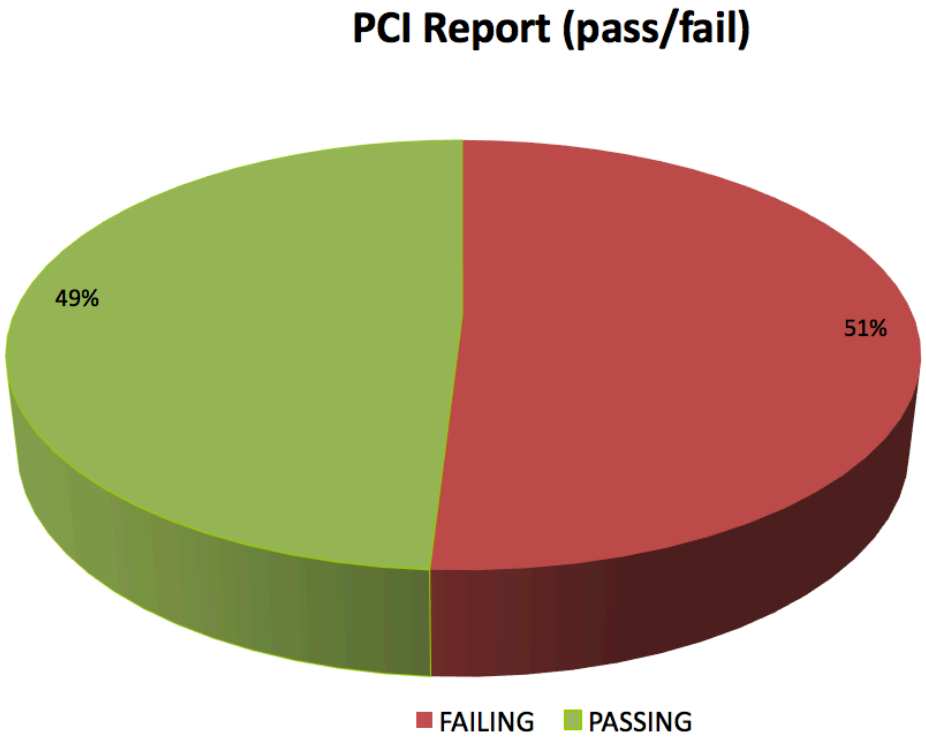
* 2012 Results for Comparison:
Excellent = 7% Good = 27% Fair = 14% Poor = 52%

Figure 3-3. Area of Streets per PCI Category (millions of SF)



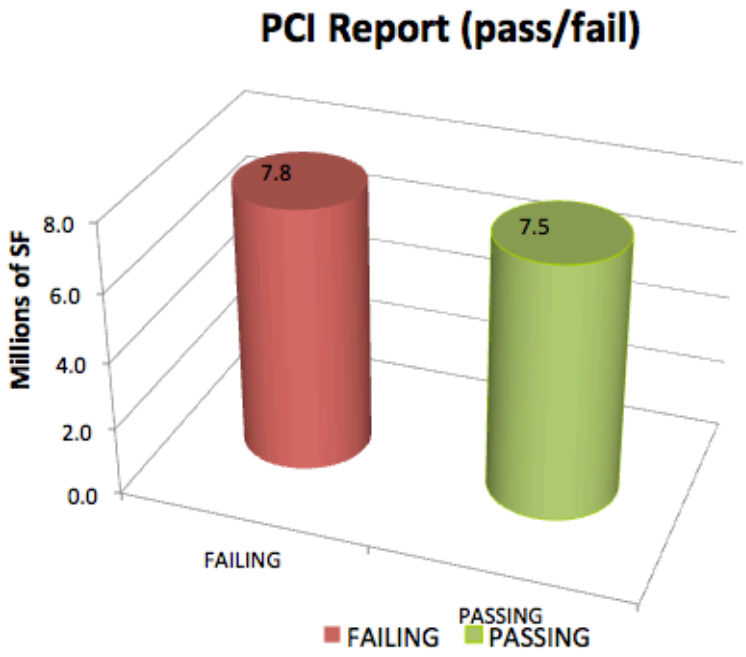
* 2012 Results for Comparison:
Excellent = 1.1 Good = 4.1 Fair = 2.1 Poor = 8.0

Figure 3-4. Current Street Conditions per Pass/Fail



* 2012 Results for Comparison:
Passing = 48% Failing = 52%

Figure 3-5. Area of Streets Per Pass/Fail (millions of SF)



* 2012 Results for Comparison:
Failing = 8.0 Passing = 7.3

Figure 3-6. Streets w/ PCI – Excellent *(see Exhibit for Council Districts & larger scale)*

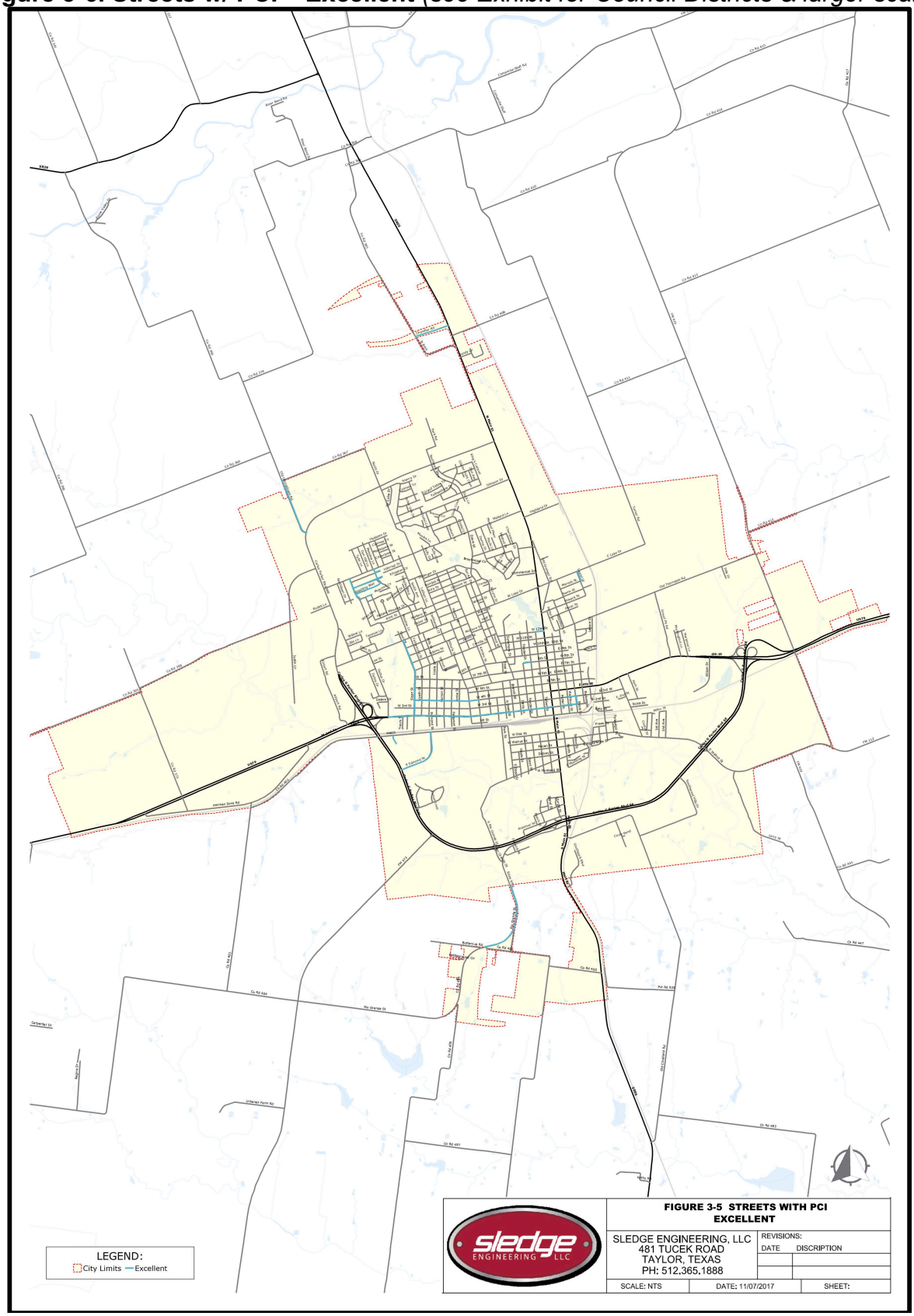


Figure 3-7. Streets with PCI – Good *(see Exhibit for Council Districts & larger scale)*

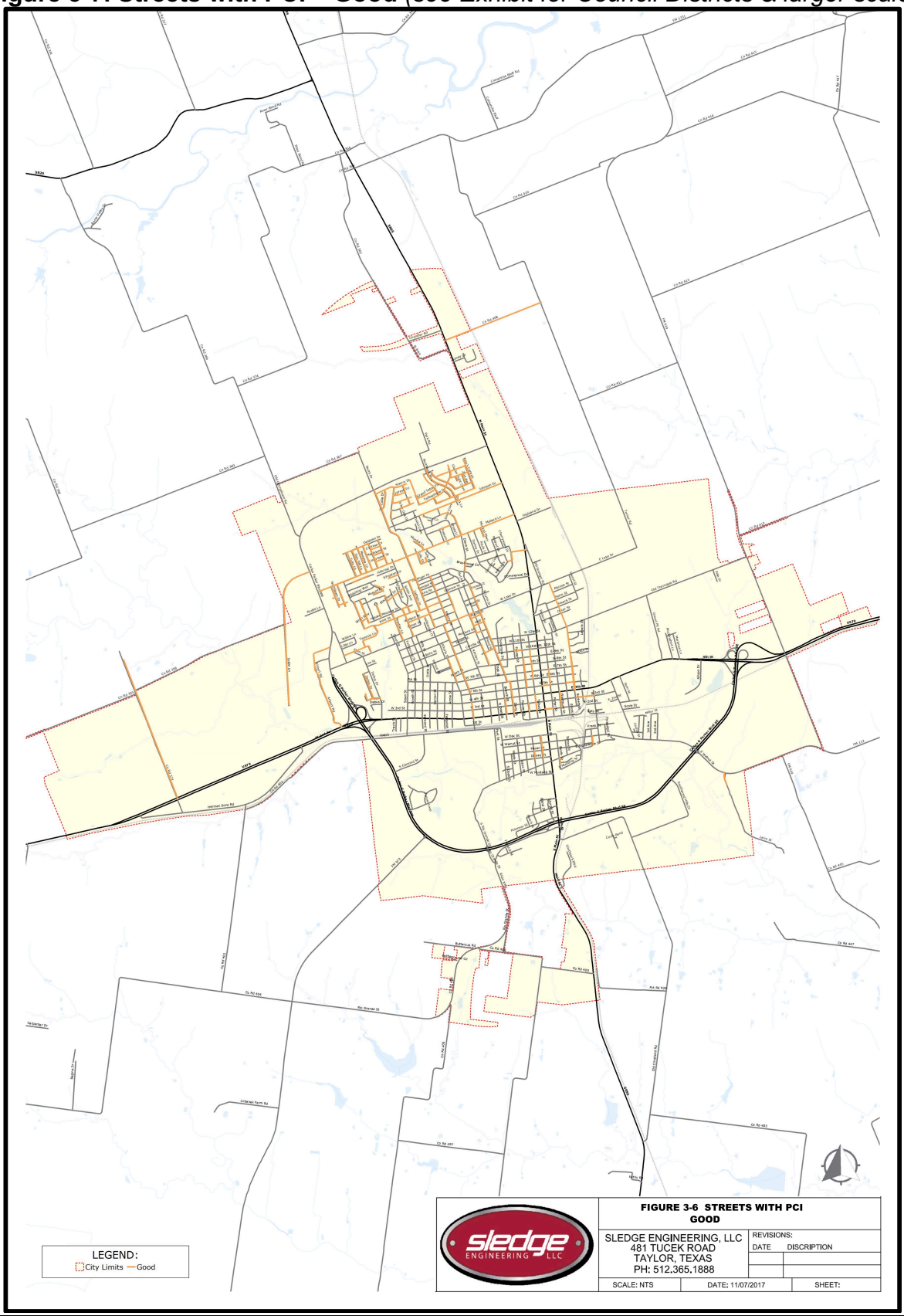


Figure 3-8. Streets with PCI – Fair *(see Exhibit for Council Districts & larger scale)*

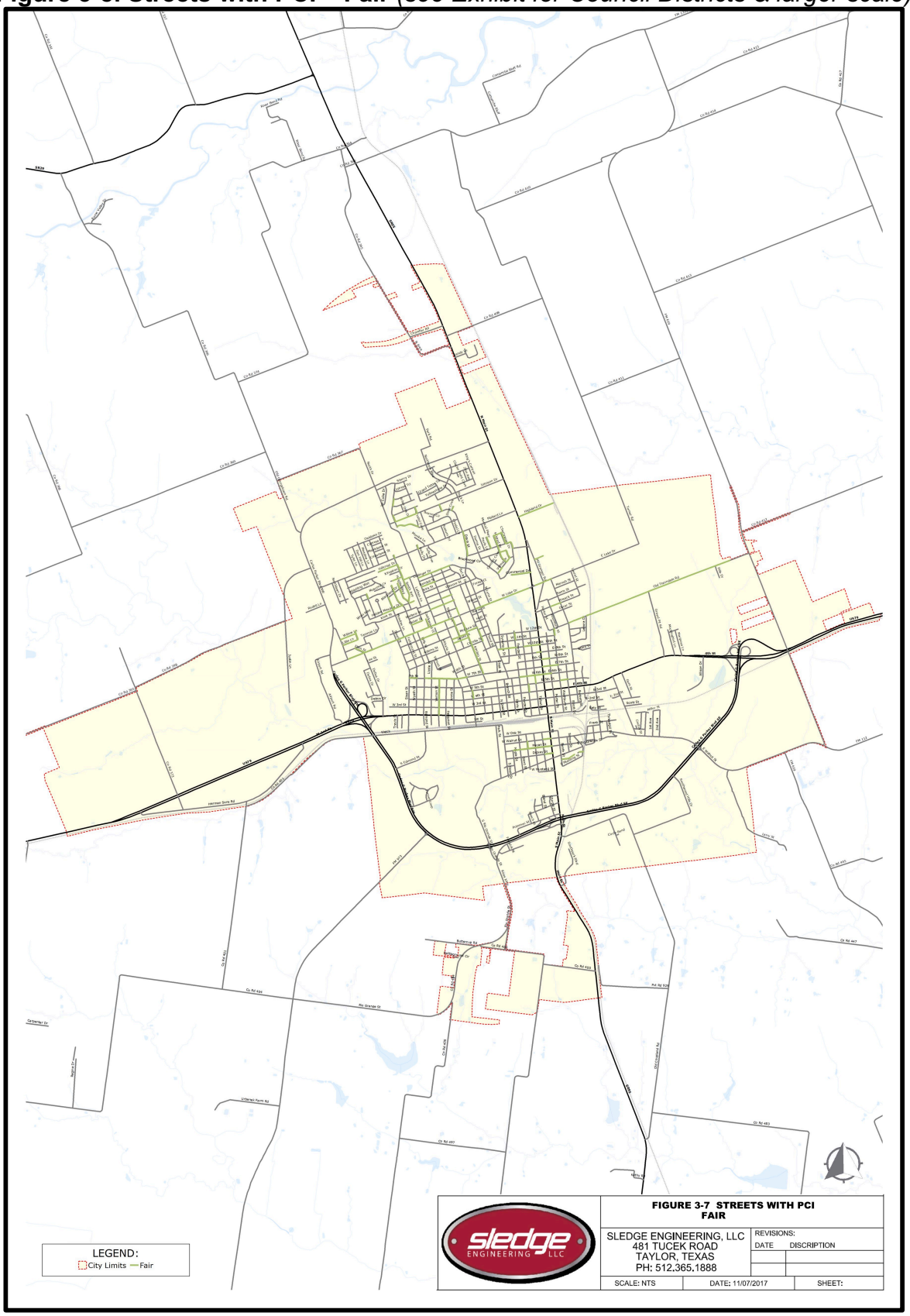
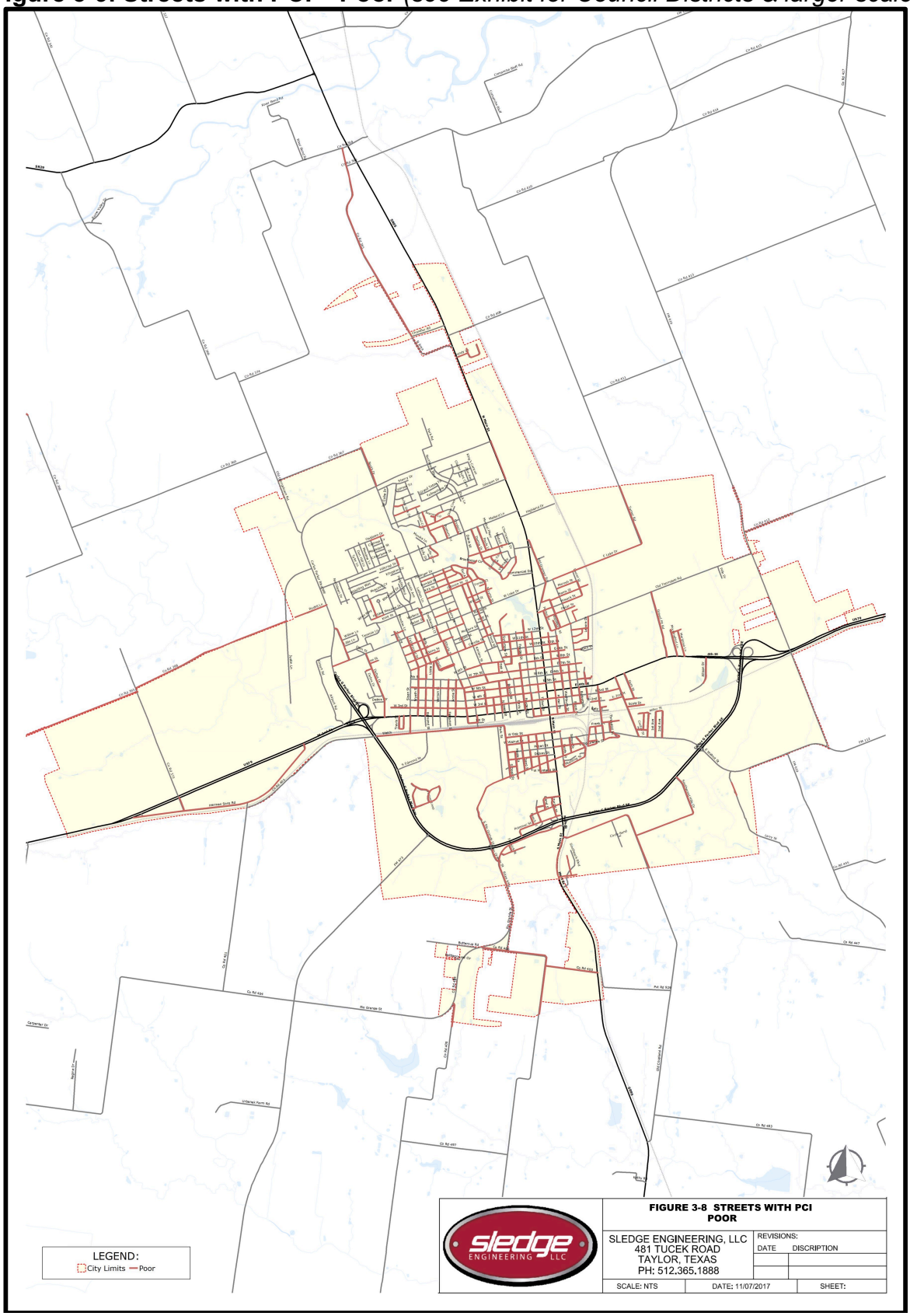


Figure 3-9. Streets with PCI – Poor *(see Exhibit for Council Districts & larger scale)*



3.6 Long-Term Plan Street Maintenance and Rehabilitation

The City should continually implement street maintenance and rehabilitation as part of long-term plan for infrastructure improvements. Seal coat and overlay rehabilitation projects should be completed on all excellent, good and fair streets. Areas considered good and fair streets that are failed should receive full depth reconstruction repairs. *It is imperative to seal the streets in excellent and good condition to protect the city's investment*! Without this maintenance and rehabilitation, street conditions deteriorate quickly and can fall into the "poor" PCI category. Once a street is listed in the "poor" condition category, then expensive full reconstruction is required to re-establish the street for its intended purpose.

Other items that the City should consider as part of the long-term plan for streets include:

1. The fair streets that received an overlay in 2014/2015 will be due for another rehabilitation project within 5-7 years of completion to maintain pavement integrity.

2. The City needs to decide whether to reconstruct the streets in poor condition or demolish remaining pavement and allow streets to return to unpaved condition in areas without functions on property that require full pavement section.

3. The City crews should continue to complete in-house maintenance such as crack sealing and pothole repairs. This work preserves the streets and should be addressed as soon as the crack or pothole is noticed.

The revenue currently generated by the Transportation User Fee fluctuates from month to month but is typically in the range of $65,000. Per the 2017 SGMP, much of the TUF funds are currently allocated to upcoming projects. **Table 3-2** shows the current planned use for upcoming TUF funds and other funding sources that can be used on City street projects. It is recommended the City consider reviewing and increasing the TUF.

Table 3-2. 2017 SGMP Table of TUF Fund Expenditures

Project	Cost	MDUS Fund	TUF Fund	Utility
Edmond Street *	$1,232,000	$680,000	$409,000 ($209,000 increase)	$143,000
4th Street CDBG*	$749,000	$0	$90,793	$0
Sidewalk Program	$10,000	$0	$10,000	$0
2709 Kelly Drive	$11,000	$0	$11,000	$0
1609/1611 Castlewood Ct	$52,000	$22,000	$30,000	$0
Paula Lane/Medical Pkwy	$33,000	$33,000	$0	$0
Laurel/Sams Street	$170,000	$0	$170,000	$0
800 Kirk Street	$38,500	$0	$38,500	$0
1806 Lynn Street	$53,000	$0	$53,000	$0
Booth/Oak (Walnut)	$55,000	$53,000	$2,000	$0
Oaklawn @ Bull Br. Trib	$66,000	$66,000	$0	$0
Preventative Maintenance contract for fair streets	$150,000	$0	$150,000	$0
In house level up of streets	$95,000	$0	$65,000	$0
Total Expenditures	$2,714,500	$854,000	$1,029,293	$143,000

* These projects are currently complete or underway. 2017 TUF funds used for the match of street improvements.

It should be noted that the City had design plans prepared for the downtown area with associated utility and sidewalk improvements. The plans were developed prior to the Downtown Master Plan. As such, the City will need to revisit which elements from the Master Plan to incorporate in the design. The estimated cost for the downtown project is $1,500,000 to $2,000,000 depending on elements adding to the project.

Other street projects that should be considered by the City include:

- CR101 (with funding actual match)
- CR366 (design match and construction match)
- Yearly Public Works Department In-House Maintenance – TUF funding
- 2018 3rd St Street CDBG Reconstruction and Utility Project - CDBG and TUF funding
- Other small projects as specified in **Table 3-2**.

In regards to the long-term budget needs for the City's street system, existing pavements in Fair, Good and Excellent condition should be given priority to protect the existing pavement. Fair condition streets should be priority over good and excellent condition streets since the fair streets are close to losing the potential for rehabilitation versus reconstruction. The poor condition streets should be reconstructed with the use of grant funds, bonds, or other funding as may become available. The City may also consider whether to reconstruct all the streets in poor condition or demo the pavement and allow the streets to become unpaved streets. Unpaved streets require much less maintenance and the maintenance can be completed with in-house crews.

In order to calculate improvements, the total cost to complete all street improvements today to obtain a PCI of good (70+) for all pavements is $52,816,496 with an additional $12,056,770 in utility improvements to move water and sewer outside of pavement areas. The cost today to keep the PCI where they currently are with no improvements or maintenance to poor streets is estimated $3,193,975.

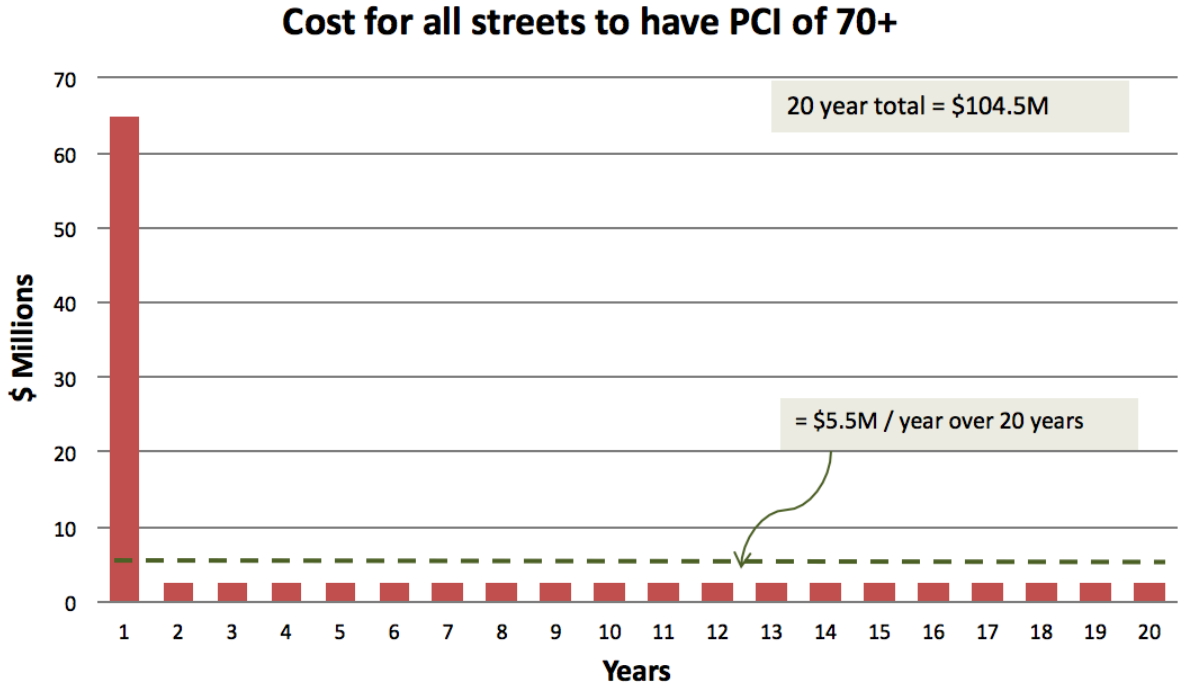
A breakdown of corrective maintenance options/costs for the 44 miles of streets not in poor condition is shown in **Table 3-3**. The costs in **Table 3-3** do not include improvements or maintenance to poor streets.

Table 3-3. Corrective Maintenance on 44 Miles of PCI 60+ Annual Costs

Cost	Per Year	Frequency
$830,349	per yr to seal all	every 10 years
$976,881	per yr to seal all	every 8.5 years

Figure 3-10 shows the graphical representation of cost in millions per years for getting all streets immediately to PCI of 70+ and maintaining them for the next 20 years.

Figure 3-10. Cost for All Streets to Improve to PCI of 70+



If all pavements were improved to PCI over 70+, the annual cost to maintain all 105 miles of streets is shown in **Table 3-4**.

Table 3-4. Corrective Maintenance to 105 miles of City Streets – Annual Costs

Cost	Per Year	Frequency
$1,692,681	per yr to seal all	every 10 years
$1,991,389	per yr to seal all	every 8.5 years

Figure 3-11 shows the graphical representation of cost in millions per year for keeping all passing streets at current PCI for next 20 years. This assumes no maintenance is completed on poor pavements.

Figure 3-11. Cost to Maintain Existing PCI Levels

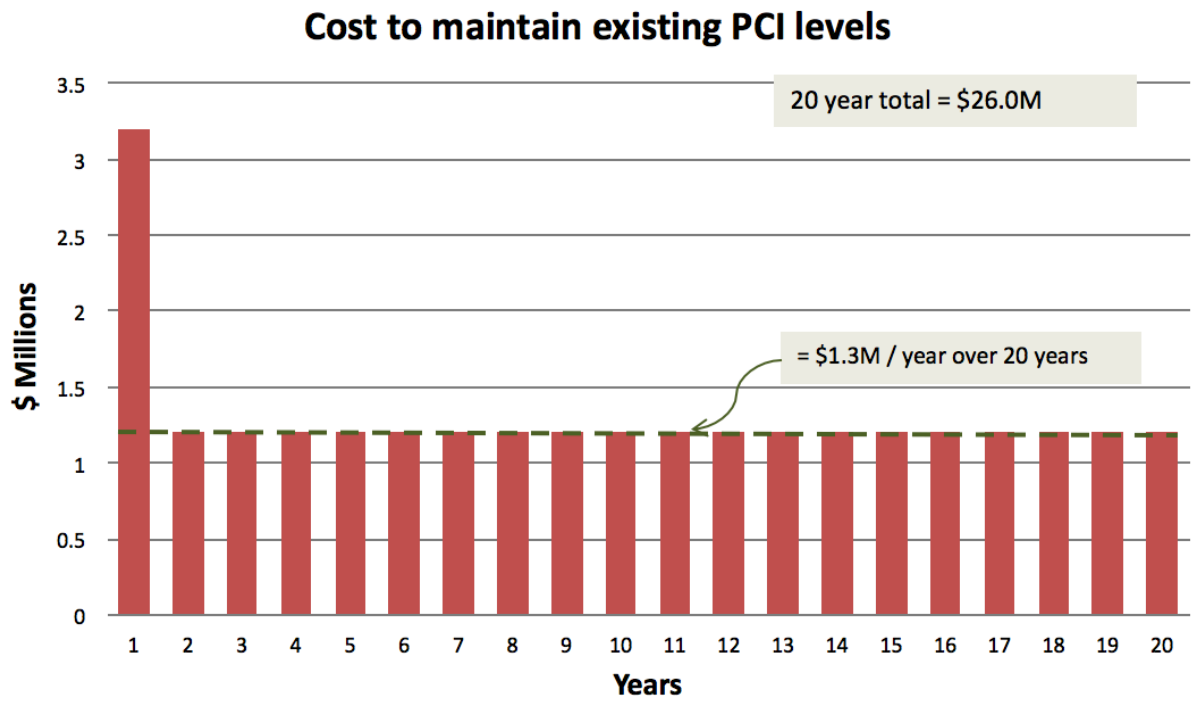


Figure 3-12 shows the cost to maintenance ratio in respect to PCI and time.

Figure 3-12. Cost to Maintenance Ratio (PCI vs Time)

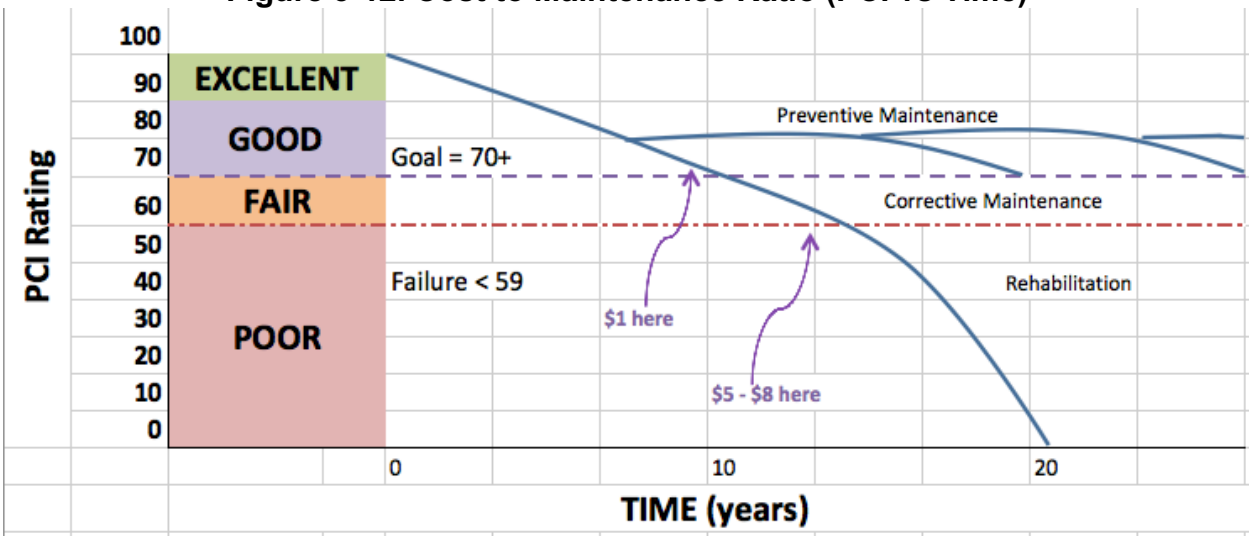


Table 3-5 shows the cost for Long-Term Plan of reconstructing all poor streets while maintaining excellent, good and fair streets. The table is labeled as "all street" since all poor streets included.

Table 3-6 shows the cost for Long-Term Plan of maintaining excellent, good and fair streets (the Downtown Street Improvements that have already been designed are included along with reconstructing a portion of the poor streets). This table includes only "partial" list of poor street reconstruction.

Table 3-5. Long-Term Plan – Cost Summary – All Street

Item	Priority 1	Priority 2	Priority 3	Total Per Item
Downtown Street Improvements		$1,500,000	$500,000	$2,000,000
2015 CDBG 4th Street (Remaining)	$400,000			$400,000
2017 CDBG 3rd Street	$900,000			$900,000
Edmond Street (Remaining)	$200,000			$200,000
CR101 Widening (+/- 10% City Match)		$10,000,000		$10,000,000
CR366 Street Project (City Match)			$2,000,000	$2,000,000
Annual Street Maintenance (City Staff)	$950,000	$950,000	$950,000	$2,850,000
Corrective Maintenance-Excellent	$4,151,745	$4,151,745	$4,151,745	$12,455,235
Corrective Maintenance-Good	$5,931,065	$5,931,065	$5,931,065	$17,793,195
Corrective Maintenance-Fair	$4,884,405	$4,884,405	$4,884,405	$14,653,215
Poor Street Reconstruction	$18,000,000	$18,000,000	$28,000,000	$64,000,000
Total by Priority	**$35,417,215**	**$45,417,215**	**$46,417,215**	**$127,251,645**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

Table 3-6. Long-Term Plan – Cost Summary – Partial Streets

Item	Priority 1	Priority 2	Priority 3	Total Per Item
Downtown Street Improvements		$1,500,000	$500,000	$2,000,000
2015 CDBG 4th Street (Remaining)	$400,000			$400,000
2017 CDBG 3rd Street	$900,000			$900,000
Edmond Street (Remaining)	$200,000			$200,000
CR101 Widening (+/- 10% City Match		$10,000,000		$10,000,000
CR366 Street Project (City Match)			$2,000,000	$2,000,000
Annual Street Maintenance (City Staff)	$950,000	$950,000	$950,000	$2,850,000
Corrective Maintenance-Excellent	$4,151,745	$4,151,745	$4,151,745	$12,455,235
Corrective Maintenance-Good	$5,931,065	$5,931,065	$5,931,065	$17,793,195
Corrective Maintenance-Fair	$4,884,405	$4,884,405	$4,884,405	$14,653,215
Poor Street Reconstruction	$2,000,000	$3,000,000	$5,000,000	$10,000,000
Total by Priority	**$19,417,215**	**$30,417,215**	**$23,417,215**	**$73,251,645**

3.7 5-Year CIP - Streets

The 5-year CIP should include a Focused Plan for Street Maintenance and Street Rehabilitation as described in the long-term plan. The Focused Plan should consider funding options such as:

- Pay as you go option
- Bond Option(s)
- TUF
- Grants (CDBG, other)

Recommendations for the funding of the maintenance program can be developed based on the City's expectations of street conditions. As funding becomes available, the Plan should incorporate funding mechanism options specific to streets such bonds and potential tax rate increase (in consultation with City's Financial Advisor).

A 5-Year CIP for street improvements is included in **Table 3-7** is per the data in **Table 3-5** for all streets maintenance and reconstruction**.**

Table 3-7. 5-Year CIP – Streets (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Downtown Street Improvements	General	Capital	$ -	$ -							$ -
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ 400,000	$ -	$ 400,000						$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ 900,000	$ 600,000			$ 300,000				$ -
Edmond Street (Remaining)	Street	Capital	$ 200,000	$ -	$ 200,000						$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$ -	$ -							$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ -	$ -							$ -
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000	$ -	$ 150,000	$ 95,000	$ 95,000	$ 95,000	$ 95,000	$ 95,000	$ 325,000
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -		$ 830,349	$ 830,349	$ 830,349	$ 830,349	$ 830,349	$ -
Corrective Maintenance-Good	General	Capital	$ 5,931,065	$ -		$ 1,186,213	$ 1,186,213	$ 1,186,213	$ 1,186,213	$ 1,186,213	$ -
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -		$ 976,881	$ 976,881	$ 976,881	$ 976,881	$ 976,881	$ -
Poor Street Reconstruction	GF/Loop	Capital	$18,000,000			$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 8,000,000
Priority 2				$ -							$ -
Downtown Street Improvements	General	Capital	$ 1,500,000	$ -							$ 1,500,000
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ -	$ -							$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ -	$ -							$ -
Edmond Street (Remaining)	Street	Capital	$ -	$ -							$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$10,000,000	$ 8,778,000			$ 1,222,000				$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ -	$ -							$ -
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000	$ -							$ 950,000
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -							$ 4,151,745
Corrective Maintenance-Good	General	Capital	$ 5,931,065								
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -							$ 4,884,405
Poor Street Reconstruction	General	Capital	$18,000,000	$ -							$18,000,000
Priority 3				$ -							$ -
Downtown Street Improvements	General	Capital	$ 500,000	$ -							$ 500,000
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ -	$ -							$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ -	$ -							$ -
Edmond Street (Remaining)	Street	Capital	$ -	$ -							$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$ -	$ -							$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ 2,000,000	$ 1,760,000	$ 240,000					$ 240,000	$ (240,000)
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000								
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -							$ 4,151,745
Corrective Maintenance-Good	General	Capital	$ 5,931,065	$ -							$ 5,931,065
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -							$ 4,884,405
Poor Street Reconstruction	General	Capital	$28,000,000	$ -							$28,000,000
											$ -
TOTAL			**$127,251,645**	**$ 11,138,000**	**$ 990,000**	**$ 5,088,443**	**$ 6,610,443**	**$ 5,088,443**	**$ 5,088,443**	**$ 5,328,443**	**$81,038,365**

3.8 General Recommendations - Streets

Other recommendations that are applicable to the City of Taylor street system include:

1. Signage - There are many areas with outdated or non-compliant traffic signage in place. It is recommended that a comprehensive inventory and plan be completed to provide guidance on replacement signage per current traffic engineering guidelines. It is recommended that any 4-way stop intersection that is missing a stop sign along one or more legs of the intersection have new signage installed as soon as possible. In addition, the City should implement a replacement plan to keep all traffic signs up to date with proper lettering, reflectivity, etc.

2. Traffic Calming Devices – In the past, the City has added stop signs as a means to react to traffic complaints (such as speeding in residential areas, confusion on yields, etc.). There are many other strategies that can be considered such as:

    a. Curve streets – A very effective means on new thoroughfare or residential streets is to place slight curves in the streets. Straight long runs of roads tend to lead to elevated speeds (straight long run of roads occurs throughout Taylor). Curves tend to slow traffic "naturally" without negatively impacting emergency response times. Obviously, this is applicable for new subdivisions and will not work for existing streets. Taylor's governing rules for new subdivisions can be modified to incorporate some of this element.
    b. Medians – Raised curbed medians (or painted medians in some instances) in roads tend to have a "narrowing" effect of roads and thus slows traffic based on visual cues of the driver. If an existing street is wide enough, then existing street can be retrofitted with medians. These are most cost effective to install when streets receive full reconstruction.
    c. Traffic Round-a-Bouts – Intersection treatment with round-a-bout does slow traffic entering and leaving from adjacent streets. These tend to not slow traffic mid-block. Placement of round-a-bouts in adjacent intersections tend to help with speed. These tend to require more right-of-way at intersections and cost more to construct then traditional intersection. Retrofit to existing streets is generally not practical. These can be considered for new subdivisions.
    d. Speed Humps (or Speed Tables) – Speed humps are wider than speed bumps and have longer transitions from the road surface to the top of the speed table. The geometry is such that the entire wheel based of a vehicle transitions up to the level raised elevation and then transitions back down to the road. Speed humps are

placed mid-blocks to effectively slow speeds. The devices can be made from asphalt or concrete (painted) or a purchased device that is installed. These are an economical means to retrofit a speed reducing measure to existing residential (or collector) streets.

e. Signage – Stop or yield signs installed at certain intersections can slow traffic. These are very cost effective and easy to implement. Without careful study, unintended consequences can occur such as increased congestion, noise, pollution, or citizen complaints.

f. Digital speed displays – Digital speed display along the side of the road has the potential to slow traffic. These are generally non-enforceable and ignored by drivers. The digital display unit is oftentimes mobile and can be moved to areas of concern when needed. These are very effective near construction zones but are very expensive for a permanent traffic calming device along a street.

g. Speed Bumps – Speed bumps are often used in parking lots to slow traffic. Speed bumps are the narrow and small height "curb" like devices. Cars have to slow to near stop to safely traverse. These devices greatly reduced emergency response times. In general, speed bumps should never be used on streets.

Prior to implementing any traffic calming device, an engineering study and recommendation should be made and placed in the City's files. The cost will vary as described above. The street reconstruction costs assume some traffic calming devices are installed on select streets; details must be worked out during the project planning phase.

3. Speed Limits – In general, residential speed limits are 20 to 30 mph. Collector or thoroughfare streets have slightly higher speeds. If a change in speed is desired and a traffic calming device is not practical, then a change in speed with more enforcement can be implemented. Before any posted speed limit is changed, the City should have the area professionally studied to include vehicle counts, vehicle types, and existing speeds in the area. TxDOT has published "warrants" that can be used as guide to changing speed limits. If warrants are met, then speed limits can change. Based on the technical engineering results, a revision of speed limit can be considered by City Council.

4. Thoroughfare Impact Fee – The fee should be updated as required by the adopting ordinance (at a minimum every 5 years).

5. Bicycle Lanes – Taylor should consider adding more bicycle lanes along certain streets. Sidewalks are for pedestrian traffic and should not be considered bicycle path unless the path is specifically designed as a "hike and bike" trail. The development rules for new subdivision should be updated to include a requirement for bicycle lane along certain residential,

collector or thoroughfare streets. Bicycle lanes can be considered for existing streets. The street will need sufficient pavement width to install a bike lane to proper standards. On-street parking will be eliminated on the side of the street with the bike lane. Engineering study is required prior to retrofitting existing street with bike lane.

6. It is recommended the City update the PMR every 3 to 5 years. Given the condition of Taylor's street, the maximize time between PMR updates should be 5 years. The update should include field measurements of all segments identified in the report and incorporation of any new streets. The PMR is currently 5 years old (with condition assessment updated as part of this 2017 SFP).

4. SIDEWALKS

For the purposes of this Strategic Plan and City planning, hike and bike trails are not considered as sidewalks and will not be discussed in this section. Hike and bike trails are considered Parks Department facilities and are discussed in **Section 10 - Parks**.

Taylor does not currently have an inventory of City owned sidewalks. The City should consider having Sidewalk Master Plan with a full inventory and assessment of the sidewalk system in Taylor completed to aid in a thorough construction and improvement plan for sidewalks. This effort would be similar to a detailed Street Inventory/Pavement Management Plan (or a Parks Master Plan).

Taylor has many old sidewalks that are in a degraded state. These sidewalks, which are found in each council district, should be individually identified and determined whether demolition followed by placement of sod or reconstruction of concrete sidewalk is best option. In some areas, there is partial block sidewalk that does not connect to sidewalk on other side of street, parking or building. In these cases, it is recommended to remove sidewalks that are broken and uneven and replace with sod. In areas of high foot traffic where sidewalks are uneven, it is recommended to reconstruct the uneven sections.

Priority for new sidewalks should be based on pedestrian safety and accessibility. All sidewalks and street crossings should be based on the Americans with Disabilities Act criteria to maximize resident accessibility and use of the pedestrian transportation grid. Areas that typically see increased pedestrian traffic include near parks, downtown, schools, and parks.

Below is a list of criteria that should be included in the Sidewalk Master Plan including applicable notes and the general framework for the effort.

4.1 Sidewalk Assessment Summary

A full assessment should be conducted to create the Sidewalk Master Plan. Following the finalization of the Sidewalk Master Plan the City should assess at least 10% of the existing network annually to continue to identify sidewalk improvements.

4.2 Sidewalk Evaluation

The existing sidewalk system is in general fair to poor condition based on observations completed as part of the street inspections. Most areas do not comply with current TDLR/ADA standards (too large cross slopes, too large running slopes, non-existent or non-compliant curb ramps, etc.) In addition, the structural integrity has failed for many existing sidewalks. The existing sidewalk will require investment of funds to improve the system.

4.3 Sidewalk Expansion Areas

The sidewalk system can be expanded into current areas that do not have sidewalks. This can typically be accomplished in commercial and business areas

without issue. In established residential subdivisions, the addition of sidewalks can lead to push back by the citizens based on concerns to existing properties. A success story was the most recent TxDOT Safe Routes to School project completed along Mallard Lane, TH Johnson, and Pinehurst Drive. The work within the subdivision for placement of new sidewalk along Pinehurst Drive is an example of a successful project through proper communication to the residents (such as the various public meetings held during the planning and design process and communication accomplished during construction). **Figure 4-1** illustrates the new sidewalk that was placed along Pinehurst Drive.

Figure 4-1. Example of New Sidewalk along Existing Street

Placement of new sidewalk in existing street rights-of-way can be very successful

with proper communication throughout the process. Key areas that should be considered for sidewalk expansion include schools, businesses, and government buildings. Each subdivision should receive some means of pedestrian connectivity to other areas. The level of traffic, safety concerns, connectivity, etc. should all be carefully considered prior to adding sidewalk to existing streets.

4.4 Review City Standards

A review of the City standards applicable to sidewalks was completed as part of this 2017 Strategic Facility Plan. General recommendations follow:

- Development requirements - Residential developments are typically required to place sidewalks along one side of the street with option for both sides of the streets. This requirement should be updated to require new residential developments to place new sidewalk on both sides of the street. All commercial developments should require sidewalk along the property.
- The City of Taylor has means to pay fee in lieu of construction of sidewalk (mostly applicable to re-plat or 50% reconstruction). For purposes of the sidewalk system, all reconstruction projects should require reconstruction of the sidewalk in front of the building. It is also recommended the City review the current fee in lieu to determine if rate is acceptable. In general, the City requires sidewalk placement. (Some gaps in certain areas of town are based on old plats and lack of requirement for sidewalk at that time.)
- The City's Engineer's Manual specifies the permit requirements, inspections, minimum width (in general 5' but 4' allowed in some areas), construction materials, and architectural barriers act compliance. The standards appear adequate; the only recommendation is to clarify where 5' wide passing lanes are required where 4' wide sidewalks allowed.
- City code should address vegetative obstructions be kept off of existing sidewalks (intrusions in walking path should be clear up to 80").

As part of the recommended Sidewalk Master Plan, all the current standards should be analyzed in detail and upgraded where appropriate. Additionally, the Sidewalk Master Plan should indicate criteria to prioritize sidewalk projects.

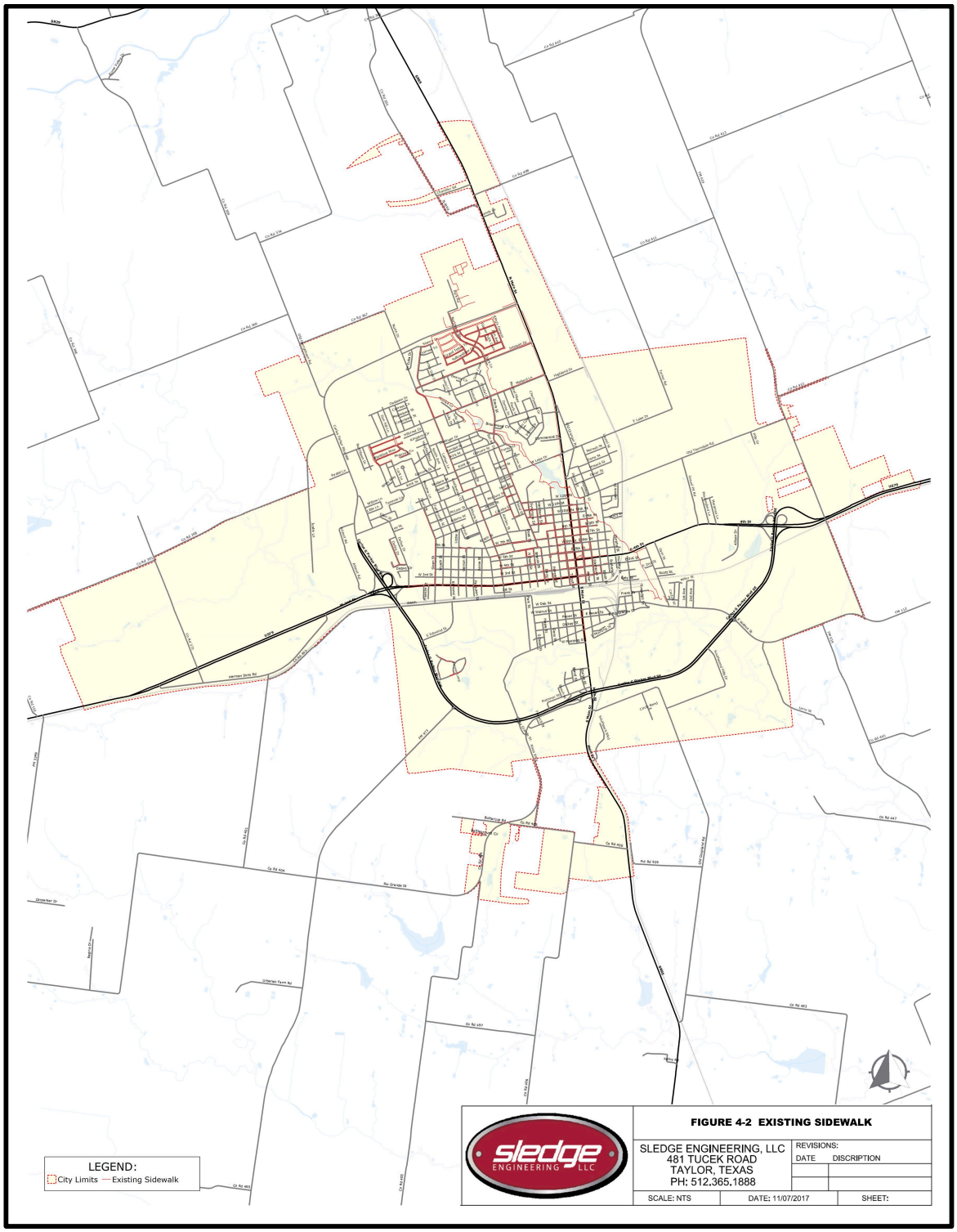
4.5 Sidewalk Goals

The sidewalk goals should be explored in detail as part of the recommended Sidewalk Master Plan. This effort can be accomplished with a mix of input from City staff, citizen groups, and Council to vision and develop comprehensive goals for the sidewalk and accessibility system within Taylor. The first goal recommended is to address the removal and replacement (if funds allow) of any sidewalk considered in poor condition that pose a safety risk to pedestrians. Another goal is to review the development requirements for placement of new sidewalk as part of residential and commercial developments. A major goal that is typically given high priority is constructing sidewalks within ¼ mile of all schools, bus stops, and parks. Any list of goals should include the acknowledgement that all sidewalks be constructed in accordance with TDLR/ADA standards.

4.6 Sidewalk Maps

Figure 4-2 illustrates the existing sidewalks in the City of Taylor.

Figure 4-2. Existing Sidewalks



**** See Digital Map (PDF) for clarity;** see Exhibits for Council Districts & larger scale*

It is estimated that the City contains approximately 130,000 LF or 25 miles of existing sidewalk in various conditions (good, fair, and poor).

An update (or full re-creation) to the City's current GIS is recommended as part of other department needs (streets, water, wastewater, etc.). The GIS database and mapping should be updated to include existing sidewalk location, slopes, conditions, etc. This effort can be completed as part of the Sidewalk Master Plan. The GIS system should be continually updated with any new sidewalk added to the system.

4.7 Long-Term Plan - Sidewalks

Reconstruction of existing sidewalks is recommended as part of the long-term plan for the City's sidewalk system. All sidewalks in poor repair with large separation at joints that create tripping hazards should be given top priority. All sidewalk improvements must follow current TLDR/ADA standards. Sidewalk placement can be either connected to back of street curbs or placed with mow strip between curb and sidewalk; this is location dependent controlled by grades and ability to meet all slope standards.

The long-term plan also includes the addition of sidewalks along streets that are currently without a walking path. All streets are not strategic for sidewalk placement as pedestrian traffic will be non-existent. New areas for sidewalk placement should be evaluated as part of the Sidewalk Master Plan to better refine the long-term budget needs.

Table 4-1 provides a long-term budget for both reconstruction and new sidewalks. If the City were to invest in placing 5' wide sidewalk along a single side of all 105 miles of street, the estimated cost of construction is $55,540,000.

Table 4-1. Long-Term Plan Budget – Sidewalk

Item	Priority 1	Priority 2	Priority 3	Total Per Item
Reconstruct Existing Sidewalk	$600,000	$600,000	$600,000	$1,800,000
New Sidewalk		$1,000,000	$1,000,000	$2,000,000
Sidewalk Master Plan	$40,000			$40,000
Total by Priority	**$640,000**	**$1,600,000**	**$1,600,000**	**$3,840,000**
Future New Sidewalk				*$55,540,000*
Total Sidewalk				*$59,380,000*

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

4.8 5-Year CIP - Sidewalks

Typical costs for sidewalk replacement is estimated $20/square foot (2017 costs). A standard 300-foot long city block would cost approximately $30,000 for a five-foot wide (5') sidewalk on one side of the road. The service life of a standard concrete sidewalk is approximately 75 years if properly designed and constructed.

In the next 5 years, a Sidewalk Master Plan should be completed. Until the Master Plan is completed, it is recommended the City plan to handle case by case necessary corrections to the existing sidewalks. Sidewalks with reported pavement failures in heavy foot traffic areas or where injury has occurred should be removed and/or reconstructed. It is suggested the City plan for a cumulative length of up to 2 city blocks (or +/-600 linear foot) of 5-foot wide sidewalk annually. The estimate repair costs annually prior to Masterplan completion is $60,000.

Table 4-2 shows the recommended 5-year CIP for sidewalks.

4.9 General Recommendations – Sidewalks

When considering future sidewalk projects, optional funding sources the City can consider for projects includes:

- Bonds, grants
- Enforcement fees
- TUF
- New development sidewalk impact fees
- Commercial and driveway assessment.

The City should continue to pursue Safe Routes to School projects as appropriate (and when TxDOT reinstates the funding program). Additionally, in areas where a hike and bike trail is more appropriate than a sidewalk, the City should continue to pursue TxDOT and TPWD grants to aid with construction.

Other general recommendations applicable to sidewalks follow:

1. Implement a Sidewalk Maintenance Plan – This plan is intended to address the immediate concerns. Items such as vegetation obstruction removal can be typically handled by City staff as appropriate or enforced per City code. Additionally, it is recommended that sidewalks with broken concrete, obstructions from differential settlement, or 2 inch drops along the walking path be removed or replaced in areas with daily foot traffic to avoid tripping hazards and improve safety. Any sidewalk installed should meet TDLR/ADA standards (2% cross slope max, 5% running slope, 8.3% ramps without handrails, etc.).

2. Conduct a Sidewalk Master Plan.

Table 4-2. 5-Year CIP – Sidewalk (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -		$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 300,000
New Sidewalk	General	Capital	$ -	$ -							$ -
Sidewalk Master Plan	General	Capital	$ 40,000	$ -		$ 40,000					$ -
Priority 2				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -							$ 600,000
New Sidewalk	General	Capital	$ 1,000,000	$ -							$ 1,000,000
											$ -
											$ -
Priority 3				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -							$ 600,000
New Sidewalk	General	Capital	$ 1,000,000	$ -							$ 1,000,000
											$ -
											$ -
											$ -
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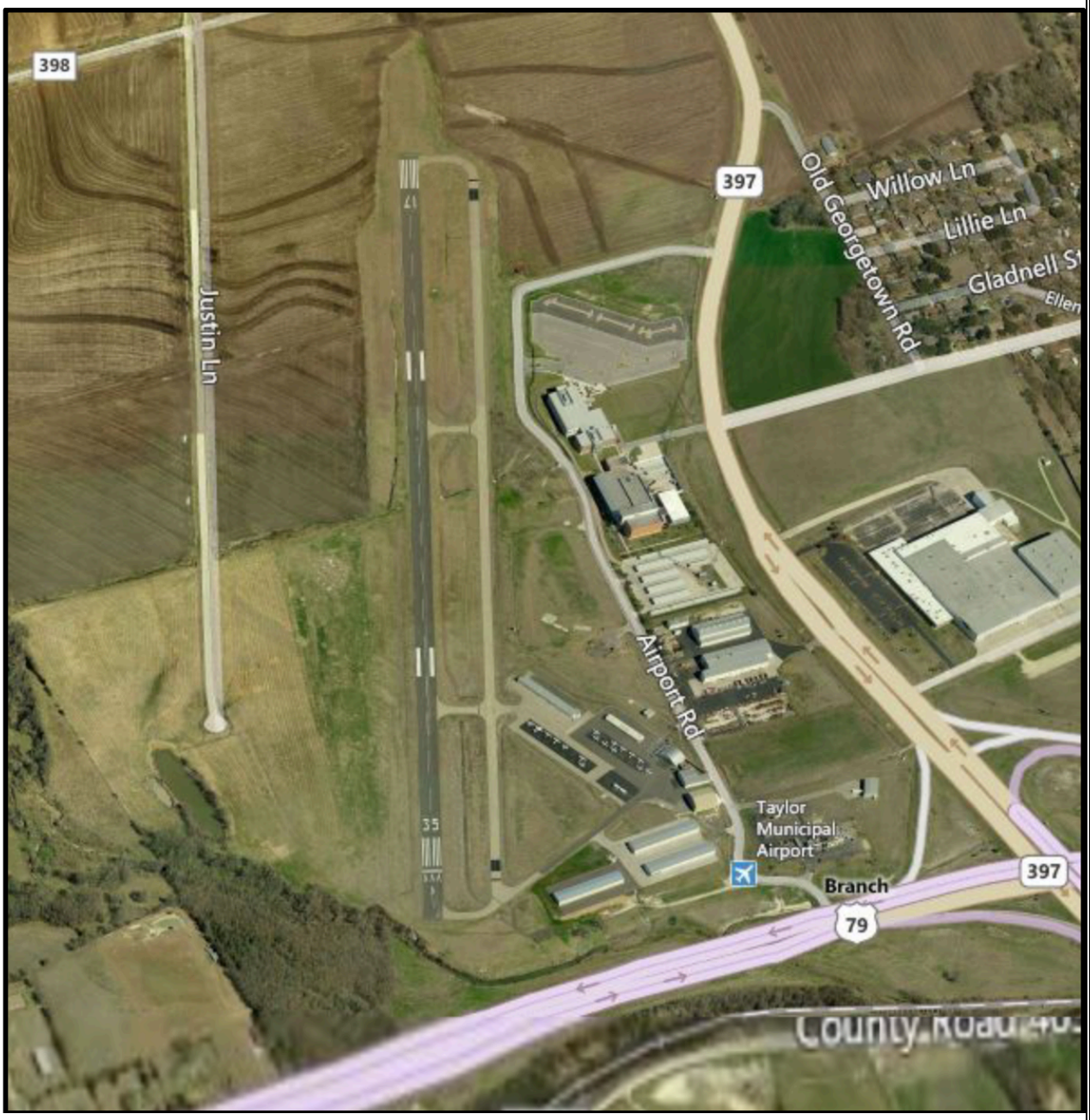
											$ -
											$ -
											$ -
											$ -
TOTAL			$ 3,840,000	$ -	$ -	$ 100,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 3,500,000

5. AIRPORT

The Taylor Municipal Airport (T74) is a general aviation airport located at the northwest corner of Highway 79 and Airport Drive in Taylor, TX. The airport is owned and operated by the City of Taylor. The airport provides very positive economic benefit to the City of Taylor and surrounding area. An aerial map of the airport is provided in **Figure 5-1**.

Figure 5-1. Airport General Location Map



As reported in the "2015 Preliminary Engineering Report" prepared by KSA Engineers, the facilities currently in place on the airport include:

1. HMAC Paved Runway 17-35 (4,000' x 75'), ARC B-II, Non-Precision Instrument
2. Parallel and Connecting Taxiways
3. Ramp and Apron Area with 27 Tie-Down Spaces
4. Box Hangars and 52 T-Hangars
5. Fueling Facilities
6. Terminal Office
7. Rotating Beacon
8. Wind Cone and Segmented Circle
9. Medium Intensity Runway Lights (MIRLs) on Runway 17-35
10. Precision Approach Path Indicators on Runway 17-35

Currently all City owned hangars are rented and a long waiting list of future tenants is being kept. The City has recently constructed a set of 12-unit T-hangars to increase the number of based aircraft. The T-hangars are expected to be available for new tenants by the end of 2017.

