

DEVELOPMENT IMPACT FEE UPDATE 2013



City of Marble Falls, Texas
September 2013

Prepared By:



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IMPACT FEE UPDATE, 2013

FOR THE

CITY OF MARBLE FALLS, TEXAS

FINAL REPORT

Prepared For:



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CAPITAL IMPROVEMENT PLAN FOR IMPACT FEES

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DEVELOPMENT IMPACT FEE UPDATE STUDY FOR THE CITY OF MARBLE FALLS, TEXAS September 2013

The City of Marble Falls, Texas retained Lee Engineering, LLC for the purpose of updating previously enacted Impact Fees for Water and Wastewater system improvements for the 10-year period 2013-2023. The City originally enacted impact fees in September 2008 by ordinance to assess new development for the costs to provide water and wastewater facilities to serve the new development.

This study has been conducted in accordance with Chapter 395 of Texas Local Government Code (the "statute") which required a jurisdiction imposing impact fees to update Land Use Assumptions and a Capital Improvements Plan upon which the fees are calculated. This document is intended to fulfill the requirements of the statute to develop Land Use Assumptions, a Capital Improvement Plan and calculation of maximum allowable impact fees that may be assessed new development occurring within the defined Study Area.

1.0 INTRODUCTION

Chapter 395 of the Texas Local Government Code provides statutory requirements for the development and imposition of Impact Fees by municipalities and counties in Texas. The statute requires the land use assumptions and capital improvement plan be updated at least every five-years. [Section 395.052]

There are three main components required by the statute and these are:

Development of **Land Use Assumptions** which include a description of the service area and projections of changes in land uses, densities, intensities, and population in the service area over at least a 10-year period. [Section 395.001(5)]

Development of a **Capital Improvement Plan** which identifies capital improvements or facility expansions for which impact fees are to be assessed [Sections 395.001(2) and 395.014]

Calculation of an **Impact Fee** which is a charge or assessment imposed by the political subdivision against new development in order to generate revenue for funding or recouping the costs of improvements necessitated by and attributable to the new development. [Section 395.001(4)]

This document reports the results of the processes to develop:

- Land Use Assumptions
- A Capital Improvements Plan
- Impact Fess

Advisory Committee

The statute requires that the municipality appoint a capital improvements Advisory Committee whose primary duties during the development of impact fees is to:

- (1) Advise and assist the City in adopting land use assumptions
- (2) Review the capital improvements plan and file written comments
- (3) Monitor and evaluate implementation of the capital improvements plan.

The Advisory Committee is a permanent entity as long as the City imposes impact fees under Section 395 and has additional continuing obligations concerning the implementation of the program and periodic update of the assumptions and capital improvements that are the basis of impact fees.

The City Council of Marble Falls officially appointed the Advisory Committee on April 28, 2008 and were fully involved in development of the original impact fee study. The Advisory committee has met regularly since that time to monitor and evaluate implementation of the capital improvements plan. The City Council appointed the existing Planning and Zoning Commission augmented by a representative of the extraterritorial jurisdiction in conformance with the statute [Section 395.058]. Members of the Advisory Committee are:

Impact Fee Advisory Committee

Committee Chairperson – Steve Reitz (Development Representative)

Committee Vice-Chairperson – Fred Zagst

Committee Member – Greg Mills

Committee Member – Thomas Barr

Committee Member – Jason Coleman

Committee Member – Darlene Oostermeyer

Committee Member – William Haddock

Committee Member – John Kemper (ETJ Representative)

2.0 LAND USE ASSUMPTIONS

The primary purpose of land use assumptions is to forecast growth over the 10-year period in order to apportion costs of capital improvements and determine actual impact fee rates that will be necessitated by the new development.

The following sections describe the process and results that comprise **Land Use Assumptions** for the future 10-year period, 2013 through 2023.

Definition of the Service Area

The statute [Section 395.001(9)] defines the service area as:

“...the area within the corporate boundaries or extraterritorial jurisdiction, as determined under Chapter 42, of the political subdivision to be served by the capital improvements or facilities expansions specified in the capital improvements plan, except roadway facilities and storm water, drainage, and flood control facilities. The service area, for the purposes of this chapter, may include all or part of the land within the political subdivision or its extraterritorial jurisdiction, except for roadway facilities and storm water, drainage, and flood control facilities. For roadway facilities, the service area is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six miles. For storm water, drainage, and flood control facilities, the service area may include all or part of the land within the political subdivision or its extraterritorial jurisdiction, but shall not exceed the area actually served by the storm water, drainage, and flood control facilities designated in the capital improvements plan and shall not extend across watershed boundaries.”

The City of Marble Falls has previously included the extraterritorial jurisdiction (ETJ) in the area for consideration of imposition of impact fees. **Figure 1** illustrates the current Municipal Boundary and resulting ETJ for Marble Falls. The existing city boundary comprises approximately 13.60 square miles of area. The ETJ, representing an area within one mile of the existing municipal boundaries includes an additional 24.84 square miles of area for a total service area of 38.44 square miles.

An issue identified during discussion of the impact fee Service Area and the existing ETJ was that of the City's existing application for a Certificates of Convenience and Necessity (CCN) to the Texas Commission on Environmental Quality (TCEQ) for its water and wastewater system. The current application includes most of the existing ETJ but excludes ten separate areas located within the existing ETJ for various reasons. The Advisory Committee, in consultation with the City's attorney in a public forum, reviewed each of the excluded areas of the CCN applications to determine whether or not the individual areas should be included or excluded from the Service Area for impact fees.

As a result, two (2) areas within the ETJ were excluded from the Service Area for impact fees. These were:

- Area served by the Channel Oaks Water System
- Area served by the Capstone MUD

The existing City of Meadowlake is also excluded.

Figure 2 illustrates the resulting service area adopted by the Advisory Committee as recommended to the City Council.

Forecast Land Use Changes

Land use and population changes have been forecasted for the future 10-year period 2013-2023. These forecasts and the resulting expected absorption of land are presented in the following portions of this section.

Population Projections

The development impact fee process requires the development of “land use assumptions” (LUA) that include forecast of population for the future 10-year period. Historical population figures were available from U.S. Census data as shown in **Figure 3** that illustrates the historical population trends from 1990 through 2010 for the City.

