Capital Improvements Plan and Impact Fee Study
2023 Update

City of Jersey Village

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CAPITAL IMPROVEMENTS PLAN AND IMPACT FEE STUDY
CITY OF JERSEY VILLAGE

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3. Water System Improvements
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B. Existing Water Plant Capacity Analysis
C. Projected 2028 Water Plant Capacity Analysis
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EXECUTIVE SUMMARY

This study was performed to update the City of Jersey Village's (the City's) water and wastewater system impact fees in accordance with the Texas Local Government Code (TLGC) Chapter 395. The population growth over the next 5-years and 10-years were projected, water and wastewater system analyses were completed, and the City's Land Use Plan and Capital Improvements Plans (CIP) were updated per the requirements of TLGC Chapter 395.

Based on the City's 5-year growth projections and associated water and wastewater demand values, a total of 254 new physical connections which equate to 1,091 service units and 1,368 people are anticipated being added to the existing water and wastewater system by the year 2028. Based on the City's 10-year growth projections and associated water and wastewater demand values, a total of 1,000 new physical connections which equate to 4,281 service units and 3,931 people are anticipated being added to the existing water and wastewater system by the year 2033. The existing water and wastewater facility and utility capacities were evaluated, and improvements were identified to serve the projected developments over the next ten (10) years. The identified improvements were quantified into project groups based on time sensitivity or proximity related to the new development. The associated costs for these improvements are also included in the Water and Wastewater Capital Improvements Plan. Only improvement costs directly related to new growth or redevelopment can be accounted for in eligible impact fee costs, so each project group was estimated based on the amount attributable to new development. The project group name, scope of work, costs, and sequencing are subject to change.

The projected water and wastewater demands for new development were converted to service units to align with the City of Houston Impact Fee Service Unit Equivalent Table, dated August 26, 2019. The baseline assumption per 1 service unit is 250 gallons per day for water demand and 200 gallons per day for wastewater demand. The total service units projected to be added to the City 's water and wastewater system would be calculated based on the City of Houston Impact Fee Service Unit Equivalent table per development type as referenced in Attachment G. Based on recent opinion of probable cost estimates, the total water system improvement costs is estimated at $29,702,000 and the total wastewater improvements cost is estimated at $39,185,000. With a 50% reduction of the maximum eligible recoverable cost, the total water improvements cost eligible for impact fees is estimated at $20,359,200 and the total wastewater improvements cost eligible for impact fees is estimated at $20,659,400.

1.0 INTRODUCTION

In June 2023, the City of Jersey Village (the "City") authorized Quiddity to update the previously approved 2020 Capital Improvements Plan, Future Land Use Plan, and Impact Fee Study for the City's water and wastewater systems. The purpose of this report is to calculate water and wastewater impact fees for the City in accordance with Texas Local Government Code (TLGC) Chapter 395 (§395), as shown in Attachment A. TLGC §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." Impact fees may be imposed to pay for capital improvements, including and limited to:

- Construction contract price;
- Surveying and engineering fees;
- Land acquisition costs, including land purchases, court awards and costs, attorney's fees, and expert witness fees; and
- Fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan.

Impact fees cannot be used to pay for:

- Construction, acquisition, or expansion of public facilities other than capital improvements identified in 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 standards;
- Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing developments;
- Administrative and operating costs of the political subdivision; and
- Principal payments and interest or other finance charges.

Impact fees must be assessed for new developments on projects identified in the Capital Improvements Plan (CIP) and cannot be used for any rehabilitation project to serve existing development. "New development" is defined as 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. "Service unit" is 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 ten (10) years. TLGC §395 requires the Land Use Plan and CIP to be presented to the public. The CIP includes an analysis of the total water and wastewater system capacity, projected service units attributable to new development within a 10-year period and should be updated at least every five (5) years. The City's last update was completed July 2020. This study evaluated both new and redevelopment, predominately South of Highway 290, where existing water and sewer facilities are not provided by the City.

Table 1-1 List of Abbreviations

Abbreviation	Full Nomenclature
ADF	Average Daily Flow
AWWA	American Water Works Association
CIP	Capital Improvement Plan
City	City of Jersey Village
conn	Connections
ESFC	Equivalent Single-Family Residential Water Connections
EST	Elevated Storage Tank
ESU	Equivalent Service Unit
ETJ	Extraterritorial Jurisdiction
gal	Gallons
gpd	Gallons Per Day
gpm	Gallons Per Minute
IFS	Impact Fee Study
LS	Lift Stations
PHF	Peak Hour Flow
MGD	Million Gallons Per Day
SU	Service Unit
TCEQ	Texas Commission on Environmental Quality
TLGC	Texas Local Government Code
TWDB	Texas Water Development Board
WP	Water Plant
WWTP	Wastewater Treatment Plant

2.0 PLANNED GROWTH PROJECTIONS

The City anticipates growth in the form of new development and redevelopment in the area south of Highway 290. This area is partially served by the City in the form of water, wastewater, and stormwater. A critical part of the CIP and IFS is to predict future development within the City's jurisdiction while projecting anticipated water and wastewater demands. Projections aid in determining the need and timing of water and wastewater capital improvements necessary to sustain and serve future growth. Growth and development projections are formulated based on land use type in areas undeveloped or anticipated for redevelopment. The future land use assumptions become the foundation of the CIP for water and wastewater facility needs.

2.1 POPULATION

The 2021 Regional Water Plan issued by the TWDB outlines population projections for the years 2020 through 2070. The anticipated annual population growth rate for the City was projected at 0.185% each year. See Table 2-1 for TWDB Population Projections.

Table 2-1 TWDB Population Projections

2020	2030	2040	2050	2060	2070
7,959	8,028	8,179	8,344	8,525	8,724

Source: Texas Water Development Board

The estimated growth rate for the City based on the 10-year projections related to new development exceeds the TWDB population projections. A total of 3,930 people are anticipated within the 10-year timeframe based on development type and per capita factors. This equates to 5% growth per year.

2.2 EXISTING SYSTEM

Monthly connection counts used for billing was provided by the City for Fiscal Year (FY) 21 – FY 23. The most recent connection counts for August 2023 were utilized as the existing water system connections. The existing water system is comprised of several types of uses including single-family residential, multi-family residential, commercial, public and irrigation. Connections for this analysis are physical connections to which drinking water is supplied as defined by 30 TAC §290.38(16). Wastewater system connections were assumed for all water service connections with the exception of irrigation. See Table 2-2 for existing water system connection count.

Table 2-2 Existing Water System Connections

Type	Connections
Single-Family Residential	2,243
Multi-Family Residential	1,544
Commercial	158
Irrigation	850
Public	66
Total	4,861

2.3 LAND USE PLAN

The future land use plan was created by referencing the City's existing land use plan, identifying undeveloped tracts, and tracts forecasted for redevelopment. The existing land use plan was updated to reflect the current land use classifications based on desktop research performed from multiple online resources, as attached in Exhibit 1. Quiddity collaborated with the City to determine the anticipated type of development for undeveloped or City owned tracts. Several existing industrial tracts near the future Village Center were predicted to be redeveloped into Commercial, Retail, and Mixed-Use. The future land use plan also included adjusted City limits based on discussions with City Staff, as attached in Exhibit 2.

Exhibit 1 – Current Land Use Classification

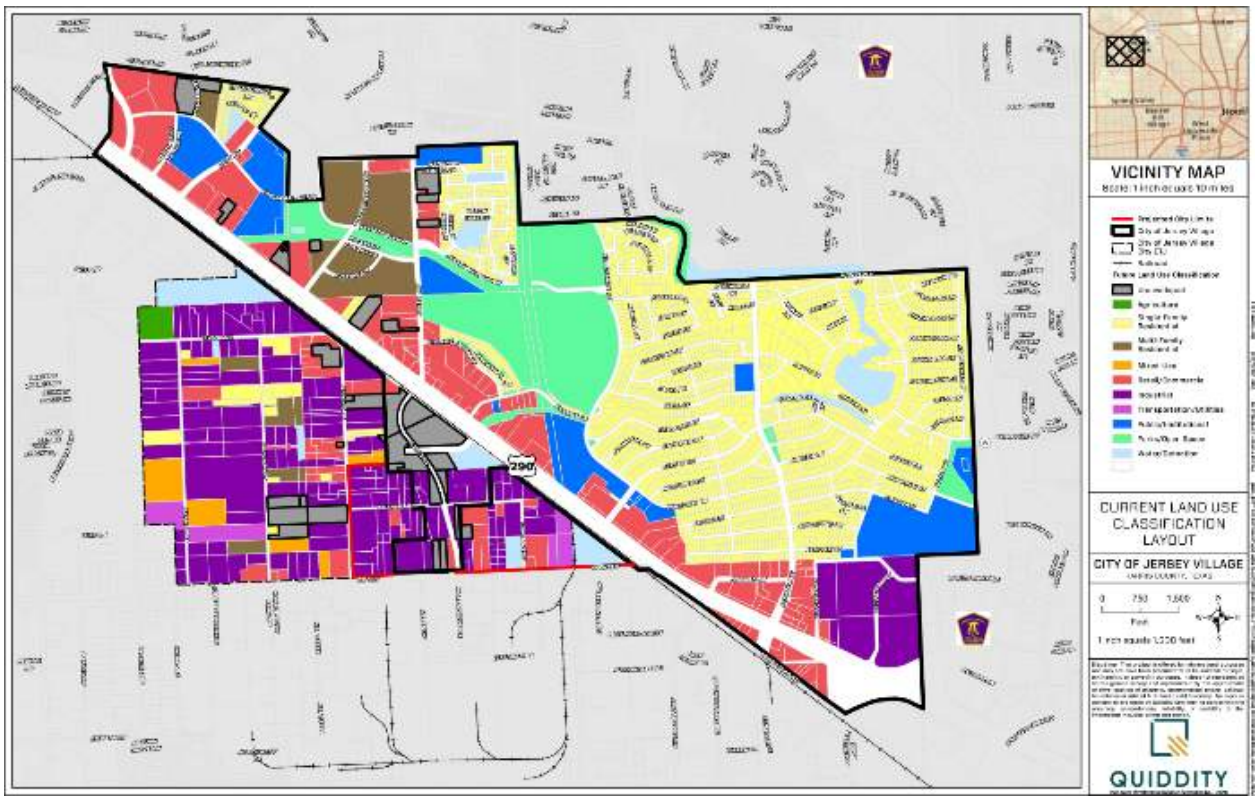
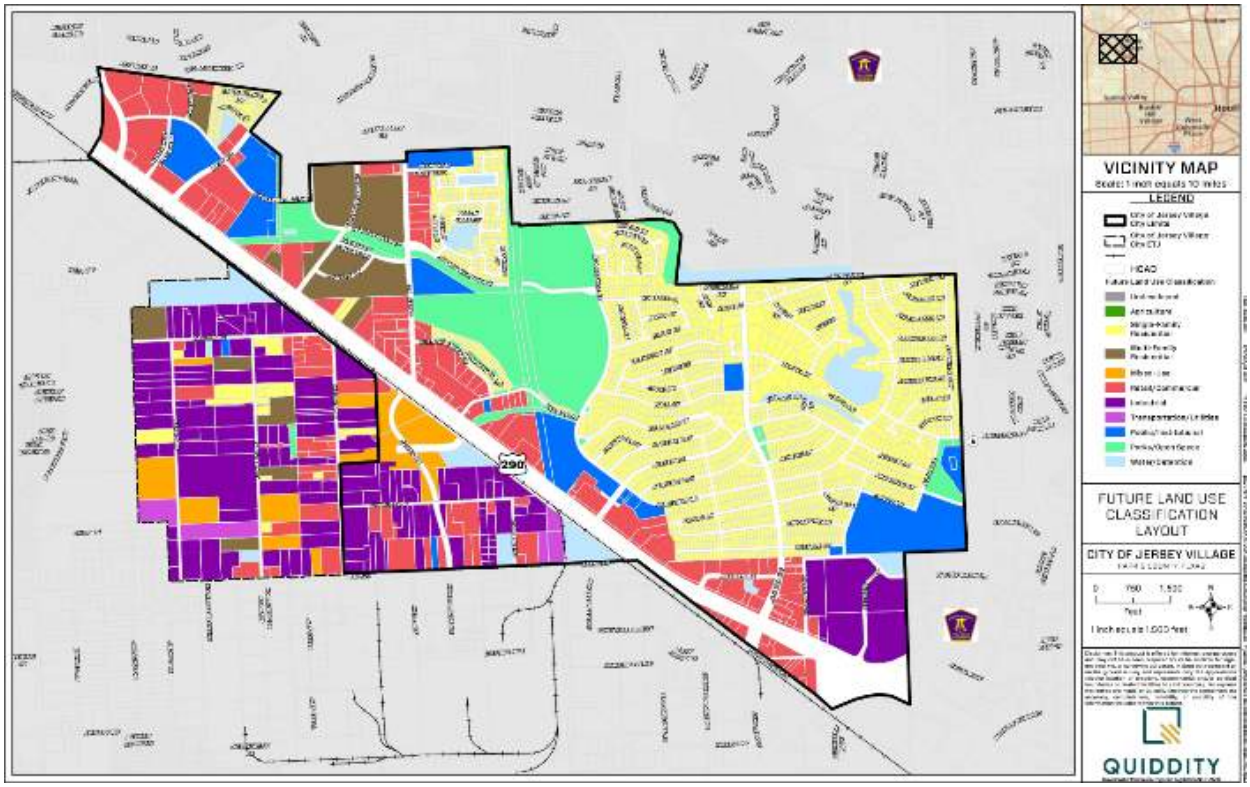


Exhibit 2 – Future Land Use Classification



2.4 FUTURE GROWTH

The future growth projections are based on the future land use plan and the projected development timeframe. Any new development defined by TLGC §395 that is anticipated to occur outside of the 10-year timeframe was excluded from this analysis. The baseline usage predicted in the IFS was 1,500 gpd per acre or 250 gpd per connections for water daily demand and 1,200 gpd per acre or 200 gpd per connections for wastewater daily demand. The number of connections per acre, or density, was assumed for each type of usage and applied to the acreage of the proposed development. The number of connections per acre was established based on the projected density within the Houston Metro area and Quiddity's experience with other types of development. Table 2-3 lists the assumed connections per acre and capita factor by each type of usage for the projected new development.

Table 2-3: Density by Type of Development

Type	Connections per Acre	Capita Factor
Single-Family Residential	6	3.25
Multi-Family Residential	15	2
Commercial	0.5	4
Industrial	0.5	1
Mixed-Use	4	8
Irrigation	2	0
Public	0.25	0

2.4.1 5-YEAR PROJECTION CONNECTIONS

The growth projected within the next five (5) years is predominately anticipated to occur within the City's inner ETJ along Wright Road, surrounding the future Village Center, and City limits southwest of Highway 290 to FM 529. This includes approximately 52 acres of commercial, 38 acres of mixed-use, 82 acres of industrial, and 10 acres of irrigation tracts. The City's 5-year population projection resulting from this growth is 1,368 people. Table 2-4 lists the 5-year projected physical connections and total connections for each type of development.

Table 2-4: 5-Year Connection Projections (FY 2028)

Type	New Development Connections	Total Connections
Single-Family Residential	0	2,243
Multi-Family	0	1,544
Commercial	28	186
Industrial	54	54
Mixed-Use	151	151
Irrigation	21	871
Public	0	66
Total	254	5,115

2.4.2 10-YEAR PROJECTION CONNECTIONS

The growth projected within the 5-year to 10-year timeframe is predicted to occur in the remaining tracts south of Highway 290 designated as "New Development" outside the projected City limits and within the City's ETJ. This includes approximately 5 acres of single-family residential, 33 acres of multi-family residential, 67 acres of commercial, 25 acres of mixed-use, 2 acres of public, as well as 371 acres of industrial designated tracts. The City's 10-year population projection resulting from this growth is approximately 2,271 people.

The growth projected to occur in the remaining undeveloped tracts within the City limits north of Highway 290 is designated as "Additional Development". This includes approximately 8 acres of multi-family residential and 23 acres of commercial designated tracts resulting in population growth of approximately 292 people. Projected physical connections were calculated based on the acrea5ge and density from the new development and additional development areas. Table 2-5 lists the 10-year projected physical connections and total connections for each type of development.

Table 2-5: 10-Year Connection Projections (FY 2033)

Type	New Development Connections	Additional Development Connections	Total Connections
Single-Family Residential	30	0	2,273
Multi-Family Residential	496	112	2,152
Commercial	38	18	242
Industrial	205	0	259
Mixed-Use	100	0	251
Irrigation	0	0	871
Public	1	0	67
Total	870	130	6,115

3.0 WATER SYSTEM CAPITAL IMPROVEMENTS PLAN

The water system capabilities to serve the existing and future development were evaluated as part of the impact fee analysis. Quiddity collected available records from City Staff, including three (3) years of daily well meter readings and monthly customer billing data from Year 2020-2023, including GIS shapefiles, construction drawings, and previous studies.

3.1 EXISTING WATER SYSTEM EVALUATION

3.1.1 EXISTING WATER INFRASTRUCTURE

The City currently has three (3) water plants and an additional elevated storage tank serving its system. Table 3-1 presents the facilities at each of the City's water plants. The Seattle Water Plant (Water Plant No. 1) is located at 15601 Seattle Street, the Village Water Plant (Water Plant No. 2) is located at 16600 Village Drive, the West Water Plant (Water Plant No. 3) is located at 12115 West Drive, and the Congo Elevated Storage Tank is located at 15402 Congo Lane. The City also owns and maintains approximately 257,000 LF of waterline ranging in size between 2" diameter to 16" diameter and approximately 1,790 fire hydrants based on previous records.

Table 3-1 Existing Water Plant Facilities

Water Plant	Surface Water (gpm)	Well (gpm)	Ground Storage (gal)	Elevated Storage (gal)	Booster Pumps (gpm)	Hydro-Tank (gal)
Seattle (WP1)	1,042		1 - 300,000 1 - 500,000	-	3 - 1,100	-
Village (WP2)		900	1 - 420,000	250,000	1 - 750 1 - 500 1 - 250 1-100	-
West (WP3)		1,550	500,000	-	2 - 1,000 1 - 750 1 - 250	1-25,000
Congo		-	-	500,000	-	-

3.1.2 EXISTING WATER DEMANDS

Water demands were determined by analyzing the City's three (3) years of daily well meter readings and monthly customer billing data from Year 2020-2023. The average daily demand was established using the number of connections in the billing data provided, and the monthly metering data for each connection type to determine unit flow rates. Table 3-2 presents the existing demand breakdown for the City.