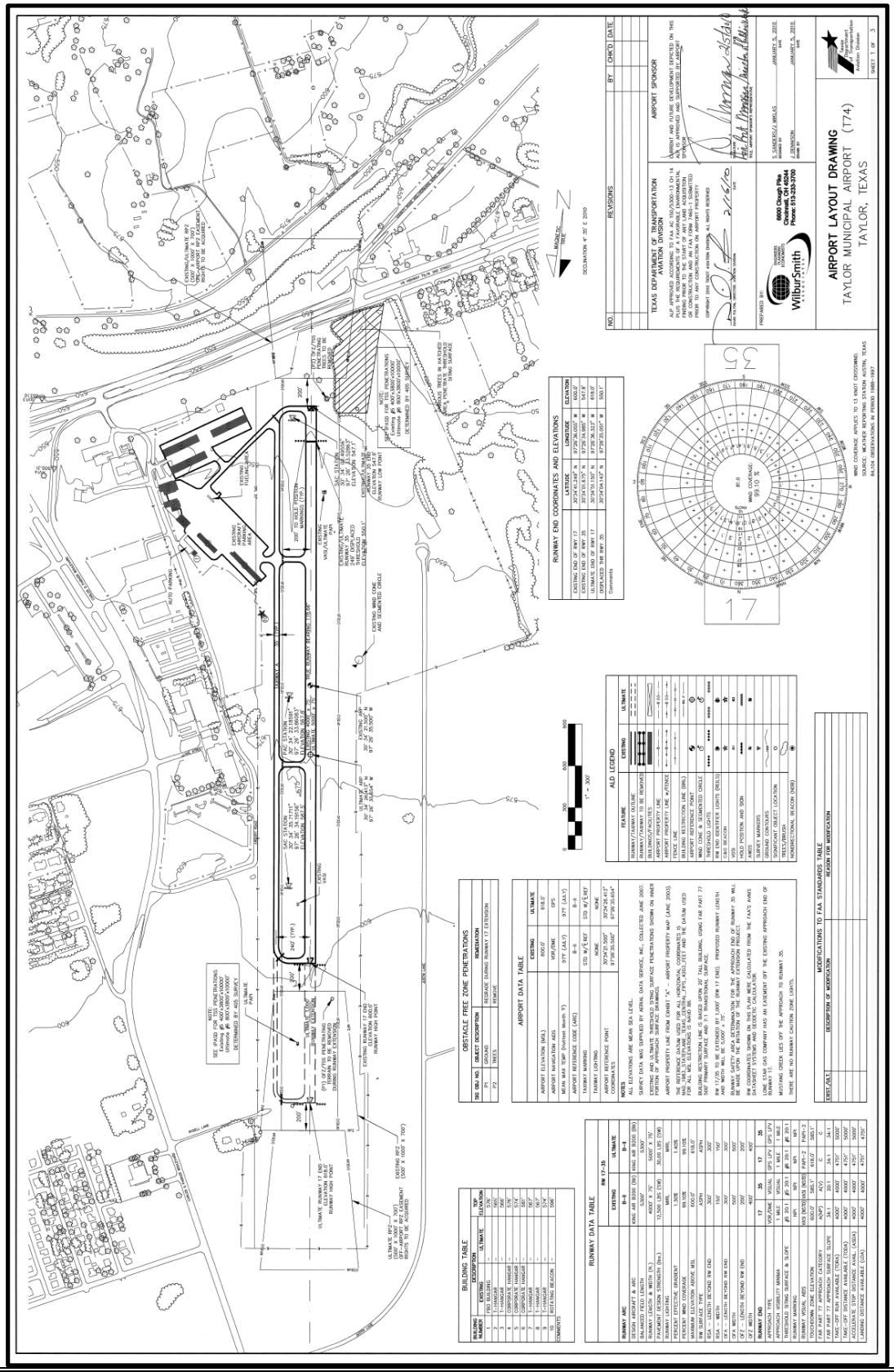
The City has completed many safety improvements at the airport over the last 5-years. These improvements include:

- Installation of new LED PAPI-2 (first LED PAPIs in the State of Texas!)
- Partial reconstruction of the parallel taxiway to eliminate undulation at the north end
- Pavement seal and restriping of runway, taxiways and hangar areas (increases surface traction, reduces FOD from raveling pavement, increases visibility from the air)
- Construction of airport perimeter fence to increase security and reduce wildlife access to airport
- Re-grading north of runway 17 and tree trimming to reduce obstructions within the threshold siting surface.

Most of the improvements were completed with 90/10, 75/25, and 50/50 grants. With the grants, TxDOT Aviation funds pay for 90%, 75% and 50% of the particular improvement and the City matches with the other 10%, 25% or 50%. There is no other infrastructure that the City owns that is so well funded primarily from outside sources. Small investment by the City is magnified by TxDOT Aviation funding. This enhances the positive economic input that the airport provides to the City.

There are some projects that TxDOT Aviation will not fund, such as City requested or mandated improvements that are not required by the FAA or TxDOT Aviation. The City is free to construct improvements on the City owned airport without TxDOT funds at any time. However, all improvements completed on the airport should be working towards meeting the ultimate plan as laid out in the Airport Layout Drawing (ALD). **Figure 5-2** shows the most recent completed ALD.

Figure 5-2. Taylor Municipal – Airport Layout Drawing



5.1 Airport Budget and Project Funding

Currently the airport fund is self-sustaining with an airport manager and one part-time employee. The FY 17 budget is $468,000. The current annual hangar and tie-down revenue is approximately $157,000.

The City currently plans to fund the next set of projects at the airport with a Certificate of Obligation Bond Issuance. A $1.5M bond was issued for airport projects, and payments began in FY2017. The airport will self-fund bond repayment over 10 years. City Council has committed to waiving the Airport's contribution to the General Fund based on fund performance. The airport has a multi-year hangar rate increase planned to aid in generating the funds necessary for bond repayment.

Over the years many improvements have been completed with the aid of monies from various Texas Department of Transportation-Aviation Division (TxDOT Aviation) grants. The TxDOT Aviation grants are monies from Federal Aviation Administration (FAA) funds and State of Texas funds. The City has been proactive in requesting and receiving funds to offset the costs of maintenance and improvements to increase safety at the airport.

The existing terminal building is not efficient for managing the airport and providing pilots with necessary areas. The building does not provide an office for the airport manager to allow items to be locked and kept from the public. Additionally, there is not a separate pilot lounge or classroom. The proposed location of the new terminal building will move the terminal to be more central to the runway length thus allowing better observations of the runway from the terminal.

The T-hangars farthest south are newer and in relatively good condition. They did experience some flooding in the 2015 flood that is considered to be 500+ year flood event. However, the structures fared well and all are currently occupied. The T-hangars (A and B) north of the terminal area are at the end of their usable life. They are recommended for demolition and replacement. The City does not own the current box hangars on the airport. The businesses operating out of the hangars own them and lease land from the airport.

The runway lights and PAPI are in good condition.

The pavement recently rehabilitated is in good condition. The terminal area apron pavement is in poor condition. This area should be reconstructed. The hangar taxilane pavement is in generally good condition following the recent rehabilitation.

5.2 Long-Term Plan - Airport

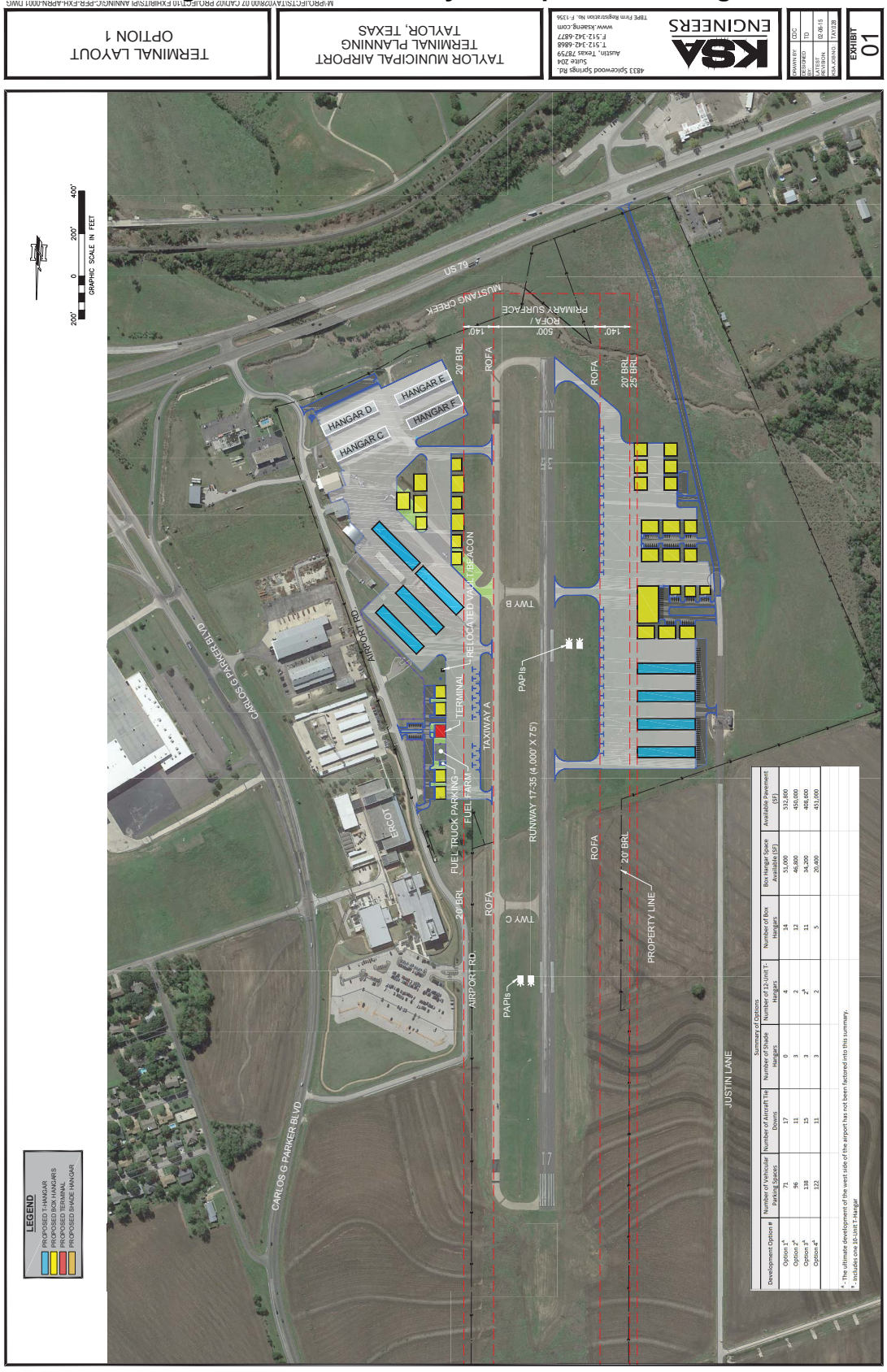
The 20-year plan for the airport includes a runway project that will increase the length of the usable landing space to 5,000 feet. To get to 5,000 feet of usable landing space, the runway will be increased to approximately 5,600 feet to allow the threshold to be displaced an additional 250 ft due to electrical lines and hillside immediately south of the runway (US 79 end).

The runway extension project has and continues to be discussed with TxDOT Aviation planning staff. One of the key factors to trigger TxDOT Aviation consideration of awarding grant funds for a runway expansion project is proof that an increase in length will bring larger aircraft to the airport. This proof is often in the form of letters from pilots stating they would use or move their plane to the airport if the runway were longer. Typically, letters are difficult to get pilots to commit to and provide. As an alternative, TxDOT Aviation requests confirmation from the airport owner, the City, that pilots have indicated this verbally. Another key factor is traffic at the airport. It is important that the airport sees enough airside traffic to warrant grant money based on use. The grants awarded by TxDOT Aviation are ultimately awarded based on improvements to the airport system within the state. TxDOT Aviation needs information provided that confidently indicates that the project will increase the safety and usability of the airport and that the City can maintain any improvements. The runway extension will provide another runway in the growing Central Texas area that can accommodate business jets. As discussed in the "Terminal Development Plan" prepared by KSA Engineers in 2015, the Central Texas area is one of the fastest growing in country. The increase in business jets is expected to increase jet fuel sales resulting in more revenues for future airport maintenance and improvements.

Ultimate development of the airport following the runway extension includes a business park to be located to the west of the runway (see Terminal Layout Option 1 – **Figure 5-3**).

The long-term plan includes general pavement rehabilitation. A rehabilitation of much of the airport pavement was completed in 2017. Pavement seals (method used in 2017 for pavement rehabilitation) are usually effective for 3 to 7 years. It is expected the airport will rehabilitate pavement again in the next 5-10 years.

Figure 5-3. Terminal Layout - Option 1 Phasing



5.3 5-Year CIP - Airport

The current TxDOT Aviation CIP includes terminal area improvements. The improvements were evaluated and estimated in the "Terminal Plan Study" prepared by KSA in 2015. TxDOT Aviation, City Staff, Sledge Engineering and KSA Engineering have had multiple meetings throughout 2016 and 2017 to determine order of projects and funding sources anticipated for each. **Figure 5-4** – Terminal Layout – Option 1 Phasing shows the project area expected to be completed in the next five years. Phase 1 of the layout shows the general location for the new terminal building, new fuel farm, auto parking and new tie-down apron.

The various planned improvements are eligible for different state/city match grants. The August 2017 draft CIP from TxDOT Aviation can be found on the TxDOT.gov website. The order of the projects is still being adjusted and changes to funding sources and projects was discussed as recently as early September 2017. Consideration is being given to the City constructing a new terminal building with 100% City funding to allow for a fuel farm project to be covered with 80/20 grant funds. The estimated cost of the new terminal building is $600,000.

Current planned improvements (in relative order) for the next 5 years are shown as Priority 1 in **Table 5-1**. Also shown in **Table 5-1** are long term projects expected after 5 years.

Table 5-1. Long-Term Plan Budget – Airport

Project Type / Title	Priority 1	Priority 2	Priority 3	Total
Airport AWOS	$190,000			$190,000
Terminal Apron/Connector Taxiways	$3,274,670			$3,274,670
Fuel Farm	$700,000			$700,000
New Terminal	$690,000			$690,000
New terminal auto access (at same time as new fuel farm and preferably at same time and coordinated with new terminal apron)	$300,000			$300,000
Reconstruct Apron & Shade	$1,543,025			$1,543,025
Project Management/Contingency	$205,210			$205,210
Pavement Rehabilitation		$350,000		
12-Unit T-Hangars (2)		$1,300,000		
Runway Extension			$2,700,000	$2,700,000
Total	**$6,902,905**	**$1,650,000**	**$2,700,000**	**$11,252,905**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

The projected 5-Year CIP for the Airport is shown in **Table 5-2**.

Figure 5-4. Terminal Layout – Option 1 Phasing

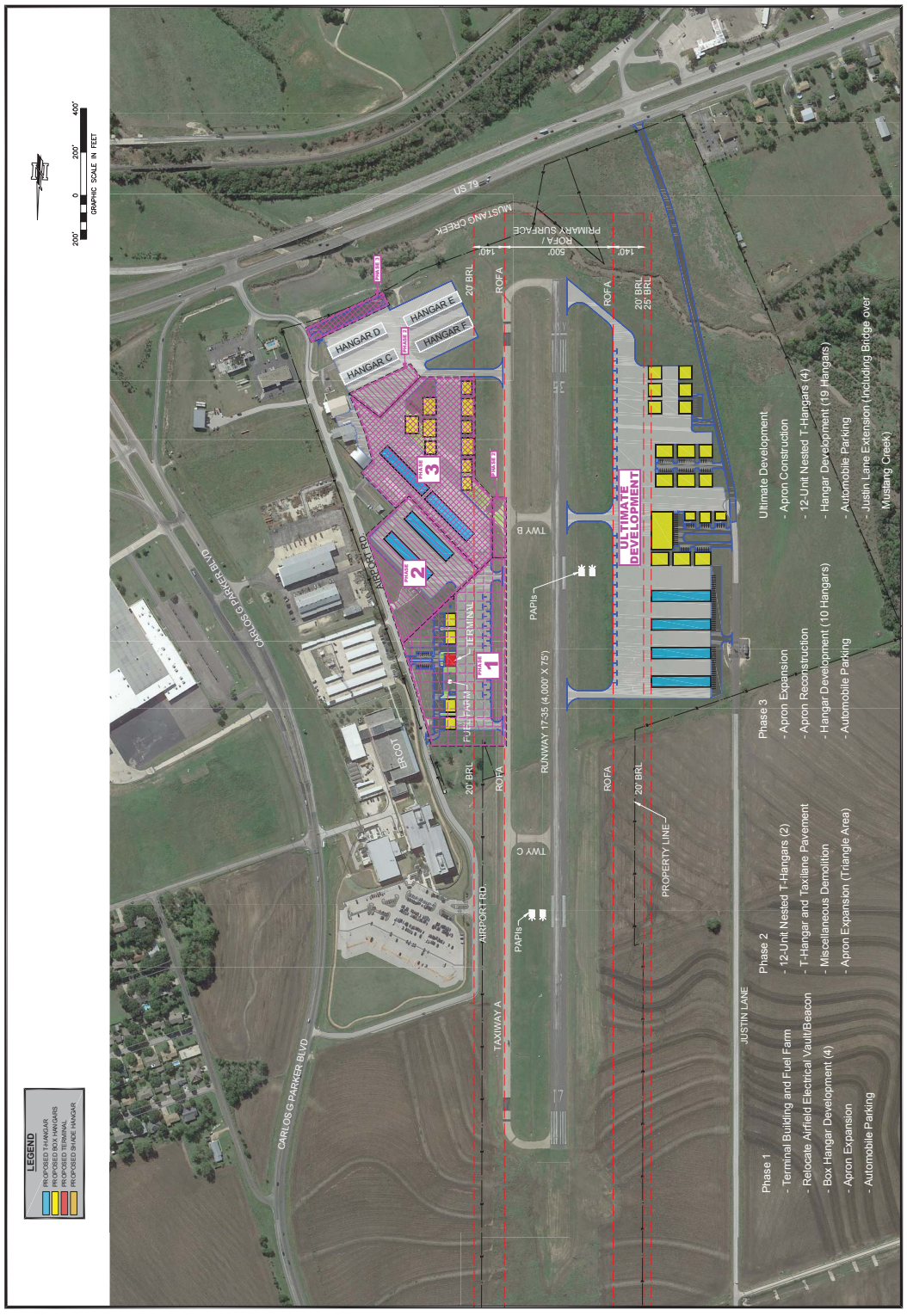


Table 5-2. 5-Year CIP – Airport (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Airport AWOS	TxDOT, CO1	Capital	$ 190,000	$ 142,500	$ 47,500						$ -
Terminal Apron and Connector Taxiways	TxDOT, CO1	Capital	$ 3,274,670	$ 2,947,203		$ 80,000	$ 247,467				$ -
Fuel Farm	TxDOT, CO1	Capital	$ 700,000	$ 525,000			$ 175,000				$ -
New Terminal	TxDOT, CO1	Capital	$ 690,000	$ -		$ 70,000	$ 620,000				$ -
New Terminal Auto Access	TxDOT, CO1	Capital	$ 300,000	$ -		$ 40,000	$ 260,000				$ -
Reconstruct Apron & Shade	TxDOT, CO1	Capital	$ 1,543,025	$1,234,420					$ 308,605		$ -
				$ -							$ -
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Project Management and Contingency	CO Bonds #1	Professional /Other	$ 200,931	$ -	$ 5,700	$ 31,985	$ 116,955		$ 46,291	$ -	$ -
TOTAL			**$ 6,898,626**	**$4,849,123**	**$ 53,200**	**$ 221,985**	**$1,419,422**	**$ -**	**$ 354,896**	**$ -**	**$ -**

5.4 General Recommendations - Airport

The City of Taylor should consider paying for design of runway expansion 100% City funded. At the end of each fiscal year, if TxDOT Aviation has funds left over, they are willing to award the money to projects that are already designed and ready for construction. Having the plans prepared and ready can possibly aid in being awarded funds earlier than the approximate 5-10 years currently anticipated. The pavement work for the runway is expected to be paid 90/10 and the runway lights are expected to be 75/25. This should only be considered if the City believes it will have available match funds at the time the project would be bid.

Hangars A and B are at the end of their usable life. New t-hangars should be considered as shown on Terminal Layout Plan, and hangars A and B demolished. Due to the current 70+ person hangar waitlist, it is recommended hangars A and B not be demolished prior to plans to construct new hangars.

6. DRAINAGE

The City of Taylor is located in the eastern portion of Williamson County, Texas. The Taylor area is generally known as the main agricultural community in the county. According to the Soil Survey of Williamson County Texas (United States Department of Agriculture – Soil Conservation Service, 1983), the soils are defined as Texas Blackland Prairie Land Resource Area. The soils are mostly clay. The topography is generally nearly level to gently sloping broad stream terraces and undulating uplands. These features impact the overall drainage in Taylor.

Drainage in Taylor generally flows from the northwest to the southeast. The major drainage creeks include the following:

1. Mustang Creek – This creek generally routes from the northwest of Taylor to the southeast side of the city. The City's wastewater treatment plant discharges into Mustang Creek. The creek flows into Brushy Creek in Segment No. 1244 of the Brazos River Basin. The creek's elevation changes from approximately 600 on the northwest side of town down to 490 near the intersection with the city limits on the southeast. Mustang Creek has connecting tributaries named Little Mustang Creek and N. Fork Mustang Creek located generally north and west of the airport. There is also an unnamed tributary located on the southside of US 79 which commences near the Taylor High School and routes to the east to merge with Mustang Creek below the discharge of the WWTP. Bull Branch is a major tributary of Mustang Creek.

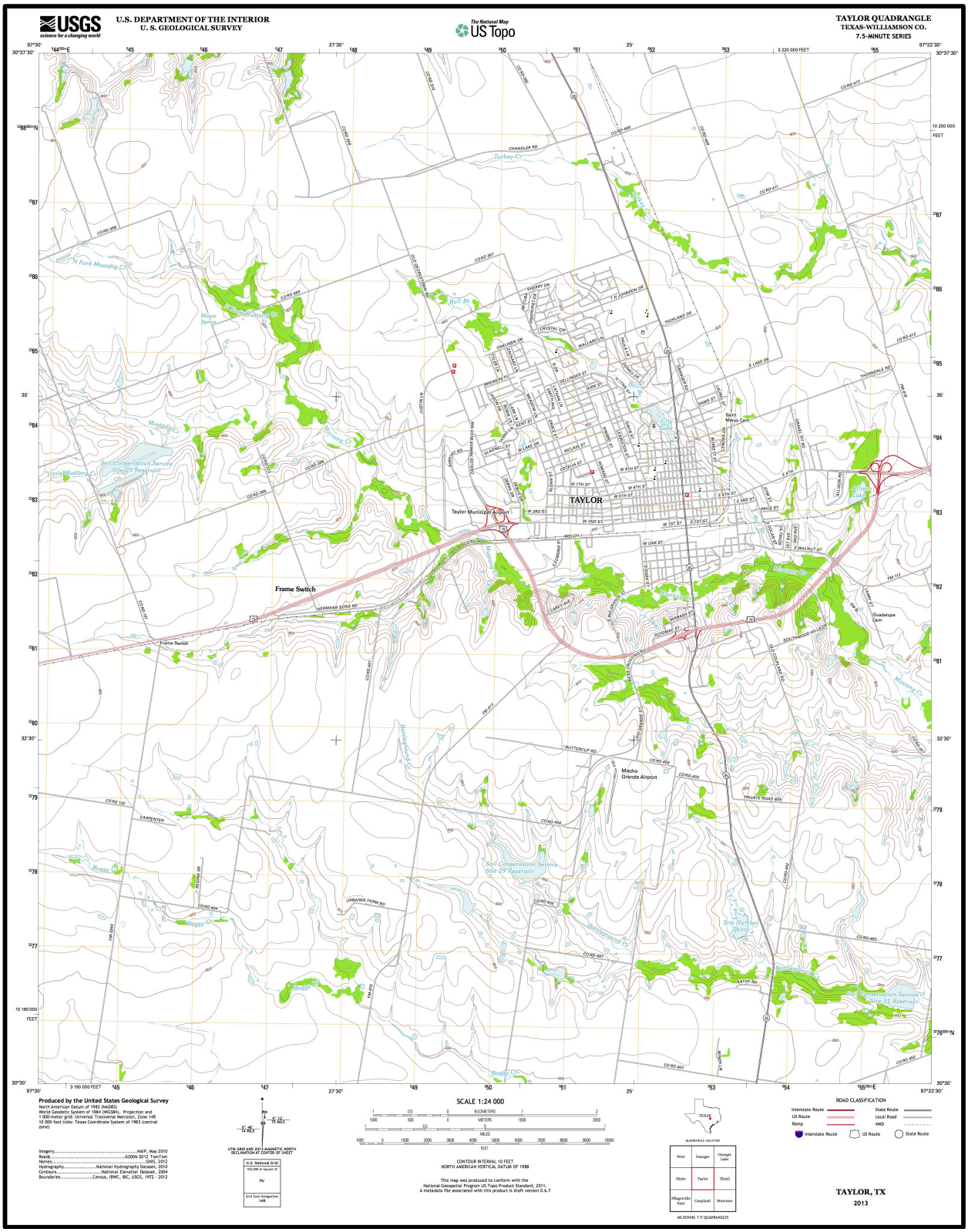
2. Bull Branch – Bull Branch starts on the north side of Taylor at elevation of 610 near the intersection of Old Georgetown Road and County Road 369. Bull Branch generally runs through the middle of town toward the southeast. Bull Branch flows into Mustang Creek between E. Walnut Street (on the north) and US 79 (on the south). The approximate elevation of Bull Branch at the confluence with Mustang Creek is 500.

3. Turkey Creek – Turkey Creek originates on the north side of Taylor near Chandler Road (approximately elevation 630). It generally flows to east to the Thrall Quadrangle. Near the city limits of Taylor, the elevation of Turkey Creek is approximately 550.

Figure 6-1 provides a copy of the USGS 7.5-Minute Quadrangle Map for Taylor. The topographic contours are at 10' intervals.

Figure 6-2 shows the USGS Quadrangle aerial map from 2010.

Figure 6-1. USGS Topographic Map – Taylor Quadrangle



** See Digital Map (PDF) for clarity*

Figure 6-2. USGS Aerial Map – Taylor Quadrangle

**** See Digital Map (PDF) for clarity***

6.1 Floodplain Maps Review

The existing Federal Emergency Management Agency (FEMA) flood plain maps for the City of Taylor were reviewed. The current maps are dated 2008. A general overview of the floodplain map is provided in **Figure 6-3**. The map shows the major drainage creeks as previously described. For each creek, the floodplain map shows the following elements:

- Floodway (i.e., main channel that contains the base flood event; development is not allowed in floodways)
- 1% annual change (or 100-year storm event)
- 1% approximate level (100-year storm)
- 0.2% annual chance (or 500-year storm event)

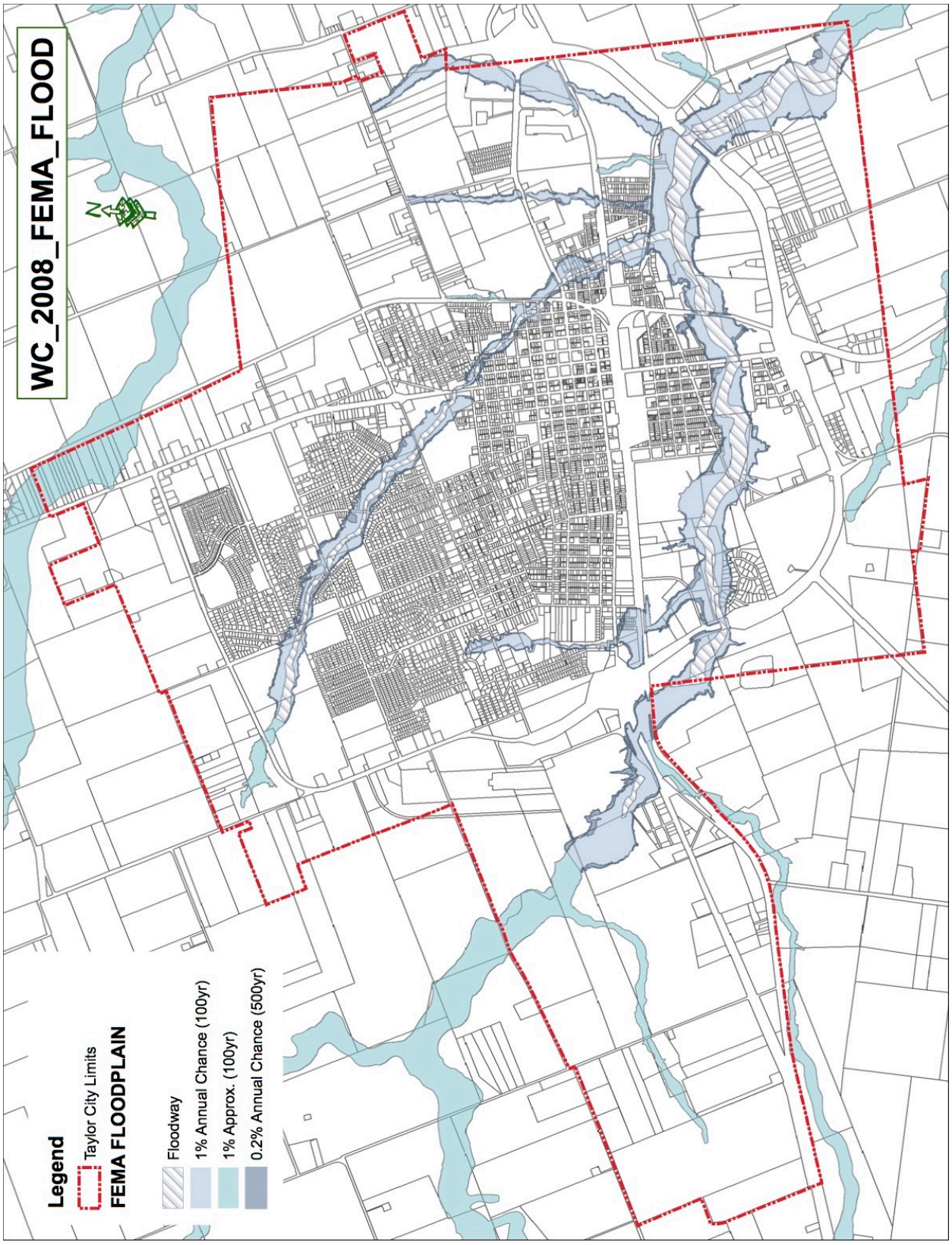
Flood elevations can be determined by overlaying the floodplain map with the topographic map. Detailed survey of any area can be provide a more exact floodplain level for either the 100-year or 500-year floodplain.

Areas outside of floodplains can certainly “flood”. Flooding can occur can based on many factors such as local rainfall patterns, topography changes, undersized local drainage features, blocked drainage elements downstream of the area (such as culverts or ditches), etc.

The maps appear to represent reasonable 100-year and 500-year floodplain boundaries from a holistic standpoint. Minor changes may be applicable in the future based on development, significant land use changes or additional area specific studies.

The City should remain actively engaged when FEMA periodically updates the floodplain maps.

Figure 6-3. FEMA Floodplain Map (2008)



6.2 Previous Studies

Various drainage specific evaluations have been completed in Taylor over the years. As problem areas were identified, specific evaluations were completed. As new development occurs, drainage reports must be submitted for review and approval by the City. While area specific studies have been completed, there have been few city-wide plans developed. The two most applicable regional type efforts include: 1) FEMA floodplain studies to develop floodplain maps and 2) development of the Municipal Drainage Utility System (MDUS). The creation of the MDUS provided a strong basis for continually studying the drainage needs of the City of Taylor.

The City's website provides a brief history and summary of the MDUS. The applicable information is provided herein for ease in reference:

- History – "The City Council investigated the establishment of a rate for a Municipal Drainage Utility System (MDUS) beginning in 2006. Current legislation allows a City to collect a fee to address drainage related issues in the community including localized flooding, emergency operations, and the cost of providing infrastructure and facilities that permit the safe drainage of storm water. Chapter 552,041 of the Texas Local Government Code provides strict guidelines on determining a rate that must be equitable, fair and reasonable among all customer classes."

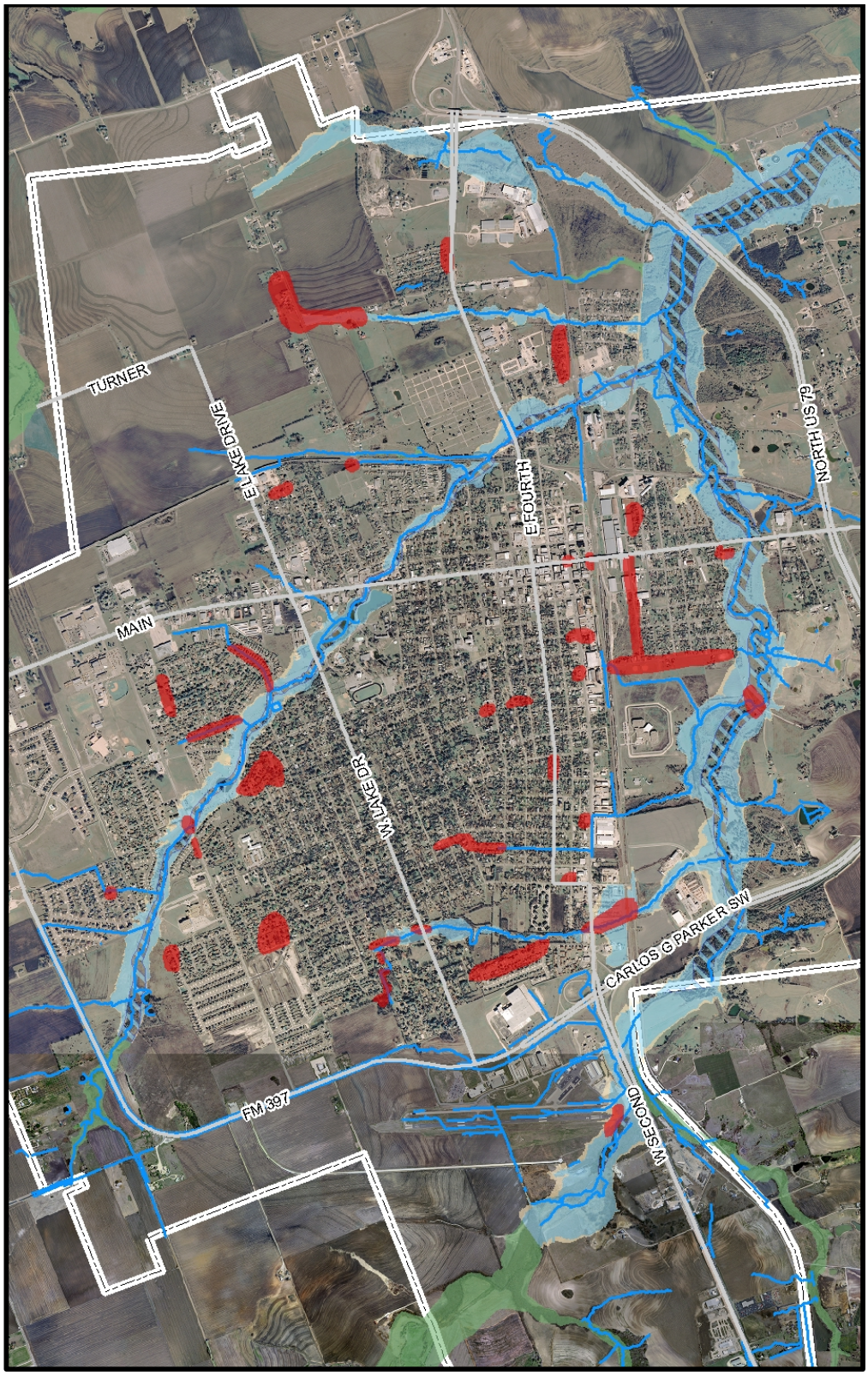
- Ordinance and Fees – "On October 8, 2009 the council introduced an ordinance to create the Utility System and on August 12, 2010 set a rate calculated as $2.00 for each ERU (equivalent residential unit) or 2,500 sq ft of impervious area. Based on a study conducted by Halff and Associates, the median single family residential property in Taylor has been determined to have approximately 2,500 square feet of impervious area or 1 ERU. Residential property is considered 1 ERU and residents are assessed $2.00 per month on their utility bill. Council did not approve any exemptions at the August 12, 2010 meeting."

  "Non residential property fees are based on total impervious area divided by 2,500 square feet to determine the number of ERU's or billing units. For example, if a non residential property has 5,000 square feet of impervious area their monthly fee would be $4.00 or $2.00 for each ERU. The fee became effective on January 1, 2011."

The Halff report referenced above is the "Storm Drainage Master Plan for the City of Taylor, Texas" prepared by Halff Associates dated February 2005. This study provides a good summary of the hydrology of the watersheds (but did not include hydraulic studies of the streams that refine floodplain levels).

The original problem area map was generated as part of the study for MDUS. The 2009 drainage issue map is provided in **Figure 6-4** (red areas indicated known issues). The 2009 cost estimates showed an average annual need of $1.6 million to fund identified drainage issues.

Figure 6-4. MDUS – Original (2009) Priority Drainage Problem Areas Identified



MDUS funds can be allocated to the following costs:

- Land, ROW, easements
- Drainage structures & facilities
- Engineering for drainage
- Machinery & equipment
- Funding and financing
- Debt service.

Projects are identified and assigned to the City's 5-year CIP. The drainage projects to be funded through the MDUS are updated annually.

The current MDUS priority list will be discussed in **Section 6.6**.

6.3 City Drainage Criteria

The City of Taylor's drainage criteria is governed by a series of documents. The main criteria that controls development and drainage requirements include but not necessarily limited to:

- Flood Damage Prevention Ordinance – Ordinance 2008-36
- FEMA Floodplain Map – 2008
- City of Taylor – Engineering Manual & Details – November 2009

These documents were reviewed in detail. There are no changes recommended as part of this 2017 Strategic Facility Plan.

6.4 New Problem Areas from 2015 Flood

The major rainfall event Memorial Day weekend of 2015 was unique in the amount and intensity of rainfall received. Based on flood water levels around the airport, the flood was considered a 500+ year event (of 0.2% probability of occurrence). To further illustrate, water levels at the airport flooded the T-Hangars. The finished floor elevations of the hangars are set at 549.5' MSL which is *5' above* the 100-year floodplain in the area (544.0' MSL). Water was approximately 2.5' in the hangars (or net 7' above 100-year flood level).

As a result of the major flood event, there was immediate need for cleanup. This included drainage channels and features that were filled with debris or otherwise damaged. **Figure 6-5** summarizes the cleanup estimate from 2015. In addition, there was street and curb damage as a result of the storms.

From a long-term perspective, drainage improvements tend to focus on the 100-year storm. Although the storm of 2015 was very rare, drainage improvements for major creeks or drainage features should consider larger storms where economically feasible.

Figure 6-5. 2015 Flood – Cleanup Summary

City of Taylor Public Infrastructure Storm Damage Repair Estimate*

Prepared May 28, 2015

	Location	Damage Description	Estimate
1	Bull Branch Park	signicficant asphalt damage to parking lot	$20,000
2	Bull Branch Park	~100 ft of fence down on ball field near Mallard Lane	$3,000
3	Bull Branch Park	~40 ft fence down on t-ball field	$1,200
4	Bull Branch Park	possible leak in concession building roof	$2,000
5	Murphy Park	1 tennis court light pole down	$5,000
6	Murphy Park	fencing down around tennis courts	$9,000
7	Murphy Park	2 wooden ball field light poles down	$12,000
8	Murphy Park	wooden bleachers are damaged	$2,000
9	Murphy Park	tennis court windscreen	$8,000
10	Murphy Park	sections of pavilion roof is bent/damaged	$1,000
11	Murphy Park	many large branches and 1 tree down near/in pavilion	$200
12	Robinson Park	playground fall protection washed away	$6,000
13	Robinson Park	ball field erosion	$45,000
14	Robinson Park	most of fencing is down around the field	$20,000
15	Robinson Park	volleyball court sand washed away	$2,000
16	Robinson Park	parking near playground eroded	$5,000
17	Taylor Regional Park	sports equipment damaged or washed away	$5,000
18	1911 Southwood Hills	fallen tree - damage to road shoulder	$2,000
19	107 Airport Road	airport lift station	$120,000
20	107 Airport Road	fence southside of Hangars D&E ~50 ft	$1,500
21	107 Airport Road	fence east side adjacent to airport rd - ~30-40 ft	$1,200
22	107 Airport Road	windsock washed away - damage extent unknown, mechanism recovered, at this time assuming base ok	$300
23	107 Airport Road	1 electrical pull box lifted (no longer flush with ground)	$500
24	Wastewater plant	fence down in areas	$30,000
25	Wastewater plant	possibly some pump repair needed	$40,000
26	West side of city cemetary	fence washed away	$15,000
27	South of Murphy Park to 4th St	6' hike and bike trail crushed gravel washed away	$80,000
28	City Shop	fence, road, equipment washed away	$10,000
29	2nd and S Doak	stop sign down	$100
30	Lorax Ln	culvert scour, one lane closed	$50,000
31	CR 101	scour damage at Mustang Creek bridge	$5,000
32	CR 369	scour and guardrail damage at Mustang Creek bridge	$20,000
33	Citywide	road damage - potholes, scouring, curb damage	$45,000
		TOTAL	**$567,000**

Items are in no particular order

*This estimate is for public infrastructure work only. It does not include debris cleanup (manhours, disposal, etc.) or any personal property cleanup (yard, house, tree clearing, etc.)

6.5 Key Areas of Drainage Problems

There are two general groupings of drainage problems in Taylor. One deals with on-going maintenance and the second requires capital improvement projects.

Maintenance is needed for all drainage systems in the City. These are on-going annual needs. Storm sewers and culverts should be maintained by keeping pipes free of debris and sediment build up. Without keeping the storm sewers and culverts clean, capacity is loss which can lead to localized flooding. Open channels (either concrete or block lined or grassed covered) throughout the City are currently in need of cleaning. Any blockages or sediment build up should be removed. Also any creek overgrowth should be cleared. The City should budget for on-going maintenance or hire crews to address. In general, MDUS funds cannot be used for routine maintenance work but can be used to purchase equipment.

Capital improvement projects are part of the on-going MDUS projects and generally require engineering design and construction via bid procurement process. The long-term plan includes capital projects specific for drainage.

6.6 Long-Term Plan - Drainage

The long-term areas of concern are best summarized by the current MDUS projects. The MDUS 2017 list of projects is summarized in **Figure 6-6** and illustrated on an aerial map in **Figure 6-7**.

As seen in **Figure 6-6**, one project is listed as “under design” (blue highlight). This project is the Edmonds/Mills Street drainage improvements with a probable total cost of $957,000 (The project will be bid with alternatives and will likely be phased). Other projects recommended based on available MDUS funding totals $478,500 (green highlight – these items are Severity 3 which fit into available MDUS funding). The remaining projects total $4,037,175. The total of all projects is $5,655,000. The City’s 5-year CIP should incorporate priority projects and adjust based on actual bids received by the City for the various projects as they progress.

Beyond the current identified priorities, there are many other local issues that will require attention. As projects are addressed on the current MDUS list, other projects can and should be added. Other drainage projects beyond the MDUS list shown in **Figure 6-6** is estimated as $6,000,000 assuming the current strategy is maintained in the future to address local drainage issues.

The City should also proactively complete a floodplain study and submit any local changes to floodplain to FEMA. Previously, letters of map revisions (LOMRs) were identified as a need for Mustang Creek and tributaries.

Figure 6-6. 2017 MDUS Project List

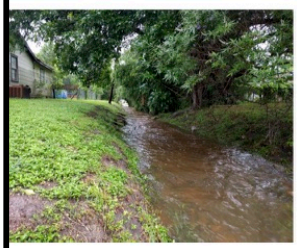
Taylor MDUS CIP Projects - Miscellaneous Drainage Improvement - Project Priority List

Priority	Project	Number of Affected Properties	Approx Cost Per Residence Affected	Probable Total Cost	Level of Severity
1	Edmond and Mills Street	43	Phase 1: $22,260	Phase 1: $957,000	3
2	Donna Channel*	15	Option 2: $117,333	Option 2: $1,760,000	3
3	2709 Kelly Drive	1	$11,000	$11,000	3
4	1609/1611 Castlewood Ct.	4	$13,000	$52,000	3
5	Paula Lane/Medical Parkway*	2	$16,500	$33,000	3
6	Laurel/Sams Street	10	$17,000	$170,000	3
7	800 Kirk Street	2	$19,250	$38,500	3
8	1st Ave/Royal St/Walnut*	7	Option 1: $25,285 Option 2: $51,428	Option 1: $177,000 Option 2: $360,000	3
9	1806 N Lynn Street	2	$26,500	$53,000	3
10	Booth/Oak (Walnut)*	2	$27,500	$55,000	3
11	Reece residence on 2nd Street*	3	Option 1: $53,333 Option 2: $32,000	Option 1: $160,000 Option 2: $96,000	3
12	Oaklawn @ Bull Br Trib (Greenlawn)*	2	$33,000	$66,000	3
13	Brookwood Circle (706, 708, 710)	3	Option 1: Donna Option 2: $63,000	Option 1: Donna Channel Option 2: $189,000	3
14	Turkey Creek	3	Option 1: City Crew Option 2: $83,392	Option 1: City Crew Option 2: $250,175	3
15	1308 TH Johnson culvert	6	$20,200	$121,000	2
16	2000 Davis Street	1	$21,000	$21,000	2
17	915 Lexington Street	1	$21,500	$21,500	2
18	3310 Crystal Circle	1	$31,000	$31,000	2
19	Kimbro @ 7th	1	$38,500	$38,500	2
20	2104 Davis Street	1	$43,000	$43,000	2
21	107 Mustang Street	1	$45,000	$45,000	2
22	Taylor Dental Association (Cabaniss) on 920 Main St/SH95	1	$50,600	$50,600	2
23	407 Drake Lane	1	$66,000	$66,000	2
24	713 Bland Street	1	$72,000	$72,000	2
25	Travis Street (& Franklin Street)	29	$5,000	$145,000	1
26	304 Cherrywood Circle	1	$14,000	$14,000	1
27	Cecilia/Lizzie Street	0	$24,000	$24,000	1
28	Tammi Lane near 1617	2	$35,250	$70,500	1
29	Debus Drive*	2	$60,500	$121,000	1
30	Old Thorndale Rd	0	$69,000	$69,000	1
31	1409 TH Johnson at Pinehurst	1	$92,400	$92,400	1
32	Mclain Street	1	$154,000	$154,000	1
33	Marisposa/Mockingbird	0	$180,500	$180,500	1
34	2200 Lee Street	1	na	Work by City	1
35	Davis Street Sidewalk at Bull Branch	0	n/a	$21,000	1

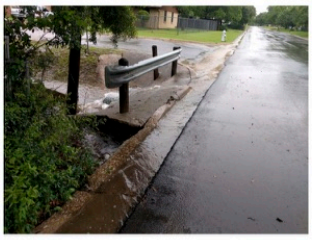
* Easement acquisition required, cost undetermined

Project Under Design

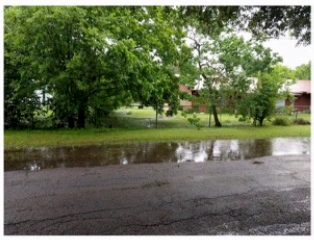
Recommended Series of projects based off available funding.



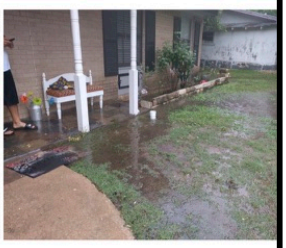
Priority Location 1



Priority Location 1



Priority Location 4



Priority Location 9

Figure 6-7. 2017 MDUS Project Map

The long-term drainage needs can be prioritized based on the level of severity of the issue. In **Figure 6-6**, the projects are ranked by "severity" (with 3 being the most severe issue and 1 being the least severe). If severity 3 are grouped as priority 1 and the other recommended improvements grouped, then the following summary of priorities results (see **Table 6-1**):

Table 6-1. Long-Term Plan Budget – Drainage

Item	Priority 1	Priority 2	Priority 3	Total
MDUS Severity 3 (All)	$4,155,000			$4,155,000
MDUS Severity 2 & 1 (All)		$1,501,000		$1,840,000
Annual Maintenance ($50,000)*; Other Minor Projects		$339,000		
Future MDUS Projects			$6,000,000	$6,000,000
Total	**$4,155,000**	**$1,840,000**	**$6,000,000**	**$11,995,000**
Future Projects				**$6,000,000**
Total w/ Future Projects				**$17,995,000**

* *Item includes maintenance item for 1-year but this cost is recurring each year.*

** As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

The total of the three priorities shown above is $11,995,000. Beyond the 2017 SFP planning horizon (approximately 20 years as represented by Priority 3 assumed projects, there will be on-going drainage needs. The "Future Projects" row listed in the above table is intended as a placeholder for projects beyond the Priority 1 – 3 projects listed. These areas are currently unknown; however, as the MDUS projects progress and in the next SFP update, these "future" projects can be defined.

6.7 5-Year CIP - Drainage

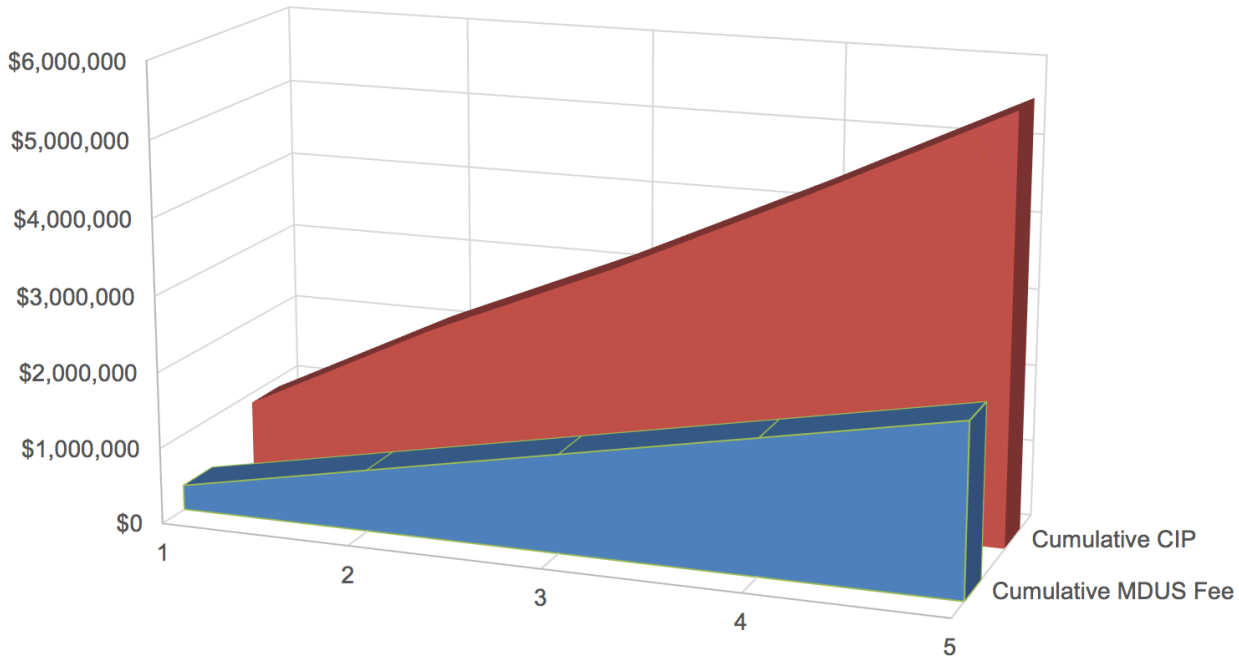
The 5-year CIP includes the current projects listed on the 2017 MDUS plan – see **Figure 6-7** (total of approximately $5.6 million). In addition, the annual maintenance budget of $50,000 is recommended. **Table 6-2** provides a recommended 5-year CIP based on current drainage needs.

Figure 6-8 shows a comparison of the anticipated MDUS revenue to be generated vs the 5-year CIP. The estimated MDUS revenue is based on the $2 fee generating approximately $322,000 in revenue for 2017 and increasing to $3 in 2018 fiscal year. The revenue projection does not discount any debt service currently covered by the MDUS fee (which is approximately $160,000 per year at this time); this further limits fees available to fund needed projects.

Table 6-2. 5-Year CIP – Drainage (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Edmond and Mills Street	MDUS	Capital	$ 957,000	$ -	$ 617,000	$ 340,000					$ -
Donna Channel*	MDUS	Capital	$ 1,760,000	$ -					$ 880,000	$ 880,000	$ -
2709 Kelly Drive	MDUS	Capital	$ 11,000	$ -		$ 11,000					$ -
1609/1611 Castlewood Ct.	MDUS	Capital	$ 52,000	$ -		$ 52,000					$ -
Paula Lane/Medical Parkway*	MDUS	Capital	$ 33,000	$ -		$ 33,000					$ -
Laurel/Sams Street	MDUS	Capital	$ 170,000	$ -		$ 170,000					$ -
800 Kirk Street	MDUS	Capital	$ 38,500	$ -		$ 38,500					$ -
1st Ave/Royal St/Walnut*	MDUS	Capital	$ 360,000	$ -			$ 360,000				$ -
1806 N Lynn Street	MDUS	Capital	$ 53,000	$ -		$ 53,000					$ -
Booth/Oak (Walnut)*	MDUS	Capital	$ 55,000	$ -		$ 55,000					$ -
Reece residence on 2nd Street*	MDUS	Capital	$ 160,000	$ -			$ 160,000				$ -
Oaklawn @ Bull Br Trib (Greenlawn)*	MDUS	Capital	$ 66,000	$ -		$ 66,000					$ -
Brookwood Circle (706, 708, 710)	MDUS	Capital	$ 189,000	$ -			$ 189,000				$ -
Turkey Creek	MDUS	Capital	$ 250,175	$ -			$ 250,175				$ -
1308 TH Johnson culvert	MDUS	Capital	$ 121,000	$ -				$ 121,000			$ -
2000 Davis Street	MDUS	Capital	$ 21,000	$ -				$ 21,000			$ -
915 Lexington Street	MDUS	Capital	$ 21,500	$ -				$ 21,500			$ -
3310 Crystal Circle	MDUS	Capital	$ 31,000	$ -				$ 31,000			$ -
Kimbro @ 7th	MDUS	Capital	$ 38,500	$ -				$ 38,500			$ -
2104 Davis Street	MDUS	Capital	$ 43,000	$ -				$ 43,000			$ -
107 Mustang Street	MDUS	Capital	$ 45,000	$ -				$ 45,000			$ -
Taylor Dental Association (Cabaniss) on 920 Main St/SH95	MDUS	Capital	$ 50,600	$ -				$ 50,600			$ -
407 Drake Lane	MDUS	Capital	$ 66,000	$ -				$ 66,000			$ -
713 Bland Street	MDUS	Capital	$ 72,000	$ -				$ 72,000			$ -
Travis Street (& Franklin Street)	MDUS	Capital	$ 145,000	$ -				$ 145,000			$ -
304 Cherrywood Circle	MDUS	Capital	$ 14,000	$ -				$ 14,000			$ -
Cecilia/Lizzie Street	MDUS	Capital	$ 24,000	$ -				$ 24,000			$ -
Tammi Lane near 1617	MDUS	Capital	$ 70,500	$ -				$ 70,500			$ -
Debus Drive*	MDUS	Capital	$ 121,000	$ -				$ 121,000			$ -
Old Thorndale Rd	MDUS	Capital	$ 69,000	$ -				$ 69,000			$ -
1409 TH Johnson at Pinehurst	MDUS	Capital	$ 92,400	$ -					$ 92,400		$ -
Mclain Street	MDUS	Capital	$ 154,000	$ -					$ 154,000		$ -
Marisposa/Mockingbird	MDUS	Capital	$ 180,500	$ -						$ 180,500	$ -
2200 Lee Street	MDUS	Capital	$ 100,000	$ -						$ 100,000	$ -
Davis Street Sidewalk at Bull Branch	MDUS	Capital	$ 21,000	$ -						$ 21,000	$ -
FUTURE MDUS Projects	MDUS	Capital	$ 6,000,000		$ 50,000						$ 5,950,000
Floodplain Study	General Fund	Professional	$ 225,900	$ -			$ 225,900				$ -
FEMA - LOMRs (Mustang Creek and & Tributary)	MDUS	Professional	$ 63,000	$ -				$ 63,000			$ -
City Maintenance of Existing Drainage	General Fund	Maintenance	$ 50,000	$ -		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
TOTAL			**$11,994,575**	**$ -**	**$ 667,000**	**$ 868,500**	**$ 1,235,075**	**$ 1,066,100**	**$ 1,176,400**	**$ 1,231,500**	**$ 6,000,000**

Figure 6-8. MDUS Revenue ($) vs 5-Year CIP (Year)



* Note: The Cumulative MDUS Fee includes the $160,000 per year in current debt service

6.8 General Recommendations - Drainage

In addition to the improvements listed, other recommendations applicable to the drainage system include:

1. Continue review of all developer drainage plans and studies and complete independent hydrology and hydraulic studies as required.
2. Maintain all existing drainage systems to ensure optimal drainage carrying capacities (detention ponds, open channels, closed storm sewer systems, etc.)
3. Update MDUS fees every 5-years.
4. Participate in FEMA floodplain updates when reviewed/updated by FEMA.

7. WATER

The source water for Taylor's distribution system is from the Brazos River Authority (BRA) water treatment plant located on Lake Granger approximately 7 miles north of Taylor (East Williamson County Facility - PWS ID No. 2460155). Water is pumped from the plant to the City's ground storage tank that distributes water to the City's customers. The City of Taylor provides water service to approximately 5,900 meters under TCEQ PWS ID No. 2460004. This includes residential (inside and outside of city limits), multi-family, commercial, industrial, agricultural, and wholesale customers (see **Table 2-4** for meter breakdown by type). The City's water distribution system consists of two (2) pressure planes and contains lines varying in size from 2" to 24". This section provides a summary of the current water system, current issues, and recommendations for improvements.

7.1 Previous Studies

Various studies and reports have been completed in the past for the City's water system. Some of the key previous efforts are summarized below:

1. Brazos G Regional Water Plan

The Texas Water Development Board (TWDB) maintains a State Water Plan that focuses on population and water use projections for a 50-year planning period. This plan is regularly updated and includes input from the various regions in the state. The City of Taylor is located in Brazos G Region.

The Brazos G Regional Water Plan is currently being updated. Draft population and water use projections were reviewed in June 2017. A summary is provided in **Section 2** of this 2017 SFP. The City should actively participate in the regional planning process and provide input on population factors with each plan update.

The key aspect to understand from the Regional Plan is that water projections are made on an annual basis expressed in acre-feet per year (acft/yr). This is developed based on population and user use on an average daily basis. As such, the projections do not account for water demands such as maximum day use, peak hour flows, or fire demands. These water demands are the basis of the sizing water distribution elements. Based on the Year 2040 DRAFT Region Plan average water use, the critical distribution system planning values are:

- Average Day Demand = 2.9 MGD
- Maximum Day Demand = 5.8 MGD
- Peak Hour Demand = 11.6 MGD (or 8,064 gpm)

2. Water Conservation Plan

The City maintains a Water Conservation Plan (which is separate from the Drought Contingency Plan which was adopted by Ordinance). The current document being used by the City was originally dated April 2009 (updated ever 5 years). While this document is not directly intended to provide long-range planning for the Water System improvements, it does provide recommendations to conserve water which impacts long-term water needs. As stated in the Water Conservation Plan, distribution water loss averaged 22% in 2007-2008 (from BRA master meter to City's metered sales). This is higher than the goal of 15%. If the TWDB's goal to reduce per capita usage in the City is to be realized (i.e., reduce to 139 gpcpd by the Year 2050), then conservation efforts must be a focus over the next 20 years. The current Water Conservation Plan identifies the following goals:

1) Promote non-wasteful uses of water through public education on annual basis
2) Reduce unaccounted-for water to 15%
3) Maintain meter testing program and continue to expand AMR
4) Maintain water rate structures that promote conservation of water (i.e., increase rate per 1,000 gallons of water use vs flat rate regardless of use). The current rate structure accomplishes this goal - see example from 2016-2017 residential rates below:
   - Block 1 0-2,000 gallons $2.94/1000 gallons
   - Block 2 2,001-5,000 $3.21
   - Block 3 5,001-9,000 $3.53
   - Block 4 >9,000 $4.12

The conservation efforts realized in the next 20 years will have a direct impact on the needs of the distribution system. The City should update the Water Conservation Plan every 5 years as required by TCEQ rule (next update due 2019) and provide an annual water use report to TWDB by May 1st.

3. Water and Wastewater System Master Plan (2001)

The "City of Taylor Water and Wastewater System Master Plan" was completed by Freese and Nichols dated December 2001. This plan was the basis of many major improvements to the water distribution system over the last 10 years. Some of the key findings from the 2001 Master Plan include:

a) Water use per capita use is approximately 160 gpcpd (gallons per capita per day)
b) Water use maximum day to average annual day is 2:1 ratio
c) Water use peak hour demands to maximum day demands is 2:1 ratio (or 4:1 compared to average day)

d) Recommendation for creation of two (2) pressure planes. This was accomplished by the new West Elevated Storage Tank construction, pressure regulating valves, and increase transmission capacity to the central and southeast portion of the system (including 16" transmission line to the Southwood Hills storage facilities)

e) The CIP projected cost was $24,304,157 from the 2001 Plan with the following projected timeline:

- 2001 – 2005 $5,453,184
- 2005 – 2010 $7,522,152
- 2010 – 2015 $4,136,405
- 2015 – 2020 $7,192,416

(These costs are shown for information purposes only for comparison with the cost shown in this 2017 SFP.)