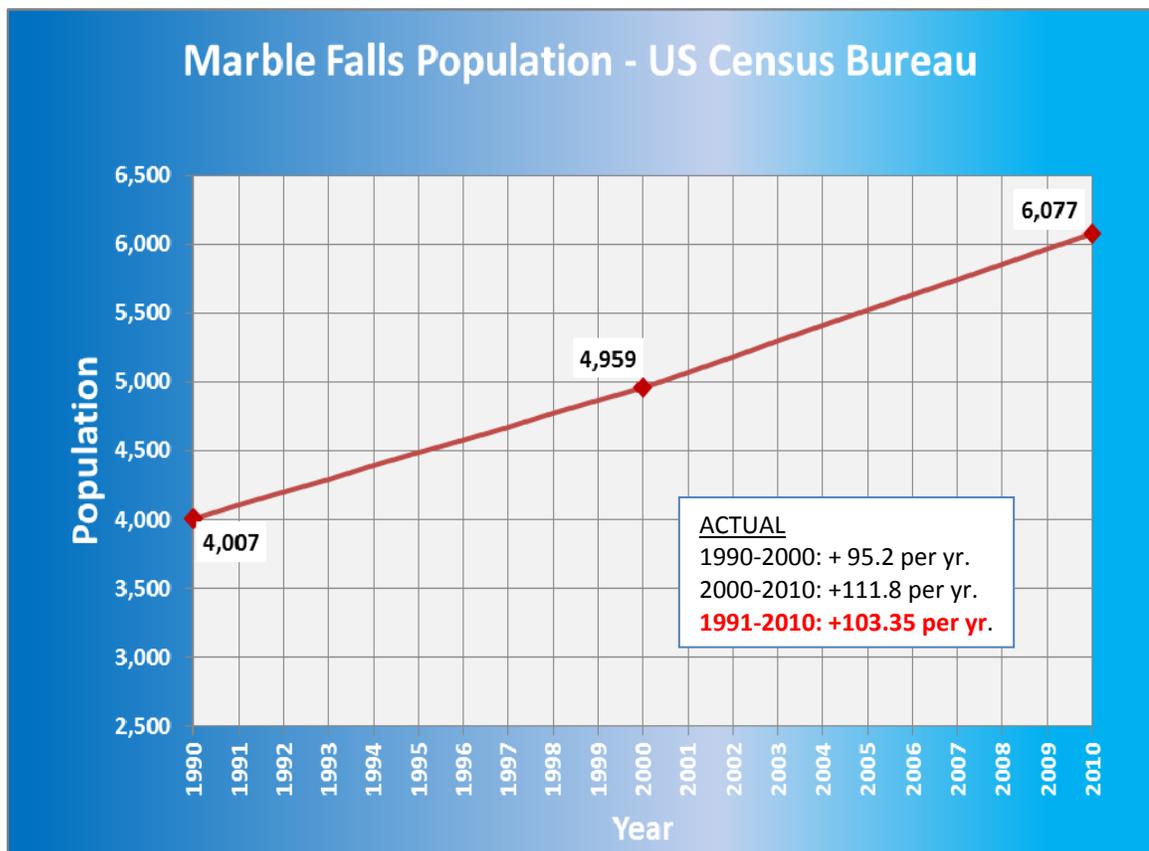
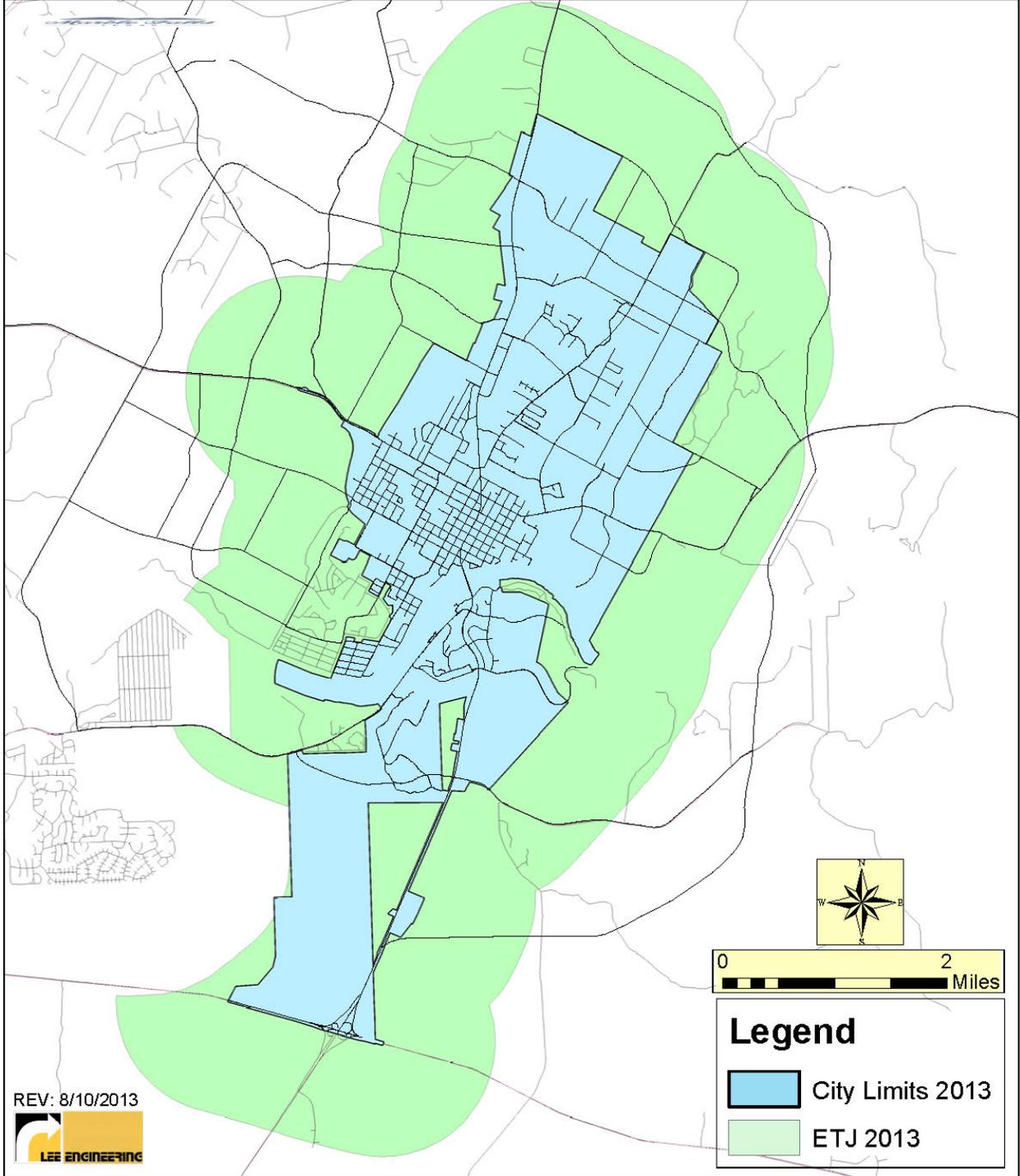