Table 3-2 Existing Water System Demands

Connection Type	Connections	Unit Demand (gpd/conn)	Total Demand (gpd)
Single-Family Residential	2,243	250	560,800
Multi-Family Residential	1,544	125	193,000
Commercial	158	1,500	237,000
Irrigation	850	300	255,000
Public	66	1,000	66,000
Accountability/Losses			145,000
Total	4,861		1,456,800

Based on the existing connections and projected unit flowrates from historical data, the effective unit flowrate per connection is 300 gpd/conn. To evaluate the water system, the peak-hour condition, as set forth by the TCEQ, was used as the worst-case scenario. Peak-hour conditions occur when a system experiences the highest-use hour on a maximum day. The City only had monthly water consumption reports available. Per 30 TAC §290.38(46), in the absence of 36 months of historical daily water usage, a maximum day factor of 2.4 should be assumed. Table 3-3 presents the calculation for the maximum day flow. Evaluating the previous three (3) years of well data, the City experienced moderate water losses or accountability issues therefore 10% was utilized in the water capacity analysis.

Table 3-3 Max Day Flow

	Flow (gpd)
Average Day Flow	1,456,800
Max Day Factor	2.4
Max Day Flow	3,496,320

Peak-hour flows are determined by multiplying the maximum day flow by a factor of 1.25 for systems with elevated storage in the absence of verified historical data. No hourly demand data was available at the time of the report. A calculation of 2.4 multiplied by 1.25 yields a total maximum day PHF of 3.0 times the ADF. Table 3-4 presents the existing water flow condition for the City.

Table 3-4 Existing Peak Hour Flow

Existing Flow Condition	Equation	Flow (gpm)
Average Day	1,456,800 gpd / 1,440 min/day	1,012
Peak Hour (Max Day)	1,012 gpm x 2.4 x 1.25	3,035

3.1.3 EXISTING WATER SYSTEM CAPACITY ANALYSIS

The existing water facilities were analyzed for their capacity to serve the existing system, in accordance with 30 TAC §TAC290.45(b)(1)(D). To meet the minimum requirements, the City must have a minimum guaranteed supply of 0.6 gpm per connection, a minimum storage capacity of 200 gallons per connection, a minimum elevated storage tank capacity of 100 gallons per connection, and either a firm booster pump capacity (with the largest pump out of service) of 2 gpm per connection or enough firm booster pump capacity to meet the maximum day peak hour demand. The City's existing water plant facilities have enough supply, elevated storage, ground storage, and booster pump capacity to serve the existing system. The existing system water plant capacity analysis is presented in Attachment B.

3.2 FUTURE WATER SYSTEM EVALUATION

3.2.1 METHODOLOGY OF PROJECTED WATER DEMANDS

To determine the projected water demands, the projected connections based on the future developments and timelines were utilized. The water unit demands by type of connection were applied to the projected connections, where applicable, and unit demands were established based upon Quiddity's experience with similar types of developments within the region.

3.2.2 5-YEAR WATER PROJECTIONS

Table 3-5 presents the projected water average daily flows for the 5-year anticipated buildout within the area of new development. Based on the projected physical connections and unit flowrate the effective unit flowrate per connection is 325 gpd/conn.

Table 3-5 5-Year Projected Average Day Flow

Connection Type	Connections	Unit Demand (gpd/conn)	Total Demand (gpd)
Single-Family Residential	2,243	250	560,800
Multi-Family Residential	1,544	125	193,000
Commercial	186	1,500	279,000
Industrial	54	1,500	81,000
Mixed-Use	151	375	56,600
Irrigation	871	300	261,300
Public	66	1,000	66,000
Accountability/Losses			166,500
Total	5,115		1,664,200

3.2.3 10-YEAR WATER PROJECTIONS

Table 3-6 presents the projected water average daily flows for the 10-year anticipated buildout within the area of new development and additional development undeveloped tracts within the City's jurisdiction. Based on the projected physical connections and unit flowrate the effective unit flowrate per connection is 365 gpd/conn.

Table 3-6 10-Year Projected Average Day Flow

Connection Type	Connections	Unit Demand (gpd/conn)	Total Demand (gpd)
Single-Family Residential	2,273	250	568,300
Multi-Family Residential	2,152	125	269,000
Commercial	242	1,500	363,000
Industrial	259	1,500	388,500
Mixed-Use	251	375	94,100
Irrigation	871	300	261,300
Public	67	1,000	67,000
Accountability/Losses			223,500
Total	6,115		2,234,700

3.2.4 FUTURE WATER SYSTEM CAPACITY ANALYSIS

The City's existing water plant facilities have enough elevated storage, ground storage, and booster pump capacity to serve the projected 5-year and 10-year buildout. The City is limited with water supply based on the 5-year and 10-year projections. The City intends to build a new water plant southwest of Highway 290 to better serve the new development projected. The 5-year and 10-year water plant capacity analyses are presented in Attachments C and D respectively.

Based on the City's intent to operate at nearly 60% surface water to comply with the Harris-Galveston Subsidence District's groundwater reduction plan, it is recommended the City renegotiate a new contractual amount of water with the City of Houston. The maximum daily amount of water should be increased to 5,363,280 gpd or 3,725 gpm, the projected 10-year maximum daily flow utilizing a max day factor of 2.4. While surface water supply may be able to provide enough capacity to serve the new development, since the contract is not guaranteed the City is required to have a total well capacity of 0.6 gpm/conn.

Quiddity included estimated cost associated with the City of Houston Interconnect No. 2 project, previously referenced in the prior CIP report. A Water Master Plan is recommended to further evaluate surface water and ground water supply options, pressures southwest of Highway 290, and their associated costs which could impact the IFS.

3.3 WATER CAPITAL IMPROVEMENTS PLAN

Quiddity was contracted by the City in FY 2023 to perform an assessment on the existing water facilities and develop a CIP focused on operation, maintenance, rehabilitation, and improvements to the existing water facility components. This allows the City to proactively budget for long-term viability of its system and better understand the prioritization of projects at the appropriate timeline to help prevent premature failures and ensure continued operation. The CIP for operation and maintenance is still in progress and will be submitted separately.

Quiddity prepared CIP recommendations for new improvements to the existing water and wastewater system based on the projected development timeframe and input received from the City. Based on these projections, the City will need additional water improvements to serve the new development. Table 3-7 presents the Water CIP list to support the projected new development that can be funded through impact

fees. Cost estimates are included in Attachment E and include anticipated contingencies, inflation, land acquisition, engineering and testing costs.

Table 3-7 Water Capital Improvements Plan

No.	Description of Project	Cost
Proposed Projects		
W-12	Water Master Plan	$125,000
W-13	Impact Fee Study & Rate Analysis	$75,000
W-14	Proposed Water Facility #4	$10,534,000
W-15	City of Houston Interconnect No. 2[(1)]	$2,135,000
W-16	FM 529 8" & 12" Water Line from Harms Rd to Hwy 290 – Service to ETJ	$2,971,000
W-17	Charles Rd 8" & Wright Rd 12" Water Line Loop – Service to ETJ	$1,720,000
W-18	Wright Rd 12" Water Line from Charles Rd to Hwy 290 – Service to ETJ	$1,724,000
W-19	Fairview St 12" Water Line from FM 529 to Taylor Rd – Service to ETJ	$5,121,000
W-20	Harms Rd 12" Water Line from FM 529 to Taylor Rd – Service to ETJ	$3,119,000
W-21	Musgrove Ln 8" & 12" Water Line from Taylor Rd to Jones Rd Along Hwy 290 – Service to ETJ	$1,417,000
W-22	Taylor Rd 8" & 12" Water Line Extension from Hwy 290 to Edge of ETJ – Service to ETJ	$761,000
	Total	**$29,702,000**

4.0 WASTEWATER SYSTEM CAPITAL IMPROVEMENTS PLAN

The wastewater system capabilities to serve the existing and future development were evaluated as part of the impact fee analysis. Quiddity collected available records from City Staff, such as recent daily wastewater treatment plant (WWTP) effluent flows from September 2023, operation reports, and record drawings. It was assumed the new development would send all projected wastewater flow to the Castlebridge WWTP based on proximity to the development and results from prior studies. The White Oak Bayou WWTP was not evaluated in the IFS as no wastewater demand was projected from the new development to this wastewater service area.

4.1 EXISTING WASTEWATER SYSTEM EVALUATION

4.1.1 EXISTING WASTEWATER INFRASTRUCTURE

The City owns and maintains the Castlebridge WWTP, located at 12103 Castlebridge Drive, which has a permitted daily average flow of 800,000 gpd or 0.8 MGD and a 2-hour peak of 1,885 gpm (with a peaking factor of 3.4). The City is also a partner in the White Oak Bayou WWTP Joint Powers, along with West Harris County Municipal Utility District (MUD) No. 1, Harris County MUD No. 25, Windfern Forest Utility District and Baker Oil Tools. Collectively the partners own the White Oak Bayou WWTP, located at 15201 Philippine Street, which has a permitted effluent flow of 2,000,000 gpd or 2.0 MGD and a peak flow of

5,556 gpm (peak factor of 4.0). The City has 40.63% ownership of the White Oak Bayou WWTP and is billed accordingly for any improvement projects at the plant. The City is also billed monthly based on the percentage contributed of the total flow per month to the White Oak Bayou WWTP Joint Powers.

The City also owns and maintains eight (8) lift station (LS) within the system including the Philippine LS, Hillcrest LS, Tahoe LS, Rio Grande LS, 290 NW LS, and the Jones Rd LS. The wastewater system also contains approximately 205,000 LF of gravity sewers ranging in size between 4" diameter to 33" diameter and approximately 795 manholes based on previous records.

4.1.2 EXISTING WASTEWATER FLOWS

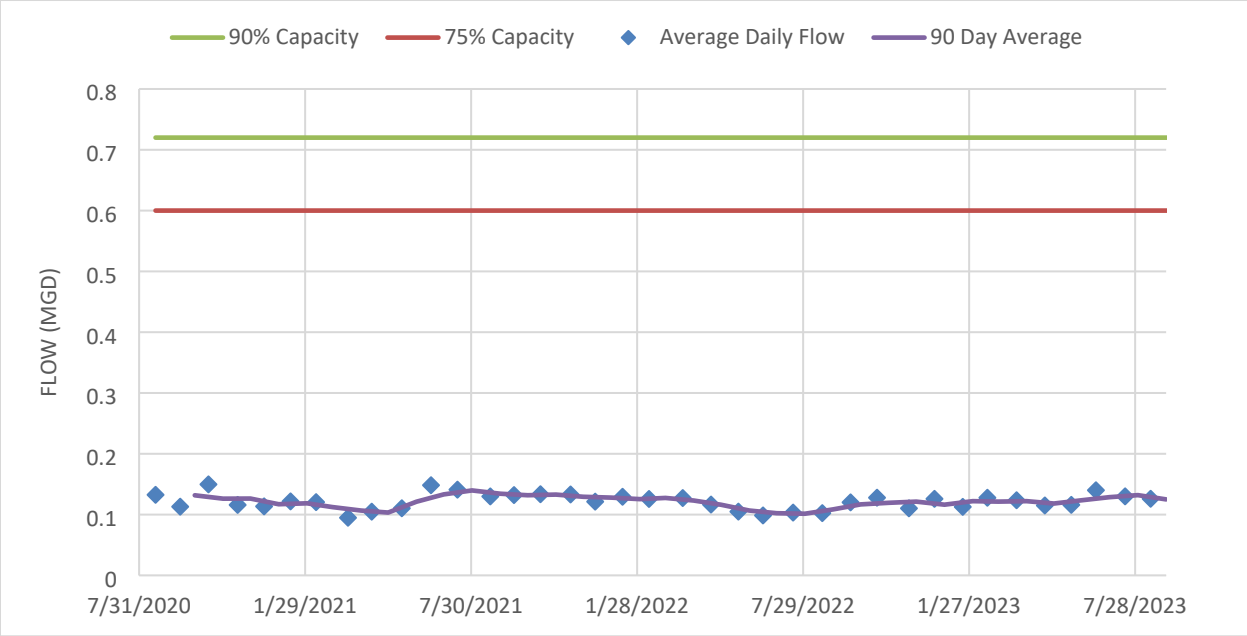
Wastewater flows were determined by analyzing the Castlebridge WWTP average daily flows provided by EPA – Enforcement and Compliance History Online (ECHO) database for the prior three (3) years of monthly data, most recently through the month of August 2023. The Average Day Flow was established for the Castlebridge WWTP shown in Table 4-1.

Table 4-1 Existing Wastewater Flows

Service Area	Average Daily Flow (GPD)
Castlebridge WWTP	121,526

Based on the three (3) years of WWTP effluent data analyzed, the City's Castlebridge WWTP receives an average daily flow of approximately 121,526 gallons or 0.12 MGD compared to the permitted average daily flow of 800,000 gallons or 0.8 MGD. This ADF equates to 15% of the Castlebridge WWTP permitting hydraulic capacity. TCEQ §305.126 requires a WWTP permit holder to initiate engineering and financial planning for expansion when the average daily sewer flows reach 75% of permitted daily flows for 3 consecutive months. Additionally, the permit holder must obtain necessary authorization to commence construction for additional facilities when the average daily flows reach 90% of permitted flows for 3 consecutive months. Figure 1 shows the Castlebridge WWTP reported effluent data for 3-year period dating July 2020 through August 2023. The WWTP consecutive 90-day average day flows peaked from June 2021 to August 2021 with a maximum 90-day average quantified at 139,733 gpd, which equates to approximately 17% of the plant's permitted capacity.

Figure 1 – Castlebridge WWTP 3-Year Flow Reporting



4.1.3 EXISTING WASTEWATER SYSTEM CAPACITY ANALYSIS

Based on the permitted flows of the Castlebridge WWTP, the City has sufficient capacity to serve the existing system for this service area. The Castlebridge WWTP has a permitted flow of 800,000 gpd and is only receiving 121,526 gpd on average daily basis from three (3) years of historical data. The hourly wastewater flows were not available for this evaluation, only record drawings and monthly reporting data.

The Jones Road LS is the only existing lift station assumed to receive an increase in wastewater flow based on its proximity to the new development. The City did not have historical flow data on the existing Jones Road LS; but was able to review record drawings and estimate the capacity of the lift station.

The prior IFS dated July 2020 evaluated the capacity of the Jones Road LS based on daily lift station pump run times provided from April 2019 – December 2019. The LS had minimal run times averaging 0.16 hours per day with a maximum run time of 0.37 hours per day, which indicated the lift station has capacity of additional wastewater flow. Since new information was not available at the time of this study, it is recommended the City obtain pump data in order to more accurately evaluate the capacity of the lift station to serve the new development. Based on preliminary assumptions, the existing Jones Road LS does not need any improvements to meet existing wastewater demands.

4.2 FUTURE WASTEWATER SYSTEM EVALUATION

The IFS evaluated tracts not served by the City, predominately south of Highway 290 between FM 529, Harms Road, and Taylor Road. As mentioned in Section 2.3, the baseline wastewater daily demand is 1,200 gpd per acre or 200 gpd per connection was utilized regardless of the development classification due to uncertainty of the development timeframe. A prior study titled "Preliminary Evaluation Study (Revised) for Water and Wastewater Sanitary Sewer Improvements" dated March 9, 2023 prepared by others, was evaluated as part of the IFS. Quiddity recommends different water and wastewater system alignments due to conflicts with existing utilities and more practical LS location to serve the new development tracts. The suggested lift station location in the prior study is not feasible as the identified tract is designated by TXDOT for drainage purposes. Quiddity analyzed the proposed utility line sizes based on allowable slopes, capacity, and line sizes allowed by the City of Houston – 2023 Infrastructure Design Manual.

A portion of the new service area projected along Charle– Road are anticipated to be collected via gravity collection system and pumped via the proposed FM 529 LS into the existing gravity collection system at the intersection of Jones Road and FM 529. This wastewater eventually flows into the existing Jones Road LS which is pumped via force main to Castlebridge WWTP. Based on the Jones Road LS record drawings, the pumps are recommended to be upsized to accommodate the new projected wastewater flow while the existing wet well and force main piping are anticipated to remain based on preliminary assumptions.

4.2.1 METHODOLOGY OF WASTEWATER FLOW PROJECTIONS

To determine the projected wastewater flows, projected connections were analyzed based on projected future development timeframes. Water unit demands by type of connection were utilized, and a return factor was applied to establish the wastewater flows. Due to the significant amount of water loss and reported issues with the sewer system leading to inflow and infiltration, a historical system-wide return factor could not be established. A return factor of 0.8 was used for new development since no historical flow information was available.

Since no flow data was available for the Jones Road LS, the existing wastewater flows for the delineated service area was projected at 179,483 gpd ADF. When combining the projected 38,619 gpd ADF at the FM 529 LS the total projected wastewater demand for Jones Road LS is projected at 218,102 gpd ADF from the new development.

4.2.2 5-YEAR WASTEWATER PROJECTIONS

Table 4-2 presents the projected 5-year wastewater ADF at the Castlebridge WWTP based on anticipated wastewater connections and timeframe for the new development. This projected flow will be supplied by the new FM 529 LS and Existing Jones Road LS via pressurized force mains to the Castlebridge WWTP.

Table 4-2 Projected WWTP Flows at 5-Year Projections

Classification	Average Daily Flows (gpd)
New Development 5-Year	218,102
Existing Castlebridge WWTP	121,526
Total	339,628

4.2.3 10-YEAR WASTEWATER PROJECTIONS

Table 4-3 presents the projected 10-year wastewater ADF at the Castlebridge WWTP based on anticipated wastewater connections and timeframe for the new development and additional development areas. This projected flow will be supplied by the New Taylor Road LS, New FM 529 LS, and Existing Jones Road LS via pressurized force mains and gravity flow via existing collection system north of Highway 290.

Table 4-3 Projected WWTP Flows at 10-Year Projections

Classification	Average Daily Flows (gpd)
New Development 5-Year	218,102
New Development 10-Year	601,897
Additional Development 10-Year	36,168
Existing Castlebridge WWTP	121,526
Total	977,693

4.2.4 FUTURE WASTEWATER SYSTEM CAPACITY ANALYSIS

TCEQ §305.126 requires a WWTP permit holder to initiate engineering and financial planning for expansion when the sewage flows reach 75% or 0.6 MGD of permitted average daily flows for 3 consecutive months. The permit holder must also obtain the necessary authorization to commence construction for additional facilities when the flows reach 90% or 0.72 MGD of the permitted average daily flows for the Castlebridge WWTP.

