REGULAR MEETING OF THE
CITY OF ALVARADO CAPITAL IMPROVEMENT PROGRAM ADVISORY COMMITTEE
104 W. COLLEGE AVE.
JUNE 14, 2023
6:00 PM
AGENDA

The Capital Improvement Program Advisory Committee (CIPAC) of the City of Alvarado will meet in a called session on Tuesday, June 14, 2023 at 6:00 p.m. in the Council Chambers at City Hall for the following agenda items.

CALL TO ORDER - Roll Call
ELECTION OF OFFICERS – Chair and Vice Chair

CITIZEN PARTICIPATION AND PUBLIC INPUT:
This is an opportunity for citizens to address the convened board of this meeting on any matter. The presiding officer may ask for the citizen to hold his or her comment on an agenda item until that agenda item is reached. The convened board has no obligation to respond in any matter to comments or questions from the public. Any response from a member of the convened Board to comments related to items not on the agenda is limited to a statement of specific factual information, a recitation of existing policy, or direction to staff to place the subject on the agenda for a future meeting.

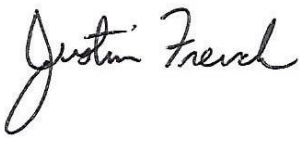
APPROVAL OF MINUTES: NA
CONSENT AGENDA: NA
NEW BUSINESS:
1. Consideration and action to recommend City Council approve land use assumptions for the capital improvement program. (French)
2. Consideration and action to recommend City Council approve the capital improvement plan for capital improvement program. (French)
3. Consideration and action to recommend City Council approve the 2023 Impact Fee Report. (BHC)
4. Consideration and action to file the semi-annual CIP report for the period October 1, 2022 – March 31, 2023. (French)

ADJOURN

ACCESSIBILITY STATEMENT
The Alvarado City Hall and Council Chamber are wheelchair accessible. The exit and parking ramps are located in the front of the building. Persons with disabilities who plan to attend this meeting and who may need auxiliary aids or services such as interpreters for persons who are deaf or hearing impaired, readers, or large print, are requested to contact the City Secretary's Office at 817-790-3351, FAX: 817-783-7925, e-mail: wallsb@cityofalvarado.org. Please call at least two (2) working days prior to the meeting so that appropriate arrangements can be made.

NON-DISCRIMINATION STATEMENT
The City of Alvarado does not discriminate on the basis of race, color, national origin, sex, religion, or disability in the employment or the provision of services.

I, the undersigned authority, do hereby certify that the above agenda was posted on the bulletin board at the City Hall of the City of Alvarado, Texas, a place convenient and readily accessible to the general public at all times, and said agenda was posted on June 9, 2023 at 4:30 p.m. and remained so posted continuously for at least 72 hours preceding the scheduled time of said meeting.



Justin French, AICP
Community Development Director
City of Alvarado, Texas

Capital Improvement Program Advisory Committee Meeting Management Report

Meeting Date: June 14, 2023
Contact: Justin French, Community Development Director

AGENDA ITEM:
Consideration and action to recommend City Council approve Land Use Assumptions for the Capital Improvement Program.

BACKGROUND & FINDINGS:
None.

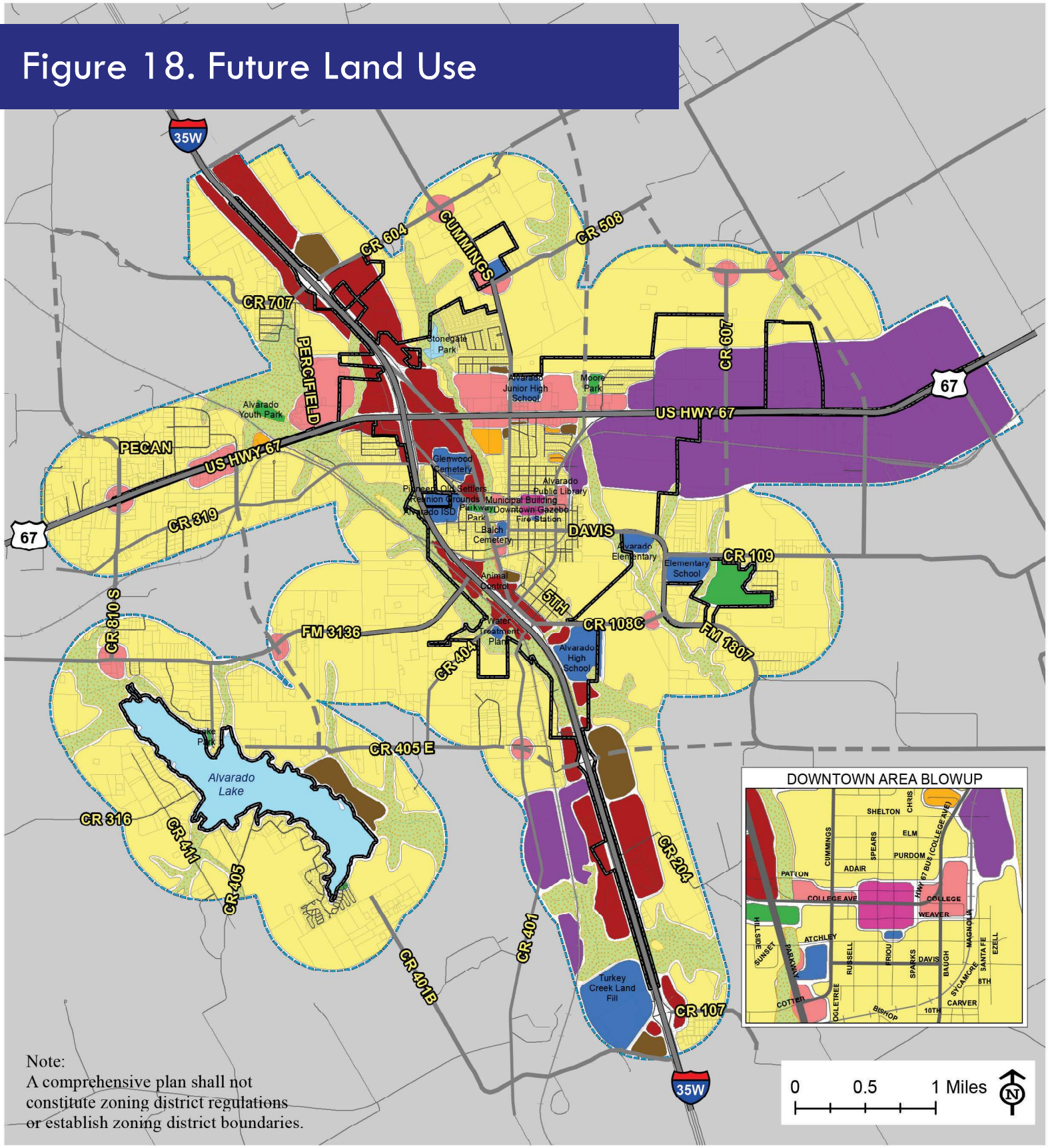
FINANCIAL IMPACT:
None.

RECOMMENDATION:
Staff suggests the Committee recommend City Council approval the Land Use Assumptions presented for the Capital Improvement Program.

MANAGEMENT REVIEW:
Paul DeBuff, City Manager

ATTACHMENTS:
2017 Future Land Use Plan

Figure 18. Future Land Use



Note:
A comprehensive plan shall not constitute zoning district regulations or establish zoning district boundaries.

City of Alvarado

Future Land Use

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Industrial/Utility
- Local Business District
- Interstate Business District
- Parks and Open Space
- Public/Semi-Public
- Downtown Square
- Lake
- Approximate Location of 100 Year Floodplain
- City Limits
- ETJ

Capital Improvement Program Advisory Committee Meeting Management Report

Meeting Date: June 14, 2023
Contact: Justin French, Community Development Director

AGENDA ITEM:
Consideration and action to recommend City Council approve the Capital Improvement Plan for the Capital Improvement Program.

BACKGROUND & FINDINGS:
None.

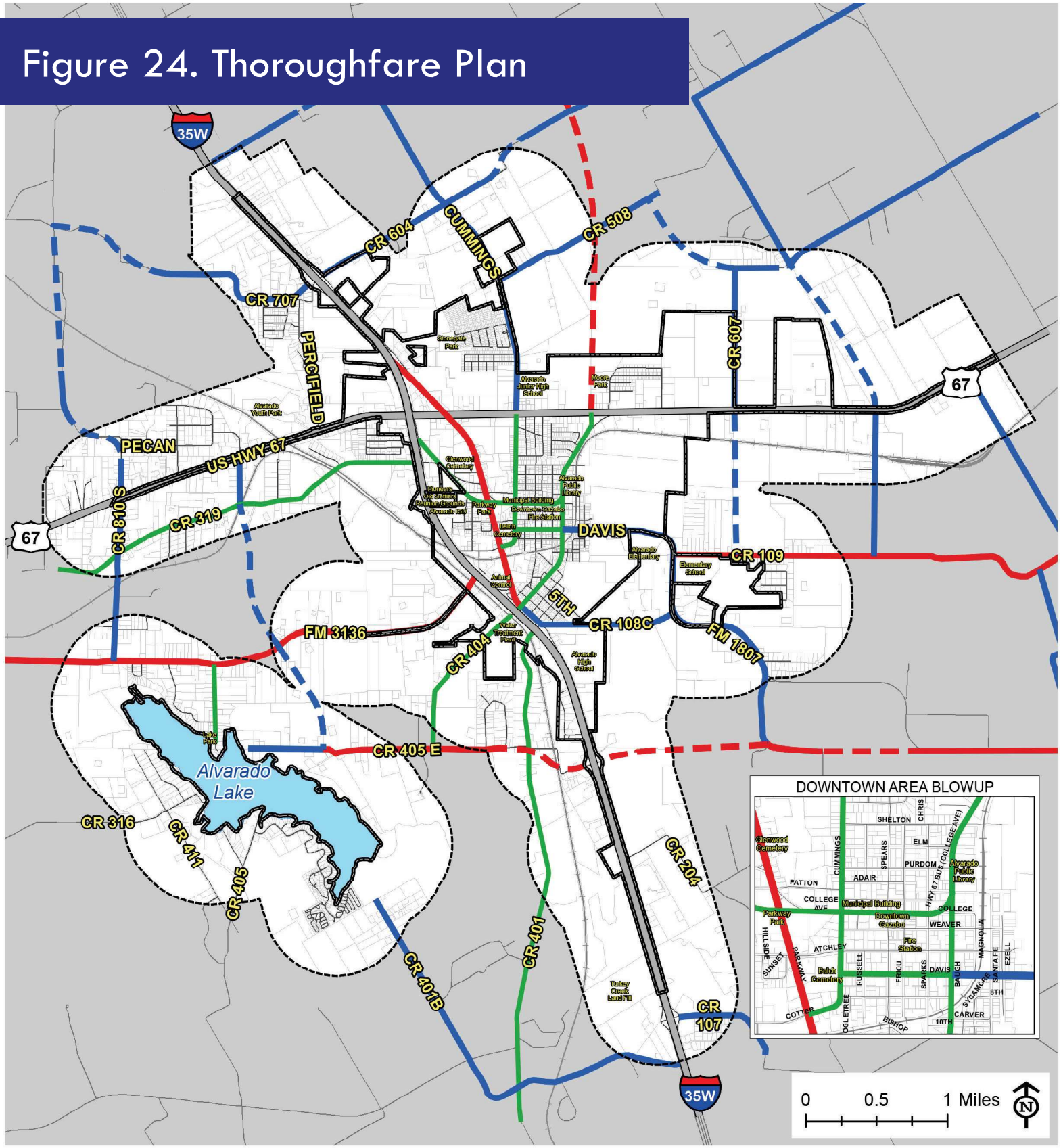
FINANCIAL IMPACT:
None.

RECOMMENDATION:
Staff suggests the Committee recommend City Council approval the Capital Improvement Plan presented for the Capital Improvement Program.

MANAGEMENT REVIEW:
Paul DeBuff, City Manager

ATTACHMENTS:
2018 Capital Improvement Plan

Figure 24. Thoroughfare Plan



City of Alvarado

Thoroughfare Plan

- Highway
- Major Thoroughfare
- Proposed Major Thoroughfare
- Arterial
- Proposed Arterial
- Collector
- Proposed Collector
- City Limits
- ETJ

FIGURE 8-1
CITY OF ALVARADO
WATER SYSTEM
CAPITAL IMPROVEMENTS PLAN

JCSUD Interconnect
Capacity: 1,389 gpm

Well #10 EST
300,000 gal
Overflow Elev.: 941 ft

Well #10
300,000 gal GST
150 gpm Supply Capacity
700 gpm Firm Pumping Capacity

JCSUD Interconnect #2
Capacity: 694 gpm

Proposed Pump Station and 250,000 gal Ground Storage Tank
700 gpm Firm Pumping Capacity

RPZ Valve
Set to 43 psi

Proposed
RPZ Valve

Well #4

Well #9

Well #9 EST
250,000 gal
Overflow Elev.: 900 ft

Well #1

Well #2

Well #6

North Zone

South Zone

Future North Zone

Soil Conservation Service Site 32 Reservoir

Lake Alvarado

Turkey Creek

Mountain Creek

CITY LIMIT AND ETJ

0 7,400
SCALE IN FEET

0 900 1,800
SCALE IN FEET

FUTURE SERVICE AREAS
- North Zone
- South Zone
- Future North Zone

LEGEND

Short-Term Proposed Improvements
- Pressure Reducing Valve
- Water Line

Immediate-Term Proposed Improvements
- Interconnect
- Well Expansion
- Ground Storage Tank
- Pump Station
- Water Line

Long-Term Proposed Improvements
- Water Line

Existing Water System
- Fire Hydrant
- Pressure Reducing Valve
- JCSUD Emergency Interconnect
- Pump Station
- Well
- Ground Storage Tank
- Elevated Storage Tank
- 10" and Smaller Water Line
- 12" and Larger Water Line
- Highway
- Road
- Railroad
- Stream
- Lake/Pond
- Parcel
- Existing CCN Boundary
- ETJ Boundary
- City Limit

FREESE AND NICHOLS

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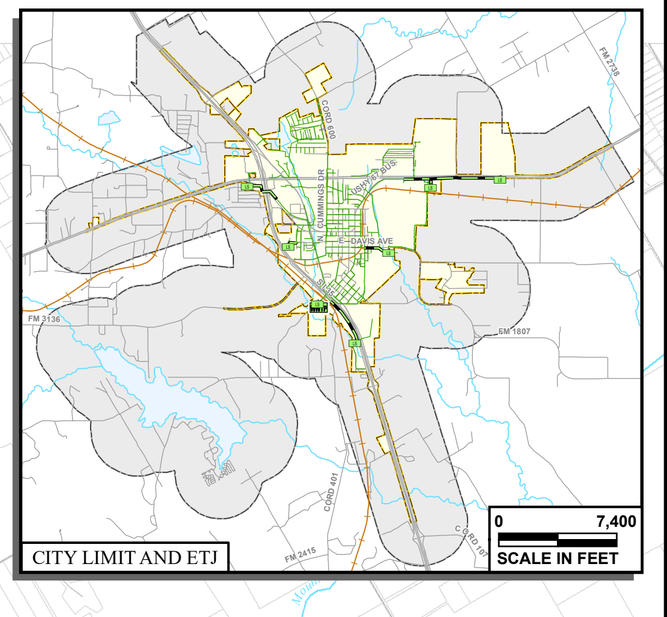

FIGURE 12-1
CITY OF ALVARADO
WASTEWATER SYSTEM CAPITAL IMPROVEMENTS PLAN

LEGEND

Under Construction/Design Improvements
- Decommission Lift Station
- Wastewater Line

Short-Term Proposed Improvements
- Lift Station
- Wastewater Treatment Plant
- Wastewater Line
- Force Main

Intermediate-Term Proposed Improvements
- Lift Station
- Wastewater Line
- Force Main

Long-Term Proposed Improvements
- Lift Station
- Wastewater Line
- Force Main
- City of Alvarado Existing CCN

Existing Wastewater System
- Lift Station
- 6" and Smaller Wastewater Line
- 8" and Larger Wastewater Line
- Force Main
- Highway
- Road
- Railroad
- Stream
- Lake/Pond
- Parcel
- City Limit
- ETJ Boundary

10 SSES Projects

SEWER BASINS
1 2 3 4 5 6 7 8 9

FREESE AND NICHOLS

0 1,600 3,200
SCALE IN FEET

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Capital Improvement Program Advisory Committee Meeting Management Report

Meeting Date: June 14, 2023
Contact: Justin French, Community Development Director

AGENDA ITEM:
Consideration and action to recommend City Council approve the 2023 Impact Fee Report for the Capital Improvement Program.