The major recommendation from the study was the creation of two (2) pressure planes to better manage low and high pressures throughout the City. To implement this recommendation, various major components of the system were updated such as two (2) new elevated storage tanks, high service pump station at the Regional Park, and major line improvements.

4. Rate Study (Water and Sewer)

Black and Veatch completed a utility rate study in November 2015 titled "Revenue Requirements, Cost of Service, and Rate Design Study for Water and Sewer Service". The study recommended a five-year financial plan for FY 2016 – 2020. The estimated revenue increases based on utility rate adjustments follow:

- FY 2016 19.0%
- FY 2017 14.1%
- FY 2018 9.9%
- FY 2019 3.0%
- FY 2020 0.0%

The majority of the increases come from adjustments to sewer rates to get these rates more in line with industry standards to match cost of this service.

Specific adjustments to minimum charge, rate charges and fixed fees are recommended in the study.

In general, water/utility rates should be updated every 3 to 5 years. As recommended in the study, the next rate study should be conducted before 2020.

7.2 BRA Coordination

The City of Taylor has a contractual relationship with the Brazos River Authority (BRA). According to the original agreement, the City had a reserve capacity of 8,525 ac-ft/yr (or 2,778 MG/year or 7.61 MGD on equivalent average day basis). The City's capacity is variable and the water rate is subject to annual adjustment. BRA owns and operates the Surface Water Treatment Plant (SWTP) located on Lake Granger (County Road 1331 near the intersection of CR 619). Pertinent information concerning this plant is summarized below:

- Four (4) high services pumps deliver water to the Taylor
- Each high service pump is rates at 1,200 gpm
- Total rated capacity of the pumps is 4,800 gpm (6.91 MGD)
- Firm rated capacity of the pumps is 3,600 gpm (5.18 MGD) (with the largest pump out of service)
- Water is delivered via one (1) 27" transmission line to the GSTs

While the BRA is responsible for upgrades to the plant, the City will pay for any improvements through the rates paid. The water pumped to Taylor was analyzed from 2013 to 2017. **Table 7-1** summarizes the water provided by BRA to the City. **Figure 7-1** illustrates the total water per year and the average daily flow in each year.

Table 7-1. BRA Water Sold to City

Year	2013	2014	2015	2016
Annual Total (MG)	777.824	822.319	725.693	724.261
Annual Total (ac-ft/yr)	**2,387**	**2,524**	**2,227**	**2,223**
Average Day (MGD)	**2.13**	**2.25**	**1.99**	**1.98**
Min Day (MGD)	1.125	1.053	0.790	0.937
Max Day (MGD)	**3.945**	**4.132**	**3.765**	**4.384**
Max to Avg Ratio	1.85	1.83	1.89	2.22
Avg Month (MG)	**64.31**	**68.527**	**60.474**	**61.855**
Min Month (MG)	49.517	50.576	42.665	52.536
Max Month (MG)	90.305	95.958	94.414	91.05
Avg of Monthly Daily Avg (MGD)	2.129	2.256	1.984	2.026
Min of Monthly Daily Avg (MGD)	1.695	1.631	1.512	1.716
Max of Monthly Daily Avg (MGD)	**2.913**	**3.095**	**3.046**	**2.937**

Figure 7-1. Water to City – Annual Total and Average Day

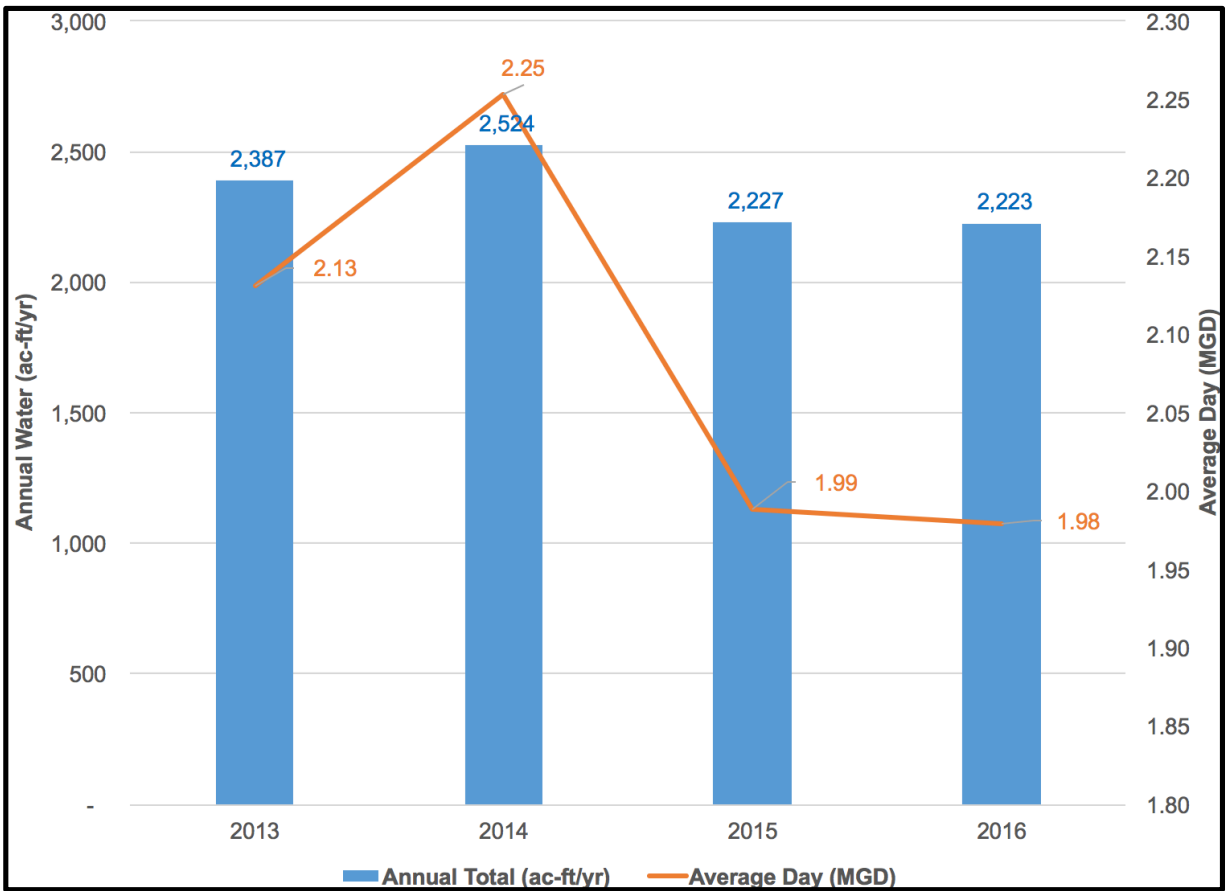
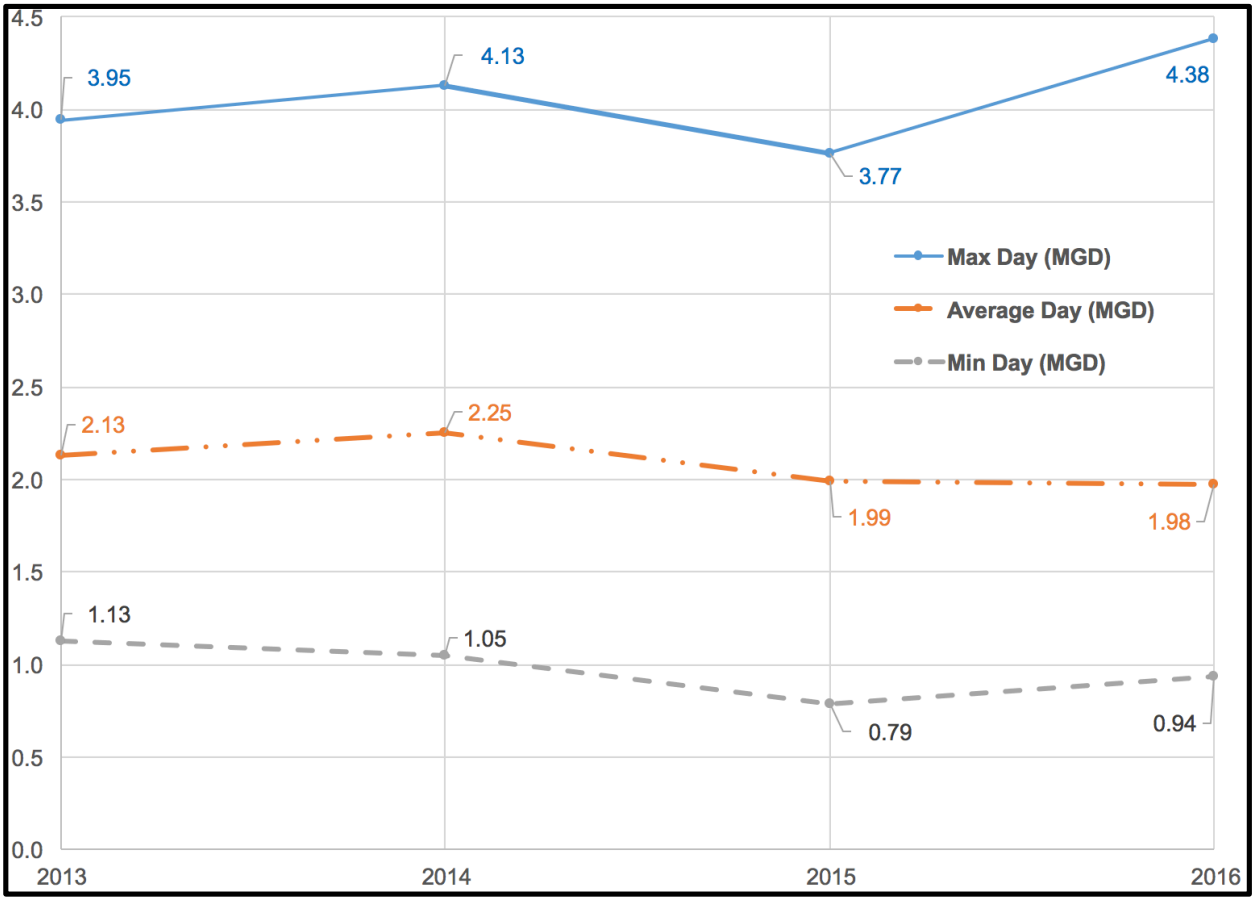


Figure 7-2 provides the maximum, average, and minimum daily values for each year (2013-2016).

Figure 7-2. Water to City – Max, Average, and Min Daily Values



The water data in **Table 7-1** and **Figures 7-1 and 7-2** reveals the following major findings:

- The average day for the years shown is 2.09 MGD. As shown previously in **Table 2-3**, the Year 2020 prediction for average day is 2.54 MGD for the TWDB Regional Water Plan. The water use projections appear to remain on pace for the Year 2020.
- The maximum day use over the 4-year period is 4.384 MGD.
- The maximum of the monthly daily average use is 3.095 MGD.
- The summer months show increased seasonal usage as is typical (see example from 2014 and 2016 illustrated in **Figure 7-3**).
- The annual rainfall was above average (average 35 inches) in 2013 (45.33 inches) and 2015 (57.5 inches). The rainfall in 2014 was 35.3 inches which is close to the average annual rainfall in Taylor. The water use in 2014 was the highest of the 4-years listed at 2,524 ac-ft/year which demonstrates the expected correlation of increase water demand in years with less rainfall.
- The maximum day to average day ratio averages 1.95 from 2013-2016. This finding is similar to the ratio of 2 used in the 2001 Master Plan. The

ratio of 2:1 maximum day to average day remains valid based on the recent data.

- The per capita water supplied to Taylor averages 130 gpcpd with the highest year of 140 gpcpd (based on assumed yearly population based on census information). As shown previously in **Table 2-3**, the per capita use assumed by the TWDB in the Regional Water Plan states a goal of reducing 150 gpcpd to 139 gpcpd by the Year 2050. Based on recent data, this goal appears achievable but will certainly be impacted by many factors in the future.

Figure 7-3(a). Water to City – 2014 Monthly Use

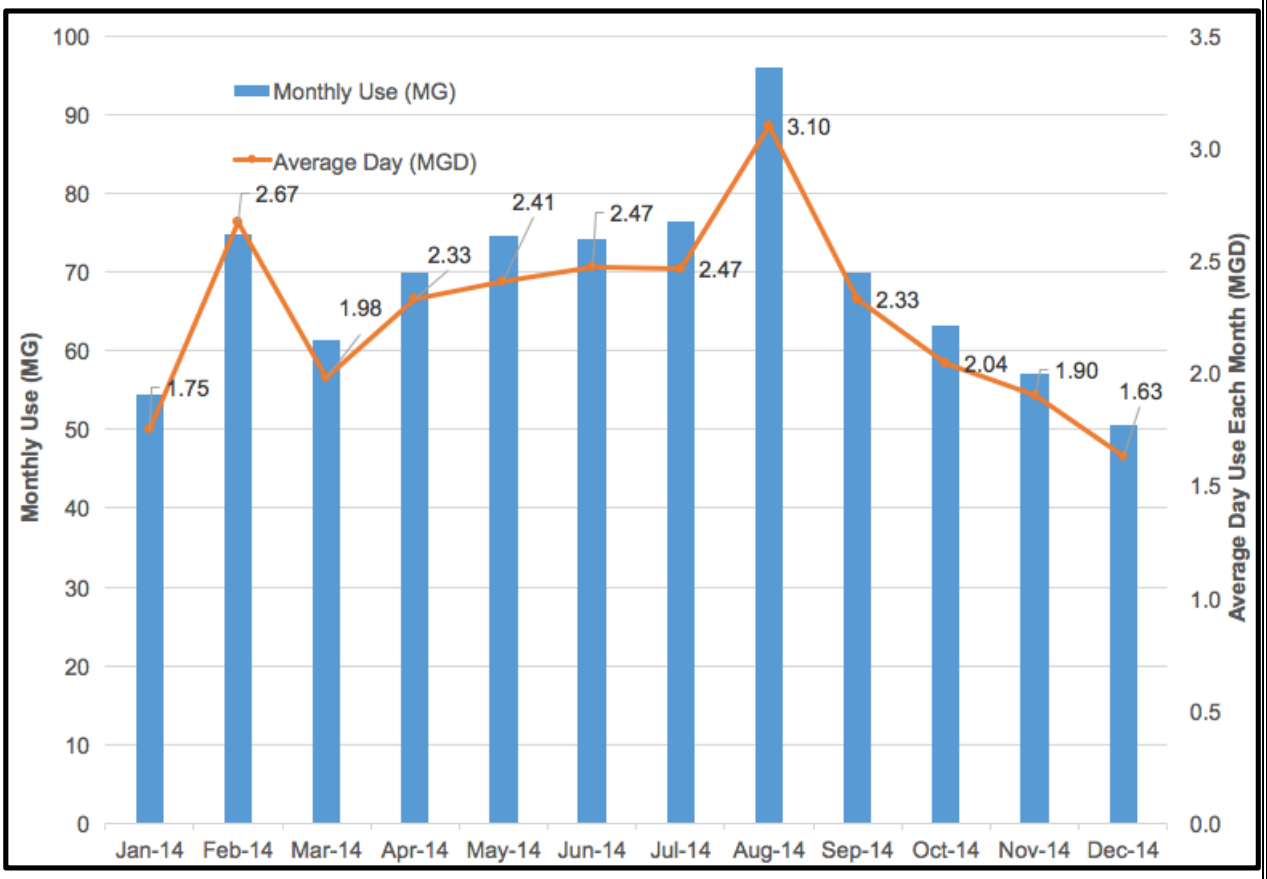
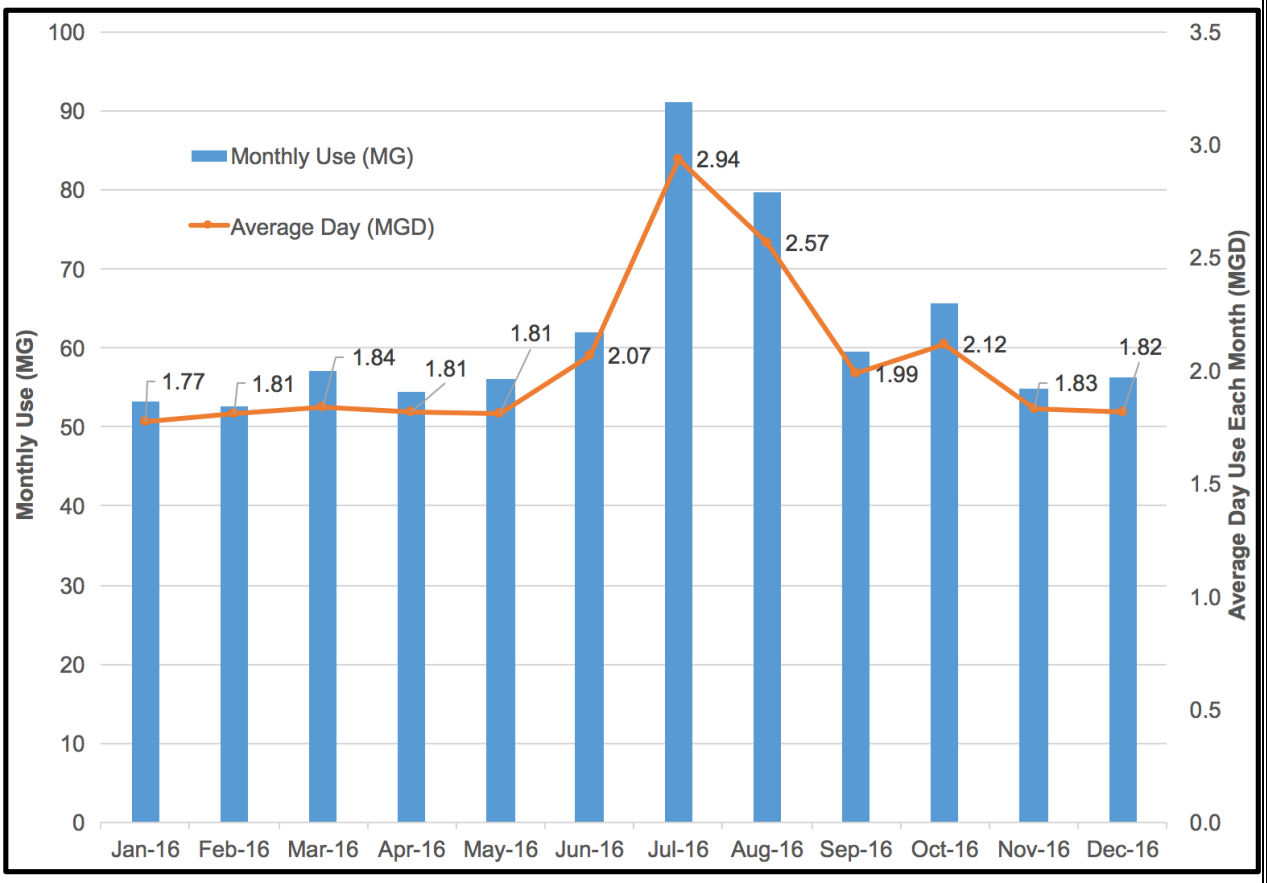


Figure 7-3(b). Water to City – 2016 Monthly Use



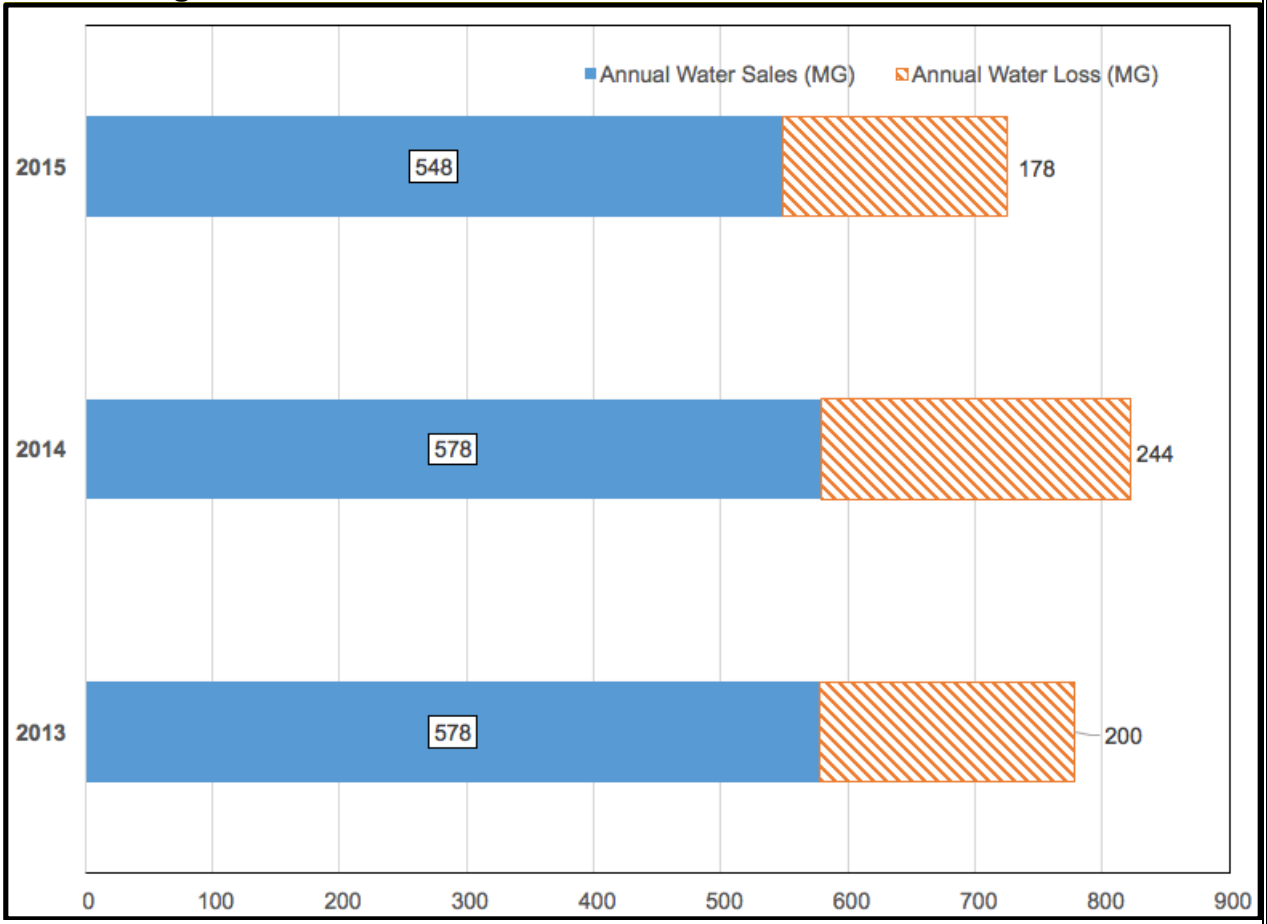
BRA leads the Brazos G Regional Water Plan effort. As previously noted, there is a stated goal to reduce gpcpd in Taylor and effectively conserve more water in future years. Water loss was calculated from available City metered sales from 2013 – 2015. The results are shown in **Table 7-2** and **Figure 7-4**. (For comparison, the 2008 water loss was 22%.)

Table 7-2. Annual Water Production, Use, and Loss 2013 - 2015

Year	Annual Water Sales (MG)	Annual Water Loss (MG)	Annual Water from BRA (MG)	Water Loss
2013	578	200	778	-35%
2014	578	244	822	-42%
2015	548	178	726	-32%

The average water loss for 2013 – 2015 was 36%. Unaccounted for water such as line flushing and line leaks is not discounted in this information. The unaccounted for water loss will be discussed further in **Section 7.7**.

Figure 7-4. Annual Water Production, Use, and Loss 2013 - 2015



BRA was contacted about future plans at the SWTP. They currently looking at a 5-year plan of how to best manage water deliver to its customers (Taylor, Jonah SUD, and Lonestar). BRA will contact the City in 2018 about scenarios to refine delivery method of water to Taylor. One scenario is a new GST at 95 with Taylor then responsible for distributing water to its storage facilities; this would require a contract amendment. A rough cost for this option is included in the long-range plan as a place holder. Other options will likely be presented, so the City should receive this information and work with BRA on the best overall scenario.

The BRA is also looking at a 20-year planning horizon for the SWTP with possible expansion. Options will be studied in 2018, but significant upgrades will likely occur at the plant given its age and the anticipation of future water quality and treatment regulations. Taylor could be responsible for water rate adjustments for any pro-rata improvements required for the City's needs. This project will not be direct Capital Improvement costs but will be paid by the City through bulk rates. The City will need to pass on the increased costs to its customers.

BRA is not inclined to assume ownership of the City's ground storage tanks or other components of the City's water distribution points or elements. The City's CIP should account for meter at take points to better determine water delivered at each take point.

7.3 Wholesale Customer Summary and Needs

Taylor's customers are comprised of typical breakdown of residential, commercial, and wholesale customers. The breakdown of sales by meter type is shown in **Table 7-3**.

Table 7-3. Taylor 2015 Water Sales Breakdown by TCEQ Class

Type	# of Meters	% of Total	Water Sales (MG)	% of Total
Residential	5,167	87.6%	344.144	62.8%
Residential Multi User	42	0.7%	21.346	3.9%
Institutional	*173*	*2.9%*	50.294	9.2%
Commercial	*387*	*6.6%*	70.595	12.9%
Industrial	*28*	*0.5%*	6.869	1.3%
Agricultural/Sprinklers	92	1.6%	19.691	3.6%
Other – Bulk Meters	10	0.2%	35.116	6.4%
Total Meters	**5,899**	**100%**	**548.056**	**100%**

For the "Other – Bulk Meters", the use fluctuates based on number of fire hydrant meters in use. The wholesale meters include four (4) for Noack take points and one (1) for Thrall. Noack's Year 2015 meter sales was 8.2 MG (22,000 gpd on average day basis) equating to 1.5% of total sales. Thrall's Year 2015 use was 23 MG (or 63,000 gpd on average day basis) which represents 4.2%.

Noack's water use has been declining with sporadic use after July 2015 while Thrall's use is fairly consistent as summarized in **Table 7-4**.

Table 7-4. Wholesale Users Summary – Noack and Thrall

Year (Water use in MG)	Noack	Thrall
FY 2009-2010	47.5	12.3
FY 2010-2011	31.0	20.7
FY 2011-2012	36.7	23.8
FY 2012-2013	8.2	22.4
FY 2013-2014	24.3	22.8
FY 2014-2015	16.5	22.4

Regardless of actual meter sales, the City of Taylor has contractual obligations for its wholesale customers. The contracts dictate that the City of Taylor reserve capacity in its system to meet the flow demands. Highlights from the wholesale contracts follow:

- Noack WSC – Contract is valid for twenty (20) years from 2000 with an additional ten (10) year extension. Terms are provided for areas of service. (Noack's use of water from Taylor is on emergency basis only at this time.)
- City of Thrall – Water is furnished via an 8" line along US 79. Taylor provides up to a maximum of 500,000 gpd. Water rate was $3.50/1,000 gallons at the time of the agreement (2010) and is subject to annual adjustment.
- City of Hutto - The contract was executed 2002 and amended in 2010. Contract provides for Taylor to provide treated water to Hutto.
    - The minimum water to be provided is 175,000 gpd (or 64 MG/yr). The peak daily flow limit is 300,000 gpd. Delivery minimum pressure is 35 psi.
    - Withdrawal amounts are subject to certain time periods: a) 60% of volume taken in day between the hours of 10 p.m. to 4 a.m. and b) 10% of volume taken can be between 5 – 9 a.m. and 5 – 9 p.m.
    - Fees are based on monthly charge for essentially a capacity reserve (which equates to a take or pay type clause). Volume rate was $2.04/1,000 gallons for first 175,000 gallons and then $3.06/1,000 gallons in 2010.
    - The transmission line is 2 miles long and delivers to Hutto's facility at FM 3349.

  Hutto was approached about any desire to increase the wholesale water delivered by the City of Taylor. Hutto has no current plans to increase the amount of water taken from the City of Taylor. It is possible to increase the capacity delivered to Hutto by removing the time restriction for taking water. Current prediction is a capacity of 700,000 gpd with peak daily flow of 1.4 MGD by using the same transmission main. Capacity beyond this amount would require detailed modeling to de the capacity determine additional capacity available. It is likely that a second transmission main would be required to accommodate any further increase in flow. There will be a certain portion of any transmission main within Taylor's ETJ that will require Taylor to pay for portion of the line per contract.

The obligations for reserved capacity in any contract creates real costs for the City of Taylor. As such, contracts without take or pay minimum use/payment should be considered in future contract amendments. In addition, customers should provide a Water Conservation Plan to comply with TCEQ rules (if they have not already done so).

Based on recent year water sales, other significant customers include the City facilities at 18 MG (various 3"/4" meters), Prison (Corrections Corp of America) at 13 MG (6" meter), Taylor ISD at 10 MG (various 3"/4" meters), and ERCOT (4" meter).

7.4 CCN Issues and Recommendations

The current CCN (Certificate of Convenience and Necessity) water map for the City of Taylor and surrounding entities is provided in **Figure 7-5** (2014 Version). The CCN numbers for the surrounding area are summarized below:

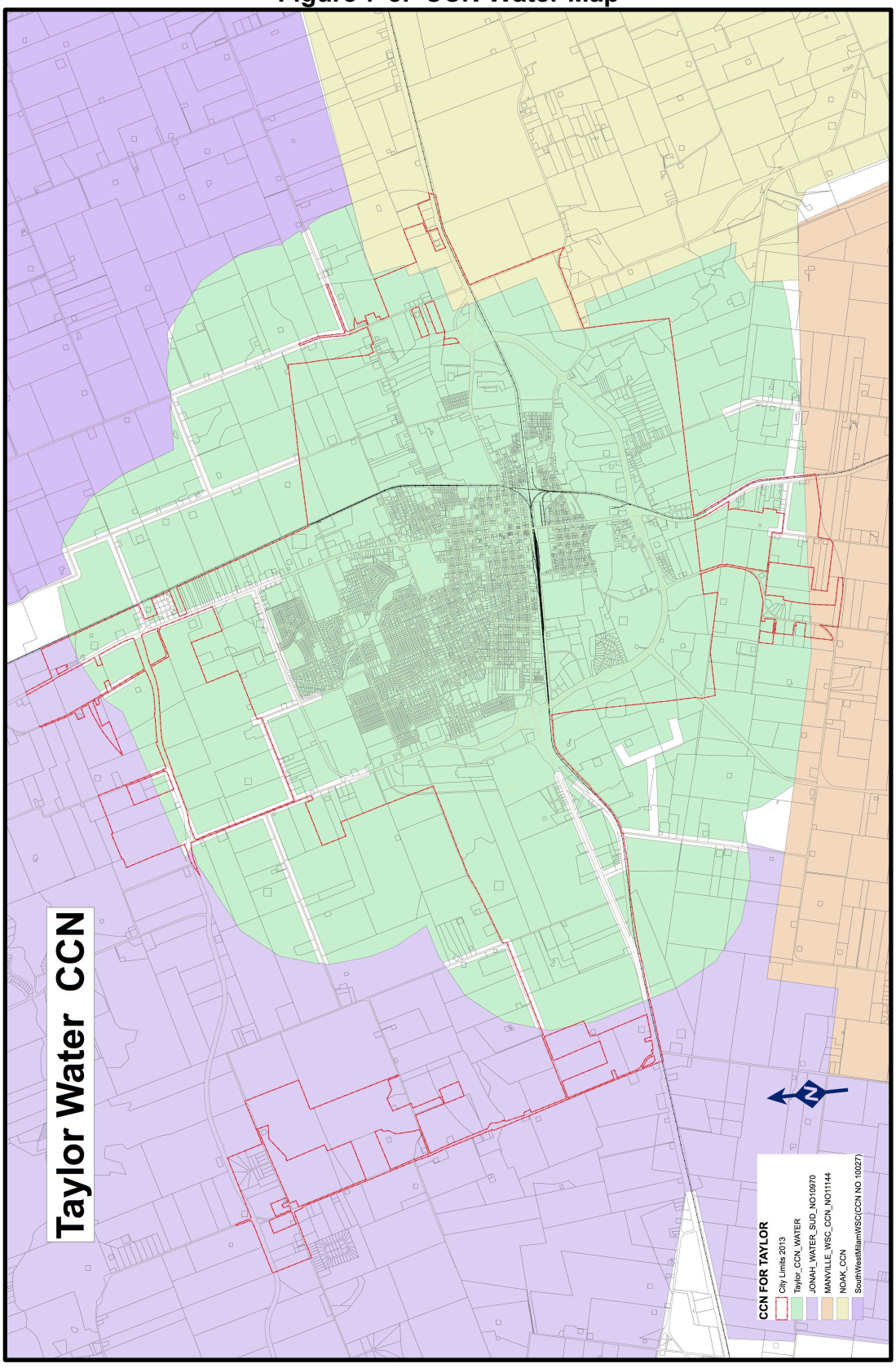
- City of Taylor 10319
- City of Hutto 10321
- City of Thrall 13063
- Jonah SUD 10970
- Manville WSC 11144
- Noack WSC 12359
- Southwest Milam WSC 10027

There are CCN water updates needed based on known growth patterns and current issues/conflicts with TCEQ's CCN map. The following summarizes the key issues:

1. City of Hutto – The boundary with City of Hutto is currently out-of-date. The City of Taylor should work with the City of Hutto to revise both water CCN's to resolve current conflicts and also to address future growth concerns by either party.
2. City of Thrall – There are no known conflicts with the two cities' water CCN. As Taylor city limits may expand in the future, change in the CCN may become necessary.
3. Jonah SUD – There are no known conflicts with Jonah SUD and the City of Taylor. As City limits may expand in the future, change in the CCN may become necessary. It is recommended that the City of Taylor coordinate with Jonah SUD for water boundaries.
4. Manville WSC – There are no known conflicts with Manville WSC and Taylor's water CCN. As City limits may expand in the future, change in the CCN may become necessary.
5. Noack WSC water CCN is changing to City of Thrall. The application is being prepared and will be filed with the state. The City of Taylor should review the revised CCN for City of Thrall to double check for no conflicts in service area.
6. Southwest Milam WSC - There are no known conflicts with Southwest Milam WSC and Taylor's water CCN.

In general, the City of Taylor should coordinate and negotiate future plans for CCN changes with all adjacent water suppliers.

Figure 7-5. CCN Water Map



7.5 SCADA Review and Recommendations

The current water system is monitored by SCADA (Supervisory Control and Data Acquisition). The current system is functional. It provides features to allow operators to view on desktop, iPad, or phones.

Based on the review and evaluation of the existing SCADA system for the water system, the following upgrades are recommended:

1. **Backup power** - Backup power is needed for the transmitting units at each pump station and tank site. Currently with a wide-spread loss of power, the SCADA system does not read tank levels. The tank levels can be manually read and reported back to operators; however, it is typically during loss of power that other events are occurring whereby city manpower is stretched. Backup (UPS) systems are recommended at water sites to keep the minimal level of SCADA functional so that tank levels of continually monitored. This will provide improved functionality and emergency responsiveness.
2. **Meters** – The BRA meter should be added to the SCADA (including the new entry point meter recommended in this Plan). The meter(s) display will provide more real-time control of the distribution system. In addition, the top ten (10) customer meters should be displayed on the SCADA system. Alarms can be issued if use falls outside of normal usage patterns.
3. **Integrate with Meter Read System** – The current radio read system can be used as entry point into the SCADA system. Since the current system uses radio read, data entry is only possible once per month. However, it can be displayed on the SCADA and used to display the previous month's water loss. If the meter system is converted to a fixed based system in future, water loss could be calculated on a daily basis. This can provide a near real time indication of water loss which can be a trigger within SCADA to investigate any spikes if unaccounted for water.
4. **Tank Levels** – Tank levels are currently displayed on SCADA. There are certain issues that need to be corrected within the program such as the Southwood Hills tank not always showing the correct level. The tank volumes should be listed on SCADA as well as the rise and fall rates; alarm conditions can be set for rapid fall rates.
5. **Communication Monitoring** – The polling of remote sites should be monitored and set as alarm condition if a site fails to read after 3 passes. The monitoring will limit the possibility of tank levels being read as normal when it could actually be a communication issue where it is simply reading the tank level from previous station polling.
6. **New System Components** – As part of the water system recommendations included in this Plan, the SCADA system will need to be expanded to include any new features and/or facilities.

In order to have a top-shelf SCADA system to make delivery of water more efficient and provide overall energy savings, a major overhaul of the SCADA system is warranted. The additional functionality listed above should be incorporated at a minimum.

The SCADA system can be enhanced further by providing automation features to reduce operator time to complete certain functions. This requires more features such as VFDs on pumps with meters to automate pump run times, on-line disinfection meters to pace booster chlorination stations (especially in major dead end lines), etc. The budget for the automation functions is listed separately.

7.6 City Base Map Review

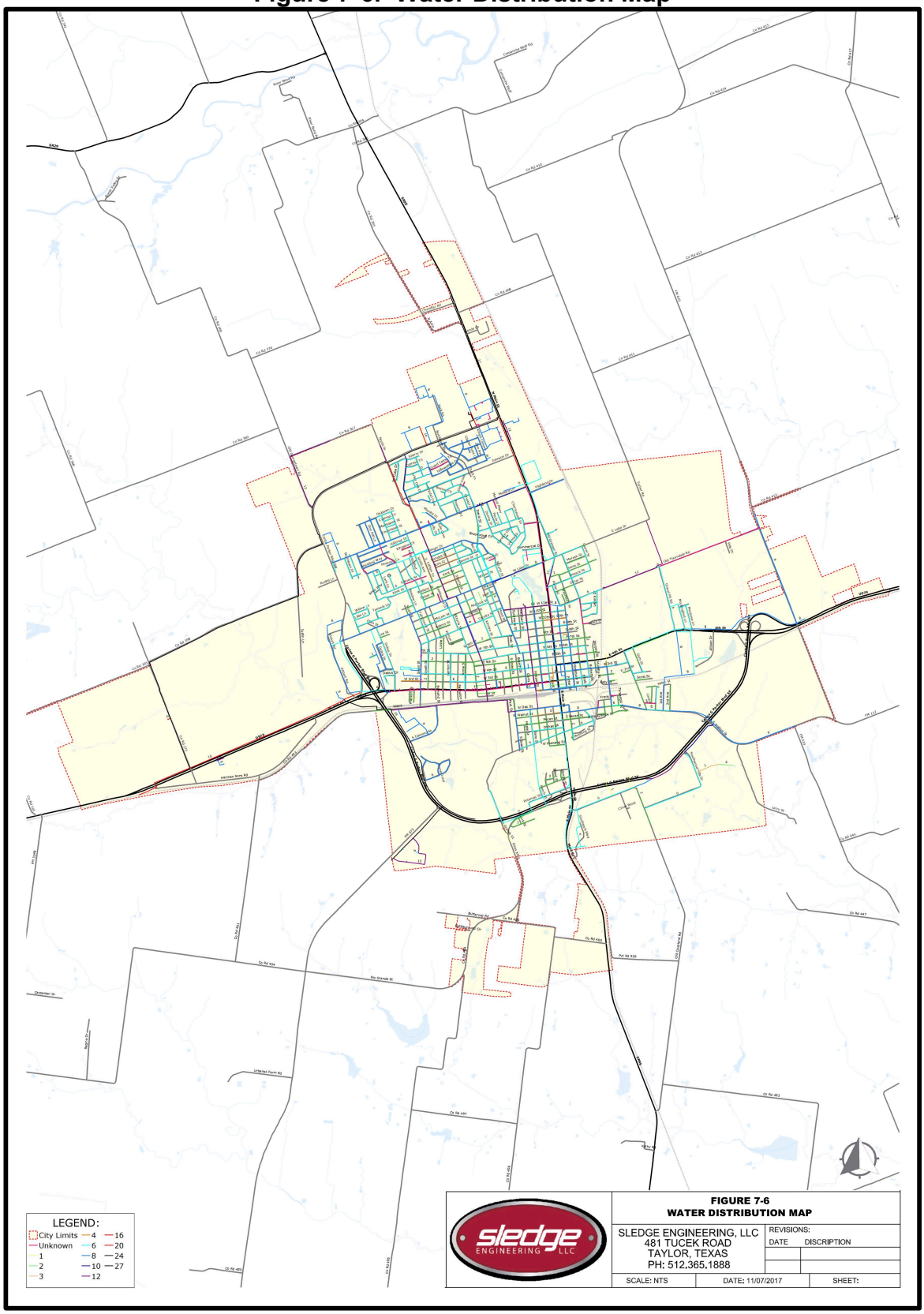
The current Water Distribution Map is provided in **Figure 7-6**. The Water Distribution System key components are summarized below:

- North High Service Pump Station
  - Located FM 1331 and SH 95 (north of 397)
  - Meter for take point from BRA
  - 1.0 MG Ground Storage Tank (GST)
  - 3 High Service Pumps (1,500 gpm)
  - Booster disinfection system (via chloramines to maintain disinfection residual in system)
  - Room for expansion of 2nd GST and 2 pumps (pump pad bases and wall pipes in place)
- Ford High Service Pump Station
  - Located on Old Granger Road
  - 1.0 MG Ground Storage Tank (GST)
  - 2 High Service Pumps (1,000 gpm)
- Elevated Storage Tank - West – 1.0 MG, overflow elevation 780 ft
- Elevated Storage Tank – Mallard Lane – 0.40 MG
- Elevated Storage Tank – Murphy Park – 0.75 MG
- Elevated Storage Tank – Southwood Hills – 0.4 MG
- Two Pressure Planes
- Pipe Size as summarized in **Table 7-5** and **Figure 7-7**. The majority of the current material type is not listed in the Water GIS or base map and should be added where known. Line replacements included in this Plan are based on knowledge of the system.

It is recommended the City Water Base Map be converted to grid system (11x17). This can be in both digital and hardcopy format. This will allow field operators to note specific discrepancies (location, line size, material type, etc.) or field locates that may be found in the field with the base map. This information can then be incorporated into annual base map updates.

The GIS should be updated and maintained continually with up to date water system information.

Figure 7-6. Water Distribution Map



**** See Digital Map (PDF) for clarity;*** *see Exhibits for Council Districts & larger scale*

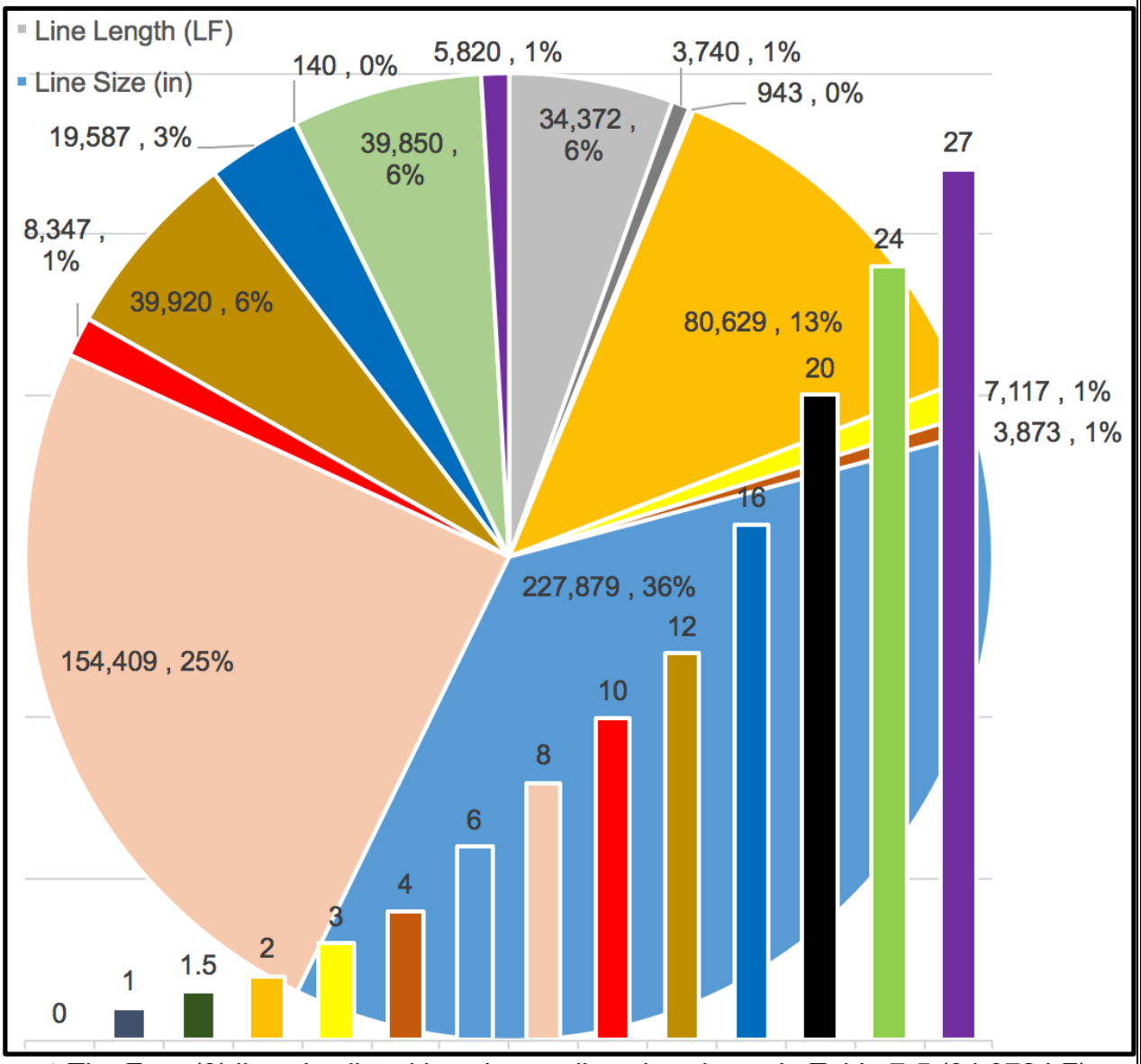
Table 7-5. Water Line Sizes, Segment Counts, and Quantities

Diameter (in) [1]	Material [2]	Line Count	Total Length (LF)	%
Not Listed		86	34,372	5.5%
1	Unspecified	5	2,248	0.4%
1	Cast Iron	5	1,492	0.2%
1.5	Unspecified	1	943	0.2%
2	Unspecified	72	51,195	8.2%
2	Cast Iron	39	25,282	4.0%
2	PVC	8	4,152	0.7%
3	Unspecified	5	6,045	1.0%
3	Cast Iron	1	1,072	0.2%
4	Unspecified	3	1,353	0.2%
4	Cast Iron	3	2,183	0.3%
4	PVC	1	337	0.1%
6	Unspecified	151	196,289	31.3%
6	Cast Iron	22	25,883	4.1%
6	PVC	6	5,707	0.9%
8	Unspecified	98	134,491	21.5%
8	Cast Iron	11	11,947	1.9%
8	PVC	7	7,971	1.3%
10	Unspecified	5	5,902	0.9%
10	Cast Iron	1	2,446	0.4%
12	Unspecified	17	30,729	4.9%
12	Cast Iron	3	5,128	0.8%
12	PVC	3	4,063	0.6%
16	Unspecified	5	19,587	3.1%
20	Unspecified	1	140	0.0%
24	Unspecified	4	39,850	6.4%
27	Unspecified	1	5,820	0.9%
	Total	**564**	**626,626**	**100.0%**

[1] Line Size “Not Listed” indicates line segments in the GIS and base map where the line size is in question or not known.

[2] Line Material that is either in question or unknown is listed as “unspecified”

Figure 7-7. Water Line Sizes (inches) and Quantities (LF)



* The Zero (0) line size listed is unknown line size shown in Table **7-5** (34,372 LF).

The total line length of water is 119 miles. As seen in **Table 7-5** and **Figure 7-7**, there is 130,674 LF of water main in the system that is less than 6" in diameter. These lines should be replaced with a minimum of 6" to meet TCEQ rules (and 8" where practical to improve fire flow in the system).

Table 7-6 provides a summary of the material type based on known GIS and base map information. Line Material that is either in question or not known is listed as "unspecified"; as illustrated it is a important that future GIS database upgrade include material type. In general, all Cast Iron should be replaced in the system.

Table 7-6. Water Line Material Type

Size (in)	Unspecified	Cast Iron	PVC
0	34,372		
1	2,248	1,492	
1.5	943		
2	51,195	25,282	4,152
3	6,045	1,072	
4	1,353	2,183	337
6	196,289	25,883	5,707
8	134,491	11,947	7,971
10	5,902	2,446	
12	30,729	5,128	4,063
16	19,587		
20	140		
24	39,850		
27	5,820		
Total	**528,962**	**75,432**	**22,231**
% Material	**84.4%**	**12.0%**	**3.5%**

There is 45,404 LF of CI line 6" and larger in the system (based on known material type). The cast iron lines should be replaced with PVC as soon as practical to prevent future leaks.

7.7 Water System Key Issues

The existing water system condition was assessed based on all available data such as recently completed projects, leak reports from City, previous studies, and local knowledge of system. The key issues for the water system follow:

1. Water Loss

As previously stated, water loss is 36% based on recent metered sales. Unaccounted for water is not discounted in this figure. Accounting for water from leaks and line flushing is not precise but reduces the net water loss. One issue that operators face is low disinfection residual in certain areas of town. Some outlying areas require monthly or sometimes bi-monthly flushing. It is recommended that flushing be metered to properly account for the amount of water utilized.

2. Disinfection Residual

Water flushing is required in the system to maintain disinfection residuals. At times, outlying areas in the distribution dip below minimum required disinfection levels. This was actually noted at one site at the last TCEQ water inspection in November 2016. While controlling water loss is

important and accounting for water used to flush the system should be refined, the priority is to protect health by maintaining proper disinfection residuals at all points in the system.

Chloramines (Total Chlorine with the combination of chlorine and ammonia) is used as the disinfectant in the system. This is required as the BRA SWTP used chloramines for the water delivered to the City. Free chlorine is not an option with the surface water as disinfectant by-products (DBP) would exceed federal/state standards. The City does boost chloramination in the system. Based on the amount of flushing required to maintain disinfection levels, additional booster disinfection should be added to the system.

Since the City must use chloramines to limit DBP, the system must convert to free chlorine once (or twice) per year to limit nitrification in the tanks and water lines. According to the City's Nitrification Action Plan, the free chlorine "burn" lasts for 30 days. This requires a great deal of coordination with wholesale customers, large uses, and sensitive customers that need to change operations based on type of disinfectant used (such as dialysis facilities, nursing homes, etc.). Customer complaints occur during the transition periods of switching back and forth with free chlorine. It is recommended that the current plan be further studied to refine the flushing protocols during the transition and also determine if a shorter free chlorine period can be utilized.

3. Undersized Lines

As previously noted, there is 130,674 LF of lines that remain in the system that are less than 6" (4" and smaller). This is significant as 6" lines are the smallest line that theoretically can be used for fire flows. These lines should be considered for line replacements.

It is recommended that the minimum line size for Taylor be 8". Given Taylor's system, the 8" line size minimum standard will help to provide peak hour flows and fire demands throughout the system. Given this standard and need to improve pressures in certain areas of the system, critical locations with 6" lines should also be replaced.

Water system pressures range from a high of 90 psi to the TCEQ minimum standard pressure of 35 psi. Some areas on the extreme ends of pressure planes have low pressures. The pressures are primarily controlled by the backbone of the pressure planes (i.e., lines greater than 8"). In general, most of the larger lines appear adequate based on local known pressures.

4. Material Type and Age of Lines

The existing database for material type and age is lacking. In general,

material type ranges from Cast Iron (CI), Ductile Iron (DI), and PVC. The City's standard line material is PVC with Ductile Iron fittings. Any lines that are not DI or PVC should be scheduled for replacement. Based on local knowledge of the water system and discussions with operators, key older lines should also be replaced. The long-term plan includes recommended line replacements.

5. Fire Hydrants

As new developments occur or as old lines are replaced, it is Taylor's practice to require new fire hydrants. This practice should continue.

The City maintains fire hydrants as part of the normal operating procedures. Hydrants that become non-functional are painted black when needed. In general, maintenance of fire hydrants in Taylor is typical. Based on input from operators and city staff, there are areas where additional fire hydrants are needed. **Table 7-7** provides the current areas where hydrants are desired along with information on available water sources in those areas. The hydrants are not listed in any particular order in the table as ALL locations should be completed.

Table 7-7. Current Locations for Additional Fire Hydrants

#	Location	Source of Water
1	Stasny & Fisher – Nearest hydrant is 700'	There is a 2" water line on Fisher; nearest 8" line is on Lake Dr. (350').
2	Rydell Ln & Carlos G Parker	The closest water line is approximately 300' away (on the opposite side of Carlos Parker).
3	Airport needs 2nd hydrant	Water lines in area should be sufficient.
4	Herman Sons Road– no hydrants	There are no City water lines on Herman Son Rd; the closest water line is the 16" on US 79.
5	Nyle Maxwell – Nearest hydrant is across US 79	The map indicates a 12" in front of the property and 8" running into the Property (need to confirm 8" ownership/easement).
6	Sandy Ln – 1,600 ft from end of Sandy Ln cul-de-sac to nearest hydrant	Closest Water line is the 27" concrete main on opposite side of Hwy 95. (This is the main feed to town from the water plant.)
7	East side of Hwy 95 (North of HEB) - all current hydrants are on West side	12" Water line on the east side of Hwy 95 ends at 3810 N. Main.
8	Sams Street & Jones Street	Jones Street was resurfaced; new 8" line.
9	Durcon (by warehouse)	Durcon installed a water line (6"/8") to their new building (dead end with flush valve). There is a fire hydrant approximately 500' away in front of the office.
10	Crop Productions – E 4th	The closest water main to this company is on the other side of US 79 (approximately 750').

#	Location	Source of Water
11	Miller St (both East/West side) (Closest hydrant is 1,100')	1st Avenue has an 8" PVC line. 2nd Avenue has a 2" line
12	Pecan & Talley (800' to nearest hydrant)	The closest 6" or 8" water line to this intersection is MLK.
13	E Rio Grande (East of S. Robinson) (700' to hydrant)	2" water line on road; nearest 6" or 8" water line to this intersection is MLK.
14	MLK & Bland	These are 2" and 3" lines in area. 8" water line is on Oak (approximately 350').
15	Maple & Rick	Maple St. has a 2" line and Rick does not have a water line. The closest 6" water line is approximately 350' away either at Rio Grande St. or Doak St.
16	Sturgis & Wabash	Existing lines are 2" (nearest larger is Potomac approximately 450' or Hwy 95 approximately 350')
17	Hwy 95 & Mississippi	8" line under pavement in Hwy 95.
18	Symes & Wabash	Nearest line is Beech approximately 305' or Potomac approximately 400'
19	Sturgis & Potomac	Need to confirm existing line is 6".
20	Fenwick & Rices Crossing	All of these lines are 2". (Nearest 6" is near Carlos Parker.)
21	Fenwick & Westchester – (closest hydrant to end of Westchester 1,700')	All lines in area are 2". (Nearest 6" is near Carlos Parker.)
22	Corner of Southwood Hills Dr. (where road turns from East/West to North/South) –	Nearest hydrant is 850'. There is a 6" water line in the area.
23	OLG Cemetery & E. Walnut – (1,400' to nearest hydrant)	Closest 8" water line is approximately 1,200' away on the opposite side of FM 112.
24	E 4th (East of FM 619)	Fire hydrants constrained by the 4 " meter East of FM 619. City does not maintain the 8" pipe; pressure issues due to decreased in diameter at the meter.
25	Cotton Rows Ln – 1,100' to end of cul-de-sac from nearest hydrant currently	The City does not own lines near the area. Nearest line is 16,000'. (Jonah may have lines in area)
26	Taylor Compress (E 4th location) – Nearest hydrant is across Hwy 95	There is a 6" water line that runs on the west side of this property that has hydrants. The Compress has fire lines on property.

The minimum fire demand is 500 gpm. In the 2001 Master Plan, the City adopted a standard of 1,000 gpm for fire demands with industrial and commercial areas use 1,500 gpm. These standards should continue to be used.

6. Tank Condition

The City of Taylor has a variety of ground storage tanks (GST) and elevated storage tanks (EST). The tanks are inspected annually by Dunham Engineering (with the most recent inspection occurring in January 2017). Summaries of the tanks are provided in **Table 7-8** and **Table 7-9.**

Table 7-8. Ground Storage Tank Summary

Name	Location	Year Built	Type	Capacity (Gallons)	Pressure Plane
Ford	Ford Street	1954	Welded Steel	1,000,000	Lower
North	Regional Park	2009	Concrete	1,000,000	Upper
Year	**Meters**	**EST**	**Total Upper:**	**1,000,000**	50%
2017	5,900	1,180,000	**Total Lower:**	**1,000,000**	50%
2070	13,200	2,640,000	**Total:**	**2,000,000**	

Some summary comments follow for the Ford GST from the 2017 Dunham Engineering report:

- Tank is in good structural condition.
- Exterior and interior protective coating is in fair condition and are providing adequate corrosion protection.
- There were no water quality issues detected at the time of the inspection.

Observations from recent site visit to the North GST follow:

- Tank is in good structural condition.
- Exterior and interior protective coating is in good condition.

The Ford GST will reach its useful life soon and should be considered for replacement during the planning period. Based on population growth and system demands, a second GST may become necessary at the North Pump Station.

Table 7-9(a). Elevated Storage Tank Summary

Name	Location	Year Built	Type	Capacity (Gallons)	Pressure Plane
West CET	Lorax Lane	2009	Composite	1,000,000	Upper
East CET	Murphy Park	2009	Composite	750,000	Lower
Mallard Lane	Mallard Lane	1971	Multi-Legged	500,000	Lower
Southwood Hills	Southwood Hills	1993	Multi-Legged	250,000	Lower
Year	**Meters**	**EST**	**Total Upper:**	**1,000,000**	40%
2017	5,900	590,000	**Total Lower:**	**1,500,000**	60%
2070	13,200	1,320,000	**Total:**	**2,500,000**	

Table 7-9(b). Elevated Storage Tank Summary – Water Levels

Name	Low Water Line	High Water Line
West CET	*116.5*	151.5
East CET	98.5	133.5
Mallard Lane	89	118
Southwood Hills	87.67	116

Some summary comments follow for the ESTs from the 2017 Dunham Engineering report:

- West and East CETs
  - Tanks are in good structural condition.
  - Exterior protective coating is in fair condition. (The West CET has few areas of minor corrosion on roof. The East CET has minor corrosion on the roof primarily near conduit laying on top of roof.)
  - Interior protective coating is in fair condition (West CET has severe corrosion on the overflow pipe; East CET has a few isolated areas of minor corrosion.)
  - West CET needs repair to provide lock on water compartment hatch.
  - East CET needs repair to provide lock on roof manway.
- Mallard Lane
  - Tank is in good structural condition.
  - Exterior and interior protective coating is in fair condition.
- Southwood Hills
  - Tank is in fair structural condition.
  - Exterior and interior protective coating was in poor condition at time of inspection; however, tank was re-coated in 2017

including some minor repairs.

The upper pressure plane is served by the West CET. The other ESTs are located in the lower pressure plane (total capacity of 1,500,000). The total EST capacity in the water distribution system is 2.5 MG.

The TCEQ requires elevated storage capacity of 100 gallons per connection. **Table 7-9** lists the EST capacity required at current and future connection counts; the current storage capacity is sufficient to meet the TCEQ minimum requirements over the planning period. The TCEQ also requires total storage capacity of 200 gallons per connection (EST plus GST). The current total storage capacity is sufficient to meet the TCEQ minimum requirements over the planning period.

7. Backup Power

The City's water system meets storage requirements such that emergency backup power is not needed per TCEQ rule. However, there are operational conditions that are undesirable with any prolonged power failure. Backup power for the SCADA system is critical at SCADA communication sites (as discussed previously).

The main issue with water delivery occurs when the North Pump Station is without power. For example, a recent power failure occurred in the system and the West Elevated Tank could not be filled. The operators have to manually check levels in the remote sites (like West EST and Mallard EST). Maintaining levels requires additional operator time and communications. Any prolonged power outage could create significant issue with tank levels and system pressures.

Backup generator capable of running the firm capacity of the North Pump Station is recommended.

8. GIS

The City previously setup the water system on the City's GIS system. The last update was in 2009. The information is pretty basic with water line size and approximately location on the correct side of the road. Given the timing of the last update and only basic information provided, the current information in the GIS should be updated. The GIS system for water should be expanded to include:

- GPS coordinates of valves, fire hydrants, tanks, pump stations, and major line intersections (Certain information should be kept from public database to limit system vulnerabilities)
- Pipe material type

- Pipe age
- Number of leaks and locations (The relatively new iWorks system has been implemented by the Water Department to better track work orders but the iWorks does not yet have the City water map incorporated. Tracking leaks and work orders issued can be accomplished with interface with GIS. This will be an excellent management tool in the future to help prioritize line replacement by focusing on lines with repeat leaks per block or road.)
- Location of all monitoring points in the City's TCEQ mandated Monitoring Plan
- Other pertinent data as may be required by TCEQ rule or operator preference.

It may be more cost efficient to have an in-house staff person run and maintain the GIS system.