Figure 3 – Historical Population, 1990-2010

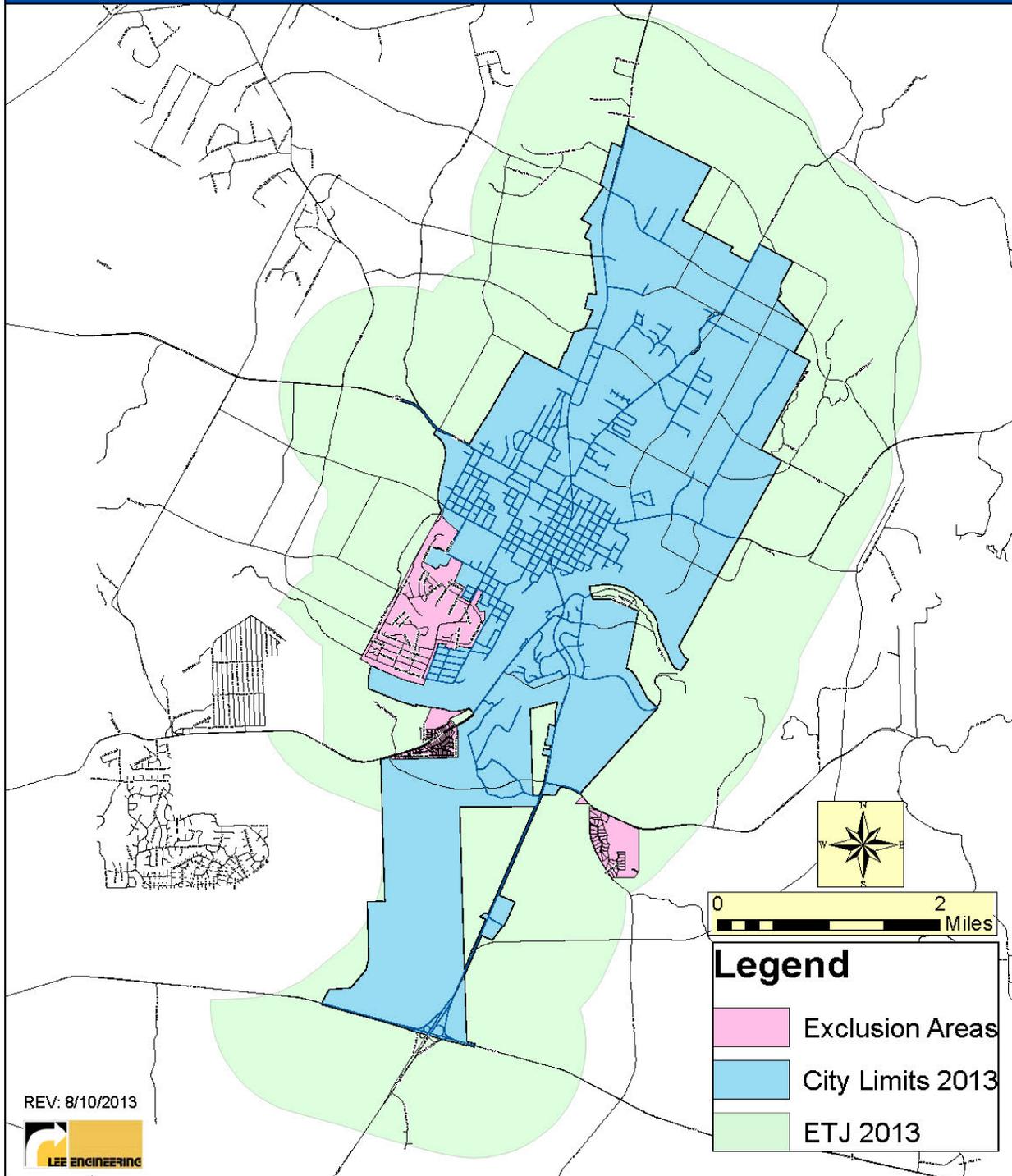
City of Marble Falls Impact Fee Update, 2013



City Limit & ETJ - 2013

Figure 1 – City Limit and ETJ of Marble Falls, Texas

City of Marble Falls Impact Fee Update, 2013



Proposed Service Area - 2013

Figure 2 - Adopted Service Area for Impact Fees

The Advisory Committee was presented these historical population figures as well as future projections of the Texas State Data Center (TSDC) and Office of the State Demographer at the University of Texas-San Antonio (UTSA). These projections are made at the county level for the years 2011 to 2050.

Historical trends indicate that Marble Falls is responsible for 13.0 percent of the observed growth of Burnet County. Figure 4 illustrates the projected growth of Burnet County for the years 2010-2025 for three growth scenarios based on migration rates: 0.0 rate for no established migration pattern, 0.5 migration rate and an 1.0 migration rate. In a like manner, the Marble Falls forecast growth based on 13.0 percent of the County's growth is shown in Figure 5 for all three migration scenarios.

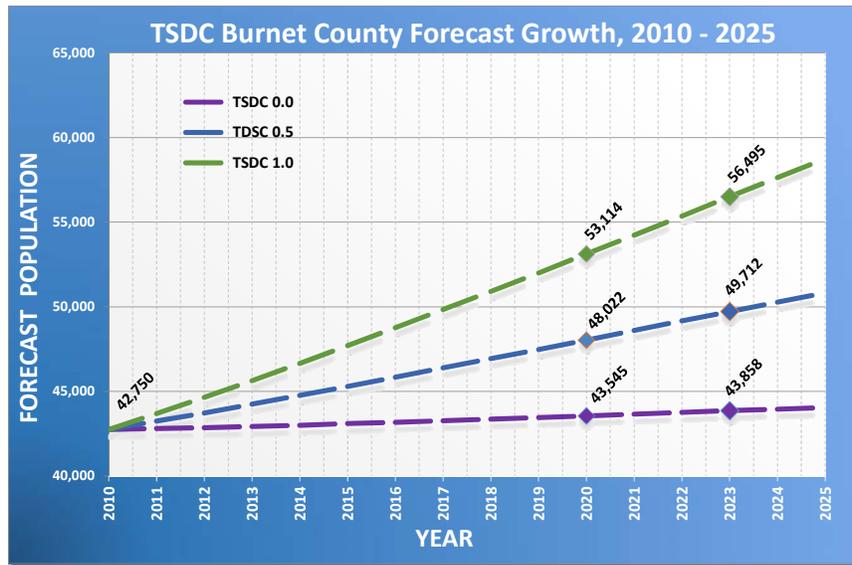


Figure 4 – TSDC Population Projections, Burnet County, 2010-2025

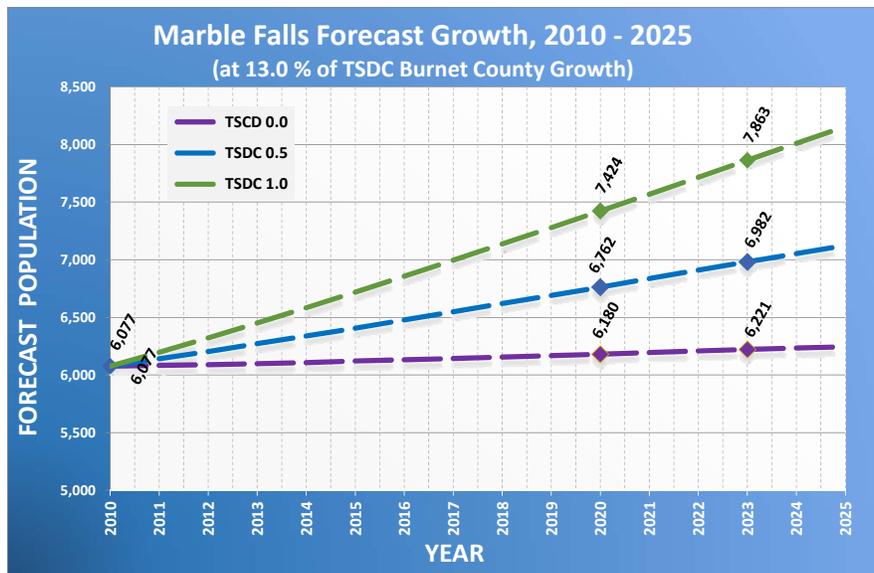


Figure 5 – TSDC Population Projections, Marble Falls, 2010-2025

Growth Alternatives

Five (5) alternatives for growth over the next 10-years were developed for comparison. These alternatives were:

- Historical Trend – 20-year growth trend, 1990-2010
- Historical Trend – most recent 10-year growth trend, 2000-2010
- TSDC, 0.0 Scenario
- TSDC, 0.5 Scenario
- TSDC, 1.0 Scenario

The following **Figure 6** compares these five growth alternatives.

