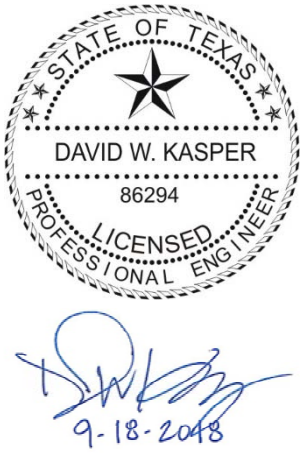
WATER AND WASTEWATER IMPACT FEE STUDY

2018 UPDATE



CITY OF ALVIN

September, 2018

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WATER AND WASTEWATER IMPACT FEE STUDY UPDATE
CITY OF ALVIN

September, 2018

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1. INTRODUCTION

Part 1: History

The City of Alvin first adopted Impact Fees and the supporting Land Use Assumptions (LUA) and Capital Improvements Plan (CIP) in 2005. Since the initial adoption, Impact Fees have been amended and reviewed to reflect the City's progress on the CIP, appropriateness of initial LUA, and the Impact Fee collections and implementation. The first update was completed in 2013 by JET Civil Consulting, LLC. The next scheduled update is scheduled to occur in 2018, which is the purpose of this report.

Part 2: State Law Pertaining to Impact Fees

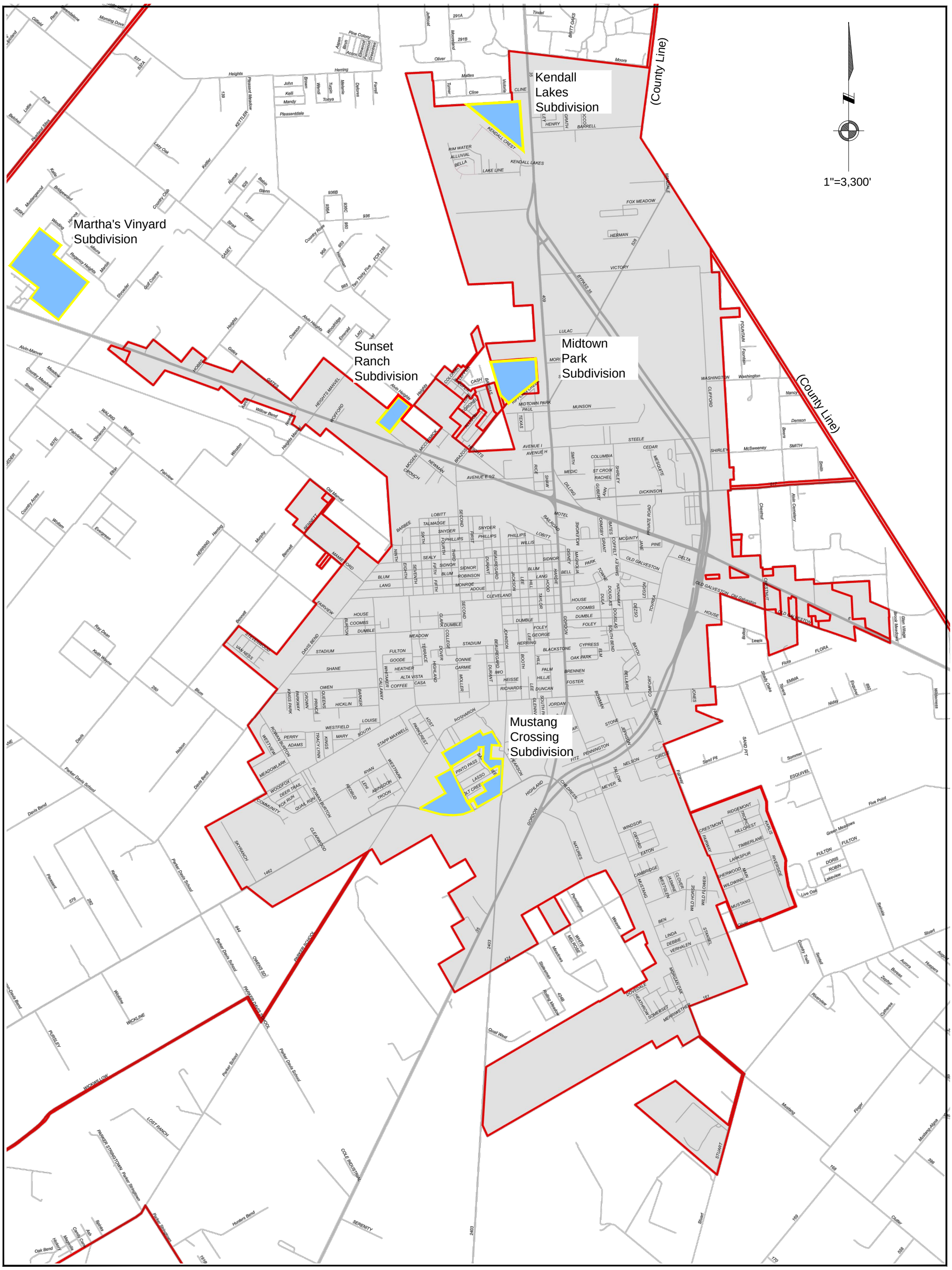
Impact Fees are charged by the City of Alvin for each new connection to the City's water and/or wastewater system. Chapter 395 of the Texas Local Government Code prescribes the required process for cities to follow for adoption, amendment, and update of Impact Fees charged. Updates are performed on a five-year cycle. The update process requires engaging a Registered Professional Engineering firm to prepare the aforementioned documents and calculations. The results are then to be presented to an Advisory Committee appointed by the City Council to review and recommend adoption of land use assumptions, population projections, proposed CIP projects, and the amount of the Impact Fees to be considered and adopted by the City. The City has elected to utilize the City of Alvin Planning Commission, which includes one or more members from the real estate industry, as required by the legislation, to fulfill this requirement.

For purpose of this update, it is recommended that the City adopt a **ten year** planning period from 2018-2027 and consider factors affecting growth rates, intensity of development, known major development projects, and projections by local and state agencies to guide the land use assumptions and resulting CIP. Included in this update study is a review of the growth experience during the previous planning period, projects implemented from the CIP, and the actual cost of water and wastewater projects. Water and wastewater studies and reports performed during this period are also reflected herein.