Based on the 5-year projected wastewater demands, it appears the Castlebridge WWTP will have enough capacity to serve the future projected development based on permitted hydraulic capacity. Assuming all tracts along Jones Road and Charles Road are developed within five (5) years, the projected wastewater

average daily flow of 339,628 gpd or 0.34 MGD equates to 42% of the permitting hydraulic capacity at Castlebridge WWTP, therefore no improvements are recommended.

Based on the 10-year projected wastewater demands, it appears the Castlebridge WWTP will not have enough capacity to serve the future projected development based on permitted hydraulic capacity. Assuming all tracts within the 5-year projected area which include Jones Road and Charles Road; in addition to the projected 10-year area which includes Wright Road, Fairview Street, Harms Road and Taylor Road are developed, including the projected development north of Highway 290, the projected wastewater average daily flow of 977,693 gpd or 0.98 MGD equates to 122% of the permitted hydraulic capacity at Castlebridge WWTP. Based on these projections, improvements would be necessary to the Castlebridge WWTP with triggers at the 75% and 90% thresholds.

While the 10-year projections assume full build out, the likelihood of all tracts developing and connecting to the new wastewater collection system is unknown. Quiddity included estimated cost associated with the expansion of Castlebridge WWTP, however more analysis is recommended due to potential site limitations for expansion and other factors. A Wastewater Master Plan is recommended to further evaluate expansion options and estimated costs at Castlebridge WWTP.

4.3 WASTEWATER CAPITAL IMPROVEMENTS PLAN

Water and wastewater system improvements are needed to accommodate the new development. Only improvements or upgrades necessary to serve the new development were evaluated for this CIP. Table 4-3 presents the anticipated overall cost for wastewater system improvements. The cost shown includes engineering and contingencies, where applicable. Details cost estimates are included in Attachment F.

Table 4-3 Wastewater Capital Improvements Plan

No.	Description of Project	Cost
S-6	Wastewater Master Plan	$175,000
S-7	Impact Fee Study & Rate Analysis	$75,000
S-10	Jones Rd LS & FM 529 Service Area 8" Wastewater Line - Service to ETJ	$1,555,000
S-11	FM 529 LS Service Area 8" Wastewater Lines - Service to ETJ	$3,045,000
S-12	Proposed Taylor Road Lift Station & 12" Force Main to Castlebridge WWTP - Service to ETJ	$4,932,000
S-13	Wright Rd 8" & 12” Wastewater Line from FM 529 to Hwy 290 - Service to ETJ	$1,998,000
S-14	Taylor Road 8", 15", & 18" Wastewater Line - Service to ETJ	$2,017,000
S-15	Fairview St 8" & 12” Wastewater Line from FM 529 to Taylor Rd - Service to ETJ(2)	$3,921,000
S-16	Harms Rd 8" & 12” Wastewater Line from FM 529 to Taylor Rd - Service to ETJ(2)	$1,867,000
S-17	Castlebridge WWTP Expansion	$ 19,600,000
	Total	**$39,185,000**

5.0 IMPACT FEE ANALYSIS

The IFS evaluates the City's available water and wastewater capacity to serve existing and future development over the next ten (10) years. The fees are calculated as a percentage of the assumed project costs based upon the percentage of the project's capacity to serve the projected development in the next ten (10) years. None of the CIP projects are intended to improve water and wastewater service to existing customers or increase capacity serving existing development as part of this analysis.

5.1 SERVICE UNITS

For impact fees, "new development" is defined as 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. "Service Unit" is 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 ten (10) years. The projected water and wastewater service unit demands are projected at 250 gpd and 200 gpd respectively. These projected water and wastewater demands correlate to the City of Houston Impact Fee Service Unit Equivalent Table dated August 26, 2019, the Service Unit Equivalents provided in Attachment G and is calculated based on the type of development and approximate total number of service units necessary for the new development. Table 5-1 presents the water and wastewater SUs for the City's future water and wastewater systems.

Table 5-1 Projected Service Units

Systems	2028 Projected Demands (gpd)	2028 Projected SUs	2033 Projected Demands (gpd)	2033 Projected SUs	Total 10-Year Demands (gpd)	Total 10-Year SUs
Water	272,628	1,091	797,582	3,190	1,070,210	4,281
Wastewater	218,102	1,091	638,065	3,190	856,167	4,281

5.2 WATER AND WASTEWATER ATTRIBUTABLE IMPROVEMENTS

Existing and proposed improvement projects were evaluated to determine the percent utilization for new development within the next five (5) and ten (10) years. The percentage of utilization within the 10-year timeframe for new development and additional development was used to calculate the eligible project

costs for impact fees. Any of the projects' capacity used on existing development cannot be included in the eligible project costs for impact fees. Tables 5-2 and 5-3 shows the calculated eligible project cost for the water and wastewater systems.

Table 5-2 Water Projects Eligible Impact Fee Cost

Projects	% Utilization	FY 2023-2028	FY 2028-2033	Total	Impact Fee Eligible Cost
Water Master Plan	100%	$125,000	$0	$125,000	$125,000
Impact Fee Study & Rate Analysis	100%	$75,000	$0	$75,000	$75,000
Proposed Water Facility #4	100%	$0	$10,534,000	$10,534,000	$10,534,000
CoH IC No. 2	50%	$0	$2,135,000	$2,135,000	$1,067,500
FM 529 8" & 12" Water Harms Rd to Hwy 290	90%	$2,971,000	$0	$2,971,000	$2,673,900
Charles Rd 8" & Wright Rd 12" Water	90%	$1,720,000	$0	$1,720,000	$1,548,000
Wright Rd 12" Water	90%	$0	$1,724,000	$1,724,000	$1,551,600
Fairview St 12" Water	10%	$0	$5,121,000	$5,121,000	$512,100
Harms Rd 12" Water	10%	$0	$3,119,000	$3,119,000	$311,900
Musgrove Ln 8" & 12" Water	90%	$0	$1,417,000	$1,417,000	$1,275,300
Taylor Rd 8" Water	90%	$0	$761,000	$761,000	$684,900
Summation		**$4,891,000**	**$24,811,000**	**$29,702,000**	**$20,359,200**

Table 5-3 Wastewater Projects Eligible Impact Fee Cost

Projects	% Utilization	FY 2023-2028	FY 2028-2033	Total	Impact Fee Eligible Cost
Wastewater Master Plan	100%	$ 175,000	$0	$175,000	$175,000
Impact Fee Study	100%	$0	$75,000	$75,000	$75,000
Castlebridge WWTP Improvements	40%	$0	$19,600,000	$19,600,000	$7,840,000
Jones Rd LS & FM 529 Area 8" Lines	90%	$1,555,000	$0	$1,555,000	$1,399,500
FM 529 LS Area 8" Lines	90%	$3,045,000	$0	$3,045,000	$2,740,500
Proposed Taylor Rd LS & 12" FM	90%	$0	$4,932,000	$4,932,000	$4,438,800
Wright Rd 8" & 12" Lines	90%	$0	$1,998,000	$1,998,000	$1,798,200
Taylor Rd 8", 15", & 18" Lines	80%	$0	$2,017,000	$2,017,000	$1,613,600
Fairview St 8" & 12" Lines	10%	$0	$3,921,000	$3,921,000	$392,100
Harms Rd 8" & 12" Lines	10%	$0	$1,867,000	$1,867,000	$186,700
Summation		**$4,775,000**	**$34,410,000**	**$39,185,000**	**$20,659,400**

5.3 MAXIMUM IMPACT FEE CALCULATION

According to the §395, impact fees can be assessed based on one of two options. The fees can either a) allow for a credit calculation to credit back the development community based on the utility revenues and ad valorem taxes that are allocated for paying a portion of future capital improvements or b) reduce recoverable cost for implementing the capital improvements plan by 50%. The intent of the credit is to prevent the City from double charging development for future capital improvements via impact fees and utility rates. The City has historically assessed impact fees using the second option, to reduce the recoverable cost by 50%. For this analysis, the 50% credit option was utilized. Tables 5-4 and 5-5 present the calculation for the maximum assessable impact fee per service unit, not physical connections, for both the City's water and wastewater system.

Table 5-4 Maximum Water Impact Fee per Service Unit

Eligible Impact Fee Costs	$20,359,200
Finance Costs (4.5%)	$7,570,000
10-Year Additional SUs	4,281 SUs
Eligible Cost per SU	$6,524
Impact Fee per SU (50% Reduction)	$3,262

Table 5-5 Maximum Wastewater Impact Fee per Service Unit

Eligible Impact Fee Costs	$20,659,400
Finance Costs (4.5%)	$7,682,000
10-Year Additional SUs	4,281 SUs
Eligible Cost per SU	$6,620
Impact Fee per SU (50% Reduction)	$3,310

Regardless of the development type, SU can be applied evenly based on the project water and wastewater demands. Water meter sizes are independent from the SU's and should be sized appropriately based on AWWA recommendations for each new service request. The City should utilize the latest manual published by AWWA titled M22 Sizing Water Service Lines and Meters for future water meter sizing.

6.0 IMPACT FEE ADOPTION

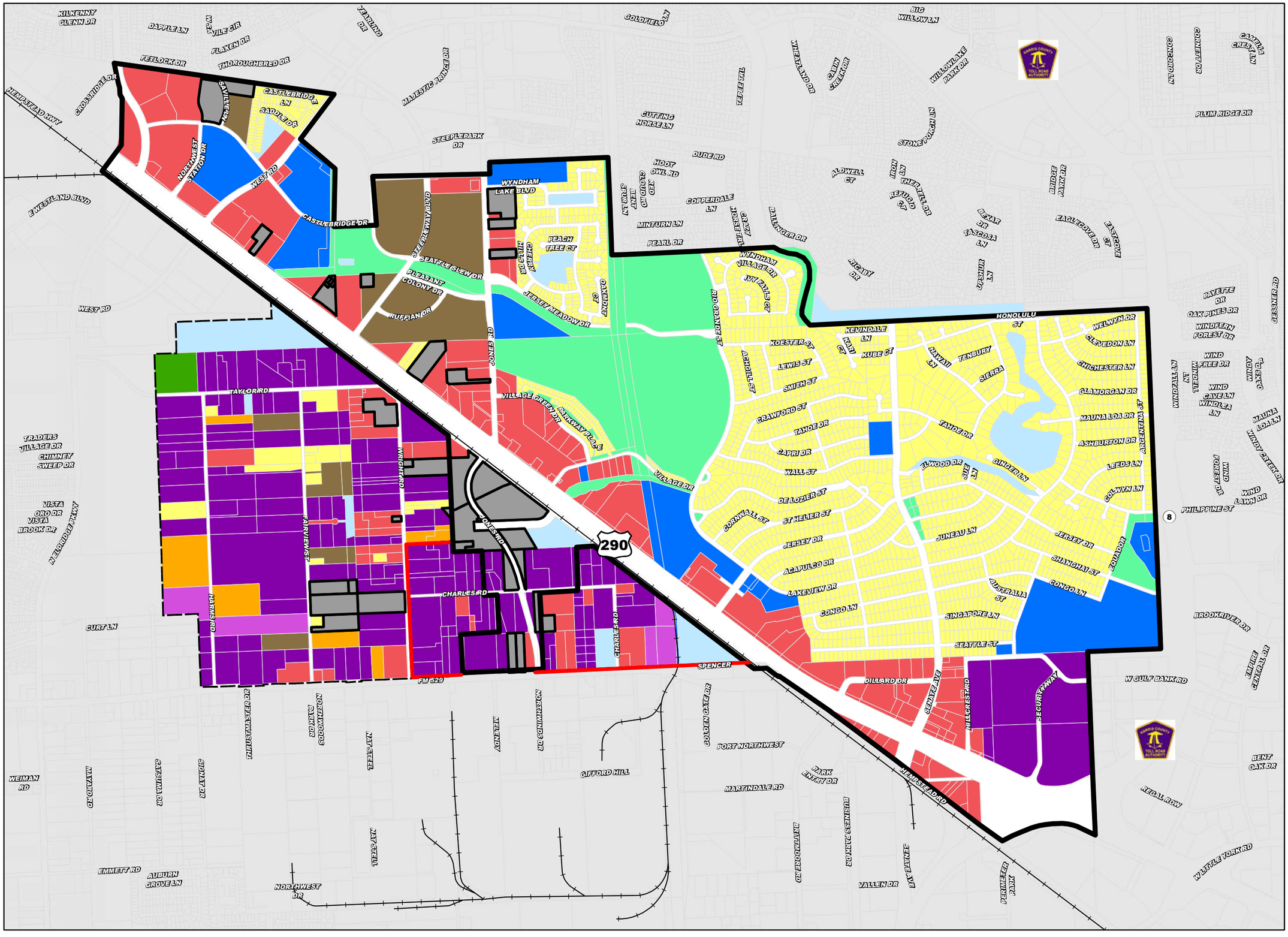
In order to approve the impact fees outlined in the report, an advisory council must review the proposed CIP, Land Use Plan, and Impact Fees and provide comments to the City Council. A public hearing must subsequently be held to review and allow public comment on the CIP, Land Use Plan, and Impact Fees.

Quiddity presented the CIP, Land Use Plan and Impact Fee updates to the Capital Improvements Advisory Committee on November 29, 2023, which in return submitted written comments and recommendation for City Council to approve the provided documents. A public hearing was held on December 18, 2023 to address comments from the updated to the CIP, Land Use Plan and Impact Fees. The City Council reviewed and approved the updated CIP, Land Use Plan and Impact Fees on December 18, 2023.

EXHIBIT 1

CURRENT LAND USE PLAN

EXHIBIT 1



VICINITY MAP

Scale: 1 inch equals 10 miles

- Projected City Limits
- City of Jersey Village
- City of Jersey Village City ETJ
- Railroad

Future Land Use Classification

- Undeveloped
- Agriculture
- Single-Family Residential
- Multi-Family Residential
- Mixed-Use
- Retail/Commercial
- Industrial
- Transportation/Utilities
- Public/Institutional
- Parks/Open Space
- Water/Detention

CURRENT LAND USE CLASSIFICATION LAYOUT

CITY OF JERSEY VILLAGE
HARRIS COUNTY, TEXAS

0 750 1,500
Feet

1 inch equals 1,500 feet

N W E S

QUIDDITY
Texas Board of Professional Engineers Registration No. F-23290

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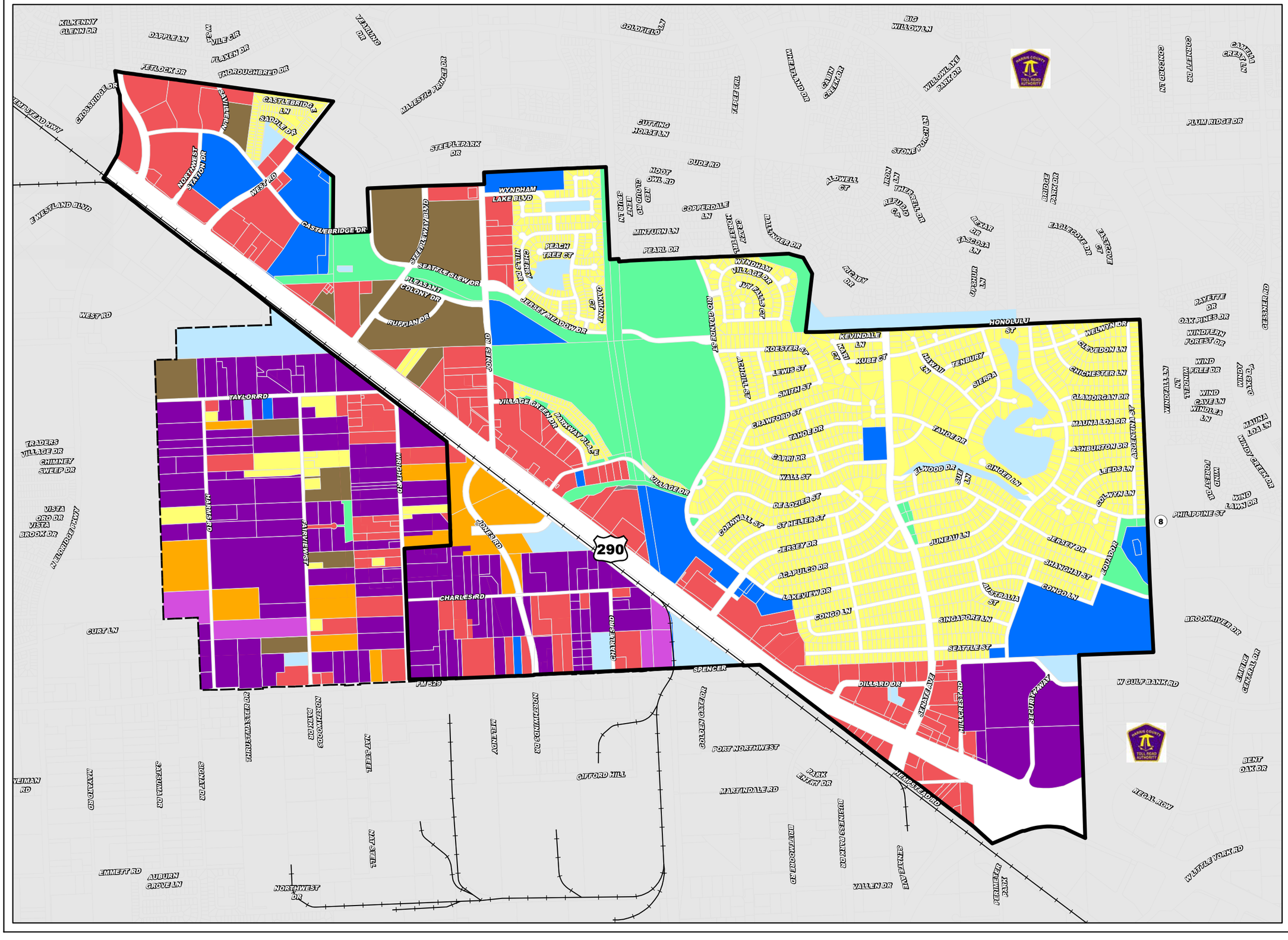
EXHIBIT 2