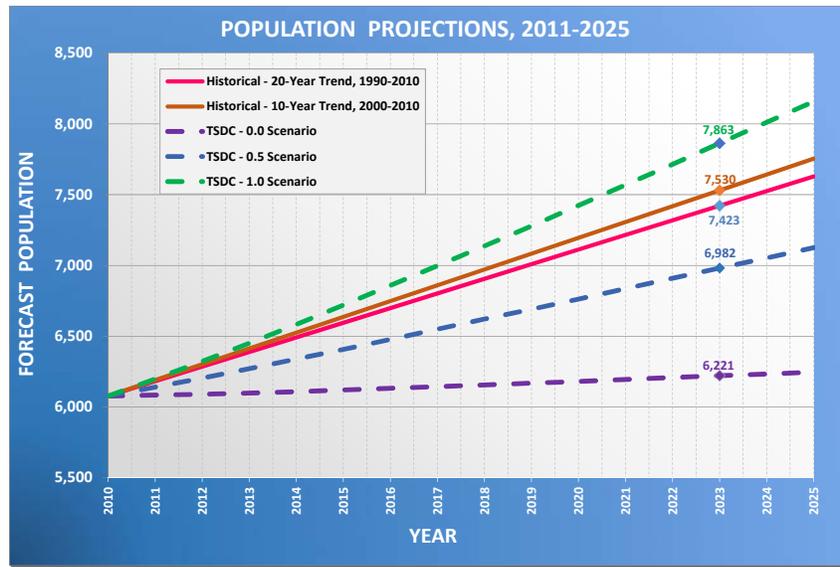


Figure 6 – Alternative Growth Scenarios, Marble Falls, 2010-2025

Table 1 presents the population forecasts by year for each of the five growth alternatives.

Table 1 – Forecast Population Growth Alternatives, 2010-2025

YEAR	ALTERNATIVE POPULATION FORECASTS				
	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Alternative #5
	Historical 20-Yr. Trend	Historical 10-Yr. Trend	TSDC - 0.0 Scenario	TSDC - 0.5 Scenario	TSDC - 1.0 Scenario
2010	6,077	6,077	6,077	6,077	6,077
2011	6,181	6,189	6,083	6,140	6,198
2012	6,284	6,301	6,089	6,203	6,322
2013	6,388	6,412	6,098	6,271	6,450
2014	6,491	6,524	6,108	6,338	6,583
2015	6,595	6,636	6,121	6,406	6,719
2016	6,698	6,748	6,131	6,477	6,858
2017	6,802	6,860	6,143	6,550	6,997
2018	6,905	6,971	6,155	6,620	7,137
2019	7,009	7,083	6,168	6,690	7,278
2020	7,112	7,195	6,180	6,762	7,424
2021	7,216	7,307	6,194	6,836	7,569
2022	7,319	7,419	6,208	6,910	7,715
2023	7,423	7,530	6,221	6,982	7,863
2024	7,526	7,642	6,233	7,053	8,011
2025	7,630	7,754	6,245	7,125	8,158
10-Yr. Growth (2013-2023)	+1,035	+1,118	+123	+711	+1,413
Pop. Per Year Growth	103.5	111.8	11.2	69.9	138.7
Avg. Annual % Growth	1.70%	1.84%	0.18%	1.15%	2.28%

Alternative population forecast, Alternative #5, has been selected as the basis for growth over the next 10-year period, 2013-2023. This alternative is developed by a credible source (Texas State Data Center) based on detailed demographic data for the State of Texas. It also most closely resembles the historical trends that have been observed over the past 10 years.

Land Use Categories and Intensities

The procedures for the development of impact fees require a forecast and "...projection of changes in land use...." for the defined service area. The city is comprised of a number of disparate land uses including residential uses of varying intensities, non-residential uses and vacant land and local infrastructure. The 1998 and 2008 Comprehensive Plans for the City of Marble Falls conducted an intensive inventory of land uses and established definitive characteristics that were examined to help determine what is likely to occur in the future.

As a result of City staff and Advisory Committee discussion, seven distinct categories of land uses were originally adopted for the purposes of impact fee assessments. Additionally, typical intensities of these land uses were determined that could be directly related to the requirements for public infrastructure such as water and wastewater services. The land use categories adopted for the Land Use Assumptions are comprised of the following:

- **Single-Family:**
Residential structures including one-family detached units, duplexes, and mobile/manufactured homes
- **Multi-Family**
Residential structures including tri-plexes, four-plexes, and apartments with five or more units per building, rooming houses, group quarters, and related accessory buildings
- **Light Commercial**
Shopping and service facilities for the retail sale of goods and services as well as low-intensity office uses for the conduct of general business activities
- **Heavy Commercial**
Heavy retail, wholesale, and service uses which may involve some outdoor activity or areas of storage such as building yards, sales lots, and automobile repair
- **Industrial**
Heavy and light manufacturing, processing, storage, repair, fabrication, or distribution of products
- **Parks/Open Space**
Public Parks, outdoor recreation areas, golf courses, trails and natural preserves
- **Public/Semi-Public**
Institutional and non-government facilities where people frequently gather including government offices, schools, churches, community centers, hospitals, and meeting halls

The following **Table 2** presents the typical densities at which the categories are expected to be absorbed during the future 10-year period, 2013-2023.

Table 2 – Typical Land Use Densities by Category

Land Use Category	Typical Development Density
Single-Family	2.9 units/acre
Multi-Family	7.4 units/acre
Light Commercial	0.25 : 1 FAR
Heavy Commercial	0.25 : 1 FAR
Industrial	0.30 : 1 FAR
Parks/Open Space	0.10 : 1 FAR
Public/Semi-Public	0.25 : 1 FAR

Forecast Land Use Absorption, 2013-2023

Forecast of future land use absorption was accomplished by review of past trends and current land uses. The primary data source utilized for forecasts of future land use was the City’s 2013 inventory of lots and tracts contained in a geo-database that included 2,549 developed and 1,060 undeveloped lots and tracts within the corporate limits of Marble Falls. **Table 3** presents the area coverage of each land use category and the undeveloped acreage.

Table 3 – 2013 Land Use, Marble Falls

2013 Land Use Inventory					
Land Use Category	2013 Acres	No. of Lots/ Tracts	% Total Developed	% of Total Area	2013 Acres per 100 Population*
Single-Family	1,312.62	1,670	65.5%		20.35
Multi-Family	147.08	188	7.4%		2.28
Light Commercial	233.45	255	10.0%		3.62
Heavy Commercial	321.24	181	7.1%		4.98
Industrial	434.12	127	5.0%		6.73
Parks/Open Space	251.54	30	1.2%		3.90
Public/Semi-Public	498.47	98	3.8%		7.73
Subtotal Developed	3,198.52	2,549	100.0%	36.7%	
Undeveloped	5,506.89	1,060			
Subtotal Undeveloped	5,506.89	1,060		63.3%	
Total Acreage	8,705.41	3,609		100.0%	

The background data, assumptions and methodology for the determination of land use absorption for the next 10-years was considered by the Advisory Committee as presented by the staff. As a result, it is forecast that a total of 700.75 additional acres of land will be absorbed over the next 10 years. Total forecast Land Use in 2023 and the 10-year increase by land use category is shown in the following **Table 4**.