BACKGROUND & FINDINGS:
None.

FINANCIAL IMPACT:
None.

RECOMMENDATION:
Staff suggests the Committee recommend City Council approval the 2023 Impact Fee Report presented for the Capital Improvement Program.

MANAGEMENT REVIEW:
Paul DeBuff, City Manager

ATTACHMENTS:
2023 Impact Fee Report

WATER & WASTEWATER, ROADWAY IMPACT FEE UPDATE

2023 to 2033

DRAFT

Submitted To

Submitted By

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
DALLAS, TEXAS

JUNE 2023

TPELS Engineering Firm No. 526

CITY OF ALVARADO, TEXAS

WATER & WASTEWATER, ROADWAY IMPACT FEE UPDATE

2023 To 2033

TABLE OF CONTENTS

CITY OF ALVARADO, TEXAS
WATER & WASTEWATER, ROADWAY IMPACT FEE UPDATE
2023 To 2033

A. INTRODUCTION

Chapter 395, of the Local Government Code is an act that provides guidelines for financing capital improvements required by new development in municipalities, counties, and certain other local governments. Under Chapter 395, political subdivisions receive authorization to enact or impose impact fees on land that is located within their political subdivision's corporate boundaries or extraterritorial jurisdictions. No governmental entity or political subdivision can enact or impose an impact fee unless they receive specific authorization by state law or by Chapter 395.

An "Impact Fee" is a charge or assessment imposed by a political subdivision for new development within its service area in order to generate revenue for funding or recouping the costs of capital improvements of facility expansions necessitated by and attributable to the new development.[1] The City of Alvarado's current water Certificate of Convenient and Necessity (CCN) is CCN Numbers 11459 and 11589, and current sewer CCN is CCN No. 21041. The first step in determining an impact fee is preparation of land use and growth assumptions for the service area for the next ten years. That step has been completed and provided by the City. Next, a Capital Improvements Plan must be created to describe the water, wastewater and roadway infrastructure that will be necessary to serve the anticipated land uses and growth. The following section describes the Water and Wastewater Impact Fee.

WATER AND WASTEWATER IMPACT FEES

The following items can be included in the water and wastewater impact fee calculation:

1) The portion of the cost of the new infrastructure that is to be paid by the City, including engineering, property acquisition and construction cost.

2) Existing excess capacity in lines and facilities that will serve future growth and which were paid for in whole or part by the City and part by the Developer.

3) Interest and other finance charges on bonds issued by the City to cover its portion of the cost.

These items are summed and the utilized capacity is calculated over the impact fee period. The maximum allowable impact fee per service unit may not exceed fifty percent of the calculated

[1] P. 831, Texas Local Government Code, West's Texas Statutes and Codes, 1998 Edition.

maximum amount of the total utilized capital improvement cost divided by the total number of new standard service units. This maximum allowable impact fee recovers a portion of the City's costs to construct facilities to serve the new developments and growth. However, the City may recover the maximum fee by crediting the portion of utility service revenue generated by new service units during the 10-year program period.

Chapter 395 requires that an update of the land use assumptions, capital improvements plan, and impact fees be performed every five years, unless it is determined by the political subdivision after a review that such an update is not necessary.

This section of the report constitutes the City's 2023 water and wastewater portion of the Capital Improvements Plan, and the maximum allowable impact fees. As required by state law, the study period is a ten-year period with 2023 as the base year. The engineering analysis of the water and wastewater systems is based on established land use in the year 2023, projected land use patterns through the year 2033, and on proposed infrastructure.

B. GLOSSARY

1. Advisory Committee means the capital improvements advisory committee established by the City for purposes of reviewing and making recommendations to the City Council on adoption and amendment of the City's impact fee program.

2. Area-related facility means a capital improvement or facility expansion which is designated in the impact fee capital improvements plan and which is not a site-related facility. Area-related facility may include a capital improvement which is located off-site, or within or on the perimeter of the development site.

3. Assessment means the determination of the amount of the maximum impact fee per service unit which can be imposed on new development.

4. Capital Improvement means either a water facility, wastewater facility or roadway with a life expectancy of three or more years, to be owned and operated by or on behalf of the City.

5. City means the City of Alvarado, Texas.

6. Credit means the amount of the reduction of an impact fee due, determined under this ordinance or pursuant to administrative guidelines that is equal to the value of area-related facilities provided by a property owner pursuant to the City's subdivision or zoning regulations or requirements, for the same type of facility.

7. Facility expansion means either a water facility expansion, sewer facility expansion or roadway expansion.

8. Final plat approval means the point at which the applicant has complied with all conditions of approval in accordance with the City's subdivision regulations, and the plat has been approved for filing with Ellis County.

9. Impact fee means either a fee for water facilities, wastewater facilities or roadway facilities, imposed on new development by the City pursuant to Chapter 395 of the Texas Local Government Code in order to generate revenue to fund or recoup the costs of capital improvements or facility expansion necessitated by and attributable to such new development. Impact fees do not include the dedication of rights-of-way or easements for such facilities, or the construction of such improvements, imposed pursuant to the City's zoning or subdivision regulations.

10. Impact fee capital improvements plan means either a water capital improvements plan, wastewater capital improvements plan or roadway capital improvements plan, adopted or revised pursuant to the impact fee regulations.

11. Land use assumptions means the projections of population and growth, and associated changes in land uses, densities and intensities over at least a ten-year period, as adopted by the City and as may be amended from time to time, upon which the capital improvements plans are based.

12. Land use equivalency table means a table converting the demands for capital improvements generated by various land uses to numbers of service units, as may be amended from time to time.

13. New development means the subdivision of land; the construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure; or any use or extension of the use of land; any of which increases the number of service units.

14. Plat has the meaning given the term in the City's subdivision regulations. Plat includes replat.

15. Platting has the meaning given the term in the City's subdivision regulations. Platting includes replatting.

16. Property owner has the meaning given the term in the City's subdivision regulations. Property owner includes the developer for a new development.

17. Recoupment means the imposition of an impact fee to reimburse the City for capital improvements which the City had previously oversized to serve new development.

18. Service area means either a water service area or wastewater benefit area within the City, within which impact fees for capital improvements or facility expansion will be collected for new development occurring within such area, and within which fees so collected will be expended for those types of improvements or expansions identified in the type of capital improvements plan applicable to the service area. For roadways, it means a roadway service area within the city limits.

19. Service unit means the applicable standard units of measure shown on the land use equivalency table in the Impact Fees Capital Improvements Plan which can be converted to water meter equivalents, for water or for wastewater facilities, which serves as the standardized measure of consumption, use or generation attributable to the new unit of development. For roadway facilities, the service unit is converted vehicle miles.

20. Site-related facility means an improvement or facility which is for the primary use or benefit of a new development, and/or which is for the primary purpose of safe and adequate provision of water, wastewater or roadway facilities to serve the new development, and which is not included in the impact fees capital improvements plan and for which the property owner is solely responsible under subdivision or other applicable development regulations.

21. Utility connection means installation of a water meter for connecting a new development to the City's water system, or connection to the City's wastewater system.

22. Wastewater facility means a wastewater interceptor or main, lift station or other facility included within and comprising an integral component of the City's collection system for wastewater. Wastewater facility includes land, easements or structure associated with such facilities. Wastewater facility excludes site-related facilities.

23. Wastewater facility expansion means the expansion of the capacity of any existing wastewater improvement for the purpose of serving new development, but does not include the repair, maintenance, modernization, or expansion of an existing sewer facility to serve existing development.

24. Wastewater capital improvements plan means the adopted plan, as may be amended from time to time, which identifies the wastewater facilities or wastewater expansions and their associated costs which are necessitated by and which are attributable to new development, for a period not to exceed 10 years.

25. Water facility means a water interceptor or main, pump station, storage tank or other facility included within and comprising an integral component of the City's water storage or distribution system. Water facility includes land, easements or structures associated with such facilities. Water facility excludes site-related facilities.

26. Water facility expansion means the expansion of the capacity of any existing water facility for the purpose of serving new development, but does not include the repair, maintenance, modernization, or expansion of an existing water improvement to serve existing development.

27. Water improvements plan means the adopted plan, as may be amended from time to time, which identifies the water facilities or water expansions and their associated costs which are necessitated by and which are attributable to new development, for a period not to exceed 10 years.

28. Water meter means a device for measuring the flow of water to a development, whether for domestic or for irrigation purposes.

C. LAND USE ASSUMPTIONS SUMMARY

Under Chapter 395, of the Local Government Code, "Land Use Assumptions" includes a description of service area and projections of changes in land uses, densities, intensities, and population in the service area for a minimum of a 10-year period. In order to impose an impact fee, the City must adopt an order, ordinance, or resolution that establishes a public hearing date to consider the land use assumptions within the designated service area. After the public hearing on the land use assumptions, the City makes a determination of adoption or rejection of the ordinance, order or resolution approving the land use assumptions that will be utilized to develop the Capital Improvement Plan.

The Land Use Assumptions used in the impact fee study were prepared using information from the City of Alvarado's Comprehensive Plan adopted in 2017. The City's Land Use Report assumes a range of growth rates from 8% per year to 15.1% per year. These growth rates were provided by the City in the Land Use Report and were calculated based on the historical growth rate of the City. Areas with known potential for development within the planning period were identified and lot counts provided by the City. The projected 2033 population was then calculated with the anticipated development. The projected growth in the 10-year planning period only accounts for the area within the City of Alvarado's existing Water and Wastewater CCN. The average annual growth rate was calculated and applied annually to each year in the study period to buildout. These calculated populations are shown in Tables C-1 and C-2 (Pages 7 & 8) of this report.

TABLE C-1
POPULATION PROJECTIONS

Year	Historic Population	* Lower Projection 8.00%	* Higher Projection 15.1%	** Meter Count Projection 12.20%
1970	2,129	-----	-----	-----
1980	2,701	-----	-----	-----
1990	2,918	-----	-----	-----
2000	3,288	-----	-----	-----
2010	3,785	-----	-----	-----
2016	3,820	-----	-----	-----
2017	4,210	-----	-----	-----
2018	4,360	-----	-----	-----
2023	**6,663**	-----	-----	-----
2024		7,196	7,669	7,476
2025	-----	7,772	8,827	8,388
2026	-----	8,393	10,160	9,411
2027	-----	9,065	11,694	10,559
2028	-----	9,790	13,460	11,847
2029	-----	10,573	15,493	13,292
2030	-----	11,419	17,832	14,914
2031	-----	12,333	20,524	16,734
2032	-----	13,319	23,624	18,776
2033		**14,385**	**27,191**	**21,067**

*** City of Alvarado Comprehensive Plan, Chapter 1, Page 11.**

**** BHC Calculated Population Projection Based on City Provided Meter Count Projections.**

The revised population projections were determined utilizing an average annual growth rate of 12.2% over the planning period. The average annual growth rate calculation and lot counts are shown in Table C-5 and are as follows:

$$\textbf{Average Annual Growth Rate (\%)} = \left[1 + \frac{\textbf{2033 Population} - \textbf{2023 Population}}{\textbf{2023 Population}}\right]^{\textbf{1/\# yrs}} - 1$$

$$\textbf{Average Annual Growth Rate} = \left[1 + \frac{(21{,}076 - 6{,}663)}{6{,}663}\right]^{1/10} - 1$$

$$= 12.2\%$$

TABLE C-2
10 - YEAR POPULATION PROJECTIONS
AND
AVERAGE ANNUAL GROWTH RATE

10-Year Population Projection

Development	Lots	Population
2023 Existing Population:	-----	6,663
1. Eagle Glen South Ph. 2	165	578
2. Lone Oak Phase 1	274	959
3. Agave Trails	700	2,450
4. Lone Oak Ph. 2-5	1333	4,666
5. Alvarado 215	925	3,238
6. Eagle Glen North	721	2,524
10-Year Population Growth:	***4118***	***14,413***
2033 Population:		**21,076**

Average Annual Growth Rate: 12.20%

Densities Assumed

Land Use	People per Unit
Single Family	3.5

10-Year Water Meter Projections

Development	Lots	Meters
Existing 2023 Meters:	-----	2,231
1. Eagle Glen South Ph. 2	165	165
2. Lone Oak Phase 1	274	274
3. Agave Trails	700	700
4. Lone Oak Ph. 2-5	1333	1,333
5. Alvarado 215	925	925
6. Eagle Glen North	721	721
New Meters:	***4118***	***4,118***
Total 2033 Meters (Exist.+New):		**6,349**

Existing Water 2023 Meter Count Provided By City Staff (1/17/23)

Size	# Meters
0.625"	1967
5/8"	143
3/4"	1
1"	43
1-1/2"	5
2"	65
3"	6
4"	1
Total:	***2,231***

10-Year Wastewater Meter Projections

Development	Lots	Meters
Existing Meters:	-----	0
1. Eagle Glen South Ph. 2	165	165
2. Lone Oak Phase 1	274	274
3. Agave Trails	700	700
4. Lone Oak Ph. 2-5	1333	1,333
5. Alvarado 215	925	925
6. Eagle Glen North	721	721
New Meters:	***4118***	***4,118***
Total 2033 Meters (Exist.+New):		**4,118**

Existing 2023 WW Meter Count

Size	# Meters
5/8x3/4	0
1"	0
2"	0
Total:	***0***

D. DEFINITION OF A SERVICE UNIT – WATER AND WASTEWATER

Chapter 395 of the Local Government Code requires that impact fees be based on a defined service unit. A "service unit" means a standardized measure of consumption, use generation, or discharge attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards. The City of Alvarado has previously defined a water and wastewater service unit to be a 5/8" x 3/4" water meter. The service unit is based on the continuous duty capacity of a 5/8" x 3/4" water meter. This is the typical meter used for a single family detached dwelling, and therefore is considered to be equivalent to one "living unit". Other meter sizes can be compared to the 5/8" x 3/4" meter through a ratio of water flows as published by the American Water Works Association as shown in Table D-1 below. This same ratio is then used to determine the proportional water and sewer impact fee amount for each water meter size.

TABLE D-1
LIVING UNIT EQUIVALENCIES
FOR VARIOUS TYPES AND SIZES OF WATER METERS

Meter Type	Meter Size	Continuous Duty Maximum Rate [(a)]	Living Unit Per Meter Size
Simple	5/8" x 3/4"	10	1.0
Simple	1"	25	2.5
Simple	1½"	50	5.0
Simple	2"	80	8.0
Compound	2"	80	8.0
Turbine	2"	100	10.0
Compound	3"	160	16.0
Turbine	3"	240	24.0
Compound	4"	250	25.0
Turbine	4"	420	42.0
Compound	6"	500	50.0
Turbine	6"	920	92.0
Compound	8"	800	80.0
Turbine	8"	1,600	160.0
Turbine	10"	2,500	250.0
Turbine	12"	3,300	330.0

(a) Source: AWWA Standards: C700-02, Subsection 4.2, Table 1, (2002)
C701-02, Subsection 4.2, Table 1, Class II, (2002)
C702-01, Subsection 4.2, Table 1, (2001)

E. CALCULATION OF WATER & WASTEWATER - LIVING UNIT EQUIVALENTS 2023-2033

The City of Alvarado provided the existing water meter count by size category as of January 2023. In total, there are 2,231 water meters serving the existing population of 6,663 residents and businesses in the Water Service Area. Table E-1 shows the number of existing meters, the living unit equivalent factor, and the total number of living unit equivalents (LUE's) for water accounts. As shown in Table E-1, the new LUE's during the impact fee period total 4,118.

Similarly, the City has provided the number of wastewater accounts as of May 2023. Serving the 6,663 residents and businesses in the Sewer Service Area, there are 348 wastewater accounts. Currently, the City has no wastewater meters. Table E- illustrates the existing Sewer accounts, their Living Unit Equivalency Factor and LUE's. As shown in Table E-1, the new LUE's during the impact fee period total 4,118.