2. SERVICE AREA

The original land use assumptions adopted in 2005 utilized a service area defined as a Regional Area Zone (RAZ) as provided by the Houston Galveston Area Council (HGAC). The RAZ boundaries were very similar to the City Limits. Since the 2013 Update study, the service area has been adjusted to reflect the existing City Limit line, plus development areas in which the City has executed a development agreement.

The proposed service area is shown on **Figure 1**. Areas that are believed to be annexed within the next five year period have been included in the proposed Service Area.



WATER AND WASTEWATER SERVICE AREA MAP

LEGEND:

SERVICE AREA - CITY OF ALVIN CITY LIMIT

SERVICE AREA - MAJOR DEVELOPMENTS

3. LAND USE ASSUMPTIONS AND POPULATION PROJECTIONS

The purpose of the Land Use Assumptions is to provide the basis for provision and requirement for projects to support new development in the Service Area and to project the number of equivalent service units to fairly allocate the resulting costs through the assessment of Impact Fees. The following factors were considered in the initially adopted Land Use Assumptions and have been reviewed as part of this update process:

- The character, type, density and quantity of existing development.
- Proposed land use.
- The Water and Wastewater Master Plan Update (2016 Freese & Nichols).
- Availability of land for future development.
- Current growth trends in the City.
- Location and configuration of vacant land.
- Employment and population absorption rates.
- Physical holding capacity of the City.
- Known or anticipated development projects.

In addition, this update has considered the following:

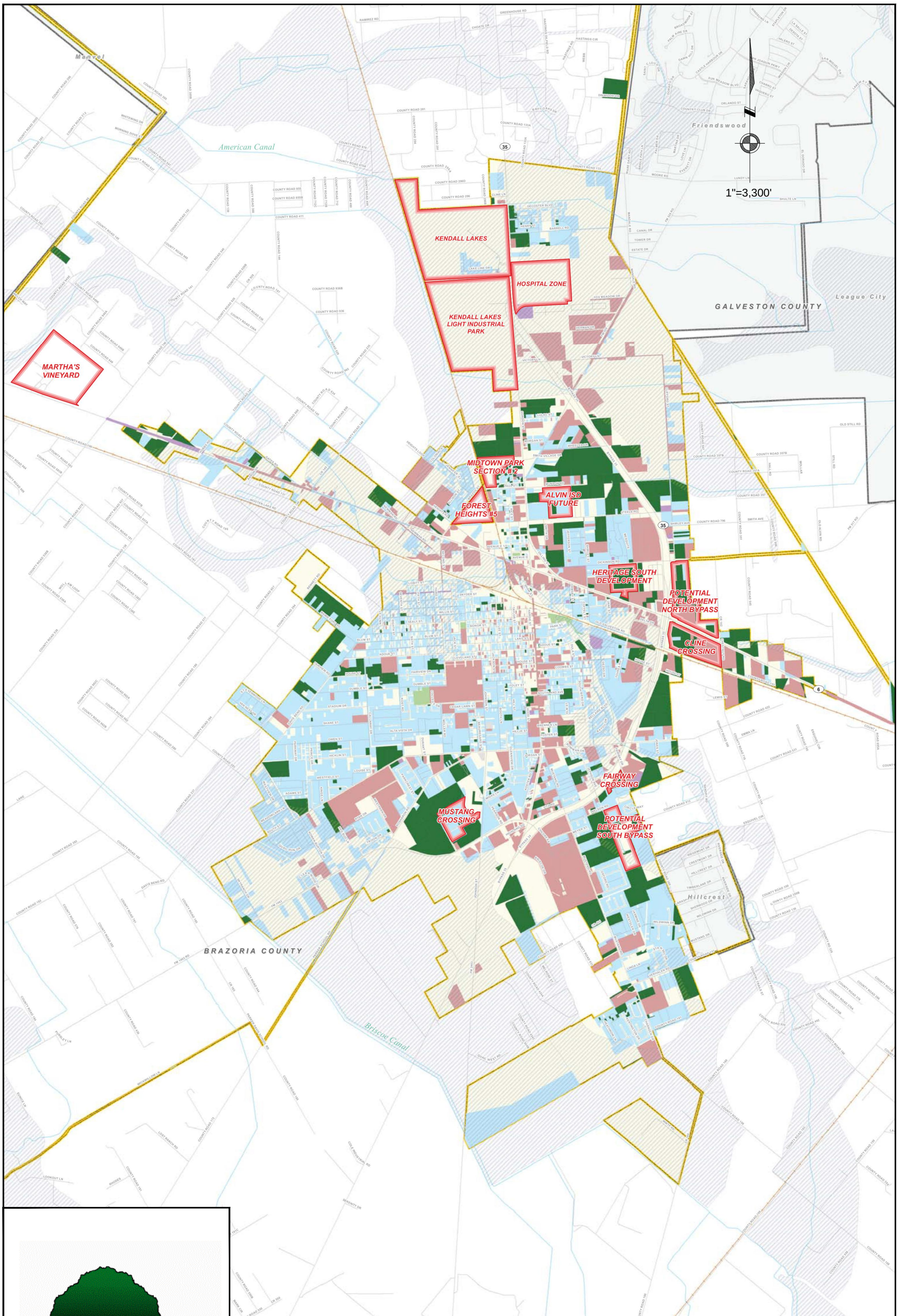
- Actual growth rates for the previous period.
- Recent annexations.

Many new developments are in the planning phase, several projects were completed, and some developments had initial phases started in construction. The following is a list of the major projects started:

- Kendall Lakes
- Mustang Crossing
- Martha's Vineyard
- Midtown Park
- Sunset Ranch

Prior to 2013, several large properties were annexed by the City of Alvin that are situated west of the City in the vicinity of State Highway 288 and F.M. 1462. Several are undeveloped and do not have utility service. One property, Savannah Plantation, has most infrastructure completed with its own water and sewer system. There are no immediate plans to incorporate these areas in to the City's current water or sewer systems, and thus are not included in the Service Area.

See **Figure 2 - Land Use Plan** on the following page.