Table 4 – Land Use Absorption, 2013-2023

Land Use Category	2013 Acres per 100 Population	2013 Acres (Actual)	2023 Acres (Forecast)	10-Year Absorption (Acres)
Single-Family	20.35	1,312.62	1,600.20	+287.58
Multi-Family	2.28	147.08	179.30	+32.22
Light Commercial	3.62	233.45	284.60	+51.15
Heavy Commercial	4.98	321.24	391.61	+70.38
Industrial	6.73	434.12	529.23	+95.11
Parks/Open Space	3.90	251.54	306.65	+55.11
Public/Semi-Public	7.73	498.47	607.68	+109.21
TOTAL		3,198.52	3,899.27	+700.75
2013 Population Estimate	6,450	(TSDC 1.0 Scenario)		
2023 Population Forecast	7,863	(TSDC 1.0 Scenario)		

Summary of Land Use Assumptions

Based on historical and current trends provided by US Census data and projections of the Capital Area Council of Governments for the Burnet County area, Marble Falls and its ETJ is expected to reach a population of **7,863 persons** by the year 2023. In order to support this growth, an additional **700.75 acres** of land is expected to be absorbed during this 10-year period.

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3.0 CAPITAL IMPROVEMENTS PLAN

This document presents the Capital Improvement Plan for Development Impact Fees being considered by the City. The following sections describe the process and results that comprise the **Capital Improvement Plan** for the future 10-year period, 2013 through 2023.

Service Area

The service area considered for impact fees included the current (2008) jurisdictional limits of Marble Falls including areas to be annexed during this calendar year as well as the extraterritorial jurisdiction (ETJ) of the City. It is planned that new capital facilities implemented by the City will extend water and sewer services to areas outside the existing city limits, into the area of the ETJ. The proposed service area is illustrated in **Figure 2**.

Capital Facilities

New Facilities

The City of Marble Falls has been active in the development of local infrastructure to include new Water and Wastewater facilities to serve continued growth in existing and newly annexed areas. The focus of development impact fees at this time is on Water and Wastewater Facilities to include the following types of new facilities

- Water Distribution Lines – Major water lines of 8 inch diameter or larger that supply water to customers of the Marble Falls Water System
- Water Treatment – Expansion of existing water treatment facilities to prepare water for distribution supplied by the Lower Colorado River Authority (LCRA)
- Wastewater Collection Lines – Major sewer lines of 12 inch diameter or greater for gravity flow lines and 6 inch diameter or greater for pressure (“force”) mains.

The City of Marble Falls staff in conjunction with the council’s Capital Improvement Advisory Committee compiled a final list of water and wastewater facilities required to accommodate existing and new development over the next 10-years. The facilities included in **Table 5** and **Table 6** for water and wastewater, respectively, is composed of proposed (new) facilities and facilities that have been previously constructed and are included to partially recoup costs of construction. Location maps of Water Facilities and Wastewater Facilities is included as **Figure 7** and **Figure 8**, respectively.

Table 5 – Water Facilities CIP, 2013-2023

Item ID	Item	Diameter	Description	Length (Ft.)	Opinion of or Actual* Capital Cost	20-Year Debt Service (@ 3%)	Total 20-Year Project Cost	% Utilized 10-Year Period (2013-2023)	10-Year Cost Allocation
WATER LINES									
W01	12" Water Line	12	Nature Heights	2,581	\$280,000	\$77,610	\$357,610	7.41%	\$26,490
W02	10" Water Line*	10	Hamilton Creek	1,352	\$140,000	\$38,805	\$178,805	7.41%	\$13,245
W03	16" Water Line	16	Mustang Dr.	2,344	\$350,000	\$97,013	\$447,013	7.41%	\$33,113
W04	12" Water Line	12	Broadway	8,420	\$880,000	\$243,918	\$1,123,918	7.41%	\$83,255
W05	8" Water Line	8	Los Escondidos Upgrade	9,888	\$1,547,000	\$428,797	\$1,975,797	7.41%	\$146,359
W06	12" Water Line*	12	Mormon Mill Rd Phase III	5,884	\$1,031,422 *	\$285,890	\$1,317,312	7.41%	\$97,581
W07	12" Water Line*	12	Cedar Ridge	4,209	\$272,657 *	\$75,575	\$348,232	7.41%	\$25,796
W08	16" Water Line*	16	Manzano Mile	9,341	\$1,092,843 *	\$302,914	\$1,395,757	7.41%	\$103,392
W09	16" Water Line*	16	Flatrock-281	27,488	\$5,191,157 *	\$1,438,885	\$6,630,042	7.41%	\$491,126
WATER TREATMENT									
WP12	Water Plant 4.1 MGD		Plant Upgrade	n/a	\$4,900,000	\$1,358,182	\$6,258,182	7.41%	\$463,581
TOTALS					\$15,685,079	\$4,347,590	\$20,032,669	7.41%	\$1,483,938

* Actual construction cost (recoup)

Table 6 – Wastewater Facilities CIP, 2013-2023

Item ID	Item	Diameter (In.)	Description	Length (Ft.)	Opinion of or Actual* Capital Cost	20-Year Debt Service (@ 3%)	Total 20-Year Project Cost	% Utilized 10-Year Period (2013-2023)	10-Year Cost Allocation
WASTEWATER LINES									
WW01	15" Wastewater	15	Nature Heights	3,623	\$440,000	\$121,959	\$561,959	1.490%	\$8,376
WW02	18" Wastewater upgrade	18	Lantana to Nature Heights	6,086	\$810,000	\$224,516	\$1,034,516	1.490%	\$15,419
WW03	18" Wastewater upgrade	18	Yett to Indian Trail	9,527	\$1,250,000	\$346,475	\$1,596,475	1.490%	\$23,795
WW04	15" Wastewater upgrade	15	Yett and Avenue L upgrade	1,014	\$220,000	\$60,980	\$280,980	1.490%	\$4,188
WW05	12" Wastewater upgrade	12	Line upgrade and manhole	1,165	\$140,000	\$38,805	\$178,805	1.490%	\$2,665
WW06	12" Wastewater*	12	Mormon Mill	5,750	\$1,669,036 *	\$462,623	\$2,131,659	1.490%	\$31,772
WW07	Lift Station*	-	Mormon Mill Lift Station	n/a	\$663,364 *	\$183,871	\$847,235	1.490%	\$12,628
WW08	12" Wastewater	12	Cedar Ridge	4,193	\$508,994 *	\$141,083	\$650,077	1.490%	\$9,689
WW09	6" Wastewater*	6	Manzano Mile	9,241	\$680,464 *	\$188,611	\$869,075	1.490%	\$12,954
WW10	Lift Station*	-	US 281 Bridge	n/a	\$563,000 *	\$156,052	\$719,052	1.490%	\$10,717
WW11	Lift Station*	-	US 281 South	n/a	\$519,281 *	\$143,934	\$663,215	1.490%	\$9,885
WW12	8" - 15" Wastewater*	8"-15"	Flatrock	21,405	\$3,912,334 *	\$1,084,421	\$4,996,755	1.490%	\$74,476
WASTEWATER TREATMENT									
WWP09	WW Plant .5 MGD	n/a	Waste water plant upgrade		\$2,500,000	\$692,950	\$3,192,950	1.490%	\$47,591
TOTALS					\$13,876,473	\$3,846,281	\$17,722,754	1.490%	\$264,157

* Actual construction cost (recoup)

Based on the absorption of population and land use over the next ten-year period (2013-2023) it is calculated that new development will utilize approximately 7.41 percent of the additional water facilities capacity. Similar to the analysis conducted for water facilities, it is estimated that new development over the forecast ten-year period will utilize approximately 1.49 percent of the additional wastewater facilities capacity.