FUTURE LAND USE PLAN

QUIDDITY ENGINEERING

EXHIBIT 2



VICINITY MAP

Scale: 1 inch equals 10 miles

LEGEND

- City of Jersey Village City Limits
- City of Jersey Village City ETJ
- HCAD

Future Land Use Classification

- Undeveloped
- Agriculture
- Single-Family Residential
- Multi-Family Residential
- Mixed-Use
- Retail/Commercial
- Industrial
- Transportation/Utilities
- Public/Institutional
- Parks/Open Space
- Water/Detention

FUTURE LAND USE CLASSIFICATION LAYOUT

CITY OF JERSEY VILLAGE
HARRIS COUNTY, TEXAS

0 750 1,500
Feet

1 inch equals 1,500 feet

N W E S

QUIDDITY
Texas Board of Professional Engineers Registration No. F-23290

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EXHIBIT 3

WATER SYSTEM IMPROVEMENTS

QUIDDITY ENGINEERING

EXHIBIT 3

West Road Water Plant

Musgrove Ln 8" & 12" Water Line

Taylor Rd 8" & 12" Water Line

City of Houston Interconnect No. 2

Fairview St 8" & 12" Water Line

Harms Rd 12" Water Line

City of Houston Water Plant

Proposed Water Facility No. 4

Village Drive Water Plant

Wright Rd 12" Water Line

FM 529 8" & 12" Water Line

Charles Rd 8" & 12" Water Line Loop

Congo Lane EST Site

Seattle Water Plant

City of Houston Interconnect No. 1

VICINITY MAP

Scale: 1 inch equals 10 miles

LEGEND

- Existing Fire Hydrant
- Existing Waterline
- Proposed Waterline
- City of Jersey Village City Limits
- City of Jersey Village City ETJ
- HCAD Parcels

5-Year Projection

- Service Area

10-Year Projection

- Service Area

WATER DISTRIBUTION SYSTEM LAYOUT

CITY OF JERSEY VILLAGE

HARRIS COUNTY, TEXAS

0 750 1,500

Feet

1 inch equals 1,500 feet

N W E S

QUIDDITY

Texas Board of Professional Engineers Registration No. F-23290

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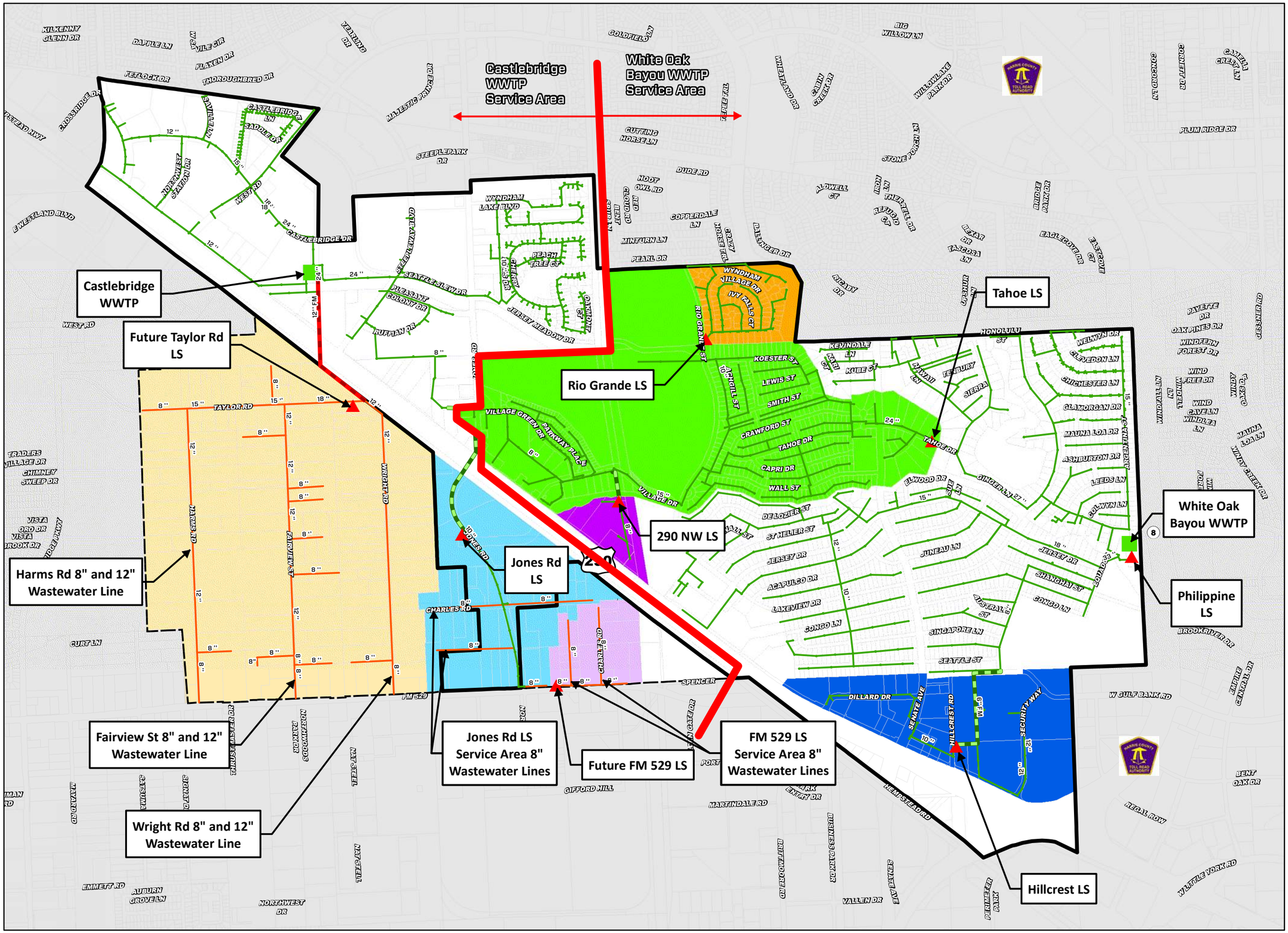
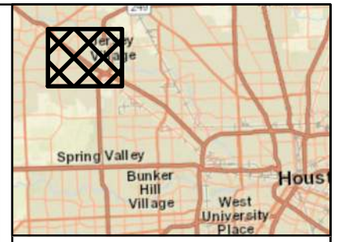
EXHIBIT 4

WASTEWATER SYSTEM IMPROVEMENTS

EXHIBIT 4





VICINITY MAP

Scale: 1 inch equals 10 miles

LEGEND

- Lift Station (LS)
- Wastewater Treatment Plant (WWTP)
- WWTP Service Area
- Existing Force Main
- Proposed Force Main
- Existing Gravity Main
- Proposed Gravity Main
- City of Jersey Village City Limits
- City of Jersey Village City ETJ
- HCAD Parcels
- Tahoe LS Service Area
- Rio Grande LS Service Area
- 290 NW LS Service Area
- Hilcrest LS Service Area

5-Year Projection

- FM 529 LS Service Area
- Jones Rd LS Service Area

10-Year Projection

- Taylor Rd LS Service Area

WASTEWATER DISTRIBUTION SYSTEM LAYOUT

CITY OF JERSEY VILLAGE

HARRIS COUNTY, TEXAS

0 750 1,500 Feet

1 inch equals 1,500 feet

N W E S

QUIDDITY

Texas Board of Professional Engineers Registration No. F-23290

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ATTACHMENT A

TEXAS LOCAL GOVERNMENT CODE CHAPTER 395

LOCAL GOVERNMENT CODE

TITLE 12. PLANNING AND DEVELOPMENT

SUBTITLE C. PLANNING AND DEVELOPMENT PROVISIONS APPLYING TO MORE THAN ONE TYPE OF LOCAL GOVERNMENT

CHAPTER 395. FINANCING CAPITAL IMPROVEMENTS REQUIRED BY NEW DEVELOPMENT IN MUNICIPALITIES, COUNTIES, AND CERTAIN OTHER LOCAL GOVERNMENTS

SUBCHAPTER A. GENERAL PROVISIONS

Sec. 395.001. DEFINITIONS. In this chapter:

(1) "Capital improvement" means any of the following facilities that have a life expectancy of three or more years and are owned and operated by or on behalf of a political subdivision:

(A) water supply, treatment, and distribution facilities; wastewater collection and treatment facilities; and storm water, drainage, and flood control facilities; whether or not they are located within the service area; and

(B) roadway facilities.

(2) "Capital improvements plan" means a plan required by this chapter that identifies capital improvements or facility expansions for which impact fees may be assessed.

(3) "Facility expansion" means the expansion of the capacity of an existing facility that serves the same function as an otherwise necessary new capital improvement, in order that the existing facility may serve new development. The term does not include the repair, maintenance, modernization, or expansion of an existing facility to better serve existing development.

(4) "Impact fee" means 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. The term includes amortized charges, lump-sum charges, capital recovery fees, contributions in aid of construction, and any other fee that functions as described by this definition. The term does not include:

(A) dedication of land for public parks or payment in lieu of the dedication to serve park needs;

(B) dedication of rights-of-way or easements or construction or dedication of on-site or off-site water distribution, wastewater collection or drainage facilities, or streets, sidewalks, or curbs if the dedication or construction is required by a valid ordinance and is necessitated by and attributable to the new development;

(C) lot or acreage fees to be placed in trust funds for the purpose of reimbursing developers for oversizing or constructing water or sewer mains or lines; or

(D) other pro rata fees for reimbursement of water or sewer mains or lines extended by the political subdivision.

However, an item included in the capital improvements plan may not be required to be constructed except in accordance with Section 395.019(2), and an owner may not be required to construct or dedicate facilities and to pay impact fees for those facilities.

(5) "Land use assumptions" includes 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.

(6) "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.

(7) "Political subdivision" means a municipality, a district or authority created under Article III, Section 52, or Article XVI, Section 59, of the Texas Constitution, or, for the purposes set forth by Section 395.079, certain counties described by that section.

(8) "Roadway facilities" means arterial or collector streets or roads that have been designated on an officially adopted roadway plan of the political subdivision, together with all necessary appurtenances. The term includes the political subdivision's share of costs for roadways and associated improvements designated on the federal or Texas highway system, including local matching funds and costs related to utility line relocation and the establishment of curbs, gutters, sidewalks, drainage appurtenances, and rights-of-way.

(9) "Service area" means 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.

(10) "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 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.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 1989, 71st Leg., ch. 566, Sec. 1(e), eff. Aug. 28, 1989; Acts 2001, 77th Leg., ch. 345, Sec. 1, eff. Sept. 1, 2001.

SUBCHAPTER B. AUTHORIZATION OF IMPACT FEE

Sec. 395.011. AUTHORIZATION OF FEE. (a) Unless otherwise specifically authorized by state law or this chapter, a governmental entity or political subdivision may not enact or impose an impact fee.

(b) Political subdivisions may enact or impose impact fees on land within their corporate boundaries or extraterritorial jurisdictions only by complying with this chapter, except that impact fees may not be enacted or imposed in the extraterritorial jurisdiction for roadway facilities.

(c) A municipality may contract to provide capital improvements, except roadway facilities, to an area outside its corporate boundaries and extraterritorial jurisdiction and may charge an impact fee under the contract, but if an impact fee is charged in that area, the municipality must comply with this chapter.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.012. ITEMS PAYABLE BY FEE. (a) An impact fee may be imposed only to pay the costs of constructing capital improvements or facility expansions, including and limited to the:

(1) construction contract price;

(2) surveying and engineering fees;

(3) land acquisition costs, including land purchases, court awards and costs, attorney's fees, and expert witness fees; and

(4) fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision.

(b) Projected interest charges and other finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision to finance the capital improvements or facility expansions identified in the capital improvements plan and are not used to reimburse bond funds expended for facilities that are not identified in the capital improvements plan.

(c) Notwithstanding any other provision of this chapter, the Edwards Underground Water District or a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may use impact fees to pay a staff engineer who prepares or updates a capital improvements plan under this chapter.

(d) A municipality may pledge an impact fee as security for the payment of debt service on a bond, note, or other obligation issued to finance a capital improvement or public facility expansion if:

(1) the improvement or expansion is identified in a capital improvements plan; and

(2) at the time of the pledge, the governing body of the municipality certifies in a written order, ordinance, or resolution that none of the impact fee will be used or expended for an improvement or expansion not identified in the plan.

(e) A certification under Subsection (d)(2) is sufficient evidence that an impact fee pledged will not be used or expended for an improvement or expansion that is not identified in the capital improvements plan.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 1995, 74th Leg., ch. 90, Sec. 1, eff. May 16, 1995.

Sec. 395.013. ITEMS NOT PAYABLE BY FEE. Impact fees may not be adopted or used to pay for:

(1) construction, acquisition, or expansion of public facilities or assets other than capital improvements or facility expansions identified in the capital improvements plan;

(2) repair, operation, or maintenance of existing or new capital improvements or facility expansions;

(3) upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards;

(4) upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development;

(5) administrative and operating costs of the political subdivision, except the Edwards Underground Water District or a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may use impact fees to pay its administrative and operating costs;

(6) principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed by Section 395.012.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.014. CAPITAL IMPROVEMENTS PLAN. (a) The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:

(1) a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;

(2) an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;

(3) a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform the professional engineering services in this state;

(4) 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;

(5) 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;

(6) the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and

(7) a plan for awarding:

(A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or

(B) in the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan.

(b) The analysis required by Subsection (a)(3) may be prepared on a systemwide basis within the service area for each major category of capital improvement or facility expansion for the designated service area.

(c) The governing body of the political subdivision is responsible for supervising the implementation of the capital improvements plan in a timely manner.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 2, eff. Sept. 1, 2001.

Sec. 395.015. MAXIMUM FEE PER SERVICE UNIT. (a) The impact fee per service unit may not exceed the amount determined by subtracting the amount in Section 395.014(a)(7) from the costs of the capital improvements described by Section 395.014(a)(3) and dividing that amount by the total number of projected service units described by Section 395.014(a)(5).

(b) If the number of new service units projected over a reasonable period of time is less than the total number of new service units shown by the approved land use assumptions at full development of the service area, the maximum impact fee per service unit shall be calculated by dividing the costs of the part of the capital improvements necessitated by and attributable to projected new service units described by Section 395.014(a)(6) by the projected new service units described in that section.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 3, eff. Sept. 1, 2001.

Sec. 395.016. TIME FOR ASSESSMENT AND COLLECTION OF FEE. (a) This subsection applies only to impact fees adopted and land platted before June 20, 1987. For land that has been platted in accordance with Subchapter A, Chapter 212, or the subdivision or platting procedures of a political subdivision before June 20, 1987, or land on which new development occurs or is proposed without platting, the political subdivision may assess the impact fees at any time during the development approval and building process. Except as provided by Section 395.019, the political subdivision may collect the fees at either the time of recordation of the subdivision plat or connection to the political subdivision's water or sewer system or at the time the political subdivision issues either the building permit or the certificate of occupancy.

(b) This subsection applies only to impact fees adopted before June 20, 1987, and land platted after that date. For new development which is platted in accordance with Subchapter A, Chapter 212, or the subdivision or platting procedures of a political subdivision after June 20, 1987, the political subdivision may assess the impact fees before or at the time of recordation. Except as provided by Section 395.019, the political subdivision may collect the fees

at either the time of recordation of the subdivision plat or connection to the political subdivision's water or sewer system or at the time the political subdivision issues either the building permit or the certificate of occupancy.

(c) This subsection applies only to impact fees adopted after June 20, 1987. For new development which is platted in accordance with Subchapter A, Chapter 212, or the subdivision or platting procedures of a political subdivision before the adoption of an impact fee, an impact fee may not be collected on any service unit for which a valid building permit is issued within one year after the date of adoption of the impact fee.

(d) This subsection applies only to land platted in accordance with Subchapter A, Chapter 212, or the subdivision or platting procedures of a political subdivision after adoption of an impact fee adopted after June 20, 1987. The political subdivision shall assess the impact fees before or at the time of recordation of a subdivision plat or other plat under Subchapter A, Chapter 212, or the subdivision or platting ordinance or procedures of any political subdivision in the official records of the county clerk of the county in which the tract is located. Except as provided by Section 395.019, if the political subdivision has water and wastewater capacity available:

(1) the political subdivision shall collect the fees at the time the political subdivision issues a building permit;

(2) for land platted outside the corporate boundaries of a municipality, the municipality shall collect the fees at the time an application for an individual meter connection to the municipality's water or wastewater system is filed; or

(3) a political subdivision that lacks authority to issue building permits in the area where the impact fee applies shall collect the fees at the time an application is filed for an individual meter connection to the political subdivision's water or wastewater system.

(e) For land on which new development occurs or is proposed to occur without platting, the political subdivision may assess the impact fees at any time during the development and building process and may collect the fees at either the time of recordation of the subdivision plat or connection to the political subdivision's water or sewer system or at the time the political subdivision issues either the building permit or the certificate of occupancy.

(f) An "assessment" means a determination of the amount of the impact fee in effect on the date or occurrence provided in this section and is the maximum amount that can be charged per service unit of such development. No specific act by the political subdivision is required.

(g) Notwithstanding Subsections (a)-(e) and Section 395.017, the political subdivision may reduce or waive an impact fee for any service unit that would qualify as affordable housing under 42 U.S.C. Section 12745, as amended, once the service unit is constructed. If affordable housing as defined by 42 U.S.C. Section 12745, as amended, is not constructed, the political subdivision may reverse its decision to waive or reduce the impact fee, and the political subdivision may assess an impact fee at any time during the development approval or building process or after the building process if an impact fee was not already assessed.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 1997, 75th Leg., ch. 980, Sec. 52, eff. Sept. 1, 1997; Acts 2001, 77th Leg., ch. 345, Sec. 4, eff. Sept. 1, 2001.

