

# **WASTEWATER IMPACT FEE STUDY**

## **LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN REPORT**

Prepared for:

**City of Harker Heights**

September 17, 2021

Prepared by:

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FREESE AND NICHOLS, INC.  
TEXAS REGISTERED  
ENGINEERING FIRM  
F-2144

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FNI Project No.: HAK21373

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## 1.0 BACKGROUND AND SCOPE

In April 2021, the City of Harker Heights, Texas (City) authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis for the southeast portion of the City’s wastewater system. The purpose of this report is to document the land use assumptions and capital improvements plan which will be used in the development and calculation of wastewater impact fees for the City of Harker Heights. The methodology used herein satisfies the requirements of the Texas Local Government Code (TLGC) Section 395 (**Section 1.1**) for the establishment of impact fees. The City does not currently charge wastewater impact fees to new developments.

### 1.1 TEXAS LOCAL GOVERNMENT CODE

Chapter 395 of the Texas Local Government Code requires an impact fee analysis before impact fees can be created and assessed. Chapter 395 defines an impact fee as “a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development.” In September 2001, Chapter 395 was amended creating the current procedure for implementing impact fees. Chapter 395 identifies the following items as impact fee eligible costs:

- Construction contract price
- Surveying and engineering fees
- Land acquisition costs
- Fees paid to the consultant preparing or updating the capital improvements plan (CIP)
- Projected interest charges and other finance costs for projects identified in the CIP

Chapter 395 also identifies items that impact fees cannot be used to pay for, such as:

- Construction, acquisition, or expansion of public facilities or assets other than those identified on the capital improvements plan
- Repair, operation, or maintenance of existing or new capital improvements
- Upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards
- Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development

- Administrative and operating costs of the political subdivision
- Principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed above

As a funding mechanism for capital improvements, impact fees allow cities to recover the costs associated with new or facility expansion in order to serve future development. Statutory requirements mandate that impact fees be based on a specific list of improvements identified in a capital improvements program and only the cost attributed (and necessitated) by new growth over a 10-year period may be considered. As projects in the program are completed, planned costs are updated with actual costs to more accurately reflect the capital expenditure of the program. Additionally, new capital improvement projects may be added to the system.

## **1.2 METHODOLOGY**

Wastewater impact fee capital improvements plan (CIP) projects were developed for the City based on the land use assumptions, input from City staff, and projects from previous studies. The recommended improvements will provide the required capacity to meet projected wastewater flows through year 2032. The projects identified are consistent with the Chapter 395 definition of impact fee eligible projects.

As part of the impact fee development, FNI will conduct workshops with the City's appointed Capital Improvements Advisory Committee (CIAC) and City Council. FNI will calculate the maximum allowable impact fee utilizing the 50% credit methodology identified in TLGC Chapter 395. The CIAC's role includes reviewing the land use assumptions and impact fee CIP and recommending an impact fee rate to the City Council. The City Council sets the impact fees to be collected.

### 1.3 LIST OF ABBREVIATIONS

The list of abbreviations used in this report are presented in **Table 1-1**.

**Table 1-1: List of Abbreviations**

Abbreviation	Actual
CIAC	Capital Improvement Advisory Committee
CIP	Capital Improvement Plan
FNI	Freese and Nichols, Inc.
MGD	Million Gallons per Day
TCE	Thonhoff Consulting Engineers, Inc.
TLGC	Texas Local Government Code

## 2.0 LAND USE ASSUMPTIONS

### 2.1 SERVICE AREA













Projected land use is an important element in the analysis of wastewater collection and treatment systems. To assist the City in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. These assumptions will become the basis for the preparation of impact fee capital improvement plans for wastewater facilities.

FNI worked with City staff to develop growth projections and land use assumptions for the study area during the development of this report. The City is anticipating the majority of future developments to occur roughly within the southeast portion of the City, and therefore determined to set the wastewater impact fee service area to this boundary, shown on **Figure 2-1**. The future land use for the service area is presented on **Figure 2-2**.