Costs and Allocated Costs of Facilities

Tables 5 and 6 provide the estimated costs for water and wastewater facilities included in the ten-year period. These are shown to include the following elements:

- Opinion of capital cost – the estimated construction cost provided by the City’s Engineer for construction of the facility including pipe, fittings, manholes, valves, reservoirs, pumping, easements and engineering design.

- Cost of Debt Service – financing costs for construction of the respective utilities from revenue bond or other financing mechanisms at an estimated interest rate of 3.0 percent (crf = 0.06722) over 20 years of bonded indebtedness.
- Total 20-Year project cost – the sum of the capital and debt costs over 20 years of bonded indebtedness.

Total project costs for new water facilities are \$20.033 million and \$17.723 million for wastewater facilities.

On a system-wide basis, the percentage of calculated utilization of the water and wastewater facilities presented in **Tables 5 and 6** results in a maximum capital cost attributable to development forecast to occur over the 10-year period. These are shown in the tables as

- \$1,483,938 for water facilities, and
- \$ 264,157 for wastewater facilities

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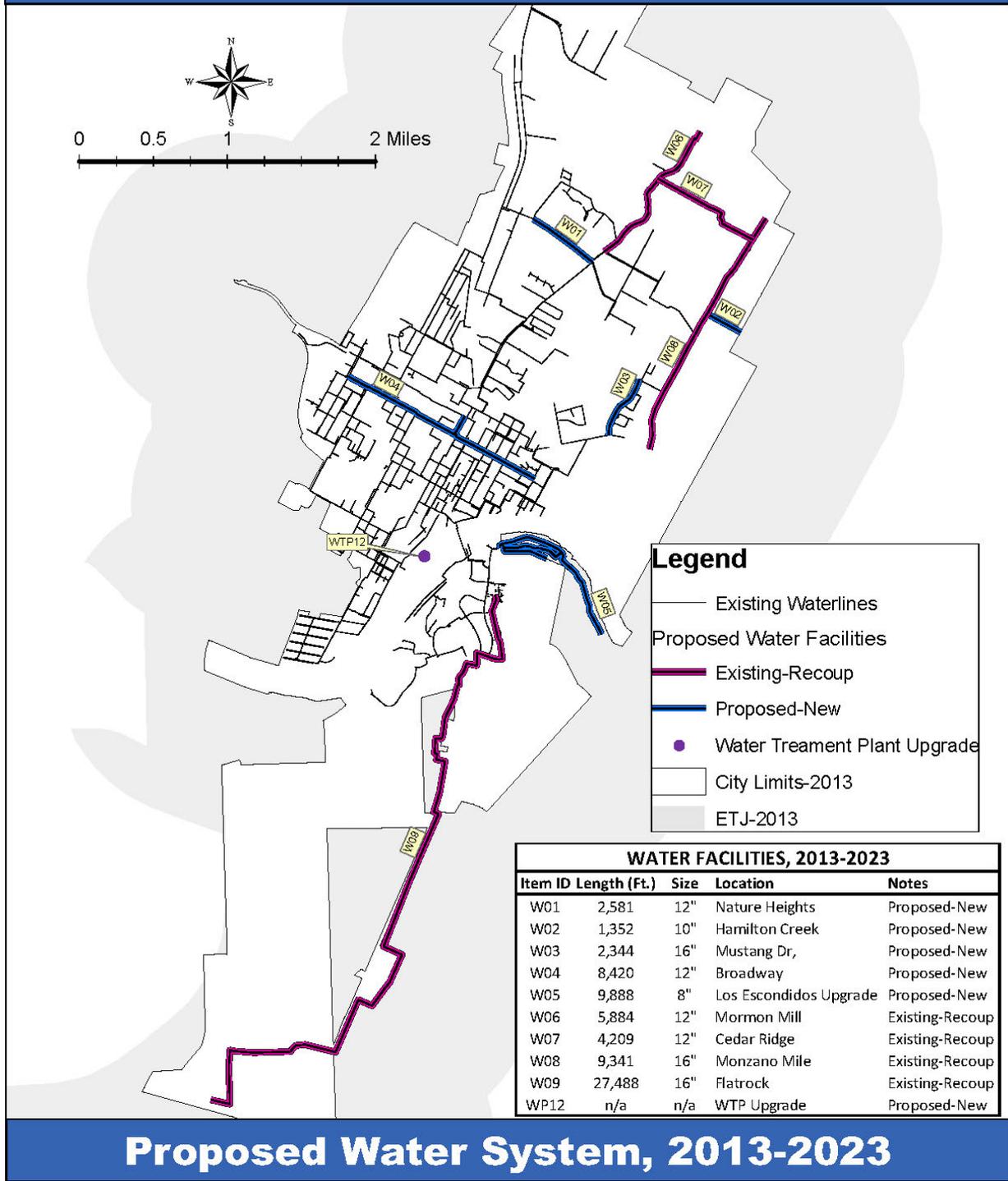