Sec. 395.017. ADDITIONAL FEE PROHIBITED; EXCEPTION. After assessment of the impact fees attributable to the new development or execution of an agreement for payment of impact fees, additional impact fees or increases in fees may not be assessed against the tract for any reason unless the number of service units to be developed on the tract increases. In the event of the increase in the number of service units, the impact fees to be imposed are limited to the amount attributable to the additional service units.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.018. AGREEMENT WITH OWNER REGARDING PAYMENT. A political subdivision is authorized to enter into an agreement with the owner of a tract of land for which the plat has been recorded providing for the time and method of payment of the impact fees.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.019. COLLECTION OF FEES IF SERVICES NOT AVAILABLE. Except for roadway facilities, impact fees may be assessed but may not be collected in areas where services are not currently available unless:

(1) the collection is made to pay for a capital improvement or facility expansion that has been identified in the capital improvements plan and the political subdivision commits to commence construction within two years, under duly awarded and executed contracts or commitments of staff time covering substantially all of the work required to provide service, and to have the service available within a reasonable period of time considering the type of capital improvement or facility expansion to be constructed, but in no event longer than five years;

(2) the political subdivision agrees that the owner of a new development may construct or finance the capital improvements or facility expansions and agrees that the costs incurred or funds advanced will be credited against the impact fees otherwise due from the new development or agrees to reimburse the owner for such costs from impact fees paid from other new developments that will use such capital improvements or facility expansions, which fees shall be collected and reimbursed to the owner at the time the other new development records its plat; or

(3) an owner voluntarily requests the political subdivision to reserve capacity to serve future development, and the political subdivision and owner enter into a valid written agreement.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.020. ENTITLEMENT TO SERVICES. Any new development for which an impact fee has been paid is entitled to the permanent use and benefit of the services for which the fee was exacted and is entitled to receive immediate service from any existing facilities with actual capacity to serve the new service units, subject to compliance with other valid regulations.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.021. AUTHORITY OF POLITICAL SUBDIVISIONS TO SPEND FUNDS TO REDUCE FEES. Political subdivisions may spend funds from any lawful source to pay for all or a part of the capital improvements or facility expansions to reduce the amount of impact fees.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.022. AUTHORITY OF POLITICAL SUBDIVISION TO PAY FEES. (a) Political subdivisions and other governmental entities may pay impact fees imposed under this chapter.

(b) A school district is not required to pay impact fees imposed under this chapter unless the board of trustees of the district consents to the payment of the fees by entering a contract with the political subdivision that imposes the fees. The contract may contain terms the board of trustees considers advisable to provide for the payment of the fees.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.
Amended by:
Acts 2007, 80th Leg., R.S., Ch. 250 (S.B. 883), Sec. 1, eff. May 25, 2007.

Sec. 395.023. CREDITS AGAINST ROADWAY FACILITIES FEES. Any construction of, contributions to, or dedications of off-site roadway facilities agreed to or required by a political subdivision as a condition of development approval shall be credited against roadway facilities impact fees otherwise due from the development.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.024. ACCOUNTING FOR FEES AND INTEREST. (a) The order, ordinance, or resolution levying an impact fee must provide that all funds collected through the adoption of an impact fee shall be deposited in interest-bearing accounts clearly identifying the category of capital improvements or facility expansions within the service area for which the fee was adopted.

(b) Interest earned on impact fees is considered funds of the account on which it is earned and is subject to all restrictions placed on use of impact fees under this chapter.

(c) Impact fee funds may be spent only for the purposes for which the impact fee was imposed as shown by the capital improvements plan and as authorized by this chapter.

(d) The records of the accounts into which impact fees are deposited shall be open for public inspection and copying during ordinary business hours.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.025. REFUNDS. (a) On the request of an owner of the property on which an impact fee has been paid, the political subdivision shall refund the impact fee if existing facilities are available and service is denied or the political subdivision has, after collecting the fee when service was not available, failed to commence construction within two years or service is not available within a reasonable period considering the type of capital improvement or facility expansion to be constructed, but in no event later than five years from the date of payment under Section 395.019(1).

(b) Repealed by Acts 2001, 77th Leg., ch. 345, Sec. 9, eff. Sept. 1, 2001.

(c) The political subdivision shall refund any impact fee or part of it that is not spent as authorized by this chapter within 10 years after the date of payment.

(d) Any refund shall bear interest calculated from the date of collection to the date of refund at the statutory rate as set forth in Section 302.002, Finance Code, or its successor statute.

(e) All refunds shall be made to the record owner of the property at the time the refund is paid. However, if the impact fees were paid by another political subdivision or governmental entity, payment shall be made to the political subdivision or governmental entity.

(f) The owner of the property on which an impact fee has been paid or another political subdivision or governmental entity that paid the impact fee has standing to sue for a refund under this section.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 1997, 75th Leg., ch. 1396, Sec. 37, eff. Sept. 1, 1997; Acts 1999, 76th Leg., ch. 62, Sec. 7.82, eff. Sept. 1, 1999; Acts 2001, 77th Leg., ch. 345, Sec. 9, eff. Sept. 1, 2001.

SUBCHAPTER C. PROCEDURES FOR ADOPTION OF IMPACT FEE

Sec. 395.041. COMPLIANCE WITH PROCEDURES REQUIRED. Except as otherwise provided by this chapter, a political subdivision must comply with this subchapter to levy an impact fee.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.0411. CAPITAL IMPROVEMENTS PLAN. The political subdivision shall provide for a capital improvements plan to be developed by qualified professionals using generally accepted engineering and planning practices in accordance with Section 395.014.

Added by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.042. HEARING ON LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN. To impose an impact fee, a political subdivision must adopt an order, ordinance, or resolution establishing a public hearing date to consider the land use assumptions and capital improvements plan for the designated service area.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.043. INFORMATION ABOUT LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN AVAILABLE TO PUBLIC. On or before the date of the first publication of the notice of the hearing on the land use assumptions and capital improvements plan, the political subdivision shall make available to the public its land use assumptions, the time period of the projections, and a description of the capital improvement facilities that may be proposed.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.044. NOTICE OF HEARING ON LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN. (a) Before the 30th day before the date of the hearing on the land use assumptions and capital improvements plan, the political subdivision shall send a notice of the hearing by certified mail to any person who has given written notice by certified or registered mail to the municipal secretary or other designated official of the political subdivision requesting notice of the hearing within two years preceding the date of adoption of the order, ordinance, or resolution setting the public hearing.

(b) The political subdivision shall publish notice of the hearing before the 30th day before the date set for the hearing, in one or more newspapers of general circulation in each county in which the political subdivision lies. However, a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may publish the required newspaper notice only in each county in which the service area lies.

(c) The notice must contain:

(1) a headline to read as follows:

"NOTICE OF PUBLIC HEARING ON LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN RELATING TO POSSIBLE ADOPTION OF IMPACT FEES"

(2) the time, date, and location of the hearing;

(3) a statement that the purpose of the hearing is to consider the land use assumptions and capital improvements plan under which an impact fee may be imposed; and

(4) a statement that any member of the public has the right to appear at the hearing and present evidence for or against the land use assumptions and capital improvements plan.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.045. APPROVAL OF LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN REQUIRED. (a) After the public hearing on the land use assumptions and capital improvements plan, the political subdivision shall determine whether to adopt or reject an ordinance, order, or resolution approving the land use assumptions and capital improvements plan.

(b) The political subdivision, within 30 days after the date of the public hearing, shall approve or disapprove the land use assumptions and capital improvements plan.

(c) An ordinance, order, or resolution approving the land use assumptions and capital improvements plan may not be adopted as an emergency measure.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.0455. SYSTEMWIDE LAND USE ASSUMPTIONS. (a) In lieu of adopting land use assumptions for each service area, a political subdivision may, except for storm water, drainage, flood control, and roadway facilities, adopt systemwide land use assumptions, which cover all of the area subject to the jurisdiction of the political subdivision for the purpose of imposing impact fees under this chapter.

(b) Prior to adopting systemwide land use assumptions, a political subdivision shall follow the public notice, hearing, and other requirements for adopting land use assumptions.

(c) After adoption of systemwide land use assumptions, a political subdivision is not required to adopt additional land use assumptions for a service area for water supply, treatment, and distribution facilities or wastewater collection and treatment facilities as a prerequisite to the adoption of a capital improvements plan or impact fee, provided the capital improvements plan and impact fee are consistent with the systemwide land use assumptions.

Added by Acts 1989, 71st Leg., ch. 566, Sec. 1(b), eff. Aug. 28, 1989.

Sec. 395.047. HEARING ON IMPACT FEE. On adoption of the land use assumptions and capital improvements plan, the governing body shall adopt an order or resolution setting a public hearing to discuss the imposition of the impact fee. The public hearing must be held by the governing body of the political subdivision to discuss the proposed ordinance, order, or resolution imposing an impact fee.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.049. NOTICE OF HEARING ON IMPACT FEE. (a) Before the 30th day before the date of the hearing on the imposition of an impact fee, the political subdivision shall send a notice of the hearing by certified mail to any person who has given written notice by certified or registered mail to the municipal secretary or other designated official of the political subdivision requesting notice of the hearing within two years preceding the date of adoption of the order or resolution setting the public hearing.

(b) The political subdivision shall publish notice of the hearing before the 30th day before the date set for the hearing, in one or more newspapers of general circulation in each county in which the political subdivision lies. However, a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may publish the required newspaper notice only in each county in which the service area lies.

(c) The notice must contain the following:

(1) a headline to read as follows:

"NOTICE OF PUBLIC HEARING ON ADOPTION OF IMPACT FEES"

(2) the time, date, and location of the hearing;

(3) a statement that the purpose of the hearing is to consider the adoption of an impact fee;

(4) the amount of the proposed impact fee per service unit; and

(5) a statement that any member of the public has the right to appear at the hearing and present evidence for or against the plan and proposed fee.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.050. ADVISORY COMMITTEE COMMENTS ON IMPACT FEES. The advisory committee created under Section 395.058 shall file its written comments on the proposed impact fees before the fifth business day before the date of the public hearing on the imposition of the fees.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.051. APPROVAL OF IMPACT FEE REQUIRED. (a) The political subdivision, within 30 days after the date of the public hearing on the imposition of an impact fee, shall approve or disapprove the imposition of an impact fee.

(b) An ordinance, order, or resolution approving the imposition of an impact fee may not be adopted as an emergency measure.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 5, eff. Sept. 1, 2001.

Sec. 395.052. PERIODIC UPDATE OF LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN REQUIRED. (a) A political subdivision imposing an impact fee shall update the land use assumptions and capital improvements plan at least every five years. The initial five-year period begins on the day the capital improvements plan is adopted.

(b) The political subdivision shall review and evaluate its current land use assumptions and shall cause an update of the capital improvements plan to be prepared in accordance with Subchapter B.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 6, eff. Sept. 1, 2001.

Sec. 395.053. HEARING ON UPDATED LAND USE ASSUMPTIONS AND CAPITAL IMPROVEMENTS PLAN. The governing body of the political subdivision shall, within 60 days after the date it receives the update of the land use assumptions and the capital improvements plan, adopt an order setting a public hearing to discuss and review the update and shall determine whether to amend the plan.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.054. HEARING ON AMENDMENTS TO LAND USE ASSUMPTIONS, CAPITAL IMPROVEMENTS PLAN, OR IMPACT FEE. A public hearing must be held by the governing body of the political subdivision to discuss the proposed ordinance, order, or resolution amending land use assumptions, the capital improvements plan, or the impact fee. On or before the date of the first publication of the notice of the hearing on the amendments, the land use assumptions and the capital improvements plan, including the amount of any proposed amended impact fee per service unit, shall be made available to the public.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.055. NOTICE OF HEARING ON AMENDMENTS TO LAND USE ASSUMPTIONS, CAPITAL IMPROVEMENTS PLAN, OR IMPACT FEE. (a) The notice and hearing procedures prescribed by Sections 395.044(a) and (b) apply to a hearing on the amendment of land use assumptions, a capital improvements plan, or an impact fee.

(b) The notice of a hearing under this section must contain the following:

(1) a headline to read as follows:

"NOTICE OF PUBLIC HEARING ON AMENDMENT OF IMPACT FEES"

(2) the time, date, and location of the hearing;

(3) a statement that the purpose of the hearing is to consider the amendment of land use assumptions and a capital improvements plan and the imposition of an impact fee; and

(4) a statement that any member of the public has the right to appear at the hearing and present evidence for or against the update.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 345, Sec. 7, eff. Sept. 1, 2001.

Sec. 395.056. ADVISORY COMMITTEE COMMENTS ON AMENDMENTS. The advisory committee created under Section 395.058 shall file its written comments on the proposed amendments to the land use assumptions, capital improvements plan, and impact fee before the fifth business day before the date of the public hearing on the amendments.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.057. APPROVAL OF AMENDMENTS REQUIRED. (a) The political subdivision, within 30 days after the date of the public hearing on the amendments, shall approve or disapprove the amendments of the land use assumptions and the capital improvements plan and modification of an impact fee.

(b) An ordinance, order, or resolution approving the amendments to the land use assumptions, the capital improvements plan, and imposition of an impact fee may not be adopted as an emergency measure.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.0575. DETERMINATION THAT NO UPDATE OF LAND USE ASSUMPTIONS, CAPITAL IMPROVEMENTS PLAN OR IMPACT FEES IS NEEDED. (a) If, at the time an update under Section 395.052 is required, the governing body determines that no change to the land use assumptions, capital improvements plan, or impact fee is needed, it may, as an alternative to the updating requirements of Sections 395.052-395.057, do the following:

(1) The governing body of the political subdivision shall, upon determining that an update is unnecessary and 60 days before publishing the final notice under this section, send notice of its determination not to update the land use assumptions, capital improvements plan, and impact fee by certified mail to any person who has, within two years preceding the date that the final notice of this matter is to be published, give written notice by certified or

registered mail to the municipal secretary or other designated official of the political subdivision requesting notice of hearings related to impact fees. The notice must contain the information in Subsections (b)(2)-(5).

(2) The political subdivision shall publish notice of its determination once a week for three consecutive weeks in one or more newspapers with general circulation in each county in which the political subdivision lies. However, a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may publish the required newspaper notice only in each county in which the service area lies. The notice of public hearing may not be in the part of the paper in which legal notices and classified ads appear and may not be smaller than one-quarter page of a standard-size or tabloid-size newspaper, and the headline on the notice must be in 18-point or larger type.

(b) The notice must contain the following:

(1) a headline to read as follows:

"NOTICE OF DETERMINATION NOT TO UPDATE

LAND USE ASSUMPTIONS, CAPITAL IMPROVEMENTS

PLAN, OR IMPACT FEES";

(2) a statement that the governing body of the political subdivision has determined that no change to the land use assumptions, capital improvements plan, or impact fee is necessary;

(3) an easily understandable description and a map of the service area in which the updating has been determined to be unnecessary;

(4) a statement that if, within a specified date, which date shall be at least 60 days after publication of the first notice, a person makes a written request to the designated official of the political subdivision requesting that the land use assumptions, capital improvements plan, or impact fee be updated, the governing body must comply with the request by following the requirements of Sections 395.052-395.057; and

(5) a statement identifying the name and mailing address of the official of the political subdivision to whom a request for an update should be sent.

(c) The advisory committee shall file its written comments on the need for updating the land use assumptions, capital improvements plans, and impact fee before the fifth business day before the earliest notice of the government's decision that no update is necessary is mailed or published.

(d) If, by the date specified in Subsection (b)(4), a person requests in writing that the land use assumptions, capital improvements plan, or impact fee be updated, the governing body shall cause an update of the land use assumptions and capital improvements plan to be prepared in accordance with Sections 395.052-395.057.

(e) An ordinance, order, or resolution determining the need for updating land use assumptions, a capital improvements plan, or an impact fee may not be adopted as an emergency measure.

Added by Acts 1989, 71st Leg., ch. 566, Sec. 1(d), eff. Aug. 28, 1989.

Sec. 395.058. ADVISORY COMMITTEE. (a) On or before the date on which the order, ordinance, or resolution is adopted under Section 395.042, the political subdivision shall appoint a capital improvements advisory committee.

(b) The advisory committee is composed of not less than five members who shall be appointed by a majority vote of the governing body of the political subdivision. Not less than 40 percent of the membership of the advisory committee must be representatives of the real estate, development, or building industries who are not employees or officials of a political subdivision or governmental entity. If the political subdivision has a planning and zoning commission, the commission may act as the advisory committee if the commission includes at least one representative of the real estate, development, or building industry who is not an employee or official of a political subdivision or governmental entity. If no such representative is a member of the planning and zoning commission, the commission may still act as the advisory committee if at least one such representative is appointed by the political subdivision as an ad hoc voting member of the planning and zoning commission when it acts as the advisory committee. If the impact fee is to be applied in the extraterritorial jurisdiction of the political subdivision, the membership must include a representative from that area.

(c) The advisory committee serves in an advisory capacity and is established to:

(1) advise and assist the political subdivision 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;

(4) file semiannual reports with respect to the progress of the capital improvements plan and report to the political subdivision any perceived inequities in implementing the plan or imposing the impact fee; and

(5) advise the political subdivision of the need to update or revise the land use assumptions, capital improvements plan, and impact fee.

(d) The political subdivision shall make available to the advisory committee any professional reports with respect to developing and implementing the capital improvements plan.

(e) The governing body of the political subdivision shall adopt procedural rules for the advisory committee to follow in carrying out its duties.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

SUBCHAPTER D. OTHER PROVISIONS

Sec. 395.071. DUTIES TO BE PERFORMED WITHIN TIME LIMITS. If the governing body of the political subdivision does not perform a duty imposed under this chapter within the prescribed period, a person who has paid an impact fee or an owner of land on which an impact fee has been paid has the right to present a written request to the governing body of the political subdivision stating the nature of the unperformed duty and requesting that it be performed within 60 days after the date of the request. If the governing body of the political subdivision finds that the duty is required under this chapter and is late in being performed, it shall cause the duty to commence within 60 days after the date of the request and continue until completion.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.072. RECORDS OF HEARINGS. A record must be made of any public hearing provided for by this chapter. The record shall be maintained and be made available for public inspection by the political subdivision for at least 10 years after the date of the hearing.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.073. CUMULATIVE EFFECT OF STATE AND LOCAL RESTRICTIONS. Any state or local restrictions that apply to the imposition of an impact fee in a political subdivision where an impact fee is proposed are cumulative with the restrictions in this chapter.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.074. PRIOR IMPACT FEES REPLACED BY FEES UNDER THIS CHAPTER. An impact fee that is in place on June 20, 1987, must be replaced by an impact fee made under this chapter on or before June 20, 1990. However, any political subdivision having an impact fee that has not been replaced under this chapter on or before June 20, 1988, is liable to any party who, after June 20, 1988, pays an impact fee that exceeds the maximum permitted under Subchapter B by more than 10 percent for an amount equal to two times the difference between the maximum impact fee allowed and the actual impact fee imposed, plus reasonable attorney's fees and court costs.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.075. NO EFFECT ON TAXES OR OTHER CHARGES. This chapter does not prohibit, affect, or regulate any tax, fee, charge, or assessment specifically authorized by state law.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.076. MORATORIUM ON DEVELOPMENT PROHIBITED. A moratorium may not be placed on new development for the purpose of awaiting the completion of all or any part of the process necessary to develop, adopt, or update land use assumptions, a capital improvements plan, or an impact fee.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 441, Sec. 2, eff. Sept. 1, 2001.