9. Water Line Trouble Areas

In discussions with the water operators, several areas in the water distribution system are considered "troubled areas". These areas have issues with undersized lines, repeated leaks, conflicts with other utilities making work by city staff problematic, and/or aging infrastructure support system. **Table 7-10** summarizes the water trouble areas as shared by City staff in summer 2017 (not listed in priority order).

Table 7-10. Water Line Trouble Areas Noted by Operators

Size (In)	Street	Location	Comments
1	Animal Control	3rd and Shelter	bore under 79 needed
2	9th	Fowzer and Davis	
2	Edmond	2nd and 6th	
2	Franklin	2nd and 1st	
2	Hood	Brown and Lake	
2	Lexington	Lake and Gilmore	
2	Miller	All	
2	Sams	Frink and Old Granger	
2	Scott	All	
2	Symes	Oak and Walnut	
2	Travis	2nd and 1st	
4	WWTP	Private property	Runs under storage shed
6	4th	Annie and Wyeth	fiber cable near line
6	Cecilia	Victoria and Sloan	

Size (In)	Street	Location	Comments
6	Debus	2nd and Lake	
6	E. MLK	Threadgill and Dolan	
6	Hosack	All	
6	Kimbro	7th and Dillinger	
6	Lexington	8th and Huff	
6	Old Granger Rd	Main and Lake	
6	Royal	MLK and Miller	
8	Along Railroad	1st and 4th	
8	Beach	Potamac and Creek	Creek crossing is washed out
8	Main	6th and MLK	
8	Old Coupland	S Main to Water Tower	
8	Robinson	3rd and MLK	
8	S Main	All	
12	12th	Main and Fowzer	

The costs associated with the trouble areas are addressed in **Section 7.9** as part of the overall undersized line issue or specific trouble areas as listed above.

7.8 Water System Future Needs

In addition to the water system key issues described in **Section 7.7**, there other water system needs based on demand projections. The previous work to establish the new North Pump Station, West CET, East CET, and related large diameter projects provided a great jump start to the needed improvements in the distribution system to meet future demands. Since growth has not been as rapid as the 2001 Master Plan estimated, the recent improvements provide an excellent backbone to the growth outlined in this 2017 SFP. The long-term plan outlined in **Section 7.9** provides an extension of the previous work to account for future demands estimated in this Plan.

Other areas of future water system needs are outlined below:

1. Typically, new developments are required to pay for any water line extension project needed for said development. As new development occurs, the city should consider “upsizing” water line extensions where strategic for other future growth needs. The City should consider a “development” reserve to fund oversizing of lines.

2. The BRA has indicated a potential centralized take point for the City. If this take point is negotiated between the BRA and the City, then a new transfer pump station will be required near the current Hwy 95 transmission main location. This pump station will need to deliver water to the tanks in the upper and lower pressure zones.

3. The Engineering Manual established by the City should be maintained in the future. Some of the key highlights follow:

   - Adhere to all TCEQ rules (maximum of connections per line size, storage requirements per tap, system pumping redundancy, etc.)
   - Minimum service size to house 1”
   - Minimum distribution lines size 8” (If 2 or more hydrants ore installed, minimum is 10”)
   - Avoid dead end lines where possible
   - Design water line projects to the minimum standards established.

4. To help with future system demand planning based on actual population and development areas, the City’s Water Distribution Model should be updated. The model should include the known system changes as identified herein and based on staff input. This will provide a tool for planning for future water system needs based on growth or new planned developments. Some of the other benefits of an updated model include:

   - Coordinate with BRA from a position of knowledge if they proposed changes to entry delivery points to the distribution system
   - Refine flushing protocols to maintain disinfection residuals in the systems (especially in the outer reaches of the system) via a Flushing Optimization Plan.
   - Refine free chlorine / chloramines nitrification plan to determine possible changes to flushing program during the transitions to reduce water use and also verify length of time needed for free chlorine.

   The model can be annually updated based on line replacements or new developments. This function can be completed by a qualified staff person or consult with an engineer.

7.9 Long-Term Plan - Water

The water system will require many upgrades as part of the long-term plan. The improvements focus on addressing the urgent needs for the water system such as low pressure areas, old lines, reducing water loss, etc. Priority is based on projected needs of the water system. The most immediate maintenance and short-term needs include:

1) Replace all lines smaller than 6" (130,674 LF according to current basemap and GIS; replace with 8").
2) Replace all old Cast Iron (CI) lines to reduce water leaks (45,404 LF)
3) Fire Hydrant replacement project (on-going effort)
4) Fire Hydrant – need additional hydrants with line extensions where required – see **Table 7-7** for current locations (as of July 2017)
5) Tank maintenance projects – upgrade/recoat tanks as required based on needs as identified in the annual tank inspection reports.
6) Upgrade GIS system with pipe age, pipe material, valve locations, fire hydrant locations, etc.
7) Upgrade SCADA system (water and wastewater). This includes backup (UPS) systems at water sites to keep the minimal level of SCADA functional. An option to more fully automate routine tasks is also included for the purpose of saving staff time for operations.
8) Complete leak detection study to identify areas of water loss and address point repairs and limited line replacements as may be identified.
9) Amend CCN to desired boundaries by City of Taylor (negotiations with adjoining CCN entities required)
10) Replace trouble area water lines (6", 8", and 12" lines listed in **Table 7-10**; smaller lines are scheduled for replacement under Item 1 above)

Other future studies or capital type projects that should be considered:

a) Convert radio read system to fixed based meter read system to allow daily accounting of water use and loss (and provide email communications to customers on daily basis if alarm condition occurs). The cost included in the long-term plan assumes the radios on the meters are adequate and only the fixed-based infrastructure is required. In the event that all meters must be changed, additional budget is shown. The BRA take point meters and all wholesale meters should be added to the system.
b) Add VFDs for the pumps at the North Pump Station (use with SCADA and fixed based meter system to maximum energy efficiency)
c) Backup generator for North Pump Station
d) Upgrade Water Distribution Modeling
e) Future BRA delivery point – new High Service Pump Station complete with new GST. The City should negotiate with BRA to pay for this station since this concept changes the delivery method in the current contract.
f) Demolish Ford Pump Station at end of useful life of current GST.
g) Justin Lane water line (20' line on west side of airport to tie 24" line to EST to US 79 main lines).

There are many water projects identified in the 2001 Water and Wastewater Master Plan that were implemented in the 2000s. This previous investment by the City laid the ground work for an excellent water system to serve both current and future needs. There were other critical projects identified in the 2001 Master Plan that have yet to be completed to date since growth has not dictated the need to implement the project. The projects remaining are prioritized in the following order:

1) 20" line along Old Granger Road to allow more water to be delivered to the Ford Ground Storage Tank and Murphy Park EST
2) 16"/12" loop from Highway 95 to and along CR 409 to Lake Drive and back to Hwy 95. This loop adds another line besides the line along Hwy 95 and Old Granger Rd to supply water to the Ford GST and Murphy EST. It will also provide needed capacity to pump water south to the Southwood Hills EST
3) 12" line along Old Thorndale Rd and an 8" line along Gravel Pit Rd.
4) 12" line to supply water to the Murphy Park EST from the west. After this line is constructed, Taylor will be able to supply water to the Murphy Park EST from both the east and west. It provides the means to fill the tank more quickly and redundancy in case of line breaks.
5) New 8" line along 7th St from Main St to the railroad.
6) 12" line along CR 398 from the proposed 24" line to existing lines at Grace Street and along CR 366 to an existing line on Old Georgetown Rd. These lines will create loops that will eliminate dead end lines, increase areas pressures, and increase fire flows.
7) 16" line to supply water to the proposed FM 973 Upper Pressure Plane EST from the west and to serve future growth southwest of the City (line allows more supply and pressure in the area prior to the future EST).
8) 12" loop along Old Thorndale Rd, FM 619, and Loop 427 to provide a second path to supply water to the Southwood Hills EST, to increase fire flows in the area, and to serve new growth. The new pipes would replace existing lines 6" and smaller.

In addition, there are growth type projects identified in the 2001 Master Plan that are solely for future development. These projects can be implemented when growth so dictates and include:

a) 16" line to supply water to the Southwood Hills EST.
b) 0.5 MG FM 973 Upper Pressure Plane EST to ensure the upper pressure plane can meet the following conditions: a) 100 gallons/tap EST and 2) 40% of the peak hour demand for 4 hours
c) Expansion of the Upper Pressure Plane Booster Pump Station to serve the needs of growth in the upper pressure plane.
d) 8" line in the upper pressure plane from Loop 427 to and along Hwy 95 to CR 400 to serve projected growth in the area.
e) 16" line along Lake Dr. between Davis St and Old Granger Road to increase the water supply to the Murphy Park EST.

f) 12”/16” line to and along FM 619 to serve future growth.
g) 12” line along Rices Crossing Rd to and along Buttercup Rd. to and along FM 973. This line complete two loops and provides another line to the proposed FM 973 Upper Pressure Plane EST.
h) 16” line along CR 398.
i) 16” line along CR 395 and CR 101 to Hwy 79. This line serves future growth, adds another supply line for the CR 373 Upper Pressure Plane EST, and another supply to the Hutto delivery point.
j) 12” line along CR 369 and south to CR 398 to serve future growth.
k) 12” loop along CR 366 and CR 365 from CR 369 to the Upper Pressure Plane Booster Pump Station. This line will serve future growth in the north.
l) 12” line along FM 619 to and along CR 447 to CR 452. This line will serve future growth southeast of the City.

Table 7-11 provides a priority list for all the short-term and long-term water system needs. **Figure 7-8** summarizes the projects on the water map by priority.

7.10 5-Year CIP - Water

Table 7-12 summarizes an example 5-year CIP for the water system (total of approximately $10.6 million). The projects are illustrated on the previous maps for the long-term plan (see **Figure 7-8**).

7.11 General Recommendations - Water

In addition to the infrastructure improvements listed, other recommendations applicable to the water system include:

1. Update the Water Conservation Plan every 5 years (or as required by TCEQ). The next update is due 2019.
2. Continue with public education efforts from Water Conservation Plan goals (such as plumbing retrofit, use of xeriscape, etc.)
3. Meter water used in flushing in the distribution where possible and refine estimates for water leaks so that the water is accounted for in water loss calculations.
4. Submit Annual Report for water use to TWDB by May 1st each year (see Water Conservation Plan for more information).
5. Update Drought Contingency Plan as major Water System are implemented that will impact trigger conditions.
6. Maintain Monitoring Plan and update per TCEQ rules if any changes in the water system occur (i.e., new pump station, tank, etc.).
7. Maintain water quality sampling as per Monitoring Plan.
8. Update Water (and Wastewater) Impact Fee.
9. Update Water (and Wastewater) Rate Study before 2020 (and continue with water conservation rate structure whereby unit cost per 1,000 gallons increases with increasing block of water use).
10. Complete Leak Detection Study (given high water system water loss); adjust water line replacement priorities based on results (if needed).

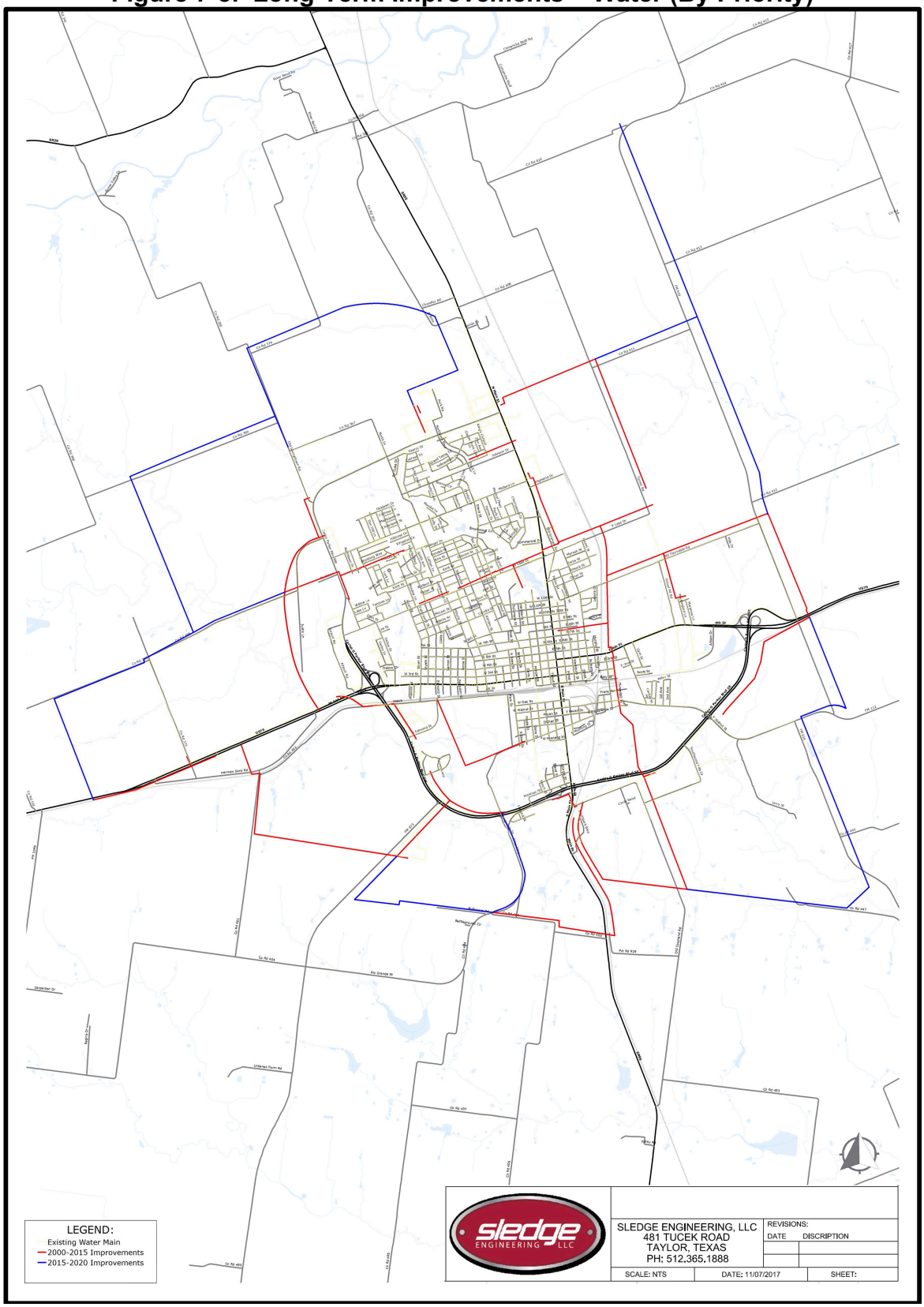
Table 7-11. Prioritized Cost for Improvements - Water

Item	Description	Priority 1	Priority 2	Priority 3	Total
1	Replace all lines smaller than 6"			$10,193,000	$10,193,000
2	Replace all CI lines		$3,582,000		$3,582,000
3	Fire Hydrant Replacement	$500,000			$500,000
4	Fire Hydrant Proposed with Lines	$790,000			$790,000
5	Tank Maintenance Projects	$400,000			$400,000
6	GIS Upgrade - Water	$50,000			$50,000
7	SCADA Upgrades (Monitor)	$200,000			$200,000
7.5	SCADA Upgrades (Automation)		$500,000		$500,000
8	Leak Detection Study	$100,000			$100,000
8.5	Leak Detection - point repairs and line replacements	$900,000			$900,000
9	CCN Water Amendment	$150,000			$150,000
10	Trouble Areas (as of Summer 2017)	$800,000			$800,000
11	Upgrade meter read to fixed based	$750,000			$750,000
11.5	Upgrade meters for fixed based		$1,450,000		$1,450,000
12	Add VFDs for North Pump Station		$300,000		$300,000
13	Backup generator for North Pump Station		$300,000		$300,000
14	Upgrade Water Distribution Model		$250,000		$250,000
15	Future HSPS Delivery Point			$2,500,000	$2,500,000
16	Demolish Ford Pump Station			$300,000	$300,000
17	Justin Lane water main (20")	$1,000,000			$1,000,000
	2001 Master Plan Remaining Priority Projects:				
17	20" line along Old Granger Road (for Ford PS and Murphy EST)	$821,000			$821,000
18	16"/12" loop from Hwy 95, CR409, Lake Drive		$1,528,000		$1,528,000
19	12" line Old Thorndale Road; 8" Gravel Pit Rd		$959,000		$959,000
20	12" line to supply Murphy EST from west.		$385,000		$385,000

Item	Description	Priority 1	Priority 2	Priority 3	Total
21	8" line along 7th from Main St to Railroad		$168,000		$168,000
22	12" line CR 398 from 24" along Grace Street, CR 366, to Old Georgetown Rd		$764,000		$764,000
23	16" to proposed/future FM 973 EST		$1,833,000		$1,833,000
24	12" loop along Old Thorndale, FM 619, Loop 427 (supply Southwood Hills EST)		$1,217,000		$1,217,000
	2001 Master Plan Remaining Priority Projects for Growth:				
25	16" to supply water to Southwood Hills EST	$2,900,000			$2,900,000
26	0.5 MG EST FM 973 (Upper Plane)			$1,000,000	$1,000,000
27	Expand Upper Pressure Plane HSPS			$650,000	$650,000
28	8" line in upper pressure plane from Loop 427, along Hwy 95, to CR 400			$1,026,000	$1,026,000
29	16" line Lake Drive between Davis St and Old Granger Road to increase supply to Murphy Park EST			$519,000	$519,000
30	12"/16" line FM 619			$2,055,000	$2,055,000
31	12" line Rices Crossing, Buttercup Rd, to FM 973			$1,577,000	$1,577,000
32	16" along CR 398			$1,123,000	$1,123,000
33	16" along CR 395 and CR 101 to Hwy 79			$1,466,000	$1,466,000
34	12" along CR 369 and south to CR 398			$1,851,000	$1,851,000
35	12" loop along CR 366, CR 365, CR 369 from Upper Plane HSPS			$1,664,000	$1,664,000
36	12" along FM 619 and along CR 447 to CR 452			$2,428,000	$2,428,000
	Total Probable Cost	**$9,361,000**	**$13,236,000**	**$28,352,000**	**$59,361,000**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

Figure 7-8. Long-Term Improvements – Water (By Priority)



**** See Digital Map (PDF) for clarity;** see Exhibits for Council Districts & larger scale*

Table 7-12. 5-Year CIP – Water (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Replace all lines smaller than 6"	Utility, Bond	Capital	$10,193,000	$ -		$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 9,443,000
Replace all CI lines	Utility Fund	Capital	$ 3,582,000	$ -		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 3,082,000
Fire Hydrant Replacement	Utility Fund	Capital	$ 500,000	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 200,000
Fire Hydrant Proposed with Lines	Utility Fund	Capital	$ 790,000	$ -		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 540,000
Tank Maintenance Projects	Bond, TWDB	Capital	$ 400,000	$ -						$ 200,000	$ 200,000
GIS Upgrade - Water	Utility Fund	Professional	$ 50,000	$ -		$ 50,000					$ -
SCADA Upgrades (Monitor)	Utility Fund	Professional	$ 200,000	$ -		$ 200,000					$ -
SCADA Upgrades (Automation)	Utility Fund	Professional	$ 500,000	$ -					$ 500,000		$ -
Leak Detection Study	Utility Fund	Capital	$ 100,000	$ -		$ 100,000					$ -
Leak Detection - point repairs and line replacements	Utility Fund	Capital	$ 900,000	$ -		$ 100,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ -
CCN Water Amendment	Utility Fund	Professional	$ 150,000	$ -		$ 50,000					$ 100,000
Trouble Areas (as of Summer 2017)	Utility Fund	Capital	$ 800,000	$ -		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 300,000
Upgrade meter read to fixed based	Utility Fund	Capital	$ 750,000	$ -							$ 750,000
Upgrade meters for fixed based	Utility Fund	Capital	$ 1,450,000	$ -						$ 450,000	$ 1,000,000
Add VFDs for North Pump Station	Utility Fund	Capital	$ 300,000	$ -			$ 300,000				$ -
Backup generator for North Pump Station	Utility Fund	Capital	$ 300,000	$ -				$ 300,000			$ -
Upgrade Water Distribution Model	Bond, TWDB	Capital	$ 250,000	$ -						$ 250,000	$ -
Future HSPS Delivery Point	Bond, TWDB	Capital	$ 2,500,000	$ -							$ 2,500,000
Demolish Ford Pump Station	Utility Fund	Capital	$ 300,000	$ -					$ 300,000		$ -
Justin Lane water main (20")	Utility Fund	Capital	$ 1,000,000	$ -						$ 1,000,000	$ -
2001 Master Plan Remaining Priority Projects:											
20" line along Old Granger Road (for Ford PS and Murphy EST)	Bond	Capital	$ 821,000	$ -					$ 821,000		$ -
16"/12" loop from Hwy 95, CR409, Lake Drive	Bond	Capital	$ 1,528,000	$ -							$ 1,528,000
12" line Old Thorndale Road; 8" Gravel Pit Rd	Bond	Capital	$ 959,000	$ -							$ 959,000
12" line to supply Murphy EST from west.	Bond	Capital	$ 385,000	$ -							$ 385,000
8" line along 7th from Main St to Railroad	Bond	Capital	$ 168,000	$ -							$ 168,000
12" line CR 398 from 24" along Grace Street, CR 366, to Old Georgetown Rd	Bond	Capital	$ 764,000	$ -							$ 764,000
16" to proposed/future FM 973 EST	Bond	Capital	$ 1,833,000	$ -							$ 1,833,000
12" loop along Old Thorndale, FM 619, Loop 427 (supply Southwood Hills EST)	Bond	Capital	$ 1,217,000	$ -							$ 1,217,000

Table 7-12. 5-Year CIP – Water (Example CIP shown) (continued)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
2001 Master Plan Remaining Priority Projects for Growth:											
16" to supply water to Southwood Hills EST	Bond	Capital	$ 2,900,000	$ -				$ 2,900,000			$ -
0.5 MG EST FM 973 (Upper Plane)			$ 1,000,000	$ -							$ 1,000,000
Expand Upper Pressure Plane HSPS			$ 650,000	$ -							$ 650,000
8" line in upper pressure plane from Loop 427, along Hwy 95, to CR 400			$ 1,026,000	$ -							$ 1,026,000
16" line Lake Drive between Davis St and Old Granger Road to increase supply to Murphy Park EST			$ 519,000	$ -							$ 519,000
12"/16" line FM 619			$ 2,055,000	$ -							$ 2,055,000
12" line Rices Crossing, Buttercup Rd, to FM 973			$ 1,577,000	$ -							$ 1,577,000
16" along CR 398			$ 1,123,000	$ -							$ 1,123,000
16" along CR 395 and CR 101 to Hwy 79			$ 1,466,000	$ -							$ 1,466,000
12" along CR 369 and south to CR 398			$ 1,851,000	$ -							$ 1,851,000
12" loop along CR 366, CR 365, CR 369 from Upper Plane HSPS	Bond	Capital	$ 1,664,000	$ -							$ 1,664,000
12" along FM 619 and along CR 447 to CR 452	Bond	Capital	$ 2,428,000	$ -							$ 2,428,000
				$ -							$ -
TOTAL			**$50,949,000**	**$ -**	**$ 50,000**	**$ 950,000**	**$ 950,000**	**$ 3,850,000**	**$ 2,271,000**	**$ 2,550,000**	**$40,328,000**

8. WASTEWATER

The City of Taylor owns and operates the wastewater collection system and wastewater treatment plant to provide sanitary sewer service for its residents and areas within the designated CCN (Certificate of Convenience and Necessity). The TCEQ uses the CCN to define the City's sewer service area. The map of the collection system is provided in **Figure 8-1** for reference.

Wastewater service customers include both those within the city limits and some areas within the Extra Territorial Jurisdiction (ETJ) of the City as per the City's CCN. Customers are comprised of residential, commercial, and industrial users. The City has developed a Pre-Treatment Program for users which primarily relates to industrial users. The Year 2016 total number of sewer connections was approximately 5,900.

The City of Taylor wastewater collection system is comprised of gravity sewer lines ranging in size from 6" collectors to 42" interceptors. Piping material is varied within the system including vitrified clay, concrete, ductile iron, fiberglass, and PVC. Projects have been completed to address infiltration and inflow within the system by point repairs, replacing lines, re-coating manholes, manhole inserts, etc. Due to the topography of Taylor, some lift stations are utilized in the collection system to help pump wastewater through force mains to higher collection lines for ultimate delivery of wastewater to the treatment plant.

The collection system is subdivided into various watersheds based on the topography of Taylor and the main interceptor sewers. The main basins are summarized below:

1. Mustang Creek Basin
2. Bull Branch Basin

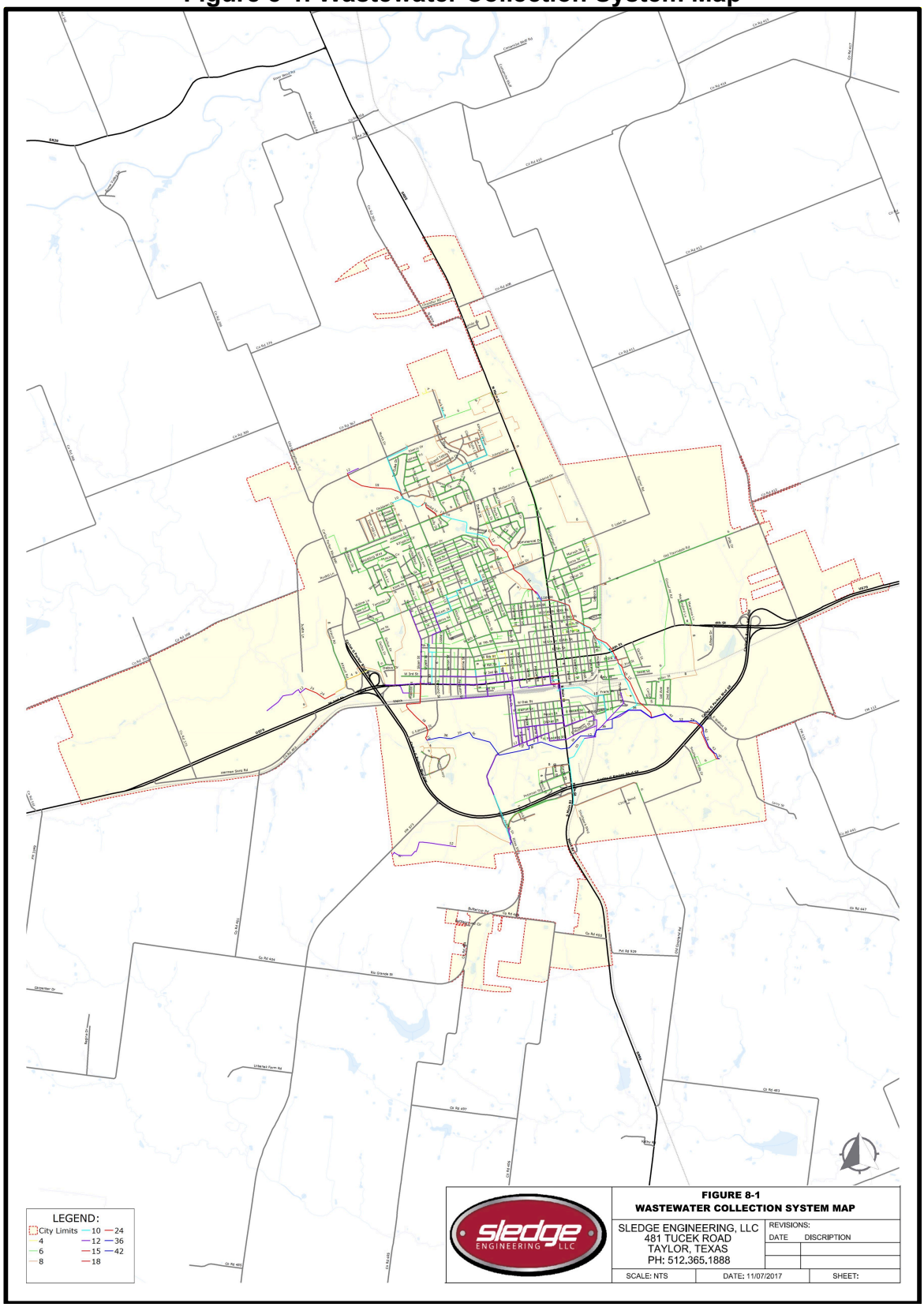
These two major drainage basins are divided into eight (8) minor basins. The previous 2001 Master Plan added two other major basins:

- Turkey Creek Basin
- South Tributary to Mustang Creek Basin

These two basins were included in the previous planning efforts primarily for future sewer service area in Taylor.

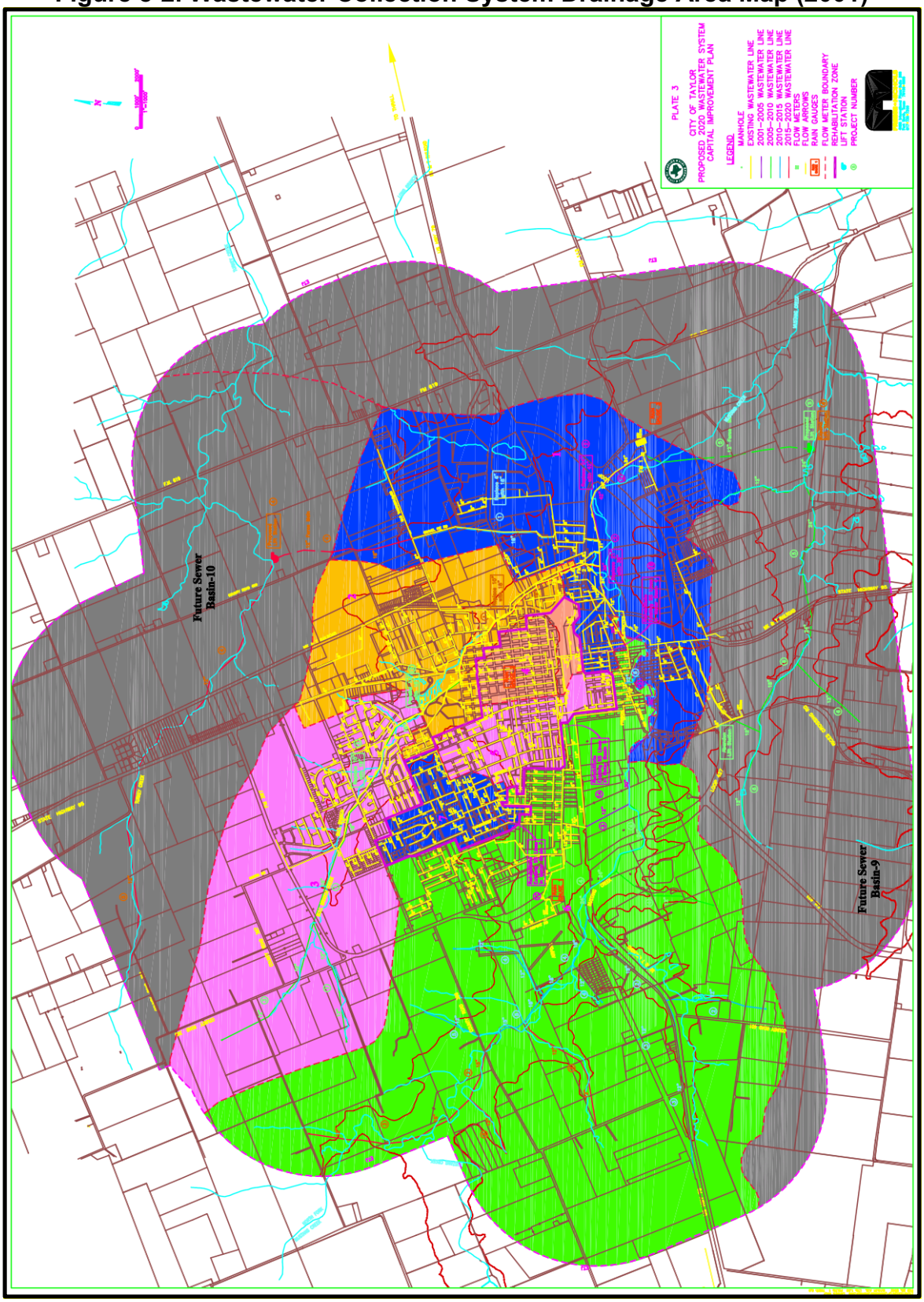
In the 2001 Water and Wastewater Master Plan, the wastewater drainage basins were defined. This included the existing and future drainage basins. These basins remain valid. A map showing the drainage basins as defined in 2001 is included as **Figure 8-2** for reference.

Figure 8-1. Wastewater Collection System Map



**** See Digital Map (PDF) for clarity;*** *see Exhibits for Council Districts & larger scale*

Figure 8-2. Wastewater Collection System Drainage Area Map (2001)



** See Digital Map (PDF) for clarity*

8.1 Previous Studies

The wastewater system has not received extensive study in the past. The key wastewater system planning effort was the 2001 Master Plan and is summarized below:

1. Water and Wastewater System Master Plan (2001)

The "City of Taylor Water and Wastewater System Master Plan" was completed by Freese and Nichols dated December 2001. This plan was the basis of many major improvements to the wastewater collection system in the last decade. Some of the key findings from the 2001 study include:

a) The WWTP attenuates peaks in the wastewater flow discharge measurements; therefore, the effluent flow is not representative of sanitary sewer inflow to the plant.

b) Flow monitoring was accomplished as part of the 2001 Master Plan (and also with the SSES at a later date). The dry weather flows indicate that 65% of the water use reaches the wastewater plant.

c) I/I was identified as a significant issue. As a result, the SSES was completed and actual sanitary sewer system rehabilitation was accomplished as a result.

d) Wastewater flows from the 2001 plan based on 2000 flows recorded indicated the following flows:
- Average day dry weather wastewater flow = 1.35 MGD
- Peak 2-Hour wet weather wastewater flow = 8.65 MGD
- Ratio of Peak 2-Hour to Average day flow = 6.4:1

e) The plants average daily flow of 4 MGD would be adequate through Year 2020 (without any buffer) but the peak 2-hour flow would be exceeded by 2015. These flows projections have not come to be realized to date.

f) Recommendation for improvements included a) rehab for I/I (infiltration and inflow), b) a new 30" interceptor sewer along Mustang Creek to relieve overloading in an old 12" line, and c) extension and paralleling of the Bull Creek interceptors.

g) Recommendations to accommodate future growth in the western and southern part of the City were summarized.

h) The wastewater CIP projected cost was $25,756,144 from the 2001 Plan with the following projected timeline:
- 2001 – 2005 $6,542,035
- 2005 – 2010 $7,942,211
- 2010 – 2015 $4,276,840
- 2015 – 2020 $7,013,059

(These costs are shown for information purposes only for comparison with the cost shown in this 2017 SFP.)

8.2 Regional Wastewater Opportunities

The TCEQ encourages regionalization of wastewater plants where practical. Engineering reports submitted in support of new or major amendments to discharge permits must include an analysis of regional opportunities.

Given the current plant capacity and ability to expand the plant on the current site to double capacity, there is no driving force or economic benefit to relocating the plant. This limits the potential for regional efforts by combining with City of Hutto or BRA. There may be opportunities in the future.

Since the plant has capacity available, the system can serve new customers that locate to the City. Taylor could also offer sewer service to areas currently only served by water CCN's (such as Manville WSC). Feasibility would need to be determined. There are no current requests for expansion of sanitary sewer coverage in areas outside of Taylor's current service area.

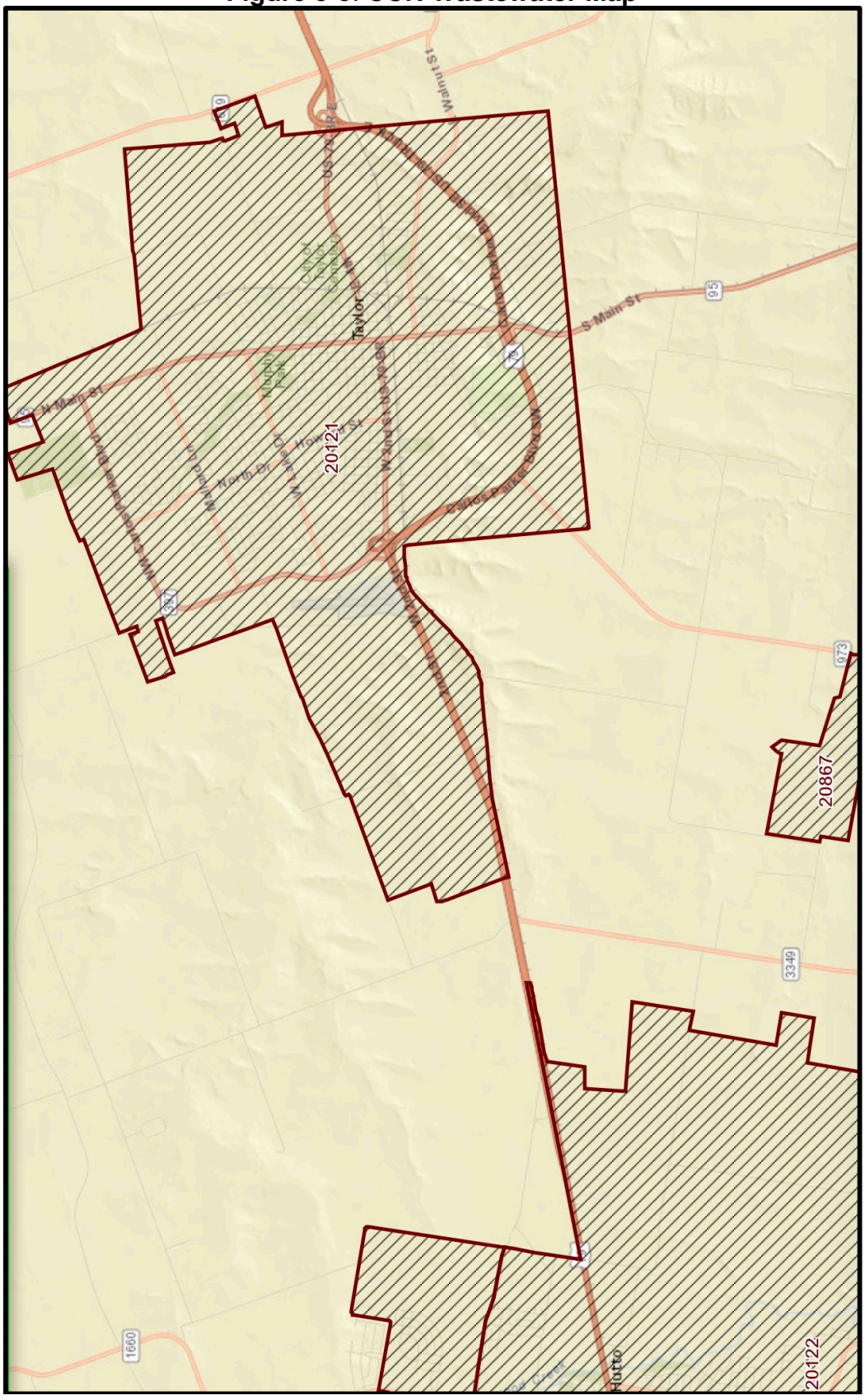
8.3 CCN Issues and Recommendations

The City of Taylor provides wastewater service for its residents and areas within the designated CCN (Certificate of Convenience and Necessity). Taylor's assigned CCN number is 20121. The TCEQ CCN sewer service area map for the Taylor area is provided in **Figure 8-3**.

The adjacent entities to Taylor providing wastewater service include Hutto (20122) and Jonah SUD (21053). There are no agreements in place to take over service area, so the CCN map controls service providers. Noack WSC's water contract with Taylor includes a provision that Taylor can expand their wastewater CCN into Noack's water service area without protest. Similar clauses are not present for other water providers in the area.

The City's 2001 Master Plan included expanded service area to account for future growth. The City of Taylor should protect its availability to serve these areas by amending the CCN map to include known and estimated growth patterns.

Figure 8-3. CCN Wastewater Map



8.4 SCADA Review and Recommendations

The SCADA for the sanitary sewer system is limited as there are relatively few lift stations that are in the system. As the water system SCADA is upgraded (see **Section 7.5**), the applicable wastewater infrastructure on SCADA can be upgraded. These costs are included in the water SCADA upgrade estimate. The WWTP SCADA is considered separately for the system at the wastewater treatment plant (see **Section 9.4**).

8.5 City Base Map Review

Figure 8-1 provides the current wastewater system map. The map includes some updates based on the wastewater system operators' knowledge of the system and base map changes that they maintain on Google Earth (kmz file).

Table 8-1 summarizes the line sizes shown in the current GIS system and wastewater base map. The table includes pipe size, the number of line segments shown in the current GIS system, the total length of line per size and the percent of total of line lengths for each pipe size.

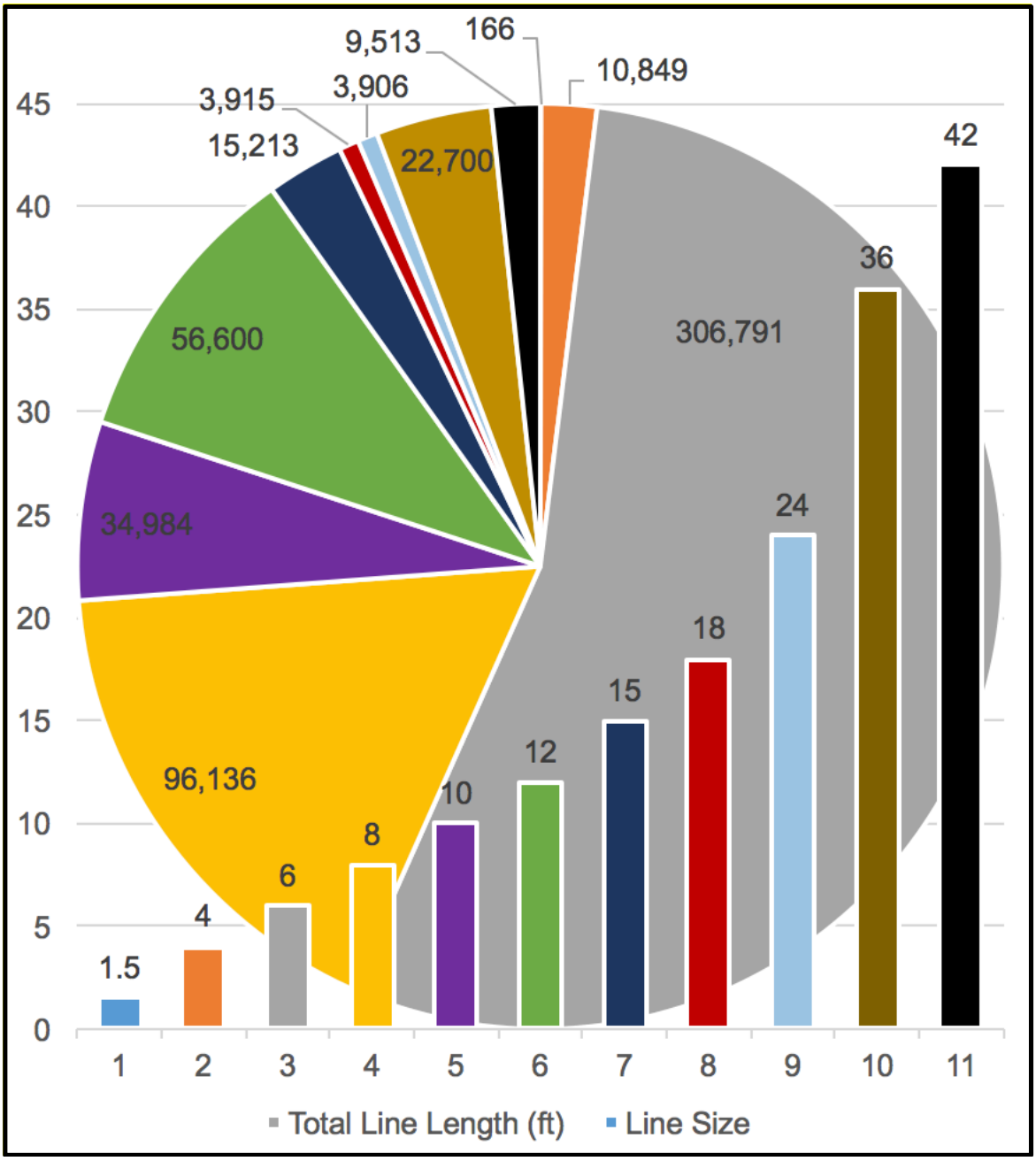
Table 8-1. Wastewater Line Sizes, Segment Counts, and Quantities

Line Size (inches)	Line Count (segments)	Total Line Length (LF)	% of Total
1.5	9	166	0.03%
4	144	10,849	1.93%
6	731	306,791	54.71%
8	262	96,136	17.14%
10	71	34,984	6.24%
12	71	56,600	10.09%
15	28	15,213	2.71%
18	11	3,915	0.70%
24	7	3,906	0.70%
36	46	22,700	4.05%
42	22	9,513	1.70%
	Total:	**560,772**	**100.00%**

According to current GIS data, the total length of sewer line is 560,772 LF or approximately 106 miles. It is possible some old lines are still counted, so GIS needs to be updated.

Figure 8-4 illustrates the total line length per sewer line size based on the available information from the City's map.

Figure 8-4. Wastewater Line Sizes (inches) and Quantities (LF)



It is recommended the City Wastewater Base Map be converted to grid system (11x17). This can be in both digital and hardcopy format. This will allow field operators to note specific discrepancies (location, line size, material type, etc.) or field locates that may be found in the field with the base map. This information can then be incorporated into annual base map updates.

The GIS should be updated and maintained continually with up to date wastewater system information.

8.6 Wastewater System Key Issues

The existing wastewater system condition was assessed based on all available data such as recently completed projects, problem areas based on input from City operators, previous studies, and local knowledge of system. The key issues for the wastewater system follow:

1. Infiltration / Inflow (I/I) and SSES

Flow monitoring was completed as part of the 2001 Master Plan. A SSES was completed for Basins 4, 5, and 7 in 2004. This led directly to a manhole rehabilitation effort in 2009. I/I was reduced as part of this effort. However, with any aging sanitary sewer system, new points of I/I or SSO (sanitary sewer overflows) can occur as lines and manholes deteriorate. A yearly program is recommended to focus on reducing I/I and eliminating SSOs.

A system wide SSES (Sanitary Sewer Evaluation Survey) is recommended to help quantify leaks, identify lines with significant issues, measure flows per basin, etc. This effort can help fine tune the priorities for line replacements identified in **Section 8.8**.

2. Undersized Lines

As previously noted, there is approximately 11,000 LF of undersized lines in the wastewater system (4" and smaller). While this is not significant, these lines should be replaced to prevent sewer stops.

3. Material Type and Age of Lines

The existing database for material type and age of sanitary sewer lines is lacking. In general, material type ranges from vitrified clay, concrete, ductile iron, fiberglass, and PVC. The clay lines are the most troublesome as they tend to lead directly to I/I. These lines are also some of the oldest in the system. All clay lines should be replaced and removed from the system. The long-term plan includes recommended line replacements.

4. Lift Station Conditions

In general, the existing lift stations are adequate, but they should be maintained to meet all current TCEQ rules and to meet flow demands. Where possible, lift stations should be eliminated from the system as operating cost tend to be high compared to gravity sanitary sewer. A summary of the lift stations and recommendations follows:

- Airport Lift Station – This lift station is located between US 79 and the T-Hangars at the airport. This lift station is relatively small. It should be eliminated when the Mustang Creek Interceptor is

constructed. This will provide for more development to the west without the need for a lift station.

- HEB lift station – This lift station is small and would be a low priority for elimination. It is possible to eliminate this station once the future Turkey Creek Interceptor is constructed.

- Windy Ridge Lift Station – This lift station is located on the south side of town. It serves the High School, some local connections, and is available for other development in the area. This station is the newest on the system and is in good condition. The City should continue to maintain this lift station to ensure optimal operation and efficiency.

5. Lift Station Backup Power

The lift stations mentioned above all have the TCEQ required backup power connections for a portable generator. The city has no dedicated portable generator for the lift stations. A trailer mounted unit should be purchased for use at the lift stations. The Airport and Windy Ridge lift stations have adequate connectors but the HEB lift station control panel will require some modification.

Permanent backup power was considered for the lift stations. Since the Airport and HEB lift stations can be replaced by future interceptor sewer lines, on-site generators are not recommended. The flows at the Windy Ridge Lift Station should be monitored and permanent power considered when flows reach near capacity of the station. Currently, the wet well is sufficient to allow a portable generator to be used to adequately keep up with the flows.

6. GIS

The City previously setup the wastewater system on the City's GIS system. The last update was in 2009. The information is basic with line size and approximately location on the correct side of the road. Given the timing of the last update and only basic information provided, the current information in the GIS should be updated. The GIS system for wastewater should be expanded to include:

- GPS coordinates of manholes, cleanouts, flow monitoring stations, and lift stations. GPS information can be obtained as part of the recommended SSES.
- Line material type
- Line age
- Number of sanitary sewer calls for service from stoppage or other

issues. (The relatively new iWorks system has been implemented by the Water Department to better track work orders but the iWorks does not yet have the City wastewater map incorporated. Tracking work orders issued can be accomplished with interface with GIS. This will be an excellent management tool in the future to help prioritize line replacement by focusing on lines with repeat issues.)

- Other pertinent data as may be required by TCEQ rule or operator preference.

It may be more cost efficient to have an in-house staff person run and maintain the GIS system.

7. Wastewater Line Trouble Areas

In discussions with the system operators, several areas in the wastewater system are considered "troubled areas". These areas have issues with repeated stoppages, I/I, or conflicts with access. **Table 8-2** summarizes the current wastewater trouble areas as shared by City staff.

Table 8-2. Wastewater Line Trouble Areas Noted by Operators

Size (In)	Street	Location	Comments
6"	1613 N. Lynn		Under driveway
6"	1613 N. Lynn	All areas in front and behind	Driveways
6"	Alley between Bind & Symes	Walnut & Pecan	
12"	Alley between Doak and Park	3rd and 2nd	

The alley issue is a result of uncontrolled construction (like fences and storage buildings) and also due to tight conditions with other issues. Pipe bursting is a construction method to help in these conditions.

The costs associated with the trouble areas listed above are addressed in **Section 8.8** as part of the overall long-term priority items.

8.7 Wastewater System Future Needs

In addition to the wastewater system key issues described in **Section 8.6**, there other sanitary sewer system needs based on demand projections. The previous work identified as part of the 2001 Master Plan has not implemented to date because the growth has not occurred in the system as originally projected. Since growth has not been as rapid as the 2001 Master Plan estimated, many of the "growth" related projects remain valid. The long-term plan outlined in **Section 8.8** provides an extension of the previous work to account for future demands estimated in this 2017 Strategic Facility Plan.

Other areas of future wastewater system needs are outlined below:

1. Typically, new developments are required to pay for any wastewater line extension project needed for said development. As new development occurs, the city should consider "upsizing" wastewater line extensions (or lift stations) where strategic for other future growth needs. In general, the City should consider a "development" reserve for oversizing lines.

2. The Engineering Manual established by the City should be maintained in the future. Some of the key highlights follow:

   - Adhere to all TCEQ rules (minimum and maximum slopes of pipes, manhole spacing, etc.)
   - Minimum service size to house 4" with cleanout at property line for City access to service line in the rights-of-way.
   - Minimum collection lines size 6" (8" generally recommended)
   - Design wastewater line projects to the minimum standards established.

3. To help with future system demand planning based on actual population and development areas, the City's Sanitary Sewer Model should be updated. The model should include the known system changes as identified herein and based on staff input. This will provide a tool for planning for future wastewater system needs based on growth or new planned developments. Some of the other benefits of an updated model include:

   - Refine line replacement priorities based on current I/I.
   - Estimate flows to the WWTP and capacity impacts both present and in the future.
   - Assist operators with potential areas of SSO to increase routine inspections.

   The model can be updated every 5 years based on line replacements or new developments/growth. This function can be completed by a qualified staff person or consult with an engineer.

8.8 Long-Term Plan - Wastewater

The long-term plan for the wastewater system requires capital investment to meet the various stated goals in this section. Priority is based on projected needs based on the wastewater system needs. The most immediate maintenance and short-term needs include:

1) Replace all lines smaller than 6" (total of 11,000 LF based on current base map information). The total for undersized line replacement projects is estimated as $660,000).
2) Conduct SSES for each major basin (2 each which includes the 8 sub-basins). SSES should include smoke testing, leak detection, drainage basin metering, and Sanitary Sewer Hydraulic Modeling to verify capacities. The two (2) studies can be completed concurrently or sequentially based on budget requirements. The budget is $400,000 for each SSES ($800,000 total).
3) Based on results of the two (2) SSES findings, complete wastewater line point repairs (for misaligned joints or root intrusion) and replacements (such as clay pipe) and complete manhole rehabilitation to eliminate SSOs and I/I. The budget rehab existing lines and manholes not to be replaced as part of other capital improvements is $2,000,000 ($1,000,000 per basin). An alternate to CIP approach to sewer system rehabilitation is for the city to hire a crew and equipment to address in-house.
4) Upgrade GIS for wastewater line information ($50,000 – assumes manhole and line information gathered during SSES efforts).
5) Upgrade SCADA system for lift station monitoring (costs included in Water SCADA upgrades since few lift stations are in the system).
6) Purchase dedicated portable generator for the lift stations (primarily for the Windy Ridge Lift Station) ($100,000).
7) Modify wastewater CCN to incorporate future growth areas ($100,000)
8) Address troubled areas identified by operators in summer of 2017 (see **Table 8-2;** budget $150,000).

Other near-term capital type projects that are priority include:

a) Eliminate airport lift station by construction of the Mustang Creek Interceptor. This proposed 18" interceptor routes from the west side of the airport, under US 79, and connect to the 36" interceptor in Mustang Creek (approximately 4,500 LF). Probable cost is $1,500,000.
b) Bull Branch main interceptors include 2 lines that are in parallel (10" and 12"/15"). These lines are in bad condition and need to be replaced with one larger sewer main (24"/36"). This project will be a major project and can be completed in phases (starting at lower sections and working up creek). The estimated total length is 13,000 LF (from the 42" line from Mustang Creek to the upper reaches of Bull Branch near Mallard Ln) with a probable total cost of $4,000,000.

There are projects identified in the 2001 Master Plan that have not been

completed to date since growth has not dictated the need to implement the project. The projects remaining are prioritized as follows:

- Extend 12”/15” interceptor along upper reaches of Bull Branch to serve the needs of projected growth [*project is part of Item b) above from the near-term project list*]
- Add capacity to the upper reaches of the existing Bull Branch Interceptor by replacing the 10” line with an 18” line and constructing a 15” line parallel to the existing 15” line.
- Extend a 12” interceptor along Bull Branch to serve the needs of projected growth.
- Extend a 15”/18” line along the railroad west of Loop 427.
- The existing 10” lower Bull Branch interceptor is made of vitrified clay. Clay lines crack over time, leading to significant infiltration into the line or exfiltration into the surrounding soil. The existing line should be replaced with an 18”+ line (assuming the line is in poor condition otherwise a second parallel line could be considered). [*project is part of Item b) above from the near-term project list*]
- Extend a 12”/15”/18” interceptor along Mustang Creek.

In addition, there are future growth type projects identified in the 2001 plan that are solely for development. These projects can be implemented when growth so dictates and include:

- Replacing the 6” line serving Sewer Basin 1 with an 18” line.
- Extend a 12”/15” line along upper reaches of Mustang Creek. (This project provides sewer to an area that can support a large industrial type site).
- Construct 12” interceptor along Turkey Creek, a lift station, and a force main to serve projected growth in Sewer Basin 10. (Eliminate HEB lift station if possible after this project).

For all the short-term and long-term wastewater system needs, the prioritized list with costs are summarized in **Table 8-3**. **Figure 8-5** summarizes the projects on the wastewater base map by priority.

8.9 5-Year CIP - Wastewater

An example 5-year CIP for the wastewater system is provided in **Table 8-4** (total of $9,710,000). For those projects listed in the 5-year CIP, the location can be seen on the long-term facility map (see **Figure 8-5**).

8.10 General Recommendations - Wastewater

Other recommendations applicable to the wastewater system include:

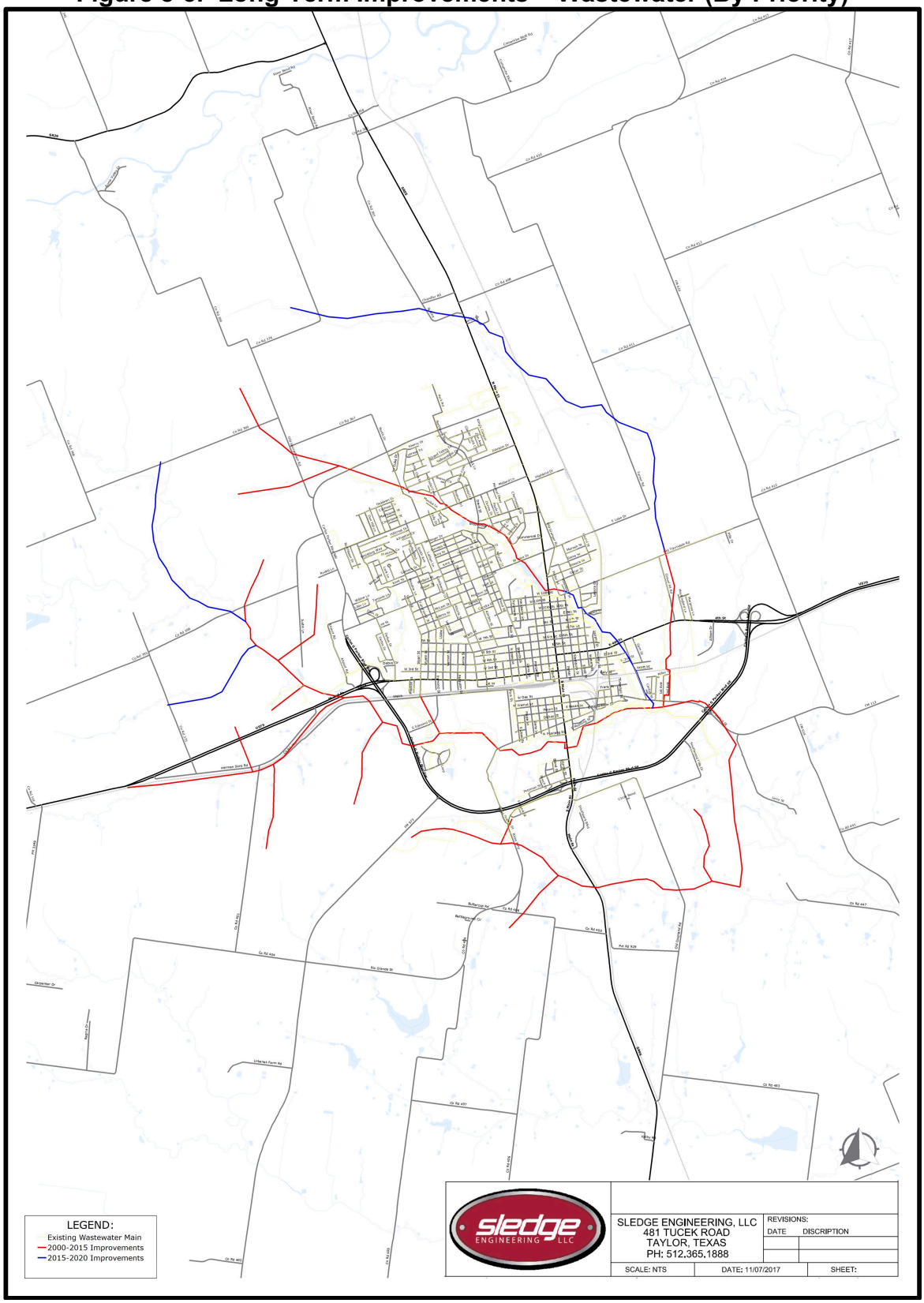
1. Update Water and Wastewater Impact Fee (per law, these fees must be updated every 5 years)
2. Update Water and Wastewater Rate Study (5-year updates recommended)
3. Complete SSES (included in CIP)

Table 8-3. Prioritized Cost for Improvements - Wastewater

Item	Description	Priority 1	Priority 2	Priority 3	Total
1	Replace all lines smaller than 6"	$330,000	$330,000		$660,000
2	SSES - Mustang Creek Basin	$400,000			$400,000
3	SSES - Bull Branch Basin	$400,000			$400,000
4	System Rehab based on SSES's		$2,000,000		$2,000,000
5	GIS Upgrade - Wastewater	$50,000			$50,000
6	SCADA Upgrades (Part of Water)	$-			$-
7	Lift Station Portable Generator	$100,000			$100,000
8	CCN Wastewater Amendment	$100,000	$100,000		$200,000
9	Trouble Areas (Summer 2017)	$150,000			$150,000
10	Eliminate Airport Lift Station - Mustang Creek Interceptor Extension	$1,500,000			$1,500,000
11	Bull Branch Interceptors Replace	$2,000,000	$2,000,000		$4,000,000
12	Complete Sanitary Sewer Model			$250,000	$250,000
	2001 Master Plan Remaining Priority Projects:				$-
13	Add capacity to upper reaches of Bull Branch (replace 10" line)			$2,100,000	$2,100,000
14	Extend 12" interceptor along Bull Branch to serve additional capacity			$1,100,000	$1,100,000
15	Extend 15"/18" line along railroad west of Loop 427			$900,000	$900,000
16	Extend 12"/15"/18" interceptor along Mustang Creek			$2,200,000	$2,200,000
	2001 Master Plan Remaining Priority Projects for Growth:				$-
17	Replace 6" line serving Basin 1 with 18"			$1,900,000	$1,900,000
18	Extend 12"/15" line along upper reaches of Mustang Creek			$2,100,000	$2,100,000
19	Construct 12" interceptor along Turkey Creek, LS, and forcemain for Basin 10			$3,800,000	$3,800,000
	Total Probable Cost	**$5,030,000**	**$4,430,000**	**$14,350,000**	**$23,810,000**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

Figure 8-5. Long-Term Improvements – Wastewater (By Priority)



**** See Digital Map (PDF) for clarity;** see Exhibits for Council Districts & larger scale*

Table 8-4. 5-Year CIP – Wastewater (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Replace all lines smaller than 6"	Utility, Bond	Capital	$ 660,000	$ -				$ 220,000	$ 220,000	$ 220,000	$ -
SSES - Mustang Creek Basin	Utility Fund	Professional	$ 400,000	$ -		$ 400,000					$ -
SSES - Bull Branch Basin	Utility Fund	Professional	$ 400,000	$ -			$ 400,000				$ -
System Rehab based on SSES's	Bond, TWDB	Capital	$ 2,000,000	$ -				$ 1,000,000	$ 1,000,000		$ -
GIS Upgrade - Wastewater	Utility Fund	Professional	$ 50,000	$ -			$ 50,000				$ -
SCADA Upgrades (Part of Water)	Utility Fund	Professional	$ -	$ -		$ -					$ -
Lift Station Portable Generator	Utility Fund	Capital	$ 100,000	$ -		$ 100,000					$ -
CCN Wastewater Amendment	Utility Fund	Professional	$ 200,000	$ -			$ 100,000	$ 100,000			$ -
Trouble Areas (Summer 2017)	Utility Fund	Capital	$ 150,000	$ -		$ 100,000	$ 50,000				$ -
Elimintate Airport Lift Station - Mustang Creek Interceptor Extension	Bond, TWDB	Capital	$ 1,500,000	$ -					$ 1,500,000		$ -
Bull Branch Interceptors Replace	Bond, TWDB	Capital	$ 4,000,000	$ -						$ 4,000,000	$ -
Complete Sanitary Sewer Model	Utility Fund	Professional	$ 250,000	$ -						$ 250,000	$ -
2001 Master Plan Remaining Priority Projects:				$ -							
Add capacity to upper reaches of Bull Branch (replace 10" line)	Bond	Capital	$ 2,100,000	$ -							$ 2,100,000
Extend 12" interceptor along Bull Branch to serve additional capacity	Bond	Capital	$ 1,100,000	$ -							$ 1,100,000
Extend 15"/18" line along railroad west of Loop 427	Bond	Capital	$ 900,000	$ -							$ 900,000
Extend 12"/15"/18" interceptor along Mustang Creek west of airport	Bond	Capital	$ 2,200,000	$ -							$ 2,200,000
2001 Master Plan Remaining Priority Projects for Growth:				$ -							
Replace 6" line serving Basin 1 with 18"	Bond	Capital	$ 1,900,000	$ -							$ 1,900,000
Extend 12"/15" line along upper reaches of Mustang Creek	Bond	Capital	$ 2,100,000	$ -							$ 2,100,000
Construct 12" interceptor along Turkey Creek, LS, and forcemain for Basin 10	Bond	Capital	$ 3,800,000	$ -							$ 3,800,000
				$ -							$ -
TOTAL			**$23,810,000**	**$ -**	**$ -**	**$ 600,000**	**$ 600,000**	**$ 1,320,000**	**$ 2,720,000**	**$ 4,470,000**	**$14,100,000**

9. WASTEWATER TREATMENT PLANT

This section summarizes the previous study completed for the City of Taylor by Sledge Engineering title "**Wastewater Treatment Plant – 2016 Strategic Facility Plan**" dated October 28, 2016. Updates are included herein based on recent activities at the plant.