Figure 7 – Water Facilities CIP, 2013-2023

City of Marble Falls Impact Fee Update, 2013

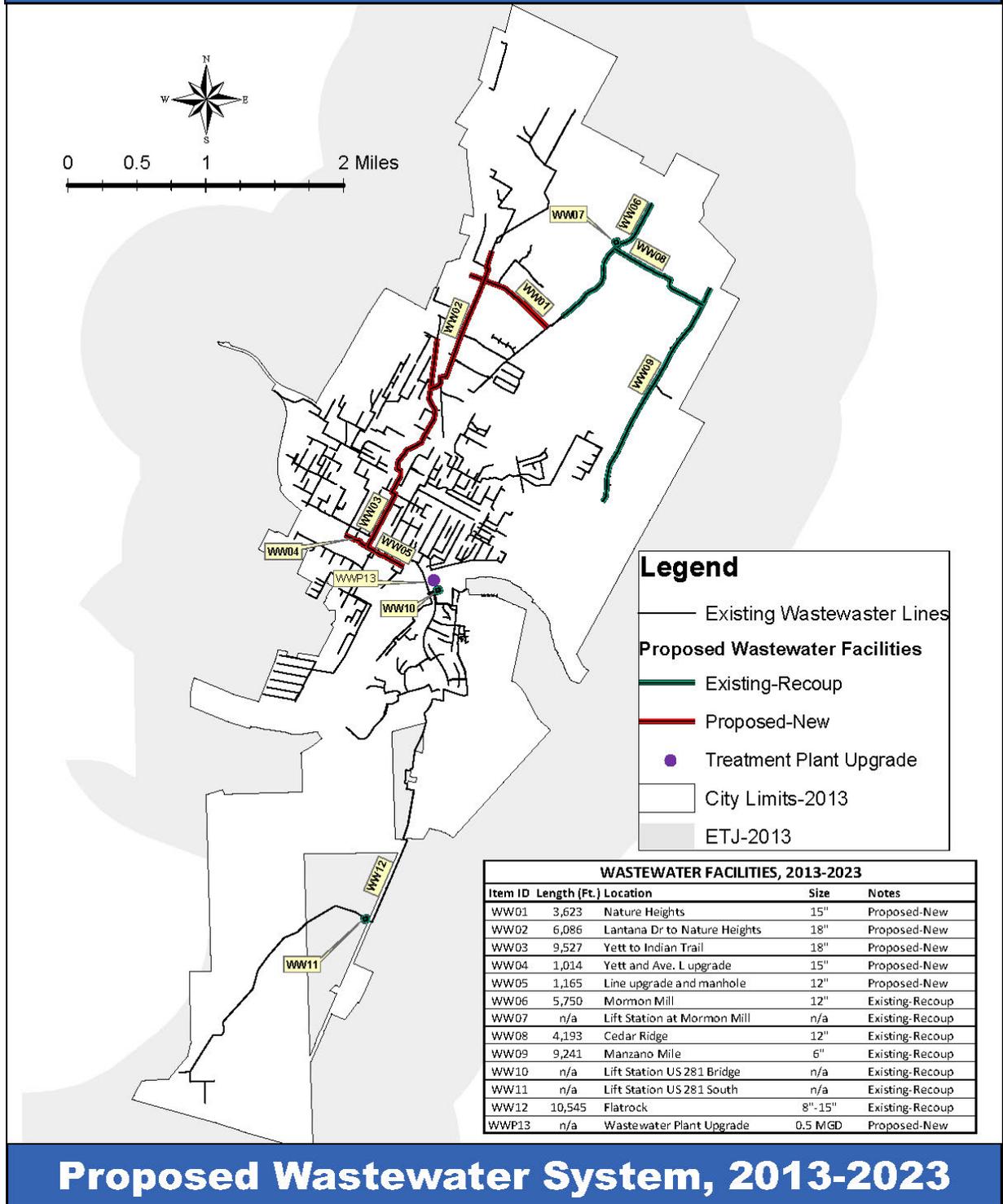


Figure 8 – Wastewater Facilities CIP, 2013-2023

Existing Facilities

Existing water and wastewater facilities have been identified as to location, size, capacity and utilization. Overall demand (water) and discharge and the resulting existing utilization of capacity has been determined that approximately 28 percent of 2013 water system capacity is utilized on a system-wide basis while approximately 74 percent of the wastewater system capacity is utilized. It is estimated that development forecast to occur over the ten-year period will utilize an additional 6 percent of existing water system capacity and 17 percent of the wastewater system capacity. These data are illustrated in the following **FIGURE 9**.

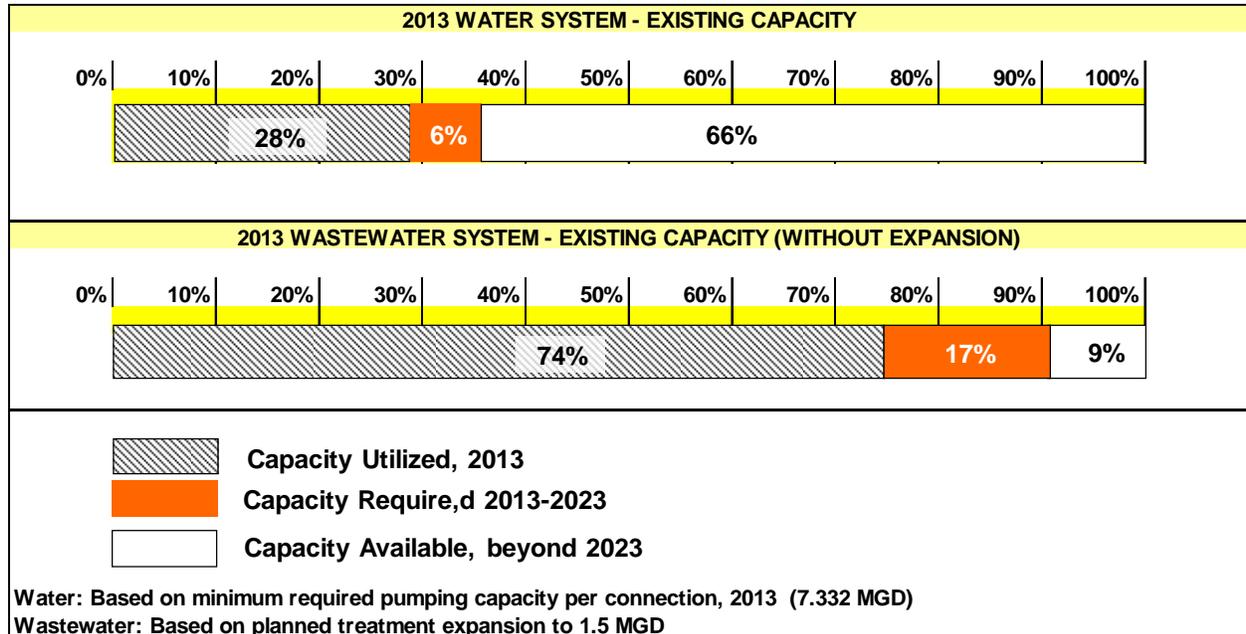


Figure 9 – Capacity of Existing System

Note that the capacity percentages of existing utilization of the water and wastewater systems for the 10-year period are not the same as the percentage of utilization of the CIP facilities shown in Tables 5 and 6. Those tables represent the utilization of the proposed capital facilities while the data of Figure 9 represent the system-wide utilization of the existing system by the forecast 10-year development.

Projected New ‘Service Units’

The statute requires that the capital improvement plan include “*the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria.*” In addition, it requires “*a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial.*”

Service Units are defined as “*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 and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years.”

The purpose of this requirement is to establish a relative measure of water consumption and wastewater discharge across the range of land uses that are expected to be absorbed over the next ten years.

Historical data and trends have been used to determine standardized rates of consumption (water) and discharge (wastewater) over the past 10 years. **Table 7**, below, illustrates actual water demand and wastewater discharge during the period 1998-2012 as provided by City of Marble Falls records. Population and the number of residential units is based on the Land Use Assumptions of this study.

Table 7 – Water and Wastewater Consumption/Demand Data, 1998-2012

Year	Population (1)	Residential Units (2)	WATER			WASTEWATER	
			No. Water Connection Customers (3)	Water Usage Average Day Demand (MG) (4)	Consumption per Resid. Unit Equivalent (gpd) (5)	WW Discharge- Avg. Day (MG) (6)	Discharge per Resid. Unit (gpd) (7)
1998	4,769	1,900	2,189	0.822	432	0.6716	354
1999	4,864	1,938	2,332	1.016	524	0.5803	299
2000	4,959	1,976	1,826	0.575	291	0.5418	274
2001	5,071	2,020	2,463	0.877	434	0.7026	348
2002	5,183	2,065	2,508	0.976	473	0.7381	357
2003	5,294	2,109	2,580	0.983	466	0.7129	338
2004	5,406	2,154	2,658	0.939	436	0.7075	328
2005	5,518	2,198	2,712	1.129	514	0.6788	309
2006	5,630	2,243	2,827	1.231	549	0.6243	278
2007	5,742	2,287	2,968	0.984	430	0.7849	343
2008	5,853	2,332	2,860	0.967	415	0.6145	264
2009	5,965	2,377	2,870	1.729	728	0.6818	287
2010	6,077	2,421	2,882	1.233	509	0.7477	309
2011	6,209	2,474	2,881	2.079	840	0.6807	275
2012	6,345	2,528	2,983	2.079	822	0.7280	288
Average Daily, 1998-2012					524		310

- (1) Actual and mid-census estimates (US Census)
- (2) Calculation at 2.51 persons per DU
- (3) City of Marble Falls Utility Records
- (4) City of Marble Falls Utility Records
- (5) Calculation
- (6) City of Marble Falls Utility Records
- (7) Calculation

Therefore the standardized rate of consumption or discharge per “residential living unit equivalent” over the past ten years is 524 gallons per day (gpd) for water consumption and 310 gpd discharge for wastewater. This can be compared to “typical” facility design capacities of 500 gpd and 300 gpd for water and wastewater respectively.