Sec. 395.077. APPEALS. (a) A person who has exhausted all administrative remedies within the political subdivision and who is aggrieved by a final decision is entitled to trial de novo under this chapter.

(b) A suit to contest an impact fee must be filed within 90 days after the date of adoption of the ordinance, order, or resolution establishing the impact fee.

(c) Except for roadway facilities, a person who has paid an impact fee or an owner of property on which an impact fee has been paid is entitled to specific performance of the services by the political subdivision for which the fee was paid.

(d) This section does not require construction of a specific facility to provide the services.

(e) Any suit must be filed in the county in which the major part of the land area of the political subdivision is located. A successful litigant shall be entitled to recover reasonable attorney's fees and court costs.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.078. SUBSTANTIAL COMPLIANCE WITH NOTICE REQUIREMENTS. An impact fee may not be held invalid because the public notice requirements were not complied with if compliance was substantial and in good faith.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989.

Sec. 395.079. IMPACT FEE FOR STORM WATER, DRAINAGE, AND FLOOD CONTROL IN POPULOUS COUNTY. (a) Any county that has a population of 3.3 million or more or that borders a county with a population of 3.3 million or more, and any district or authority created under Article XVI, Section 59, of the Texas Constitution within any such county that is authorized to provide storm water, drainage, and flood control facilities, is authorized to impose impact fees to provide storm water, drainage, and flood control improvements necessary to accommodate new development.

(b) The imposition of impact fees authorized by Subsection (a) is exempt from the requirements of Sections 395.025, 395.052-395.057, and 395.074 unless the political subdivision proposes to increase the impact fee.

(c) Any political subdivision described by Subsection (a) is authorized to pledge or otherwise contractually obligate all or part of the impact fees to the payment of principal and interest on bonds, notes, or other obligations issued or incurred by or on behalf of the political subdivision and to the payment of any other contractual obligations.

(d) An impact fee adopted by a political subdivision under Subsection (a) may not be reduced if:

(1) the political subdivision has pledged or otherwise contractually obligated all or part of the impact fees to the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision; and

(2) the political subdivision agrees in the pledge or contract not to reduce the impact fees during the term of the bonds, notes, or other contractual obligations.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 2001, 77th Leg., ch. 669, Sec. 107, eff. Sept. 1, 2001.

Sec. 395.080. CHAPTER NOT APPLICABLE TO CERTAIN WATER-RELATED SPECIAL DISTRICTS. (a) This chapter does not apply to impact fees, charges, fees, assessments, or contributions:

(1) paid by or charged to a district created under Article XVI, Section 59, of the Texas Constitution to another district created under that constitutional provision if both districts are required by law to obtain approval of their bonds by the Texas Natural Resource Conservation Commission; or

(2) charged by an entity if the impact fees, charges, fees, assessments, or contributions are approved by the Texas Natural Resource Conservation Commission.

(b) Any district created under Article XVI, Section 59, or Article III, Section 52, of the Texas Constitution may petition the Texas Natural Resource Conservation Commission for approval of any proposed impact fees, charges, fees, assessments, or contributions. The commission shall adopt rules for reviewing the petition and may charge the petitioner fees adequate to cover the cost of processing and considering the petition. The rules shall require notice substantially the same as that required by this chapter for the adoption of impact fees and shall afford opportunity for all affected parties to participate.

Added by Acts 1989, 71st Leg., ch. 1, Sec. 82(a), eff. Aug. 28, 1989. Amended by Acts 1995, 74th Leg., ch. 76, Sec. 11.257, eff. Sept. 1, 1995.

Sec. 395.081. FEES FOR ADJOINING LANDOWNERS IN CERTAIN MUNICIPALITIES. (a) This section applies only to a municipality with a population of 115,000 or less that constitutes more than three-fourths of the population of the county in which the majority of the area of the municipality is located.

(b) A municipality that has not adopted an impact fee under this chapter that is constructing a capital improvement, including sewer or waterline or drainage or roadway facilities, from the municipality to a development located within or outside the municipality's boundaries, in its discretion, may allow a landowner whose land adjoins the capital improvement or is within a specified distance from the capital improvement, as determined by the governing body of the municipality, to connect to the capital improvement if:

(1) the governing body of the municipality has adopted a finding under Subsection (c); and

(2) the landowner agrees to pay a proportional share of the cost of the capital improvement as determined by the governing body of the municipality and agreed to by the landowner.

(c) Before a municipality may allow a landowner to connect to a capital improvement under Subsection (b), the municipality shall adopt a finding that the municipality will benefit from allowing the landowner to connect to the capital improvement. The finding shall describe the benefit to be received by the municipality.

(d) A determination of the governing body of a municipality, or its officers or employees, under this section is a discretionary function of the municipality and the municipality and its officers or employees are not liable for a determination made under this section.

Added by Acts 1997, 75th Leg., ch. 1150, Sec. 1, eff. June 19, 1997.
Amended by:
Acts 2011, 82nd Leg., R.S., Ch. 1043 (H.B. 3111), Sec. 5, eff. June 17, 2011.
Acts 2011, 82nd Leg., R.S., Ch. 1163 (H.B. 2702), Sec. 100, eff. September 1, 2011.

ATTACHMENT B

EXISTING WATER PLANT CAPACITY ANALYSIS

ATTACHMENT B
EXISTING WATER PLANT CAPACITY ANALYSIS
CITY OF JERSEY VILLAGE
DECEMBER 2023

1. Demand Conditions

Type	Connections	Unit Flowrate		Total Average Daily Flow
SF Residential	2,243	250 gpd/conn		560,800 gpd
MF Residential	1,544	125 gpd/conn		193,000 gpd
Commercial	158	1,500 gpd/conn		237,000 gpd
Industrial	0	1,500 gpd/conn		0 gpd
Mixed Use	0	375 gpd/conn		0 gpd
Irrigation	850	300 gpd/conn		255,000 gpd
Public	66	1,000 gpd/conn		66,000 gpd
Accountability/Losses			10.0%	145,000 gpd
Total	**4,861**			**1,456,800 gpd**

Effective Unit Flowrate Per Connection = 300 gpd/conn

2. Supply Capacity {TAC §290.45(b)(1)(D)(i)}

	Capacity	Flowrate
TCEQ Minimum Required = (0.6 gpm/conn)(4,861 conn) =	2,917 gpm	
Existing Well No. 1 @ Village Water Plant : 1 @ 900 gpm =	900 gpm	
Existing Well No. 1 @ West Water Plant : 1 @ 1,550 gpm =	1,550 gpm	
	2,450 gpm	
(2,450 gpm)(1,440 min/day)/(2.4) =		1,470,000 gpd
Surface Water Supply @ Seattle Water Plant : 1,042 gpm =	1,042 gpm *	

3. Total Storage Capacity {TAC §290.45(b)(1)(D)(ii)}

TCEQ Minimum Required = (200 gal/conn)(4,861 conn) =	972,200 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 300,000 gallons =	300,000 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Ground Storage Tank @ Village Water Plant = 1 @ 420,000 gallons =	420,000 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Ground Storage Tank @ West Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	2,470,000 gal

4. Elevated Storage Tank Capacity {TAC §290.45(b)(1)(D)(iv)}

TCEQ Minimum Required = (100 gal/conn)(4,861 conn) =	486,100 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	750,000 gal
Existing Pressure Tank @ Village Water Plant = 1 @ 25,000 gallons =	25,000 gal

5. Booster Pump Capacity {TAC §290.45(b)(1)(D)(iii)}

TCEQ Minimum Required = (2 gpm/conn)(4,861 conn) =	9,722 gpm	
or (1,456,800 gpd)*(2.4*1.25)/(1,440 min/day) =	3,035 gpm	
Existing Pumps @ Seattle Water Plant = 2 @ 1,100 gpm =	2,200 gpm	
Existing Pumps @ Village Water Plant = 1 @ 100 gpm =	100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ Village Water Plant = 1 @ 500 gpm =	500 gpm	
Existing Pumps @ West Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ West Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
	5,050 gpm	
Existing Pumps @ Seattle Water Plant = 1 @ 1,100 gpm =	1,100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
(5,050 gpm)(1,440 min/day)/(1.25)/(2.4) =		2,424,000 gpd
Total Plant Capacity =		**1,470,000 gpd**

NOTES: (Corresponding to the numbered items)

1. Existing connection counts are based on billing data provided by the City for August 2023. Daily flow rates are based on well and surface water meter data provided by the City for September 2020 through August 2023. Projected connection counts are based on the currently undeveloped lots within the City's system being developed, as well as the developments in the City's ETJ where new service is to be installed. A value of 2.4 for the maximum daily demand factor was utilized as established by 30 TAC 290.38 (43) in lieu of 3 years of daily flow data.

2. The values presented for the water wells are based on the 2023 Inspection Report. The flow of 0.6 gpm/conn is referenced from the TCEQ's Chapter 290 criteria.The factor of 2.4 shown in the Quiddity calculations was utilized as the ratio of Maximum Daily Flow (MDF) to Average Daily Flow (ADF). Quiddity's criteria is based on being able to pump the MDF with the well running 24 hrs/day and back calculating the ADF. (24 hr run time)/2.4 = 10 hrs on an average day (600 min). Surface water supply is not included in the supply capacity because no amount of water supply is guaranteed by the City of Houston in the supply contract. Since the City of Houston cannot guarantee a minimum of 0.35 gpm/connection, Jersey Village is required to have a total well capacity of 0.6 gpm/connection.

3. The total storage capacity required by the TCEQ is 200 gpd/conn. Because the GST does not produce any water, it should not be considered in the calculation of the system capacity in terms of flow.

4. Elevated storage tank (EST) capacity must be at least 100 gallons per connection to meet the requirements of 30 TAC 290.45(b). Since the EST capacity is sufficient, the Hydropneumatic tank capacity is not used in calculating the maximum number of connections allowed.

5. The TCEQ's minimum requirement for booster pumps is 2 gpm/conn or the ability to meet Peak Hourly Flow (PHF) with the largest unit at each pump station out of service, whichever is lesser. The pumps and sizes not utilized in the calculation are shown for reference. The PHF is calculated by using the TCEQ's factor of 1.25 for the ratio of PHF to MDF, for systems that meet the EST capacity rules of greater than 100 gpd/connection. Multiplying the PHF by the MDF as defined in Note No. 1 gives us the ratio of PHF to ADF and is equal to 2.4.

ATTACHMENT C

PROJECTED 2028 WATER PLANT CAPACITY ANALYSIS

ATTACHMENT C
PROJECTED 2028 WATER PLANT CAPACITY ANALYSIS
CITY OF JERSEY VILLAGE
DECEMBER 2023

1. Demand Conditions

Type	Connections	Unit Flowrate		Total Average Daily Flow
SF Residential	2,243	250 gpd/conn		560,800 gpd
MF Residential	1,544	125 gpd/conn		193,000 gpd
Commercial	186	1,500 gpd/conn		279,000 gpd
Industrial	54	1,500 gpd/conn		81,000 gpd
Mixed Use	151	375 gpd/conn		56,600 gpd
Irrigation	871	300 gpd/conn		261,300 gpd
Public	66	1,000 gpd/conn		66,000 gpd
Accountability/Losses			10.0%	166,500 gpd
Total	**5,115**			**1,664,200 gpd**

Effective Unit Flowrate Per Connection = 325 gpd/conn

2. Supply Capacity {TAC §290.45(b)(1)(D)(i)}

	Capacity	Flowrate
TCEQ Minimum Required = (0.6 gpm/conn)(5,115 conn) =	3,069 gpm	
Existing Well No. 1 @ Village Water Plant : 1 @ 900 gpm =	900 gpm	
Existing Well No. 1 @ West Water Plant : 1 @ 1,550 gpm =	1,550 gpm	
Proposed Well @ Future Water Plant No. 4: 1 @ 1,500 gpm =	**1,500 gpm**	
	3,950 gpm	
(3,950 gpm)(1,440 min/day)/(2.4) =		2,370,000 gpd
Surface Water Supply @ Seattle Water Plant : 1,042 gpm =	1,042 gpm *	

3. Total Storage Capacity {TAC §290.45(b)(1)(D)(ii)}

TCEQ Minimum Required = (200 gal/conn)(5,115 conn) =	1,023,000 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 300,000 gallons =	300,000 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Ground Storage Tank @ Village Water Plant = 1 @ 420,000 gallons =	420,000 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Ground Storage Tank @ West Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	2,470,000 gal

4. Elevated Storage Tank Capacity {TAC §290.45(b)(1)(D)(iv)}

TCEQ Minimum Required = (100 gal/conn)(5,115 conn) =	511,500 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	750,000 gal
Existing Pressure Tank @ Village Water Plant = 1 @ 25,000 gallons =	25,000 gal

5. Booster Pump Capacity {TAC §290.45(b)(1)(D)(iii)}

TCEQ Minimum Required = (2 gpm/conn)(5,115 conn) =	10,230 gpm	
or (1,664,200 gpd)*(2.4*1.25)/(1,440 min/day) =	3,467 gpm	
Existing Pumps @ Seattle Water Plant = 2 @ 1,100 gpm =	2,200 gpm	
Existing Pumps @ Village Water Plant = 1 @ 100 gpm =	100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ Village Water Plant = 1 @ 500 gpm =	500 gpm	
Existing Pumps @ West Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ West Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
New Pump @ Future Water Plant 4 = 1 @ 600 gpm =	**600 gpm**	
	5,650 gpm	
Existing Pumps @ Seattle Water Plant = 1 @ 1,100 gpm =	1,100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
New Pump @ Future Water Plant 4 = 1 @ 600 gpm =	**600 gpm**	
(5,650 gpm)(1,440 min/day)/(1.25)/(2.4) =		2,712,000 gpd
Total Plant Capacity =		**2,370,000 gpd**

NOTES: (Corresponding to the numbered items)

1. Existing connection counts are based on billing data provided by the City for August 2023. Daily flow rates are based on well and surface water meter data provided by the City for September 2020 through August 2023. Projected connection counts are based on the currently undeveloped lots within the City's system being developed, as well as the developments in the City's ETJ where new service is to be installed. A value of 2.4 for the maximum daily demand factor was utilized as established by 30 TAC 290.38 (43) in lieu of 3 years of daily flow data.

2. The values presented for the water wells are based on the 2023 Inspection Report. The flow of 0.6 gpm/conn is taken from the TCEQ's Chapter 290 criteria. The factor of 2.4 shown in the JC calculations was utilized as the ratio of Maximum Daily Flow (MDF) to Average Daily Flow (ADF). Quiddity's criteria is based on being able to pump the MDF with the well running 24 hrs/day and back calculating the ADF. (24 hr run time)/2.4 = 10 hrs on an average day (600 min). Surface water supply is not included in the supply capacity because no amount of water supply is guaranteed by the City of Houston in the supply contract. Since the City of Houston cannot guarantee a minimum of 0.35 gpm/connection, Jersey Village is required to have a total well capacity of 0.6 gpm/connection. Additionally, a new 1,500 gpm well will be required at Future Water Plant 4.

3. The total storage capacity required by the TCEQ is 200 gpd/conn. Because the GST does not produce any water, it should not be considered in the calculation of the system capacity in terms of flow.

4. Elevated storage tank (EST) capacity must be at least 100 gallons per connection to meet the requirements of 30 TAC 290.45(b). Since the EST capacity is sufficient, the Hydropneumatic tank capacity is not used in calculating the maximum number of connections allowed.

5. The TCEQ's minimum requirement for booster pumps is 2 gpm/conn or the ability to meet Peak Hourly Flow (PHF) with the largest unit at each pump station out of service. The PHF is calculated by using the TCEQ's factor of 1.25 for the ratio of PHF to MDF, for systems that meet the EST capacity rules of greater than 100 gpd/connection. Multiplying the PHF by the MDF as defined in Note No. 1 gives us the ratio of PHF to ADF and is equal to 2.4.