9.1 Existing Plant Information

The City has one (1) wastewater treatment plant known as the Mustang Creek Wastewater Treatment Plant. The plant is located on the southeast side of Taylor approximately 3,000 feet from the intersection of US 79 and FM 112. The plant is located off of FM 112 at 100 Larry Street. The WWTP discharges effluent into Mustang Creek (which flows into Brushy Creek in Segment No. 1244 of the Brazos River Basin).

Figure 9-1 provides a "Bird's Eye" view of the plant property

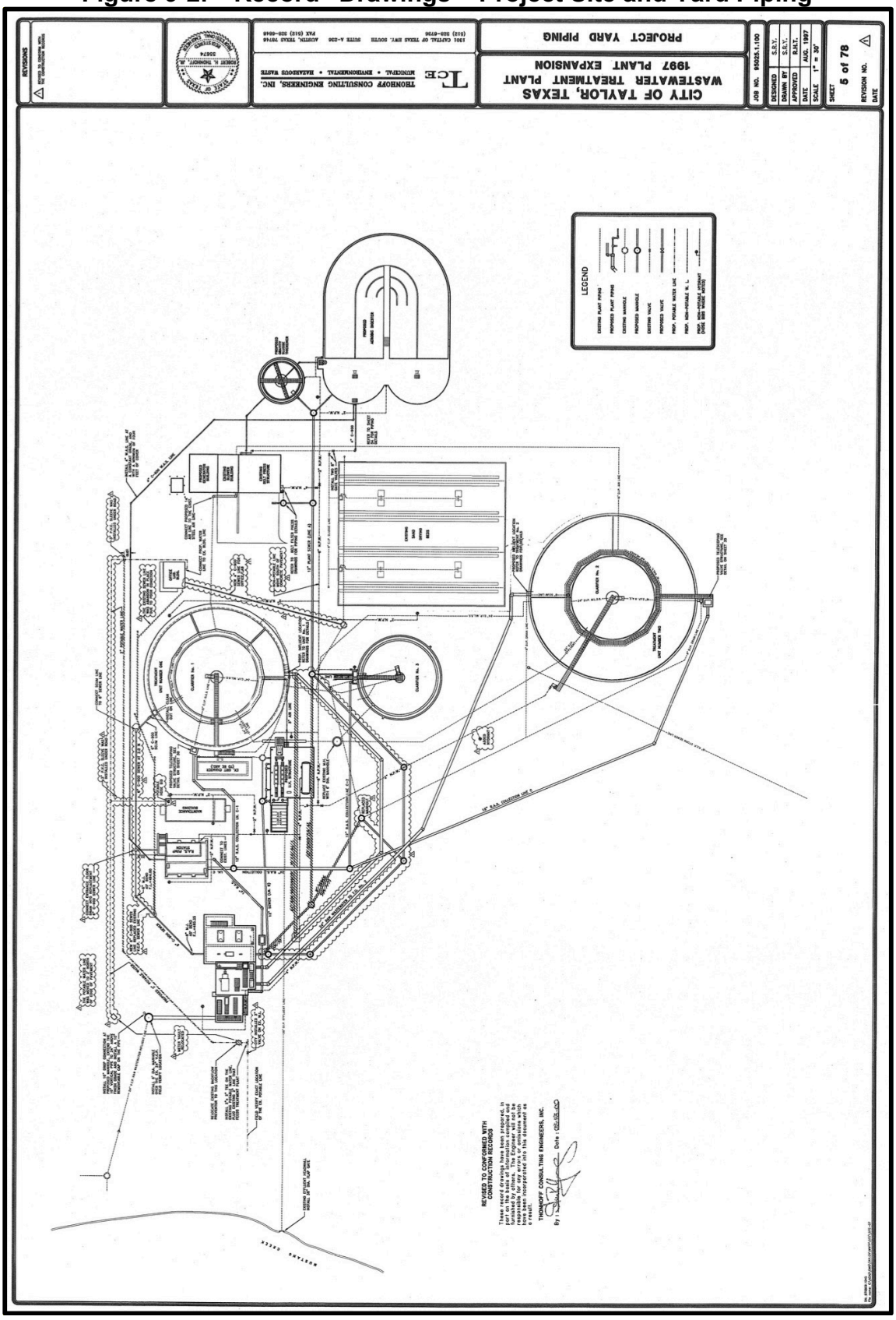
Figure 9-1. "Bird's Eye" View of WWTP Property

The wastewater treatment plant provides treatment services for all current users on the sanitary sewer collection system of the City of Taylor. This plant was constructed in 1998. The design plans were issued July 11, 1997 with the "record drawings" issued May 15, 2000.

The plant capacity was designed to 4 million gallons per day (MGD) annual average flow of effluent. The peak design capacity was planned for 6,944 gallons per minute (gpm) two-hour peak flow (or 10 MGD on an equivalent 24-hour basis). The plant remains at these original design flows.

The project site and yard plan from the "record" drawings are provided for reference in **Figure 9-2**. The treatment units listed on this sheet will be summarized in this section.

Figure 9-2. "Record" Drawings – Project Site and Yard Piping



The wastewater treatment plant includes the following major components:

- Climber bar screen (36” channel with manual bypass channel; 2 Hp Motor)
- Parshall Flume Influent Meter (open channel)
- Influent Lift Station (5 pumps; two 60 Hp Motor Pumps, two 40 Hp Motor Pumps, one 15 Hp Motor Pump)
- Internally Fed Rotating Fine Screen (rated for 5 MGD; 1 Hp Motor)
- Treatment Units No. 1 and No. 2 – Aeration Units (bubble diffuser aeration with air provided by blowers – 2 each at 125 Hp)
- Treatment Unit No. 1 - Final Clarifier No. 1 (effective diameter = 65’; ½ Hp Motor)
- Treatment Unit No. 2 - Final Clarifier No. 2 (effective diameter = 65’; ½ Hp Motor)
- Final Clarifier No. 3 (effective diameter = 65’; ½ Hp Motor)
- Ultraviolet (UV) disinfection (2 channels)
- Venturi Type Effluent Meter (closed pipe)
- Cascade Aeration and 36” Effluent Outfall Pipe to Mustang Creek
- Sludge Pump Station for WAS/RAS (3 RAS pumps with 30 Hp Motors and 2 WAS pumps with 7.5 Hp Motors; influent meter located on forcemain near point of discharge at influent lift station)
- Aerobic Digester (carousel type unit with 2 – 60 Hp motor driven propellers)
- Gravity Sludge Thickener (effective diameter = 34’; ¾” Hp Motor)
- Sludge Dewatering Belt Press (sludge pump 10 Hp Motor, booster pump 10 Hp Motor); backup is Sludge Drying Beds
- Non-potable water re-use system (5,000-gallon pressure tank, 2 - 20 Hp Motor Pumps, air)
- Office, Laboratory, and Storage Building with Generator (750KW,937.5 kva)

9.2 TPDES Permit

The City of Taylor's TPDES permit authorizes the City to dispose of treated effluent into Mustang Creek (thence to Brushy Creek in Segment No. 1244 of the Brazos River Basin). The Texas Pollutant Discharge Elimination System (TPDES) permit number for the plant is WQ0010299001 (EPA ID No. TX0020443). The current permit was issued on January 22, 2014 and must be renewed prior to the permit expiring at midnight on December 1, 2018. **Table 9-1** shows a summary list of permitted effluent parameters.

Table 9-1. Current Discharge Permit Pollutant Limits

Effluent Parameter	Final Limit
Annual Average Daily Flow (measure continuous via totalizing meter)	**4.0 MGD**
Daily Average Flow	Report
Daily Maximum Flow in Month	Report
2-Hour Peak Flow	**6,944 gpm**
Daily Average Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) (measure by composite samples 2/week)	**10 mg/L (334 ppd)**
7-Day Average $CBOD_5$	15 mg/L
Daily Maximum $CBOD_5$	25 mg/L
Single Grab Sample Maximum $CBOD_5$	35 mg/L
Daily Average Total Suspended Solids (TSS) (measure by composite sample – 2/week)	**15 mg/L (500 ppd)**
7-Day Average TSS	25 mg/L
Daily Maximum TSS	40 mg/L
Individual Grab Sample Maximum TSS	60 mg/L
Daily Average Ammonia Nitrogen (NH_3N) (measure by composite sample – 2/week)	**2 mg/L (67 ppd)**
7-Day Average NH_3N	5 mg/L
Daily Maximum NH_3N	7 mg/L
Individual Grab Sample Maximum NH_3N	15 mg/L
Daily Average E. coli, CFU or MPN/100 mL (measure by grab sample – 1/day)	**126**
Daily Maximum E. coli, CFU or MPN/100 mL	399
Minimum Dissolved Oxygen (DO) (measure by grab sample – 2/week)	**4.0 mg/L**
Maximum pH (measure by grab sample – 1/week)	9.0
Minimum pH (measure by grab sample – 1/week)	6.0
	-

MGD - million gallons per day
mg/L - milligrams per liter
gpm - gallons per minute
ppd - pounds per day

Other key requirements listed in the permit include:

- The permit also requires no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
- The annual average flow and maximum 2-hour peak flow shall be reported monthly.
- The plant must maintain backup power in the event of electrical power failures.
- City must employ or contract with one or more licensed operators as defined in 30 TAC Chapter 30.
- 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%.
- Buffer zones must be maintained in accordance with 30 TAC 309.13 (a) – (d).
- The plant must be protected from the 100-year flood.
- Biomonitoring requirements in the permit apply to the outfall for whole effluent toxicity (WET) testing.
- Sludge provisions of the permit must be met. Annual sludge report is required.
- Pre-Treatment Program required for industrial users.

The TCEQ requires monthly operating reports to document TPDES permit compliance.

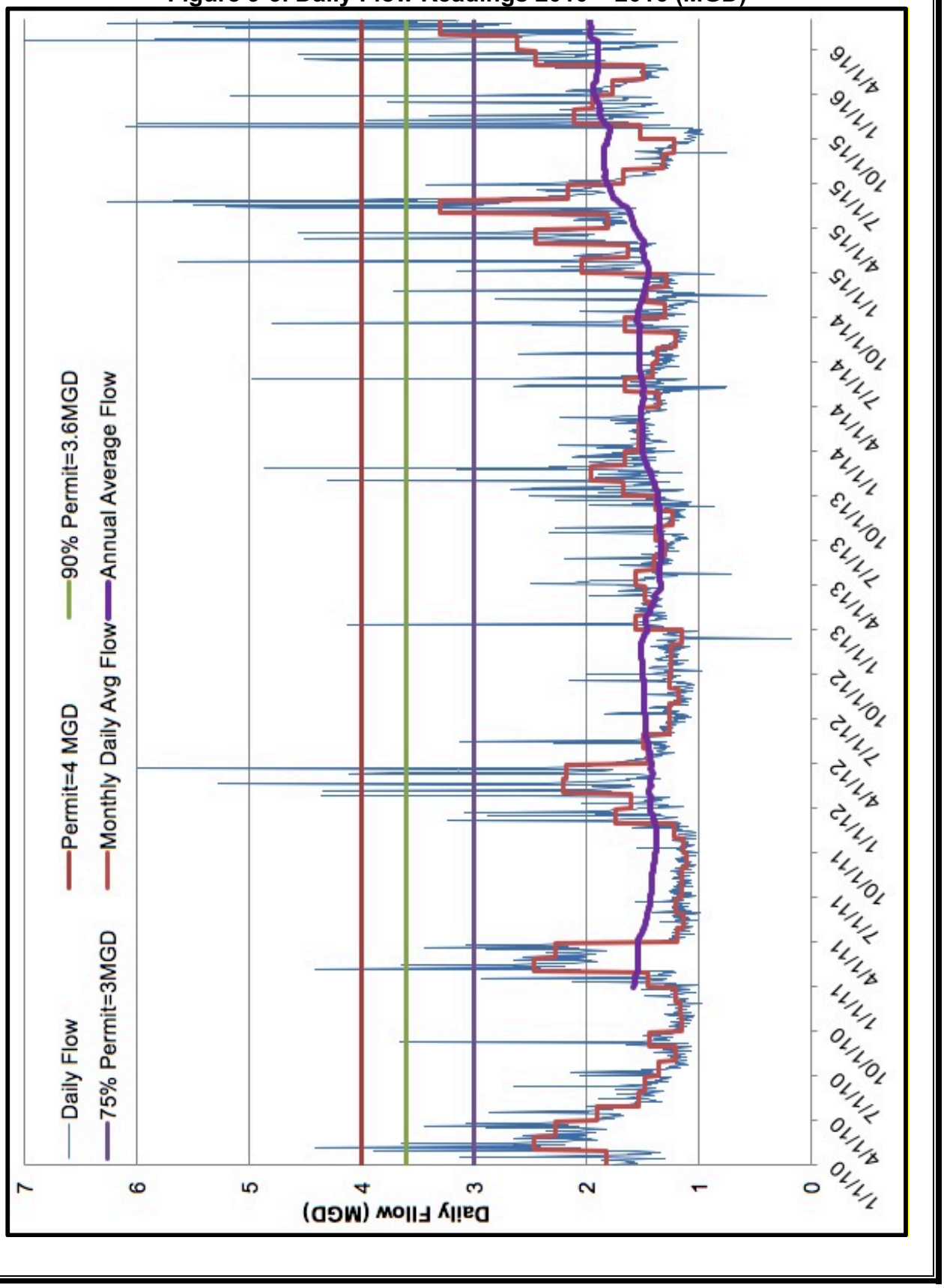
9.3 Daily Operating Logs Parameter Summary

Detailed analysis of the individual effluent parameters is provided in the "**Wastewater Treatment Plant - 2016 Strategic Facility Plan**". The following summarizes individual key parameters shown in **Table 9-1**.

1. Daily Flow

Figure 9-3 graphs the daily flow values from 2010 – 2016.

Figure 9-3. Daily Flow Readings 2010 – 2016 (MGD)



This chart also provides for reference:

a) Daily average flow permit limit = 4.0 MGD,

b) 90% of the annual average limit = 3.6 MGD

c) 75% of the annual average limit = 3.0 MGD.

According to the TPDES Permit, when the average daily flow exceeds 75% of the permitted level (or 3.0 MGD) for three consecutive months, the TCEQ requires the permittee to either: 1) initiate engineering and financial planning for the expansion and/or upgrading of the wastewater treatment and/or collection facilities or 2) seek a waiver for this requirement.

The TCEQ also requires construction to commence for plant expansion when the flow exceeds 90% of the permitted limit (or 3.6 MGD).

The daily flow values shown in **Figure 9-3** above the permit limit DO NOT represent a violation of the permit or exceedance of the daily average flow permit limit. Permit compliance is based solely on the "annual average flow" which is defined as "*the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months*". The plot of the annual average flow (or running 365-day average) is used to determine permit compliance and compared to the permit limit of 4 MGD. As shown on **Figure 9-3**, the annual average flow value is never above the permit limit thresholds for the time period shown.

2. CBOD5, TSS, and NH3-N

The plant has excellent performance in meeting the permit effluent limits for CBOD5 and TSS. For comparison, CBOD5 permit limit is 334 ppd and TSS permit is 500 ppd. The effluent results are a fraction of the permit limits with average monthly CBOD5 and TSS removals that are only 5% and 8% respectively of the permit values.

The permit limit for NH3-N is 67 ppd. As with CBOD5 and TSS, the effluent NH3-N results area a fraction of the permit limit (11%).

3. Disinfection

The permit limit for *E. coli* (CFU or MPN/100 mL) is 126 on a daily average basis for each month. The effluent always complies with the permit. For example, since January 2015, the average *E. coli* result is 23 which is only 18% of the permit limit of 126.

One area of concern for *E. coli* compliance is the noticeable uptrend since January 2015. This indicates that the UV system is failing (system was replaced in 2017).

9.4 Existing Treatment Process and Units

Various units have indications of structural issues. Structural deterioration has occurred at the Aerobic Digester. In addition, various areas adjacent to treatment units show settlement of 6" to 12" inches with sidewalk and some structural cracking. Recommendations to address the structure are included in the list of proposed improvements.

The existing plant process utilizes a mechanical plant operating in the conventional activated sludge mode to treat the influent wastewater to the levels prescribed in the TPDES permit.

To evaluate the existing treatment plant's treatment units, the TCEQ rules pertaining to treatment unit sizing were used to compare to the calculated capacities. Chapter 30 of the Texas Administrative Code includes Chapter 217 – Design Criteria for Sewerage Systems is used as the standard for comparing Taylor's plant to the criteria. These rules became effective August 28, 2008 (with various updates as recent as 2015). A detailed plant evaluation was provided as part of the WWTP – 2016 Strategic Facility Plan.

The following influent characteristics were assumed and used in the calculations of treatment unit capacities. A hydraulic profile and modeling of flows through the plant was not included as part of this scope of work. Prior to next permit renewal a hydraulic model is recommended to verify peak flow capacities through the plant's treatment units and connecting piping.

The existing plant evaluation was based on the following:

- Average annual flow = 4 MGD (2,777 gpm); 2-Hour Peak 6,944 gpm (10 MGD)
- $CBOD_5$ Influent = 400 mg/L (13,344 ppd) Effluent = 10 mg/L (334 ppd)
- TSS Influent = 250 mg/L (8,340 ppd) Effluent = 15 mg/L (500 ppd)
- NH3-N Influent = 50 mg/L (1,668 ppd) Effluent = 2 mg/L (67 ppd)

Table 9-2 provides a summary of the detailed analysis and calculated capacities for each major unit. Note: *If the TCEQ changes the TPDES permit in the future and lowers the effluent parameters, then the plant must be reevaluated. This effort will likely be required at each permit renewal.*

Table 9-2. Existing WWTP Units Capacity and TCEQ Rule Compliance

Unit	Unit Information	Evaluated Capacity	TCEQ Reference
Bar Screen	Climber bar screen with conveyor to dumpster	0.5 Inch 10 MGD	217.121 – must include manual bypass channel
Influent Meter	Parshall Flume Throat Width = Peak Capacity = Continuous flow recorder, transmitter, and totalizer chart	18 Inch 15.9 MGD	
Influent Lift Station	Pump 1 (15 Hp) = Pump 2 and 3 (40 Hp) = Pump 4 and 5 (60 Hp) = Firm Capacity with 4 pumps =	500 gpm 2,150 gpm 3,000 gpm 7,800 gpm	Pump peak flow with firm capacity 217.61(c) *Estimated Flows*
Influent Forcemain To Fine Screen and Splitter Box	20" diameter pipe Area = Velocity at average flow = Velocity at peak 2-hour flow =	 2.18 sf 2.84 fps 7.09 fps	 Minimum velocity Forcemain 3 fps
Fine Screen	Design capacity = Internally feed rotating fine screen Space for second screen available and is recommended	5 MGD	217.122 – clear openings < 0.25”
Grit Chamber	Not currently provided but is recommended		217.124
Aeration Basin	 Depth at peak water surface elev. = Volume of Basin = Influent BOD_5 = Calculated organic loading = Calculated Capacity = Aeration Provided by Blowers and Bubble Diffusers	 16 ft 2.9 MG 13,344 ppd 35 ppd/ 1000cf 4.0 MGD 1,250 lbO_2/ hr	Required organic loading is 35 ppd BOD_5 per 1,000 cf of volume 217.154(b) 2.2 lbO_2/lbBOD 217.155(a)
Clarifiers	# of Clarifiers Clarifier Diameter = Clarifier Side Water Depth = Total Clarifier Surface Area (each) = Capacity of Clarifiers at Avg Flow = Capacity of Clarifiers at Peak = Total Detention Time Provided =	3 65 ft 12 ft 2,827 sf 5.09 MGD 10.18 MGD 1.83 hrs	 Maximum loading Rate at peak flow is 1,200 gpd/sf 217.154 Detention Time = 1.8 hr
Disinfection Chamber	Number of Channels = Total Number of Banks = Total Number of Lamps =	2 10 400	Disinfectant for Peak Flow 217.291

Unit	Unit Information	Evaluated Capacity	TCEQ Reference
Effluent Meter	Venturi Flow Tube Continuous flow recorder, transmitter, and totalizer chart Chart Calibrated to Max =	15.9 MGD 10 MGD	Effluent flow must be measured 217.33(a); Need weir or flume
Cascade Aeration	Number of Steps with Spikes	7	Adequate for DO
Return/ Waste Sludge Pump Station	Number of RAS Pumps = Motor Size = *Estimated* Flow 1 pump running = Estimated Firm Capacity = Number of WAS Pumps = Estimated WAS capacity = Estimated WAS capacity =	3 30 Hp 1,200 gpm 2,400 gpm 2 600 gpm 1,200 gpm	Pumps should range from 200 to 400 gpd / clarifier total surface area 217.152 (j)(3)
Aerobic Digester	Surface Area = Total Volume = Number of Mixers = Motor Size Per Mixer =	9,060. Sf 0.813 MG 2 60 Hp	Design Air 0.5 Hp per 1000cf 217.49(t)
Gravity Thickener	Number of Units = Diameter = Surface Area = Volume =	1 34 ft 707 sf 0.063 MG	Used for sludge holding tank prior to dewatering
Sludge Dewatering	Number of Belt Presses = Drying Bed provided for backup	2	TCEQ 217.250
Reclaim Water System	Pressure Tank Size Pumps Air Compressor Meter	5,000 Gal 2 Each 1 Each 0 Each	217.39 – must use system for wash down and irrigation; meter

Based on the current TCEQ design criteria and the calculations summarized in **Table 9-2**, the majority of the plant meets current TCEQ rules. There are a few items that do not meet the current standards and will need to be addressed with overall plant improvements.

9.5 Long-Term Plan - WWTP

Since plant expansion is not anticipated over the next 20 years unless accelerated growth occurs, the alternatives listed herein focus on items needed to: a) address current deficiencies at the plant, b) improve operational performance, and c) reduce energy consumption.

Additional property is not recommended at this time since plant expansion is not necessary based on current growth patterns. If plant expansion is needed in the future, the existing property should be adequate to accommodate an expansion. This will help to reduce any potential environmental constraints since all improvements will be contained within the boundaries of the existing treatment plant site. There are no known environmental or permit issues associated with the existing site.

The recommended treatment unit improvements are summarized as follows:

1. Consider aerated pre-equalization basin to attenuate peak flows (after meter verification and data collection period until permit renewal in 2018).
2. Replace existing climber bar screen and conveyor belt to meet current TCEQ rules. Equipment is at end of useful life. Provide container (dumpster) that is fully covered with tight-fitting cover designed to reduce vector attraction. *This work was completed in August 2017*.
3. Replace influent gates (2 each – 36” x 48” aluminum slide gate; one to be motored operated. *This work was completed in August 2017 with the existing gates refurbished but the motor operator not installed.*
4. Add second fine screen with 5 MGD capacity to increase total capacity to plant capacity of 10 MGD. With two screens, a full scale study can be completed in accordance with TCEQ rules to allow for CBOD5 removal credit (up to 35%).
5. Install mechanical type grit chamber after fine screen with grit washer and conveyor to enclosed dumpster.
6. Replace influent pumps (3 each at 60 Hp to match size of largest two pumps) and install five (5) VFDs (variable frequency drives) to allow for more energy efficient operation, flow face influent to be more consistent for treatment units, and provide redundancy for large flows). The station should be designed so that 2-hour peak flow can be pumped with 1 of the 5 pumps out of service. Current permit peak is 6,944 gpm or 10 MGD on an equivalent 24-hour period. Total pump capacity with 4 pumps should be increased to 11,110 gpm or 16 MGD for future expansion and to meet 4:1 peak to average ratio required by TCEQ.
7. Add influent meter on main forcemain since Parshall Flume can be submerged at times. An ultrasonic flowmeter should be installed on the discharge forcemain from the main plant influent lift station. This information will be very useful in the future to predict true 2-hour peak flows. *This work was completed in August 2017.*

8. Repaint Treatment Unit No. 1 (clarifier mechanism) upgrade sludge rake to spiral type design for more efficient sludge removal process, and install full radius scum removal arm.
9. Replace bubble diffusers in Aeration Basin 1
10. Repaint and refurbish Treatment Unit No. 2 (aeration basin and clarifier). Also upgrade sludge rake to spiral type design for more efficient sludge removal process, and install full radius scum removal arm.
11. Replace bubble diffusers in Aeration Basin 2.
12. Add DO meters in Aeration Basins and replace blowers with VFD type motors to more precisely and automatically pace air to aeration basins based on DO demand. This will greatly improve energy efficiency at the plant and reduce electric costs.
13. Repaint Clarifier No. 3, upgrade sludge rake to spiral type design for more efficient sludge removal process, and install full radius scum removal arm.
14. Replace UV Disinfection system with more energy efficient system with flow pace capability to best match UV dose to flow. *This work was completed in September 2017.*
15. Replace effluent flow meter with open channel type such as Parshall Flume to meet TCEQ rules. Maximum flow should be minimum of 12,500 gpm (18 MGD)
16. Replace ultrasonic flowmeters for RAS and WAS flows.
17. Replace RAS and WAS pumps with VFDs to allow for more energy efficient operation and provide improved redundancy
18. Repair walls on Aerobic Digester.
19. Replace motors and mixers in Aerobic Digester.
20. Repaint Sludge Thickener clarifier type mechanism.
21. Recondition Belt Press units
22. Install meter on reclaim water line after pumps with flow totalizer recorder.
23. Replace slide and isolation gates at all channels.
24. Replace wet and dry well vents.

The general site improvements include:

1. Repair sidewalks.
2. Regrade areas to re-establish grade next to units and eliminate areas of ponding water.
3. Add motor operated gate with keypad and video for security and better control septic haulers disposals.
4. Setup irrigation system on site to use on site re-use system.
5. Fix low areas below fence.

Since redundancy is provided throughout the plant, it is possible to address most improvements without any major shutdowns. This will be an advantage to the existing operations to help provide permit compliance during construction. The most involved process will be switch of operations to Aeration Basin and Clarifier No. 2 while work on Treatment Unit No. 1 is accomplished.

Opinion of total probable project cost were developed for the above listed improvements. Various equipment vendors were contacted and provide equipment budgets. In general, the equipment prices are doubled in **Table 9-3** to reflect equipment plus installation costs. Electrical costs, contractor mobilization and non-construction costs are estimated. A prioritized list for the improvements is provided in **Table 9-3** (the 2017 project elements are shown for reference). The costs shown represent total probable cost with engineering, contingency, and construction for complete project. Other items such as permit renewal are included in **Table 9-3**.

Table 9-3. Prioritized Costs for Improvements WWTP

#	Description	Priority 1 2017 Project	Priority 1 Items Remaining	Priority 1 / 2	Priority 3	Priority Total
1	Aerated Pre-Equalization Basin				$2,210,000	$2,210,000
2	Replace Climber Screen	$275,000				$-
3	Replace Climber Screen Conveyor and Container	$53,000				$-
4	Refurbish Influent Gates (2 EA) - Add 1 motor operated	$47,000		$32,500		$32,500
5	Add Fine Screen (5 MGD)				$520,000	$520,000
6	Install Mechanical Grit Chamber				$1,125,000	$1,125,000
7	Replace Influent Pumps (3 EA 60 Hp) with VFDs (5 EA)			$455,000		$455,000
8	Add Influent Meter on Forcemain from Lift Station	$32,000				$-
9	Repaint and Upgrade Clarifier 1 Sludge Rake & Full Radius Skimmer		$170,000		$170,000	$340,000
10	Repaint and Upgrade Clarifier 2 Sludge Rake &			$340,000		$340,000

#	Description	Priority 1 2017 Project	Priority 1 Items Remaining	Priority 1 / 2	Priority 3	Priority Total
	Full Radius Skimmer					
11	Repaint and Upgrade Clarifier 3 Sludge Rake & Full Radius Skimmer		$170,000		$170,000	$340,000
12	Replace Treatment Unit 2			$5,000,000		$5,000,000
13	Replace Bubble Diffusers in Aeration Basin 1			$195,000		$195,000
14	Replace Bubble Diffusers in Aeration Basin 2				$195,000	$195,000
15	Convert Aeration Basin to DO Pace Air			$429,000		$429,000
16	Replace UV Disinfection System with Flow Pace	$1,000,000				$-
17	Replace Slide and Isolation Gate at UV	$107,000				$-
18	Replace Effluent Flow Meter Parshall Flume				$250,000	$250,000
19	Repair Walls on Aerobic Digester		$195,000			$195,000
20	Replace Motors and Mixers in Aerobic Digester				$910,000	$910,000
21	Repaint Sludge Thickener Clarifier Mechanism			$130,000		$130,000
22	Recondition Belt Presses			$130,000	$650,000	$780,000
23	Install Meter for Reclaim System	$36,000				$-
24	Replace Wet and Dry Well Vents			$39,000		$39,000
25	Repair Sidewalks			$78,000		$78,000
26	Regrade Areas			$104,000		$104,000

#	Description	Priority 1 2017 Project	Priority 1 Items Remaining	Priority 1 / 2	Priority 3	Priority Total
	Next to Units					
27	Add Motor Operated Gate with Keypad			$130,000		$130,000
28	On-site irrigation system				$130,000	$130,000
29	Regrade Low Areas Near Fence			$32,500		$32,500
30	SCADA Upgrades		$85,000			$85,000
31	Electrical Upgrades (Existing and Upgrades for New Equipment)		$50,000	$2,129,000	$1,899,000	$4,078,000
32	TPDES Permit Effluent Testing, Flow Measurement and Application		$30,000			$30,000
	Total Opinion of Probable Cost	**$1,550,000**	**$700,000**	**$9,224,000**	**$8,229,000**	**$18,153,000**
	Total Priority 1 - Currently Funded		**$2,250,000**			**$19,703,000**
	Future Expansion				**$20,000,000**	**$39,703,000**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

** Priority 1 projects are currently funded. Priority 1 / 2 projects are needed and are included in the overall analysis with other Priority 1 items in **Section 12**.

Table 9-3 shows total for Priority 1 – 3 items of $18,153,000. The total with the 2017 project is **$19,703,000**.

The above table assume rehabilitation of Treatment Unit 2 (aeration and clarifier). There are some concerns with the structural integrity of the steel unit. Additional testing of the existing materials should be completed prior to any rehabilitation. If the unit is deemed to have failed and beyond typical rehabilitation assumed in **Table 9-3**, then a new concrete structure should be constructed. ***The estimated cost for a new aeration and clarifier arrangement similar to the existing Treatment Unit No. 1 is $5 million***. This cost is included in Priority 2 in **Table 9-3**.

While expansion was assumed as not required based on best available flow data at this time, it may become necessary to expand in the future. The plant capacity may require an additional 50% capacity if population trends accelerate. Since current capacity is 4 MGD annual average flow with 10 MGD equivalent two-hour peak, a possible expansion to 6 MGD average flow with 20 MGD equivalent two-hour peak is possible. ***The estimated cost for this expansion is $20 million***. The costs presented in **Table 9-3** are estimates based on the professional opinions of the contributing authors. The construction cost estimates are in 2017 dollars as based on current market rates of labor and material furnished for similar projects. Other considerations for the costs contained herein include:

- A comprehensive compliance strategy is not included in the cost estimates to address minor TCEQ rule issues. Only critical issues are included in the costs in this Plan. As future plant expansion is needed, full compliance should be achieved on an on-going basis based on new rules as may be proposed by the TCEQ.
- A reasonable allowance for contractor overhead and profit is included in all cost estimates.
- Total cost include design, management, survey, geotechnical, and similar non-construction costs.
- A reasonable allowance for contingencies is included for current market conditions (contingency typically equals 15% of hard costs).

The priority phasing shown in **Table 9-3** does not include any inflation factors for those items not in Priority 1. This allows for ease in comparison based on 2017 dollars.

The City has several options and scenarios when looking at possible facility decisions in the upcoming years. The cost summary table above highlights one scenario with three priority categories. Timeline can vary for these priorities; an example timeline follows:

- Priority 1 = 0-2 Years Timeline
- Priority 2 = 2-4 Years Timeline
- Priority 3 = 5+ Years Timeline

While there are unlimited scenarios available, it is important for City leadership to determine the optimal potential timing when considering the facility decisions and future funding options.

The recommended improvements can be paid through annual budget, loans, and/or grants (if available). Grants are highly unlikely based on current federal and state programs but it is possible that some “loan forgiveness” can be achieved for the City of Taylor for certain programs. This is applicable whether all improvements are completed as one project or as multiple phased projects. The improvements must be covered through a funding vehicle such as:

- City annual CIP plan.
- Texas Water Development board (TWDB) - Clean Water State Revolving Fund (CWSRF) loan program. If the City ranks as disadvantage communities, then low or no interest loans with partial debt forgiveness is possible.
- Sale of bonds by City.
- Texas Capital Fund or Economic Development Administration (EDA) grants if improvements are tied to wastewater supply needs for attracting a certain industry to the City.

If loan monies are required, a qualified financial advisor should be consulted to determine the most advantageous funding means available to the City of Taylor including any potential impact to water and sewer rates.

9.6 5-Year CIP - WWTP

The Priority 1 items listed in **Table 9-3** are currently under construction at the plant. The project description submitted to the TCEQ to gain approval follows:

> *The "City of Taylor - Wastewater Treatment Plant – 2017 Emergency Improvements" project is intended to replace failed or failing existing equipment. Engineering plans and specifications sealed by Stephen P. Dorman, P.E. of Sledge Engineering were dated March 21, 2017. The Mustang Creek WWTP was constructed in 1997. Most equipment is nearing the end of its useful life. The City Council of the City of Taylor has declared an emergency because of certain failed equipment including the mechanical bar screen and the headworks screening conveyor. Operators are currently using the backup manually cleaned bar screen. In addition, the UV system is starting to show deteriorated performance although no permit excursions have occurred to date.* ***The plant has an excellent record of permit compliance. To continue this performance, certain maintenance items must occur as soon as possible to replace failed or failing equipment.*** *Influent flows and organic loads are consistent with those at the last permit renewal (January 22, 2014). Permitted flows and parameters will not change as the result of the project. Instead, this project is considered maintenance by the replacement of certain equipment.*

The project elements include the items listed in **Table 9-4**. Construction is estimated to be completed by the end of 2017.

Table 9-4. WWTP 2017 Emergency Improvements

Item	Description of Item
1	Replace Mechanical Climber Bar Screen (remove existing and replace with new climber screen)
2	Replace Climber Screen Conveyor (also received fine screens) and Container (conveyor will include discharge chute through lid on new container)
3	Replace Influent Gates that isolate mechanical bar screen channel from manually cleaned bar screen channel (2 Each)
4	Add Influent Meter on Forcemain from Influent Lift Station to Fine Screen (meter to be strap on type meter located in the MCC where the forcemain routes; plant shut down is not required)
5	Replace UV Disinfection System with new system (existing flow pace system to be replaced with new flow pace system; new controls will be included to replace existing controls; new cleaning system will be included to replace existing; minor channel modifications to be included but overall hydraulics will not change based on the equipment replacement; ***the peak flow for new system increases from 10 to 16 MGD in anticipation of future peak flow increase at the plant***.)
6	Replace Slide gates upstream of UV (2 each; open or close gates to isolate the UV channels as is current function) and UV effluent weir gates (2 each; gates to be motored actuated based on plant effluent flow to keep bulb submergence as provided with existing gates)
8	Install Meter for Reclaim System (the existing reclaim system does not have meter as required by TCEQ rule so new propeller type meter will be installed on existing discharge piping; a new in-line strainer will be added to the piping to limit the particles that enter the reclaim system to reduce plugging of hoses or other systems that utilize the reclaim water.)
9	Electrical Upgrades (Upgrades of existing conditions based on new equipment installed as part of the maintenance project)
10	Contractor Mobilization/Demobilization and Bonding and miscellaneous as required for complete project

Portions of Priority 1 and 2 items should be included in the City's 5-Year CIP. **Table 9-5** provides an example 5-Year CIP for the WWTP (total of $11,271,000).

Prior to implementing any project or developing detail budgets for financing, all costs should be reviewed and adjusted based on the project elements to be included, size of the resulting project, and proper inflation factors. While priority has been assigned where appropriate, the City of Taylor may need to adjust Capital Improvement Plan goals as necessary for the WWTP.

Table 9-5. 5-Year CIP – WWTP (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Aerated Pre-Equalization Basin	TWDB	Capital	$ 2,210,000	$ -	$ -	$ -					$ 2,210,000
Replace Climber Screen	Bond	Capital	$ 275,000	$ -	$ 275,000	$ -					$ -
Replace Climber Screen Conveyor and Container	Bond	Capital	$ 53,000	$ -	$ 53,000	$ -					$ -
Refurbish Influent Gates (2 EA) - Add 1 motor operated	Bond, TWDB	Capital	$ 79,500	$ -	$ 47,000	$ -				$ 32,500	$ -
Add Fine Screen (5 MGD)	TWDB	Capital	$ 520,000	$ -	$ -	$ -			$ 520,000		$ -
Install Mechanical Grit Chamber		Capital	$ 1,125,000	$ -	$ -	$ -					$ 1,125,000
Replace Influent Pumps (3 EA 60 Hp) with VFDs (5 EA)	TWDB	Capital	$ 455,000	$ -	$ -	$ -	$ 455,000				$ -
Add Influent Meter on Forcemain from Lift Station	Bond	Capital	$ 32,000	$ -	$ 32,000	$ -					$ -
Repaint and Upgrade Clarifier 1 Sludge Rake & Full Radius Skimmer	Bond	Capital	$ 340,000	$ -	$ -	$ 170,000					$ 170,000
Repaint and Upgrade Clarifier 2 Sludge Rake & Full Radius Skimmer	TWDB	Capital	$ 340,000	$ -	$ -	$ -	$ 340,000				$ -
Repaint and Upgrade Clarifier 3 Sludge Rake & Full Radius Skimmer	Bond	Capital	$ 340,000	$ -	$ -	$ 170,000					$ 170,000
Replace Treatment Unit 2		Capital	$ 5,000,000	$ -	$ -	$ -				$ 5,000,000	$ -
Replace Bubble Diffusers in Aeration Basin 1	TWDB	Capital	$ 195,000	$ -	$ -	$ -					$ 195,000
Replace Bubble Diffusers in Aeration Basin 2		Capital	$ 195,000	$ -	$ -	$ -	$ 195,000				$ -
Convert Aeration Basin to DO Pace Air	TWDB	Capital	$ 429,000	$ -	$ -	$ -		$ 429,000			$ -
Replace UV Disinfection System with Flow Pace	Bond	Capital	$ 1,000,000	$ -	$ 1,000,000	$ -					$ -
Replace Slide and Isolation Gate at UV	Bond	Capital	$ 107,000	$ -	$ 107,000	$ -					$ -
Replace Effluent Flow Meter Parshall Flume		Capital	$ 250,000	$ -	$ -	$ -			$ 250,000		$ -
Repair Walls on Aerobic Digester	Bond	Capital	$ 195,000	$ -	$ -	$ 195,000					$ -
Replace Motors and Mixers in Aerobic Digester	TWDB	Capital	$ 910,000	$ -	$ -	$ -			$ 910,000		$ -
Repaint Sludge Thickener Clarifier Mechanism	TWDB	Capital	$ 130,000	$ -	$ -	$ -		$ 130,000			$ -
Recondition Belt Presses	TWDB	Capital	$ 780,000	$ -	$ -	$ -			$ 130,000		$ 650,000
Install Meter for Reclaim System	Bond	Capital	$ 36,000	$ -	$ 36,000	$ -					$ -
Replace Wet and Dry Well Vents	TWDB	Capital	$ 39,000	$ -	$ -	$ -		$ 39,000			$ -
Repair Sidewalks	TWDB	Capital	$ 78,000	$ -	$ -	$ -		$ 78,000			$ -
Regrade Areas Next to Units	TWDB	Capital	$ 104,000	$ -	$ -	$ -		$ 104,000			$ -
Add Motor Operated Gate with Keypad	TWDB	Capital	$ 130,000	$ -	$ -	$ -		$ 130,000			$ -
On-site irrigation system		Capital	$ 130,000	$ -	$ -	$ -					$ 130,000
Regrade Low Areas Near Fence	TWDB	Capital	$ 32,500	$ -	$ -	$ -		$ 32,500			$ -
SCADA Upgrades	Bond	Capital	$ 85,000	$ -	$ -	$ 85,000					$ -
Electrical Upgrades (Existing and Upgrades for New Equipment)	Bond	Capital	$ 4,078,000	$ -	$ -	$ 50,000	$ 297,000	$ 283,000	$ 543,000	$ 673,000	$ 2,232,000
FUTURE Plant Expansion					$ 50,000						$ (50,000)
TPDES Permit Effluent Testing, Flow Measurement and Application	Bond	Professional	$ 30,000	$ -		$ 30,000					$ -
TOTAL			**$19,703,000**	**$ -**	**$ 1,600,000**	**$ 700,000**	**$ 1,287,000**	**$ 1,225,500**	**$ 2,353,000**	**$ 5,705,500**	**$ 6,832,000**

9.7 General Recommendations - WWTP

In addition to the capital improvements included for the wastewater treatment plant, other recommendations include:

1. Continue influent testing on a ***weekly*** basis to test for pH, FOG (fats, oils and grease), TSS, $CBOD_5$, NH_3-N, and total phosphorus (start testing for this parameter). Influent testing should be prior to any treatment unit (i.e., prior to bar screen). Stagger the days and times of testing so that a broad range of sample data is collected throughout the coming years.

2. Calculate the 30-day average percent removal of CBOD5 and TSS to show compliance with 85% removal permit requirement.

3. Record influent flow meter daily to determine each days incoming flow and 2-hour peak. As noted in the improvements section, an ultrasonic flowmeter should be installed on the discharge forcemain from the main plant influent lift station. Both meters should be used to record the total day's flow and the peak flows that occur each day. 2-hour peak capacity should be revisited during the next permit renewal cycle (2018).

5. From a treatment capacity standpoint, monitor the type and size of industries that locate to the City. Certain industries will have significant impacts to the pollutant loadings to the treatment plant(s). Pre-treatment of waste discharge from any Categorical Industrial Users (CIU) or Significant Industrial Users (SIU) should be evaluated on a case by case basis. The City's draft Pre-Treatment Program should be fully implemented.

6. Renew the existing TPDES permit prior to expiration on December 1, 2018. The permit renewal application must be submitted no later than six (6) months prior to expiration (that is, by June 1, 2018).

7. A hydraulic profile and modeling of flows through the plant was not included as part of this scope of work. Prior to next permit renewal a hydraulic model is recommended to verify peak flow capacities through the plant units and piping.

8. The City of Taylor must maintain diligence in locating and correcting sources of I/I in the sanitary sewer collection system to reduce peak flows received at the WWTP.

9. Report the "annual average daily flow" by averaging 365-days of daily flow at the end of each month. Continue to report the "average daily flow" as required.

10. When the average flows reach 2 MGD, both aeration basins must be used to provide adequate treatment.

11. When peak flows are above 6.8 MGD (4,722 gpm), all three clarifiers should be operated to provide adequate treatment.

12. When the average daily flow exceeds 75% of the permitted level (or 3.0 MGD) for three consecutive months, the TPDES permit requires the permittee to either: 1) initiate engineering and financial planning for the expansion and/or upgrading of the wastewater treatment and/or collection facilities or 2) seek a waiver for this requirement. The TCEQ also requires construction to commence for plant expansion when the flow exceeds 90% of the permitted limit (or 3.6 MGD).

13. Monitor all TPDES permit conditions to ensure continual compliance.

14. Report any monthly permit non-compliance to upper staff management and City Council.

15. Provide routine maintenance of the existing plant units, components, and equipment to extend useful life.

10. PARKS

The parks listed in **Table 10-1** were reviewed in the 2017 Strategic Facility Plan and the deficiencies as well as recommended upgrades are summarized in this section consisting of approximately 240 acres of park land:

Table 10-1. Taylor Parks

Park/Site	Park/Site
1. Future Sites (reserved)	8. Jason Street Park
2. Murphy Park	9. Hike & Bike Trail
3. Robinson Park	10. Heritage Park
4. Taylor Regional Park Sports Complex	11. West End Park
5. Bull Branch Park	12. Gateway and Downtown Signage
6. Doak Street Ball Fields	13. Burkett Street Pocket Park
7. Gano Street Park	14. Taylor Skate Park

Figure 10-1 provides a map of the existing Taylor Parks.

Figure 10-1. Map of Existing Taylor Parks

10.1 Summary of Previous Park Plans

All previous park planning efforts such as the 2005 Murphy Park Master Plan, 2005 Robinson Park Master Plan, and 2016 Parks and Recreation Master Plan were reviewed prior to making recommendations in the 2017 Strategic Facility Plan. Some items recommended are altered from the previous planning efforts to take into account items of safety concern, construction synergies, and overall best use of City funds.

While all the parks in the City of Taylor have many great amenities, there are certain improvements and enhancements that are recommended. The assessments for each park are summarized below. The park site assessments include the list of deficiencies, recommended upgrades, and estimates for improvements by priority.

10.2 Murphy Park

The summary of Murphy Park assessment follows:

1. Most paving should be reconstructed.
2. Almost all uncovered site furnishings are in very poor condition and should be removed or replaced for safety. (This includes at least resetting and leveling the concrete site furniture that is at risk of falling over.)
3. Ball fields need new bleachers, fencing repair and replacement. No current ADA seating or path from parking area or for concession restrooms.
    a. Recommend replacing press box, table and shading device.
    b. Fields need leveling and potholes filled at minimum. Also need to be weeded and over-seeded with more grass seed.
4. Refresh fall material at playgrounds. The addition of specific ADA equipment is recommended. Given the ongoing maintenance of mulch, more permanent fall protection such as poured rubber or turf should be considered.
5. Recommend re-building existing mini golf course to allow use, or demolishing unused mini golf course for safety.
6. Recommend replacing much of the fencing at the tennis courts (rusty and broken in many places). Courts should be planned for resurface. Some areas have cracked and heaved enough to block gates from swinging.
    a. Lighting at the tennis courts appears old
    b. Demolish older unused court as well as freestanding practice wall
7. Football field and track area.
    a. Track will need resurfaced and will need repairs to subgrade in some places. Fence runs through outside lane near home stands.
    b. Stands are not ADA compliant
    c. Field is in fair condition, recommend some sand leveling and continuing maintenance.
    d. Visitor Ticket booth and restrooms are not ADA compliant
    e. Visitor restroom building should be demolished.

   f. A large portion of this area is still owned by the school district and it is recommended that the city acquire this before making improvements. It is also recommended that the city engage a full assessment of the ISD owned property prior to making improvements and possibly before purchasing.
8. Replace missing cable and rotted park fence to keep vehicles from traveling on grass. Split rail or other style fencing would be more visually appealing and cost effective.
9. Swimming pool:
   a. Pumps are nearly 20 years old and reaching the end of life.
   b. Pools have settled as viewable along perimeter drains and water lines. Pools will need to be leveled and repairs as required.
   c. Flatwork / pool deck around the pools has settled and cracked in many areas. Recommended to replace the remaining old flatwork.
10. Pavilion / Bandstand area:
   a. There are some issues with transients using this area due to poor lighting.
   b. Fencing off the pavilion does not allow day-to-day use of this area. Removing the fence and allowing daily use could help with this problem as more people will frequent the area that is otherwise unused during most times.
   c. Basic maintenance such as painting should be done in the near future to the pavilion.
11. Consideration should be taken to purchase old ISD admin building on 12th to utilize as Park and Recreation Headquarters. It is an ideal location for access to the park as well as house summer camps, etc. This is also true for other ISD owned buildings on the site such as the field house etc. If this area becomes park land, there are upgrades that will need to be considered. A more complete assessment of the ISD land is recommended prior to making upgrades to this area.
12. The previous park master plan recommends selling off the portion of the park where the existing baseball and softball fields are for commercial property. Given the location of the business already on the corner, the city should consider retaining this property and the existing ball fields. It will be much less costly to revitalize these fields than to replace elsewhere. This will also allow for the rebuilding of the existing tennis courts in their current location.
13. Murphy Park's Master Plan should be updated to reflect all recent planning efforts.

Figure 10-2 provides an improvement plan for the Murphy Park. **Table 10-2** provides a summary of the prioritized improvements at Murphy Park.

Figure 10-2. Murphy Park Recommended Improvements Site Map

Table 10-2. Murphy Park Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Asphalt Rehabilitation		$645,000	
Asphalt New		$569,000	
Pool Pumps	$101,000		
Pool foundation and leveling repairs	$126,000		
Replace Old sections Concrete Flatwork around Pools	$206,000		
Additional Shade structures at Pool		$63,000	
Split rail fencing		$18,000	
New Flatwork and ADA paths at Ball Fields	$53,000		
New Aluminum Bleachers at Ball Fields	$51,000		
New Park Furniture	$76,000		
Replace 8 Tennis Courts		$759,000	
Add Pre-Fab Restroom and Concession at Tennis		$316,000	
Demo Putt-Putt Golf Course (Option 1)	$51,000		
Renovate Putt-Putt Golf Course (Option 2)			$171,000
Update Pavilion		$25,000	
Add ADA Play Equipment to Play Areas		$38,000	
Opinion of Cost	**$664,000**	**$2,433,000**	**$171,000**
Total			**$3,268,000**

10.3 Robinson Park

The assessment for Robinson Park follows:

1. Swimming Pool:
   a. Current swimming pool is in poor condition. There are visible cracks through the pool and it leaks over a foot of water a day.
   b. Pump area is too small with not access for maintenance.
   c. There is no ADA path to pool or in restrooms
   d. The pool and related structures should be demolished.
   e. Currently planned is a splash pad that can be expanded in phases to meet summer water play needs at Robinson Park. The splash pad will be much less costly than a pool and require no supervision of a lifeguard or staff

and will use less water than replacing the pool with a new one. This would allow the main focus of city provided pools to be at Murphy Park only 1.9 miles away by driving, or closer on the hike and bike trail.

f. Phase 2 of the splash pad should be planned to include a restroom facility to serve this area.

2. Givens Community Center:
   a. This building is currently under a design/build contract for renovation. The current renovation project is planned to take care of all current concerns in this facility.
3. Baseball Field:
   a. Seating should be replaced. There is no ADA seating.
   b. Provide ADA path and compliant concrete flatwork around seating area with route to the restroom building.
   c. Outfield has drainage issues and is constantly wet
   d. Fences are in the process of being repaired at the time of this report.
   e. There are no lights, and scoreboard is old. These should be installed to allow more use of this field.
4. Playground:
   a. Fall material should be refreshed.
   b. An ADA compliant route to the playground is needed. There is currently a sidewalk in place but no ramp into the playground itself.
   c. Additional ADA equipment is needed on the playground.
   d. A second basketball court and the addition of lighting should be considered, similar to the Robinson Park Master Plan to allow for more play space.
5. Parking:
   a. All parking should be paved. Currently it is road base, ADA parking is made non-compliant with washing gravel.
6. Tennis Courts:
   a. The existing tennis courts should be demolished. Currently they are in poor condition and beyond repair.
7. Dolan Street Lot:
   a. Currently vacant. This lot would be an ideal location for a trail head and parking area for the Hike and Bike Trail.

Figure 10-3 shows the site plan with the recommended improvements for Robinson Park. **Table 10-3** provides a summary of the prioritized improvements at Robinson Park.

Figure 10-3. Robinson Park Recommended Improvements Site Map

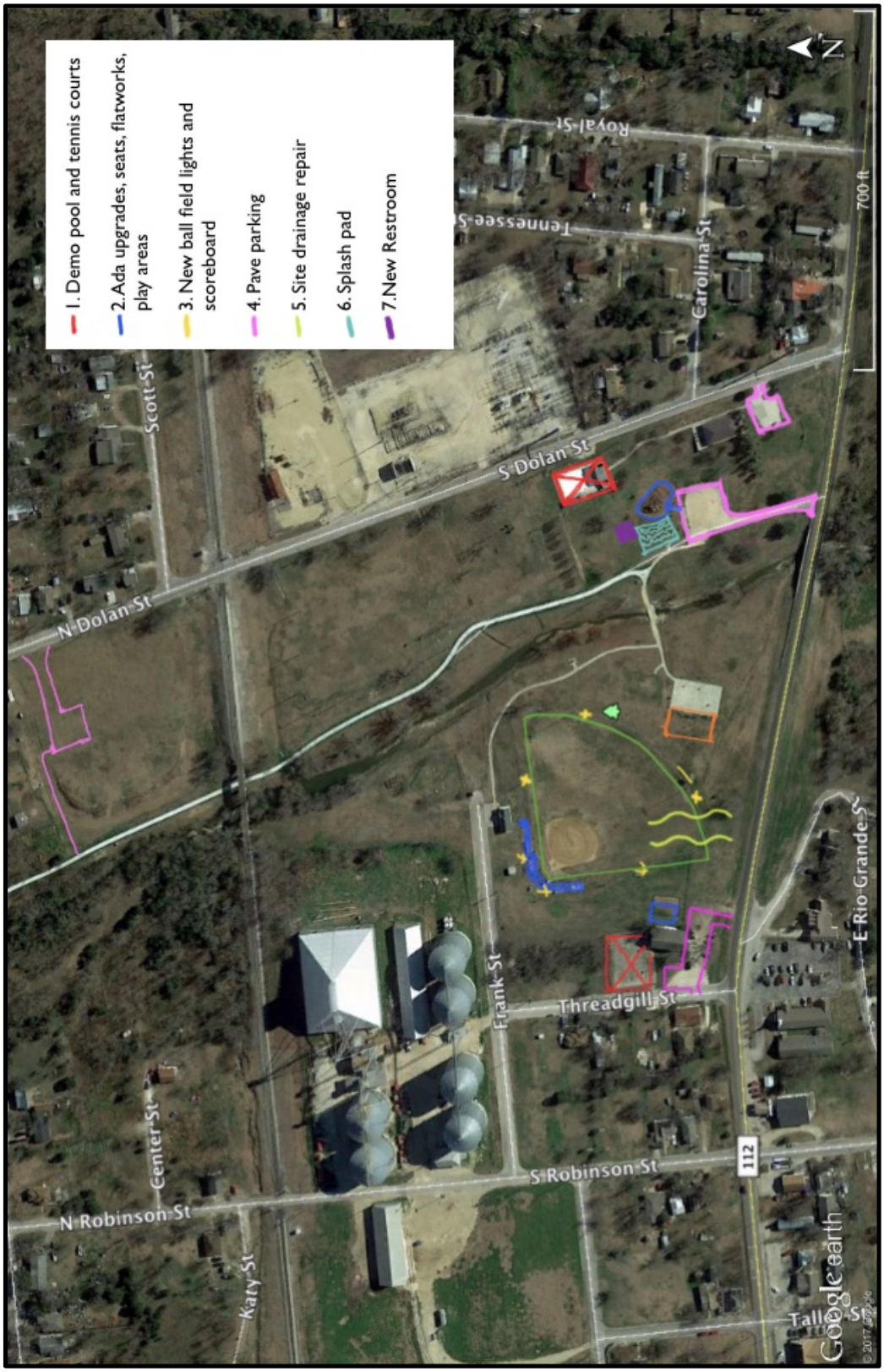


Table 10-3. Robinson Park Recommended Improvement Budget

Description	Priority 1	Priority 2	Priority 3
Asphalt New	$210,000		
Demo Pool	$80,000		
New Pool			$3,746,000
Phase 2 addition to splash pad		$150,000	
New Restroom Building Near Splash Pad		$312,000	
New Flatwork and ADA paths at Ball Field	$57,000		
New Aluminum Bleachers at Ball Field	$25,000		
Replace Lights and new Scoreboard at Ball Field		$187,000	
Site Grading for Ball Field Drainage		$25,000	
Add Playground Fall Material	$6,000		
Provide ADA path to Playground	$3,000		
Demo existing Tennis courts	$30,000		
Add Second Basketball Court with Lights			$81,000
Opinion of Cost	**$411,000**	**$674,000**	**$3,827,000**
Total			**$4,912,000**

A future project could include a lighted soccer field. This should be considered after Priority 1 and 2 projects are completed.

10.4 Taylor Regional Park Sports Complex

The Taylor Regional Sports Complex is a great park that attracts tourists to the area for various sporting tournaments and events. While relatively new, there are some items of note from the assessment:

1. Currently parks maintenance shares the space with the water department. There is not enough space here and equipment is stored outside in the weather. A new parks maintenance building and yard should be provided at this park. This not only helps the park department but allows for easier expansion of the water pump station.
2. Parking is undersized for the size of the park and for the large tournament events and games that are held at the park.

3. A public recreation center at this site is recommended. There is adequate space on this site to house this center. While the location has not been selected at this time, the City of Taylor should plan for a Recreation Center to meet the expressed needs of citizens and park users.
4. Bill Pickett Trail is currently a driveway and should be converted to public right of way.
5. Some damage noted to the dumpster enclosure. (maintenance item)
6. Additional batting cages are needed for competing teams.
7. Portion of the park with the small pond located near the middle school should be named. This area is intended for use as a work out station but only has a small climbing wall. More work out equipment should be added as well as paved parking with and ADA path to this equipment.

Figure 10-4 illustrates the improvements recommended for the regional park (the potential Recreational Center is not shown since site and location should be determined after further study). The costs associated with the improvements is listed in **Table 10-4**.

Table 10-4. Taylor Regional Park Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Signage and more workout equipment at park near school	$31,000		
Additional work out equipment at park near school		$31,000	
Expand Parking lots		$1,230,000	
Maintenance yard and building for Regional Park		$1,008,000	
New Recreational Center			$4,612,000
Expand Playground and Add ADA Playground	$148,000		
12 Batting Cages with Shade Canopy		$701,000	
Opinion of Cost	**$179,000**	**$2,970,000**	**$4,612,000**
Total			**$7,761,000**

Other potential / future projects at the park include additional spectator seating inducing shading, soccer fields with lights and shaded seating, and playground areas. These should be considered with other projects where possible or as funds allow. These projects are generally considered to Priority 3+ phasing but can be revisited during the City's CIP process or future SFP updates.