TABLE E-1
WATER LIVING UNIT EQUIVALENTS BY METER SIZE

Meter Size	2023			2033			New Living Units During Impact Fee Period
	Number of Water Meters	Living Unit Equivalent Ratio for 5/8" Used	Total Number of Equivalent Living Units	Number of Water Meters	Living Unit Equivalent Ratio for 5/8" Used	Total Number of Equivalent Living Units	
0.625"	1,967	1.0	1,967	6,085	1.0	6,085	4,118
5/8"	143	1.0	143	143	1.0	143	0
3/4"	1	1.0	1	1	1.0	1	0
1"	43	2.5	108	43	2.5	108	0
1-1/2"	5	5.0	25	5	5.0	25	0
2"	65	8.0	520	65	8.0	520	0
3"	6	16.0	96	6	16.0	96	0
4"	1	25.0	25	1	25.0	25	0
Totals	**2,231**		**2,885**	**6,349**		**7,003**	**4,118**

TABLE E-2
WASTEWATER LIVING UNIT EQUIVALENTS BY METER SIZE

Meter Size	2023			2033			New Living Units During Impact Fee Period
	Number of Waste Water Meters	Living Unit Equivalent Ratio for 5/8" Used	Total Number of Equivalent Living Units	Number of Waste Water Meters	Living Unit Equivalent Ratio for 5/8" Used	Total Number of Equivalent Living Units	
5/8"	0	1.0	0	4,118	1.0	4,118	4,118
Totals	**0**		**0**	**4,118**		**4,118**	**4,118**

F. WATER SUPPLY AND WATER DISTRIBUTION SYSTEM

This update includes additional capital improvement plan (CIP) projects that will tentatively serve new developments. The proposed CIP projects are shown schematically in Figure No. 1 and are summarized in Table F-2. Existing facilities, applicable for reimbursement under Chapter 395 of the Local Government Code are also shown in Figure No. 1. Eligible facilities include major distribution lines, pump stations, treatment facilities, ground and elevated storage reservoirs as well as regional systems participation. Utilized capacities were based on ten-year growth system demands.

F.1 Existing Facilities

As of 2023, the City of Alvarado has participated financially in the construction of the facilities shown on Figure No. 1 and identified as capital recovery projects. The capital recovery projects are itemized with their project costs in Table F-1. These distribution lines and facilities have capacity to serve new developments, and the portion of capacity expected to be absorbed by the new developments has been included, as a percentage of the total 20-year project cost, in the value of the maximum impact fee calculation.

Actual capital costs, including construction, engineering and easements of the various elements of the existing water distribution system, were utilized where the information was known. The existing costs of facilities were determined from records provided by the City of Alvarado.

F.2 Water Distribution System Capital Improvement Projects

In order to meet the demands of the anticipated growth over the next 10-years to 2033, certain water distribution system improvements are required. Figure No. 1 shows the recommended system improvements and Table F-2 itemizes each project and the project cost. These recommended improvements, along with certain existing facilities, form the basis for the Water System Impact Fee Calculation.

Costs for CIP projects were estimated using average unit costs from projects which have been bid recently, plus an estimated cost for engineering and easements, and were amortized to include the additional cost of issuing 20-year bonds at 5% annual interest rate. The cost and the utilized capacity of the existing water lines, pump stations, ground storage reservoirs, elevated storage tanks, and existing facility proposed improvements during the impact fee period are included in the Water and Wastewater Impact Fee Tables at the end of the Water/Wastewater Impact Fee section of this report.

0 2500 5000 7500

HORIZONTAL SCALE IN FEET

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

WATER DISTRIBUTION SYSTEM
2023-2033 CAPITAL IMPROVEMENT PLAN
JUNE 2023

BURLESON

1. 16" WATER LINE 2,400 L.F.

WEL #10 0.3-MG EST

CUMMINGS DR.

1. 12" WATER LINE 4,570 L.F.

2. 12" WATER LINE 5,035 L.F.

3. 12" WATER LINE 10,565 L.F.

PROPOSED ELEVATED STORAGE TANK 1.0 MG

VENUS

ALVARADO

U.P. RAILROAD

I-35W

US-67

C.R. 319

B.N.S.F. RAILROAD

4. 8" WATER LINE 1,980 L.F.

5. 12" WATER LINE 10,140 L.F.

N. PARK DR.

N. BAUGH ST.

E. DAVIS AVE

C.R. 109

11. 12" WATER LINE 2,080 L.F.

6. 12" WATER LINE 1,340 L.F.

7. 8" WATER LINE 2,130 L.F.

C.R. 1807

KEENE

8. 8" WATER LINE 2,280 L.F.

MAPLE AVE.

9. 8" WATER LINE 2,550 L.F.

10. 12" WATER LINE 1,295 L.F.

12. 12" WATER LINE 4,715 L.F.

C.R. 206

LAKE ALVARADO

SECOND JSUD CONNECTION POINT PROPOSED PUMPSTATION 5.86 MG & GROUND STORAGE TANK 1.5 MG & DISINFECTION SYSTEM

LEGEND

- ALVARADO ETJ
- PROPOSED SAN. SEW. LIFT STATION
- EXIST. CONTROL VALVE
- EXIST. GROUND STORAGE TANK
- PROPOSED GROUND STORAGE TANK
- EXIST. ELEVATED STORAGE TANK
- PROPOSED ELEVATED STORAGE TANK
- EXIST. WATER LINE
- EXIST. WATER LINE (IF ELIGIBLE)
- PROPOSED WATER LINE (IF ELIGIBLE)

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TABLE F-1
EXISTING CAPITAL RECOVERY PROJECTS

EXISTING WATER LINES

Project No.	Project	Size	Project Cost	Debt Service	Total Project Cost
1	1) JCSUD 16-inch Transmission Line	16"	$ 494,399	$ 259,559	$ 753,958
Subtotal: Water Lines			**$ 494,399**	**$ 259,559**	**$ 753,958**

EXISTING STORAGE FACILITIES

Project No.	Project	Capacity	Project Cost	Debt Service	Total Project Cost
1	Well #10 0.3-MG EST	0.3-MG	$ 2,549,986	$ 1,338,743	$ 3,888,729
Subtotal: Storage Facilities			**$ 2,549,986**	**$ 1,338,743**	**$ 3,888,729**

TABLE F-2
10-YEAR WATER CAPITAL IMPOVEMENT PLAN

PROPOSED WATER LINES

Project No.	Project	Size	Opinion of Project Cost (1)	Debt Service (2)	Total Project Cost
1	12-inch Water Line Transmission	12"	$ 1,142,500	$ 599,813	$ 1,742,313
2	12-inch Water Line Transmission Upsize from 8-inch	12"	$ 604,200	$ 317,205	$ 921,405
3	12-inch Water Line Transmission	12"	$ 2,641,250	$ 1,386,656	$ 4,027,906
4	8-inch Water Line Transmission	8"	$ 376,200	$ 197,505	$ 573,705
5	12-inch Water Line Transmission	12"	$ 2,535,000	$ 1,330,875	$ 3,865,875
6	12-inch Water Line Transmission Upsize from 8-inch	12"	$ 80,400	$ 42,210	$ 122,610
7	8-inch Water Line Transmission	8"	$ 404,700	$ 212,468	$ 617,168
8	8-inch Water Line Transmission	8"	$ 433,200	$ 227,430	$ 660,630
9	8-inch Water Line Transmission	8"	$ 484,500	$ 254,363	$ 738,863
10	12-inch Water Line Transmission	12"	$ 323,750	$ 169,969	$ 493,719
11	12-inch Water Line Transmission	12"	$ 520,000	$ 273,000	$ 793,000
12	12-inch Water Line Transmission	12"	$ 1,178,750	$ 618,844	$ 1,797,594
Subtotal: Proposed Water Lines			**$ 10,724,450**	**$ 5,630,337**	**$ 16,354,787**

PROPOSED PUMPING & STORAGE FACILITIES

Project No.	Project	Capacity	Opinion of Project Cost (1)	Debt Service (2)	Total Project Cost
1	1.0-MG EST	1.0-MG	$ 6,000,000	$ 3,150,000	$ 10,350,000
2	1.5-MG Ground Storage Tank	1.5-MG	$ 7,500,000	$ 3,937,500	$ 12,937,500
3	5.86 MGD Pump Station	5.86-MGD	$ 7,000,000	$ 3,675,000	$ 12,075,000
Subtotal: Proposed Pumping and Storage Facilities			**$ 20,500,000**	**$ 10,762,500**	**$ 35,362,500**

PLANNING EXPENSES

Project No.	Project	Opinion of Cost (1)(b)	Debt Service (2)	Total Project Cost
	Water Impact Fee Update	$ 23,500	$ -	$ 23,500
Subtotal, Planning Expenses:		**$ 23,500**	**$ -**	**$ 23,500**
Water Distribution System CIP Grand Total:		**$ 31,247,950**	**$16,392,837**	**$ 51,740,787**

Notes:

(1) Opinion of Project Cost includes:
- a) Engineer's Opinion of Construction Cost
- b) Professional Services Fees (Survey, Engineering, Testing, Legal)
- c) Cost of Easement or Land Acquisitions

(2) Debt Service based on 20-year simple interest bonds at 5%

F.3 Utilized Capacity

The portion of City-funded projects costs that may be reimbursed by impact fee revenue is relative to the portion of facility capacity that is anticipated to be absorbed by new developments during the fee period. This portion, or utilized capacity, was determined for existing facilities and for proposed CIP projects. For existing facilities, available capacities were found under current 2023 demands, and were compared to the available capacity remaining under the predicted 2033 demand scenario. The difference in available capacities, by percentage, was applied to the 20-year total project cost to determine the allowable recovery dollar amount. The same procedure was utilized to determine utilized capacity during fee period for proposed CIP projects.

For each line segment in the water distribution model, the build-out flow rate in any given line was compared to the flow rate in the same line for the 2023 demand and the 2033 demand. The utilized capacity during the Impact Fee period is the difference between the year 2023 percent utilized and the year 2033 percent utilized. The utilized capacity for each water distribution facility, both existing and proposed, is presented in detail in the Impact Fee Capacity Calculation Tables. Table F-3 summarizes the project cost and utilized cost over the impact fee period of 2023-2033 for each element of the Water Distribution System.

TABLE F-3

SUMMARY OF ELIGIBLE CAPITAL COST & UTILIZED CAPACITY COST

Water System	Total Capital Cost ($)	Total 20-Year Project Cost ($)	Utilized Capacity During Fee Period ($)
Existing Water Lines	$ 494,399	$ 753,958	$ 457,401
Existing Water Facilities	$ 2,549,986	$ 3,888,729	$ 777,746
Existing Water System Subtotal:	**$ 3,044,385**	**$ 4,642,687**	**$ 1,235,147**
Proposed Water Lines	$ 10,724,450	$ 16,354,787	$ 13,867,300
Proposed Pumping & Storage Facilities	$ 20,500,000	$ 35,362,500	$ 33,076,875
Impact Fee Expenses	$ 23,500	$ 23,500	$ 23,500
Proposed Water System Subtotal:	**$ 31,247,950**	**$ 51,740,787**	**$ 46,967,675**
TOTAL:	**$ 34,292,335**	**$ 56,383,474**	**$ 48,202,822**

G. WASTEWATER COLLECTION SYSTEM

G.1 General

This update includes additional capital improvement plan (CIP) projects that will tentatively serve new developments. The proposed CIP projects are shown schematically in Figure No. 2 and are summarized in Table G-1. Existing facilities, applicable for reimbursement under Chapter 395 of the Local Government Code are also shown in Figure No. 2. Utilized capacities were based on ten-year growth system demands.

G.2 Collection Lines

The wastewater project cost includes necessary appurtenances (manholes, aerial crossings and the like), purchase of easements, utility relocation, pavement removal and replacement, and engineering costs. For existing Impact Fee projects, actual costs were utilized where known. Future project cost estimates were based on 2023 average unit cost per linear feet and includes engineering, easements, and construction cost. Financing cost is included for each project assuming a bond rate of 5% over a 20-year term.

This impact fee study anticipates developer initiated and funded sanitary sewer lines up to 8-inches in diameter. Therefore, the City's predicted up size cost for sanitary sewers larger than 8-inches were included in the impact fee calculations. The City anticipates participating in the upsizing of these sanitary sewer lines to support the future growth, and those costs are included in the impact fee calculations.

G.3 Treatment

The City of Alvarado owns and operates a wastewater treatment facility that has a current capacity of 0.8-MGD. Future development in Alvarado is projected to necessitate the expansion of the Wastewater Treatment Plant. The future expansion will include two phases, where the first phase would increase the capacity of the wastewater treatment plant from 0.8 million gallons per day to 1.4 million gallons per day. The second phase would increase the capacity of the wastewater treatment plant from 1.4 million gallons per day to 2.2 million gallons per day.

G.4 Capital Improvement Plan

a) Proposed

To meet the demands of the anticipated growth over the next 10-years, certain wastewater collection system improvements are required. The recommended improvements are shown on Figure No. 2 (page 20) and listed on Table G-1 (page 21). Table G-1 itemizes the cost of each lift station, gravity sewer, and wastewater treatment plant expansions included in the Impact Fee Report. These recommended improvements form the basis for the Wastewater Collection System Impact Fee calculation and totals $88,285,873. Adding the cost of financing brings the total 10-year Wastewater Collection System Capital Improvements cost to $148,919,911.

b) Existing

The City anticipates a significant amount of growth in a number of areas in the planning boundary since a significant amount of the land within the City's corporate limits is undeveloped, or vacant. The planning boundary analyzed in this study was the City of Alvarado's existing Wastewater CCN. The impact fee study includes an existing 12-inch and 15-inch gravity sewer line with an existing length of approximately 5,665 feet that is eligible for capital recovery.

0 2500 5000 7500

HORIZONTAL SCALE IN FEET

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
TBPE Firm No. 526; TBPLS Firm No. 10031800
11910 Greenville Ave., Suite 600
Dallas, Texas 75243 (214) 361-7900

WASTEWATER COLLECTION SYSTEM 2023-2033 CAPITAL IMPROVEMENT PLAN JUNE 2023

BURLESON
ALVARADO
VENUS
KEENE
LAKE ALVARADO

1. 18" GRAVITY LINE 6,895 L.F.
2. 10" FORCE MAIN 13,510 L.F.
3. 21" GRAVITY LINE 5,470 L.F.
4. 18" GRAVITY LINE 4,700 L.F.
5. 24" GRAVITY LINE 5,875 L.F.
6. 8" GRAVITY LINE 5,770 L.F.
7. 12" GRAVITY LINE 2,155 L.F.
8. 6" FORCE MAIN 6,450 L.F.
9. 8" GRAVITY LINE 2,520 L.F.
10. 30" GRAVITY LINE 903 L.F.
11. 24" GRAVITY LINE 4,300 L.F.
12. 8" GRAVITY LINE 4,570 L.F.
1. 12"/15" GRAVITY LINE 5,665 L.F.