ATTACHMENT D

PROJECTED 2033 WATER PLANT CAPACITY ANALYSIS

QUIDDITY ENGINEERING

ATTACHMENT D
PROJECTED 2033 WATER PLANT CAPACITY ANALYSIS
CITY OF JERSEY VILLAGE
DECEMBER 2023

1. Demand Conditions

Type	Connections	Unit Flowrate		Total Average Daily Flow
SF Residential	2,273	250 gpd/conn		568,300 gpd
MF Residential	2,152	125 gpd/conn		269,000 gpd
Commercial	242	1,500 gpd/conn		363,000 gpd
Industrial	259	1,500 gpd/conn		388,500 gpd
Mixed Use	251	375 gpd/conn		94,100 gpd
Irrigation	871	300 gpd/conn		261,300 gpd
Public	67	1,000 gpd/conn		67,000 gpd
Accountability/Losses			10.0%	223,500 gpd
Total	**6,115**			**2,234,700 gpd**

Effective Unit Flowrate Per Connection = 365 gpd/conn

2. Supply Capacity {TAC §290.45(b)(1)(D)(i)}

	Capacity	Flowrate	
TCEQ Minimum Required = (0.6 gpm/conn)(6,115 conn) =	3,669 gpm		
Existing Well No. 1 @ Village Water Plant : 1 @ 900 gpm =	900 gpm		
Existing Well No. 1 @ West Water Plant : 1 @ 1,550 gpm =	1,550 gpm		
New Well @ Future Water Plant 4: 1 @ 1,500 gpm =	1,500 gpm		
	3,950 gpm		
(3,950 gpm)(1,440 min/day)/(2.4) =		2,370,000 gpd	
Surface Water Supply @ Seattle Water Plant : 1,042 gpm =	1,042 gpm		*
New Surface Water Supply @ Water Plant No. 4: 1,500 gpm =	**1,500 gpm**		*

3. Total Storage Capacity {TAC §290.45(b)(1)(D)(ii)}

TCEQ Minimum Required = (200 gal/conn)(6,115 conn) =	1,223,000 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 300,000 gallons =	300,000 gal
Existing Ground Storage Tank @ Seattle Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Ground Storage Tank @ Village Water Plant = 1 @ 420,000 gallons =	420,000 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Ground Storage Tank @ West Water Plant = 1 @ 500,000 gallons =	500,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	2,470,000 gal

4. Elevated Storage Tank Capacity {TAC §290.45(b)(1)(D)(iv)}

TCEQ Minimum Required = (100 gal/conn)(6,115 conn) =	611,500 gal
Existing Elevated Storage Tank @ Village Water Plant = 1 @ 250,000 gallons =	250,000 gal
Existing Elevated Storage Tank @ Congo Ln = 1 @ 500,000 gallons =	500,000 gal
	750,000 gal
Existing Pressure Tank @ Village Water Plant = 1 @ 25,000 gallons =	25,000 gal

5. Booster Pump Capacity {TAC §290.45(b)(1)(D)(iii)}

TCEQ Minimum Required = (2 gpm/conn)(6,115 conn) =	12,230 gpm	
or (2,234,700 gpd)*(2.4*1.25)/(1,440 min/day) =	4,656 gpm	
Existing Pumps @ Seattle Water Plant = 2 @ 1,100 gpm =	2,200 gpm	
Existing Pumps @ Village Water Plant = 1 @ 100 gpm =	100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ Village Water Plant = 1 @ 500 gpm =	500 gpm	
Existing Pumps @ West Water Plant = 1 @ 250 gpm =	250 gpm	
Existing Pumps @ West Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
New Pump @ Future Water Plant 4 = 1 @ 600 gpm =	600 gpm	
New Pumps @ Future Water Plant 4 = 2 @ 600 gpm =	1,200 gpm	
	6,850 gpm	
Existing Pumps @ Seattle Water Plant = 1 @ 1,100 gpm =	1,100 gpm	
Existing Pumps @ Village Water Plant = 1 @ 750 gpm =	750 gpm	
Existing Pumps @ West Water Plant = 1 @ 1,000 gpm =	1,000 gpm	
New Pump @ Future Water Plant 4 = 1 @ 600 gpm =	600 gpm	
(6,850 gpm)(1,440 min/day)/(1.25)/(2.4) =		3,288,000 gpd
Total Plant Capacity =		**2,370,000 gpd**

NOTES: (Corresponding to the numbered items)

1. Existing connection counts are based on billing data provided by the City for August 2023. Daily flow rates are based on well and surface water meter data provided by the City for September 2020 through August 2023. Projected connection counts are based on the currently undeveloped lots within the City's system being developed, as well as the developments in the City's ETJ where new service is to be installed. A value of 2.4 for the maximum daily demand factor was utilized as established by 30 TAC 290.38 (43) in lieu of 3 years of daily flow data.

2. The values presented for the water wells are based on the 2020 JC Impact Fee Study.The flow of 0.6 gpm/conn is taken from the TCEQ's Chapter 290 criteria. The factor of 2.4 shown in the JC calculations was utilized as the ratio of Maximum Daily Flow (MDF) to Average Daily Flow (ADF). Quiddity's criteria is based on being able to pump the MDF with the well running 24 hrs/day and back calculating the ADF. (24 hr run time)/2.4 = 10 hrs on an average day (600 min). Surface water supply is not included in the supply capacity because no amount of water supply is guaranteed by the City of Houston in the supply contract. Since the City of Houston cannot guarantee a minimum of 0.35 gpm/connection, Jersey Village is required to have a total well capacity of 0.6 gpm/connection.

3. The total storage capacity required by the TCEQ is 200 gpd/conn. Because the GST does not produce any water, it should not be considered in the calculation of the system capacity in terms of flow.

4. Elevated storage tank (EST) capacity must be at least 100 gallons per connection to meet the requirements of 30 TAC 290.45(b). Since the EST capacity is sufficient, the Hydropneumatic tank capacity is not used in calculating the maximum number of connections allowed.

5. The TCEQ's minimum requirement for booster pumps is 2 gpm/conn or the ability to meet Peak Hourly Flow (PHF) with the largest unit at each pump station out of service. The PHF is calculated by using the TCEQ's factor of 1.25 for the ratio of PHF to MDF, for systems that meet the EST capacity rules of greater than 100 gpd/connection. Multiplying the PHF by the MDF as defined in Note No. 1 gives us the ratio of PHF to ADF and is equal to 3.0. To meet pumping requirements with the largest pump out of service, a total of four new 600 gpm pumps are required at Future Water Plant 4.

ATTACHMENT E

WATER CAPITAL IMPROVEMENT PLAN PROJECTS COST ESTIMATES

QUIDDITY ENGINEERING

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
PROPOSED WATER FACILITY No. 4
CAPITAL IMPROVEMENTS PROJECT No. W-14
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of construction of 1.0 MG ground storage tank, 1,500 GPM Water Well, 3-600 GPM booster pumps, Generator, all related piping, foundations, electrical controls, instrumentation, site work and all additional items needed for completely functional water plant.

Item No.	Description	Unit	Qty.	Unit Price	Total	
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$313,000	$313,000	
2.	One (1) 1,500 GPM Evangeline Aquifer Water Well	L.S.	1	2,000,000	2,000,000	(2)
3.	One (1) Standby Diesel Generator with Fuel Tank	L.S.	1	200,000	200,000	
4.	One (1) 1,000,000 gallon Concrete Ground Storage Tank	L.S.	1	1,750,000	1,750,000	
5.	Three (3) 600 GPM Booster Pumps & Concrete Pad	L.S.	1	250,000	250,000	
6.	Electrical Control & Chemical Building	L.S.	1	750,000	750,000	
7.	Plant Piping, Valves, Fittings, Thrust Blocks and Pipe Supports Including Protective Coatings	L.S.	1	550,000	550,000	
8.	Site Work (Including Fencing, Gate, Restoration)	L.S.	1	325,000	325,000	
9.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
10.	Power Extension & Service Meter	L.S.	1	100,000	100,000	
			SUBTOTAL		$6,263,000	(3)
				Contingencies (20%)	$1,253,000	(4)
				5 Yr Inflation @ 3.5%/Yr	$1,411,000	
				Engineering & Testing	$1,607,000	(5)
				TOTAL	**$10,534,000**	(6)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) Quiddity does not and cannot guarantee a 1,500 gpm water well can be obtained from this aquifer in this location. Quiddity does not control the hydraulic conductivity of the aquifer or the water quality produced from the aquifer. Quiddity will hold the Contractor responsible for obtaining the capacity that has a minimum of 80% aquifer efficiency as measured in draw-down tests. This estimate does not include provisions to improve water quality if poor water quality is found after the water well is constructed. This estimate includes a one-piece straight well to accommodate the pump being set in liner, a test hole 200' beyond planned depth, and a submersible or vertical turbine motor.

(3) This cost estimate assumes the water plant site is not located within the 1% annual chance floodplain or within existing wetlands. This estimate does not include any costs for wetland mitigation, detention basins, mitigation basins, or any other work related to compensating for wetlands or floodplain impact. This estimate assumes the property currently owned by the City of Jersey Village can be utilized to support the water plant facilities. The estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way; platting; or aesthetic upgrades.

(4) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(5) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(6) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
CITY OF HOUSTON INTERCONNECT No. 2
CAPITAL IMPROVEMENTS PROJECT No. W-15
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of a second interconnect with the City of Houston at the Water Facility No. 4 via 12-inch waterline within ROW along Fairview Street and Taylor Road to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$62,000	$62,000	
2.	12" Waterline Extension	L.F.	5,000	$130	650,000	
3.	City of Houston Interconnect No. 2 Plant Piping and 12" Meter in Vault	L.S.	1	300,000	300,000	(2)
4.	Trench Safety Systems	L.F.	5,000	2	10,000	
5.	Traffic Control Plan	L.S.	1	25,000	25,000	
6.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
7.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
8.	Pavement Replacement	S.Y.	500	100	50,000	
9.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$1,237,000	(3)
				Contingencies (20%)	$247,000	
				10 Yr Inflation @ 3.5%/Yr	$325,000	
				Engineering & Testing	$326,000	
				TOTAL	**$2,135,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way; platting; aesthetic upgrades; or bringing electrical power to the site.

(3) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
FM 529 8-INCH & 12-INCH WATER LINE FROM HWY 290 TO JONES RD - SERVICE IN ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-16
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of a 12-inch waterline along FM 529 from Jones Road to Charles Road, an 8-inch water line from FM 529 along Charles Road to Jones and a 12-inch waterline from Charles Road to Highway 290, including the crossing of Highway 290 to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$92,000	$92,000	
2.	8" Waterline	L.F.	2,800	90	252,000	
3.	12" Waterline	L.F.	3,800	130	494,000	
4.	12" Waterline with 24-inch Steel Casing	L.F.	650	750	488,000	
5.	Fire Hydrants	EA.	20	5,000	100,000	
6.	8" Gate Valves	EA.	4	3,000	12,000	
7.	12" Gate Valves	EA.	6	4,000	24,000	
8.	Trench Safety Systems	L.F.	7,250	2	15,000	
9.	Traffic Control Plan	L.S.	1	25,000	25,000	
10.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
11.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
12.	Pavement Replacement	S.Y.	1,000	100	100,000	
13.	Site Restoration	L.S.	1	125,000	125,000	
			SUBTOTAL		$1,767,000	(2)
				Contingencies (20%)	$353,000	
				5 Yr Inflation @ 3.5%/Yr	$398,000	
				Engineering & Testing	$453,000	(3)
				TOTAL	**$2,971,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
CHARLES ROAD 8-INCH & WRIGHT ROAD 12-INCH WATER LINE LOOP - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-17
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of an 8-inch waterline from Jones Road west along Charles Road to Wright Road and a 12-inch waterline south along Wright Road and east along FM 529 connection to the existing 12-inch waterline to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$51,000	$51,000	
2.	8" Waterline	L.F.	2,000	90	180,000	
3.	12" Waterline	L.F.	3,500	130	455,000	
4.	Fire Hydrants	EA.	17	5,000	85,000	
5.	8" Gate Valves	EA.	2	3,000	6,000	
6.	12" Gate Valves	EA.	5	4,000	20,000	
7.	Trench Safety Systems	L.F.	5,500	2	11,000	
8.	Traffic Control Plan	L.S.	1	25,000	25,000	
9.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
10.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
11.	Pavement Replacement	S.Y.	500	100	50,000	
12.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$1,023,000	(2)
				Contingencies (20%)	$205,000	
				5 Yr Inflation @ 3.5%/Yr	$230,000	
				Engineering & Testing	$262,000	(3)
				TOTAL	**$1,720,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
WRIGHT ROAD 12-INCH WATER LINE FROM CHARLES ROAD TO HWY 290 - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-18
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of an 12-inch waterline along Wright Road from Charles Road to Hwy 290 and along Hwy 290 from Wright Road to Jones Road to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$51,000	$51,000	
2.	12" Waterline	L.F.	5,000	130	650,000	
3.	Fire Hydrants	EA.	15	5,000	75,000	
4.	12" Gate Valves	EA.	6	4,000	24,000	
5.	Trench Safety Systems	L.F.	5,000	2	10,000	
6.	Traffic Control Plan	L.S.	1	25,000	25,000	
7.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
8.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
9.	Pavement Replacement	S.Y.	500	100	50,000	
10.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$1,025,000	(2)
				Contingencies (20%)	$205,000	
				5 Yr Inflation @ 3.5%/Yr	$231,000	
				Engineering & Testing	$263,000	(3)
				TOTAL	**$1,724,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
FAIRVIEW STREET 12-INCH WATER LINE FROM FM 529 TO TAYLOR ROAD - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-19
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of 8-inch and 12-inch waterlines along Fairview Street from FM 529 to Taylor Road, along FM 529 from Fairview Road to Wright Road and along Taylor Road and Hwy 290 from Fairview Road to Wright Road to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$106,000	$106,000	
2.	8" Waterline	L.F.	4,200	90	378,000	
3.	12" Waterline	L.F.	8,200	130	1,066,000	
4.	Fire Hydrants	EA.	41	5,000	205,000	
5.	8" Gate Valves	EA.	6	3,000	18,000	
6.	12" Gate Valves	EA.	10	4,000	40,000	
7.	Trench Safety Systems	L.F.	12,400	2	25,000	
8.	Traffic Control Plan	L.S.	1	30,000	30,000	
9.	Dewatering/Well Pointing	L.S.	1	20,000	20,000	
10.	Storm Water Pollution Prevention	L.S.	1	30,000	30,000	
11.	Pavement Replacement	S.Y.	750	100	75,000	
12.	Site Restoration	L.S.	1	125,000	125,000	
			SUBTOTAL		$2,118,000	(2)
				Contingencies (20%)	$424,000	
				10 Yr Inflation @ 3.5%/Yr	$1,044,000	
				Land Acquisition	$890,000	(3)
				Engineering & Testing	$645,000	
				TOTAL	**$5,121,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 20-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
HARMS ROAD 12-INCH WATER LINE FROM FM 529 TO TAYLOR ROAD - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-20
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of an 12-inch waterline along Harms Road from FM 529 to Taylor Road, along FM 529 from Harms Road to Fairview Road and along Taylor Road from Harms Road to Fairview Road to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$78,000	$78,000	
2.	12" Waterline	L.F.	8,100	130	1,053,000	
3.	Fire Hydrants	EA.	24	5,000	120,000	
4.	12" Gate Valves	EA.	10	4,000	40,000	
5.	Trench Safety Systems	L.F.	8,100	2	16,000	
6.	Traffic Control Plan	L.S.	1	30,000	30,000	
7.	Dewatering/Well Pointing	L.S.	1	20,000	20,000	
8.	Storm Water Pollution Prevention	L.S.	1	30,000	30,000	
9.	Pavement Replacement	S.Y.	500	100	50,000	
10.	Site Restoration	L.S.	1	125,000	125,000	
			SUBTOTAL		$1,562,000	(2)
				Contingencies (20%)	$312,000	
				10 Yr Inflation @ 3.5%/Yr	$769,000	
				Engineering & Testing	$476,000	(3)
				TOTAL	**$3,119,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
MUSGROVE LANE 8-INCH & 12-INCH WATER LINE
FROM TAYLOR ROAD TO JONES ROAD ALONG HWY 290
CAPITAL IMPROVEMENTS PROJECT No. W-21
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of an 8-inch waterline along Musgrove Lane and east to Hwy 290 and a 12-inch waterline along Hwy 290 to Taylor Road to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$27,000	$27,000	
2.	12" Waterline	L.F.	1,100	130	143,000	
3.	8" Waterline	L.F.	1,500	90	135,000	
4.	Fire Hydrants	EA.	8	5,000	40,000	
5.	12" Gate Valves	EA.	2	4,000	8,000	
6.	8" Gate Valves	EA.	2	3,000	6,000	
7.	Trench Safety Systems	L.F.	2,600	2	5,000	
8.	Traffic Control Plan	L.S.	1	20,000	20,000	
9.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
10.	Storm Water Pollution Prevention	L.S.	1	20,000	20,000	
11.	Pavement Replacement	S.Y.	500	100	50,000	
12.	Site Restoration	L.S.	1	75,000	75,000	
			SUBTOTAL		$544,000	(2)
				Contingencies (20%)	$109,000	
				10 Yr Inflation @ 3.5%/Yr	$268,000	
				Land Acquisition	$330,000	(3)
				Engineering & Testing	$166,000	
				TOTAL	**$1,417,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 20-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT E

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
TAYLOR ROAD 8-INCH & 12-INCH WATER LINE EXTENSION FROM HWY 290 TO ETJ -SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. W-22
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project will consist of design and construction of a 12-inch and 8-inch waterline along Taylor Road to the west of Harms Road to serve the projected development. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$14,000	$14,000	
2.	12" Waterline	L.F.	200	130	26,000	
3.	8" Waterline	L.F.	800	90	72,000	
4.	Fire Hydrants	EA.	4	5,000	20,000	
5.	12" Gate Valves	EA.	1	4,000	4,000	
6.	8" Gate Valves	EA.	1	3,000	3,000	
7.	Trench Safety Systems	L.F.	1,000	2	2,000	
8.	Traffic Control Plan	L.S.	1	15,000	15,000	
9.	Dewatering/Well Pointing	L.S.	1	10,000	10,000	
10.	Storm Water Pollution Prevention	L.S.	1	15,000	15,000	
11.	Pavement Replacement	S.Y.	500	100	50,000	
12.	Site Restoration	L.S.	1	50,000	50,000	
			SUBTOTAL		$281,000	(2)
				Contingencies (20%)	$56,000	
				10 Yr Inflation @ 3.5%/Yr	$138,000	
				Land Acquisition	$200,000	(3)
				Engineering & Testing	$86,000	(4)
				TOTAL	**$761,000**	(5)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 20-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way.