LANDUSE

- Vacant-Developable
- Residential
- Park
- Other
- Mixed Use
- Commercial

LAND USE MAP

3.1 BASE DATA

The data developed for the original Land Use Assumptions was based on US Census data and HGAC planning resources and provided results. Updated data was obtained from the 2016 Water and Wastewater Master Plan document as shown in the following **Table 1**:

TABLE 1

POPULATION DATA

	2000	2005	2010	2013	2015	2018 (Base Year)	2027 (Projected 10 Year)	2037 (Projected 20 Year)
Population	21,413	22,892	24,236	25,719	26,759	28,397	33,937	41,368
Connections	8,430	9,741	10,313	10,944	11,388	12,084	14,441	17,604

Since the original LUA's were adopted, the 2010 Census was completed and reflected that the City of Alvin had a population of 24,828. Starting in year 2015, population projection data is sourced from the Freese & Nichols Master Plan study, which references data from the Texas Water Development Board. In this way, the Impact Fee Update Study is consistent with the Water Master Plan Study.

Table 2 on the following page shows population projections for the 10 year and 20 year planning periods for this study.

TABLE 2

POPULATION PROJECTIONS

Year	Population	Connections	Notes
2014	26,234	11,163	
2015	26,759	11,388	Base year- F&N Study
2016	27,294	11,615	
2017	27,840	11,847	
2018	28,397	12,084	Current Study Year
2019	28,965	12,325	
2020	29,544	12,574	
2021	30,135	12,823	
2022	30,738	13,080	
2023	31,352	13,341	
2024	31,979	13,608	
2025	32,619	13,880	
2026	33,271	14,158	
2027	33,937	14,441	Ten Year Projected
2028	34,616	14,730	
2029	35,308	15,025	
2030	36,014	15,325	
2031	36,734	15,632	
2032	37,469	15,944	
2033	38,218	16,263	
2034	38,983	16,588	
2035	39,762	16,922	
2036	40,557	17,258	
2037	41,368	17,604	20 Year Projected

The following **Table 3** provides the housing starts and resulting estimated population increases for the past 5 years.

TABLE 3

PREVIOUS PERIOD HOUSING STARTS

Year	Housing Starts	Est. Population	Percent Increase in Housing Starts
2013	97	25,178	0.8%
2014	134	26,234	1.2%
2015	171	26,759	1.5%
2016	78	27,294	0.7%
2017	154	27,840	1.3%
		5 YEAR AVERAGE	**1.1%**

3.2 TWENTY YEAR GROWTH ASSUMPTIONS

The original Land Use Assumptions projected a growth rate going forward for the 20 year planning period (2005-2014) of 4%. Due to the economic downturn beginning shortly after the original adoption, lower growth rates were actually experienced thru year 2013. Since 2013, the housing market has picked up significantly in the City of Alvin and the Greater Houston area.

The current rate of growth in terms of equivalent service units (ESU's) for the City is averaging around 150 new ESU's per calendar year as evidenced by the impact fees collected for the since 2013:

Calendar Year 2011: Impact Fees collected= $243,681 / $2,400 = 96 ESU's

Calendar Year 2012: Impact Fees collected= $153,616 / $2,400 = 64 ESU's

Calendar Year 2013:

2013 (Jan-Oct): Impact Fees collected= $241,905 / $2,400 = 101 ESU's

2013 (Nov-Dec): Impact Fees collected= $42,000 / $2,500 = 17 ESU's

118 ESU's

Calendar Year 2014: Impact Fees collected= $389,995 / $2,500 =156 ESU's

Calendar Year 2015: Impact Fees collected= $457,000 / $2,500 = 183 ESU's

Calendar Year 2016: Impact Fees collected= $263,315 / $2,500 = 105 ESU's

Calendar Year 2017: Impact Fees collected= $449,970 / $2,500 = 180 ESU's

With the current total connections in the system expressed in ESU's of approximately 12,084, the growth rates in terms of equivalent connections was **1.3%** for the period 2013-2017. It is recommended that for the 2018 update of the LUA's the City adopt a growth rate of **2.0% per year** in equivalent connections to the water and wastewater system. This growth rate is consistent with the Freese & Nichols Water and Wastewater Master Plan study.

3.3 ULTIMATE POPULATION PROJECTIONS

The original Land Use Assumptions adopted in 2005 provided a build-out or ultimate holding capacity of the City as established in the City's Comprehensive Plan. Primary factors considered were existing development patterns, proposed land uses, and available land. This ultimate build-out population was estimated at 58,600. Since 2005, as a result of additional land being annexed into the City, the ultimate projected population is increased to approximately 60,000 persons based on a density similar to that of the existing City prior to annexations.

3.4 LAND USE ASSUMPTIONS SUMMARY

The updated land use assumptions are summarized as follows:

- The existing estimated population (2018) is 28,397; the estimated 2027 population is 33,937; and the estimated 2037 population is 41,368.
- The existing number of equivalent connections (2018) is 12,084; the estimated 2027 number of connections is 14,441; and the estimated 2037 number of connections is 17,604.
- The projected growth rate for the ten year planning period (2018-2027) for purposes of this update report is 2.0 percent.
- The ultimate population is estimated to be 60,000.
- Based on the 2.0% growth rate, the following table summarizes population increase, total population and resulting increase in ESU's for the ten year and twenty year planning periods.
- The following **Table 4** shows growth by year based on 2.0% rate.

TABLE 4

POPULATION PROJECTION SUMMARY

YEAR	CONNECTIONS (2.0% GROWTH)	POPULATION
2018	12,084	28,397
2027	14,441	33,937
2037	17,604	41,368
Ultimate	25,532	60,000

4. CAPITAL IMPROVEMENT PLAN

The Impact Fee Capital Improvement Plan (CIP) includes projects anticipated to serve growth in the City based on a growth rate of 2.0%, which is consistent with the Water and Wastewater Master Plan study.

4.1 ELIGIBLE FACILITIES

The impact fee legislation allows those projects necessitated by growth during the planning period to be included in the impact fee calculation. Projects included in the CIP include water distribution lines, wells, tanks, and water production and treatment facilities. The original planned projects going back as far as 2005 are shown on **Table 5** with original and final costs and status of completion. Some of the projects on the list were implemented, while others were not warranted due to the reduced rate of growth during the 2009-2013 economic slowdown. The source of the identified projects on **Table 5** is the Water and Wastewater Master Plan prepared by Carter and Burgess, Inc. in 2001. There was $750,000 included in both the wastewater project and water project lists for developer assistance in the event that lines or facilities were required to be upsized to serve future development. These funds have not been utilized and will not be included in the CIP for the next planning period. Six lift stations were identified in the original CIP, of which only 2 were warranted due to increased flows. The remainder of these projects will be warranted for rehabilitation purposes only and will be removed from the CIP for Impact Fees.