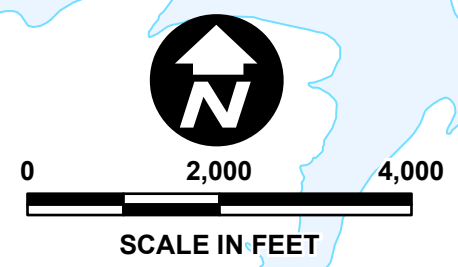
FIGURE 2-1  
CITY OF  
HARKER HEIGHTS  
WASTEWATER IMPACT FEE  
SERVICE AREA

LEGEND

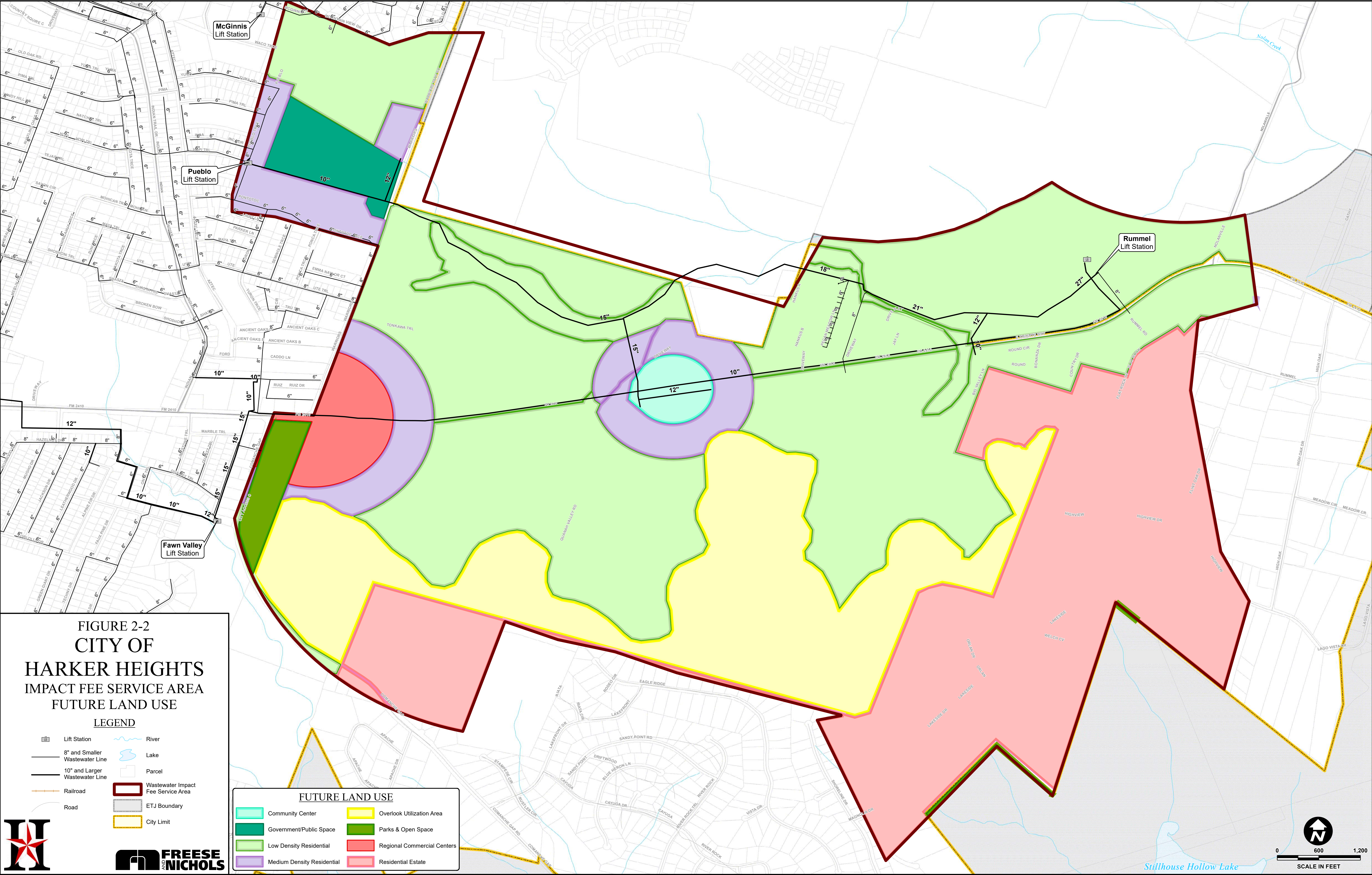
- |  |                                |   |                         |
|--|--------------------------------|---|-------------------------|
|  | Lift Station                   |  | Road                    |
|  | Wastewater Treatment Plant     |  | River                   |
|  | 8" and Smaller Wastewater Line |  | Lake                    |
|  | 10" and Larger Wastewater Line |  | Parcel                  |
|  | Railroad                       |  | Wastewater Service Area |
|  |                                |  | ETJ Boundary            |
|  |                                |  | City Limit              |