PROPOSED EXPANSIONS FOR EXIST. WASTEWATER TREATMENT PLANT
PH. 1 TO 1.4 MGD
PH. 2 TO 2.2 MGD

PROPOSED CHAMBERS CREEK LIFT STATION

CUMMINGS DR.
N. BAUGH ST.
E. DAVIS AVE
MAPLE ST.
GLENWOOD DR.
N. PKWY. DR.
U.P. RAILROAD
B.N.S.F. RAILROAD
US-67
I-35W
C.R. 319
C.R. 109
C.R. 1807
C.R. 206

LEGEND

- ALVARADO ETJ
- EXIST. ALVARADO LIFT STATION
- PROPOSED SAN. SEW. LIFT STATION
- EXIST. SAN. SEW. LINE
- EXIST. SAN. SEW. LINE (I.F. ELIGIBLE)
- PROPOSED SAN. SEW. LINE
- PROPOSED SAN. SEW. FORCE MAIN

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TABLE G-1

10-YEAR WASTEWATER CAPITAL IMPROVEMENT PLAN

PROPOSED SANITARY SEWER LINES

Project No.	Project	Size	Opinion of Project Cost (1)	Debt Service (2)	Total Project Cost
1	18-inch Gravity Sewer Line	18"	$ 2,137,450	$ 1,122,161	$ 3,259,611
2	10-inch Force Main	10"	$ 2,702,000	$ 1,418,550	$ 4,120,550
3	21-inch Gravity Sewer Line	21"	$ 1,914,500	$ 1,005,113	$ 2,919,613
4	18-inch Gravity Sewer Line (Upsize from 12-inch)	18"	$ 517,000	$ 271,425	$ 788,425
5	24-inch Gravity Sewer Line (Upsize from 12-inch)	24"	$ 1,057,500	$ 555,188	$ 1,612,688
6	8-inch Gravity Sewer Line	8"	$ 1,096,300	$ 575,558	$ 1,671,858
7	12-inch Gravity Sewer Line	12"	$ 452,550	$ 237,589	$ 690,139
8	6-inch Force Main	6"	$ 1,225,500	$ 643,388	$ 1,868,888
9	8-inch Gravity Sewer Line	8"	$ 478,800	$ 251,370	$ 730,170
10	30-inch Gravity Sewer Line (Upsize from 18-inch)	30"	$ 99,330	$ 52,148	$ 151,478
11	24-inch Gravity Sewer Line	24"	$ 1,634,000	$ 52,148	$ 1,686,148
12	8-inch Gravity Sewer Line	8"	$ 868,300	$ 857,850	$ 1,726,150
Subtotal: Proposed Sewer Lines			**$ 14,183,230**	**$ 7,042,488**	**$ 21,225,718**

PROPOSED FACILITIES

Project No.	Project	Capacity	Opinion of Project Cost (1)	Debt Service (2)	Total Project Cost
1	Treatment Plant Expansion Ph. 1	1.4-MGD	$ 30,000,000	$ 15,750,000	$ 51,750,000
2	Treatment Plant Expansion Ph. 2	2.2-MGD	$ 40,000,000	$ 21,000,000	$ 69,000,000
3	Chambers Creek Lift Station	0.5-MG	$ 3,500,000	$ 1,837,500	$ 6,037,500
Subtotal: Proposed Facilities			**$ 73,500,000**	**$ 38,587,500**	**$ 126,787,500**

PLANNING EXPENSES

Project No.	Project	Opinion of Cost (1)(b)	Debt Service (2)	Total Project Cost
	Wastewater Impact Fee Update	$ 23,500	$ -	$ 23,500
Subtotal, Planning Expenses:		**$ 23,500**	**$ -**	**$ 23,500**
Wastewater Collection System CIP Grand Total:		**$ 87,706,730**	**$ 45,629,988**	**$ 148,036,718**

Notes:

(1) Opinion of Project Cost includes:
   a) Engineer's Opinion of Construction Cost
   b) Professional Services Fees (Survey, Engineering, Testing, Legal)
   c) Cost of Easement or Land Acquisitions

(2) Debt Service based on 20-year simple interest bonds at 5%

G.5 Utilized Capacity

The population and employment growth in each wastewater drainage sub-basin was determined utilizing the City's growth projections. These growth rates were used to calculate the 2023 and 2033 wastewater demand flows. The following summarizes each design flow component utilized to calculate the wastewater design flows.

a) Population Based Flow (Residential): For the purpose of this wastewater impact fee study base residential units flow of 100 gallons per capita per day (gpcd) is a reasonable basis for the design of the wastewater collection and treatment facilities.

b) Infiltration and Inflow: Groundwater can infiltrate into the sanitary sewer system through faulty sewer pipe joints, breaks in sewer pipes and manholes, and faulty service lines. This infiltration can create a surcharge burden on the wastewater collection system and the wastewater treatment plant. Normal plant capacity must be designed to handle these infiltration related conditions.

   Inflow is generally related to storm based events that increase groundwater and surface water flow into the wastewater system. The additional flow is generally recognized to enter through manholes, service lines, damaged and old collection lines, roof drains and storm drains. Excessive inflow can cause surcharged sewers, sanitary sewer overflows and put the treatment facilities capacity at risk of being exceeded. It is estimated that the combined infiltration and inflow is 650 gallons per acre per day (gpad).

The calculation of peak flows often requires the development of a unit hydrograph (Diurnal Curve). At the time of this report flow data was not available and a unit hydrograph could not be created specific to the City of Alvarado. The peak wet weather flows were calculated directly by applying the densities, usage rates, approximate inflow and infiltration rates, and population projections to the overall land area. These peak hour wastewater flows are the basis for design of most components in the wastewater system. The most significant exception is wastewater treatment, which is typically designed on the basis of average daily flow.

The percent-utilized capacity was calculated for the design flow of each study year based on the 10-year capacity. The utilized capacity during the Impact Fee period is the difference between the year 2023 capacity and the year 2033 capacity. Table G-2 below summarizes the project cost and utilized cost over the impact fee period of 2023 – 2033 for each element of the wastewater system. The utilized capacity for each existing and proposed wastewater facility and collection line is presented in detail in Impact Fee Capacity Calculation Tables.

TABLE G-2
WASTEWATER COLLECTION SYSTEM
SUMMARY OF ELIGIBLE CAPITAL COST & UTILIZED CAPACITY COST

Wastewater System	Total Capital Cost ($)	Total 20-Year Project Cost ($)	Utilized Capacity During Fee Period ($)
Existing Sewer Lines	$ 579,143	$ 883,193	$ 353,277
Existing Wastewater Collection System Subtotal:	**$ 579,143**	**$ 883,193**	**$ 353,277**
Proposed Sewer Lines	$ 14,183,230	$ 21,225,718	$ 12,901,033
Proposed Facilities	$ 73,500,000	$ 126,787,500	$ 56,925,000
Impact Fee Expenses	$ 23,500	$ 23,500	$ 23,500
Proposed Wastewater Collection System Subtotal:	**$ 87,706,730**	**$ 148,036,718**	**$ 69,849,533**
TOTAL:	**$ 88,285,873**	**$ 148,919,911**	**$ 70,202,810**

H. CALCULATION OF MAXIMUM IMPACT FEES – WATER & WASTEWATER

The maximum impact fees for the water and wastewater systems are calculated separately by dividing the cost of the capital improvements or facility expansions necessitated and attributable to new development in the service area within the 10-year period by the number of living units anticipated to be added to the City within the 10-year period as shown on Table H-1 and H-2 The calculations are shown below.

TABLE H-1
MAXIMUM ALLOWABLE WATER IMPACT FEE

Maximum Water Impact Fee =	Eligible Existing Utilized Cost	+	Eligible Proposed Utilized Cost	
	Number of New Living Unit Equivalent over the Next 10 Years			
=	$1,235,147	+	$46,967,675	$48,202,822
	4,118			4,118

Maximum Water Impact Fee = $11,705.40

Allowable Maximum Water Impact Fee: (Max Impact Fee x 50%) = $5,852.70

TABLE H-2
MAXIMUM ALLOWABLE WASTEWATER IMPACT FEE

Maximum Water Impact Fee =	Eligible Existing Utilized Cost	+	Eligible Proposed Utilized Cost	
	Number of New Living Unit Equivalent over the Next 10 Years			
=	$353,277	+	$69,849,533	$70,202,810
	4,118			4,118

Maximum Water Impact Fee = $17,047.79

Allowable Maximum Water Impact Fee: (Max Impact Fee x 50%) = $8,523.90

Based on the Maximum Impact Fee Calculation for Water and Wastewater, Table H-3 calculates the maximum impact fee for the various sizes of water meters.

TABLE H-3

ALLOWABLE MAXIMUM FEE PER LIVING UNIT EQUIVALENT
AND
PER METER SIZE AND TYPE

50% Max . Water Impact fee /LUE ..... **$ 5,852.70**

50% Max . Wastewater Impact fee /LUE ..... **$ 8,523.90**

Typical Land Use	Meter Type	Meter Size	LUE	Maximum Impact Fee		Total
				Water	Wastewater	
Single Family Residential	Simple	5/8" x3/4"	1	$ 5,852.70	$ 8,523.90	$ 14,376.59
Single Family Residential	Simple	1"	2.5	$ 14,631.75	$ 21,309.74	$ 35,941.49
Single Family Residential	Simple	1-1/2"	5	$ 29,263.49	$ 42,619.48	$ 71,882.97
Single Family Residential	Simple	2"	8	$ 46,821.59	$ 68,191.17	$ 115,012.76
Commercial/Retail	Compound	2"	8	$ 46,821.59	$ 68,191.17	$ 115,012.76
Commercial/Retail	Turbine	2"	10	$ 58,526.98	$ 85,238.96	$ 143,765.94
Commercial/Retail/Multi Family	Compound	3"	16	$ 93,643.17	$ 136,382.34	$ 230,025.51
Commercial/Retail/Multi Family	Turbine	3"	24	$ 140,464.76	$ 204,573.51	$ 345,038.27
Commercial/Retail/Multi Family	Compound	4"	25	$ 146,317.45	$ 213,097.41	$ 359,414.86
Commercial/Retail/Multi Family	Turbine	4"	42	$ 245,813.32	$ 358,003.64	$ 603,816.97
Industrial	Compound	6"	50	$ 292,634.91	$ 426,194.82	$ 718,829.72
Industrial	Turbine	6"	92	$ 538,448.23	$ 784,198.46	$1,322,646.69
Industrial	Compound	8"	80	$ 468,215.85	$ 681,911.70	$1,150,127.56
Industrial	Turbine	8"	160	$ 936,431.70	$1,363,823.41	$2,300,255.11

I. ROADWAY IMPACT FEES

The first step in the development impact fee process is the development of a 10-year Capital Improvement Plan (CIP). This capital improvement plan includes projects intended for construction by the City of Alvarado in the next 10 years to serve existing and future development.

The website *World Population Review* (https://worldpopulationreview.com/us-cities/alvarado-tx-population accessed May 25, 2023) listed the population for the City of Alvarado as 5,927 for 2023. The City of Alvarado Planning Section provided an expected growth rate of 8%. This analysis utilizes this population and growth rate for its calculations.

Transportation impact fees may only include items that are currently within the limits for the City of Alvarado and listed in a published plan. They may not include elements that are currently beyond the existing city limits. Projects must also increase the capacity of a roadway. Impact fee analysis may not utilize projects that only resurface, realign, or change aesthetics. This analysis utilized projects identified in the June 2017 *City of Alvarado Comprehensive Plan: Figure 24. Thoroughfare Plan* (https://www.cityofalvarado.org/302/Thoroughfare-Plan, accessed May 25th, 2023).

I.1 Existing Facilities

The City of Alvarado's major thoroughfare, arterial, and major collector street system is partially developed at this time. Several roadways in developed areas are partially built to current thoroughfare plan standards. Many existing streets are two-lane asphalt roadways with open surface drainage.

The existing major arterial roadways and thoroughfare within the City include County Road 604, County Road 508, County Road 607, Cummings Road, FM 1807, Davis Road, Baugh Street, Sparks Street, County Road 108C, FM 3136, County Road 405 E, US HWY 67, and Interstate 35W. Several of the arterial roadways including FM 3136, SH 67 and FM 1807 are under the operation and maintenance authority of the Texas Department of Transportation (TxDOT).

I.2 Proposed Facilities

The City of Alvarado adopted an updated thoroughfare plan in June of 2017 that is the basis for development of the future street system and the source for potential cross section elements. The thoroughfare system is a conventional network conforming to a hierarchical,

functional classification system developed to support the forecast traffic demands of future land use.

The highest classification of roadway is the Major Thoroughfare type facility, followed by the Arterial and Collector facilities. Major Thoroughfare roadways are generally multiple lanes – 4 or 6 lanes. These roadways also generally include medians that serve the function of controlling access, separating opposing traffic movements, and providing an area for the storage of left turning vehicles. (*Figure 1*)

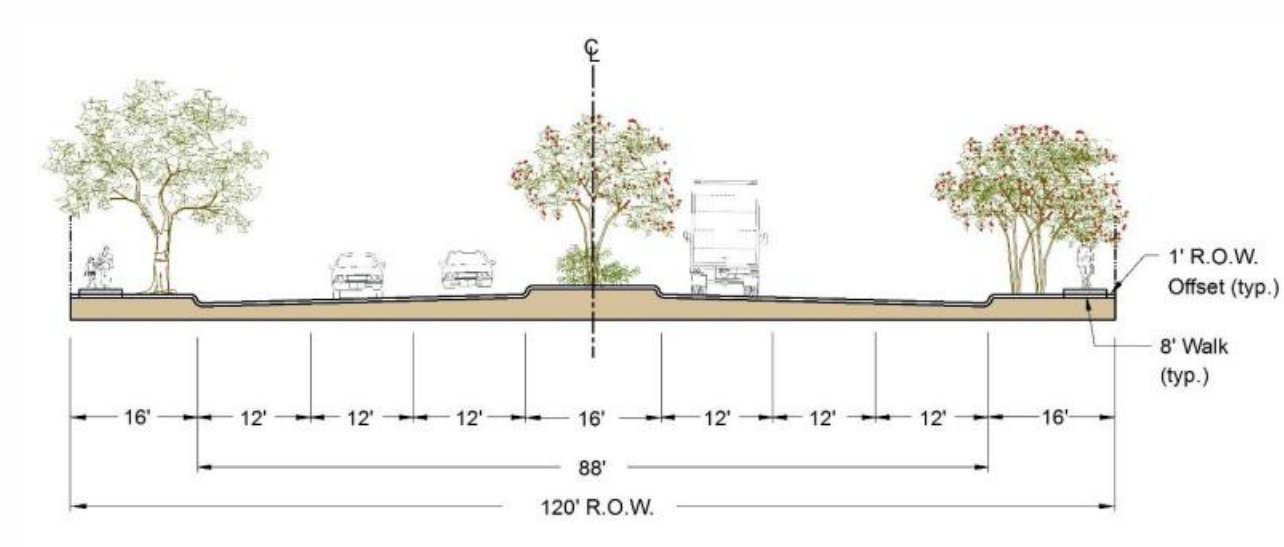


Figure 1 – Typical Major Thoroughfare Cross Section

The Arterials are generally designed to move traffic and provide access to Major Thoroughfares. Arterials are intended to provide more mobility than collectors. These types of roadways should carry lighter volumes of traffic than major thoroughfares. (*Figure 2*)

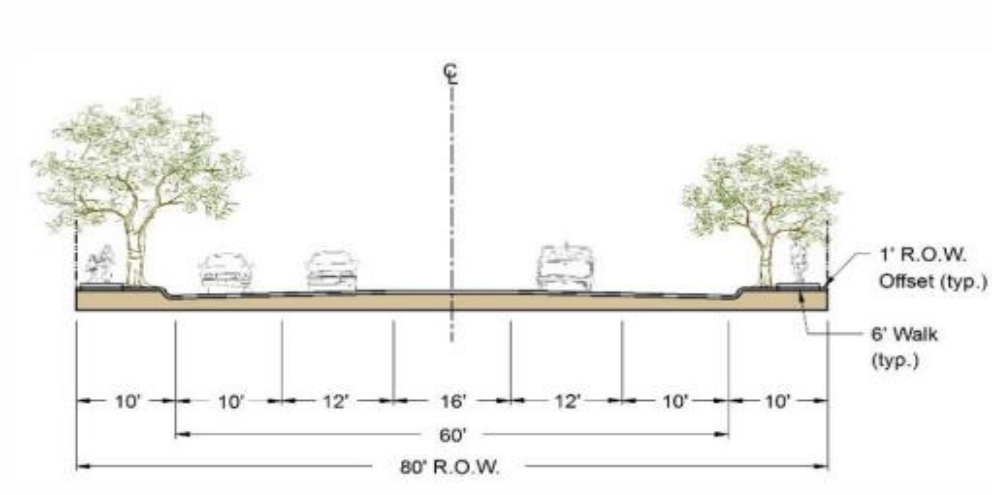


Figure 2 – Typical Arterial Cross Section

Collectors are generally designed to distribute traffic from local streets and funnel it to arterials (i.e., from residential developments). Collectors are intended to provide more access than arterials. Collectors should provide access to adjacent land uses, but access should still be managed using shared driveways and other techniques that minimize disturbance of the free-flow of traffic. (*Figure 3*).