4.2 EXISTING WASTEWATER SYSTEM

The original CIP for Impact Fees adopted in 2005 inventoried the wastewater facilities that existed in the City at that time. The collection system consisted of 506,745 linear feet of gravity flow pipe with diameters ranging from 6 to 33 inches consisting of vitrified clay, PVC, RCP, and ductile iron pipe. There were approximately 2,250 manholes in the system according the report at that time. Wastewater system expansions that have occurred since 2005 include the following:

<u>2005 – 2013 Period</u>

- Barrell Road Sanitary Sewer: 2800 feet – 18” gravity main
- Recreation Center Area Utilities- 415 feet of 12” gravity main and 880 feet of 6” force main

<u>2013 – 2018 Period</u>

- Impact Fee Study Update 2013
- Wastewater Utility Master Plan

4.3 EXISTING WATER DISTRIBUTION SYSTEM

The City's water system was also inventoried with the 2005 report which listed only production, storage, and pumping facilities. The system at that time consisted of one pressure plane including five water wells, three pump booster stations, six ground storage tanks, and two elevated tanks. Not reported in 2005 were the lengths of water mains and appurtenances within the City's water distribution system. The City in 2013 had approximately 145 miles of water mains in the city with 975 fire hydrants and approximately 2600 valves.

New facilities added to the water system since the 2005 report include the following:

<u>2005 – 2013 Period</u>

- Northside Elevated Storage Tank
- Recreation Area Utilities- 900 feet of 10" inch water mains and 7 fire hydrants

<u>2013 – 2018 Period</u>

- Impact Fee Study Update 2013
- Water Utility Master Plan
- Dyche Lane Elevated Water Storage Tank

4.4 CAPITAL IMPROVEMENT CATEGORIES

Capital Improvement Projects are separated into three categories:

- **Category A**- Expansion of Systems to Currently Unserved Areas
- **Category B** - Upgrading Existing System for Future Flows
- **Category C** - Additions to Existing System for Future Flows

Category A projects are determined to be 100% related to growth, and the costs for these projects are therefore totally eligible for reimbursement by impact fees. Categories B and C include projects that are to be partially funded with impact fees and partially from other funding sources. Category B project costs that are eligible for impact fees are determined by subtracting the capacity of the existing facility to be expanded and only applying the percentage of the cost for the increase. Category C projects are system additions such as new tanks and plant expansions that would serve future growth in areas that currently have service.

The CIP Plan Summary from the 2005 report is included on the following **Table 5** for reference:

TABLE 5 – ORIGINAL (2005) CAPITAL IMPROVEMENT PLAN SUMMARY

WASTEWATER PROJECTS				
Category A Projects				
Barrell Road Sanitary Sewer	2007	$212,000	100%	$212,000
Recreation Center Area Utilities	2005	$287,000	100%	$287,000
FM517 Sanitary Sewer Extension	2013	$108,000	100%	$108,000
Bypass 35 Sanitary Services	2014	$151,000	100%	$151,000
Developer Assistance for WW	Yearly	$750,000	100%	$750,000
Category B Projects				
Interceptor Diversion at LS17	2005	$54,000	100%	$54,000
LS 23 upgrade & FM Diversion	2006	$240,000	100%	$240,000
LS 11 Replacement	2006	$135,000	100%	$135,000
LS 15 Upgrade	2009	$18,000	20%	$3,600
LS 16 Upgrade	2009	$25,000	50%	$12,500
LS 21 Upgrade	2009	$23,000	50%	$11,500
LS 22 Upgrade	2009	$19,000	20%	$3,800
Rowan-Burton WW Upgrade	2010	$109,000	44%	$47,960
Davis Bend Road WW Upgrade	2011	$128,000	44%	$56,320
FM528 WW Improvement	2012	$203,000	70%	$142,100
SH35 WW Improvement	2014	$166,000	55%	$91,300
Category C Projects				
Westside Interceptor and FM	2006	$3,200,000	100%	$3,200,000
Herman Drive Sanitary Sewer	2008	$109,000	100%	$109,000
WWTP Optimization Ph. 1	2006	$1,569,151	15%	$235,373
WWTP Optimization Ph. 2	2007	$1,169,136	15%	$175,370
WATER PROJECTS				
Category A Projects				
South SH 35 Area Waterlines	2008	$435,000	100%	$435,000
Barrell Road Waterline Loop	2006	$430,000	100%	$430,000
CR 424 Waterline	2010	$663,000	100%	$663,000
Recreation Center Waterline Extension	2005	$125,000	100%	$125,000
Chestnut Street	2011	$241,000	100%	$241,000
Developer Assistance for Water	Yearly	$750,000	100%	$750,000
Category B Projects				
Durant Street 8" Waterline	2005	$90,000	56%	$50,400
Johnson Street Waterline	2008	$85,500	58%	$49,590
Davis Bend Road Waterline	2012	$150,000	45%	$67,500
Category C Projects				
Northside Elevated Storage	2005	$1,035,000	100%	$1,035,000
Water Plant and Water Well #9	2006	$1,215,000	100%	$1,215,000
TOTALS		$13,894,787		$11,087,313

The eligible projects that have been constructed and funded with impact fees cost are as follows, as shown on **Table 6** below:

TABLE 6

COMPLETED PROJECTS SUMMARY

Capital Improvement Project	Actual Cost
WASTEWATER PROJECTS	
Barrell Road Sanitary Sewer	$359,714
Recreation Center Area Utility Line	$253,288
Lift Station 23 Upgrade and FM Diversion	$166,066
Lift Station 11 Replacement	$262,126
Wastewater Treatment Plant Optimization Ph. 1	$2,506,500
Impact Fee Study Update	$7,975
Wastewater Utility Master Plan	$51,612
Total Wastewater	**$3,607,281**
WATER PROJECTS	
Recreation Center Area Utility Line	$57,502
Northside Elevated Storage Tank	$1,734,166
Impact Fee Study Update (Water)	$7,975
Water Utility Master Plan	$51,612
Dyche Lane Elevated Water Tank	$1,938,331
Total Water	**$3,789,586**

4.5 CAPITAL IMPROVEMENT PROJECTS FOR 2018 UPDATE

The projects eligible for Capital Recovery Fee consideration are shown on **Table 7 (Water) and Table 8 (Wastewater)**. These tables show both proposed future CIP improvements, and existing facilities that have excess capacity which can serve some or all of the projected growth during the study period. For the existing facilities, their design capacity was evaluated against existing demands and projected growth to determine the prorated value for growth during the study period.