(5) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

WASTEWATER CAPITAL IMPROVEMENT PLAN PROJECTS COST ESTIMATES

QUIDDITY ENGINEERING

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
JONES RD LS & FM 529 SERVICE AREA 8-INCH WASTEWATER LINES - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-10
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of 8-inch gravity sewer along Charles Road east and west of Jones Road and an 8-inch gravity sewer from Jones Road to Wright Road in between Charles Road and FM 529 to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$36,000	$36,000	
2.	8-inch Gravity Sewer	L.F.	4,400	90	396,000	
3.	48-inch Diameter Manhole	EA.	11	5,000	55,000	
4.	Trench Safety Systems	L.F.	4,400	2	9,000	
5.	Traffic Control Plan	L.S.	1	25,000	25,000	
6.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
7.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
8.	Pavement Replacement	S.Y.	500	100	50,000	
9.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$711,000	(2)
				Contingencies (20%)	$142,000	
				5 Yr Inflation @ 3.5%/Yr	$160,000	
				Land Acquisition	$390,000	(3)
				Engineering & Testing	$152,000	
				TOTAL	**$1,555,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of tract estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
FM 529 LS SERVICE AREA 8-INCH WASTEWATER LINES - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-11
CITY OF JERSEY VILLAGE

DECEMBER 2023

Scope:

The project consists of design and construction of an 8-inch gravity sewer along FM 529 east of Jones Rd and north along Charles Road to serve projected development. This includes a lift station along FM 529 to pump the waste to the nearby collection system along Jones Road. Also upgrades to the existing Jones Road Lift Station. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$83,000	$83,000	
2.	Lift Station at FM 529	L.S.	1	850,000	850,000	(2)
3.	Lift Station at Jones Road	L.S.	1	170,000	170,000	(3)
4.	8-inch Gravity Sewer	L.F.	3,400	90	306,000	
5.	48-inch Diameter Manhole	EA.	12	5,000	60,000	
6.	Trench Safety Systems	L.F.	3,400	2	7,000	
7.	Traffic Control Plan	L.S.	1	20,000	20,000	
8.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
9.	Storm Water Pollution Prevention	L.S.	1	20,000	20,000	
10.	Pavement Replacement	S.Y.	500	100	50,000	
11.	Site Restoration	L.S.	1	75,000	75,000	
			SUBTOTAL		$1,656,000	(4)
				Contingencies (20%)	$331,000	
				5 Yr Inflation @ 3.5%/Yr	$373,000	
				Land Acquisition	$260,000	(5)
				Engineering & Testing	$425,000	
				TOTAL	**$3,045,000**	(6)

ATTACHMENT F

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This cost includes a 6' diameter precast wet well with precast valve vault with below ground piping and valves. Assumes the depth of the proposed lift station finish floor will not exceed 20-feet (20') from finished grade elevation and is not located in any flood hazard areas, 1% annual chance floodplain or within existing wetlands. This estimate does not include any costs for wetland mitigation, detention basins, mitigation basins, or any other work related to compensating for wetlands or floodplain impact. The mechanical equipment assumes two (2) 5-HP pumps complete with base elbows, guide rails, power cables, and lifting chains with a firm single pump capacity of 107 gpm pumping through ~100 linear feet of 4" diameter PVC force main. This includes on-site electrical equipment, Diesel Generator, Automatic Transfer Switch, NEMA 4X utility service rack; NEMA 4X stainless steel control panel, transducer controls, cellular auto dialer, duct bank, conduit and wire. Site security assumes 8-ft tall wood fence. Minimal site restoration is anticipated and cost does not include driveway or access road. City should use neighboring driveway for access. This estimate assumes no mitigation basins or detention basin are necessary and site drainage can be discharged via sheet flow off the site boundary. This estimate does not include a storm water outfall or storm water drainage system of any kind.

(3) This cost includes replacement of three (3) 10-HP pumps complete with base elbows, guide rails, power cables, and lifting chains with a firm single pump capacity of 575 gpm pumping through 6" diameter PVC force main. This assumes the existing hatches are large enough to accomodate the new larger pumps and replacement of hatch is not needed. No modifications were assumed to electrical components, controls, header piping, valves, protective coating, or any other repairs or improvements to the lift station.

(4) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(5) Cost assumes 55-ft by 55-ft footprint is necessary for Lift Station site. Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(6) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
PROPOSED TAYLOR ROAD LIFT STATION
& 12-INCH FORCE MAIN TO CASTLEBRIDGE WWTP - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-12
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of 1.1 MGD lift station (Lift Station No. 1) and 12-inch force main to serve projected development. The force main will convey the waste collected in the new development south of Hwy 290 and cross major highways, intersections, roadways and utilites. All utilities are anticipated within the public right-of-way with no easements.

Item No.	Description	Unit	Qty.	Unit Price	Total	
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$141,000	$141,000	
2.	Lift Station	L.S.	1	1,400,000	1,400,000	(2)
3.	12-inch Force Main	L.F.	2,900	120	348,000	
4.	12-inch Force Main with 24-inch Steel Casing	L.F.	600	750	450,000	
5.	Trench Safety Systems	L.F.	3,500	2	7,000	
6.	Traffic Control Plan	L.S.	1	100,000	100,000	
7.	Dewatering/Well Pointing	L.S.	1	30,000	30,000	
8.	Storm Water Pollution Prevention	L.S.	1	30,000	30,000	
9.	Pavement Replacement	S.Y.	2,000	100	200,000	
10.	Site Restoration	L.S.	1	120,000	120,000	
			SUBTOTAL		$2,826,000	(3)
				Contingencies (20%)	$565,000	
				10 Yr Inflation @ 3.5%/Yr	$636,000	
				Land Acquisition	$180,000	(4)
				Engineering & Testing	$725,000	(5)
				TOTAL	**$4,932,000**	(6)

ATTACHMENT F

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This cost includes a 12-ft (12') diameter precast wet well with precast valve vault with below ground piping and valves. Assumes the depth of the proposed lift station finish floor will not exceed 27-feet (27') from finished grade elevation and is not located in any flood hazard areas, 1% annual chance floodplain or within existing wetlands. This estimate does not include any costs for wetland mitigation, detention basins, mitigation basins, or any other work related to compensating for wetlands or floodplain impact. The mechanical equipment assumes three (3) 25-HP pumps complete with base elbows, guide rails, power cables, and lifting chains with a firm single pump capacity of 1,700 gpm pumping through ~3,500 linear feet of 12" diameter PVC force main. This includes on-site electrical equipment, Diesel Generator, Automatic Transfer Switch, NEMA 4X utility service rack; NEMA 4X stainless steel control panel, transducer controls, cellular auto dialer, duct bank, conduit and wire. Site security assumes 8-ft tall wood fence. Minimal site restoration is anticipated and cost includes driveway or access road. This estimate assumes no mitigation basins or detention basin are necessary and site drainage can be discharged via sheet flow off the site boundary. This estimate does not include a storm water outfall or storm water drainage system of any kind.

(3) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(4) Cost assumes 75-ft by 75-ft footprint is necessary for Lift Station site. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(5) This estimate does not include costs for determination, dedication, or acquisition of easements or right-of-way for utilities.

(6) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
WRIGHT ROAD 8-INCH AND 12-INCH
WASTEWATER LINE FROM FM 529 TO HWY 290 - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-13
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of a 12-inch gravity sewer along Wright Road from Lift Station No. 1 along Hwy 290 then south along Wright Road and an 8-inch gravity sewer extending off of Wright Road to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$52,000	$52,000	
2.	8-inch Gravity Sewer	L.F.	1,600	90	144,000	
3.	12-inch Gravity Sewer	L.F.	4,200	130	546,000	
4.	48-inch Diameter Manhole	EA.	14	5,000	70,000	
5.	Trench Safety Systems	L.F.	5,800	2	12,000	
6.	Traffic Control Plan	L.S.	1	25,000	25,000	
7.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
8.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
9.	Pavement Replacement	S.Y.	500	100	50,000	
10.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$1,039,000	(2)
				Contingencies (20%)	$208,000	
				10 Yr Inflation @ 3.5%/Yr	$234,000	
				Land Acquisition	$250,000	(3)
				Engineering & Testing	$267,000	
				TOTAL	**$1,998,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
TAYLOR ROAD 8-INCH, 15-INCH, & 18-INCH WASTEWATER LINE - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-14
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of a 18-inch gravity sewer along Taylor Road from Hwy 290 to Fairview Street, a 15-inch gravity sewer from Fairview Street to Harms Road, an 8-inch gravity sewer along Musgrove Lane and an 8-inch gravity sewer along Taylor Road west of Harms Road to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$48,000	$48,000	
2.	8-inch Gravity Sewer	L.F.	1,500	90	135,000	
3.	15-inch Gravity Sewer	L.F.	1,600	150	240,000	
4.	18-inch Gravity Sewer	L.F.	1,400	180	252,000	
5.	48-inch Diameter Manhole	EA.	12	5,000	60,000	
6.	Trench Safety Systems	L.F.	3,000	2	6,000	
7.	Traffic Control Plan	L.S.	1	25,000	25,000	
8.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
9.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
10.	Pavement Replacement	S.Y.	500	100	50,000	
11.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$956,000	(2)
				Contingencies (20%)	$191,000	
				10 Yr Inflation @ 3.5%/Yr	$215,000	
				Land Acquisition	$410,000	(3)
				Engineering & Testing	$245,000	
				TOTAL	**$2,017,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
FAIRVIEW STREET 8-INCH AND 12-INCH
WASTEWATER LINE FROM FM 529 TO TAYLOR ROAD -SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-15
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of a 12-inch gravity sewer along Fairview Street and 8-inch gravity sewer lines extending off of Fairview Street to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way. to serve projected development.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$78,000	$78,000	
2.	8-inch Gravity Sewer	L.F.	5,800	90	522,000	
3.	12-inch Gravity Sewer	L.F.	4,000	130	520,000	
4.	48-inch Diameter Manhole	EA.	29	5,000	145,000	
5.	Trench Safety Systems	L.F.	9,800	2	20,000	
6.	Traffic Control Plan	L.S.	1	30,000	30,000	
7.	Dewatering/Well Pointing	L.S.	1	20,000	20,000	
8.	Storm Water Pollution Prevention	L.S.	1	30,000	30,000	
9.	Pavement Replacement	S.Y.	750	100	75,000	
10.	Site Restoration	L.S.	1	125,000	125,000	
			SUBTOTAL		$1,565,000	(2)
				Contingencies (20%)	$313,000	
				10 Yr Inflation @ 3.5%/Yr	$352,000	
				Land Acquisition	$1,290,000	(3)
				Engineering & Testing	$401,000	
				TOTAL	**$3,921,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
HARMS ROAD 8-INCH AND 12-INCH
WASTEWATER LINE FROM FM 529 TO TAYLOR ROAD - SERVICE TO ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-16
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of a 12-inch gravity sewer along Harms Road and an 8-inch gravity sewer extending off of Harms Road to serve the projected development. The majority of utilities are anticipated within the public right-of-way with minimal easements in order to serve tracts not adjacent to public right-of-way.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$50,000	$50,000	
2.	8-inch Gravity Sewer	L.F.	1,400	90	126,000	
3.	12-inch Gravity Sewer	L.F.	4,000	130	520,000	
4.	48-inch Diameter Manhole	EA.	14	5,000	70,000	
5.	Trench Safety Systems	L.F.	5,400	2	11,000	
6.	Traffic Control Plan	L.S.	1	25,000	25,000	
7.	Dewatering/Well Pointing	L.S.	1	15,000	15,000	
8.	Storm Water Pollution Prevention	L.S.	1	25,000	25,000	
9.	Pavement Replacement	S.Y.	500	100	50,000	
10.	Site Restoration	L.S.	1	100,000	100,000	
			SUBTOTAL		$992,000	(2)
				Contingencies (20%)	$198,000	
				10 Yr Inflation @ 3.5%/Yr	$223,000	
				Land Acquisition	$200,000	(3)
				Engineering & Testing	$254,000	
				TOTAL	**$1,867,000**	(4)

Notes:

(1) All Totals have been rounded to the nearest $1,000.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) Cost assumes 25-ft easement is necessary to serve tracts not adjacent to public right-of-way. Unit cost of track estimated from HCAD 2023 Appraised Valuation and includes estimated soft costs for survey metes and bounds with exhibit and typical land acquisition process. Does not assume condemnation, contested hearing or litigation.

(4) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT F

CLASS 3 ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
FOR CONSTRUCTION OF
CASTLEBRIDGE WWTP EXPANSION - SERVICE IN CITY LIMITS & ETJ
CAPITAL IMPROVEMENTS PROJECT No. S-17
CITY OF JERSEY VILLAGE
DECEMBER 2023

Scope:

The project consists of design and construction of facility improvements and expansion at the Castlebridge WWTP to serve the projected demand from new development.

Item No.	Description	Unit	Qty.	Unit Price	Total	(1)
1.	Mobilization, Bonds & Insurance, Permits	L.S.	1	$500,000	$500,000	
2.	Lift Station	L.S.	1	$1,500,000	$1,500,000	
3.	Headworks	L.S.	1	$1,000,000	$1,000,000	
4.	Aeration Basin	L.S.	1	$1,200,000	$1,200,000	
5.	Aerobic Digesters	L.S.	1	$1,800,000	$1,800,000	
6.	Chlorine Contact Basin, Dechlorination, and Flow Measurement	L.S.	1	$1,200,000	$1,200,000	
7.	Blowers & Accessories	L.S.	1	$1,200,000	$1,200,000	
8.	Non-Potable Water Pumping Station	L.S.	1	$350,000	$350,000	
9.	Chemical Building	L.S.	1	$500,000	$500,000	
10.	Control Building	L.S.	1	$1,000,000	$1,000,000	
11.	Yard Piping, Fittings, Valves, Supports, etc.	L.S.	1	$800,000	$800,000	
12.	Site Electrical Work	L.S.	1	$500,000	$500,000	
13.	Site Rwork	L.S.	1	300,000	$300,000	
			SUBTOTAL		$11,350,000	(2)
				Contingencies (20%)	$2,270,000	
				5 Yr Inflation @ 3.5%/Yr	$2,713,000	
				Engineering	$3,267,000	
				TOTAL	**$19,600,000**	(3)

Notes:

(1) This estimate is prepared for preliminary cost planning purposes for an expansion of the Castlewood WWTP from a 0.8 MGD permitted facility to a 1.1 MGD permitted facility. Grab sampling from the City was used as a preliminary determination of influent loading, and those samples exceeded the design loading of the prior design. The City shall conduct composite influent sampling in accordance with the TCEQ Rules and Regulations to determine the appropriate influent pollutant design basis for this WWTP. This cost also assumes that all of the required facilities will be constructed on the existing property, and no additional costs are included for property or buffer zone aquisition.

(2) This estimate represents my best judgment as a design professional familiar with the construction industry. Quiddity Engineering, LLC has no control over the cost of labor, materials, or equipment; over the Contractor's methods of determining bid prices; or over competitive bidding or market conditions. Accordingly, we cannot and do not guarantee that bids will not vary from this cost estimate.

(3) This estimate does not include inflation or escalation. Market conditions remain volatile due to, but not limited to, labor shortages, material shortages, and supply chain disruptions since the start of the COVID-19 pandemic. More recently, market conditions are experiencing an added strain due to recent and ongoing global conflicts. The U.S. Bureau of Labor Statistics Consumer Index reported an average overall inflation of 3.7% over the last 12 months. The unknown decisions of federal government monetary policy, in connection with the events noted above, may increase or decrease the current inflation rates. In addition to inflation, Quiddity has seen a significant market escalation, on the order of 30-40%, over the past 36 months due to the significant deficit in supply versus demand in the local construction industry in connection with the events noted above. It is recommended the Client take these items in consideration when preparing the budget for the project.

ATTACHMENT G

CITY OF HOUSTON – IMPACT FEE SERVICE UNIT EQUIVALENT TABLE

ATTACHMENT G

HOUSTON PUBLIC WORKS

IMPACT FEE SERVICE UNIT EQUIVALENT TABLE

How to calculate:

Multiply Service Units Equivalent (SUE) by Sq ft, Occ, number of bowls etc...(SUE column x Per column) to obtain the "approximate". total number of service units.

Recommended SUs are based on 1.0 SU = 250 gpd.

*Please keep in mind that some proposed developments may require multiple SUEs

Line No.	Type of Development	Service Unit Equivalent	Per
1.	Bakery	0.0019	Square Foot
2.	Banquet Hall (No Cooking, Warming Kitchen Only)	0.0200	Occupant
3.	Barber Shop	0.6048	Bowl
4.	Beauty Shop or Beauty Salon	0.6048	Bowl
5.	Bowling Alley (Dining Additional Charge)	0.8000	Lane
6.	Car Repair (Office Additional Charge)	0.00020	Square Foot
7.	Carwash, Tunnel, Self-Service	8.00	Carwash
8.	Carwash, Tunnel, With Attendant	39.60	Carwash
9.	Carwash, Wand Type, Self-Serve	1.54	Carwash Bay
10.	Church or Fellowship Hall	0.0037	Occupant
11.	Club, Tavern, or Lounge	0.0399	Occupant
12.	Concert Hall	0.0399	Occupant
13.	Country Club	0.4032	Member
		0.1008	Guest
14.	Dance School or Dance Studio	0.0399	Occupant
15.	Day Care Center	0.0399	Occupant
16.	Dormitory (Dining Additional Charge)	0.3604	Bed
17.	Fire Station (Dining Additional Charge)	0.3604	Capita
18.	Fitness Center/Club – Freestanding	0.0015	Square Foot
19.	Fitness Club – Within Shopping Center	0.0399	Occupant
20.	Funeral Home (Services Per Week)	0.39	Service
21.	Gas Station with Carwash	11.78	Station
22.	Gas Station Without Carwash	2.21	Station
23.	Grocery Store, 5,000-28,999 Sq. Ft	0.00033	Square Foot
24.	Grocery Store, 29,000 + Sq. Ft	0.0009	Square Foot
25.	Homeless Shelter (No Cooking or Dining)	0.1323	Bed
26.	Hospital (Dining Additional Charge))	0.8001	Bed
27.	Hotel or Motel, With or W/O Kitchenettes	0.7554	Room
28.	Manufacturing	0.00020	Square Foot
29.	Mobile Home Park	1.00	Space
30.	Movie Theater	0.0200	Seat
31.	Nail Salon (Manicure or Pedicure)	0.0004	Square Foot
		0.3024	Bowl
32.	Nursing Home (Salon & Dining Additional Charge)	0.3604	Bed
33.	Office (Includes Studio, Therapy & Massage)	0.000237	Square Foot
34.	Park	0.0200	Occupant
35.	Post Office, Excluding Dock	0.000320	Square Foot
36.	Prison	0.3654	Capita
37.	Racquetball Court	0.6426	Court
38.	Recreational Vehicle Park	0.3000	Vehicle
39.	Residence, Apartment with Washer / Dryer	0.4762	Unit

HOUSTON PUBLIC WORKS

IMPACT FEE SERVICE UNIT EQUIVALENT TABLE

Line No.	Type of Development	Service Unit Equivalent	Per
40.	Residence. Apartment Without Washer / Dryer	0.4046	Unit
41.	Residence, Condominium	0.4762	Unit
42.	Residence, Single Family or Townhouse, Up To 3000 Sq. Ft (Additional Charge Of 0.0002 SU Per Sq. Ft Over 3000 Sq. Ft)	1.000	Unit
43.	Restaurant, Fast Food	0.0021	Square Foot
44.	Restaurant, Full Service / Dining / Bar Area	0.0033	Square Foot
45.	Retail	0.000281	Square Foot
46.	School (College, High, Middle, Elementary)	0.0198	Seat
47.	Skating Rink	0.0200	Capita
48.	Stadium	0.0126	Seat
49.	Swimming Pool	0.0200	Swimmer
50.	Toilet (Park Amenity)	0.1640	Toilet
51.	Transportation Terminal (Dining Additional Charge)	0.0200	Passenger
52.	Warehouse	0.000121	Square Foot
53.	Washeteria	0.5639	Machine
54.	Water Dispensing Unit – Freestanding	4.5630	Unit