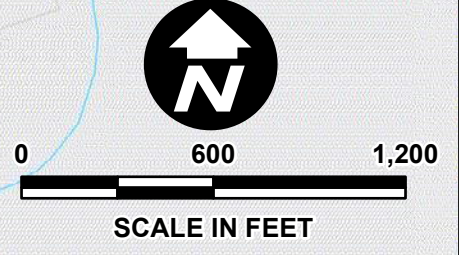
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Updated: Wednesday, August 18, 2021 10:25:03 AM  
User Name: JBY





## 2.2 HISTORICAL AND PROJECTED GROWTH

### 2.2.1 Historical Population

Historical population data was provided in the February 2021 *Wastewater Flow Capacity Analysis Report* developed by Thonhoff Consulting Engineers, Inc. (TCE). The City had an average 2.2% annual growth rate over the past eight years. This historical population information is presented in **Table 2-1**.

**Table 2-1: Historical Population within City Limits**

Year	Population	Average Annual Growth Rate (%)
2012	27,894	
2013	28,563	2.4%
2014	29,233	2.3%
2015	29,903	2.3%
2016	30,573	2.2%
2017	31,243	2.2%
2018	31,913	2.1%
2019	32,583	2.1%
2020	33,253	2.1%
Average		2.2%

### 2.2.2 Projected Growth

The magnitude and distribution of the growth in the service area will dictate where future wastewater infrastructure is required. It is important to note that projecting future growth is challenging, especially for relatively small geographic areas such as individual cities or sections of cities, because it can be difficult to predict how fast or slow development will occur when there are a variety of circumstances that can impact it. **Table 2-2** presents the City's projected growth for the 10-year planning period for the wastewater impact fee service area.

**Table 2-2: Wastewater Impact Fee Service Area Growth**

Year	Connections
2022	125
2032	1,500

### 3.0 CAPITAL IMPROVEMENTS PLAN

Wastewater capital improvement plan (CIP) projects were developed for the City of Harker Heights in the February 2021 *Wastewater Flow Capacity Analysis Report* by TCE. The wastewater CIP projects that are required to serve growth within the next 10 years were identified for inclusion in the wastewater impact fee analysis.

#### 3.1 WASTEWATER LOAD PROJECTIONS

Wastewater flow projections for 2022 and 2032 were developed using criteria from the February 2021 *Wastewater Flow Capacity Analysis Report*. 2.97 people per connection and 76 gallons per capita per day were assumed for wastewater flow projections. A wet weather peaking factor of 4.0 was applied to calculate the peak wet weather flow. **Table 3-1** presents the projected wastewater flows for the wastewater impact fee service area in million gallons per day (MGD).

**Table 3-1: Impact Fee Service Area Wastewater Flow Projections**

Year	Average Daily Flow (MGD)	Peak Wet Weather Flow (MGD)
2022	0.03	0.11
2032	0.34	1.35

#### 3.2 WASTEWATER SYSTEM IMPROVEMENTS

The TCE 2021 *Wastewater Flow Capacity Analysis Report* included proposed wastewater system improvements. A summary of the proposed projects serving growth in the 10-year period used in the impact fee analysis is shown in **Table 3-2**. The proposed impact fee CIP projects are shown on **Figure 3-1**.



**Table 3-2: Wastewater Impact Fee Capital Improvements Plan**

Project Number	Project Name
EXISTING	
A	Rummel Lift Station and Force Main
B	15/18/21/27" Gravity Line
C	Impact Fee Study
PROPOSED	
1	10-inch Force Main
2	Rummel Lift Station Expansion
3	Proposed Lift Station and 18-inch Force Main
4	24/27" Gravity Line
5	1.5 MGD Wastewater Treatment Plant Expansion