The capital improvement project maps are shown on the following pages, reprinted from the 2015 Utility Master Plan Update for the City of Alvin prepared by Freese & Nichols.

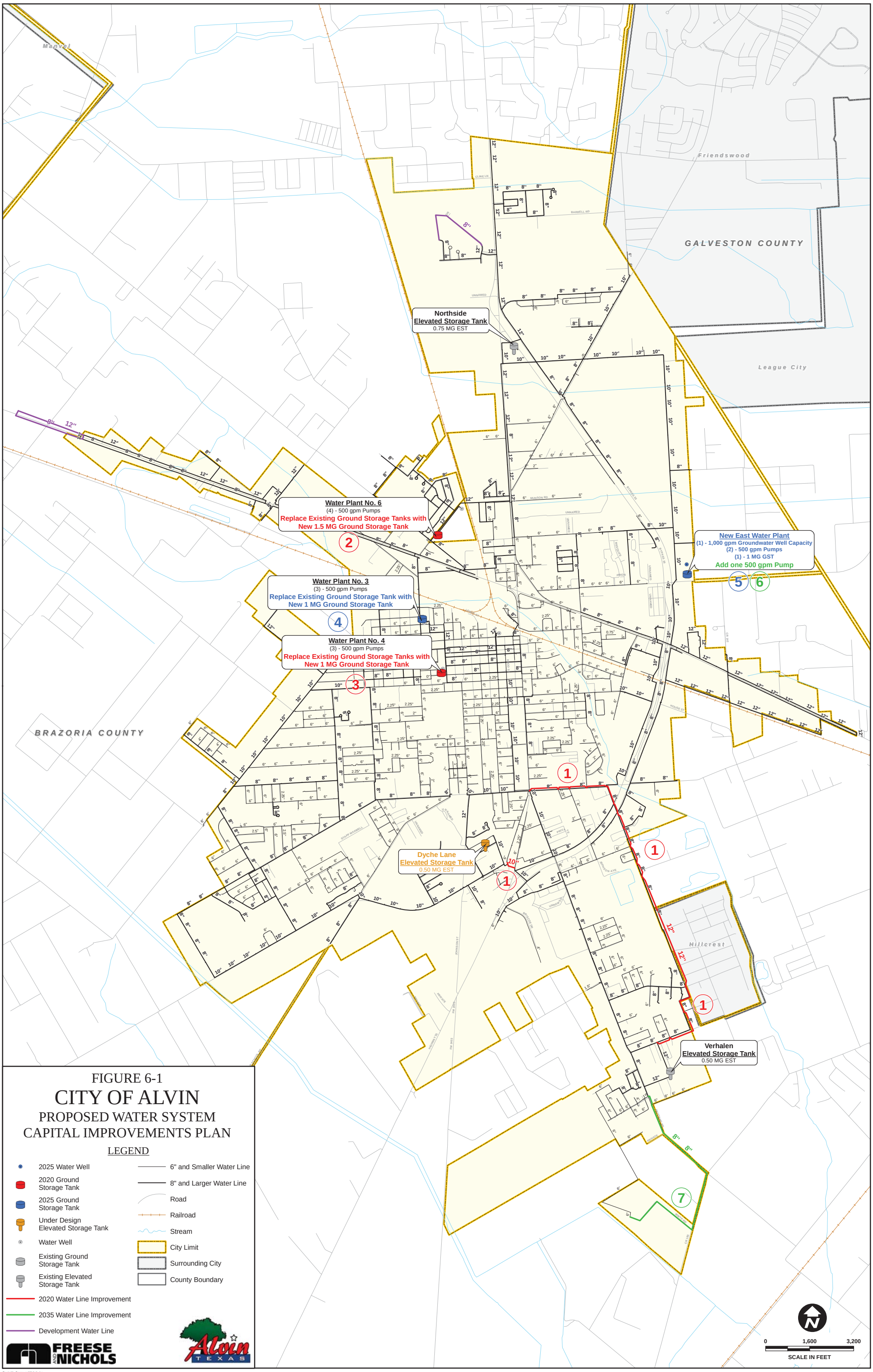


FIGURE 6-1

CITY OF ALVIN

PROPOSED WATER SYSTEM CAPITAL IMPROVEMENTS PLAN

LEGEND

- 2025 Water Well
- 2020 Ground Storage Tank
- 2025 Ground Storage Tank
- Under Design Elevated Storage Tank
- Water Well
- Existing Ground Storage Tank
- Existing Elevated Storage Tank
- 2020 Water Line Improvement
- 2035 Water Line Improvement
- Development Water Line
- 6" and Smaller Water Line
- 8" and Larger Water Line
- Road
- Railroad
- Stream
- City Limit
- Surrounding City
- County Boundary

FREESE AND NICHOLS

Alvin TEXAS

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Updated: Thursday, February 04, 2016