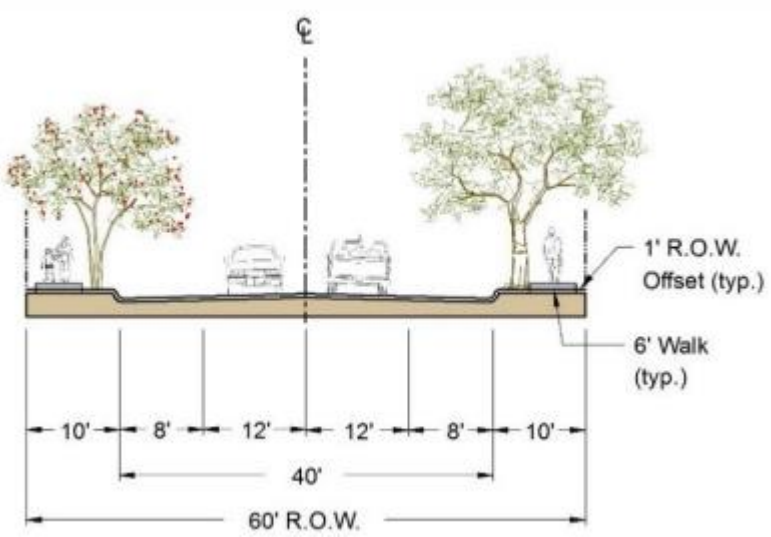


Figure 3 – Typical Collector Cross Section

I.3 Capital Improvement Plan for Roadway Impact Fees

The thoroughfare facilities determined for inclusion in the Capital Improvement Plan of this study are tabulated in **Table 1A** and graphically illustrated in **Figure 4**. Each listed project includes a description of the planned improvements, the approximate project length, and an engineer's opinion of probable cost to the City. In addition, under existing State Statute, a municipalities' cost associated with TxDOT facilities can be financed with impact fees. All roadways included in the 2019 CIP are identified in the City of Alvarado Thoroughfare Plan. **Table 1B** shows recoupment costs for projects completed as part of the previous CIPs with debt not retired. These recoupment projects are also illustrated in **Figure 4**.

The engineer's opinions of probable construction cost were prepared without the benefit of a detailed preliminary engineering study for each project. The costs are based on data provided by the City of Alvarado and on roadway project construction bids. Financing costs for the projects in the thoroughfare CIP were also included in the total estimated cost and the interest rate of 5% was provided by the City of Alvarado.

Table A1 – Future Capital Improvement Projects

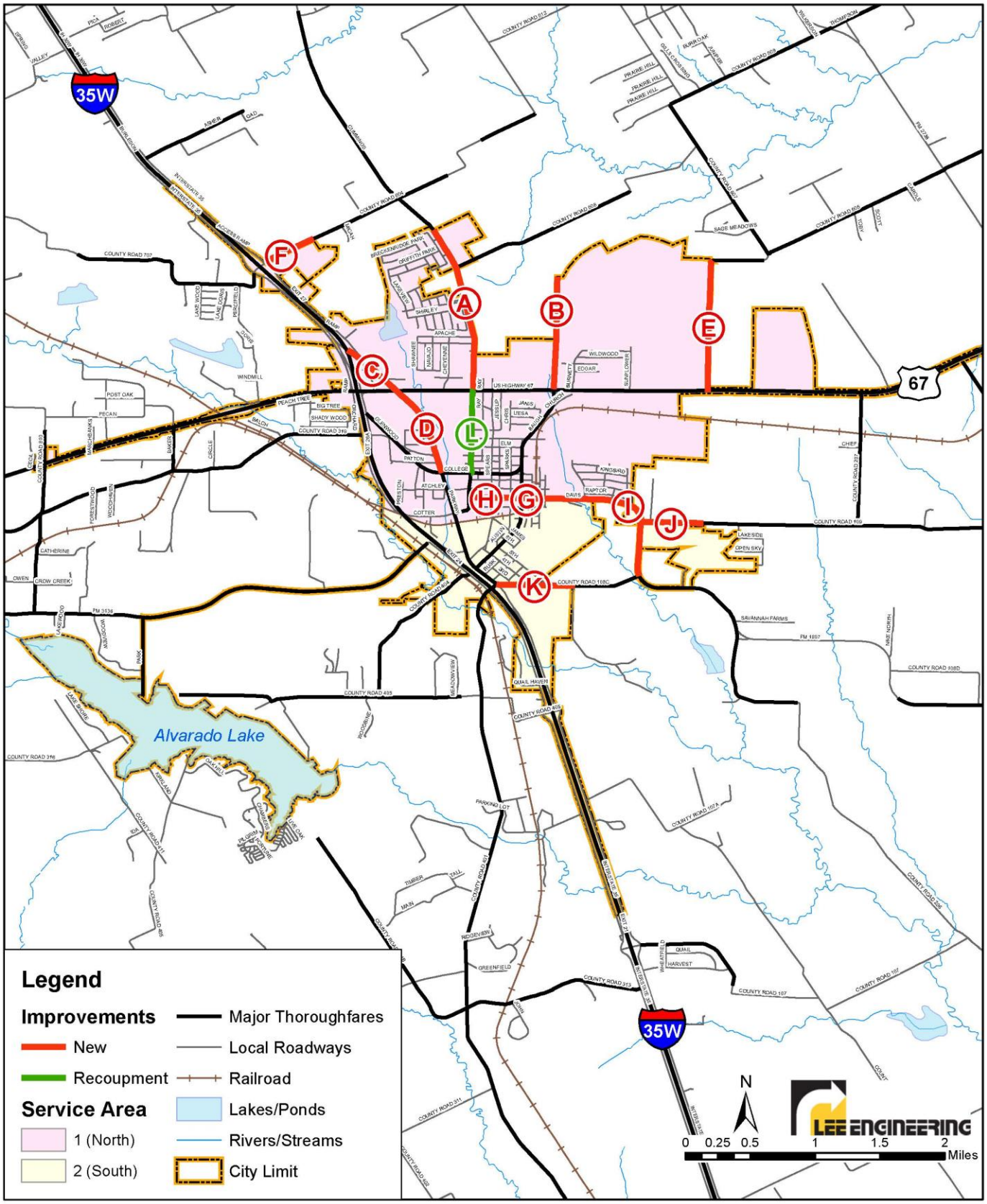
ARTERIAL	BOUNDARY FROM	BOUNDARY TO	EXISTING	PROJECT DESCRIPTION	LENGTH (ft)	TOTAL COST W/O INTEREST	COST OF INTEREST	TOTAL PROJECT COST
A - N. Cummings Dr	US 67	N City Limits	2 lanes	Build a 2-lane section w/ dual left turn lane	6,706	$ 18,775,680.00	$ 9,387,840.00	$ 28,163,520.00
B - Baugh St	US 67	City Limits	2 lanes	Build a 6-lane undivided section	5,500	$ 19,250,000.00	$ 9,625,000.00	$ 28,875,000.00
C - N Parkway Dr	IH35	US 67	2 lanes	Build 6-lanes divided section	1,590	$ 5,565,000.00	$ 2,782,500.00	$ 8,347,500.00
D - N Parkway Dr	US 67	W College St	2 lanes	Build 4-lanes divided section	3,750	$ 10,875,000.00	$ 5,437,500.00	$ 16,312,500.00
E - CR 607	US 67	City Limits	2 lanes	Build 4-lanes divided section	5,300	$ 15,370,000.00	$ 7,685,000.00	$ 23,055,000.00
F - CR 604	IH35	City Limits	2 lanes	Build 4-lanes divided section	2,100	$ 6,090,000.00	$ 3,045,000.00	$ 9,135,000.00
G - Davis Ave	Sparks	Railroad Tracks	2 lanes	Build 5-lanes section	800	$ 2,480,000.00	$ 1,240,000.00	$ 3,720,000.00
H - Davis Ave	Cummings	Sparks	2 lanes	Build 5-lanes section	1,000	$ 3,100,000.00	$ 1,550,000.00	$ 4,650,000.00
				Service Area 1 Sub Total		**$ 81,505,680.00**	**$ 40,752,840.00**	**$ 122,258,520.00**
I - Davis Ave	Railroad Tracks	Maple St	2 lanes	Build 5-lanes section	6,300	$ 19,530,000.00	$ 9,765,000.00	$ 29,295,000.00
J - CR 109	FM 1807	City Limits	2 lanes	Build 5-lanes section	1,320	$ 4,092,000.00	$ 2,046,000.00	$ 6,138,000.00
K - Maple St	S PKWY Dr	S City Limits/HS Driveway	2 lanes	Build 5-lanes section	2,375	$ 7,362,500.00	$ 3,681,250.00	$ 11,043,750.00
				Service Area 2 Sub Total		**$ 30,984,500.00**	**$ 15,492,250.00**	**$ 46,476,750.00**
				CIP PROJECT TOTALS :		**$ 112,490,180.00**	**$ 56,245,090.00**	**$ 168,735,270.00**

Table 1B – Recoupment Projects

Projects from previous CIP that have been completed:

ARTERIAL	BOUNDARY FROM	BOUNDARY TO	EXISTING	PROJECT DESCRIPTION	LENGTH (ft)	TOTAL COST W/O INTEREST	COST OF INTEREST	TOTAL PROJECT COST
L - N Cummings Dr	US 67	W College St	2 lanes	Built 2-lane undivided section w/ OSP	3,275	$ 2,333,964.00	$ 1,166,982.00	$ 3,500,946.00
				Service Area 1 Sub Total		**$ 2,333,964.00**	**$ 1,166,982.00**	**$ 3,500,946.00**
None						$ -	$ -	$ -
				Service Area 2 Sub Total		**$ -**	**$ -**	**$ -**
				RECOUPMENT PROJECT TOTALS :		**$ 2,333,964.00**	**$ 1,166,982.00**	**$ 3,500,946.00**

Figure 4 – Roadway Impact Fee Eligible Capital Improvements Plans



J. IMPACT FEE CALCULATION

J.1 INTRODUCTION

The next step of the Development Impact Fee process is the determination of the maximum fee per service unit that can be charged by the City for new developments. The fee is calculated by dividing the costs of the capital improvements identified as necessary to serve growth forecast to occur during the 10-year planning period by the number of service units of growth forecast to occur. The specific steps, as described in following paragraphs of this section include:

1. Determination of a standard service unit;
2. Identification of service areas for the City;
3. Identification of that portion of the total capital improvements necessary to serve the projected growth over the next 10-year period;
4. Analysis of the total capacity, level of current usage, and commitment for usage of capacity of existing improvements;
5. Determination of the "standard service unit" and equivalency tables establishing the ratio of a service unit to the types of land use forecast for growth.

J.2 SERVICE UNIT

To determine the impact fee rate applied to thoroughfare facilities the standard service unit selected was **"PM Peak Hour Vehicle-Miles."** This service unit can be obtained by multiplying the number of trips generated by a specific land use type during the PM peak hour (vehicles) by the average trip length (miles) for that land use. The PM peak hour was chosen because it is usually considered the critical time for roadway analyses. The trip generation data was directly obtained or derived for each defined land use type from "*Trip Generation Manual, 11th Edition*" of the Institute of Transportation Engineers, which is the standard data reference to determine vehicle trip generation characteristics of particular land use types and densities. Trip length information for each land use specified was based on data developed for the Dallas-Fort Worth area by the North Central Texas Council of Governments (NCTCOG). The trip length was set at a maximum of three (3) miles for any land use, as this trip length was assumed to be the maximum average distance a trip would travel on roadways within each service area in the City of Alvarado. **Table 2** shows the typical service units for each land use type.

Table 2 - Service Unit Calculation by Land Use Type

City of Alvarado 2023 Roadway Impact Fee Study Update

	Variable	PM Peak Trips[1] (vehicles)	Trip Length[2] (miles)	Vehicle-Miles
Residential	Dwelling Unit	0.94	3.0	2.82
Office	1,000 ft^2	1.44	3.0	4.32
Commercial / Retail	1,000 ft^2	3.40	3.0	10.20
Industrial	1,000 ft^2	0.65	3.0	1.95
Institutional	1,000 ft^2	1.01	3.0	3.03
Parks and Recreational	Acre	6.47	3.0	19.41

[1] Based on *ITE Trip Generation, 11th Edition*

[2] Based on FHWA National Household Travel Survey (2017)

J.3 SERVICE AREAS

The State Statute governing the imposition of development impact fees require that collection and expenditure of fees imposed for street facilities "*...is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six miles.*" To comply with this State Law, two service areas (labeled Service Area 1 and Service Area 2) were established for the City of Alvarado to ensure that funds are spent within six miles of where they are collected. The service areas include most of the developable land within the city limits of Alvarado. Within Alvarado, the growth, and intensities of growth for the ultimate development of the City and that portion of the service area expected to occur during the 10-year period, 2023-2033, is forecast. The two service areas are shown in **Figure 4**.

J.4 ASSUMPTIONS AND EVALUATION CRITERIA

Determination of the eligible costs of capital improvements to serve the forecast growth over the 10-year period from 2023 to 2033 was based on data provided by the City of Alvarado and found in the 2017 Comprehensive Plan. The basic criteria and assumptions made for this study include the following:

1. Costs of existing facilities constructed to serve new development have been included, and City of Alvarado staff identified projects of this type.
2. Bond interest costs are included.
3. Street facility improvements, although necessary for additional capacity by new growth, will logically serve all existing and future growth by improved safety and drainage

characteristics. Therefore, the 10-year eligible costs have been proportioned as the ratio of the 10-year growth to the total number of service units determined for the build-out.

Table 3 shows the portion of ultimate build-out service units that will be attributable to growth within the next 10 years and is used to pro-rate the identified costs in the service area.

In order to maintain the equity of impact fee assessment, the cost for streets included in the 10-year Capital Improvement Plan will include the total cost of the street facilities, not reduced by any expected participation. Construction by a developer of an arterial facility within or off-site should be treated as a credit to the impact fee assessment.

Table 3 - Summary of Vehicle-Mileage Distribution by Development Period

City of Alvarado 2023 Roadway Impact Fee Study Update

	Existing		2024 - 2033		Year 2045 - Ultimate		
Service Area	**Vehicle-Miles 2023**	**Portion of Ultimate Vehicle-Miles**	**Vehicle-Miles Added 2024-2034**	**Portion of Ultimate Vehicle-Miles**	**Vehicle-Miles Added 2033 - Ultimate**	**Portion of Ultimate Vehicle-Miles**	**Ultimate Vehicle-Miles**
1	20,608	0.482	15,124	0.353	7,053	0.165	42,785
2	10,582	0.516	7,222	0.352	2,688	0.131	20,492
Total	**31,190**		**22,346**		**9,741**		**63,277**

J.5 ELIGIBLE COSTS

Table 4 presents a summary of the roadway capital improvement costs for the two service areas. The 10-year portion of the total costs was calculated using the data from **Table 3**.

Costs of each of the individual street projects were accumulated, or apportioned, for the service area in which they were located. Boundaries of the service areas were located to be coincident with natural barriers, the center of existing or proposed street facilities included in the capital improvements plan or along city limit lines. The costs of these projects included only those costs that will be paid for by the City of Alvarado.

J.6 DETERMINATION OF STANDARD SERVICE UNIT AND EQUIVALENCY

The determination of growth of service units and resulting impact fee rates were then made. **Table 5** presents the derivation of service unit equivalents for each of the six defined land use types. The service unit equivalents are referenced to and based on the residential land use.

Table 6 presents a summary of the calculations and resulting eligible costs per service unit. Under current State law, municipalities are required to administer a detailed financial analysis to support the use of an impact fee higher than 50 percent of the eligible costs. As an

alternative to performing the financial analysis, the impact fee can be set at or below 50 percent of the total eligible costs. The total eligible costs per service unit are shown in **Table 6**. The City will use either a detailed financial analysis to adjust for tax credits or will use 50 percent of these eligible costs.

K. IMPACT FEE CALCULATION METHODOLOGY

The methodology for calculating the maximum *allowable* impact fee for roadway facilities can be summarized in the following three steps. First, determine the cost of the roadway facilities (existing roadways eligible for recuperation of construction cost and proposed roadways) that can be attributed to new growth over the 10-year period. This calculation for Service Areas 1 and 2 is summarized on pages 35 and 36.