The methodology to determine existing and future service units is based on the calculated average rates of consumption/discharge and the forecast absorption of land use over the 10-year period. The following **Table 8** shows the calculations to arrive at the number of existing (2013) and projected (2023) service units and the resulting 10-year additional Service Units.

Table 8 – Calculation of 10-Year Additional Service Units

Year	WATER			WASTEWATER		
	Average Day Demand (MG)	Service Unit Demand (gpd)	Service Units	Average Day Flow (MG)	Service Unit Demand (gpd)	Service Units
2013	2.079	524	3,968	0.728	310	2,348
2023	2.534	524	4,837	0.887	310	2,863
10-Year Additional Service Units:			869			515

The Table shows that there are calculated to be 869 additional service units requiring water connection and 515 additional service units requiring wastewater connection during the 10-year period 2013-2023.

Service Unit Equivalency

This impact fee defines a water and wastewater “service unit” as a $\frac{3}{4}$ -inch water meter which is the equivalent of a single-family *Living Unit Equivalent (LUE)*. 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 $\frac{3}{4}$ -inch meter by the ratio of water flows for various meter sizes as published by the American Water Works Association (AWWA) as show in the following **Table 9**:

Table 9 – Service Unit Equivalents

Meter Size (1)	Maximum Continuous Operating Capacity (GPM) (2)	Service Unit Equivalent
3/4" PD (3)	15	1.00
1" PD	25	1.67
1 1/2" PD	50	3.33
2" PD	80	5.33
2" Compound	80	5.33
2" Turbine	100	6.67
3" Compound	160	10.67
3" Turbine	240	16.00
4" Compound	250	16.67
4" Turbine	420	28.00
6" Compound	500	33.33
6" Turbine	920	61.33
8" Compound	800	53.33
8" Turbine	1,600	106.67
10" Turbine	2,500	166.67

(1) PD = Positive Displacement Meter

(2) Operating Capacities per American Water works Association C-700-02

(3) Typical SF Residential Meter, City of Marble Falls

Therefore, the impact fee rate will be established by dividing total allowable capital costs per single family living unit (Service Unit) by the number of new service units determined by this study. The Impact Fee will then be the equivalent single-family living unit rate multiplied by the Service Unit Equivalent as determined by the meter size required for any particular development at the time of issuance of the building permit.

Summary of 10-Year Capital Improvement Plan

New water system facilities planned for the ten-year period are identified in **Table 5** and have a total 20-year project cost of \$20,032,699. Of this total cost, \$1,483,938 has been determined to be that those costs of the facilities attributable to new development forecast to occur over the ten-year period, 2013-2023. The following **Table 10** summarizes the total and allocated capital costs by existing water facilities with costs to be recouped and new, proposed facilities and water treatment plant capacity upgrade.

Table 10 – Summary of Water CIP Costs

Water System Facility	Project Cost	Utilized Capacity 10-Yr Period
Existing Water Lines	\$9,691,343	\$717,895
Proposed Wastewater Lines	\$4,083,144	\$302,463
Water Treatment	\$6,258,182	\$463,581
TOTAL	\$20,032,669	\$1,483,938

New wastewater system facilities planned for the ten-year period are identified in **Table 6** and have a total 20-year project cost of \$17,722,754. Of this total cost, \$264,157 has been determined to be attributable to new development forecast to occur over the ten-year period. The following **Table 11** summarizes the total and allocated capital costs by existing sewer facilities with costs to be recouped and new, proposed facilities and wastewater treatment plant capacity upgrade.

Table 11 - Summary of Wastewater CIP Costs

Wastewater System Facility	Project Cost	Utilized Capacity 10-Yr Period
Existing Sewer Lines	\$10,877,069	\$162,122
Proposed Wastewater Lines	\$3,652,735	\$54,444
Proposed Wastewater Treatment	\$3,192,950	\$47,591
TOTAL	\$17,722,754	\$264,157

It is calculated that in the 10-year period (2013-2023), an additional 869 water service units and 515 wastewater service units will be absorbed by new development. The “service unit” for the purposes of impact fees is defined as a ¾-inch water meter. Service Unit Equivalency is determined by the ratio of the flow capacity of any particular sized meter and the flow capacity of the standard ¾-inch meter.

4.0 Calculation of Impact Fees

Calculation of Maximum Allowable Impact Fee Rate

The statute requires calculation of the maximum impact fee per service unit include the costs of the capital improvements less the amount equal to the portion of ad valorem tax and utility service revenues generated by new development that is used for the payment of improvements (including debt) or, as an alternative, a credit equal to 50 percent of the total projected costs of implementing the CIP. The resulting calculation, individually for water and wastewater facilities is then divided by the respective 10-year additional service units to arrive at the impact fee rate (\$ per Service Unit). This calculation is as follows:

$$\begin{aligned}\text{WATER FACILITIES} &= \frac{(\text{Water facility costs attributable to new development}) \times 50\%}{\text{Number of New Service Units over 10-Year Period}} \\ &= \frac{(\$1,483,938) \times 50\%}{869} = \frac{\$741,969}{869} \\ &= \underline{\underline{\$ 853.82}}\end{aligned}$$

$$\begin{aligned}\text{WASTEWATER FACILITIES} &= \frac{(\text{Water facility costs attributable to new development}) \times 50\%}{\text{Number of New Service Units over 10-Year Period}} \\ &= \frac{(\$264,157) \times 50\%}{515} = \frac{\$132,078}{515} \\ &= \underline{\underline{\$ 256.46}}\end{aligned}$$

Therefore, the Maximum Allowable Impact Fee rate that may be assessed are:

- **\$ 853.82 for Water Facilities**
- **\$ 256.46 for Wastewater Facilities**

Calculation of Maximum Allowable Impact Fees

The Impact Fee actually assessed is a simple calculation of the Impact Fee Rate times the Service Unit Equivalent based on the size of water meter required for a particular building permit. The following **Table 12** illustrates the Maximum Assessable Water, Wastewater and Combined Water/Wastewater Impact Fees based on the calculated rate.

Table 12 – Maximum Allowable Impact Fees

Meter Size	Water Facilities	Wastewater Facilities	Combined Total
3/4" PD (3)	\$853.82	\$256.46	\$1,110.28
1" PD	\$1,423.03	\$427.43	\$1,850.47
1 1/2" PD	\$2,846.07	\$854.87	\$3,700.93
2" PD	\$4,553.71	\$1,367.79	\$5,921.49
2" Compound	\$4,553.71	\$1,367.79	\$5,921.49
2" Turbine	\$5,692.13	\$1,709.73	\$7,401.87
3" Compound	\$9,107.41	\$2,735.57	\$11,842.99
3" Turbine	\$13,661.12	\$4,103.36	\$17,764.48
4" Compound	\$14,230.33	\$4,274.33	\$18,504.67
4" Turbine	\$23,906.96	\$7,180.88	\$31,087.84
6" Compound	\$28,460.67	\$8,548.67	\$37,009.33
6" Turbine	\$52,367.63	\$15,729.55	\$68,097.17
8" Compound	\$45,537.07	\$13,677.87	\$59,214.93
8" Turbine	\$91,074.13	\$27,355.73	\$118,429.87
10" Turbine	\$142,303.33	\$42,743.33	\$185,046.67