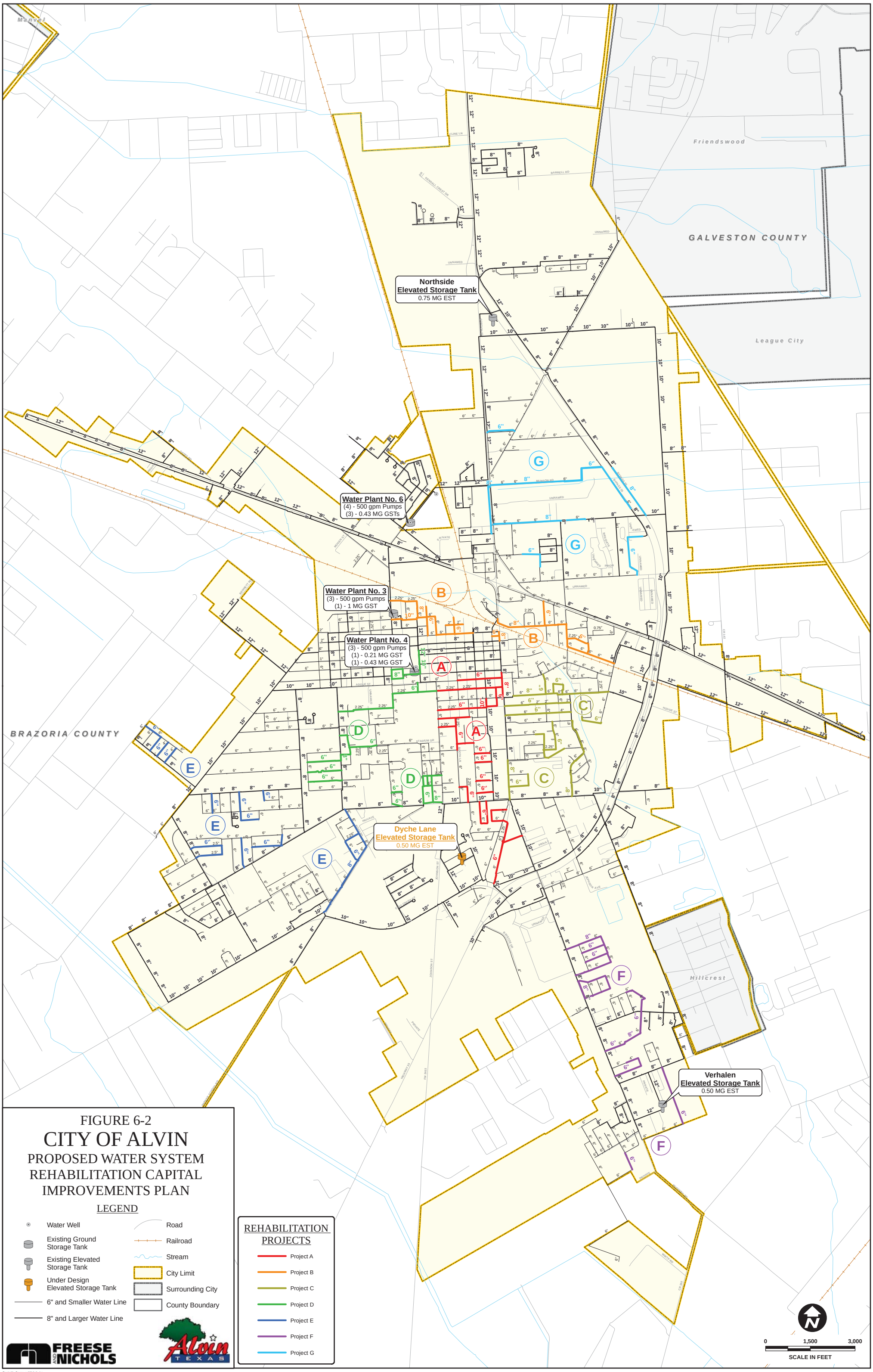

FIGURE 6-2

CITY OF ALVIN

PROPOSED WATER SYSTEM REHABILITATION CAPITAL IMPROVEMENTS PLAN

LEGEND

- Water Well
- Existing Ground Storage Tank
- Existing Elevated Storage Tank
- Under Design Elevated Storage Tank
- 6" and Smaller Water Line
- 8" and Larger Water Line
- Road
- Railroad
- Stream
- City Limit
- Surrounding City
- County Boundary

REHABILITATION PROJECTS

- Project A
- Project B
- Project C
- Project D
- Project E
- Project F
- Project G

FREESE AND NICHOLS

Alvin TEXAS

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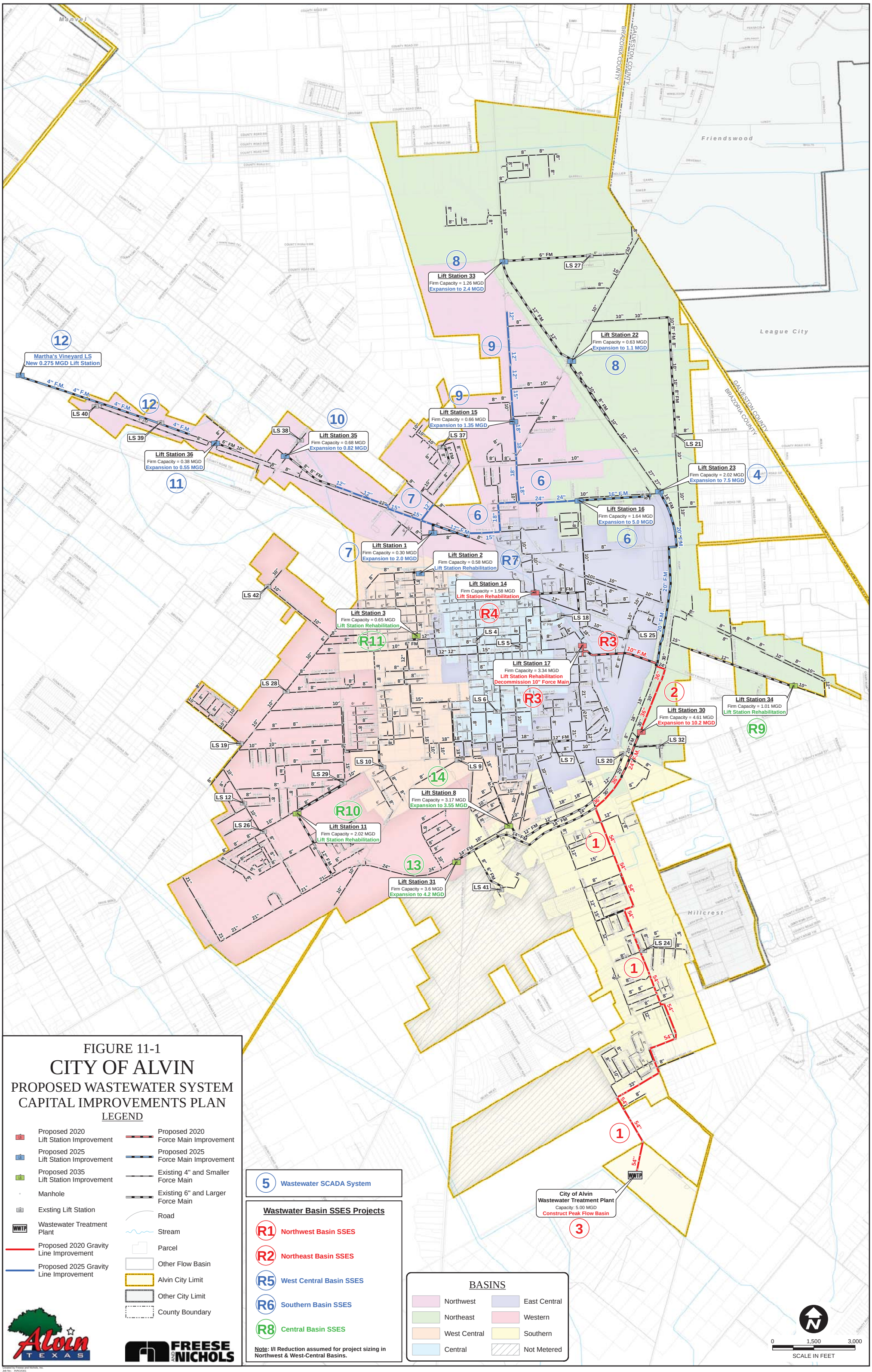