Table 4 - Summary of Capital Improvement Cost by Service Area

City of Alvarado 2023 Roadway Impact Fee Study Update

Service Area	Zone Cost of Thoroughfare	Portion of Capacity of Thoroughfare Attributed to Growth (2023 - 2032)	Cost of Thoroughfare Attributed to Growth (2023 - 2032
1	$125,759,466.00	0.353	$44,393,091.50
2	$46,476,750.00	0.352	$16,359,816.00
Totals	**$172,236,216.00**		**$60,752,907.50**

Table 5 - Thoroughfare Land Use Equivalency

City of Alvarado 2023 Roadway Impact Fee Study Update

Land Use	Development Unit	Veh-Miles / Development Unit (1)	SU Equivalency (2)
Residential	Dwelling Unit	2.82	1.00
Office	1,000 ft^2	4.32	1.53
Commercial / Retail	1,000 ft^2	10.20	3.62
Industrial	1,000 ft^2	1.95	0.69
Public and Institutional	1,000 ft^2	3.03	1.07
Parks and Recreational	1,000 ft^2	19.41	6.88

Notes:
(1) Based on data from the ITE Trip Generation Manual and NCTCOG

(2) Ratio of each land use to service unit of Residential

Table 6 - Impact Fee Calculation for Thoroughfare by Service Area

City of Alvarado 2023 Roadway Impact Fee Study Update

Service Area	Cost of Thoroughfare Attributed to Growth (2023 - 2034)	Number of New Service Units (2024 - 2034)	Cost Per Service Unit	Cost Per Service Unit (Rounded)
1	$44,393,091.50	15,124	$2,935.27	**$2,935**
2	$16,359,816.00	7,222	$2,265.27	**$2,265**
Totals	$60,752,907.50	22,346		

K.1 Calculation for Service Area 1

Cost of Roadway Facilities (Tables 1A and 1B - Service Area 1) = $125,759,466.00
Proportion of Capacity Attributable to New Growth (Table 3 - Service Area 1) = .353
Cost of Roadway Facilities Attributable to Growth (2023-2033 - Service Area 1):
$125,759,466.00 x 0.353 = $44,393,091.50

The second step is to determine the maximum *calculated* impact fee. The maximum *calculated* impact fee is the ratio of the total cost for roadway facilities attributable to growth in the next ten years (2023-2033) divided by the total growth in equivalent service units (ESU). The maximum calculated impact fee for Service Area 1 is:

$$\text{Maximum Roadway Impact Fee} = \frac{\text{Eligible Thoroughfare Cost Attributed to Growth (Table 4)}}{\text{Total Growth in Equivalent Service Units (Table 3)}}$$

$$= \frac{\$44,393,091.50}{15,124 \text{ ESU}}$$

= $2,935.27 / ESU (Service Area 1)

This amount represents the maximum *calculated* impact fee for roadway facilities. For the last step, the current impact fee legislation requires the City to produce a financial analysis to support a fee greater than 50 percent of the eligible costs or to reduce the maximum calculated impact fee by 50 percent. If the City chooses to use a maximum *allowable* impact fee of 50 percent of the maximum calculated fee the amount would be $2,935.27 x 50% = $1,467.63 or $1,467.50 (rounded).

K.2 Calculation for Service Area 2

Cost of Roadway Facilities (Tables 1A and 1B - Service Area 2) = $46,476,750.00
Proportion of Capacity Attributable to New Growth (Table 3 - Service Area 2) = 0.352
Cost of Roadway Facilities Attributable to Growth (2023-2033 - Service Area 2):
$46,476,750 x 0.352 = $16,359,816.00

The second step is to determine the maximum *calculated* impact fee. The maximum *calculated* impact fee is the ratio of the total cost for roadway facilities attributable to growth in the next ten years (2023-2033) divided by the total growth in equivalent service units (ESU). The maximum calculated impact fee for Service Area 2 is:

$$\text{Maximum Roadway Impact Fee} = \frac{\text{Eligible Thoroughfare Cost Attributed to Growth (Table 4)}}{\text{Total Growth in Equivalent Service Units (Table 3)}}$$

$$= \frac{\$16,359,816.00}{7,222 \text{ ESU}}$$

= $2,265.27 / ESU = $2,265.00 / ESU (Rounded Service Area 2)

This amount represents the maximum *calculated* impact fee for roadway facilities. For the last step, the current impact fee legislation requires the City to produce a financial analysis to support a fee greater than 50 percent of the eligible costs or to reduce the maximum calculated impact fee by 50 percent. If the City chooses to use a maximum *allowable* impact fee of 50 percent of the maximum calculated fee the amount would be $2,265.00 x 50% = $1,132.64 or $1,132.50 (rounded).

K.3 Impact Fee Calculation Example

The land use equivalency table is provided in **Table 7**. This table identifies the total service units generated by specific uses within each land use category. To obtain the impact fee to be charged for a particular land use, the impact fee per service unit adopted by the City and the service units per development unit generated for that particular land use from **Table 7** are used. Examples for calculating the impact fee for both a single-family dwelling unit and a 50,000 ft^2 shopping center (commercial / retail facility) assuming impact fees of $1,467.50 per service unit (Service Area 1) and $1,132.50 per service unit (Service Area 2) are shown on page 38.

Table 7 - Land Use Equivalency

City of Alvarado 202023 Roadway Impact Fee Study Update

CATEGORY	LAND USE	DEVELOPMENT UNITS[1]	ITE TRIP RATE[2]	TRIP LENGTH[3]	PASS-BY TRAFFIC[4]	SERVICE UNITS[5]	MAX ALLOWABLE IMPACT FEE / DEVELOPMENT UNIT[6]	
							Service Area 1	Service Area 2
RESIDENTIAL								
	Single-Family Detached	Dwelling Unit	0.94	3.0	0	2.82	$4,138.35	$3,193.65
	Apartment/Multi-Family	Dwelling Unit	0.51	3.0	0	1.53	$2,245.28	$1,732.73
	Condominium/Townhouse	Dwelling Unit	0.57	3.0	0	1.71	$2,509.43	$1,936.58
	Mobile Home	Dwelling Unit	0.58	3.0	0	1.74	$2,553.45	$1,970.55
OFFICE								
	General Office Building	1,000 ft^2 GFA	1.44	3.0	0	4.32	$6,339.60	$4,892.40
	Medical - Dental Office	1,000 ft^2 GFA	3.1	3.0	0	9.30	$13,647.75	$10,532.25
COMMERCIAL								
	Automobile Care Center	1,000 ft^2 GFA	3.11	2.5	0.3	5.44	$7,983.20	$6,160.80
	Building Materials/Lumber	1,000 ft^2 GFA	2.25	2.0	0.2	3.60	$5,283.00	$4,077.00
	Convenience Stores/Gas Station	Fueling Positions	18.42	0.4	0.63	2.73	$4,006.28	$3,091.73
	Drive-In Bank	1,000 ft^2 GFA	21.01	1.7	0.47	18.93	$27,779.78	$21,438.23
	Fast Food Restaurant	1,000 ft^2 GFA	33.03	2.0	0.5	33.03	$48,471.53	$37,406.48
	Free-Standing Discount Store	1,000 ft^2 GFA	4.86	2.5	0.17	10.08	$14,792.40	$11,415.60
	Garden Center/Nursery	1,000 ft^2 GFA	6.94	2.5	0.2	13.88	$20,368.90	$15,719.10
	Golf Course	Acres	3.74	2.5	0	9.35	$13,721.13	$10,588.88
	Hardware/Paint Store	1,000 ft^2 GFA	2.98	2.5	0.26	5.51	$8,085.93	$6,240.08
	Home Improvement Store	1,000 ft^2 GFA	2.29	3.0	0.48	3.57	$5,238.98	$4,043.03
	Hotel	Rooms	0.59	3.0	0	1.77	$2,597.48	$2,004.53
	Pharmacy/Drugstore	1,000 ft^2 GFA	10.25	2.5	0.49	13.07	$19,180.23	$14,801.78
	Self-Service Car Wash	Stalls	5.54	2.0	0.6	4.43	$6,501.03	$5,016.98
	Service Station	Fueling Positions	13.91	0.5	0.42	4.03	$5,914.03	$4,563.98
	Sit-Down Restaurant	1,000 ft^2 GFA	9.05	2.4	0.43	12.38	$18,167.65	$14,020.35
	Shopping Center	1,000 ft^2 GFA	3.4	3.0	0.34	6.73	$9,876.28	$7,621.73
	Supermarket	1,000 ft^2 GFA	8.95	2.5	0.36	14.32	$21,014.60	$16,217.40
INDUSTRIAL								
	General Light Industrial	1,000 ft^2 GFA	0.65	3.0	0	1.95	$2,861.63	$2,208.38
	Mini-Warehouse	1,000 ft^2 GFA	0.15	3.0	0	0.45	$660.38	$509.63
	Warehouse	1,000 ft^2 GFA	0.18	3.0	0	0.54	$792.45	$611.55
INSTITUTIONAL								
	High School	Students	0.14	2.1	0	0.29	$425.58	$328.43
	Day Care Center	Students	0.79	2.7	0.9	0.21	$308.18	$237.83
	Nursing Home	1,000 ft^2 GFA	0.59	2.5	0	1.48	$2,171.90	$1,676.10
	Church	1,000 ft^2 GFA	0.49	2.1	0	1.03	$1,511.53	$1,166.48

[1] GFA = Gross Floor Area

[2] (Vehicles); Based on *ITE Trip Generation Manual, 11th Edition*

[3] (Miles); Based on NCTCOG Data

[4] Percentage of traffic already passing by site - land use is an intermediate destination

[5] (Vehicle-Miles)

[6] Based on 50% of maximum calculated impact fee for each service area

* The land uses and trip generation characteristics listed in this chart are intended as examples. The complete table of land uses and trip generation characteristics is contained in the Institute of Transportation Engineers *Trip Generation Manual, Eleventh Edition* , which is incorporated herein by reference.

K.4 Service Area 1 – Example Calculations

SINGLE-FAMILY DWELLING (Service Area 1)

• Vehicle-Miles per Development Unit for Single-Family Dwelling Unit
(1 Dwelling Unit) x (2.82 Vehicle-Miles / Dwelling Unit) = 2.82 Vehicle-Miles

• Assume 50 percent of the Maximum Calculated Roadway Impact Fee = 1,467.50 / Service Unit:
(2.82 Vehicle-Miles) x ($1,467.50 / Vehicle-Miles) = $ 4,138.35

50,000 ft^2 SHOPPING CENTER (Service Area 1)

• Vehicle-Miles per Development Unit for Shopping Center
(50,000 ft^2) x (6.73 Vehicle-Miles / 1,000 ft^2) = 336.5 Vehicle-Miles

• Assume 50 percent of the Maximum Calculated Roadway Impact Fee = $1,267.00 / Service Unit: x (336.5 Vehicle-Miles) x ($1,467.50 / Vehicle-Miles) = $ 493,813.75

K.5 Service Area 2 – Example Calculations

SINGLE-FAMILY DWELLING (Service Area 2)

• Vehicle-Miles per Development Unit for Single-Family Dwelling Unit
(1 Dwelling Unit) x (2.82 Vehicle-Miles / Dwelling Unit) = 2.82 Vehicle-Miles

• Assume 50 percent of the Maximum Calculated Roadway Impact Fee = $1,132.50 /Service Unit:
(2.82 Vehicle-Miles) x ($1,132.50 / Vehicle-Miles) = $ 3,193.65

50,000 ft^2 SHOPPING CENTER (Service Area 2)

• Vehicle-Miles per Development Unit for Shopping Center
(50,000 ft^2) x (6.73 Vehicle-Miles / 1,000 ft^2) = 336.5 Vehicle-Miles

• Assume 50 percent of the Maximum Calculated Roadway Impact Fee = $1,132.50 /Service Unit:
(336.50 Vehicle-Miles) x ($1,132.50 / Vehicle-Miles) = $381,086.25

10 YEAR WATER AND WASTEWATER IMPACT FEE REVIEW

APPENDIX "A"

WATER DISTRIBUTION SYSTEM

IMPACT FEE DATA

PUMP STATION
GROUND STORAGE RESERVOIRS
ELEVATED STORAGE TANK
TRANSMISSION LINE
DISTRIBUTION LINES

TABLE NO. A-1
CITY OF ALVARADO, TEXAS
WATER DISTRIBUTION SYSTEM IMPACT FEE STUDY
EXISTING IMPACT FEE WATER LINES

Pipe Number	Length (Ft.)	Diameter (Inches)	Total Project Cost ($)	Debt Service Interest Rate	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
							2023	2033	During Fee Period	2023	2033	During Fee Period
1) JCSUD 16-inch Transmission Line												
1	2,400	16	$494,399	5%	$259,559	$753,958	39%	100%	61%	$296,557	$753,958	$457,401
Subtotal:	**2,400**		**$494,399**	5%	**$259,559**	**$753,958**				**$296,557**	**$753,958**	**$457,401**
EXISTING TOTAL:												
	2,400		**$494,399.00**		**$259,559**	**$753,958**				**$296,557**	**$753,958**	**$457,401**

TABLE NO. A-2

CITY OF ALVARADO, TEXAS

WATER DISTRIBUTION IMPACT FEE STUDY

EXISTING WATER FACILITIES

Project	Projected Capacity	Cost ($)					Capacity Utilized (%)			Capacity Utilized ($)		
		Const.	Engineering, Testing and Property Acquisition	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2023	2033	In The CRF Period	2023	2033	In The CRF Period
Elevated Storage Tanks												
Well #10 0.3-MG EST	0.3-MG	$2,549,986	$0	5.000%	$1,338,743	$3,888,729	80%	100%	20%	$3,110,983	$3,888,729	$777,746
Existing Facility Total		**$2,549,986**			**$1,338,743**	**$3,888,729**				**$3,110,983**	**$3,888,729**	**$777,746**

TABLE NO. A-3

CITY OF ALVARADO, TEXAS

WATER SYSTEM IMPACT FEE STUDY

PROPOSED CIP - WATER LINES

+ Average Unit costs are based in '2023' dollars unless otherwise indicated and includes engineering and easements.

Pipe Number	Length (Ft.)	Diameter (Inches)	+Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2022	2032	During Fee Period	2022	2032	During Fee Period
1) 12-inch Water Line Transmission													
2 1	4,570	12	$250.00	$1,142,500		$599,813	$1,742,313	0%	88%	88%	$0	$1,524,524	$1,524,524
Subtotal:	**4,570**			**$1,142,500**	5.0%	**$599,813**	**$1,742,313**				**$0**	**$1,524,524**	**$1,524,524**
2) 12-inch Water Line Transmission Upsize from 8-inch													
1 2	5,035	12	$120.00	$604,200		$317,205	$921,405	0%	88%	88%	$0	$806,229	$806,229
Subtotal:	**5,035**			**$604,200**	5.0%	**$317,205**	**$921,405**				**$0**	**$806,229**	**$806,229**
3) 12-inch Water Line Transmission													
2 3	10,565	12	$250.00	$2,641,250		$1,386,656	$4,027,906	0%	88%	88%	$0	$3,524,418	$3,524,418
Subtotal:	**10,565**			**$2,641,250**	5.0%	**$1,386,656**	**$4,027,906**				**$0**	**$3,524,418**	**$3,524,418**
4) 8-inch Water Line Transmission													
2 4	1,980	8	$190.00	$376,200		$197,505	$573,705	0%	60%	60%	$0	$344,223	$344,223
Subtotal:	**1,980**			**$376,200**	5.0%	**$197,505**	**$573,705**				**$0**	**$344,223**	**$344,223**
5) 12-inch Water Line Transmission													
2 5	10,140	12	$250.00	$2,535,000		$1,330,875	$3,865,875	0%	82%	82%	$0	$3,170,018	$3,170,018
Subtotal:	**10,140**			**$2,535,000**	5.0%	**$1,330,875**	**$3,865,875**				**$0**	**$3,170,018**	**$3,170,018**
6) 12-inch Water Line Transmission Upsize from 8-inch													
1 6	1,340	12	$60.00	$80,400		$42,210	$122,610	0%	89%	89%	$0	$109,123	$109,123
Subtotal:	**1,340**			**$80,400**	0.0%	**$42,210**	**$122,610**				**$0**	**$109,123**	**$109,123**
7) 8-inch Water Line Transmission													
2 7	2,130	8	$190.00	$404,700		$212,468	$617,168	0%	89%	89%	$0	$549,280	$549,280
Subtotal:	**2,130**			**$404,700**	5712500.0%	**$212,468**	**$617,168**				**$0**	**$549,280**	**$549,280**
8) 8-inch Water Line Transmission													
2 8	2,280	8	$190.00	$433,200		$227,430	$660,630	0%	85%	85%	$0	$561,536	$561,536
Subtotal:	**2,280**			**$433,200**	5712500.0%	**$227,430**	**$660,630**				**$0**	**$561,536**	**$561,536**
9) 8-inch Water Line Transmission													
2 9	2,550	8	$190.00	$484,500		$254,363	$738,863	0%	80%	80%	$0	$591,090	$591,090
Subtotal:	**2,550**			**$484,500**	5712500.0%	**$254,363**	**$738,863**				**$0**	**$591,090**	**$591,090**
10) 12-inch Water Line Transmission													
2 10	1,295	12	$250.00	$323,750		$169,969	$493,719	0%	80%	80%	$0	$394,975	$394,975
Subtotal:	**1,295**			**$323,750**	5.0%	**$169,969**	**$493,719**				**$0**	**$394,975**	**$394,975**

CITY OF ALVARADO, TEXAS
WATER SYSTEM IMPACT FEE STUDY
PROPOSED CIP - WATER LINES

+ Average Unit costs are based in '2023' dollars unless otherwise indicated and includes engineering and easements.