Figure 10-4. Taylor Regional Park Sports Complex Recommended Improvements

10.5 Bull Branch Park

The summary of the assessment at the Bull Branch Park follows:

1. Repave parking areas at both pony and little league fields
2. Repairs and replacement of fences at all ball fields
3. Most site furnishing should be replaced or removed. (all wood seating is rotting or rotted. This is a safety issue as someone could fall through)
4. Plan for some renovation of the fishing pier.
5. Concrete lined area of the creek is broken and eroding. Replace this area near walk bridge.
6. No ADA seating or access to concession restrooms at either ball field area
7. Site lighting along trail is in poor condition. Fiberglass poles are sun dried and splintering in many places, reaching end of life.
8. 2 Story building at the little league fields should be replaced.
9. Wood soffits and surfaces at pony field concession need replaced.

Figure 10-5 shows the Bull Branch Park recommended improvements. **Table 10-5** provides the phased costs associated with the improvements.

Table 10-5. Bull Branch Park Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Asphalt Rehabilitation	$253,000		
Repairs to Pier		$19,000	
New lights on trail		$169,000	
Renovate Restroom Facility near Pond	$34,000		
New Roof for Pavilion	$4,000		
Repairs to Eroded Creek Crossing	$14,000		
New Aluminum Bleachers at Ball Field	$56,000		
Install Lights and new Scoreboard at Ball Field			$211,000
Replace Davis St. Ball Field Building		$493,000	
Renovate Mallard St. Ball Field Building	$42,000		
Add Playground Fall Material	$5,000		
Provide ADA path to Playground	$3,000		
Opinion of Cost	**$411,000**	**$681,000**	**$211,000**
Total			**$1,303,000**

Disc golf can also be added at this park (or another park as the City chooses); equipment needed is assumed to be purchased and installed as part of park department annual budgets or as a future project.

Figure 10-5. Bull Branch Park Recommended Improvements Site Map

10.6 Doak Street Ball Fields

The assessment of the Doak Street Ball Fields is provided below:

1. No ADA route to fields
2. No ADA seating area
3. Fields should be sand leveled in uneven areas
4. Fence is in good condition
5. No Lights
6. Irrigation system installed and appears to be working
7. No onsite parking provided.
8. No restroom or concession facility provided. Given the location of this park it is recommended restrooms are installed.
9. No shade provided on site

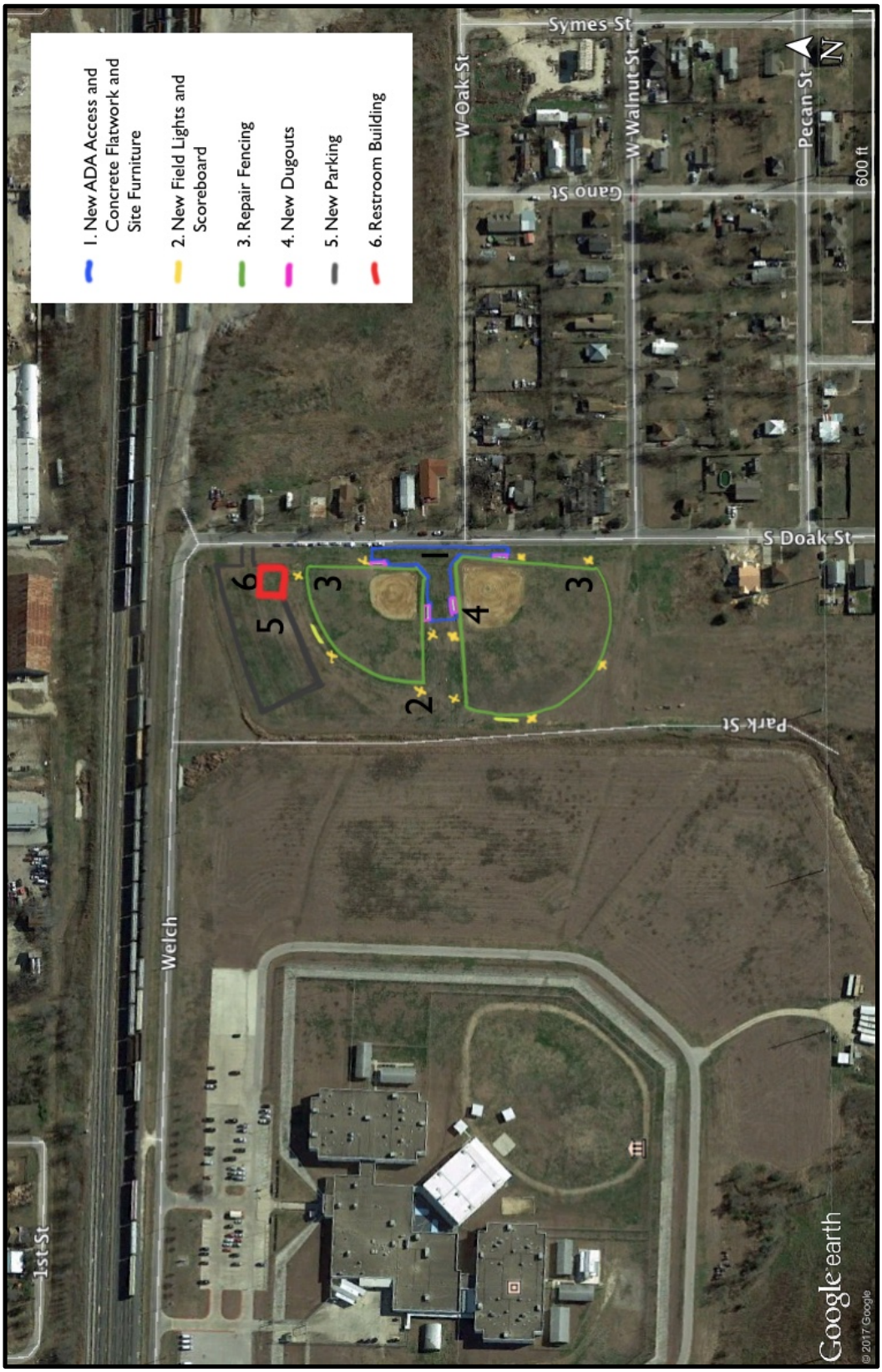
In general, fields are in fair condition and should be sand leveled in spots that are uneven. These fields are in a good location to serve the south side of the community, and if kept as city property, they should be upgraded to include ADA flatwork, bleachers, restroom building, parking and field lighting.

The Doak Fields site map with improvements highlighted is shown on **Figure 10-6**. The prioritized cost for the various improvements is listed in **Table 10-6**.

Table 10-6. Doak Fields Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Asphalt New			$265,000
New Park Concession / Restroom Facility			$331,000
New Aluminum Bleachers at Ball Field	$53,000		
Install Lights and new Scoreboard at Ball Field			$199,000
Shade Structures for Seating area and Dugouts			$159,000
Provide ADA path, flatwork and seating area	$126,000		
Opinion of Cost	**$179,000**	**$0**	**$954,000**
Total			**$1,133,000**

Figure 10-6. Doak Fields Recommended Improvements Site Map



10.7 Gano Street Basketball Court

The Gano Street Basketball court is a park property that is utilized by the surrounding neighborhood by mostly pedestrian traffic. While it is not necessary to provide general parking for this park, it is recommended to provide 1 ADA parking space with and ADA path to reach the courts. This path will also prevent people from walking through the grass and causing damage. Assessment information includes:

1. Court is in good condition
2. Goals are in good condition
3. No ADA parking or route to courts

The Gano Street Basketball Court is shown in **Figure 10-7**. The cost estimate for the recommended improvements is listed in **Table 10-7**.

Figure 10-7. Gano Street Recommended Improvements Site Map

Table 10-7. Gano Street Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Provide ADA parking space and path to Playground	$9,000		

10.8 Jason Street Playground

This park consists of a small playground on a residential sized lot located between a home and a detention pond (see **Figure 10-8**). An ADA path and parking space should be added to the playground. This park could benefit from more play equipment but given its size would likely crowd the neighboring home. Additional fall material is needed at play equipment. The cost for the listed improvements is summarized in **Table 10-8**.

Figure 10-8. Jason Street Playground Recommended Improvements Site Map

Table 10-8. Jason Street Playground Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Add Playground Fall Material	$1,400		
Provide ADA parking space and path to Playground	$9,600		
Opinion of Cost	**$11,000**	**$0**	**$0**
Total			**$11,000**

10.9 Hike and Bike Trail

The hike and bike trail is a great asset to the City of Taylor and makes for an overall good system to link parks for pedestrian traffic. With a few upgrades, this will be a very effective and well-utilized trail system that will last the city for many years to come with minimal maintenance. Improvement items include:

1. Some areas have washed out where not paved. This is mostly the area in the lower sections of the trail between Main Street and the existing animal shelter. It is recommended to reconstruction this portion of trail with concrete sidewalk to make a permanent repair and prevent future damage to the trail.
2. Some areas of the trail are especially dark. While most of the intent of the trail is to be utilized during the day, these darker areas should be lit to improve safety. The area between Robinson Park and Main Street should be considered for added lighting in strategic areas along the trail.
3. Some areas of the trail can be hard to follow (when traveling along the trail on direction ends, at the Passman Elementary, turn-off to the Taylor Regional Park along the trail, etc.). It is highly recommended to add way-finding signage and distance markers along the trail.

The Hike and Bike trail was recently upgraded by the addition of: 1) the Cross Town Trail (construction cost of $270,000 with total project cost of approximately $300,000) and 2) Main Street Trail (construction cost of $1.5 million with total project cost of approximately $1.75 million).

Table 10-9 summarizes the recommended improvements for the hike and bike trail system.

Table 10-9. Hike and Bike Trail Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Pave washed-out portions of Trail with Concrete Sidewalk	$233,000		
Add lighting along trail in strategic areas		$173,000	
Wayfinding Signage	$16,000		
Opinion of Cost	**$233,000**	**$173,000**	**$0**
Total			**$406,000**

The City should consider future expansion of the hike and bike trail system. This expansion is assumed to occur after the Priority 2 / 3 projects. Future expansion should be addressed in the City's future CIP and the next SFP update.

10.10 West End Park

The West End Park is located at the corner of Vernon Street and 4th Street. Notes applicable to this site follow (see **Table 10-10** for applicable estimated cost):

1. If this park is kept in the park system, it is recommended to add signage and an ADA path to the basketball court.
2. The building on this site has been used for fire department training (built in 1920) and should be demolished if the park is kept in use and the fire training function be relocated.

Table 10-10. West End Park Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Provide ADA parking space and path to Playground	$9,000		
Opinion of Cost	**$9,000**	**$0**	**$0**
Total			**$9,000**

10.11 Gateway Signage and Downtown Signage

The city has been planning to install gateway signage along major corridors entering the city. This is recommended and should be planned and budgeted for in future CIPs. The higher priority areas for this are along the Highway 79 corridors as the most traffic enters town this direction.

Downtown Way-Finding Signage should be added to help with both street and pedestrian traffic. Current planned signage will significantly improve the connectivity of downtown to other areas of the city and encourage more pedestrian traffic to downtown businesses.

The cost estimates for these signage projects are provided in **Table 10-11**.

Table 10-11. Gateway and Downtown Signage Cost

Description	Priority 1	Priority 2	Priority 3
Gateway Signage		$200,000	
Downtown Signage	$100,000		
Opinion of Cost	**$100,000**	**$200,000**	**$0**
Total			**$300,000**

10.12 Heritage Park

Currently Heritage Park consists of one city block in downtown Taylor across from the existing City Hall. The current form of Heritage Park does not attract many guests and it remains an underutilized asset of the city. At the time of this Strategic Plan, the City is in the process of renovating Heritage Park to include Porter Street and will connect this park directly to City Hall. This plan will help in the beautification of downtown and should result in much higher use of this park. The current planned renovations should address all concerns at this location as well as some of the parking lot issues at City Hall. The estimated project cost is ***$3 - $3.5 million*** but final scope, design, and bidding is pending.

10.13 Burkett Street Pocket Park

There are no improvements recommended at this time for the Burkett Street Pocket Park.

10.14 Taylor Skate Park

The Taylor Skate Park is currently in progress at 3rd and Porter Street. The project includes:

a. Concrete Flatwork and skate park features
b. Lighting
c. Seating
d. Landscaping

The funding has been secured for no additional project cost is included in this Plan since it will be completed in early 2018.

10.15 Long-Term Plan - Parks

Table 10-12 provides a summary of the total probable cost for each park by priority presented in this section. The “future” projects identified for the various parks are not listed in the table but referenced for future use.

10.16 5-Year CIP – Parks

The 5-year CIP projects are generally the Priority 1 items from the various parks’ budgets. Priority 1 items are typically things that impact health, safety and welfare, ADA issues, and high priority maintenance beyond routine maintenance. The Priority 1 cost totals for each park are shown in **Table 10-12**. **Table 10-13** provides an example 5-Year CIP for the Priority 1 projects.

Table 10-12. Long-Term Prioritized Cost - Parks

Park	Priority 1	Priority 2	Priority 3	Total Per Park
Murphy Park	$664,000	$2,433,000	$171,000	$3,268,000
Robinson Park	$411,000	$674,000	$3,827,000	$4,912,000
Taylor Regional Park Sports Complex	$179,000	$2,970,000	$4,612,000	$7,761,000
Bull Branch Park	$441,000	$681,000	$211,000	$1,333,000
Doak Street Ball Fields	$179,000	$-	$954,000	$1,133,000
Gano Street Basketball Court	$9,000	$-	$-	$9,000
Jason Street Playground	$11,000	$-	$-	$11,000
Hike and Bike Trail	$233,000	$173,000	$-	$406,000
West End Park	$9,000	$-	$-	$9,000
Gateway and Downtown Signage	$100,000	$200,000	$-	$300,000
Heritage Park	$3,000,000	$-	$-	$3,000,000
Burkett Street Pocket Park	$-	$-	$-	$-
Taylor Skate Park	$-	$-	$-	$-
Total by Priority	**$5,236,000**	**$7,131,000**	**$9,775,000**	**$22,142,000**
Future Projects				**$3,000,000**
Total by Priority w/ Future				**$25,142,000**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

** "Future" projects generally considered to occur beyond Priority 3 are estimated as $3,000,000 and include: a) Robinson Park lighted soccer field, 2) Regional Park – additional seats and shade at baseball/softball fields, lighted soccer with seats, and playgrounds, 3) Bull Branch Park – disc golf, and 4) Heritage Park – additional project elements.

10.17 General Recommendations – Parks

Other recommendations to supplement the parks infrastructure plan follows:

1. Update the Parks Master Plan every 5 years and incorporate changes realized from the CIP.
2. Conduct a Trails Master Plan as supplement to the Parks Master Plan to refine the proposed trails recommended in this Plan and future master planning efforts.
3. Review conditions at each site annually and update formal assessments each 2 years.

Table 10-13. 5-Year CIP – Parks (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Murphy Park	General	Capital	$ 1,044,000	$ -					$ 544,000	$ 500,000	$ -
Robinson Park	General	Capital	$ 411,000	$ -		$ 411,000					$ -
Taylor Regional Park Sports Complex	General	Capital	$ 153,000	$ -			$ 153,000				$ -
Bull Branch Park	General	Capital	$ 441,000	$ -				$ 441,000			$ -
Doak Street Ball Fields	General	Capital	$ 179,000	$ -			$ 179,000				$ -
Gano Street Basketball Court	General	Capital	$ 9,000	$ -		$ 9,000					$ -
Jason Street Playground	General	Capital	$ 10,725	$ -		$ 10,725					$ -
Hike and Bike Trail	General	Capital	$ 233,000	$ -			$ 133,000	$ 100,000			$ -
West End Park	General	Capital	$ 9,000	$ -		$ 9,000					$ -
Gateway and Downtown Signage	General	Capital	$ 100,000	$ -			$ 100,000				$ -
Taylor Skate Park	GF/Loop	Capital	$ 400,000	$ 100,000	$ 100,000						$ 200,000
Priority 2				$ -							$ -
Murphy Park	General	Capital	$ 2,433,000	$ -							$ 2,433,000
Robinson Park	General	Capital	$ 674,000	$ -							$ 674,000
Taylor Regional Park Sports Complex	General	Capital	$ 2,970,000	$ -							$ 2,970,000
Bull Branch Park	General	Capital	$ 681,000	$ -							$ 681,000
Doak Street Ball Fields	General	Capital	$ -	$ -							$ -
Gano Street Basketball Court	General	Capital	$ -	$ -							$ -
Jason Street Playground	General	Capital	$ -	$ -							$ -
Hike and Bike Trail	General	Capital	$ 173,000	$ -							$ 173,000
West End Park	General	Capital	$ -	$ -							$ -
Gateway and Downtown Signage	General	Capital	$ 200,000	$ -							$ 200,000
Priority 3				$ -							$ -
Murphy Park	General	Capital	$ 171,000	$ -							$ 171,000
Robinson Park	General	Capital	$ 3,827,000	$ -							$ 3,827,000
Taylor Regional Park Sports Complex	General	Capital	$ 4,612,000	$ -							$ 4,612,000
Bull Branch Park	General	Capital	$ 211,000	$ -							$ 211,000
Doak Street Ball Fields	General	Capital	$ 954,000	$ -							$ 954,000
Gano Street Basketball Court	General	Capital	$ -	$ -							$ -
Jason Street Playground	General	Capital	$ -	$ -							$ -
Hike and Bike Trail	General	Capital	$ -	$ -							$ -
West End Park	General	Capital	$ -	$ -							$ -
Gateway and Downtown Signage	General	Capital	$ -	$ -							$ -
TOTAL			**$19,895,725**	**$ 100,000**	**$ 100,000**	**$ 439,725**	**$ 565,000**	**$ 541,000**	**$ 544,000**	**$ 500,000**	**$17,106,000**

11. DEPARTMENTS / BUILDINGS

The City of Taylor owns and insures buildings and structures with estimated valuation of $45,000,000. **Appendix A** provides a summary of the insurance coverages for all the City-owned property. The "Real and Personal Property Schedule" list the address, year built, occupancy/department, building valuation, and content valuation for each property and structure owned by the City of Taylor.

The City owned property is comprised of certain elements previously discussed in applicable sections of this Plan (such as tanks, WWTP, park structures, etc.). The balance of the items are buildings and structures associated with various City departments such as:

1. City Hall – Administration
2. Municipal Court
3. Fire Department
4. Police Department
5. Animal Control
6. Cemetery
7. Library
8. Public Works Department
9. Street Maintenance Building
10. Moody Museum

This section provides an assessment of the each of the above departments including applicable building ages, building size information, and/or other applicable information that impacts costs for any recommended improvements. The City has recently completed an energy efficiency report for several buildings. Taylor did execute a Performance Contract with Siemens to fund replacement of some air conditioning, lights, and other related energy savings. The improvements recommended herein account for the previously planned improvements.

11.1 City Hall – Administration

The assessment summary of City Hall follows:

Site:

1. Parking is concrete and in fair condition. Certain portions of the parking lot should be re-constructed. The lot should be re-striped. Current ADA spaces do not meet ADA standards as the slopes exceed 2%.
2. Sidewalk entry at rear of building is not ADA compliant.
3. Site lighting was low at time of visit but is currently being replaced with LED as part of the Energy Project so this issue should be alleviated.
4. Crickets and other pests are very bad at certain times of the year and can pile up against the front entry.

Building Exterior:

1. Most of the building is tilt wall construction and in good condition.
2. Metal panel is in fair condition, but trim is damaged in some locations. Care should be taken to repair and seal building around the metal panels for both pest and environmental intrusion.
3. Roof is in fair condition and should be maintained for leaks and other problem areas as needed. Depending on the timeline of building replacement a new roof will need to be budgeted within the next 10 years.
4. Most HVAC units have been replaced or are in the process as part of the City's energy project currently in progress.

Building Interior:

1. Most of the carpeting on the interior of the building is nearing the end of its life and should be scheduled for replacement in the near future.
2. Most interior wood doors do not have ADA hardware.
3. Acoustic ceiling tiles are in fair condition in most offices.
4. Acoustic ceiling tiles are aging and should be considered for replacement in the next 5 years in all public areas.
5. Council Chambers do not have designated ADA seating.
6. Currently Auditorium area is shared with the ISD building across the street.
7. The structure of this building is good considering it was built in 1972.
8. Building should be fully remodeled including the addition of a new front Facade to this building. (or replace building with new). Security enhancements should also be implemented. This will require specific study based on the future plans for the facility.

Summary:

Generally, the overall condition of the City Hall building is fair to good; however, the retrofitted design which utilized an existing grocery store structure has some inherent challenges to everyday use for the City Hall function. While most office areas are in good condition, layout and use of space is not ideal. ADA issues are an issue throughout. Additional meeting room space is needed. In the long-term plan, this building should be replaced with a new structure designed specifically for City Hall use which will greatly improve operational efficiency. The current location of the site is ideal.

Figure 11-1 provides an existing aerial map for City Hall along with a legend for some of the above listed recommended improvements.

Table 11-1 summarizes the recommended improvements along with associated costs for the City Hall.

Figure 11-1. Aerial Map with Proposed Improvements – City Hall

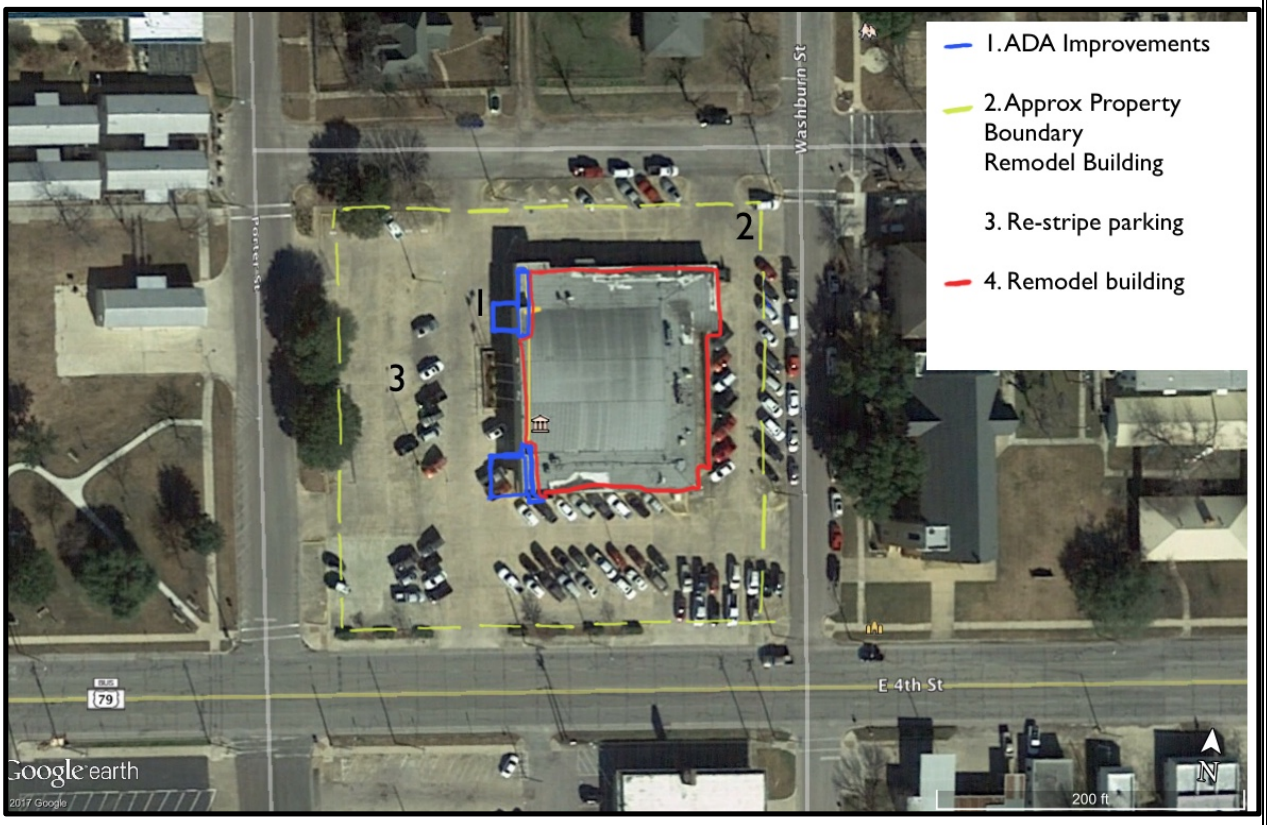


Table 11-1. City Hall Recommended Improvements

Description	Priority 1	Priority 2*	Priority 3
New City Hall Option 1	$5,217,000		
Full Renovation with Facade Option 2		$3,130,000	
Backup Generator for New City Hall		$49,000	
ADA Path Upgrades from Parking into building at front	$31,000		
Reconstruct Portion of Parking Lot			$750,000
Restripe Parking Lot	$15,000		
Opinion of Cost	**$5,263,000**	**$3,179,000**	**$750,000**
Total			**$9,192,000**

* Please note the total for Priority 2 reflects Option 2 for City Hall. Priority 1 is for new City Hall. If Option 1 is selected, then the cost for Option 2 remodel shown in Priority 2 can be removed from the overall list. Alternatively, it is possible to renovate City Hall and then replace it at some point in the future (such as in Priority 3), it is generally assumed that only 1 of the 2 options for the City Hall will be executed.

11.2 Municipal Court

The Municipal Court facility assessment is summarized below:

Site:

1. Asphalt is in poor condition.
2. No ADA access to building.
3. Parking area is very tight.
4. Location seems to be good; however, it is on a small lot with minimal room for expansion.

Building Exterior:

1. Exterior of building is in fair condition.
2. Some signs of cracking due to foundation movement.
3. Insulation at glass top area is falling down and should be repaired.
4. Gutter and downspouts are badly damaged.

Building Interior:

1. Larger lobby needed - this area should have some private areas for defendants to be able to talk without being overheard.
2. Another room aside from the court room should be available for use by the prosecutor to meet with defendants so that the court room is not held up by these meetings.
3. The transaction window area should be bulletproof and more secure. Security enhancements should also be implemented throughout. This will require specific study based on the future plans for the facility.
4. Circulation in the building happens through office areas which should be avoided.
5. There is no security between defendant / public areas and offices which is cause for safety concern.
6. The vault is too small and is running out of room for active case files. Digital files are possible to reduce some storage room, but in general records must be maintained.
7. Closed cases are stored in a room that is not fire protected and must be kept for a minimum of 5 years. Larger room and/or digitizing files are recommended.
8. Electrical infrastructure is nearing end of life.
9. Carpet is fair to poor and should be replaced.
10. Most wall surfaces are in good to fair condition.
11. Acoustic ceilings are in fair condition.
12. Most lighting is in fair condition and offers acceptable light levels. However, the lights are T8 fluorescent and should be considered for upgrade for energy saving reasons. Mechanical and closet areas are very dim and lighting should be upgraded.

Summary:

While much of the interior of this building is in fair condition, given site constraints and overall interior circulation and space needs for a municipal court, consideration should be taken to include this in a new Justice Center. At minimum, care should be taken to alleviate safety, ADA and privacy concerns mentioned above. Some of this could be accomplished with an addition to the west side where the old drive-thru is located but would still not be ideal for the current use as a municipal court. This option is shown in the below site plan diagram. This existing building could be used for the Chamber of Commerce and Downtown Manager. The option to include in a new Justice Center is located in the Police Department sub-section of this report.

Figure 11-2 provides the aerial map with summary legend for the Municipal Court. **Table 11-2** provides cost estimate for the renovation option.

Figure 11-2. Aerial Map with Proposed Improvements – Municipal Court

Table 11-2. Municipal Court Recommended Improvements (Renovation Option)

Description	Priority 1	Priority 2	Priority 3
New Addition to Municipal Court		$362,000	
ADA Path Upgrades from Parking into building at front	$36,000		
Opinion of Cost	**$36,000**	**$362,000**	**$0**
Total			**$398,000**

11.3 Fire Department

The assessments of the fire department sites were based on site visits, interviews with City staff, and on the "Safety and Health Considerations for the Design or Fire and Emergency Medical Services Station" (https://www.usfa.fema.gov/downloads/pdf/publications/fa-168.pdf).

Fire Station #1:

This station is the newest fire station in the City of Taylor (2006). Some retrofitting/remodel could be done to maximize existing space efficiency such as:

1. Add office area in common area
2. Reconfigure kitchen storage area to allow separate lockable area for fridge/pantries.
3. Convert oven to gas and have auto/emergency shut off for kitchen so it isn't left on in an emergency exit.
4. Add more data to EOC room. Currently the only 2 backed up outlets are in this room. This room is not secure due to windows to outside.
5. There is no actual built in base system in the communications room. Currently the antenna is sitting up on the window sill connected to a portable unit. Permanent exterior antennae should be installed for better connectivity as well.
6. Some bunk room area could be converted to office space for officer in charge.
7. Current parking bays are crowded. The maintenance equipment and work area should be housed in a separate building on site.
8. Future addition to allow 2 trucks to fit per bay would be desirable.
9. There is no exhaust ventilation for the garage area. This is a safety concern due to the nature of running vehicles crossing with personnel.
10. Add secure entry area for a public entry. Currently a citizen has no entry area.
11. The addition of a weight room to the south is recommended to allow for the existing weight room to be converted into more admin space.

Fire Station #1 existing aerial map with proposed improvements illustrated is provided in **Figure 11-3**.

Figure 11-3. Aerial Map with Proposed Improvements – Fire Station #1

Fire Station #2:

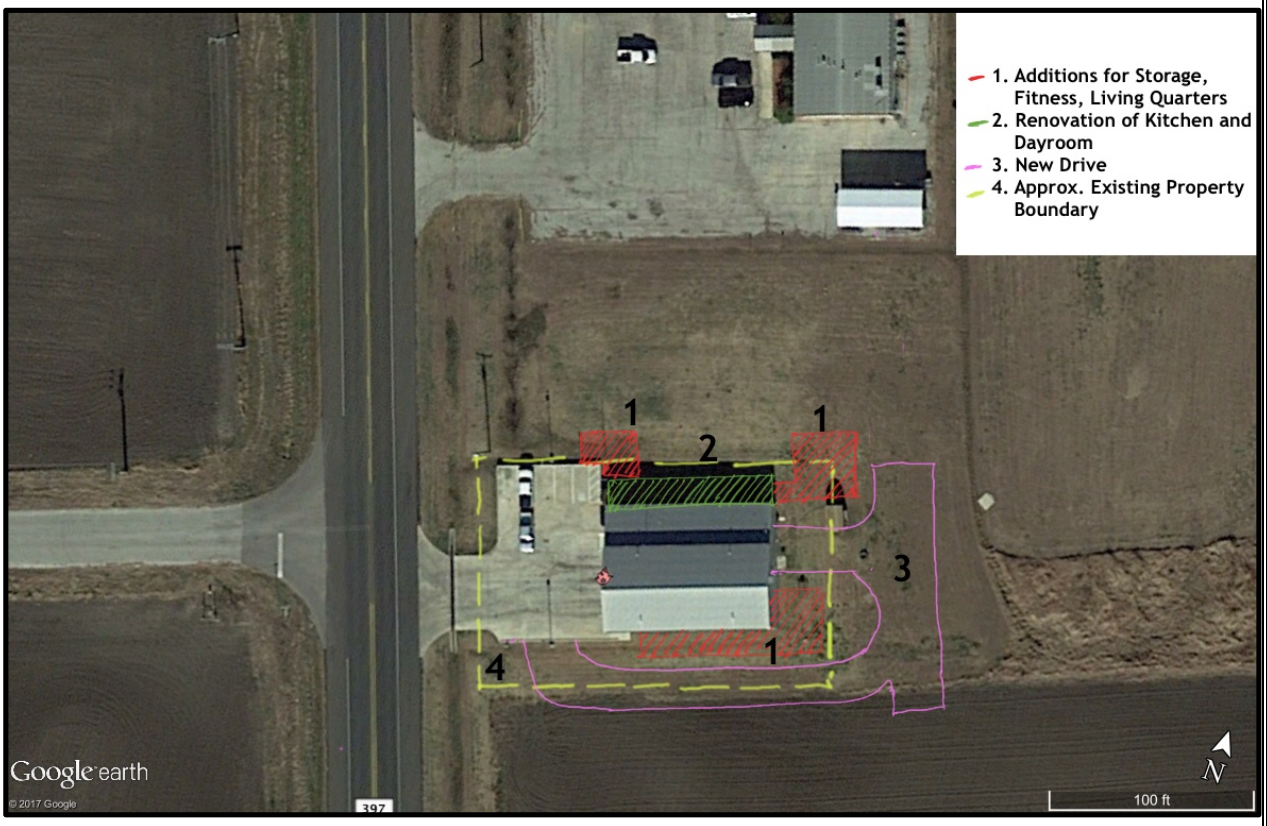
This station is located on the loop and does not have pull through access (built in 2002). This is an extreme safety concern for both fire fighters and citizens as the only access is by stopping in the road and backing into the station. There have been 3 past incidents with other vehicles here. The existing site with proposed improvements summarized below are shown in **Figure 11-4**:

1. Additional land must be acquired behind this fire station to allow for pull through access (if available).
2. Additional space needed for weight room
3. Additional space needed for meeting area
4. Additional space needed for public entry
5. Additional onsite parking needed.
6. Backup generator should be replaced with more reliable automatic unit that will power building systems. One cost effective solution would be to relocate Fire Station #1 generator system to this station and upgrade Fire Station #1's generator system to allow for building system backup at that location as well.
7. Pest are problematic at this station. There have been reported issues with crickets and rattlesnakes among other pests mentioned. The building

should be sealed better and a more stringent pest control plan put into place.

8. Flashing light or signal along the road is recommended to address safety concerns of trucks entering the station ($250,000). This is a priority if the new drive is not implemented but should be considered even if new drive is constructed.

Figure 11-4. Aerial Map with Proposed Improvements – Fire Station #2



Victoria Street Station:

This station is currently used to house extra units and is not staffed. It was built in 1955. **Figure 11-5** provides the existing site aerial map. While it is located in an ideal location to serve the nearby area, it will need to be replaced to make functional as a modern fire station.

The building is in poor condition and the overall layout is not conducive to daily use as a modern fire station.

Figure 11-5. Aerial Map with Proposed Improvements – Victoria Station

Summary:

Fire Station #1 is a relatively new building and can be made to work more optimally with some minor renovations and addition of some more storage space. Administrative offices at this location are undersized and should be expanded to accommodate more staff. Secure storage and some renovation to help with pest infiltration are needed.

Fire Station #2 can be a highly functioning fire station with renovations, additions, and land acquisition. This station is the closest to fire block 4. If the land acquisition to make this fire station larger and more functional is not possible, it may be advantageous to consider a new fire station on the other side of the loop on at least 3 acres that would help to cover fire block 4 in a quicker manner than currently possible.

This station has served its useful life as an active fire station. In its current state, it is acceptable for use as an auxiliary station and to house auxiliary units as it does now. Given this station's location and the fact that it scored highly in the overall Taylor Fire Department's PPC ratings, consideration should be made to rebuild a new auxiliary station to serve this area of town in the long-term (20+ years).

New stations are recommended in the southwest and northwest area of Taylor to help with response times. These areas have a good deal of new planned development and will need fire service. As development occurs, it may be possible to secure fire department land dedication.

It should be noted that Williamson County provides all EMS services for the City of Taylor. Williamson County EMS has been sharing space in other County cities (such as Hutto, Round Rock etc.). Williamson County EMS might want consideration to be in a future southwest Taylor Fire Station. Additional coordination is recommended prior to any new station being planned in the City of Taylor. However, based on previous communications, it is believed that any new station will not need to accommodate Williamson County EMS.

Table 11-3. Fire Department Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Fire Station #2 – Additions/Renovations		$1,593,000	
Fire Station #1 - Ventilation System for Garage Area	$85,000		
Fire Station #1 - Emergency Shut-Off for Kitchen "ISIMET"	$20,000		
Fire Station #2 - Backup power generator	$49,000		
New Fire Station for Southwest District		$4,759,000	
New Fire Station for Zone Northwest District			$4,759,000
Land Acquisition (sites to be determined – cost may vary)	$198,000		
Fire Station #1 - Maintenance Building		$293,000	
Fire Station #1 - Minor Renovations		$61,000	
Renovations to Administration Building	$159,000		
Fire Station #1 - Upgrade Communication System	$18,000		
Opinion of Cost Per Priority	**$529,000**	**$6,706,000**	**$4,759,000**
Total All Priorities			**$11,994,000**

* Other Future project includes flashing lights or signal on highway for Station #2 ($250,000)

11.4 Police Department

The assessment of the police department building and site were based in part site visits, interview with City staff, and on the "Police Department Planning Guides" (http://www.theiacp.org/portals/0/pdfs/publications/acf2f3d.pdf).

Site:

1. The site is undersized and limits any future growth of the police station (reference is made to **Figure 11-6** which also summarizes the improvements listed herein). New land is needed.
2. The parking is across the street and mixes both officers' vehicles, visitors, and other staff. There should be controlled, secure parking for all staff vehicles that also blocks view into the area from public areas.
3. There is no covered parking for department owned vehicles.
4. There is not a wash bay area. Currently some car care is done in the street near the entry of the building due to lack of space.
5. Entry to the building should be controlled more with bollards or other vehicle restricting devices.
6. No room for a vehicle to get around the sides of the building.
7. Back door of building leads into drainage area between neighboring building. It is not ADA compliant and this exterior area is not secure.

Building Exterior:

1. The exterior of the building is mostly metal panel. It is in fair condition but damaged in many areas.
2. Stucco accents around entry areas have some cracks consistent with foundation issues.
3. There is no secure area around HVAC condenser units.
4. Front entry is not secure. No entrance specifically for law enforcement separate from citizens.
5. There is not an exterior private/secure area for staff use.

Building Interior:

1. Although built in 1998, the building is very crowded and grossly undersized for a department of this size.
2. There are significant signs of foundation issues throughout the building. This can be seen easily in un-level floors in hallways and throughout the larger areas. This poor condition should be corrected prior to any remodel which can be costly. The better option is to replace the building.
3. Evidence room
    a. Room is very undersized.
    b. The high-density storage does not lock in place and is a safety concern for employees having to enter the area.
    c. More secure drop off lockers are needed. Some should be larger than existing. These should lead directly to the processing area for evidence rather than into the hall prior to the evidence room.

   d. Office area outside of evidence room is undersized and requires more storage for everyday use.
   e. The area is poorly ventilated.
   f. Transaction type window to this area of the building is needed.
   g. There is no work room for packing / processing evidence prior to filing.
   h. Evidence room needs refrigerator space. Currently there is only an apartment size refrigerator.
4. Dispatch:
   a. This area is very tight and not as secure as it should be. There is need for at least one more work station.
   b. There is no office area separate for supervisor
   c. There is no secure area for servers. They are currently placed next to wet counter area that adds to risk of damage. These should be placed within a secure closet with dedicated a/c room and have backup server and power.
   d. Kitchen is needed in this area to allow for employees to stay within dispatch area while on duty.
5. Entry area:
   a. Bulletproof glass is recommended at reception counter with secure wall as well.
   b. There should be a separate entry for staff/law enforcement that does not mix with citizen entry.
   c. There is no private counseling area or victim services area. There should be one for patrol and one available for detectives.
   d. There is not a private / soft room for juvenile needs.
6. Training Room:
   a. Current training room only allows for approximately 16 people and is very undersized. It should allow for 40 minimum given the department size.
   b. More conference space is needed for smaller meetings as well (rooms that hold approximately 10-12 people).
7. Records Room:
   a. Records should be stored in secured and fire rated room.
8. There is no dedicated finger printing area which complicates this process and can make less accurate.

Summary:

The existing Police Station building is undersized and should be replaced on a new site that will house the needs of the current department as well as accommodate future growth and needs. The lack of secure parking and entries as well as proper processing rooms and general security is concerning for both department employees, and citizens. The location on the south side of town along a main corridor is ideal as law enforcement has quick access to most area of town. This building should be maintained for day-to-day use and plan to replace at a new location when funds allow. Given the current location of the

building, the City should carefully plan for the redevelopment of this site to retail or similar use. Combining use in a new building with departments such as the Municipal Court or Fire Department is recommended to help combine projects and provide some possible cost savings for shared spaces. The budget in **Table 11-4** shows a line item for locating the Municipal Court within this facility.

Figure 11-6. Aerial Map with Proposed Improvements – Police Department

Table 11-4 Police Department Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Land Acquisition	$243,000		
New Justice Center (Police Portion)	$10,435,000		
New Justice Center (Municipal Court Portion)		$1,517,000	
Backup Generator for New Police Station	$49,000		
Secured Covered Parking for Police Vehicles	$485,000		
Car wash area			$97,000
Opinion of Cost	**$11,212,000**	**$1,517,000**	**$97,000**
Total			**$12,826,000**

* Note: If new station is not implemented or timing is not soon, then some safety improvements should be implemented soon for the Police Station.

11.5 Animal Control

The condition of the current Taylor Animal shelter is poor. The storage building was built in 1955, and the dog kennels were built in 1994. There are three available options to improve Taylor's Animal Control program:

1. Upgrade Facilities at Current Site (shown in **Figure 11-7** below)
2. Relocate site and build new facilities
3. Partner with Williamson County Regional Animal Shelter
4. Relocated to new site and move existing facilities.

The current facility should be fully replaced and brought up to current standards. Given the location of the current Animal Shelter which is very near the creek (flood risk to animals as part of the site is in the floodplain) and very near the train tracks (noise issue causing stress on animals), the option of relocating the animal shelter may be a better option than keeping it in the current location. It would also make economic sense to plan to relocate this when purchasing land for the new public works land acquisition to allow sharing land, possible drives, security, utilities etc.

Another option to consider is to partner with the Williamson County Animal Shelter, which would save the city considerable money since there would not be need for the cost of constructing, maintaining and staffing a new facility.

The fourth option listed above is to relocate existing facilities to a new site at estimated cost of $2,500,000. This option is not recommended due to the poor condition of the existing facilities. If a new site (or existing buildings at new site) are utilized, then all facilities and equipment need to be updated to current standards. This will increase project costs unless a smaller facility is implemented to serve fewer animals. It is believed that this option will not be as feasible and economical as other options listed since blend of existing and new facilities are used.

The current property could be used as a new trail head and parking area for the City of Taylor Trail System or continued use as an auxiliary public works yard.

Table 11-5 provides a budget for the Animal Shelter options. The state requirements are reflected in the costs shown in the cost table.

Table 11-5. Taylor Animal Shelter Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Upgrade Facilities at Current Site	$250,000		
Relocate Site and Build New Facilities		$4,000,000	
Opinion of Cost	**$250,000**	**$4,000,000**	**$0**
Total			**$4,250,000**

Figure 11-7. Animal Shelter if Existing Site Retained

11.6 Cemetery

The Cemetery is owned and operated by the City of Taylor. The Cemetery is located on the east side of town north of Business US Highway 79. According to lot counts, the Cemetery can accommodate growth for the long-term future.

All roads within the cemetery are in poor condition. Part of the issue are waterline leaks from the system providing water to over 85 hose bibs so utility upgrades should be considered for this site. All roads should be planned for full replacement; however, it is recommended to start with the main roads and access to the sexton's office. (see **Figure 11-8** for illustration of the main road replacements as well as other recommendations listed herein).

In the long-term plan, it is recommended to plan for replacement of the sexton's office as the current building is in fair to poor condition and does not have space to allow for proper ADA paths for visitors or staff. An ADA restroom facility should be provided for public use as well in the new design.

It is also recommended to add a pavilion at the eastern end of the cemetery where grave sites currently stop. This location will allow for covered funeral ceremonies and will eventually be near the center of the cemetery when full build out occurs. The most economical and recommended way to do this would be to construct this as a part of, or concurrent with a new sexton's office and restroom facility.

As stated above, the new sexton office is planned in what will be the eventual center of the cemetery. It is best to provide a new main entrance road for optimum access to the new sexton office and also to accommodate the future build out of the cemetery.

There is also a need for a new cremation garden. As this means of burial becomes more utilized, the need will continue to arise. The placement of the cremation garden should be adjacent to the new sexton office and new pavilion. The new proposed entrance road will provide direct access to this new cremation garden.

Figure 11-8. Cemetery Recommended Improvements Site Map

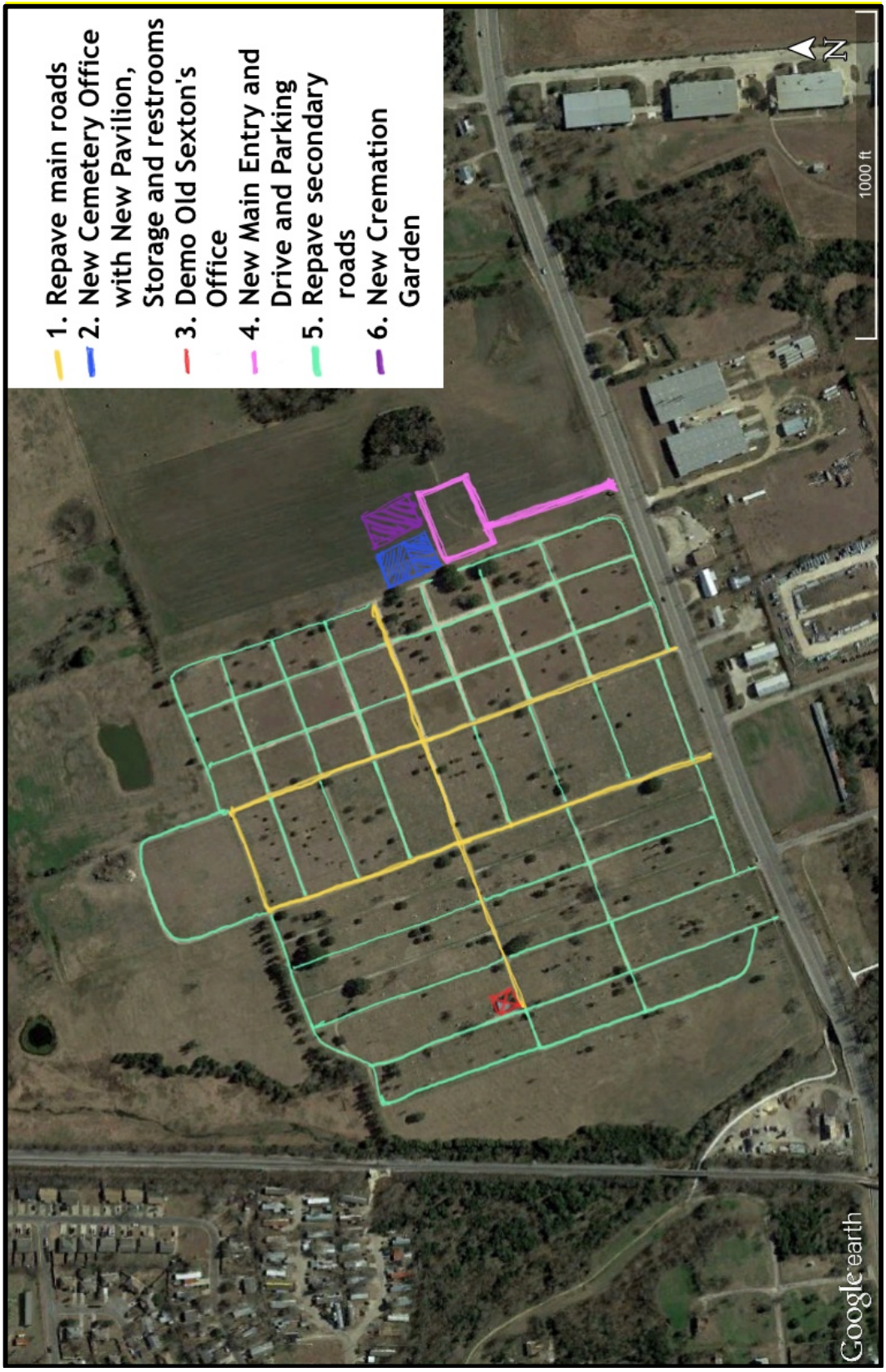


Table 11-6 summarizes the proposed budget for the recommended improvements with a priority assigned to each item.

Table 11-6. Cemetery Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Asphalt Rehabilitation Main Roads		$294,000	
Asphalt Rehabilitation Secondary Roads			$263,000
New Pavilion Chapel		$108,000	
New Cemetery Admin office with Restrooms and Storage	$297,000		
Storage Building for Grounds Maintenance		$162,000	
New Cremation Garden		$202,000	
New Main Entry Drive and Parking Lot	$396,000		
Demo Sexton's Office		$13,000	
Opinion of Cost	**$693,000**	**$779,000**	**$263,000**
Total			**$1,735,000**

The City has $175,000 of dedicated cemetery funds for driveway maintenance / reconstruction in the current CIP budget.

11.7 Library

The Library was built in 2006 and is in overall good condition. **Figure 11-9** provides the site plan for the Library. The assessment of the Library was based in part site visits, interview with City staff, and on state standards (such as TSL - https://www.tsl.texas.gov/sites/default/files/public/tslac/plstandards/2014%20TLA_Standards_Final.pdf). The following summarizes the assessment completed as part of this 2017 Strategic Facility Plan:

Site:

1. Some washing out of soil and pooling of water against foundation is occurring. This is especially noted at the back of the building as well as in flowerbeds that block drainage. This should be re-graded to allow proper drainage away from the foundation and splash blocks placed properly.
2. There is a missing cover on irrigation controls on west side of building.
3. There is some unauthorized use of site after hours, but most of this is to utilize WIFI supplied by the library. Currently the library is alleviating this problem by scheduling WIFI access during library hours only.

Building Exterior:

1. Cladding is red brick and limestone.
2. There was some initial foundation movement at the northeast corner of the building. Much of this is likely caused by water infiltration under the foundation due to poor drainage. It appears that this movement happened shortly after construction and is no longer progressing. Proper grading and minor foundation repairs should alleviate future issues.
3. All control joints and window joints should be caulked and sealed.
4. Hollow metal windows should have the window gaskets replaced and sealed. Some signs of seeping and leaking are present.
5. The low slope / flat modified roof should be replaced in the next 10 years. Some signs of deterioration are present such as bubbles in the membrane.
6. Trees should be trimmed back from roof and gutters cleaned. There are plants growing in the gutters in areas. This will cause rot and leaks.

Building Interior:

1. Staff work room / shared office space is very crowded.
2. Storage space is limited for the multiple functions the library carries out.
3. Library is designed to hold approximately 100,000 books and currently houses approximately 52,000 books.

Summary:

The library structure is overall in good condition and most library needs are met within the current structure. Storage is very limited, and additional storage areas should be taken into consideration. If the volume of books grows or more

programs are added, this will problem will become more apparent. General maintenance items should be taken care of as soon as possible as to not cause further damage to the building. (items mentioned above such as site drainage, placement of splash blocks under downspouts, repair of gutters and tree trimming). **Table 11-7** provides a summary of the capital projects for the Library.

Figure 11-9. Library Recommended Improvements Site Map

Table 11-7. Library Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
Replace Roof in Flat Section		$58,000	
Repoint brick as needed	$11,000		
Dedicated A/C Unit for Archives Room to Control Humidity	$10,000		
Site Drainage and Grading	$18,000		
Opinion of Cost	**$39,000**	**$58,000**	**$0**
Total			**$97,000**

11.8 Public Works Department

The Public Works Department is located on Main Street. A summary of the assessment follows:

Site:

1. The site is too small for the amount of vehicles and supplies.
2. Location of this facility would be better suited towards the outskirts of town. The current location is in a major commercial corridor for the city and would be better suited for retail or commercial space.
3. Site storage building are very old and in poor condition.
4. There are no compliant ADA paths on site or into any building.
5. Site pavement is in very poor condition.
6. Site fencing is in fair condition.

Buildings:

1. All buildings have served their useful lives.
2. No adequate ventilation is in shop area.
3. No ADA compliant path is in building or restrooms.

Summary:

ADA issues are an issue throughout with no real accessibility. There is no secured entry (either via exterior card reader type entry door or interior glassed reception area. Additional meeting room space is needed. The current location of the public works department / Public Utility department has served its useful life in both the condition of the structures as well as the physical location within the City of Taylor. It is recommended that these sites are considered for relocation in a less populated area for both safety and visual appeal to the city. This could allow for the city to sell or lease out the current property that will provide additional tax roll money to the City and provide a modern facility that will better serve the City. The improvement budget is provided in **Table 11-8**.

Table 11-8. Public Works Recommended Improvements Budget

Description	Priority 1	Priority 2	Priority 3
New Public Works/ Utilities/ Streets Office Building	$2,754,000		
New Public Works Warehouse Building	$2,326,000		
New Public Utilities Warehouse Building	$2,326,000		
New Lot with Covered Parking for Fleet and Equip	$1,469,000		
Land Acquisition	$734,000		
Demolition of Existing Public Works/Utilities Structures			$130,000
Opinion of Cost	**$9,609,000**	**$0**	**$130,000**
Total			**$9,739,000**

11.9 Street Maintenance Building

The current buildings and locations are poor. The Street Maintenance Building should be combined with a New Public Works Center located out of the central part of the city (see **Section 11.8**).

Figure 11-10 shows the existing sites for both the Public Works Building and Street sites.

The previous **Table 11-8** provided the combined cost for the new proposed Public Works/Utilities/Streets site and building.

Figure 11-10. Public Works/Utilities/Streets Improvements - Existing Sites

11.10 Moody Museum

The Moody Museum has several ADA issues inside and outside the building. However, being a historic structure, improvements will need to be planned with the Historic Commission. It is recommended at a minimum to add an ADA path from the street to the entry of the building. This project is relatively minor and can be addressed as part of a sidewalk project. The current ramp that is at the back of the building does not comply with ADA standards as there is not landing at the door.

11.11 Long-Term Plan – Buildings/Miscellaneous

The combined cost summary for the various departments and sites discussed in **Section 11** are shown in **Table 11-9**.

Table 11-9. Long-Term Plan – Various Departments/Buildings

Department / Buildings	Priority 1	Priority 2	Priority 3	Total Per Site
City Hall	$5,263,000	$3,179,000	$750,000	$9,192,000
Municipal Court	$36,000	$362,000	$-	$398,000
Fire Department	$529,000	$6,706,000	$4,759,000	$11,994,000
Police Department	$11,212,000	$1,517,000	$97,000	$12,826,000
Animal Control	$250,000	$4,000,000	$-	$4,250,000
Cemetery	$693,000	$779,000	$263,000	$1,735,000
Library	$39,000	$58,000	$-	$97,000
Public Works	$9,609,000	$-	$130,000	$9,739,000
Moody Museum	$-	$-	$-	$-
Total by Priority	**$27,631,000**	**$16,601,000**	**$5,999,000**	**$50,231,000**

* As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.

** Temporary/Future improvements include $250,000 for the existing Police Station security if timing of a new station is delayed and $250,000 for traffic signal at Fire Station #2 if new drive is not implemented. Grand total increases to $50,731,000.

11.12 5-Year CIP – Buildings/Miscellaneous

5-year CIP impacts of proposed improvements are generally the Priority 1 items from the various budgets listed in **Section 11**. Priority 1 items are typically things that effect health, safety and welfare, ADA issues, and high priority maintenance items. The Priority 1 cost totals for each site are shown in **Table 11-9** (total of $27,631,000) but each subsection cost table should be referenced for more detail for each department. An example 5-Year CIP for these improvements is shown in **Table 11-10**.

Table 11-10. 5-Year CIP – Departments/Buildings (Example CIP shown)

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
City Hall	General	Capital	$ 5,263,000	$ -		$ 5,263,000					$ -
Municipal Court	General	Capital	$ 36,000	$ -		$ 36,000					$ -
Fire Department	General	Capital	$ 529,000	$ -					$ 529,000		$ -
Police Department	General	Capital	$11,212,000	$ -				$ 11,212,000			$ -
Animal Control	General	Capital	$ 250,000	$ -			$ 250,000				$ -
Cemetery	General	Capital	$ 693,000	$ -	$ 175,000	$ 518,000					$ -
Library	General	Capital	$ 39,000	$ -		$ 39,000					$ -
Public Works	General, Bond	Capital	$ 9,609,000	$ -						$ 9,609,000	$ -
Moody Museum	General	Capital	$ -	$ -							$ -
				$ -							$ -
Priority 2				$ -							$ -
City Hall	General	Capital	$ 3,179,000	$ -							$ 3,179,000
Municipal Court	General	Capital	$ 362,000	$ -							$ 362,000
Fire Department	General	Capital	$ 6,706,000	$ -							$ 6,706,000
Police Department	General	Capital	$ 1,517,000	$ -							$ 1,517,000
Animal Control	General	Capital	$ 4,000,000	$ -							$ 4,000,000
Cemetery	General	Capital	$ 779,000	$ -							$ 779,000
Library	General	Capital	$ 58,000	$ -							$ 58,000
Public Works	General	Capital	$ -	$ -							$ -
Moody Museum	General	Capital	$ -	$ -							$ -
	General	Capital		$ -							$ -
Priority 3				$ -							$ -
City Hall	General	Capital	$ -	$ -							$ -
Municipal Court	General	Capital	$ -	$ -							$ -
Fire Department	General	Capital	$ 4,759,000	$ -							$ 4,759,000
Police Department	General	Capital	$ 97,000	$ -							$ 97,000
Animal Control	General	Capital	$ -	$ -							$ -
Cemetery	General	Capital	$ 263,000	$ -							$ 263,000
Library	General	Capital	$ -	$ -							$ -
Public Works	General	Capital	$ 130,000	$ -							$ 130,000
Moody Museum	General	Capital	$ -	$ -							$ -
											$ -
TOTAL			**$49,481,000**	**$ -**	**$ 175,000**	**$ 5,856,000**	**$ 250,000**	**$ 11,212,000**	**$ 529,000**	**$ 9,609,000**	**$21,850,000**

12. CONCLUSIONS

The City of Taylor has infrastructure that are in poor, fair, and good condition. Some infrastructure has reached the end of its useful life and should be replaced. There are specific areas of improvements needed from simple maintenance to more capital-intensive projects. These improvements are identified in this 2017 Strategic Facility Plan. The improvements generally include capital expenditures that will enhance the overall City's operational and maintenance efficiencies. While this report provides the City of Taylor a general 2017 snapshot of current areas of focus, it does provide a general road map to addressing areas of concern through a prioritized schedule.

The total improvements recommended herein for the City of Taylor will require continued effort by current and future staff and City Councils to properly fund equipment replacement and rehabilitation. This 2017 Strategic Facility Plan provides the information needed to make informed decisions and move towards City infrastructure that offer an affordable, perpetual life that enhances the City services and the quality of life of its citizens.

12.1 Long-Term Plan

The long-term plan for each applicable department or infrastructure component is presented in each applicable section of this 2017 SFP. The long-term plan information includes prioritization where applicable. A summary of the total cost for all improvements are provided in **Table 12-1** and **Figure 12-1**.

As seen in **Table 12-1**, the total for all improvements is approximately ***$320 million***. Prioritization of current and future staff and City Councils will be required to continually re-prioritize and fund needed improvements.