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Updated: February 03, 2016
User: 02216

5. IMPACT FEE CALCULATION

This section includes a summary of the capital improvement project costs, interest costs, service unit equivalency, and a calculation of the maximum impact fee amount. The capital improvement costs included in the impact fee calculation is the portion of the project cost that is directly related to new growth. Some of the projects include replacement of an existing facility with new capacity added that will be available for future growth. **Tables 7 and 8** on the following pages show the proposed CIP Project Costs Summaries, reflecting costs prorated for new development to be used in the impact fee calculation. The costs allocated to new development are then regressed from the 20 year CIP planning period to the 10 year impact fee planning period.

TABLE 7

PROJECT COSTS SUMMARY - WATER

Project Name	Project Cost	Planned Year	Percent of Cost Related to New Development	Project Costs Related to New Development
Fairway Drive and South Street Water Line Improvements	$ 4,022,400	2019	100%	$ 4,022,400
Water Plant No. 6 Ground Storage Tank Replacement	$ 3,159,000	2019	14%	$ 442,260
Water Plant No. 4 Ground Storage Tank Replacement	$ 2,106,000	2020	36%	$ 758,160
Water Plant No. 3 Ground Storage Tank Replacement	$ 2,106,000	2024	0%	$ -
East Water Plant (GST, Pumps, Well 9)	$ 5,304,000	2025	100%	$ 5,304,000
East Water Plant Pump Expansion	$ 250,000	2035	100%	$ 250,000
Mustang Rd / Stuart Rd Loop (WWTP Area)	$ 1,565,100	2035	100%	$ 1,565,100
Water Line Improvements Phase 1 (A)	$ 3,064,600	2021	15%	$ 459,690
Water Line Improvements Phase 2 (B)	$ 2,531,900	2023	15%	$ 379,785
Water Line Improvements Phase 3 (C)	$ 3,063,900	2025	15%	$ 459,585
Water Line Improvements Phase 4 (D)	$ 2,795,300	2027	15%	$ 419,295
Water Line Improvements Phase 5 (E)	$ 2,444,000	2029	15%	$ 366,600
Water Line Improvements Phase 6 (F)	$ 2,592,800	2031	15%	$ 388,920
Water Line Improvements Phase 7 (G)	$ 3,114,800	2032	15%	$ 467,220
Fire Hydrant Connection Retrofitting (H)	$ 397,800	2033	15%	$ 59,670
TOTAL WATER	**$ 38,517,600**			**$ 15,342,685**

New Connections Served in 20 Year Period by the Water Capital Improvements:	5,520
New Connections Served in the 10 Year Period:	2,357
Percent of Project Cost Assigned to the 10 Year Period:	43%
Project Cost Assigned to the 10 Year Period:	**$ 6,551,215**

TABLE 8

PROJECT COSTS SUMMARY - WASTEWATER

Project Name	Project Cost	Planned Year	Percent of Cost Related to New Development	Project Costs Related to New Development
Peak Flow Storage Basin at WWTP	$ 1,287,000	2019	100%	$ 1,287,000
54" Eastside Interceptor	$ 12,991,700	2019	38%	$ 4,936,846
Lift Station 30 Expansion and Highway 35 Bypass Gravity Mains	$ 8,975,200	2020	49%	$ 4,397,848
Lift Station 17 Rehabilitation	$ 780,000	2019	10%	$ 78,000
Lift Station 14 Rehabilitation	$ 780,000	2020	10%	$ 78,000
Lift Station 23 Expansion	$ 7,176,500	2021	73%	$ 5,238,845
Wastewater SCADA System	$ 2,373,600	2022	29%	$ 688,344
Lift Station 16 Expansion and Replacement Gravity Mains	$ 7,253,400	2022	67%	$ 4,859,778
Lift Station 1 Expansion and Highway 6 Replacement Gravity Mains	$ 3,150,000	2023	85%	$ 2,677,500
Lift Stations 22 and 33 Expansion	$ 1,232,400	2023	43%	$ 529,932
Lift Station 15 Expansion and Replacement Gravity Mains	$ 1,889,900	2024	51%	$ 963,849
Lift Station 35 Expansion	$ 645,900	2024	17%	$ 109,803
Lift Station 36 Expansion	$ 435,300	2025	31%	$ 134,943
Lift Station 2 Rehabilitation	$ 390,000	2025	10%	$ 39,000
Lift Station 31 Expansion	$ 3,223,500	2026	14%	$ 451,290
Lift Station 8 Expansion	$ 1,519,200	2028	11%	$ 167,112
Lift Station 34 Rehabilitation	$ 546,000	2030	10%	$ 54,600
Lift Station 11 Rehabilitation	$ 624,000	2032	10%	$ 62,400
Lift Station 3 Rehabilitation	$ 561,600	2033	10%	$ 56,160
TOTAL WASTEWATER	**$ 55,835,200**			**$ 26,811,250**

New Connections Served in 20 Year Period by the Wastewater Capital Improvements:	5,520
New Connections Served in the 10 Year Period:	2,357
Percent of Project Cost Assigned to the 10 Year Period:	43%
Project Cost Assigned to the 10 Year Period:	**$ 11,448,209**