Pipe Number	Length (Ft.)	Diameter (Inches)	+Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2022	2032	During Fee Period	2022	2032	During Fee Period
11) 12-inch Water Line Transmission													
1 11	2,080	12	$250.00	$520,000		$273,000	$793,000	0%	85%	85%	$0	$674,050	$674,050
Subtotal:	**2,080**			**$520,000**	5.0%	**$273,000**	**$793,000**				**$0**	**$674,050**	**$674,050**
12) 12-inch Water Line Transmission													
1 12	4,715	12	$250.00	$1,178,750		$618,844	$1,797,594	0%	90%	90%	$0	$1,617,834	$1,617,834
Subtotal:	**4,715**			**$1,178,750**	5.0%	**$618,844**	**$1,797,594**				**$0**	**$1,617,834**	**$1,617,834**
PROPOSED TOTAL:	**48,680**			**$10,724,450**		**$5,630,337**	**$16,354,787**				**$0**	**$13,867,300**	**$13,867,300**

1 - City Participates in Cost Oversize
2 - City Initiates and Funds

TABLE NO. A-4

CITY OF ALVARADO, TEXAS

WATER DISTRIBUTION IMPACT FEE STUDY

PROPOSED WATER FACILITIES

Project	Projected Capacity	Cost ($)					Capacity Utilized (%)			Capacity Utilized ($)		
		Const.	Engineering, Testing and Property Acquisition (20%)	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2023	2033	In The CRF Period	2023	2033	In The CRF Period
Elevated Storage Tanks												
1.0-MG EST	1.0-MG	$6,000,000	$1,200,000	5.000%	$3,150,000	$10,350,000	0%	90%	90%	$0	$9,315,000	$9,315,000
Ground Storage Tanks												
1.5-MG Ground Storage Tank	1.5-MG	$7,500,000	$1,500,000	5.000%	$3,937,500	$12,937,500	0%	95%	95%	$0	$12,290,625	$12,290,625
Pump Stations												
5.86 MGD Pump Station	5.86-MGD	$7,000,000	$1,400,000	5.000%	$3,675,000	$12,075,000	0%	95%	95%	$0	$11,471,250	$11,471,250
Proposed Facility Total		**$20,500,000**	**$4,100,000**		**$10,762,500**	**$35,362,500**				**$0**	**$33,076,875**	**$33,076,875**

10 YEAR WATER AND WASTEWATER IMPACT FEE REVIEW

APPENDIX "B"

WASTEWATER COLLECTION SYSTEM

IMPACT FEE DATA

WASTEWATER TREATMENT PLANT
CITY COLLECTION LINES
LIFT STATION
FORCE MAINS

TABLE NO. B-1
CITY OF ALVARADO, TEXAS
WASTE WATER COLLECTION SYSTEM IMPACT FEE STUDY
EXISTING IMPACT FEE TRANSMISSION LINES

Pipe Number	Length (Ft.)	Diameter (Inches)	Total Project Cost ($)	Debt Service Interest Rate	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
							2023	2033	During Fee Period	2023	2033	During Fee Period
1) 12-inch/15-inch Gravity Sewer Line												
1	5,665	12"/15"	$579,143	5%	$304,050	$883,193	40%	80%	40%	$353,277	$706,554	$353,277
Subtotal:	**5,665**		**$579,143**	5%	**$304,050**	**$883,193**				**$353,277**	**$706,554**	**$353,277**
EXISTING TOTAL:												
	5,665		**$579,143.00**		**$304,050**	**$883,193**				**$353,277**	**$706,554**	**$353,277**

TABLE NO. B-2

CITY OF ALVARADO, TEXAS

WASTE WATER COLLECTION SYSTEM IMPACT FEE STUDY

PROPOSED CIP - COLLECTION LINES

+ Average Unit costs are based in '2023' dollars unless otherwise indicated and includes engineering and easements.

Pipe Number	Length (Ft.)	Diameter (Inches)	+Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2022	2032	During Fee Period	2022	2032	During Fee Period
1) 18-inch Gravity Sewer Line													
2 1	6,895	18	$310.00	$2,137,450		$1,122,161	$3,259,611	0%	57%	57%	$0	$1,866,868	$1,866,868
Subtotal:	**6,895**			**$2,137,450**	5.0%	**$1,122,161**	**$3,259,611**				**$0**	**$1,866,868**	**$1,866,868**
2) 10-inch Force Main													
2 2	13,510	10	$200.00	$2,702,000		$1,418,550	$4,120,550	0%	61%	61%	$0	$2,521,867	$2,521,867
Subtotal:	**13,510**			**$2,702,000**	5.0%	**$1,418,550**	**$4,120,550**				**$0**	**$2,521,867**	**$2,521,867**
3) 21-inch Gravity Sewer Line													
2 3	5,470	21	$350.00	$1,914,500		$1,005,113	$2,919,613	0%	51%	51%	$0	$1,497,237	$1,497,237
Subtotal:	**5,470**			**$1,914,500**	5.0%	**$1,005,113**	**$2,919,613**				**$0**	**$1,497,237**	**$1,497,237**
4) 18-inch Gravity Sewer Line (Upsize from 12-inch)													
1 4	4,700	18	$110.00	$517,000		$271,425	$788,425	0%	80%	80%	$0	$627,156	$627,156
Subtotal:	**4,700**			**$517,000**	5.0%	**$271,425**	**$788,425**				**$0**	**$627,156**	**$627,156**
5) 24-inch Gravity Sewer Line (Upsize from 12-inch)													
1 5	5,875	24	$180.00	$1,057,500		$555,188	$1,612,688	0%	57%	57%	$0	$921,536	$921,536
Subtotal:	**5,875**			**$1,057,500**	5.0%	**$555,188**	**$1,612,688**				**$0**	**$921,536**	**$921,536**
6) 8-inch Gravity Sewer Line													
2 6	5,770	8	$190.00	$1,096,300		$575,558	$1,671,858	0%	66%	66%	$0	$1,109,640	$1,109,640
Subtotal:	**5,770**			**$1,096,300**	5.0%	**$575,558**	**$1,671,858**				**$0**	**$1,109,640**	**$1,109,640**
7) 12-inch Gravity Sewer Line													
2 7	2,155	12	$210.00	$452,550		$237,589	$690,139	0%	42%	42%	$0	$291,982	$291,982
Subtotal:	**2,155**			**$452,550**	5.0%	**$237,589**	**$690,139**				**$0**	**$291,982**	**$291,982**
8) 6-inch Force Main													
2 8	6,450	6	$190.00	$1,225,500		$643,388	$1,868,888	0%	79%	79%	$0	$1,483,244	$1,483,244
Subtotal:	**6,450**			**$1,225,500**	5.0%	**$643,388**	**$1,868,888**				**$0**	**$1,483,244**	**$1,483,244**
9) 8-inch Gravity Sewer Line													
2 9	2,520	8	$190.00	$478,800		$251,370	$730,170	0%	71%	71%	$0	$516,935	$516,935
Subtotal:	**2,520**			**$478,800**	5.0%	**$251,370**	**$730,170**				**$0**	**$516,935**	**$516,935**
10) 30-inch Gravity Sewer Line (Upsize from 18-inch)													
1 10	903	30	$110.00	$99,330		$52,148	$151,478	0%	76%	76%	$0	$114,684	$114,684
Subtotal:	**903**			**$99,330**	5.0%	**$52,148**	**$151,478**				**$0**	**$114,684**	**$114,684**

CITY OF ALVARADO, TEXAS
WASTE WATER COLLECTION SYSTEM IMPACT FEE STUDY
PROPOSED CIP - COLLECTION LINES

+ Average Unit costs are based in '2023' dollars unless otherwise indicated and includes engineering and easements.

Pipe Number	Length (Ft.)	Diameter (Inches)	+Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Year Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2022	2032	During Fee Period	2022	2032	During Fee Period
11) 24-inch Gravity Sewer Line													
2 11	4,300	24	$380.00	$1,634,000		$52,148	$1,686,148	0%	57%	57%	$0	$963,513	$963,513
Subtotal:	**4,300**			**$1,634,000**	5.0%	**$52,148**	**$1,686,148**				**$0**	**$963,513**	**$963,513**
12) 8-inch Gravity Sewer Line													
2 11	4,570	24	$190.00	$868,300		$857,850	$1,726,150	0%	57%	57%	$0	$986,371	$986,371
Subtotal:	**4,570**			**$868,300**	5.0%	**$857,850**	**$1,726,150**				**$0**	**$986,371**	**$986,371**
PROPOSED TOTAL:	**54,248**			**$14,183,230**		**$7,042,488**	**$21,225,718**				**$0**	**$12,901,033**	**$12,901,033**

1 - City Participates in Cost Oversize
2 - City Initiates and Funds

TABLE NO. B-3

CITY OF ALVARADO, TEXAS

WASTE WATER COLLECTION SYSTEM IMPACT FEE STUDY

PROPOSED WASTE WATER FACILITIES

Project	Projected Capacity	Cost ($)					Capacity Utilized (%)			Capacity Utilized ($)		
		Const.	Engineering, Testing and Property Acquisition (20%)	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2023	2033	In The CRF Period	2023	2033	In The CRF Period
Wastewater Treatment Plant Expansion												
Treatment Plant Expansion Ph. 1	1.4-MG	$30,000,000	$6,000,000	5.000%	$15,750,000	$51,750,000	43%	86%	43%	$22,178,571	$44,357,143	$22,252,500
Treatment Plant Expansion Ph. 2	2.2-MG	$40,000,000	$8,000,000	5.000%	$21,000,000	$69,000,000	0%	45%	45%	$0	$31,050,000	$31,050,000
Chambers Creek Lift Station												
Chambers Creek Lift Station	0.5-MG	$3,500,000	$700,000	5.000%	$1,837,500	$6,037,500	0%	60%	60%	$0	$3,622,500	$3,622,500
Proposed Facility Total		**$73,500,000**	**$14,700,000**		**$38,587,500**	**$126,787,500**				**$22,178,571**	**$79,029,643**	**$56,925,000**

CITY OF ALVARADO, TEXAS
WATER AND WASTEWATER, ROADWAY IMPACT FEE UPDATE

PREPARED BY

birkhoff, hendricks & carter, L.L.P.
Professional Engineers
Dallas, Texas

JUNE 2023

Capital Improvement Program Advisory Committee Meeting Management Report

Meeting Date: June 14, 2023
Contact: Justin French, Community Development Director

AGENDA ITEM:
Consideration and action to recommend City Council approve the Semi-Annual Report of the Capital Improvement Program's progress.

BACKGROUND & FINDINGS:
None.

FINANCIAL IMPACT:
None.

RECOMMENDATION:
Staff suggests the Committee recommend City Council approval the attached Semi-Annual Report of the Capital Improvement Program's progress.

MANAGEMENT REVIEW:
Paul DeBuff, City Manager

ATTACHMENTS:
Semi-Annual Report
Current CIP for Roadway Impact Fees
Current CIP for Water Impact Fees
Current CIP for Wastewater Impact Fees

City of Alvarado

Semi-annual Report

October 1, 2022 through March 31, 2023

(FY2023)

Capital Improvements Program Advisory Committee

Larry Pool, Place 1 **Jameye Jones, Place 3** **Pam Jones, Place 4**

Sandra Rendon, Place 2 **Larry Harris, Place 5**

Executive Summary

Chapter 395 of the Texas Local Government Code describes the process by which cities in Texas must establish and manage development impact fee programs. This report provides the status of the Water, Wastewater, and Roadway Impact Fee Program in the City of Alvarado.

The general philosophy of the impact fee program is that new development should pay for some portion of the new public water, wastewater, and roadway infrastructure required to serve new development. Growth estimates are based on regional population and employment projections developed by the North Central Texas Council of Governments, the City of Alvarado's Comprehensive Plan, and the amount of vacant land available for development.

The Alvarado City Council approved the implementation of water, wastewater impact, and roadway impact fees in June of 2019, and collections of fees began immediately. The Parks of Alvarado Addition was in the approval process during this implementation process and a development agreement between the City of Alvarado of the developer, allowed the development to proceed with an agreed upon impact fee prior to the adoption of the impact fee ordinance.

The City of Alvarado owns and operates public infrastructure comprised of pumping stations, storage facilities, water and sewer pipelines, and roadways that are improved and expanded to meet a fast-growing city's current and future needs. One schedule for future investment in public infrastructure is known as the Impact Fee Capital Improvements (IFCIP). Projects included in the IFCIP enhance system capacity and efficiency, provide service to new development, and meet regulatory requirements. The City of Alvarado has a Capital Improvement Plan (CIP) that forecasts projects to be designed and/or constructed over next five to ten years. The CIP is evaluated and updates are considered every year. Not all CIP projects are eligible for impact fee funding. The Water and Wastewater Master Plan and the Master Thoroughfare Plan define the portion of the CIP related to increasing the system capacity.

Projects may be partially completed in phases when private development occurs, and the developer constructs the infrastructure required to serve the development. For this reporting period, impact fee collections totaled $647,950.

The City continues to progress in implementing the capital program with fair and equitable administration. Collection of impact fees reduces the debt required to construct new water, wastewater, and transportation infrastructure to serve new development. No perceived inequities are noted in implementing the capital program.

Impact Fee Revenue Summary

This report covers the period from October 1, 2022 through March 31, 2023. During this reporting period, the City collected $647,950 in impact fees.

Service units (living unit equivalent) for water and sanitary sewer are based upon ¾" water meter equivalents. From October 1, 2022 through March 31, 2023, the City of Alvarado has collected $418,319 in water and sanitary sewer impact fee revenue. During the same period, the City of Alvarado collected $229,631 in roadway impact fees. The tables below summarize the fees collected during this period.

Description	Water		
	Residential	**Commercial**	**Total**
# Sites/Permits	19	0	19
# Service Units Charged	19	0	19
$ Service Units Charged	22,040	0	22,040
$ Offsets/Credits Earned	0	0	0
$ Net Amount Collected	**22,040**	**0**	**22,040**

Description	Sanitary Sewer		
	Residential	**Commercial**	**Total**
# Sites/Permits	197	0	197
# Service Units Charged	197	0	197
$ Service Units Charged	500,577	0	500,577
$ Offsets/Credits Earned	104,298	0	104,298
$ Net Amount Collected	**396,279**	**0**	**396,279**

Description	Roadway		
	Residential	**Commercial**	**Total**
# Service Area 1 Projects	191	0	191
$ Service Area 1 Charge	448,659	0	448,659
$ Offsets/Credits Earned	221,377	0	221,377
$ Service Area 1 Collect	227,282	0	227,282
# Service Area 2 Projects	1	0	1
$ Service Area 2 Charge	2,349	0	2,349
$ Offsets/Credits Earned	0	0	0
$ Service Area 2 Collect	2,349	0	2,349
$ Net Amount Collected	**229,631**	**0**	**229,631**

The following tables list projects identified by the 2017 Master Thoroughfare Plan, 2018 Water and Wastewater Masterplan, and the 2019 Impact Fee Capital Improvement Program. Projects under design, construction, or completed are noted in the table. The estimated costs are based on 2019 dollars, respectively. It is important to note these are estimates and could change significantly due to material costs, land costs, etc.

TABLE 1
PROPOSED WATER FACILITIES
(PUMPING/GROUND STORAGE/ELEVATED STORAGE/TRANSMISSION)

MP ID#	LOCATION DESCRIPTION	SCHEDULE OF CONSTRUCTION	STATUS (% Complete)	MP OPC (2019 $)
1	N. Cummings Drive 12" Water Line Extension*	Not Started	0%	$1,108,700
4	Sunflower Lane 8" Water Line Extension	Not Started	0%	$626,900
5	Davis Avenue 12" Water Line Extension	Not Started	0%	$776,200
6	JCSUD Supply Interconnect #2	Not Started	0%	$574,400
7	JCSUD Interconnect #2 Pump Station & Ground Storage Tank	Not Started	0%	$695,200
9	N. Parkway Drive 12" Water Line Extension	Not Started	0%	$403,100
10	Phase 1 Eastside 12" Water Line Extension	Not Started	0%	$1,499,000
11	Phase 2 Eastside 12" Water Line Extension	Not Started	0%	$717,200
12	Phase 3 Eastside 12" Water Line Extension	Not Started	0%	$1,053,300
13	Southside 8" Water Line Extension	Not Started	0%	$443,600

*Stonegate Boulevard Water Line Extension may be east/west alternative route.