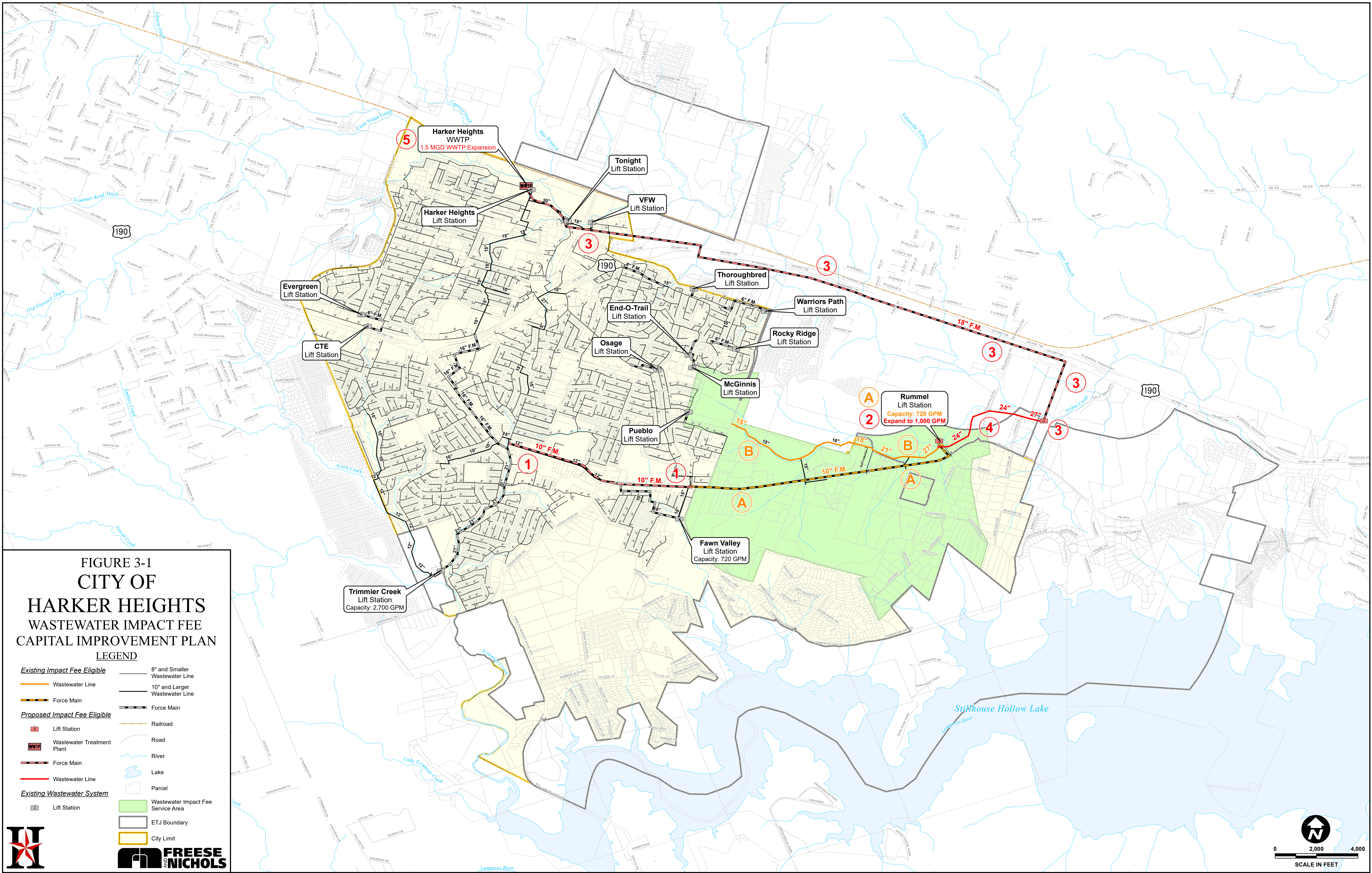


FIGURE 3-1  
CITY OF  
HARKER HEIGHTS  
WASTEWATER IMPACT FEE  
CAPITAL IMPROVEMENT PLAN

LEGEND

- Existing Impact Fee Eligible**
- Wastewater Line
  - Force Main
- Proposed Impact Fee Eligible**
- Lift Station
  - Wastewater Treatment Plant
  - Force Main
  - Wastewater Line
- Existing Wastewater System**
- Lift Station
- 8" and Smaller Wastewater Line
  - 10" and Larger Wastewater Line
  - Force Main
  - Railroad
  - Road
  - River
  - Lake
  - Parcel
  - Wastewater Impact Fee Service Area
  - ETJ Boundary
  - City Limit