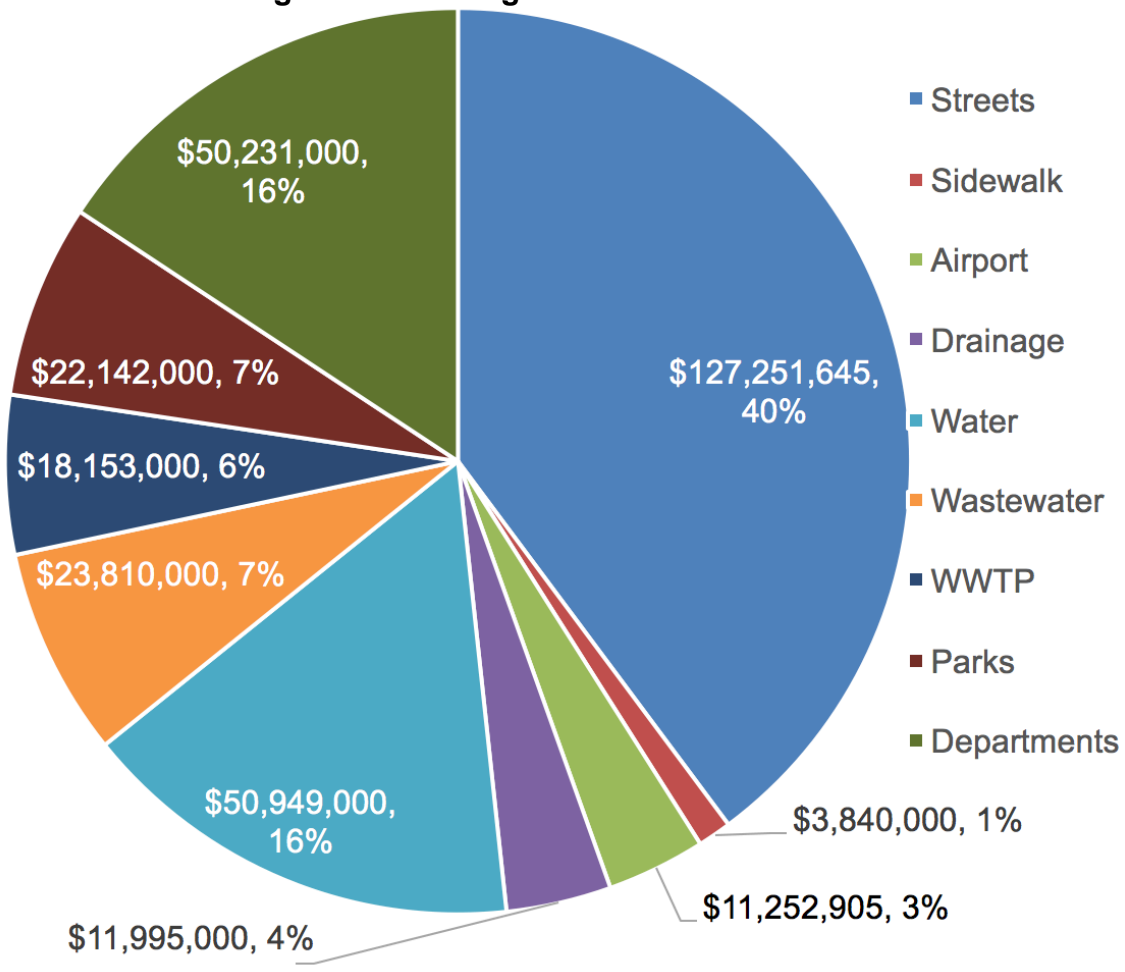
Table 12-1. Long-Term Plan – Total

Department	Priority 1	Priority 2	Priority 3	Total Per Department	%
Streets	$35,417,215	$45,417,215	$46,417,215	$127,251,645	40%
Sidewalk	$640,000	$1,600,000	$1,600,000	$3,840,000	1%
Airport	$6,902,905	$1,650,000	$2,700,000	$11,252,905	4%
Drainage	$4,155,000	$1,840,000	$6,000,000	$11,995,000	4%
Water	$9,361,000	$13,236,000	$28,352,000	$50,949,000	16%
Wastewater	$5,030,000	$4,430,000	$14,350,000	$23,810,000	7%
WWTP	$700,000	$9,224,000	$8,229,000	$18,153,000	6%
Parks	$5,236,000	$7,131,000	$9,775,000	$22,142,000	7%
Departments	$27,631,000	$16,601,000	$5,999,000	$50,231,000	16%
Total by Priority	**$95,073,120**	**$101,129,215**	**$123,422,215**	**$319,624,550**	
Total Priority 1+2		**$196,202,335**			

Notes for Table 12-1 and Figure 12-1:

1. As previously noted, all cost shown in 2017 dollars for ease in comparison across all priorities. Prior to implementation in CIP, cost estimates should be updated.
2. Cost are generally for capital elements and do not include on-going maintenance items (example: new asphalt parking only includes cost to construct the lot and does not include on-going items needed to maintain such as crack sealing in the future).
3. The costs presented herein do not include budget impacts to staffing, operational, and new equipment/vehicles that may be required in operating budgets to fully operate and maintain some of the capital improvements identified (example: fire trucks for new fire station not included since this is operational/departmental costs).
4. Streets assumed all street maintenance and reconstruction (see **Table 3-5**)
5. See notes for WWTP Priority 1 and 1 / 2 (overlap of the top priorities – these elements are in essence 1A and 1B priority).

Figure 12-1. Long-Term Plan – Total Cost



The three priorities summarized for each department in **Table 12-1** is illustrated in **Figure 12-2**.

Figure 12-2. Long-Term Plan – Total Cost with Priority by Department

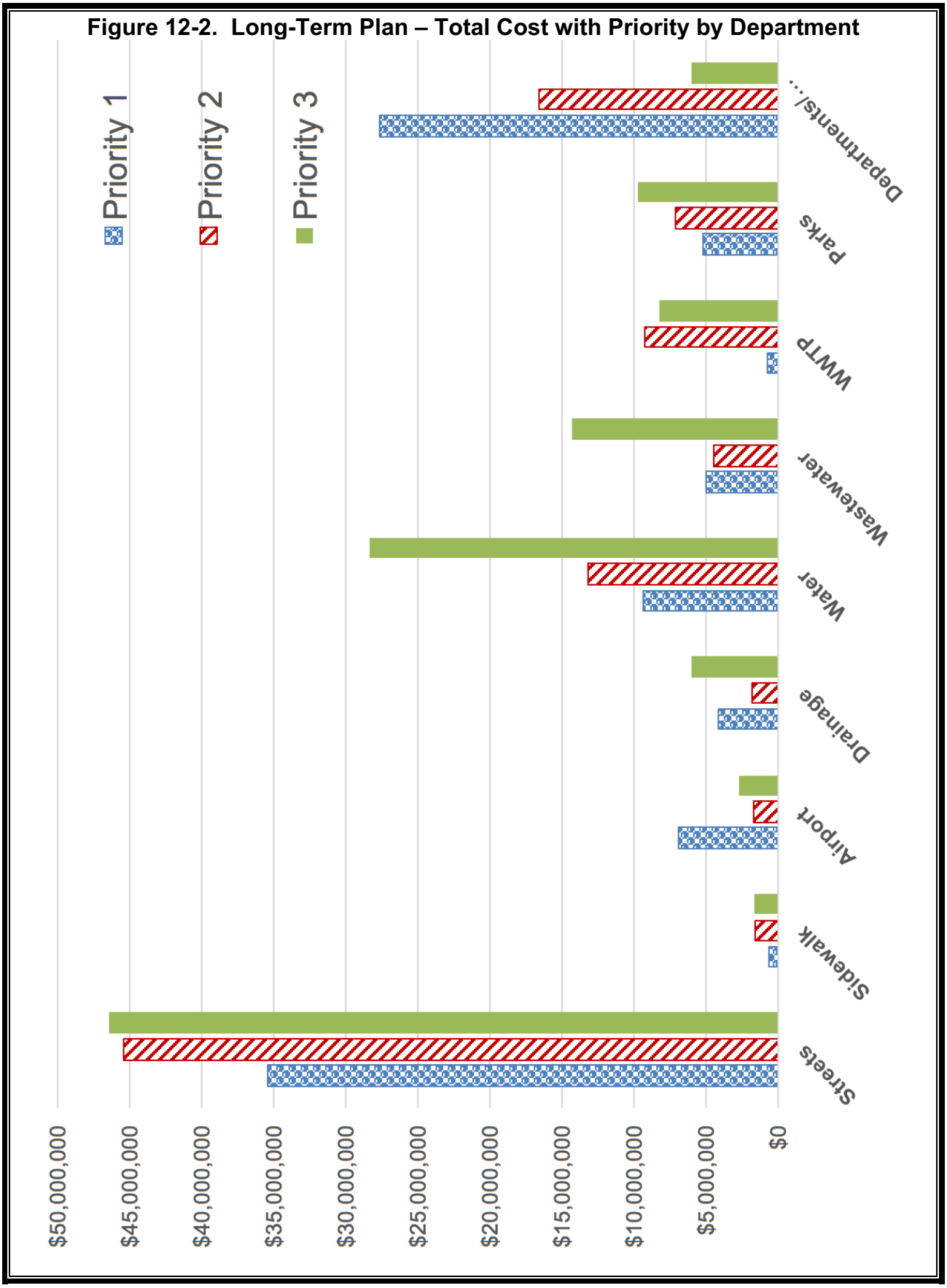


Table 12-2 lists the total for all improvements per area/department with the "future" projects shown as described in the various sections. Prioritization of these "future" projects are not provided based on additional study required, work beyond Priority 3 as assigned, or timing of a selected option. A summary of the "future" items identified follows:

- Future sidewalks – if City wide ($55,540,000)
- Future drainage beyond Priority ($6,000,000)
- Future WWTP expansion when required ($20,000,000)
- Parks - "Future" projects generally considered to occur beyond Priority 3 are estimated as $3,000,000 and include:
    a) Robinson Park lighted soccer field
    b) Regional Park – additional seats and shade at baseball/softball fields, lighted soccer with seats, and playgrounds
    c) Bull Branch Park – disc golf
    d) Heritage Park – additional project elements
- Departments/Buildings - Temporary/Future improvements include:
    a) $250,000 for the existing Police Station security if timing of a new station is delayed
    b) $250,000 for traffic signal at Fire Station #2 if new drive is not implemented.

Table 12-2. Long-Term Plan – Total with "Future" Projects Included

Department	Priority 1	Priority 2	Priority 3	Total Per Department	Additonal Future Projects	Total With Future Projects
Streets	$ 35,417,215	$ 45,417,215	$ 46,417,215	$ 127,251,645		$ 127,251,645
Sidewalk	$ 640,000	$ 1,600,000	$ 1,600,000	$ 3,840,000	$ 55,540,000	$ 59,380,000
Airport	$ 6,902,905	$ 1,650,000	$ 2,700,000	$ 11,252,905		$ 11,252,905
Drainage	$ 4,155,000	$ 1,840,000	$ 6,000,000	$ 11,995,000	$ 6,000,000	$ 17,995,000
Water	$ 9,361,000	$ 13,236,000	$ 28,352,000	$ 50,949,000		$ 50,949,000
Wastewater	$ 5,030,000	$ 4,430,000	$ 14,350,000	$ 23,810,000		$ 23,810,000
WWTP	$ 700,000	$ 9,224,000	$ 8,229,000	$ 18,153,000	$ 20,000,000	$ 38,153,000
Parks	$ 5,236,000	$ 7,131,000	$ 9,775,000	$ 22,142,000	$ 3,000,000	$ 25,142,000
Departments/Buildings	$ 27,631,000	$ 16,601,000	$ 5,999,000	$ 50,231,000	$ 500,000	$ 50,731,000
Total by Priority	**$ 95,073,120**	**$ 101,129,215**	**$ 123,422,215**	**$ 319,624,550**	**$ 85,040,000**	**$ 404,664,550**

12.2 5-Year CIP

The CIP information presented in this 2017 SFP are included for illustrative purposes only. They are intended to represent a 5-year approach to the addressing the Priority 1 projects listed in this plan. The City's 5-year CIP should be adjusted to incorporate as many Priority 1 projects as possible as funding will allow. The 5-year CIP should be updated annually as part of the budget process.

The combined 5-Year CIP for all the improvements listed in the 2017 SFP is provided in **Appendix B**. The total cost represented over the 5-year period is $69 million. The breakdown between the various areas of study is shown in **Table 12-3**.

Future tasks to develop the 5-year CIP include:

1. Identify current year CIP funded projects
2. Add council districts for applicable projects (such as sidewalks, streets, etc.)
3. Add known upcoming funding for various projects
4. Project potential funding sources
5. Reduce number of projects based on prioritization by staff and City Council
6. Adopt 5-year CIP as part of 2018 budget process.

Table 12-3. 5-Year CIP – Total Cost (Example CIP shown)

Site	TOTAL	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Streets	$ 127,251,645	$ 990,000	$ 5,088,443	$ 6,610,443	$ 5,088,443	$ 5,088,443	$ 5,328,443	$ 81,038,365
Sidewalk	$ 3,840,000	$ -	$ 100,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 3,500,000
Airport	$ 6,898,626	$ 53,200	$ 221,985	$ 1,419,422	$ -	$ 354,896	$ -	$ -
Drainage	$ 11,994,575	$ 667,000	$ 868,500	$ 1,235,075	$ 1,066,100	$ 1,176,400	$ 1,231,500	$ 6,000,000
Water	$ 50,949,000	$ 50,000	$ 950,000	$ 950,000	$ 3,850,000	$ 2,271,000	$ 2,550,000	$ 40,328,000
Wastewater	$ 23,810,000	$ -	$ 600,000	$ 600,000	$ 1,320,000	$ 2,720,000	$ 4,470,000	$ 14,100,000
WWTP	$ 19,703,000	$ 1,600,000	$ 700,000	$ 1,287,000	$ 1,225,500	$ 2,353,000	$ 5,705,500	$ 6,832,000
Parks	$ 19,922,000	$ -	$ 439,725	$ 565,000	$ 541,000	$ 544,000	$ 500,000	$ 17,132,275
Departments	$ 49,481,000	$ 175,000	$ 5,856,000	$ 250,000	$ 11,212,000	$ 529,000	$ 9,609,000	$ 21,850,000
Total Per Year		**$ 3,535,200**	**$14,824,653**	**$ 12,976,940**	**$ 24,363,043**	**$ 15,096,739**	**$ 29,454,443**	**$ 68,914,225**
TOTAL	**$ 313,849,846**					**5-Year Total**	**$ 96,715,818**	**$ 68,914,225**

12.3 Overall Prioritization and Ranking

A major challenge with a comprehensive Strategic Facility Plan is to rank all the various needs identified across all City departments and facilities. There is a challenge is deciding projects to budget when seemingly equal needs exist. For example, is replacing a building more important than replacing a water line given that both may be listed as Priority 1 in the respective departments? Instead of letting political needs dictate priority or tackling projects easily funded when partial or full grants are available, a tool is needed to help balance all important influences such as engineering, operational, political, public, and technical. Overall prioritization and ranking/grouping is possible with an open dialogue process.

An important aspect that helps with decisions of projects is funding source. Sometimes a project is easily funded via general fund or utility funds and fits within the existing CIP budgets. If a project includes full or partial grant or is part of cost-sharing with another entity (like Williamson County or TxDOT Aviation where airport projects are funded with 90% "grants"), then it is easier to proceed with a project. Such projects can be completed fairly quick and straightforward. Major capital projects without a funding source secured can take years to develop a Focused Project Plan, fund, design, bid, and construct.

For the purposes of the City of Taylor 2017 Strategic Facility Plan, projects across departments are ranked based on the following three (3) major groupings:

- **Group 1 - Regulatory and Life Safety Projects** – This group includes items that are needed based on regulatory requirements. Items that are direct rule violations or non-compliant must be resolved. There is a level of severity that should be considered for potential rule non-compliance. Any area of life safety should be ranked the highest while minor rule excursions may not rise to the level of life safety issue. Generic examples of life safety issues include low water system pressure, low disinfection residual, sanitary sewer overflows, etc. Other generic examples of potential rule deviations that may not rise to the level of life safety include sidewalk tripping hazards, undersized water or sewer lines, ADA/TDLR issues at building, etc.). Police or Fire Stations that do not meet current guidelines would also belong in Group 1 (even if it is not direct state agency rule violation). Certain street replacements could also be high priority especially if they are main thoroughfares used for fire and police response.

- **Group 2 - Efficiency Projects** – Projects that include enhancements to efficiencies of city infrastructure are considered Group 2. Examples include: replace lights with LED relatively short return on investment due to energy efficiency, replace HVAC with automation at buildings that greatly improves energy efficiency, water leak study, replace water lines to

return water loss revenue to city budget for other projects, replace or demo park pool that leaks, etc. Other efficiency enhancements examples include improve parking or circulation to a building, complete airport projects since mostly grant money and stimulates the local economy, etc.

- **Group 3 - Operational Projects** – Operational projects are elements that are needed but may not rise to the level of Group 1 or 2. Generic examples include streets rehabilitation, water or sewer line upsizing, SSES or other studies that lead the way for other projects, building remodel or replacement, etc.

There will be projects that do not fit perfectly within one group. Some projects in this SFP may contain one element that falls within a category. In these cases, the whole project is placed within the group that has the element controlling the most critical need. These grouping are a general guide for City Staff and City Council to consider all the projects identified.

The grouping and ranking of projects should focus on the Priority 1 projects. The 5-year CIP will generally just include Priority 1 projects. The Priority 1 projects have been identified across all facilities as more urgent than Priority 2 or 3 projects. As such, grouping and ranking Priority 1 projects are worth the exercise as a guide to critical decisions facing the City of Taylor.

Table 12-4 shows all Priority 1 projects listed in order as they appeared in this 2017 Strategic Facility Plan.

Table 12-4. City of Taylor – Priority 1 Projects (with WWTP Priority 1 / 2)

Department	Item	Priority 1	Total
Street	2015 CDBG 4th Street (Remaining)	$400,000	**$35,417,215**
	2017 CDBG 3rd Street	$900,000	
	Edmond Street (Remaining)	$200,000	
	Annual Street Maintenance (City Staff)	$950,000	
	Corrective Maintenance-Excellent	$4,151,745	
	Corrective Maintenance-Good	$5,931,065	
	Corrective Maintenance-Fair	$4,884,405	
	Poor Street Reconstruction	$18,000,000	
Sidewalk	Reconstruct Existing Sidewalk	$600,000	**$640,000**
	Sidewalk Master Plan	$40,000	
Airport	Airport AWOS	$190,000	**$6,902,905**
	Terminal Apron and Connector Taxiways	$3,274,670	
	Fuel Farm	$700,000	
	New Terminal	$690,000	
	Design and construct new terminal	$300,000	

Department	Item	Priority 1	Total
	auto access (at same time as new fuel farm and preferably at same time and coordinated with new terminal apron)		
	Reconstruct Apron & Shade	$1,543,025	
	Project Management and Contingency	$205,210	
Drainage	Edmond and Mills Street	$957,000	**$4,154,675**
	Donna Channel*	$1,760,000	
	2709 Kelly Drive	$11,000	
	1609/1611 Castlewood Ct.	$52,000	
	Paula Lane/Medical Parkway*	$33,000	
	Laurel/Sams Street	$170,000	
	800 Kirk Street	$38,500	
	1st Ave/Royal St/Walnut*	$360,000	
	1806 N Lynn Street	$53,000	
	Booth/Oak (Walnut)*	$55,000	
	Reece residence on 2nd Street*	$160,000	
	Oaklawn @ Bull Br Trib (Greenlawn)*	$66,000	
	Brookwood Circle (706, 708, 710)	$189,000	
	Turkey Creek	$250,175	
Water	Fire Hydrant Replacement	$500,000	**$9,361,000**
	Fire Hydrant Proposed with Lines	$790,000	
	Tank Maintenance Projects	$400,000	
	GIS Upgrade - Water	$50,000	
	SCADA Upgrades (Monitor)	$200,000	
	Leak Detection Study	$100,000	
	Leak Detection - point repairs and line replacements	$900,000	
	CCN Water Amendment	$150,000	
	Trouble Areas (as of Summer 2017)	$800,000	
	Upgrade meter read to fixed based	$750,000	
	Justin Lane water main (20")	$1,000,000	
	20" line along Old Granger Road (for Ford PS and Murphy EST)	$821,000	
	16" to supply water to Southwood Hills EST	$2,900,000	
Wastewater	Replace all lines smaller than 6"	$330,000	**$5,030,000**
	SSES - Mustang Creek Basin	$400,000	
	SSES - Bull Branch Basin	$400,000	
	GIS Upgrade - Wastewater	$50,000	
	Lift Station Portable Generator	$100,000	
	CCN Wastewater Amendment	$100,000	

Department	Item	Priority 1	Total
	Trouble Areas (Summer 2017)	$150,000	
	Eliminate Airport Lift Station - Mustang Creek Interceptor Extension	$1,500,000	
	Bull Branch Interceptors Replace	$2,000,000	
WWTP-2	Refurbish Influent Gates (2 EA) - Add 1 motor operated	$32,500	$9,224,000
	Replace Influent Pumps (3 EA 60 Hp) with VFDs (5 EA)	$455,000	
	Repaint and Upgrade Clarifier 2 Sludge Rake & Full Radius Skimmer	$340,000	
	Replace Treatment Unit 2	$5,000,000	
	Replace Bubble Diffusers in Aeration Basin 1	$195,000	
	Convert Aeration Basin to DO Pace Air	$429,000	
	Repaint Sludge Thickener Clarifier Mechanism	$130,000	
	Recondition Belt Presses	$130,000	
	Replace Wet and Dry Well Vents	$39,000	
	Repair Sidewalks	$78,000	
	Regrade Areas Next to Units	$104,000	
	Add Motor Operated Gate with Keypad	$130,000	
	Regrade Low Areas Near Fence	$32,500	
	Electrical Upgrades for Current Projects	$2,129,000	
Parks	Murphy Park	$664,000	**$5,236,000**
	Robinson Park	$411,000	
	Taylor Regional Park Sports Complex	$179,000	
	Bull Branch Park	$441,000	
	Doak Street Ball Fields	$179,000	
	Gano Street Basketball Court	$9,000	
	Jason Street Playground	$11,000	
	Hike and Bike Trail	$233,000	
	West End Park	$9,000	
	Gateway and Downtown Signage	$100,000	
	Heritage Park	$3,000,000	
Department	City Hall	$5,263,000	**$27,631,000**
	Municipal Court	$36,000	
	Fire Department	$529,000	
	Police Department	$11,212,000	
	Animal Control	$250,000	
	Cemetery	$693,000	
	Library	$39,000	
	Public Works	$9,609,000	
Total		**$103,596,795**	**$103,596,795**

As previously noted, the total of all Priority 1 projects is ***$95,073,120***. The projects shown for the WWTP in the above **Table 12-4** are the Priority 2 projects since the Priority 1 projects are currently funded. The Priority 2 projects shown for the WWTP are for additional TCEQ compliance issues and are therefore included in the grouping exercise. Based on this, the totals for Priority 1 projects in **Tables 12-3 and 12-4** are not the same.

Table 12-5 provides an example of grouping into the three Groups previously described with ranking intradepartmental.

Table 12-5. City of Taylor – Priority 1 Projects with Grouping

Dept	Rank	Item	Group 1	Group 2	Group 3
Street	1	2015 CDBG 4th Street (Remaining)		$400,000	
Street	2	2017 CDBG 3rd Street		$900,000	
Street	3	Edmond Street (Remaining)		$200,000	
Street	4	Annual Street Maintenance (City Staff)		$950,000	
Street	5	Corrective Maintenance-Excellent	$1,000,000	$1,000,000	$2,151,745
Street	6	Corrective Maintenance-Good	$1,000,000	$1,000,000	$3,931,065
Street	7	Corrective Maintenance-Fair	$1,000,000	$1,000,000	$2,884,405
Street	8	Poor Street Reconstruction	$4,000,000	$4,000,000	$10,000,000
SW	1	Reconstruct Existing Sidewalk	$200,000	$200,000	$200,000
SW	2	Sidewalk Master Plan		$40,000	
Air	1	Airport AWOS		$190,000	
Air	2	Terminal Apron and Connector Taxiways		$3,274,670	
Air	3	Fuel Farm		$700,000	
Air	4	New Terminal		$690,000	
Air	5	New terminal auto access		$300,000	
Air	6	Reconstruct Apron & Shade		$1,543,025	
Air	7	Project Management and Contingency		$205,210	
Drain	1	Edmond and Mills Street	$957,000		
Drain	2	Donna Channel*		$1,760,000	
Drain	3	2709 Kelly Drive			$11,000
Drain	4	1609/1611 Castlewood Ct.			$52,000
Drain	5	Paula Lane/Medical Parkway*			$33,000
Drain	6	Laurel/Sams Street			$170,000
Drain	7	800 Kirk Street			$38,500

Dept	Rank	Item	Group 1	Group 2	Group 3
Drain	8	1st Ave/Royal St/Walnut*			$360,000
Drain	9	1806 N Lynn Street			$53,000
Drain	10	Booth/Oak (Walnut)*			$55,000
Drain	11	Reece residence on 2nd Street*			$160,000
Drain	12	Oaklawn @ Bull Br Trib (Greenlawn)*			$66,000
Drain	13	Brookwood Circle (706, 708, 710)			$189,000
Drain	14	Turkey Creek			$250,175
Water	1	Fire Hydrant Replacement	$250,000	$250,000	
Water	2	Leak Detection Study	$100,000		
Water	3	Leak Detection - point repairs and line replacements	$900,000		
Water	4	Trouble Areas (as of Summer 2017)		$400,000	$400,000
Water	5	20" line along Old Granger Road (for Ford PS and Murphy EST)		$821,000	
Water	6	GIS Upgrade - Water		$50,000	
Water	7	Fire Hydrant Proposed with Lines			$790,000
Water	8	Tank Maintenance Projects			$400,000
Water	9	Justin Lane water main (20")			$1,000,000
Water	10	Upgrade meter read to fixed based			$750,000
Water	11	16" to supply water to Southwood Hills EST			$2,900,000
Water	12	SCADA Upgrades (Monitor)			$200,000
Water	13	CCN Water Amendment			$150,000
WW	1	Replace all lines smaller than 6"	$330,000		
WW	2	Lift Station Portable Generator		$100,000	
WW	3	Trouble Areas (Summer 2017)		$150,000	
WW	4	GIS Upgrade - Wastewater		$50,000	
WW	5	SSES - Mustang Creek Basin		$400,000	
WW	6	SSES - Bull Branch Basin		$400,000	
WW	7	Eliminate Airport LS - Mustang Creek Interceptor		$1,500,000	

Dept	Rank	Item	Group 1	Group 2	Group 3
		Extension			
WW	8	Bull Branch Interceptors Replace			$2,000,000
WW	9	CCN Wastewater Amendment			$100,000
WWTP	1	Repaint and Upgrade Clarifier 2	$340,000		
WWTP	2	Replace Treatment Unit 2	$5,000,000		
WWTP	3	Replace Influent Pumps with VFDs		$455,000	
WWTP	4	Replace Bubble Diffusers in Aeration Basin 1		$195,000	
WWTP	5	Convert Aeration Basin to DO Pace Air		$429,000	
WWTP	6	Add 1 motor operated influent gate			$32,500
WWTP	7	Repaint Sludge Thickener Clarifier			$130,000
WWTP	8	Recondition Belt Presses			$130,000
WWTP	9	Replace Wet and Dry Well Vents			$39,000
WWTP	10	Repair Sidewalks			$78,000
WWTP	11	Regrade Areas Next to Units			$104,000
WWTP	12	Add Motor Operated Gate with Keypad			$130,000
WWTP	13	Regrade Low Areas Near Fence			$32,500
WWTP	14	Electical Upgrades for Current Projects			$2,129,000
Parks	1	Heritage Park	$3,000,000		
Parks	2	Murphy Park		$486,000	$178,000
Parks	3	Robinson Park		$140,000	$271,000
Parks	4	Taylor Regional Park Sports Complex			$179,000
Parks	5	Bull Branch Park			$441,000
Parks	6	Doak Street Ball Fields			$179,000
Parks	7	Gano Street Basketball Court			$9,000
Parks	8	Jason Street Playground			$11,000
Parks	9	Hike and Bike Trail			$233,000
Parks	10	West End Park			$9,000

Dept	Rank	Item	Group 1	Group 2	Group 3
Parks	11	Gateway and Downtown Signage			$100,000
Dept	1	City Hall	$5,263,000		
Dept	2	Municipal Court	$36,000		
Dept	3	Fire Department	$529,000		
Dept	4	Police Department	$10,435,000		$777,000
Dept	5	Animal Control		$250,000	
Dept	6	Cemetery			$693,000
Dept	7	Library			$39,000
Dept	8	Public Works			$9,609,000
		Subtotals Per Group	**$34,340,000**	**$24,428,905**	**$44,827,890**

Table 12-5 is a tool to better understanding the ranking in the priority projects. This tool can be used by City Staff and Council in developing the 2018 5-Year CIP needs.

12.4 Other Recommendations - General

In addition to the prioritized capital improvements and specific recommendations to each major Infrastructure area, other recommendations associated with the overall city infrastructure were presented in this report in the applicable sections. Additional recommendations not previously identified are summarized below:

1. Consider future scope of work with applicable consultants for the following services:
   a) Aerial photography to Update Base Mapping (recommend every 5 years unless significant growth occurs)
   b) Demographic Study and Housing Study (to support future population and water use projections as part of the TWBD regional planning process and communicate with Brazos G.)
   c) Traffic Speed Study (use to modify posted speed limits on city streets)
   d) City Engineering Manual (update by 2019)
   e) GIS Update (outside firm or hire city staff)
   f) Zoning and development ordinance review and update (by 2020)
   g) Code Enforcement review and update (by 2020)

2. Adjust operating budgets as needed based on the impacts to staffing, operational, and new equipment/vehicles that may be required to fully operate and maintain some of the capital improvements identified in the SFP.

3. Annual CIP update. The CIP information presented in this SFP (and **Appendix B**) are included for illustrative purposes only. They are intended to represent a 5-year approach to the addressing the Priority 1 projects listed in this plan. The City's 5-year CIP should be adjusted to incorporate as many Priority 1 projects as possible as funding will allow. The 5-year CIP should be updated annually as part of the budget process.

4. Strategic Facility Plan (bi-annual update)

APPENDIX A

Real Property Schedule

(2016-2017)

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

TML INTERGOVERNMENTAL RISK POOL

The contribution and limit calculated for your Real and Personal Property Coverages are based on the following schedule. The values shown are the estimated Replacement Cost or Actual Cash Value (RC or ACV) unless otherwise noted and endorsed. Any changes or corrections may require adjustment to the contribution. Improvements and betterments to locations you lease from others are included with the contents value. Your elected Coverage Extension limits are shown on a separate schedule.

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
1	303 Airport Rd	1948	Hanger/Base	156,526	10,000
			Airport	RC	RC
2	309 Airport Rd	1985	Hanger A	192,959	0
	A10		Airport	RC	
3	309 Airport Rd	1948	Hanger B	99,853	0
	B5		Airport	RC	
5	301 S Dolan Rd	1960	Bath House	46,293	0
			Parks & Recreation	RC	
6	707 E 4th St	1938	Storage Building	30,620	0
			Street	RC	
7	Hwy 112	1974	Maintenance Building	59,372	58,200
			Sewer	RC	RC
8	Hwy 112	1994	Blower Building	334,019	150,000
			Sewer	RC	RC
11	1208 Sycamore Dr	1939	Club House/Boys Scouts	158,498	0
			Parks & Recreation	RC	
12	1001 Mallard Dr	1985	Concession Stand/Restroom	105,354	0
			Parks & Recreation	RC	
13	2205 Davis St	1985	Concession Stand/Restroom	124,868	0
			Parks & Recreation	RC	
14	Hwy 112	1985	Contact Stabilization	159,225	100,000
	#2		Sewer	RC	RC
15	Hwy 112	1985	Contact Stabilization	79,612	90,000
	#1		Sewer	RC	RC
16	701 E 4th St	1955	Animal Control Storage	11,314	2,000
			Animal Control	RC	RC
17	701A E 4th St	1994	Dog Kennels	46,293	3,000
			Animal Control	RC	RC
19	1120 Porter St	1948	Equip Storage w/Break Room	50,653	3,000
			Storage	ACV	RC
20	910 Victoria St	1955	Fire Station (TVFD)	188,495	5,000
			Fire	RC	RC
22	1319 W 4th St	1920	Training Center (Old School)	233,128	0
			Fire	RC	
25	1615 Old Granger Rd	1954	1M gal Ground Water Tank	779,101	0
	Ford Ground Storage		Water	RC	
26	1301 W 4th St	1948	Senior Citizen Nutrition	119,367	0
			Senior Citizens	RC	

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
27	Hwy 112	1972	Old Lab/Chart Bldg	20,656	10,000
			Sewer	RC	RC
28	Hwy 112	1972	RAS/WAS Building	66,742	300,000
			Sewer	RC	RC
32	303 Airport Rd	1985	Runway Lights	15,570	0
			Airport	RC	
33	1424 N Main St	1948	Office/Fleet Maintenance	122,584	35,000
			Street	RC	RC
34	1424 N Main St	1948	Maintenance Shop	62,278	20,800
			Street	RC	RC
35	114 W 9th St	1985	Museum - Moody	369,414	53,147
			Museum	RC	RC
36	1001 E 4th St	1955	Tool House/Sexton Office	35,602	10,000
			Storage	RC	RC
37	2260 N Lynn Rd	1990	Restroom	64,562	0
			Parks & Recreation	RC	
38	1220 Sycamore Dr	1988	Pavilion	713,812	5,000
			Parks & Recreation	RC	RC
39	2200 N Lynn Rd	1988	Pavilion	36,225	2,500
			Parks & Recreation	RC	RC
42	400 Porter St	1972	Public/City Hall	1,520,627	1,000,000
			Administration	RC	RC
44	1803 Old Coupland Rd	1988	Pump House	38,301	31,200
			Water	RC	RC
46	1201 N Main St	1950	Utility Storage	54,078	62,400
			Water Administration	RC	RC
49	1202 N Main St	1920	Utility Office	111,167	25,000
			Water Administration	RC	RC
51	1118 Porter St	1950	Truck/Tractor Stg Shed	6,332	50,000
			Vehicle Maintenance	RC	RC
58	500 S Main St	1998	Police Department	1,032,573	250,000
			Police	RC	RC
59	205 Airport Rd	1999	Hangar C	388,616	0
	C12		Airport	RC	
60	207 Airport Rd	1999	Hangar D	388,616	0
	D12		Airport	RC	
64	Hwy 112	1985	Contact Stabilization	51,899	0
	#3		Sewer	RC	
65	Hwy 112	1985	Sludge Tank	1,037,971	275,000
			Sewer	RC	RC
66	Hwy 112	1985	Thickener Scum/Sludge	51,899	135,000
			Sewer	RC	RC

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

TML INTERGOVERNMENTAL RISK POOL

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
67	Hwy 112	1985	Lift Station-MCU Pumps	235,827	660,000
			Sewer	RC	RC
68	1600 Sycamore St	2000	Swimming Pool	1,037,971	0
			Parks & Recreation	RC	
69	Rices Crossing	2000	Lift Station	103,797	0
			Sewer	RC	
73	303 Airport Rd	1980	Tower w/Glass Beacon Light	36,329	0
			Airport	RC	
74	305 Airport Rd	2001	Pilot/Nurses Flight Quarters	55,324	0
			Airport	RC	
75	705 Carlos Parker Blvd NM	2002	Fire Station	729,797	75,000
			Fire	RC	RC
76	303 Airport Rd	2001	Electrical Control Box	5,190	5,000
			Airport	RC	RC
77	303 Airport Rd	2000	Grnd AV Fuel Tank	57,088	0
			Airport	RC	
78	303 Airport Rd	2001	Grnd Jet Fuel Tank	57,088	0
			Airport	RC	
79	1600 Sycamore St	2000	Bathouse	126,529	0
			Parks & Recreation	RC	
80	1600 Sycamore St	2000	Office	48,888	5,000
			Parks & Recreation	RC	RC
81	1600 Sycamore St	2000	Pump House	36,433	10,000
			Parks & Recreation	RC	RC
82	Hwy 112	2000	Ultravoilet Disinfectors/Sewer	176,455	560,000
			Sewer	RC	RC
83	1805 Old Coupland Rd	1990	500k gal Elevated Water Tank	1,559,136	0
			Water	RC	
85	702 Mallard Ln	1980	500k gal Elevated Water Tank	1,559,136	0
			Water	RC	
87	North Dr between George Dr/Randall	2002	School Flasher	4,671	0
	#3515		Street	RC	
88	North Dr between Marshall St/Mallar	2002	School Flasher	4,671	0
	#3516		Street	RC	
89	Mallard Ln between Main St/Medical	2002	School Flasher	4,671	0
	#3522		Street	RC	
90	Mallard Ln between North Dr/Kelly C	2002	School Flasher	4,671	0
	#3517		Street	RC	
91	Mallard Ln between Greenlawn/Smit	2002	School Flasher	4,671	0
	#3518		Street	RC	
92	TH Johnson Dr between Davis St/Mai	2002	School Flasher	4,671	0
	#3520		Street	RC	

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

TML INTERGOVERNMENTAL RISK POOL

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
93	TH Johnson Dr between Davis St/Mai	2002	School Flasher	4,671	0
	#3521		Street	RC	
94	North Dr between TH Johnson/Mallai	2002	School Flasher	4,671	0
	#3519		Street	RC	
97	100 Larry St	2004	Wastewater Lab	128,501	20,000
			Wastewater	RC	RC
98	109 W 5th St	1972	City Hall Annex	257,728	55,000
			City Hall	RC	RC
99	304 E 3rd St	2002	Admin Office	168,670	65,000
			Fire	RC	RC
101	1307 Sycamore St	2006	Restroom	188,080	0
			Parks	RC	
102	900 Frank St	2006	Restroom	107,326	0
			Parks	RC	
103	801 Vance St	2006	Public Library	3,608,090	2,000,000
			Library	RC	RC
104	200 Washburn St	2006	Central Fire Station	1,507,860	220,253
			Fire	RC	RC
105	107 Airport Rd	2007	Lift Station	186,835	0
			Sewer	RC	
106	3910 N Main St	2003	Lift Station	259,493	0
			Sewer	RC	
108	301 Airport Rd	2007	Hanger E	377,614	0
			Airport	RC	
109	210 N Carlos G Parker Blvd	2009	Shade Structure (1 of 2)	3,425	0
	Taylor Regional Park		Parks & Recreation	RC	
110	210 N Carlos G Parker Blvd	2009	Athletic Eqpt incl Football Bleach	130,444	0
	Taylor Regional Park		Parks & Recreation	RC	
111	210 N Carlos G Parker Blvd	2009	Pavilion	28,025	0
	Taylor Regional Park		Parks & Recreation	RC	
112	210 N Carlos G Parker Blvd	2009	Site Furnishing (Trash Cans/Table	31,139	0
	Taylor Regional Park		Parks & Recreation	RC	
113	210 N Carlos G Parker Blvd	2009	Scoreboard	40,550	0
	Taylor Regional Park		Parks & Recreation	RC	
114	210 N Carlos G Parker Blvd	2009	Ballfield Lighting (10 Fields)	615,326	0
	Taylor Regional Park		Parks & Recreation	RC	
115	210 N Carlos G Parker Blvd	2009	Football Lighting	73,362	0
	Taylor Regional Park		Parks & Recreation	RC	
116	210 N Carlos G Parker Blvd	2009	Basketball Lighting	24,196	0
	Taylor Regional Park		Parks & Recreation	RC	
117	210 N Carlos G Parker Blvd	2009	Soccer Lighting (2 Fields)	138,271	0
	Taylor Regional Park		Parks & Recreation	RC	

Real and Personal Property Schedule

Member: Taylor
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Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

TML INTERGOVERNMENTAL RISK POOL

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
118	210 N Carlos G Parker Blvd	2009	Playground Equipment	81,221	0
	Taylor Regional Park		Parks & Recreation	RC	
119	210 N Carlos G Parker Blvd	2009	Ballfield Bench Seating	88,228	0
	Taylor Regional Park		Parks & Recreation	RC	
120	210 N Carlos G Parker Blvd	2009	Concession Building #1	212,888	0
	Taylor Regional Park		Parks & Recreation	RC	
121	210 N Carlos G Parker Blvd	2009	Concession Building #2	212,888	0
	Taylor Regional Park		Parks & Recreation	RC	
122	210 N Carlos G Parker Blvd	2009	Alt #8 Batting Cages Lighted	105,948	0
	Taylor Regional Park		Parks & Recreation	RC	
123	210 N Carlos G Parker Blvd	2009	Alt #9 Xeriscape Garden #2-Optic	28,056	0
	Taylor Regional Park		Parks & Recreation	RC	
124	210 N Carlos G Parker Blvd	2009	Landscape and Irrigation	1,454,763	0
	Taylor Regional Park		Parks & Recreation	RC	
125	210 N Carlos G Parker Blvd	2009	Fencing	706,962	0
	Taylor Regional Park		Parks & Recreation	RC	
126	210 N Carlos G Parker Blvd	2009	Misc Metals/Handrails/Scorer Ta	51,899	0
	Taylor Regional Park		Parks & Recreation	RC	
127	210 N Carlos G Parker Blvd	2009	Signage/Temp/Fixed/Educationa	20,759	0
	Taylor Regional Park		Parks & Recreation	RC	
128	210 N Carlos G Parker Blvd	2009	Shade Shelter (2 of 2)	3,425	0
			Parks & Recreation	RC	
129	210 N Carlos G Parker Blvd	2009	Shade Structure (1 of 4)	4,048	0
	East WILCO Park		Parks & Recreation	RC	
130	210 N Carlos G Parker Blvd	2009	Shade Structure (2 of 4)	4,048	0
	Taylor Regional Park		Parks & Recreation	RC	
131	210 N Carlos G Parker Blvd	2009	Shade Structure (3 of 4)	4,048	0
	Taylor Regional Park		Parks & Recreation	RC	
132	210 N Carlos G Parker Blvd	2009	Shade Structure (4 of 4)	4,048	0
	Taylor Regional Park		Parks & Recreation	RC	
133	210 N Carlos G Parker Blvd	2009	Shade Structure (1 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
134	210 N Carlos G Parker Blvd	2009	Shade Structure (2 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
135	210 N Carlos G Parker Blvd	2009	Shade Structure (3 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
136	210 N Carlos G Parker Blvd	2009	Shade Structure (4 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
137	210 N Carlos G Parker Blvd	2009	Shade Structure (5 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
138	210 N Carlos G Parker Blvd	2009	Shade Structure (6 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

TML INTERGOVERNMENTAL RISK POOL

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
139	210 N Carlos G Parker Blvd	2009	Shade Structure (7 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
140	210 N Carlos G Parker Blvd	2009	Shade Structure (8 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
141	210 N Carlos G Parker Blvd	2009	Shade Structure (9 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
142	210 N Carlos G Parker Blvd	2009	Shade Structure (10 of 10)	15,466	0
	Taylor Regional Park		Parks & Recreation	RC	
143	1124 Porter St	1970	Storage Building	7,162	0
			Water	RC	
144	1122 Porter St	1950	Storage Building	2,906	0
			Water	ACV	
145	1206 Sycamore Dr	1975	Clubhouse (Girl Scouts)	98,296	0
			Parks & Recreation	RC	
146	1424 N Main St	1960	Fleet Wash Shed	3,114	0
			Fleet	RC	
147	301 S Dolan St	2008	Shade Shelter #1	830	0
			Parks & Recreation	RC	
148	301 S Dolan Rd	2008	Shade Shelter #2	1,661	0
			Parks & Recreation	RC	
149	416 N Main St	1990	Old City Hall Gazebo	2,803	0
			Parks & Recreation	RC	
150	416 N Main St	1990	Flag Pole	10,899	0
			Parks & Recreation	RC	
151	1401 Sycamore	2010	Pavilion	38,820	0
	Murphy Park		Parks & Recreation	RC	
152	210 N Carlos G Parker Blvd	2011	TRPSC Signs	86,982	0
	Taylor Regional Park		Parks & Recreation	RC	
153	400 W 12th St	2011	750k gal Elevated Water Tank	1,957,094	0
	Murphy Park		Water	RC	
154	608 Lorax Ln	2011	1M gal Elevated Water Tank	2,587,869	0
			Water	RC	
155	2200 N Lynn	2010	Wood Playground Set	215,587	0
	Bull Branch Park		Parks & Recreation	RC	
156	1424 N Main		Recreational Equipment	0	10,800
			Parks & Recreation		RC
157	114 W 9th St	1970	Carport/Storage	4,256	0
			Parks & Recreation	RC	
158	1600 Sycamore St	2006	Pool Shade Shelter	4,878	0
			Parks & Recreation	RC	
159	210 N Carlos G Parker Blvd, Suite 460	2011	1M Gal Ground Storage Tank	851,240	0
			Water	RC	

Real and Personal Property Schedule

Member: Taylor
Member ID: 3204
Coverage Period: 10/01/2016 to 10/01/2017 Shown As of 10/01/2016

ID	Address or Site Secondary ID	Year Built	Occupancy Department	Bldg Value Valuation Basis	Contents Value Valuation Basis
160	Southwest	2011	24" Water Transmission Main	1,161,038	0
			Water	RC	
161	3706 N Main St		Christmas Lights	0	64,061
			Parks & Recreation		RC
162	304 S Dolan St	2012	Pavilion/Fence	137,116	5,000
			Parks & Recreation	RC	RC
163	210 N Carlos G Parker Blvd	2011	Pump Bldg/Parks Maintenance	378,133	0
			Parks	RC	
164	210 N Carlos G Parker Blvd	2011	Fence-Chain Link	18,995	0
			Parks	RC	
165	701 E 4th St	2015	Animal Control Office	15,332	2,500
			Animal Control	RC	RC
166	197 S Edmond St	2015	Industrial Shell Building	2,531,250	100,000
	EDC		Economic Development	RC	RC
167	700 N Main St	2015	Office	0	50,000
			Economic Development		RC
Coverage: Real & Personal Property		Total Items:	132	36,156,509	6,593,861

APPENDIX B

Combined

5-Year CIP

(CIP Included for Illustrative Purposes Only)

Site	TOTAL	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Streets	$ 127,251,645	$ 990,000	$ 5,088,443	$ 6,610,443	$ 5,088,443	$ 5,088,443	$ 5,328,443	$ 81,038,365
Sidewalk	$ 3,840,000	$ -	$ 100,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 3,500,000
Airport	$ 6,898,626	$ 53,200	$ 221,985	$ 1,419,422	$ -	$ 354,896	$ -	$ -
Drainage	$ 11,994,575	$ 667,000	$ 868,500	$ 1,235,075	$ 1,066,100	$ 1,176,400	$ 1,231,500	$ 6,000,000
Water	$ 50,949,000	$ 50,000	$ 950,000	$ 950,000	$ 3,850,000	$ 2,271,000	$ 2,550,000	$ 40,328,000
Wastewater	$ 23,810,000	$ -	$ 600,000	$ 600,000	$ 1,320,000	$ 2,720,000	$ 4,470,000	$ 14,100,000
WWTP	$ 19,703,000	$ 1,600,000	$ 700,000	$ 1,287,000	$ 1,225,500	$ 2,353,000	$ 5,705,500	$ 6,832,000
Parks	$ 19,922,000	$ -	$ 439,725	$ 565,000	$ 541,000	$ 544,000	$ 500,000	$ 17,132,275
Departments	$ 49,481,000	$ 175,000	$ 5,856,000	$ 250,000	$ 11,212,000	$ 529,000	$ 9,609,000	$ 21,850,000
Total Per Year		**$ 3,535,200**	**$ 14,824,653**	**$ 12,976,940**	**$ 24,363,043**	**$ 15,096,739**	**$ 29,454,443**	**$ 68,914,225**
TOTAL	**$ 313,849,846**					**5-Year Total**	**$ 96,715,818**	**$ 68,914,225**

Streets

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Downtown Street Improvements	General	Capital	$ -	$ -							$ -
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ 400,000	$ -	$ 400,000						$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ 900,000	$ 600,000			$ 300,000				$ -
Edmond Street (Remaining)	Street	Capital	$ 200,000	$ -	$ 200,000						$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$ -	$ -							$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ -	$ -							$ -
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000	$ -	$ 150,000	$ 95,000	$ 95,000	$ 95,000	$ 95,000	$ 95,000	$ 325,000
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -		$ 830,349	$ 830,349	$ 830,349	$ 830,349	$ 830,349	$ -
Corrective Maintenance-Good	General	Capital	$ 5,931,065	$ -		$ 1,186,213	$ 1,186,213	$ 1,186,213	$ 1,186,213	$ 1,186,213	$ -
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -		$ 976,881	$ 976,881	$ 976,881	$ 976,881	$ 976,881	$ -
Poor Street Reconstruction	GF/Loop	Capital	$18,000,000			$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 8,000,000
Priority 2				$ -							$ -
Downtown Street Improvements	General	Capital	$ 1,500,000	$ -							$ 1,500,000
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ -	$ -							$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ -	$ -							$ -
Edmond Street (Remaining)	Street	Capital	$ -	$ -							$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$10,000,000	$ 8,778,000			$ 1,222,000				$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ -	$ -							$ -
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000	$ -							$ 950,000
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -							$ 4,151,745
Corrective Maintenance-Good	General	Capital	$ 5,931,065								
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -							$ 4,884,405
Poor Street Reconstruction	General	Capital	$18,000,000	$ -							$18,000,000
Priority 3				$ -							$ -
Downtown Street Improvements	General	Capital	$ 500,000	$ -							$ 500,000
2015 CDBG 4th Street (Remaining)	CDBG/Street	Capital	$ -	$ -							$ -
2017 CDBG 3rd Street	CDBG/Street	Capital	$ -	$ -							$ -
Edmond Street (Remaining)	Street	Capital	$ -	$ -							$ -
CR101 Widening (Approx. 10% City M	Wilco/CO	Capital	$ -	$ -							$ -
CR366 Street Project (City Match)	Wilco/CO	Capital	$ 2,000,000	$ 1,760,000	$ 240,000					$ 240,000	$ (240,000)
Annual Street Maintenance (City Staff)	General	Capital	$ 950,000								
Corrective Maintenance-Excellent	General	Capital	$ 4,151,745	$ -							$ 4,151,745
Corrective Maintenance-Good	General	Capital	$ 5,931,065	$ -							$ 5,931,065
Corrective Maintenance-Fair	General	Capital	$ 4,884,405	$ -							$ 4,884,405
Poor Street Reconstruction	General	Capital	$28,000,000	$ -							$28,000,000
											$ -
TOTAL			**$127,251,645**	**$ 11,138,000**	**$ 990,000**	**$ 5,088,443**	**$ 6,610,443**	**$ 5,088,443**	**$ 5,088,443**	**$ 5,328,443**	**$81,038,365**

Sidewalks

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -		$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 300,000
New Sidewalk	General	Capital	$ -	$ -							$ -
Sidewalk Master Plan	General	Capital	$ 40,000	$ -		$ 40,000					$ -
Priority 2				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -							$ 600,000
New Sidewalk	General	Capital	$ 1,000,000	$ -							$ 1,000,000
											$ -
Priority 3				$ -							$ -
Reconstruct Existing Sidewalk	General	Capital	$ 600,000	$ -							$ 600,000
New Sidewalk	General	Capital	$ 1,000,000	$ -							$ 1,000,000
											$ -
											$ -
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											$ -
TOTAL			**$ 3,840,000**	**$ -**	**$ -**	**$ 100,000**	**$ 60,000**	**$ 60,000**	**$ 60,000**	**$ 60,000**	**$ 3,500,000**

Airport

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Airport AWOS	TxDOT, CO1	Capital	$ 190,000	$ 142,500	$ 47,500						$ -
Terminal Apron and Connector Taxiways	TxDOT, CO1	Capital	$ 3,274,670	$ 2,947,203		$ 80,000	$ 247,467				$ -
Fuel Farm	TxDOT, CO1	Capital	$ 700,000	$ 525,000			$ 175,000				$ -
New Terminal	TxDOT, CO1	Capital	$ 690,000	$ -		$ 70,000	$ 620,000				$ -
New Terminal Auto Access	TxDOT, CO1	Capital	$ 300,000	$ -		$ 40,000	$ 260,000				$ -
Reconstruct Apron & Shade	TxDOT, CO1	Capital	$ 1,543,025	$ 1,234,420					$ 308,605		$ -
				$ -							$ -
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Project Management and Contingency	CO Bonds #1	Professional /Other	$ 200,931	$ -	$ 5,700	$ 31,985	$ 116,955		$ 46,291	$ -	$ -
TOTAL			**$ 6,898,626**	**$ 4,849,123**	**$ 53,200**	**$ 221,985**	**$ 1,419,422**	**$ -**	**$ 354,896**	**$ -**	**$ -**

Drainage

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Edmond and Mills Street	MDUS	Capital	$ 957,000	$ -	$ 617,000	$ 340,000					$ -
Donna Channel*	MDUS	Capital	$ 1,760,000	$ -					$ 880,000	$ 880,000	$ -
2709 Kelly Drive	MDUS	Capital	$ 11,000	$ -		$ 11,000					$ -
1609/1611 Castlewood Ct.	MDUS	Capital	$ 52,000	$ -		$ 52,000					$ -
Paula Lane/Medical Parkway*	MDUS	Capital	$ 33,000	$ -		$ 33,000					$ -
Laurel/Sams Street	MDUS	Capital	$ 170,000	$ -		$ 170,000					$ -
800 Kirk Street	MDUS	Capital	$ 38,500	$ -		$ 38,500					$ -
1st Ave/Royal St/Walnut*	MDUS	Capital	$ 360,000	$ -			$ 360,000				$ -
1806 N Lynn Street	MDUS	Capital	$ 53,000	$ -		$ 53,000					$ -
Booth/Oak (Walnut)*	MDUS	Capital	$ 55,000	$ -		$ 55,000					$ -
Reece residence on 2nd Street*	MDUS	Capital	$ 160,000	$ -			$ 160,000				$ -
Oaklawn @ Bull Br Trib (Greenlawn)*	MDUS	Capital	$ 66,000	$ -		$ 66,000					$ -
Brookwood Circle (706, 708, 710)	MDUS	Capital	$ 189,000	$ -			$ 189,000				$ -
Turkey Creek	MDUS	Capital	$ 250,175	$ -			$ 250,175				$ -
1308 TH Johnson culvert	MDUS	Capital	$ 121,000	$ -				$ 121,000			$ -
2000 Davis Street	MDUS	Capital	$ 21,000	$ -				$ 21,000			$ -
915 Lexington Street	MDUS	Capital	$ 21,500	$ -				$ 21,500			$ -
3310 Crystal Circle	MDUS	Capital	$ 31,000	$ -				$ 31,000			$ -
Kimbro @ 7th	MDUS	Capital	$ 38,500	$ -				$ 38,500			$ -
2104 Davis Street	MDUS	Capital	$ 43,000	$ -				$ 43,000			$ -
107 Mustang Street	MDUS	Capital	$ 45,000	$ -				$ 45,000			$ -
Taylor Dental Association (Cabaniss) on 920 Main St/SH95	MDUS	Capital	$ 50,600	$ -				$ 50,600			$ -
407 Drake Lane	MDUS	Capital	$ 66,000	$ -				$ 66,000			$ -
713 Bland Street	MDUS	Capital	$ 72,000	$ -				$ 72,000			$ -
Travis Street (& Franklin Street)	MDUS	Capital	$ 145,000	$ -				$ 145,000			$ -
304 Cherrywood Circle	MDUS	Capital	$ 14,000	$ -				$ 14,000			$ -
Cecilia/Lizzie Street	MDUS	Capital	$ 24,000	$ -				$ 24,000			$ -
Tammi Lane near 1617	MDUS	Capital	$ 70,500	$ -				$ 70,500			$ -
Debus Drive*	MDUS	Capital	$ 121,000	$ -				$ 121,000			$ -
Old Thorndale Rd	MDUS	Capital	$ 69,000	$ -				$ 69,000			$ -
1409 TH Johnson at Pinehurst	MDUS	Capital	$ 92,400	$ -					$ 92,400		$ -
Mclain Street	MDUS	Capital	$ 154,000	$ -					$ 154,000		$ -
Marisposa/Mockingbird	MDUS	Capital	$ 180,500	$ -						$ 180,500	$ -
2200 Lee Street	MDUS	Capital	$ 100,000	$ -						$ 100,000	$ -
Davis Street Sidewalk at Bull Branch	MDUS	Capital	$ 21,000	$ -						$ 21,000	$ -
FUTURE MDUS Projects	MDUS	Capital	$ 6,000,000		$ 50,000						$ 5,950,000
Floodplain Study	General Fund	Professional	$ 225,900	$ -			$ 225,900				$ -
FEMA - LOMRs (Mustang Creek and & Tributary)	MDUS	Professional	$ 63,000	$ -				$ 63,000			$ -
City Maintenance of Existing Drainage	General Fund	Maintenance	$ 50,000	$ -		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
TOTAL			**$11,994,575**	**$ -**	**$ 667,000**	**$ 868,500**	**$ 1,235,075**	**$ 1,066,100**	**$ 1,176,400**	**$ 1,231,500**	**$ 6,000,000**

Water

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Replace all lines smaller than 6"	Utility, Bond	Capital	$10,193,000	$ -		$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 9,443,000
Replace all CI lines	Utility Fund	Capital	$ 3,582,000	$ -		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 3,082,000
Fire Hydrant Replacement	Utility Fund	Capital	$ 500,000	$ -	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 200,000
Fire Hydrant Proposed with Lines	Utility Fund	Capital	$ 790,000	$ -		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 540,000
Tank Maintenance Projects	Bond, TWDB	Capital	$ 400,000	$ -						$ 200,000	$ 200,000
GIS Upgrade - Water	Utility Fund	Professional	$ 50,000	$ -		$ 50,000					$ -
SCADA Upgrades (Monitor)	Utility Fund	Professional	$ 200,000	$ -		$ 200,000					$ -
SCADA Upgrades (Automation)	Utility Fund	Professional	$ 500,000	$ -					$ 500,000		$ -
Leak Detection Study	Utility Fund	Capital	$ 100,000	$ -		$ 100,000					$ -
Leak Detection - point repairs and line replacements	Utility Fund	Capital	$ 900,000	$ -		$ 100,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ -
CCN Water Amendment	Utility Fund	Professional	$ 150,000	$ -		$ 50,000					$ 100,000
Trouble Areas (as of Summer 2017)	Utility Fund	Capital	$ 800,000	$ -		$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 300,000
Upgrade meter read to fixed based	Utility Fund	Capital	$ 750,000	$ -							$ 750,000
Upgrade meters for fixed based	Utility Fund	Capital	$ 1,450,000	$ -						$ 450,000	$ 1,000,000
Add VFDs for North Pump Station	Utility Fund	Capital	$ 300,000	$ -			$ 300,000				$ -
Backup generator for North Pump Station	Utility Fund	Capital	$ 300,000	$ -				$ 300,000			$ -
Upgrade Water Distribution Model	Bond, TWDB	Capital	$ 250,000	$ -						$ 250,000	$ -
Future HSPS Delivery Point	Bond, TWDB	Capital	$ 2,500,000	$ -							$ 2,500,000
Demolish Ford Pump Station	Utility Fund	Capital	$ 300,000	$ -					$ 300,000		$ -
Justin Lane water main (20")	Utility Fund	Capital	$ 1,000,000	$ -						$ 1,000,000	$ -
2001 Master Plan Remaining Priority Projects:											
20" line along Old Granger Road (for Ford PS and Murphy EST)	Bond	Capital	$ 821,000	$ -					$ 821,000		$ -
16"/12" loop from Hwy 95, CR409, Lake Drive	Bond	Capital	$ 1,528,000	$ -							$ 1,528,000
12" line Old Thorndale Road; 8" Gravel Pit Rd	Bond	Capital	$ 959,000	$ -							$ 959,000
12" line to supply Murphy EST from west.	Bond	Capital	$ 385,000	$ -							$ 385,000
8" line along 7th from Main St to Railroad	Bond	Capital	$ 168,000	$ -							$ 168,000
12" line CR 398 from 24" along Grace Street, CR 366, to Old Georgetown Rd	Bond	Capital	$ 764,000	$ -							$ 764,000
16" to proposed/future FM 973 EST	Bond	Capital	$ 1,833,000	$ -							$ 1,833,000
12" loop along Old Thorndale, FM 619, Loop 427 (supply Southwood Hills EST)	Bond	Capital	$ 1,217,000	$ -							$ 1,217,000
2001 Master Plan Remaining Priority Projects for Growth:											
16" to supply water to Southwood Hills EST	Bond	Capital	$ 2,900,000	$ -				$ 2,900,000			$ -
0.5 MG EST FM 973 (Upper Plane)			$ 1,000,000	$ -							$ 1,000,000
Expand Upper Pressure Plane HSPS			$ 650,000	$ -							$ 650,000
8" line in upper pressure plane from Loop 427, along Hwy 95, to CR 400			$ 1,026,000	$ -							$ 1,026,000
16" line Lake Drive between Davis St and Old Granger Road to increase supply to Murphy Park EST			$ 519,000	$ -							$ 519,000
12"/16" line FM 619			$ 2,055,000	$ -							$ 2,055,000
12" line Rices Crossing, Buttercup Rd, to FM 973			$ 1,577,000	$ -							$ 1,577,000
16" along CR 398			$ 1,123,000	$ -							$ 1,123,000
16" along CR 395 and CR 101 to Hwy 79			$ 1,466,000	$ -							$ 1,466,000
12" along CR 369 and south to CR 398			$ 1,851,000	$ -							$ 1,851,000
12" loop along CR 366, CR 365, CR 369 from Upper Plane HSPS	Bond	Capital	$ 1,664,000	$ -							$ 1,664,000
12" along FM 619 and along CR 447 to CR 452	Bond	Capital	$ 2,428,000	$ -							$ 2,428,000
				$ -							$ -
TOTAL			**$50,949,000**	**$ -**	**$ 50,000**	**$ 950,000**	**$ 950,000**	**$ 3,850,000**	**$ 2,271,000**	**$ 2,550,000**	**$40,328,000**

Wastewater

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Replace all lines smaller than 6"	Utility, Bond	Capital	$ 660,000	$ -				$ 220,000	$ 220,000	$ 220,000	$ -
SSES - Mustang Creek Basin	Utility Fund	Professional	$ 400,000	$ -		$ 400,000					$ -
SSES - Bull Branch Basin	Utility Fund	Professional	$ 400,000	$ -			$ 400,000				$ -
System Rehab based on SSES's	Bond, TWDB	Capital	$ 2,000,000	$ -				$ 1,000,000	$ 1,000,000		$ -
GIS Upgrade - Wastewater	Utility Fund	Professional	$ 50,000	$ -			$ 50,000				$ -
SCADA Upgrades (Part of Water)	Utility Fund	Professional	$ -	$ -		$ -					$ -
Lift Station Portable Generator	Utility Fund	Capital	$ 100,000	$ -		$ 100,000					$ -
CCN Wastewater Amendment	Utility Fund	Professional	$ 200,000	$ -			$ 100,000	$ 100,000			$ -
Trouble Areas (Summer 2017)	Utility Fund	Capital	$ 150,000	$ -		$ 100,000	$ 50,000				$ -
Elimintate Airport Lift Station - Mustang Creek Interceptor Extension	Bond, TWDB	Capital	$ 1,500,000	$ -					$ 1,500,000		$ -
Bull Branch Interceptors Replace	Bond, TWDB	Capital	$ 4,000,000	$ -						$ 4,000,000	$ -
Complete Sanitary Sewer Model	Utility Fund	Professional	$ 250,000	$ -						$ 250,000	$ -
2001 Master Plan Remaining Priority Projects:				$ -							
Add capacity to upper reaches of Bull Branch (replace 10" line)	Bond	Capital	$ 2,100,000	$ -							$ 2,100,000
Extend 12" interceptor along Bull Branch to serve additional capacity	Bond	Capital	$ 1,100,000	$ -							$ 1,100,000
Extend 15"/18" line along railroad west of Loop 427	Bond	Capital	$ 900,000	$ -							$ 900,000
Extend 12"/15"/18" interceptor along Mustang Creek west of airport	Bond	Capital	$ 2,200,000	$ -							$ 2,200,000
2001 Master Plan Remaining Priority Projects for Growth:				$ -							
Replace 6" line serving Basin 1 with 18"	Bond	Capital	$ 1,900,000	$ -							$ 1,900,000
Extend 12"/15" line along upper reaches of Mustang Creek	Bond	Capital	$ 2,100,000	$ -							$ 2,100,000
Construct 12" interceptor along Turkey Creek, LS, and forcemain for Basin 10	Bond	Capital	$ 3,800,000	$ -							$ 3,800,000
				$ -							$ -
TOTAL			**$23,810,000**	**$ -**	**$ -**	**$ 600,000**	**$ 600,000**	**$ 1,320,000**	**$ 2,720,000**	**$ 4,470,000**	**$14,100,000**