TABLE 2
PROPOSED WASTEWATER FACILITIES
(PUMPING/COLLECTION LINES)

MP ID#	LOCATION DESCRIPTION	SCHEDULE OF CONSTRUCTION	STATUS (% Complete)	MP OPC (2019 $)
1	Parkway Drive 18"/30" Sewer Line Replacement	18" Not Started, 30" Completed	15%	$2,452,700
2	Basin 2 – 15" Sewer Line Replacement	Not Started	0%	$1,995,100
3	Basin 5 – 12" Sewer Line Extension	Not Started	0%	$1,758,400
4	Maple Avenue 24" Sewer Line Replacement	August 2023 Completion	50%	$2,409,300
5	Basin 3 – 8"/12" Sewer Line Extensions	Not Started	0%	$1,638,300
6	IH35 West Lift Station & 6" Force Main	Not Started	0%	$1,028,800
7	IH35 South 12" Sewer Line Extension	Not Started	0%	$1,603,500
8	Basin 1 – 8" Sewer Line Extension	Not Started	0%	$904,600
9	Wastewater Treatment Plant Phase 1 Expansion & Peak Flow Basin	Not Started	Nearly 100% Designed	$11,682,000
11	Chambers Creek Lift Station & 6" Force Main	Not Started	0%	$1,346,900
12	Basin 6 – 8"/12" Sewer Line Extension Phase 1	Not Started	0%	$1,563,000
13	BNSF Railroad 12"/15" Sewer Line Extension	Not Started	0%	$2,950,900
29	Whisper Park 24" Sewer Line Extension taking Davis Lift Station Offline	TBD	Nearly 100% Designed	$3,972,544*

*In 2023 Dollars.

TABLE 5

PROPOSED ROADWAYS

MP ID#	LOCATION DESCRIPTION	SIZE	SCHEDULE OF CONSTRUCTION	STATUS (% Complete)	MP OPC (2019 $)
A	Far N. Cummings Drive	5 lanes, SA	Not Started	0%	$8,476,400
B	N. Cumming Drive Recoupment	2 lanes, UC	Not Started	0%	$2,333,964
C	N. Baugh Street Extension	6 lanes, DA	Not Started	0%	$3,403,400
D	New Road (Sunflower Lane)	2 lanes, UC	Not Started	0%	$4,678,600
E	W. Cotter Avenue	2 lanes, UC	Not Started	0%	$1,816,900
F	Far N. Parkway Drive	6 lanes, DA	Not Started	0%	$2,908,200
G	N. Parkway Drive	4 lanes, DA	Not Started	0%	$5,249,400
H	Davis Avenue	5 lanes, SA	Not Started	0%	$1,211,300
I	Davis Avenue	5 lanes, SA	Not Started	0%	$4,307,550
I	Davis Avenue	5 lanes, SA	Not Started	0%	$4,307,550
J	5th Street	2 lanes, UC	Not Started	0%	$1,844,800
K	Maple Street	5 lanes, SA	Not Started	0%	$3,043,500

CONCLUSIONS

The following conclusions are made by the Impact Fee Capital Improvements Program Advisory Committee:

1. The City continues to make progress in the implementation of the capital program.
2. The pace of development, the pace of implementing the capital improvement program, the 50% collection methodology, and the “first in, first out” impact fee accounting method eliminate the possibility of refunds of impact fees in accordance with state law.
3. Collection of impact fees reduces the debt required to construct new water, wastewater, and transportation infrastructure to serve new development.
4. The administration of the program has been fair and equitable.
5. No perceived inequalities are noted in implementing the capital program.

Based on the above findings, we conclude that the City of Alvarado impact fee program for the period from October 1, 2022 through March 31, 2023 generally succeeded in meeting expectations of administration, revenues, and expenditures.

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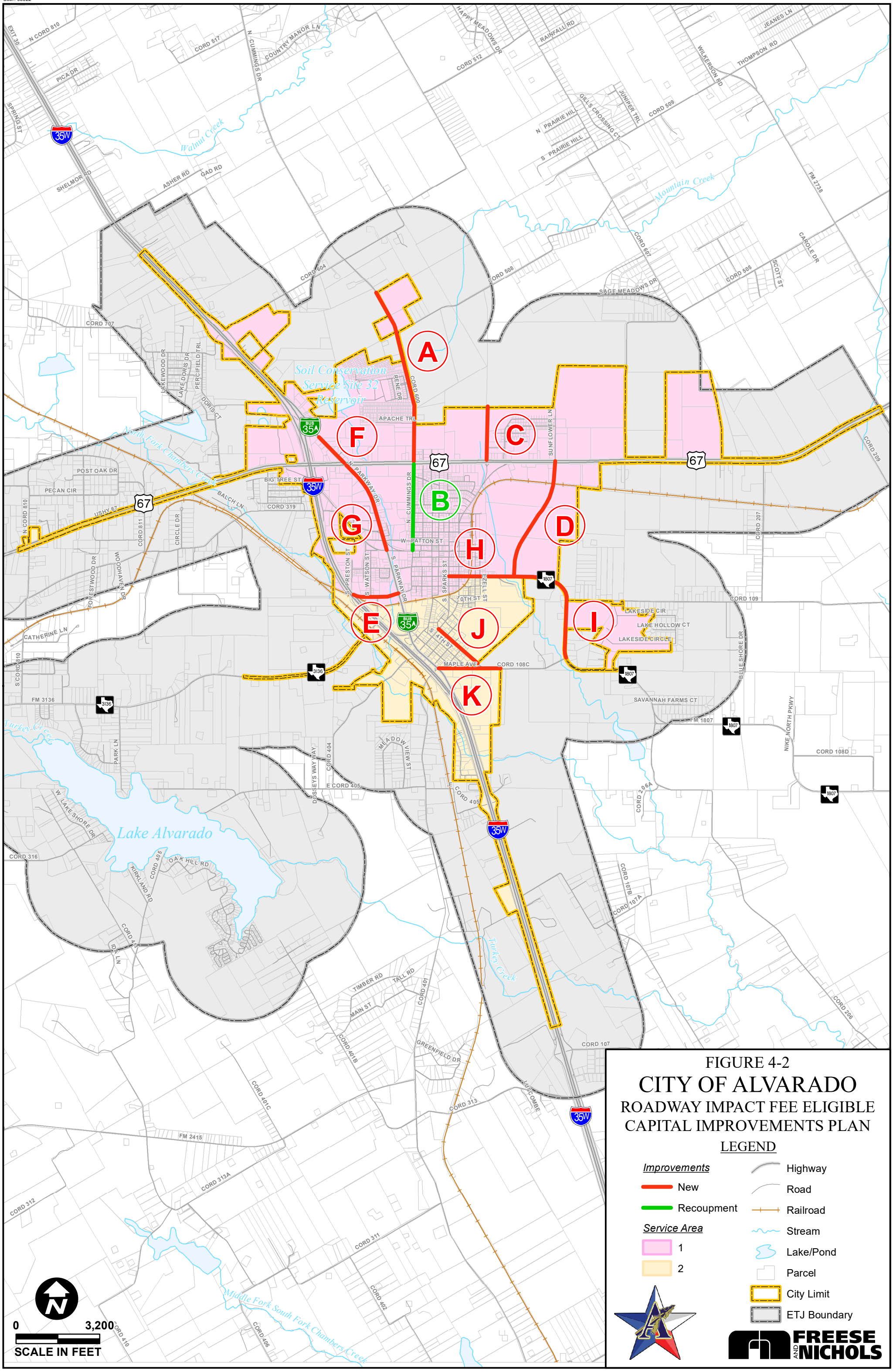


FIGURE 4-2

CITY OF ALVARADO

ROADWAY IMPACT FEE ELIGIBLE CAPITAL IMPROVEMENTS PLAN

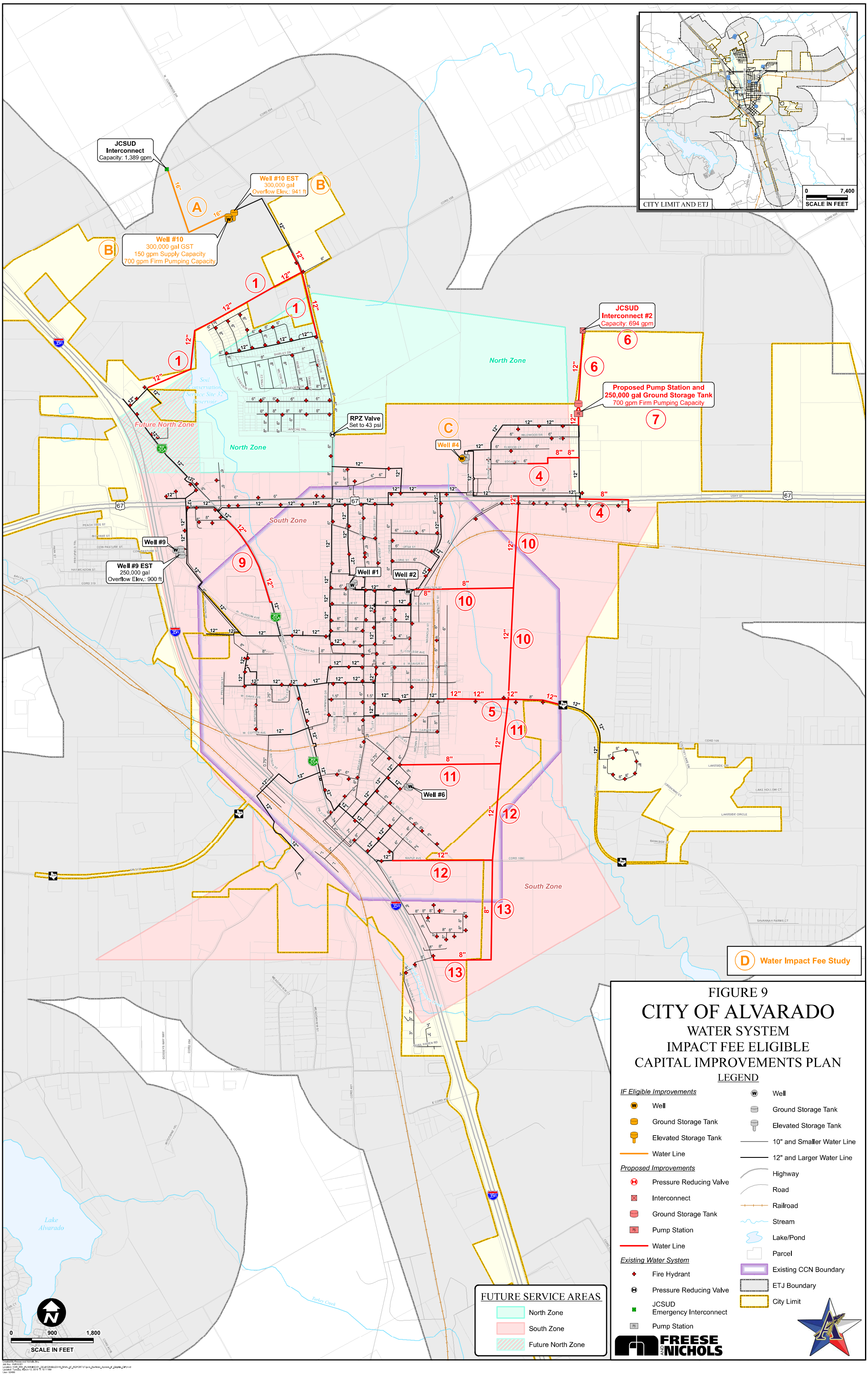
LEGEND

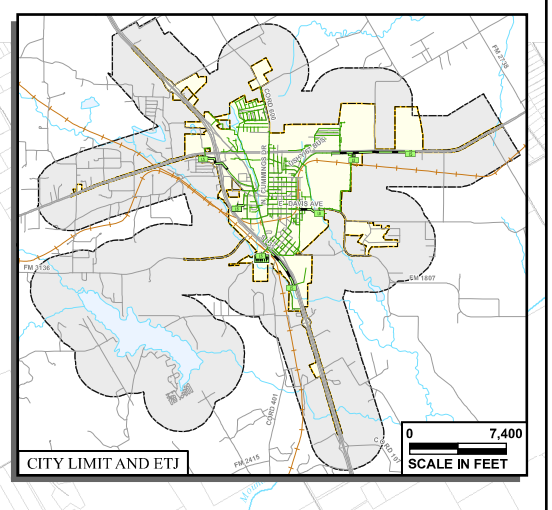
Improvements
- New
- Recoupment

Service Area
- 1
- 2

- Highway
- Road
- Railroad
- Stream
- Lake/Pond
- Parcel
- City Limit
- ETJ Boundary

FREESE AND NICHOLS


JCSUD Interconnect
Capacity: 1,389 gpm
Well #10 EST
300,000 gal
Overflow Elev.: 941 ft
Well #10
300,000 gal GST
150 gpm Supply Capacity
700 gpm Firm Pumping Capacity
JCSUD Interconnect #2
Capacity: 694 gpm
Proposed Pump Station and 250,000 gal Ground Storage Tank
700 gpm Firm Pumping Capacity
RPZ Valve
Set to 43 psi
Well #4
Well #9
Well #9 EST
250,000 gal
Overflow Elev.: 900 ft
Well #1
Well #2
Well #6
North Zone
South Zone
Future North Zone
Soil Conservation Service Site 32 Reservoir
Lake Alvarado
Turkey Creek
CITY LIMIT AND ETJ
0 7,400
SCALE IN FEET
0 900 1,800
SCALE IN FEET
D Water Impact Fee Study
FUTURE SERVICE AREAS
North Zone
South Zone
Future North Zone
FIGURE 9
CITY OF ALVARADO
WATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN
LEGEND
IF Eligible Improvements
Well
Ground Storage Tank
Elevated Storage Tank
Water Line
Proposed Improvements
Pressure Reducing Valve
Interconnect
Ground Storage Tank
Pump Station
Water Line
Existing Water System
Fire Hydrant
Pressure Reducing Valve
JCSUD Emergency Interconnect
Pump Station
Well
Ground Storage Tank
Elevated Storage Tank
10" and Smaller Water Line
12" and Larger Water Line
Highway
Road
Railroad
Stream
Lake/Pond
Parcel
Existing CCN Boundary
ETJ Boundary
City Limit
FREESE AND NICHOLS



BASIN 7
BASIN 1
BASIN 5
BASIN 9
BASIN 8
BASIN 2
BASIN 6
BASIN 4
BASIN 3

Burger King LS
Capacity: 187 gpm

Preston LS
Capacity: 70 gpm

Wastewater Treatment Plant
Existing Average Day Permitted Capacity: 0.6 MGD
Headworks Improvements
Expand to 1.2 MGD

Influent LS
Capacity: 2,100 gpm

Quail Haven LS
Capacity: 1,400 gpm

Proposed I-35W LS
Capacity: 210 gpm

Davis LS
Capacity: 1,124 gpm

OLE's LS

Saber LS
Capacity: 150 gpm

Proposed Chambers Creek LS
Capacity: 350 gpm

C Wastewater Impact Fee Study

FIGURE 10
CITY OF ALVARADO
WASTEWATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENTS PLAN

LEGEND

IF Eligible Improvements
- Wastewater Line

Proposed Improvements
- Lift Station
- Wastewater Treatment Plant
- Wastewater Line
- Force Main

Existing Wastewater System
- Lift Station
- 6" and Smaller Wastewater Line
- 8" and Larger Wastewater Line
- Force Main

- Highway
- Road
- Railroad
- Stream
- Lake/Pond
- Parcel
- City Limit
- ETJ Boundary
- Existing CCN Boundary

SEWER BASINS
1 2 3 4 5 6 7 8 9

FREESE AND NICHOLS

0 1,600 3,200
SCALE IN FEET

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Location: H:\W_WW_PLANNING\P_DEL\VGRABLER\LITHO_JT_REPORT\Figure_10-Wastewater_System_F_Eligible_CIP.mxd
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