5.1 FINANCE COSTS DETERMINATION

Costs incurred to support the debt service for the CIP list above are eligible for reimbursement in accordance with the Impact Fee Legislation. This update reflects an estimated interest rate of 2.5% per annum on bonds such as TWDB State Revolving Fund loans. On that basis, the total interest expense for the Impact Fee calculation are as follows, based on a 20 year finance term:

	WATER	**WASTEWATER**
Project Cost	$6,551,215	$11,448,209
Interest Rate	3.00%	3.00%
Term (years)	20	20
Total Interest	$2,168,677	$3,789,749
Total Eligible Cost w/ Interest	**$8,719,892**	**$15,237,959**

5.2 SERVICE UNIT DETERMINATION

The equivalent meter was selected in the 2005 report as the method to measure consumption by new growth for impact fee purposes. The water meter serves as the service unit for both water and wastewater impact fee calculations. The equivalent meter is defined as the unit equivalent to the hydraulic capacity of a ¾ inch meter. The ¾ inch meter was selected because it represents the water meter size for an average single family dwelling. Equivalency factors were provided for larger meter sizes as developed by the American Water Works Association. **Table 8** provides these equivalency factors.

TABLE 8
Equivalent Meter Factors

METER SIZE (INCHES)	EQUIVALENCY FACTOR
5/8 OR 3/4	1.0
1”	1.67
1 ½”	3.33
2”	5.33
3”	10.0
4”	16.67
6”	33.33
8”	53.33
10”	76.67
12”	176.67

The total existing meter count is provided by the City’s Water Billing Department is shown on **Table 9** below. The meter counts include both residential and commercial meters serviced by City of Alvin.

TABLE 9
EXISTING METER COUNT

Meter Size	Number of Meters
3/4”	7320
1”	382
1-1/2”	99
2”	198
3”	30
4”	9
6”	2

The 2005 report calculated the population per equivalent meter to factor in not only the residential meters but also include the commercial and other meters. The 2005 calculation was as follows:

Population per Equivalent meter (2005) = 23,450/7759 = 3.02

For 2013 the calculation is as follows:

Population per equivalent meter (2013) = 25,178/9510= 2.65

The 2016 Water and Wastewater Master Plan study utilized a conversion factor of 2.35 to convert from equivalent connections to population.

Population per Equivalent Meter (2018) = 28,397/ 12,084 = 2.35

Using this ratio, we can next determine the estimated expansion of the City's utility system over the ten-year planning period expressed in an increase in equivalent service units or meters. Using the population projections presented in the Land Use Assumptions for 2018 to 2027, the increase is as follows:

Increase in Equivalent Connections *= (2027 population – 2018 population) / 2.35*

= (33,937 – 28,397) / 2.35 = **2,357 Equivalent Connections**

5.3 MAXIMUM IMPACT FEE CALCULATION

The maximum assessable impact fee is determined by dividing the cost of the CIP projects plus interest by the projected increase in equivalent meters for the 10 year planning period. The fee for various meter sizes is then determined by applying the factors provided in **Table 10** for all meters larger than the standard ¾" residential meter. The maximum assessable impact fee for the City of Alvin for water and wastewater is as follows:

WATER

Maximum Water impact fee = (Water Cost / increase in # of equivalent meters)

= ($8,719,892 / 2,357)

= **$3,700 per equivalent meter**

WASTEWATER

Maximum Wastewater Impact Fee = (Wastewater cost / increase in # of equiv. meters)

= ($15,237,959 / 2,357)

= $6,465 per equivalent meter

Chapter 395 of the Local Government Code was amended in 2001 to include that the City must provide a credit for the following:

Section 395.014 Paragraph a (7):

> *(A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the Capital Improvements Plan; or*
>
> *(B) in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.*

The Impact Fee legislation allows the City to charge an impact fee up to the amount shown as the calculated maximum. In 2005, the maximum calculated fees were $3,107 for water and $3,699 for wastewater. The City adopted Impact Fee amounts of $750 for water and $500 for wastewater. Subsequently in 2007, the City elected to raise the Impact Fee to $1,440 for water and $960 for wastewater, for a total fee of $2,400 where it remained until 2013. In 2013, the impact fee was raised to $2,500. For this update, the maximum impact fee is:

50% of Water CIP Costs per Equivalent Meter = $3,700 x 50% =	**$1,850**
50% of Wastewater CIP Costs per Equivalent Meter = $6,464 x 50% =	**$3,232**
Total =	**$5,082**

5.4 CONCLUSIONS AND RECOMMENDATIONS

After discussion and deliberation of the Impact Fee Advisory Committee, the 2018 fee amounts to be recommended to City Council are as shown on **Table 10** below:

TABLE 10 - PROPOSED CAPITAL RECOVERY FEES

	Current Fee	2018 Update Max Fee w/ 50% Credit	**Proposed Fee**
Water	*$1,000*	$1,850	$1,700
Wastewater	*$1,500*	$3,232	$2,650
	$2,500	$5,082	**$4,350**

MULTIPLYING FACTORS

Single Family Dwelling	= 1.0 ESFC (Single Family Equivalent Unit)
Apartment Complex	= 1.0 ESFC per living unit
Hotel, Motel, Resort	= 0.8 ESFC per unit or room
Mobile Home	= 1.0 ESFC per unit or room

Commercial, Retail, Institutional, Light Industrial, and all other non-residential development:

Meter Size:	**Factor**		**Total Impact Fee**
5/8" - 3/4"	1.00	ESFC's	$4,350
1"	1.67	ESFC's	$7,264
1.5"	3.33	ESFC's	$14,485
2"	5.33	ESFC's	$23,185
3"	10.67	ESFC's	$46,414
4"	16.67	ESFC's	$72,514
6"	33.33	ESFC's	$144,985
8"	53.33	ESFC's	$231,985
10"	76.67	ESFC's	$333,514
12"	176.67	ESFC's	$768,514

Note 1: When separate dedicated fire system meters and systems are installed, the fire system meters are not charged a separate capital recovery fee.

Note 2: When building fire flow systems are combined with other building water systems, the City Engineer shall determine the equivalency factor based on the meter size that would be required without the fire protection component of the flow.