Wastewater Treatment Plant

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Aerated Pre-Equalization Basin	TWDB	Capital	$ 2,210,000	$ -	$ -	$ -					$ 2,210,000
Replace Climber Screen	Bond	Capital	$ 275,000	$ -	$ 275,000	$ -					$ -
Replace Climber Screen Conveyor and Container	Bond	Capital	$ 53,000	$ -	$ 53,000	$ -					$ -
Refurbish Influent Gates (2 EA) - Add 1 motor operated	Bond, TWDB	Capital	$ 79,500	$ -	$ 47,000	$ -				$ 32,500	$ -
Add Fine Screen (5 MGD)	TWDB	Capital	$ 520,000	$ -	$ -	$ -			$ 520,000		$ -
Install Mechanical Grit Chamber		Capital	$ 1,125,000	$ -	$ -	$ -					$ 1,125,000
Replace Influent Pumps (3 EA 60 Hp) with VFDs (5 EA)	TWDB	Capital	$ 455,000	$ -	$ -	$ -	$ 455,000				$ -
Add Influent Meter on Forcemain from Lift Station	Bond	Capital	$ 32,000	$ -	$ 32,000	$ -					$ -
Repaint and Upgrade Clarifier 1 Sludge Rake & Full Radius Skimmer	Bond	Capital	$ 340,000	$ -	$ -	$ 170,000					$ 170,000
Repaint and Upgrade Clarifier 2 Sludge Rake & Full Radius Skimmer	TWDB	Capital	$ 340,000	$ -	$ -	$ -	$ 340,000				$ -
Repaint and Upgrade Clarifier 3 Sludge Rake & Full Radius Skimmer	Bond	Capital	$ 340,000	$ -	$ -	$ 170,000					$ 170,000
Replace Treatment Unit 2		Capital	$ 5,000,000	$ -	$ -	$ -				$ 5,000,000	$ -
Replace Bubble Diffusers in Aeration Basin 1	TWDB	Capital	$ 195,000	$ -	$ -	$ -					$ 195,000
Replace Bubble Diffusers in Aeration Basin 2		Capital	$ 195,000	$ -	$ -	$ -	$ 195,000				$ -
Convert Aeration Basin to DO Pace Air	TWDB	Capital	$ 429,000	$ -	$ -	$ -		$ 429,000			$ -
Replace UV Disinfection System with Flow Pace	Bond	Capital	$ 1,000,000	$ -	$ 1,000,000	$ -					$ -
Replace Slide and Isolation Gate at UV	Bond	Capital	$ 107,000	$ -	$ 107,000	$ -					$ -
Replace Effluent Flow Meter Parshall Flume		Capital	$ 250,000	$ -	$ -	$ -			$ 250,000		$ -
Repair Walls on Aerobic Digester	Bond	Capital	$ 195,000	$ -	$ -	$ 195,000					$ -
Replace Motors and Mixers in Aerobic Digester	TWDB	Capital	$ 910,000	$ -	$ -	$ -			$ 910,000		$ -
Repaint Sludge Thickener Clarifier Mechanism	TWDB	Capital	$ 130,000	$ -	$ -	$ -		$ 130,000			$ -
Recondition Belt Presses	TWDB	Capital	$ 780,000	$ -	$ -	$ -			$ 130,000		$ 650,000
Install Meter for Reclaim System	Bond	Capital	$ 36,000	$ -	$ 36,000	$ -					$ -
Replace Wet and Dry Well Vents	TWDB	Capital	$ 39,000	$ -	$ -	$ -		$ 39,000			$ -
Repair Sidewalks	TWDB	Capital	$ 78,000	$ -	$ -	$ -		$ 78,000			$ -
Regrade Areas Next to Units	TWDB	Capital	$ 104,000	$ -	$ -	$ -		$ 104,000			$ -
Add Motor Operated Gate with Keypad	TWDB	Capital	$ 130,000	$ -	$ -	$ -		$ 130,000			$ -
On-site irrigation system		Capital	$ 130,000	$ -	$ -	$ -					$ 130,000
Regrade Low Areas Near Fence	TWDB	Capital	$ 32,500	$ -	$ -	$ -		$ 32,500			$ -
SCADA Upgrades	Bond	Capital	$ 85,000	$ -	$ -	$ 85,000					$ -
Electrical Upgrades (Existing and Upgrades for New Equipment)	Bond	Capital	$ 4,078,000	$ -	$ -	$ 50,000	$ 297,000	$ 283,000	$ 543,000	$ 673,000	$ 2,232,000
FUTURE Plant Expansion					$ 50,000						$ (50,000)
TPDES Permit Effluent Testing, Flow Measurement and Application	Bond	Professional	$ 30,000	$ -		$ 30,000					$ -
TOTAL			**$19,703,000**	**$ -**	**$ 1,600,000**	**$ 700,000**	**$ 1,287,000**	**$ 1,225,500**	**$ 2,353,000**	**$ 5,705,500**	**$ 6,832,000**

Parks

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
Murphy Park	General	Capital	$ 1,044,000	$ -					$ 544,000	$ 500,000	$ -
Robinson Park	General	Capital	$ 411,000	$ -		$ 411,000					$ -
Taylor Regional Park Sports Complex	General	Capital	$ 179,000	$ -			$ 153,000				$ 26,000
Bull Branch Park	General	Capital	$ 441,000	$ -				$ 441,000			$ -
Doak Street Ball Fields	General	Capital	$ 179,000	$ -			$ 179,000				$ -
Gano Street Basketball Court	General	Capital	$ 9,000	$ -		$ 9,000					$ -
Jason Street Playground	General	Capital	$ 11,000	$ -		$ 10,725					$ 275
Hike and Bike Trail	General	Capital	$ 233,000	$ -			$ 133,000	$ 100,000			$ -
West End Park	General	Capital	$ 9,000	$ -		$ 9,000					$ -
Gateway and Downtown Signage	General	Capital	$ 100,000	$ -			$ 100,000				$ -
Taylor Skate Park	GF/Loop	Capital	$ 400,000	$ 100,000	$ 100,000						$ 200,000
Priority 2				$ -							$ -
Murphy Park	General	Capital	$ 2,433,000	$ -							$ 2,433,000
Robinson Park	General	Capital	$ 674,000	$ -							$ 674,000
Taylor Regional Park Sports Complex	General	Capital	$ 2,970,000	$ -							$ 2,970,000
Bull Branch Park	General	Capital	$ 681,000	$ -							$ 681,000
Doak Street Ball Fields	General	Capital	$ -	$ -							$ -
Gano Street Basketball Court	General	Capital	$ -	$ -							$ -
Jason Street Playground	General	Capital	$ -	$ -							$ -
Hike and Bike Trail	General	Capital	$ 173,000	$ -							$ 173,000
West End Park	General	Capital	$ -	$ -							$ -
Gateway and Downtown Signage	General	Capital	$ 200,000	$ -							$ 200,000
Priority 3				$ -							$ -
Murphy Park	General	Capital	$ 171,000	$ -							$ 171,000
Robinson Park	General	Capital	$ 3,827,000	$ -							$ 3,827,000
Taylor Regional Park Sports Complex	General	Capital	$ 4,612,000	$ -							$ 4,612,000
Bull Branch Park	General	Capital	$ 211,000	$ -							$ 211,000
Doak Street Ball Fields	General	Capital	$ 954,000	$ -							$ 954,000
Gano Street Basketball Court	General	Capital	$ -	$ -							$ -
Jason Street Playground	General	Capital	$ -	$ -							$ -
Hike and Bike Trail	General	Capital	$ -	$ -							$ -
West End Park	General	Capital	$ -	$ -							$ -
Gateway and Downtown Signage	General	Capital	$ -	$ -							$ -
											$ -
TOTAL			**$19,922,000**	**$ 100,000**	**$ 100,000**	**$ 439,725**	**$ 565,000**	**$ 541,000**	**$ 544,000**	**$ 500,000**	**$17,132,275**

Departments/Buildings

Project Type / Title	Funding Source(s)	Project Type	Probable Total Cost	Grant Funding	FY2017-18	FY2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	Remaining Projects
Priority 1				$ -							$ -
City Hall	General	Capital	$ 5,263,000	$ -		$ 5,263,000					$ -
Municipal Court	General	Capital	$ 36,000	$ -		$ 36,000					$ -
Fire Department	General	Capital	$ 529,000	$ -					$ 529,000		$ -
Police Department	General	Capital	$11,212,000	$ -				$ 11,212,000			$ -
Animal Control	General	Capital	$ 250,000	$ -			$ 250,000				$ -
Cemetery	General	Capital	$ 693,000	$ -	$ 175,000	$ 518,000					$ -
Library	General	Capital	$ 39,000	$ -		$ 39,000					$ -
Public Works	General,Bond	Capital	$ 9,609,000	$ -						$ 9,609,000	$ -
Moody Museum	General	Capital	$ -	$ -							$ -
				$ -							$ -
Priority 2				$ -							$ -
City Hall	General	Capital	$ 3,179,000	$ -							$ 3,179,000
Municipal Court	General	Capital	$ 362,000	$ -							$ 362,000
Fire Department	General	Capital	$ 6,706,000	$ -							$ 6,706,000
Police Department	General	Capital	$ 1,517,000	$ -							$ 1,517,000
Animal Control	General	Capital	$ 4,000,000	$ -							$ 4,000,000
Cemetery	General	Capital	$ 779,000	$ -							$ 779,000
Library	General	Capital	$ 58,000	$ -							$ 58,000
Public Works	General	Capital	$ -	$ -							$ -
Moody Museum	General	Capital	$ -	$ -							$ -
	General	Capital		$ -							$ -
Priority 3				$ -							$ -
City Hall	General	Capital	$ -	$ -							$ -
Municipal Court	General	Capital	$ -	$ -							$ -
Fire Department	General	Capital	$ 4,759,000	$ -							$ 4,759,000
Police Department	General	Capital	$ 97,000	$ -							$ 97,000
Animal Control	General	Capital	$ -	$ -							$ -
Cemetery	General	Capital	$ 263,000	$ -							$ 263,000
Library	General	Capital	$ -	$ -							$ -
Public Works	General	Capital	$ 130,000	$ -							$ 130,000
Moody Museum	General	Capital	$ -	$ -							$ -
											$ -
TOTAL			**$49,481,000**	**$ -**	**$ 175,000**	**$ 5,856,000**	**$ 250,000**	**$ 11,212,000**	**$ 529,000**	**$ 9,609,000**	**$21,850,000**

EXHIBITS

4 Quads (NE, NW, SE, SW) to illustrate at larger scale and to show Council Districts for the following Figures:

Figure 3-6 through Figure 3-9 - Street Condition
Figure 4-2 – Existing Sidewalks
Figure 7-6 – Existing Water
Figure 7-8 – Water System Improvements
Figure 8-1 – Existing Wastewater
Figure 8-5 – Wastewater Improvements

Figure 3-6 Street Condition – Excellent

NORTHEAST QUADRANT

FIGURE 3-6 STREETS WITH PCI EXELLENT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:
City Limits
Excellent

Council District 1
Council District 2
Council District 3
Council District 4

SR95
N Main St
Tonner Rd
PM 619
US79
Old Thorndale Rd
E Lake Dr
W Lake Dr
Dahlberg Blvd
Highland Dr
Commercial Dr
Old Granger Rd
Co Rd 367
Co Rd 365
Co Rd 410
Co Rd 408
Co Rd 411
Co Rd 413
Co Rd 417
Co Rd 412
Chandler Rd
Sandy Ln
Sandy Cv
Mallard Ln
Johnson Dr
Sherry Dr
North Dr
Park Rd
Brookwood Cir
Davis St
Bell Ave
Forest Ct
Randall St
Kirk St
Kent St
Wallace St
Fisher St
Speegle St
McClure St
Brown St
Burns St
Huff St
Wilson St
Hood St
Farrington St
Lynn St
Sycamore St
Vance St
W 12th St
W 11th St
Peirce St
Washburn St
Sams St
Hosack St
Oscar St
Maresh St
Dores St
Laurel St
Lenora Dr
Gravel Pit Rd
Pille Dr
Grace Ln
Carolyn Cove
Yanna Dr
Medical Pkwy
Holly Ln
Paula Ln
Mildred Dr
Cherrywood Dr
Doma Dr
Monika Ln
Kelly Dr
Julie Cove
Sunny Ln
Oakdawn Dr
Cypress Cv
Maplelawn St
Cedarlawn St
Meadow Ln
Don Hill Ln
Tyler Ln
Hillcrest Dr
Kingston Dr
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Cv
Baker Dr
Meadow Ridge Dr
Cherrylawn Dr
Northlawn Dr
Heights Blvd
Blackland Dr
Smith Ave
Lathan Ln
Lark Ln
Hidden Meadow Dr
Wren Way
Willow Ln
Tammie Ln
Old Georgetown Rd
Castlewood Ct
Mills St
Fairgrounds Rd
Sherry
Om Cuba Dr
Pinehurst Dr
Cypress Trl
Willow Brook Trl
Amber Oaks Dr
Timber Crest Dr
Northpark Blvd
Glacier Point Cove
King's Canyon
Zion Ave
Grand Teton Trl
Yellowstone Dr
Yosemite Trl
Dixie Ln
Beaver Cir
Dove Cove
Cotton Boll
Crystal Cir
Possum Trl
Kaela Ln

CITY OF TAYLOR FOUNDED 1876

sledge ENGINEERING LLC

FIGURE 3-6 STREETS WITH PCI EXELLENT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

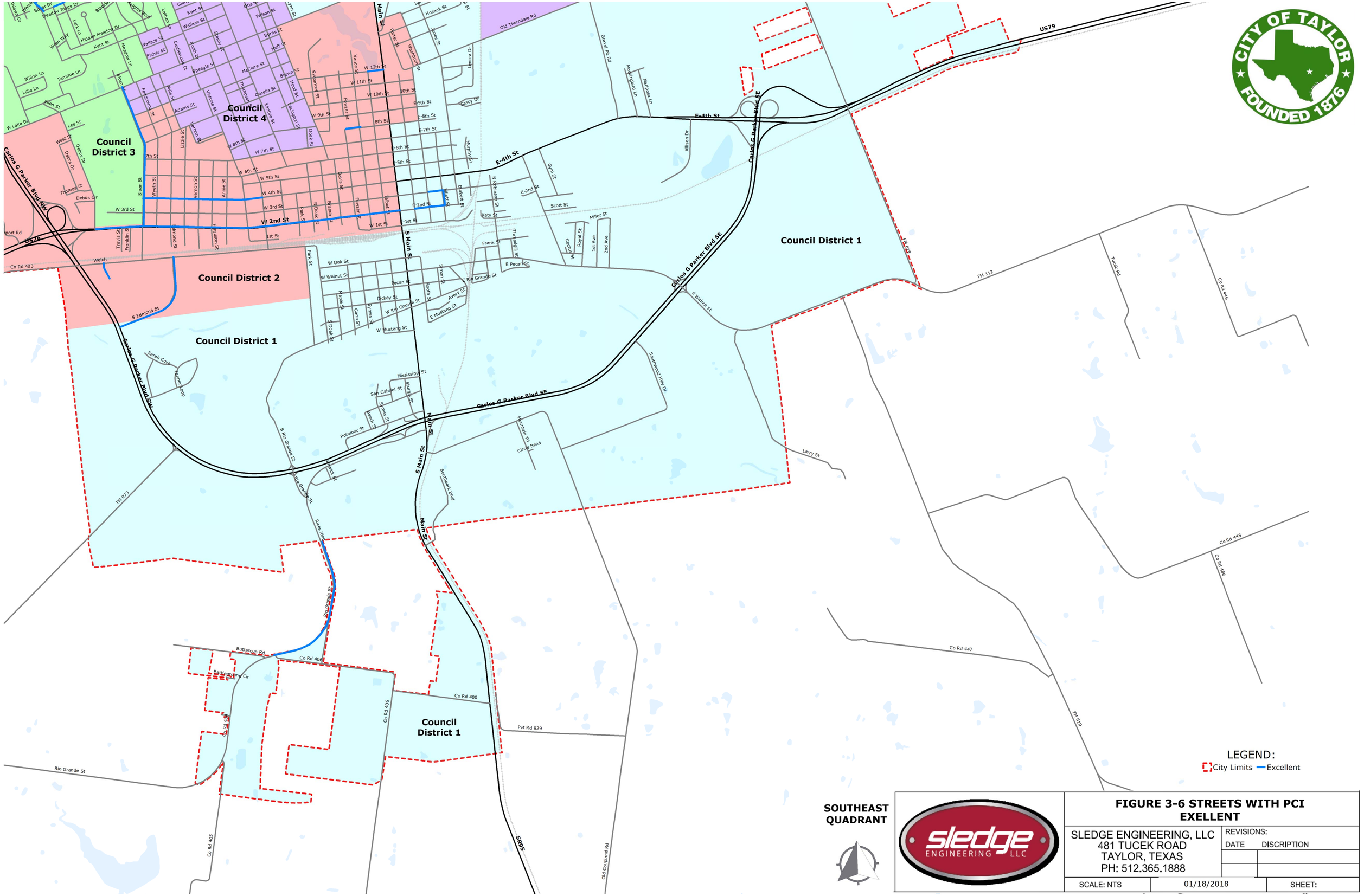
SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:
City Limits — Excellent

NORTHWEST QUADRANT

SR29
Co Rd 141
Spr Co Rd 366
Rome Valley Dr
Co Rd 365
Laurel Crest Rd
Gabriel Farms Dr
Co Rd 101
Co Rd 366
Co Rd 374
SR95
Co Rd 365
Council District 3
Co Rd 368
Gotham Rowe Ln
Council District 2
Co Rd 394
Mustang Creek Nw
Mustang Dr
Co Rd 369
Co Rd 367
Old Georgetown Rd
North Dr
Sherry
Cypress Tr
Elm Oaks Dr
Sagewood
Stone Ridge
Oaklawn Dr
Cypress Dr
Maplelawn St
Cedarlawn St
Tyler Ln
Deer Hill Ln
Meadow Ln
Hillcrest Dr
Kingston Dr
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Cv
Carlos Parker Blvd NW
Cherrylawn Dr
Meadow Ridge Dr
Blackland Dr
Rydell Ln
Lark Ln
Hidden Meadow Dr
Wren Way
Kent St
Co Rd 160
Co Rd 398
Willow Ln
Tammie Ln
Old Georgetown

CITY OF TAYLOR ★ FOUNDED 1876 ★



SOUTHEAST QUADRANT

LEGEND:
City Limits
Excellent

FIGURE 3-6 STREETS WITH PCI EXELLENT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:
DATE DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:

City Limits — Excellent

FIGURE 3-6 STREETS WITH PCI EXELLENT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

SOUTHWEST QUADRANT

Figure 3-7 Street Condition - Good

FIGURE 3-7 STREETS WITH PCI GOOD

NORTHEAST QUADRANT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:
- City Limits
- Good

Council District 1
Council District 2
Council District 3
Council District 4

SR95
N Main St
Co Rd 365
Co Rd 367
Co Rd 405
Co Rd 408
Co Rd 410
Co Rd 411
Co Rd 413
Co Rd 417
Co Rd 419
FM 619
US79
Chandler Rd
Sandy Ln
Sandy Cv
Park Rd
North Dr
Sherry
Sherry Dr
Cypress Trl
Willow Brook Trl
Timber Crest Dr
Arbor Oaks Dr
Pinehurst Dr
Northwest Passage
Glacier Point Cove
Kings Canyon
Yosemite Trl
Grand Teton Trl
Yellowstone Dr
Johnson Dr
Dick Ln
Dove Cove
Beaver Cir
Carton Bill
Crystal Cir
Pessum Trl
Mallard Ln
Highland Dr
Monika Ln
Kelly Dr
Sunny Ln
Julie Cove
Davis St
Doma Dr
Paula Ln
Holly Ln
Medical Pkwy
Mildred Dr
Cherrywood Dr
Dahlberg Blvd
Brookwood Cir
Carolyn Cove
Verna Dr
Grace Ln
Old Granger Rd
Commercial Dr
E Lake Dr
Turner Rd
W Lake Dr
Forest Ct
Lynn St
Wilson St
Burns St
Huff St
Hood St
Bellinger St
Bell Air Dr
Randall St
Kirk St
Kent St
Wallace St
Fisher St
Speegle St
McLane St
McClure St
Thompson St
Castlewood Ct
Sycamore St
Hackberry St
Fowler St
Vance St
W 12th St
W 11th St
Brown St
Lyons Dr
Perry St
Washburn St
Sams St
Hosack St
Oscar St
Dores St
Maresh St
Laurel St
Old Thorndale Rd
Pille Dr
Gravel Pit Rd
Morgan Rd
Harrison Rd
Katie Ln
Oakhaven Dr
Cypress Dr
Meadowlawn Dr
Cedarlawn St
Dogwood Ln
Meadow Ln
Don Hill Ln
Hillcrest Dr
Kingston Dr
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Dr
Bayer Dr
Meadow Ridge Dr
Blackland Dr
Heights Blvd
Smith Ave
Lathan Ln
Cherrylawn Dr
Northlawn Dr
Lark Ln
Hidden Meadow Dr
Wren Way
Kent St
Willow Ln
Tammie Ln
Old Georgetown Rd
Meadow Ln
Fairgrounds Rd
Mills St
Fisher St
Wallace St
Kent St
Sherry St
Randall St
Kirk St
Bell Air Dr
Forest Ct
Lynn St
Wilson St
Burns St
Huff St
Hood St
Bellinger St
Brookwood Cir
Carolyn Cove
Verna Dr
Grace Ln
Old Granger Rd
Commercial Dr
Dahlberg Blvd
Mildred Dr
Cherrywood Dr
Medical Pkwy
Holly Ln
Paula Ln
Doma Dr
Davis St
Monika Ln
Kelly Dr
Sunny Ln
Julie Cove
Mallard Ln
Highland Dr
Dove Cove
Beaver Cir
Carton Bill
Crystal Cir
Pessum Trl
Dick Ln
Johnson Dr
Sherry
Sherry Dr
Cypress Trl
Willow Brook Trl
Timber Crest Dr
Arbor Oaks Dr
Pinehurst Dr
Northwest Passage
Glacier Point Cove
Kings Canyon
Yosemite Trl
Grand Teton Trl
Yellowstone Dr
Park Rd
North Dr
Oakhaven Dr
Cypress Dr
Meadowlawn Dr
Cedarlawn St
Dogwood Ln
Meadow Ln
Don Hill Ln
Hillcrest Dr
Kingston Dr
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Dr
Bayer Dr
Meadow Ridge Dr
Blackland Dr
Heights Blvd
Smith Ave
Lathan Ln
Cherrylawn Dr
Northlawn Dr
Lark Ln
Hidden Meadow Dr
Wren Way
Kent St
Willow Ln
Tammie Ln
Old Georgetown Rd
Meadow Ln
Fairgrounds Rd
Mills St
Fisher St
Wallace St
Kent St
Sherry St
Randall St
Kirk St
Bell Air Dr
Castlewood Ct
Speegle St
McLane St
McClure St
Thompson St
Sycamore St
Hackberry St
Fowler St
Vance St
W 12th St
W 11th St
Brown St
Lyons Dr
Perry St
Washburn St
Sams St
Hosack St
Oscar St
Dores St
Maresh St
Laurel St
Old Thorndale Rd
Pille Dr
Gravel Pit Rd
Morgan Rd
Harrison Rd
Katie Ln
Co Rd 367
Co Rd 365
Co Rd 405
Co Rd 408
Co Rd 410
Co Rd 411
Co Rd 413
Co Rd 417
Co Rd 419
FM 619
US79
SR95
N Main St
Chandler Rd
Sandy Ln
Sandy Cv
Park Rd
Council District 1
Council District 2
Council District 3
Council District 4

FIGURE 3-7 STREETS WITH PCI GOOD

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

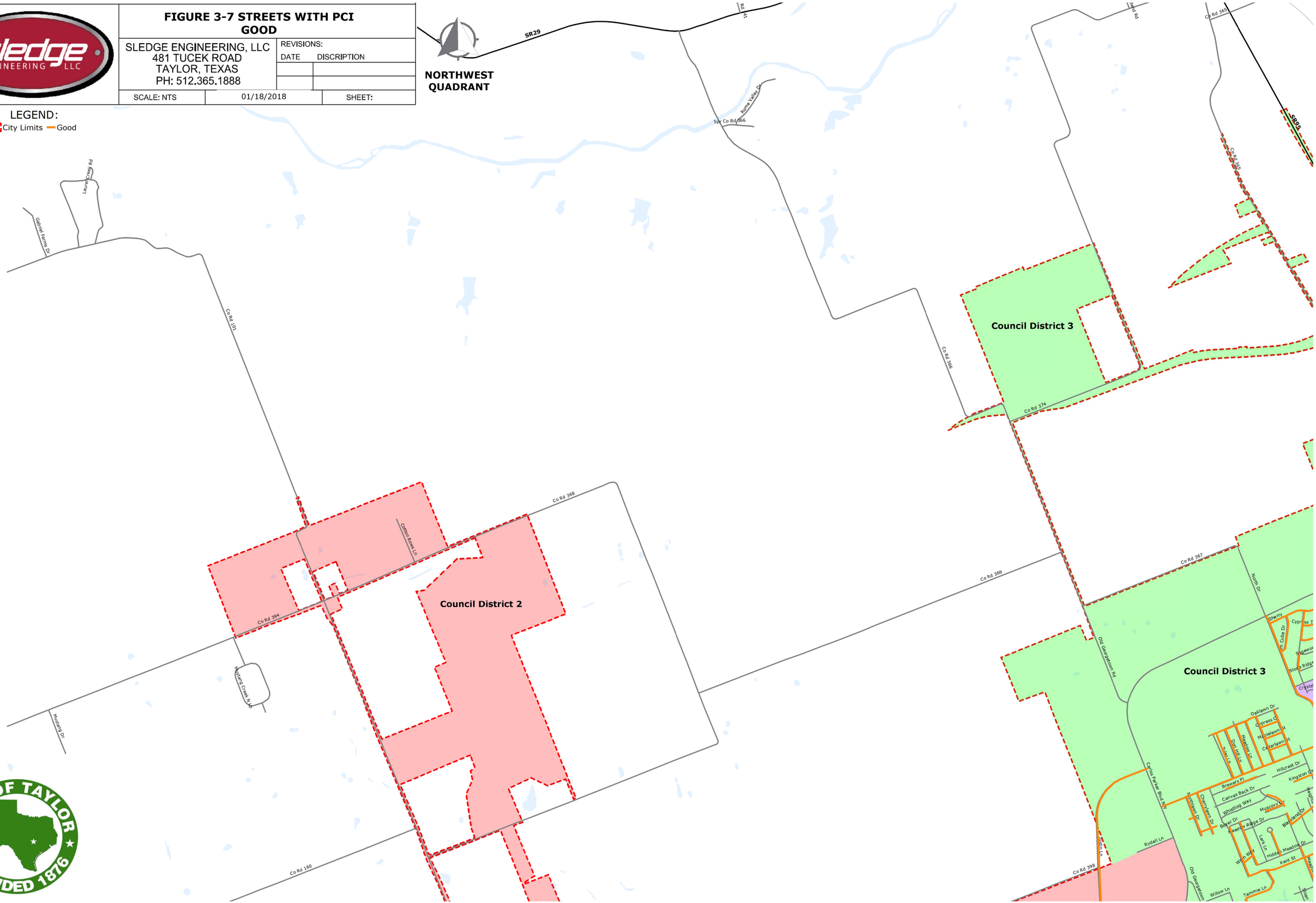
REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:
City Limits
Good

NORTHWEST QUADRANT



CITY OF TAYLOR
FOUNDED 1876


CITY OF TAYLOR
FOUNDED 1876
Council District 1
Council District 2
Council District 3
Council District 4
Council District 1
Council District 1
US79
E-4th St
Carlos G Parker Blvd SE
Carlos G Parker Blvd SW
Carlos G Parker Blvd NW
Main St
S Main St
SR95
FM 619
FM 112
FM 973
Co Rd 445
Co Rd 446
Co Rd 447
Co Rd 486
Co Rd 400
Co Rd 405
Co Rd 406
Co Rd 403
Pvt Rd 929
Rio Grande St
Old Coupland Rd
Larry St
Southwood Hills Dr
W 2nd St
W 3rd St
Welch
S Edmond St
Old Thorndale Rd
Gravel Pit Rd
LEGEND:
City Limits
Good
SOUTHEAST QUADRANT

sledge ENGINEERING LLC

FIGURE 3-7 STREETS WITH PCI GOOD

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3

W 2nd St
U579
Carlos G Parker Blvd NW
Carlos G Parker Blvd SW
W 3rd St
Welch
Travis St
Rydell Ln
Justin Ln
Airport Rd
W Lake Dr
Lee St
West St
Debus Dr
Debus Cir
Tremont St
Willow Ln
Lillie Ln
Tammie Ln
Allen St
Kent St
Hidden Meadow Dr
Bayer Dr
Meadow Ridge Dr
Co Rd 160
Co Rd 369
Co Rd 398
Co Rd 395
Co Rd 397
Co Rd 373
Co Rd 403
Herman Sons Rd
Co Rd 133
Limmer Loop
Mager Ln
FM 3349
Co Rd 199
Co Rd 132
Co Rd 134
Carpenter Dr
Co Rd 401
Co Rd 404
Rio Grande St
FM 973
Regina Dr

LEGEND:
City Limits — Good

sledge ENGINEERING LLC	**FIGURE 3-7 STREETS WITH PCI GOOD**	**SOUTHWEST QUADRANT**
SLEDGE ENGINEERING, LLC 481 TUCEK ROAD TAYLOR, TEXAS PH: 512.365.1888	REVISIONS: DATE DISCRIPTION	
SCALE: NTS	**01/18/2018**	SHEET:

Figure 3-8 Street Condition – Fair

FIGURE 3-8 STREETS WITH PCI FAIR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

NORTHEAST QUADRANT

LEGEND:
City Limits
Fair

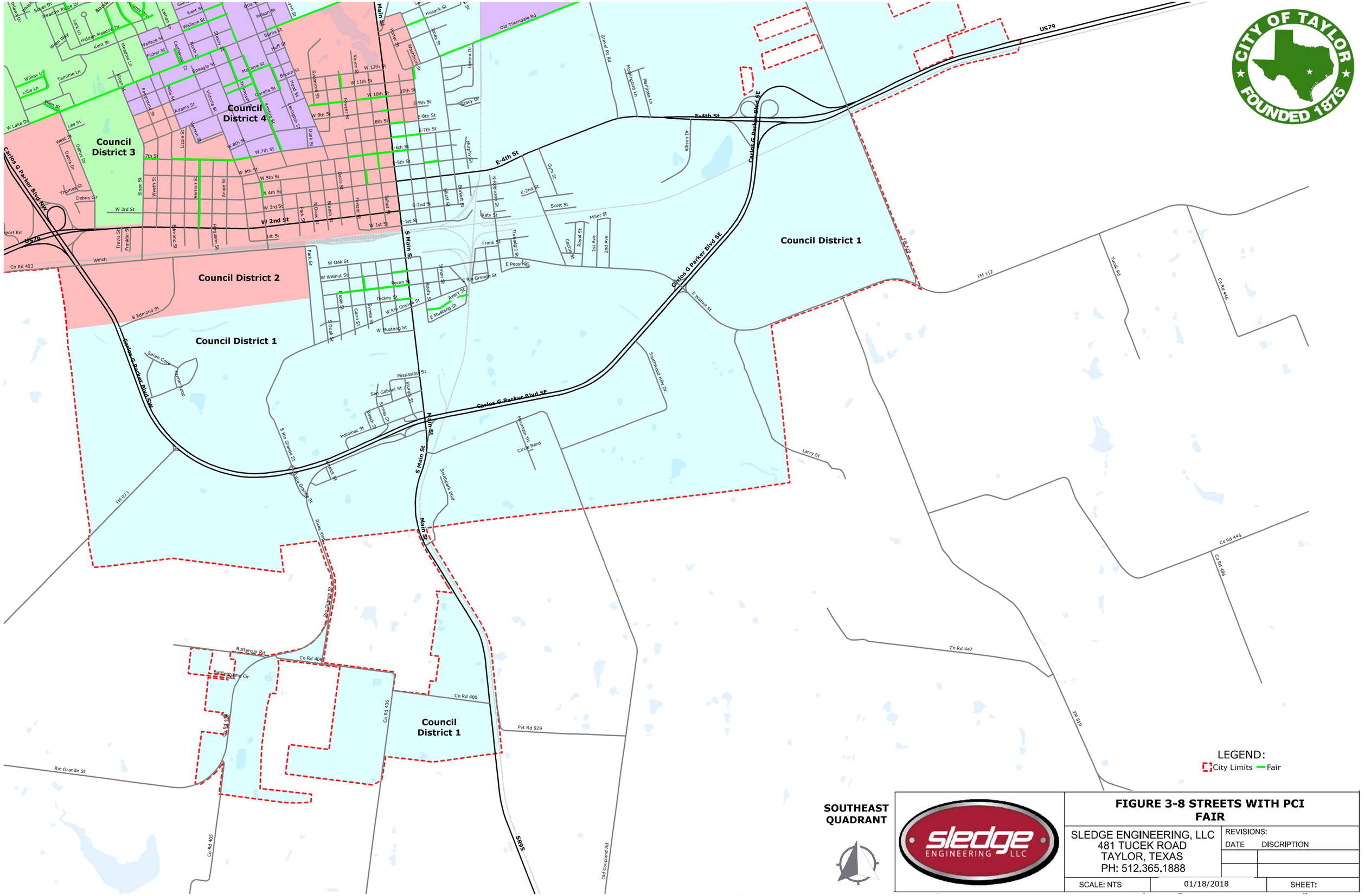
FIGURE 3-8 STREETS WITH PCI FAIR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

LEGEND:
City Limits
Fair



CITY OF TAYLOR
FOUNDED 1876

LEGEND:
City Limits — Fair

SOUTHEAST QUADRANT

FIGURE 3-8 STREETS WITH PCI FAIR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:


Council District 3
Council District 2
Council District 1
W 2nd St
US79
Co Rd 160
Co Rd 369
Co Rd 398
Co Rd 395
Co Rd 373
Co Rd 403
Co Rd 133
Co Rd 199
Co Rd 132
Co Rd 134
Co Rd 401
Co Rd 404
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
FM 973
Carpenter Dr
Rio Grande St
Regina Dr
Justin Ln
Airport Rd
Carlos Parker Blvd NW
Carlos G Parker Blvd NW
Rydell Ln
W Lake Dr
Lee St
West St
Debus Dr
Thomas St
W 3rd St
Welch
Willow Ln
Lillie Ln
Tammie Ln
Kent St
Wren Way
SOUTHWEST
QUADRANT

LEGEND:
City Limits — Fair

FIGURE 3-8 STREETS WITH PCI FAIR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

Figure 3-9 Street Condition - Poor

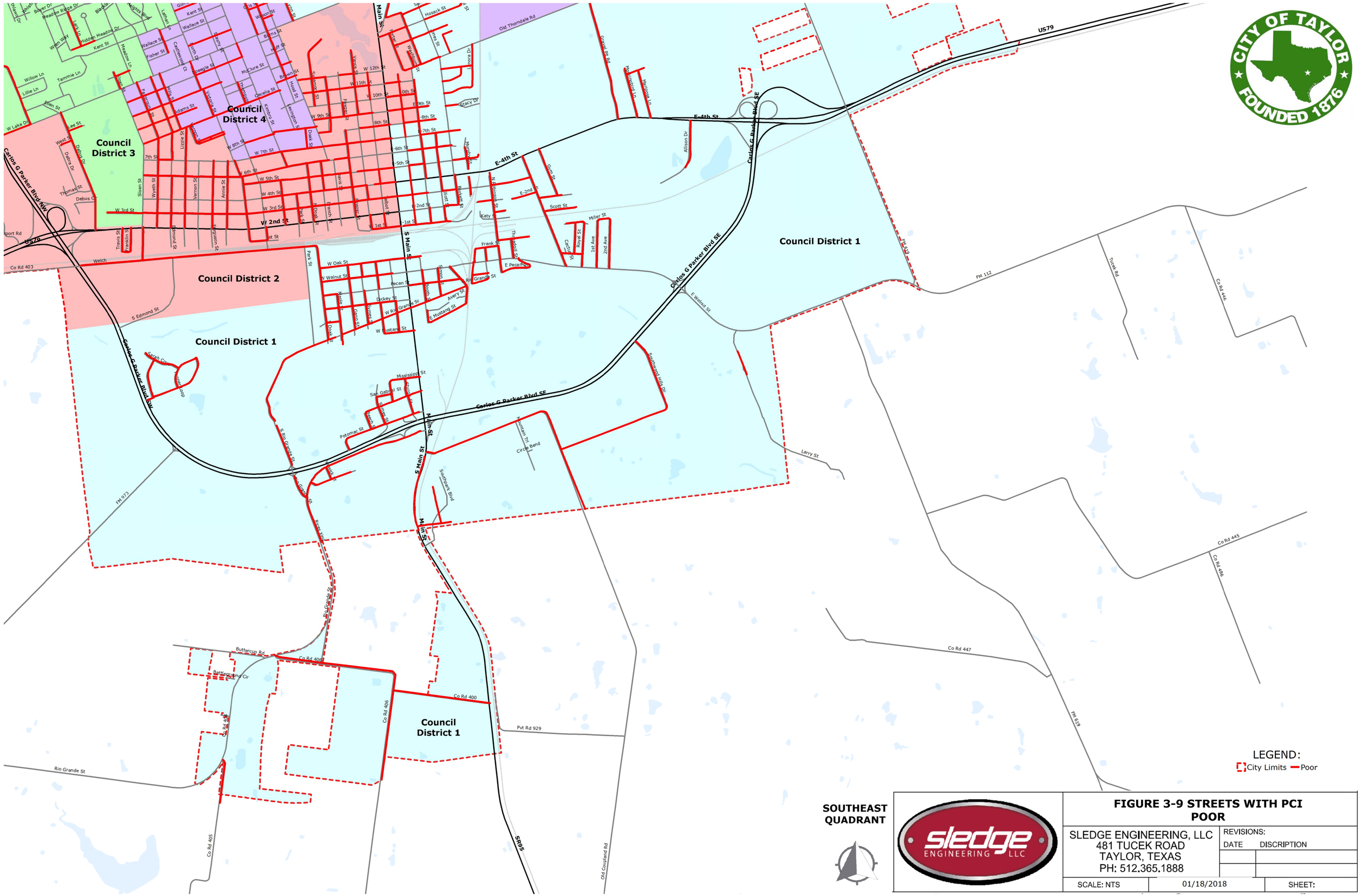

FIGURE 3-9 STREETS WITH PCI POOR
SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888
REVISIONS:
DATE
DISCRIPTION
SCALE: NTS
01/18/2018
SHEET:
sledge ENGINEERING LLC
NORTHEAST QUADRANT
LEGEND:
City Limits
Poor
Council District 4
Council District 3
Council District 4
Council District 2
Council District 1
N Main St
SH95
Co Rd 410
Co Rd 408
Co Rd 413
Co Rd 411
Co Rd 412
Co Rd 417
Co Rd 367
Co Rd 365
FM 619
Chandler Rd
Sandy Ln
Park Rd
Johnson Dr
Highland Dr
Mallard Ln
Dahlberg Blvd
Commercial Dr
E Lake Dr
W Lake Dr
Old Thorndale Rd
Pille Dr
Tornado Rd
Old Granger Rd
US79
Katie Ln
W 12th St
W 11th St
CITY OF TAYLOR
FOUNDED 1876

FIGURE 3-9 STREETS WITH PCI POOR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:



CITY OF TAYLOR
FOUNDED 1876

SOUTHEAST QUADRANT

FIGURE 3-9 STREETS WITH PCI POOR

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3

Co Rd 160
Co Rd 369
Co Rd 133
Co Rd 398
Co Rd 395
Co Rd 373
Co Rd 403
Co Rd 401
Co Rd 404
Co Rd 199
Co Rd 132
Co Rd 134
Rydell Ln
Justin Ln
Carlos Parker Blvd NW
Airport Rd
W Lake Dr
Willow Ln
Lillie Ln
Tammie Ln
Allen St
Lee St
West St
Debus Dr
Debra Dr
Thomas St
W 3rd St
Travis St
Welch
Carlos G Parkar Blvd SW
W 2nd St
U579
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
FM 973
Carpenter Dr
Regina Dr
Rio Grande St

LEGEND:
City Limits — Poor

FIGURE 3-9 STREETS WITH PCI POOR

SOUTHWEST QUADRANT

sledge ENGINEERING LLC
SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

Figure 4-2 – Existing Sidewalks

FIGURE 4-2 EXISTING SIDEWALK

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

NORTHEAST QUADRANT

LEGEND:
City Limits — Existing Sidewalk

FIGURE 4-2 EXISTING SIDEWALK

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

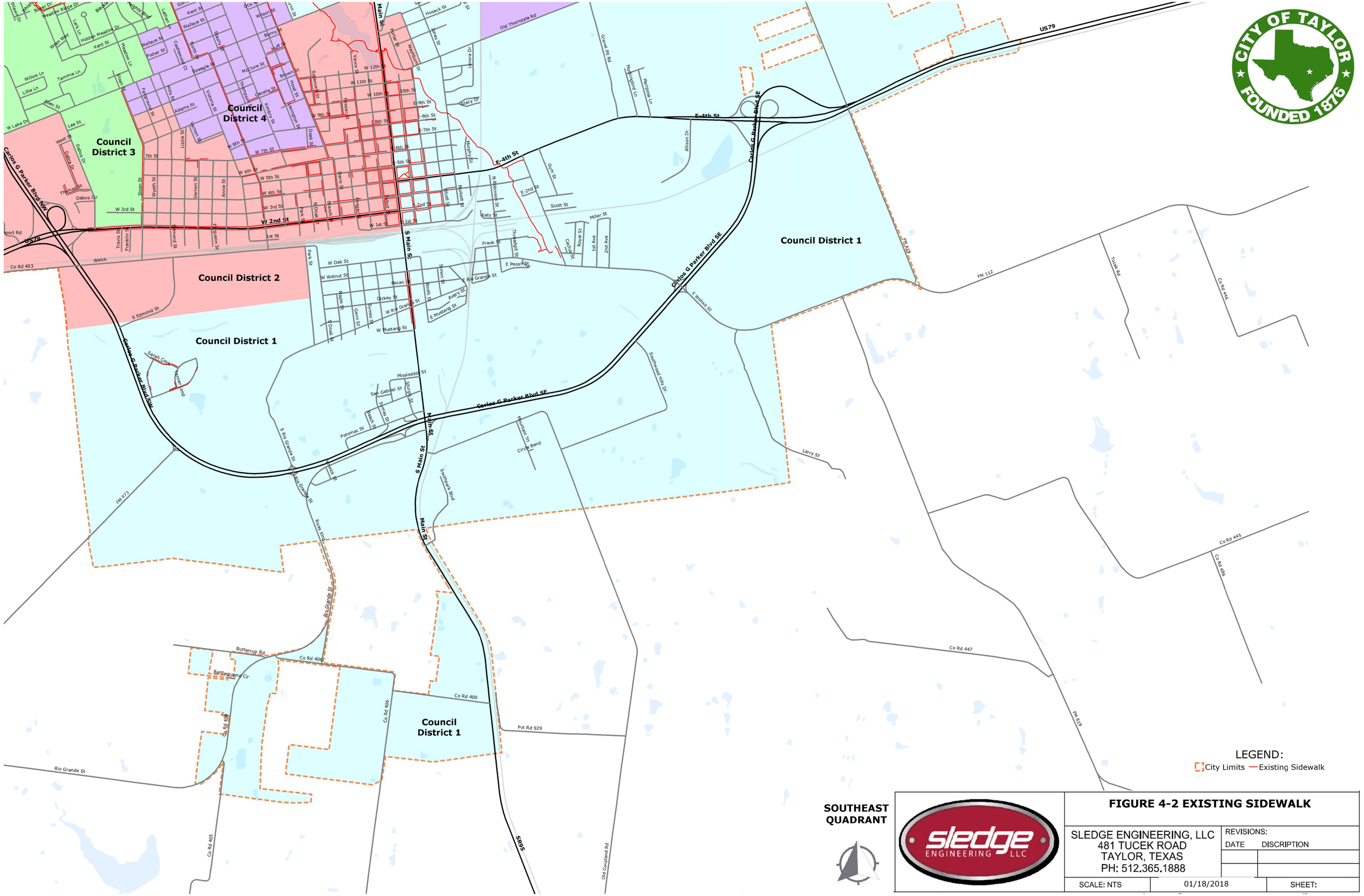
REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

NORTHWEST QUADRANT

LEGEND:
City Limits — Existing Sidewalk

Council District 2
Council District 3
Council District 3
SR29
SR95
Co Rd 101
Co Rd 366
Co Rd 368
Co Rd 369
Co Rd 374
Co Rd 394
Co Rd 367
Co Rd 160
Co Rd 398
Co Rd 365
Gabriel Farms Dr
Laurel Creek Rd
Cotton Rows Ln
Mustang Creek N
Mustang Dr
Rome Valley Dr
Old Georgetown Rd
Carlos Parker Blvd NW
North Dr
Justin Ln
Rydell Ln
Oaklawn Dr
Cypress Dr
Maplelawn St
Cedarlawn St
Hillcrest Dr
Kingston Cir
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Cv
Meadow Ridge Dr
Blackland Dr
Hidden Meadow Dr
Kent St
Lark Ln
Wren Way
Willow Ln
Tammie Ln
Meadow Ln
Don Hill Ln
Tyler Ln
Northlawn Dr
Cherrylawn Dr
Stone Ridge
Sherry



LEGEND:

🟧 City Limits — Existing Sidewalk

SOUTHEAST QUADRANT

FIGURE 4-2 EXISTING SIDEWALK

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

CITY OF TAYLOR
FOUNDED 1876

Council District 1

Council District 2

Council District 3

Co Rd 160
Co Rd 369
Co Rd 398
Co Rd 395
Co Rd 401
Co Rd 373
Co Rd 403
Co Rd 133
Co Rd 199
Co Rd 132
Co Rd 134
Co Rd 404
Co Rd 401
Rydell Ln
Justin Ln
Carlos Parker Blvd NW
Airport Rd
W Lake Dr
Willow Ln
Lillie Ln
Ellen St
Tammie Ln
Kent St
Hidden Meadow Dr
Meadow Ridge Dr
Lee St
West St
Dakota Dr
Debus Dr
Thomas St
W 3rd St
Travis St
Welch
Carlos G Parker Blvd SW
W 2nd St
US79
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
Carpenter Dr
Regina Dr
FM 973
Rio Grande St

LEGEND:
City Limits — Existing Sidewalk

sledge ENGINEERING LLC

FIGURE 4-2 EXISTING SIDEWALK

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | **01/18/2018** | SHEET:

SOUTHWEST QUADRANT

Figure 7-6 – Existing Water

FIGURE 7-6 EXISTING WATER DISTRIBUTION MAP

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

NORTHEAST QUADRANT

FIGURE 7-6 EXISTING WATER DISTRIBUTION MAP

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

NORTHWEST QUADRANT
LEGEND:
City Limits
Unknown
1
2
3
4
6
8
10
12
16
20
24
27
Council District 2
Council District 3
Council District 3
SR29
SR95
Co Rd 101
Co Rd 366
Co Rd 368
Co Rd 369
Co Rd 374
Co Rd 367
Co Rd 394
Co Rd 160
Co Rd 398
Co Rd 365
Spr Co Rd 366
Cotton Rows Ln
Mustang Dr
Old Georgetown Rd
Carlos Parker Blvd NW
North Dr
Oaklawn Dr
Cypress Cv
Maplelawn St
Cedarlawn St
Hillcrest Dr
Kingston Cir
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Cv
Meadow Ridge Dr
Hidden Meadow Dr
Kent St
Rydell Ln
Tammie Ln
Willow Ln
Wren Way
Lark Ln
Northlawn Dr
Cherrylawn Dr
Tyler Ln
Don Hill Ln
Meadow Ln
CITY OF TAYLOR
FOUNDED 1876

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3
Council District 4

LEGEND:
City Limits
Unknown
1
2
3
4
6
8
10
12
16
20
24
27

SOUTHEAST QUADRANT

FIGURE 7-6 EXISTING WATER DISTRIBUTION MAP

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:
DATE DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:


CITY OF TAYLOR
FOUNDED 1876
Council District 1
Council District 2
Council District 3
W 2nd St
US79
Carlos G Parker Blvd NW
Co Rd 160
Co Rd 133
Co Rd 395
Co Rd 398
Co Rd 373
Co Rd 403
Co Rd 401
Co Rd 404
Co Rd 132
Co Rd 134
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
FM 973
Carpenter Dr
Regina Dr
Rio Grande St
Justin Ln
Airport Rd
Rydell Ln
W Lake Dr
Willow Ln
Lillie Ln
Tammie Ln
Ellen St
Lee St
West St
Debus Dr
Thomas St
Debus Cir
W 3rd St
Welch
LEGEND:
City Limits
Unknown
1
2
3
4
6
8
10
12
16
20
24
27

FIGURE 7-6 EXISTING WATER DISTRIBUTION MAP

SOUTHWEST QUADRANT

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

Figure 7-8 – Water System Improvements

NORTHEAST QUADRANT

FIGURE 7-8 WATER SYSTEM IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

LEGEND:
City Limits
2000-2015 Improvements

Council District 1
Council District 2
Council District 3
Council District 4

CITY OF TAYLOR FOUNDED 1876

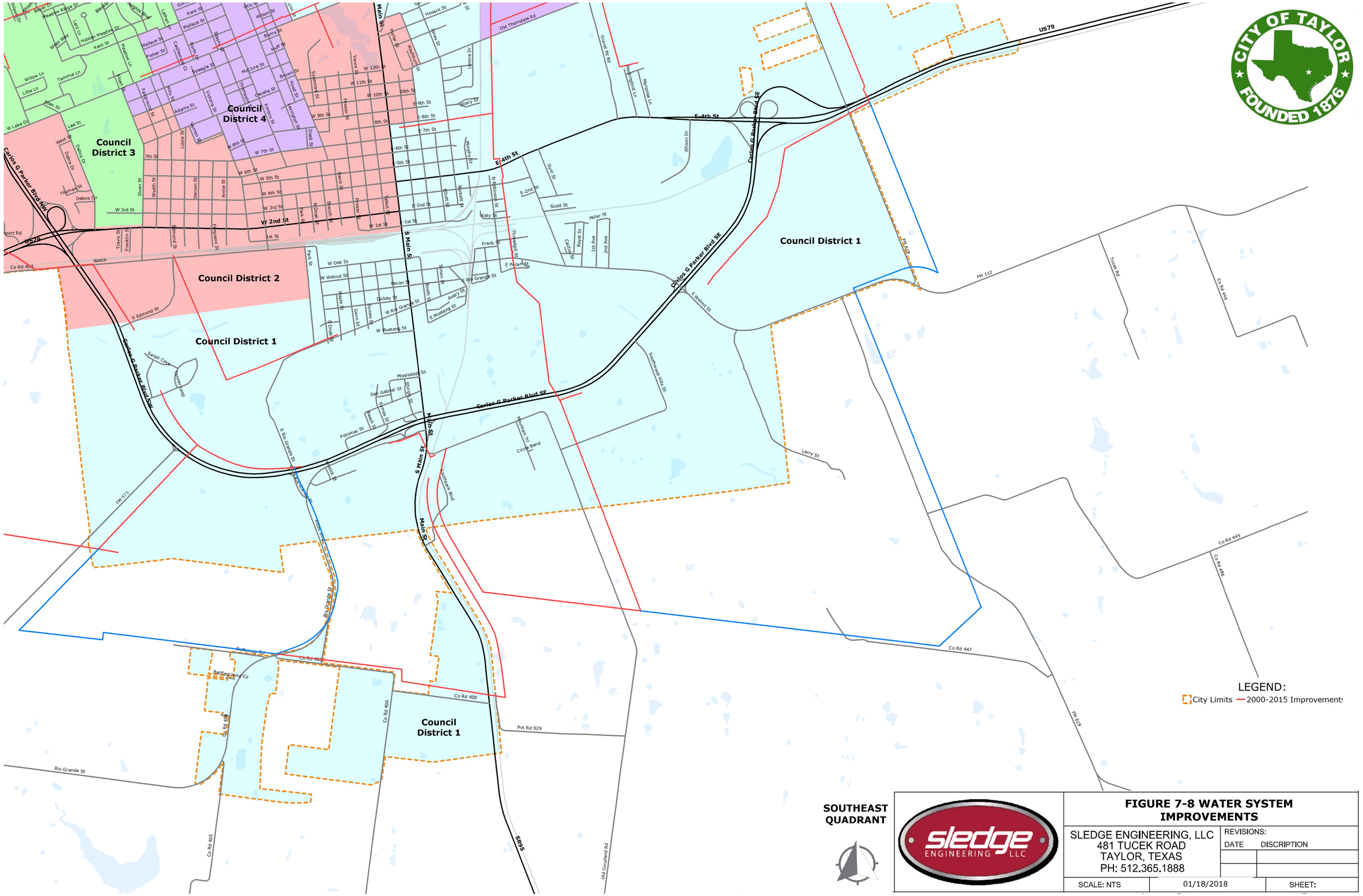
FIGURE 7-8 WATER SYSTEM IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

sledge
ENGINEERING LLC
NORTHWEST QUADRANT
LEGEND:
City Limits
2000-2015 Improvements
2015-2020 Improvements
SR29
SR95
Council District 2
Council District 3
Council District 3
Co Rd 101
Co Rd 366
Co Rd 368
Co Rd 369
Co Rd 367
Co Rd 374
Co Rd 394
Co Rd 160
Co Rd 365
Co Rd 398
Gabriel Farms Dr
Cotton Rows Ln
Mustang Creek N
Mustang Dr
Rome Valley Dr
Old Georgetown Rd
Carlos Parker Blvd NW
North Dr
Oaklawn Dr
Cypress Dr
Maplelawn St
Cedarlawn St
Hillcrest Dr
Kingston Cir
Brewers Pl
Canvas Back Dr
Whistling Way
Muscovy Cv
Meadow Ridge Dr
Hidden Meadow Dr
Kent St
Willow Ln
Tammie Ln
Justin Ln
Tyler Ln
Don Hill Ln
Meadow Ln
Northlawn Dr
Cherrylawn Dr
Blackland Dr
Wren Way
Lark Ln
Stone Ridge
CITY OF TAYLOR
FOUNDED 1876



SOUTHEAST QUADRANT

FIGURE 7-8 WATER SYSTEM IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

CITY OF TAYLOR
FOUNDED 1876

Council District 1

Council District 2

Council District 3

W 2nd St

U579

Carlos G Parker Blvd NW

Carlos G Parker Blvd SW

Co Rd 160

Co Rd 369

Co Rd 395

Co Rd 401

Co Rd 373

Co Rd 403

Herman Sons Rd

Co Rd 133

Co Rd 100

Mager Ln

Limmer Loop

FM 3349

Co Rd 132

Co Rd 134

Carpenter Dr

Co Rd 404

Co Rd 401

FM 973

Rio Grande St

Regina Dr

Ryder Dr

Meadow Ridge Dr

Bayer Dr

Hidden Meadow Dr

Kent St

Willow Ln

Tammie Ln

Lillie Ln

Ellen St

W Lake Dr

Lee St

West St

Debus Dr

Debra Dr

Thomas St

Debus Cir

W 3rd St

Airport Rd

Justin Ln

Travis St

Welch

LEGEND:

City Limits — 2000-2015 Improvements

sledge ENGINEERING LLC

FIGURE 7-8 WATER SYSTEM IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | **01/18/2018** | SHEET:

SOUTHWEST QUADRANT

Figure 8-1 – Existing Wastewater


FIGURE 8-1 EXISTING WASTEWATER
NORTHEAST QUADRANT
sledge ENGINEERING LLC
SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888
REVISIONS:
DATE
DISCRIPTION
SCALE: NTS
01/18/2018
SHEET:
LEGEND:
City Limits
4
6
8
10
12
15
18
24
36
42
Council District 4
Council District 3
Council District 4
Council District 2
Council District 1
N Main St
SH95
Co Rd 410
Co Rd 413
Co Rd 408
Co Rd 411
Co Rd 412
Co Rd 417
Co Rd 367
Co Rd 365
FM 619
Turner Rd
E Lake Dr
Old Thorndale Rd
US79
Chandler Rd
Johnson Dr
Highland Dr
Mallard Ln
Dahlberg Blvd
Commercial Dr
W Lake Dr
CITY OF TAYLOR
FOUNDED 1876

FIGURE 8-1 EXISTING WASTEWATER

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

NORTHWEST QUADRANT

LEGEND:

City Limits — 4 — 6 — 8 — 10 — 12 — 15 — 18 — 24 — 36 — 42

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3
Council District 4

US79
E 4th St
W 2nd St
Carlos G Parker Blvd NW
Carlos G Parker Blvd SE
Main St
S Main St
FM 619
FM 112
FM 973
SR95
Co Rd 403
Co Rd 405
Co Rd 406
Co Rd 400
Co Rd 445
Co Rd 446
Co Rd 447
Pvt Rd 929
Old Coupland Rd
Rio Grande St
Buttercup Rd
Battleground Cir
Old Thorndale Rd
Gravel Pit Rd
Tucek Rd
Co Rd 446

LEGEND:
City Limits
4
6
8
10
12
15
18
24
36
42

SOUTHEAST QUADRANT

sledge ENGINEERING LLC

FIGURE 8-1 EXISTING WASTEWATER

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:
DATE | DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

Council District 3
Council District 2
Council District 1
W 2nd St
US79
Co Rd 160
Co Rd 369
Co Rd 398
Co Rd 395
Co Rd 133
Co Rd 373
Co Rd 403
Co Rd 401
Co Rd 132
Co Rd 134
Co Rd 404
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
FM 973
Carpenter Dr
Regina Dr
Rio Grande St
Justin Ln
Airport Rd
Carlos G Parker Blvd NW
Carlos G Parker Blvd SW
W Lake Dr
Rydell Ln
Welch
W 3rd St
LEGEND:
City Limits
4
6
8
10
12
15
18
24
36
42

FIGURE 8-1 EXISTING WASTEWATER

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

SOUTHWEST QUADRANT

Figure 8-5 – Wastewater Improvements

FIGURE 8-5 WASTEWATER IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS 01/18/2018 SHEET:

LEGEND:

- ▨ City Limits
- 🟥 2000-2015 Improvements
- 🟦 2015-2020 Improvements

CITY OF TAYLOR
FOUNDED 1876

FIGURE 8-5 WASTEWATER IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:	
DATE	DISCRIPTION

SCALE: NTS	01/18/2018	SHEET:

NORTHWEST QUADRANT

LEGEND:
- City Limits
- 2000-2015 Improvements
- 2015-2020 Improvements

CITY OF TAYLOR FOUNDED 1876

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3
Council District 4

LEGEND:
City Limits
2000-2015 Improvements
2015-2020 Improvements

SOUTHEAST QUADRANT

FIGURE 8-5 WASTEWATER IMPROVEMENTS

SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:
DATE | DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET:

CITY OF TAYLOR
FOUNDED 1876

Council District 1
Council District 2
Council District 3

Co Rd 160
Co Rd 369
Co Rd 398
Co Rd 395
Co Rd 373
Co Rd 133
Co Rd 100
Co Rd 132
Co Rd 134
Co Rd 401
Co Rd 404

W 2nd St
U579
Herman Sons Rd
Limmer Loop
Mager Ln
FM 3349
FM 973
Carpenter Dr
Regina Dr
Rio Grande St

Rydell Ln
Carlos Parker Blvd NW
Carlos G Parker Blvd SW
Airport Rd
Justin Ln
W Lake Dr
Willow Ln
Lillie Ln
Ellen St
Tammie Ln
Lee St
West St
Debus Dr
Debra Dr
Thomas St
Debus Cir
W 3rd St
Travis St
Welch
Kent St
Hidden Meadow Dr
Meadow Ridge Dr
Boyer Dr

LEGEND:
- City Limits
- 2000-2015 Improvements
- 2015-2020 Improvements

FIGURE 8-5 WASTEWATER IMPROVEMENTS

SOUTHWEST QUADRANT

sledge ENGINEERING LLC
SLEDGE ENGINEERING, LLC
481 TUCEK ROAD
TAYLOR, TEXAS
PH: 512.365.1888

REVISIONS:

DATE	DISCRIPTION

SCALE: NTS | 01/18/2018 | SHEET: