

2018

LEAGUE CITY ROADWAY CAPITAL RECOVERY FEE

FINAL REPORT

November 2018



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FINAL REPORT

Prepared for:

City of League City



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EXECUTIVE SUMMARY

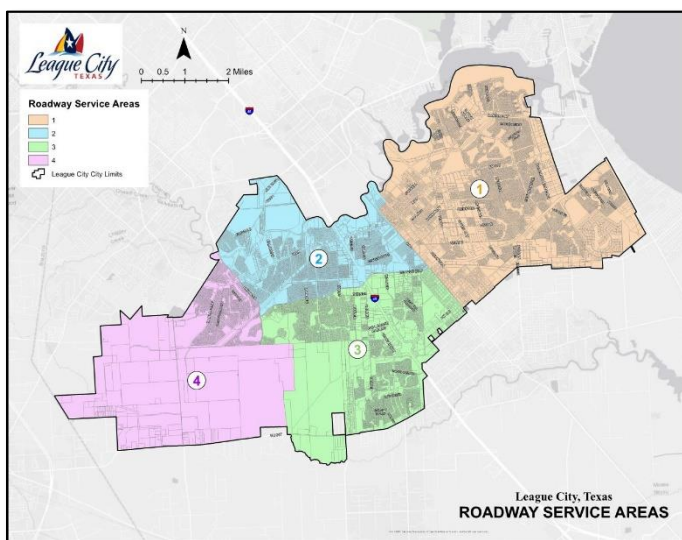
Shrinking funds available for city infrastructure improvements have prohibited many cities from upgrading infrastructure to meet increasing demands resulting from new growth. To alleviate this issue, many cities collect “impact fees”, or capital recovery fees (CRFs), from new development to help fund roadway improvements necessitated by such development. These fees provide an objective method for new developments to pay their fair share for impact to the city’s infrastructure. The one-time, up-front charges provide a predictable cost for new development rather than “negotiated” developer exactions.

As codified in Chapter 395 of the Texas Local Government Codes, two rational nexus tests must be demonstrated in order to legally support CRF programs. First, a reasonable connection between the need for additional capital facilities and the growth in demand generated by the new development must be defined. Second, a reasonable connection between the expenditure of the funds collected and the benefits to the new development must be shown.

The purpose of this report is to summarize the methodology used in the development and calculation of roadway CRFs for the City of League City. The methodology used herein satisfies the requirements of the Texas Local Government Code Section 395 for the establishment of capital recovery fees.

Service Areas

Four (4) roadway service areas were created within League City’s current city limits. To conform to legislative mandates in Chapter 395, no point is greater than a six-mile maximum to a zone boundary. This six-mile limit ensures that roadway improvements are in close proximity to the development paying the fees that it serves.



Service Units

Vehicle-miles of travel in the PM peak hour was determined to be the most effective service unit for calculating and assessing CRFs. Vehicle-miles establish a relationship between the intensity of land development and the demand on the roadway system through the use of published trip generation data and average trip length. The PM peak hour is used as the time period for assessment because typically the greatest demand for roadway capacity occurs during this hour. Additionally, roadways are sized to meet this demand and roadway capacity can more accurately be defined on an hourly basis.

The service units (vehicle-miles) for new development are a function of trip generation and the average trip length characteristics for specific land uses based on the best available data. The result of combining trip generation and trip length information is an equivalency table that establishes a service unit rate for various land uses.

Existing Conditions

An analysis of the existing roadway system revealed that the current roadway system provides 161,758 vehicle-miles of capacity. Existing demands placed on the system was determined to be 104,152 vehicle-miles. Evaluation of the existing roadway system found 4,559 vehicle-miles of deficiencies on the current roadway network (specific roadway segments at or above their capacity).

Projected Growth

Projected growth, expressed in terms of vehicle-miles over a 10-year planning period, was based on population and employment data that was prepared in the 2017 Land Use Assumptions Report. Based on this growth (2017-2027), the overall projected vehicle-miles of demand generated in the 10-year period was calculated to be 105,346 vehicle-miles. The majority of growth is in Service Area 3 (43,676 vehicle-miles) with Service Areas 1 and 4 (29,116 and 27,991 vehicle-miles, respectively) also bringing significant growth and Service Area 2 (4,562 vehicle-miles) bringing in the least due to the near-built-out level of development in this area.

Capital Improvements Plan (CIP)

Project selection was based on recently completed projects, planned projects from the City CIP, and project needs identified in the Master Mobility Plan. Arterial and collector class facilities identified in the currently Master Mobility Plan not built to the ultimate standard were considered in the CRF capital improvements plan (CIP) to accommodate growth projections for each service area.

Forty (40) projects comprise the CRF CIP (CRFCIP) totaling \$347.1 million, providing 113,957 vehicle-miles of new net capacity, were identified for CRF consideration of which \$215.5 million is attributable to new development over the 10-year planning period. A 50% credit, per Chapter 395 legislation, results in a total CRFCIP cost of \$107.8 million attributable to new development in the 10-year period. The CRFCIP cost attributable to new growth in Service Area 1, 2, 3, and 4 is \$9.4 million, \$16.6 million, \$50.4 million, and \$31.4 million, respectively.

Cost per Service Unit Calculation

The *full* cost per service unit was calculated based on the total cost attributable to new development and the projected 10-year demand. State legislation requires that a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing a roadway CRF capital improvements program be given. The maximum allowable cost per service unit was calculated using the total cost of the CRF program, less the 50% ad valorem credit.

The determination of fees due from new development is based upon the size and type of development, its associated service unit generation (equivalency table) and the cost per service unit derived or adopted for each service area.

	A	B	C	D = B / A	E = C / A
Service Area	Projected 10-Year Growth (Vehicle-Miles)	Full Cost Attributable to New Development	Credited Cost Attributable to New Development	Base Cost per Service Unit	Maximum Allowable Cost per Service Unit (After Credit)
1	29,116	\$18,858,634	\$9,429,317	\$646	\$323
2	4,563	\$33,148,240	\$16,574,120	\$7,264	\$3,632
3	43,676	\$100,794,591	\$50,397,296	\$2,306	\$1,153
4	27,991	\$62,738,070	\$31,369,035	\$2,240	\$1,120
Total	105,346	\$215,539,535	\$107,769,767	\$2,502	\$1,251

1.0 INTRODUCTION

Shrinking funds available for roadway improvements on city thoroughfares have prohibited many cities from upgrading infrastructure to meet increasing travel demands resulting from new growth. To alleviate this issue, many cities collect "impact fees", or capital recovery fees (CRFs), from new development to help fund roadway improvements necessitated by such development. What is unique and perhaps controversial about CRFs is that they often finance roadway improvements that are outside the development itself. However, when considering traffic implications created from a system standpoint, CRFs provide a structured means by which infrastructure may keep pace with such development.

Texas initially authorized the use of impact fees with the passage of Senate Bill 336 during the 1987 legislature. Now codified in Chapter 395 of the Texas Local Government Codes, the legislation authorizes cities to collect fees from new developments to finance new construction or expansion of capital improvements such as water treatment and distribution facilities, storm and wastewater facilities, and roadway facilities. The law stipulates that all fees collected from new development must not exceed the maximum amount calculated by the methodology described therein.

The law also mandates that CRF systems be updated periodically (at least every five years) to ensure that the appropriate cost per service unit is established. As new roadway improvements are completed, actual costs are inserted into the cost per service unit calculation to reflect a more accurate reading of service area costs as opposed to estimated costs that were established at the onset of the impact fee system. Additionally, new capital improvement projects can be added to the system.

Capital Recovery Fee Quick Facts

One-time charge assessed to new development for a portion of costs related to a specific capital improvement program.

A **funding mechanism** for implementing infrastructure necessary to accommodate *new development*.

Facilitates “**growth paying for growth**”.

Alleviates burden of new facilities on existing tax base (allows cities to recoup a portion of cost of providing improvements).

Provides a **systematic, structured** approach to assessment of fees.

Enables **upfront knowledge of fees** to be imposed to new development.

In September 2001, Chapter 395 was amended, which called for several technical and administrative changes including the following:

- Expansion of the permissible service area structure for roadway facilities from three to six miles;
- A credit for the portion of ad valorem tax revenues generated by improvements over the program period, or the credit equal to 50% of the total projected cost of implementing the capital improvements plan;
- A city's share of costs on the federal or Texas highway system, including matching funds and costs related to utility line relocation, the establishment of curbs and gutters, sidewalks, drainage appurtenances, and rights-of-way;
- Increase in the time period of update of impact fee land use assumptions and capital improvements plan from a three to five-year period;
- Changes in compliance requirements as they relate to annual reporting; and
- Consolidation of the land use assumptions and capital improvements plan hearings as well as a single public hearing for system updates.



The implementation of a roadway CRF system complying with Chapter 395 offers several benefits including:

1. A systematic, structured approach to assessment of fees;
2. A clear, equitable distribution of costs associated with the impact of new development;
3. The ability to pool funds for project initiation within a service area;
4. Assurance that fees collected will be spent in the area where new development is occurring;
5. Up-front knowledge of fees to be imposed;
6. Credits for developer participation; and
7. Ability for developers to demonstrate that, pursuant to city guidelines, specific unit equivalencies may be different from those presented in the land use equivalency table.

Recognizing the need to provide safe and adequate facilities and desiring to have equitable funding of roadway improvements, the City of League City retained Freese and Nichols, Inc. to assist in the development of a roadway CRF system.

1.1 METHODOLOGY

To develop roadway CRFs, a series of work tasks were undertaken. These tasks are described below.

1. Meetings were held with City Staff to discuss CRF methodology, project criteria and eligibility, and cost eligibility for consideration in the study.
2. Roadway **service areas** were developed to ensure conformity with legislative mandate, including six-mile maximum zones and within city limits.
3. Vehicle-miles of travel (VMT) in the PM peak hour was identified as the **service unit** of measure for analyses and CRF calculations.
4. An **existing roadway inventory** was conducted to document lane geometrics, roadway functional classification, and system capacity. Traffic volume count data was gathered from counts collected as part of the Master Mobility Plan update. This data was used to determine roadway utilization, and if any capacity deficiencies exist within each CRF service area.
5. Projected **10-year growth** was calculated for service areas based on land use assumptions (projections of population and employment growth) and translated into residential, office, commercial and industrial VMT using service unit equivalencies. Trip rate data was obtained from *Trip Generation, Tenth Edition* by the Institute of Transportation Engineers, and trip length statistics for League City was obtained from the Houston-Galveston Area Council (H-GAC) travel demand model.
6. A **capital improvements plan (CIP)** to address projected growth was developed by service area based upon discussions with City Staff and consideration of recommendations in the Master Mobility Plan.
7. **Roadway costs** associated with construction, engineering, right-of-way, and project financing for capital improvement projects were prepared by Freese and Nichols. Costs for study updates are eligible for recovery and were included in the total project cost. Roadway cost data was compiled and tabulated by service area.
8. As defined in Chapter 395, a **50% ad valorem credit** was applied to determine the discount to be applied to the cost of the CIP in determining a cost per service unit for each service area in lieu of the finance credit analysis.
9. The cost of capacity supplied, cost attributable to new development and the **maximum cost per service unit** was calculated for each service area.
10. This report was prepared to document the procedures, findings, and conclusions of the study.

2.0 ROADWAY SERVICE AREAS

Capital recovery fee (CRF) legislation requires that service areas be defined for CRFs to ensure that facility improvements are located in proximity to the area that is generating the need. Chapter 395 requires that roadway service areas be limited to a six-mile maximum and be located within the current city limits. Roadway service areas are different from other CRF service areas, which can include the city limits and Extra-Territorial Jurisdiction (ETJ). This is primarily because roadway systems are "open" to both local and regional use as opposed to a defined limit of service that is provided with water and wastewater systems. The result is that new development can only be assessed a CRF based on the cost of necessary capital improvements within that service area.

A service area structure consisting of four (4) zones has been developed for League City and correlates with the current corporate boundaries, as depicted in **Figure 1**. Freese and Nichols met with City Staff to initially review and approve the proposed service area structure which was also used in the development of the 2017 Land Use Assumptions Report.

3.0 LAND USE ASSUMPTIONS

The 2017 Land Use Assumptions Report, approved by City Council on November 28, 2017, documents the full formulation of base year demographics, growth rate, and projected ten-year demographics and is located in **Appendix H**. The following summarizes the contents of this report for use in projecting future demand as required by Chapter 395.

3.1 2017 POPULATION AND EMPLOYMENT

For the land use assumptions process, 2017 base population and employment data, seen in **Table 1**, was calculated using data from the Houston-Galveston Area Council (H-GAC) with verification of this data from City Staff. This information provided a breakdown of employment by traffic analysis zone (TAZ) for 2017, 2030, and 2040. It is important to note that the TSZs do not follow City limits in some locations, so adjustments were made based on the locations of existing land uses and upon the percentage of each TAZ located within City limits. Employment for each TAZ was broken down into basic, retail, and service uses as defined by H-GAC in the modeling demographics. This "benchmark" information provides a starting basis of data for the ten-year growth assumptions that will be presented within the following section.

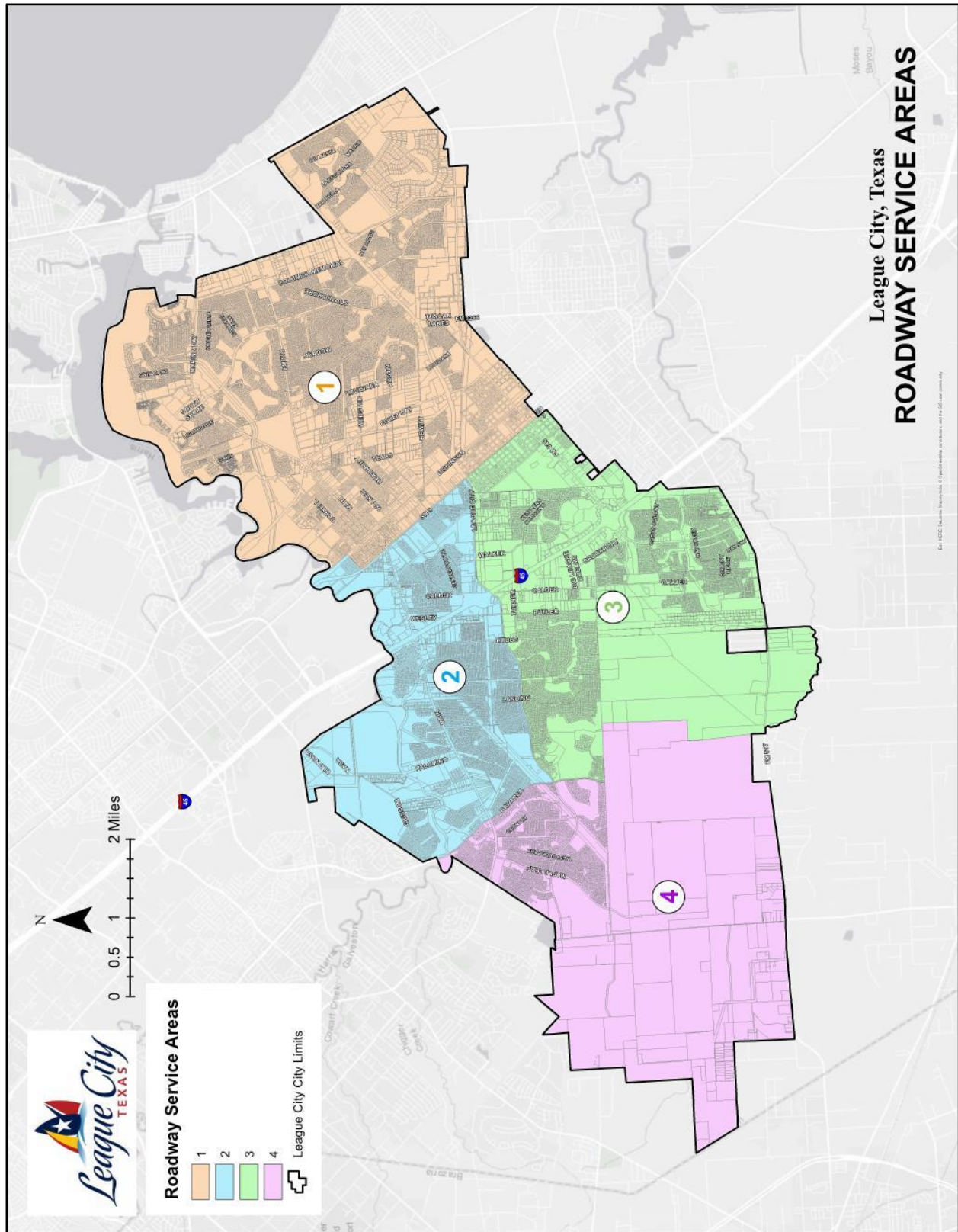


FIGURE 1: ROADWAY SERVICE AREAS

TABLE 1: SUMMARY OF BASE YEAR (2017) POPULATION AND EMPLOYMENT

Service Area	Housing Units	Population	Employment (Employees)			
			Basic	Retail	Service	Total
1	15,951	44,343	1,495	6,030	11,135	18,660
2	9,122	25,358	576	2,628	2,385	5,589
3	8,032	22,330	2,036	1,086	1,453	4,575
4	3,814	10,604	102	713	569	1,384
Total	36,919	102,635	4,209	10,457	15,542	30,208

3.2 TEN-YEAR GROWTH ASSUMPTIONS

Projected growth has been characterized in two forms: population and employment. A series of assumptions were made to arrive at reasonable growth rates for population and employment. The following assumptions have been made as a basis from which ten-year projections could be initiated.

- Future land uses will occur based on similar trends of the past and consistent with the Future Land Use Plan,
- The City will be able to finance the necessary improvements to accommodate continued growth, and
- Densities will be as projected in the Future Land Use Plan.

A compound annual growth rate of **3.4%** was used for the planning period to track the Thoroughfare Plan update growth projections and other concurrent City studies. The ten-year projections are based upon this growth rate and considers past trends of the City and is in line with concurrent studies.

Using the previously mentioned data from H-GAC, linear interpolation was used to develop the interim year 2027 in the data for both population and employment. For population, adjustments were made to account for existing subdivisions with lots remaining and anticipated developments such as the Duncan Tract on the southwest quadrant of the City and the Coastal Point subdivision, located in the southeast quadrant of the city. For employment, adjustments were made to match growth trends anticipated by the City and modifications in the 2017 Future Land Use Plan with specific areas of growth for The University of Texas Medical Branch (UTMB) campus and Pinnacle Park. The population and employment projections (2027) for the roadway service areas are summarized in **Table 2**.

TABLE 2: POPULATION AND EMPLOYMENT PROJECTIONS (2027)

Service Area	Housing Units	Population	Employment (Employees)			
			Basic	Retail	Service	Total
1	18,431	51,238	1,805	8,625	12,897	23,327
2	9,940	27,634	595	2,830	2,462	5,887
3	13,804	38,374	2,909	2,807	4,044	9,760
4	9,403	26,140	159	1,541	1,028	2,728
Total	51,578	143,386	5,468	15,803	20,431	41,702

3.3 SUMMARY OF GROWTH

- From the 2017 Future Land Use Plan, approximately 44 percent of the total developable land within the City limits is developed, with the remaining land available for future development, where infrastructure and topography permit.
- The existing 2017 population for the City limits of League City is approximately 102,635 persons, with an existing estimated employment of around 30,208 jobs.
- An average annual growth rate of 3.4 percent was used to calculate the League City's ten-year growth projections as recommended by the Planning and Zoning Commission in the Future Land Use Plan Update process.
- The ten-year (2027) population growth projection of the Roadway Service Area is 143,386, employment is projected to be a total of 41,702 jobs by 2027 for the Roadway Service Area

TABLE 3. LAND USE ASSUMPTION SUMMARY (2017-2027)

	2017	2027	Total Increase	Percent Total Growth	Annual Growth Rate
Population (Persons)					
League City Total	102,635	143,386	40,751	39.7%	3.4%
Service Area 1	44,343	51,238	6,895	15.5%	1.5%
Service Area 2	25,358	27,634	2,276	9.0%	0.9%
Service Area 3	22,330	38,374	16,044	71.8%	5.6%
Service Area 4	10,604	26,140	15,536	146.5%	9.4%
Employment (Employees)					
League City Total	30,208	41,702	6,529	21.6%	3.3%
Service Area 1	18,660	23,327	4,667	25.0%	2.3%
Basic	1,495	1,805	310	20.7%	1.9%
Service	11,135	12,897	1,762	15.8%	1.5%
Retail	6,030	8,625	2,595	43.0%	3.6%
Service Area 2	5,589	5,887	298	5.3%	0.5%
Basic	576	595	19	3.3%	0.3%
Service	2,385	2,462	77	3.2%	0.3%
Retail	2,628	2,830	202	7.7%	0.7%
Service Area 3	4,575	9,760	5,185	113.3%	7.9%
Basic	2,036	2,909	873	42.9%	3.6%
Service	1,453	4,044	2,591	178.3%	10.8%
Retail	1,086	2,807	1,721	158.5%	10.0%
Service Area 4	1,384	2,728	1,344	97.1%	7.0%
Basic	102	159	57	55.9%	4.5%
Service	569	1,028	459	80.7%	6.1%
Retail	713	1,541	828	116.1%	8.0%

4.0 ROADWAY CAPITAL RECOVERY FEE SERVICE UNITS

Service units establish a relationship between roadway projects and demand placed on the street system by development, as well as, the ability to calculate and assess capital recovery fees (CRFs) for specific development proposals. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions."

To determine the roadway CRF for a particular development, the service unit must accurately identify the impact that the development will have on the major roadway system (i.e., arterial and collector roads) serving the development. This impact is a combination of the number of new trips generated by the development, the particular peaking characteristics of the land-use(s) within the development, and the length of each new trip on the transportation system.

The service unit must also reflect the capacity, which is provided by the roadway system, and the demand placed on the system during the time in which peak, or design, conditions are present on the system. Transportation facilities are designed and constructed to accommodate volumes expected to occur during the peak hours (design hours). These volumes typically occur during the peak hours as motorists travel to and from work.

The vehicle-mile during the evening (PM) peak hour serves as the service unit for CRFs in League City. This service unit establishes a more precise measure of capacity, utilization and intensity of land development through the use of published trip generation data. It also recognizes legislative requirements with regards to trip length. This service unit has been tested and validated since the inception of impact fee legislation in 1989.

4.1 SERVICE UNITS

Service units create a link between supply (roadway projects) and demand (development). Both can be expressed as a combination of the number of vehicles traveling during the peak hour and the distance traveled by these vehicles in miles.

4.1.1 Service Unit Supply

For roadway capital project improvements, the number of service units provided during the peak hour is simply the product of the capacity of the roadway in one hour and the length of the product. For example:

Given a four-lane divided roadway project with a 665 vehicle per hour per lane capacity and a length of two miles, the number of service units provided is:

$$665 \text{ vehicles per hour per lane} \times 4 \text{ lanes} \times 2 \text{ miles} = 5,320 \text{ vehicles-miles}$$

4.1.2 Service Unit Demand

The demand placed on the system can be expressed in a similar manner. For example, a development generating 100 vehicle trips in the PM peak hour with an average trip length of two miles would generate:

$$100 \text{ vehicle-trips} \times 2 \text{ miles/trip} = 200 \text{ vehicle-miles}$$

Similarly, demand placed on the existing roadway network is calculated in the same manner with a known traffic volume (peak hour roadway counts collected by the City as part of the Master Mobility Plan) on a street and a given segment length.

4.2 SERVICE UNITS FOR NEW DEVELOPMENT

An important objective in the development of the CRF system is the development of a specific service unit equivalency for individual developments. The vehicle-miles generated by a new development are a function of the trip generation and average trip length characteristics of that development. The following describes the process used to develop the vehicle-equivalency table, which relates land use types and sizes to the resulting vehicle-miles of demand created by that development.

4.2.1 Trip Generation

Trip generation information for the PM peak hour was based on data published in the Tenth Edition of *Trip Generation* by the Institute of Transportation Engineers (ITE). *Trip Generation* is a reference publication that contains travel characteristics of over 100 land uses across the nation and is based on empirical data gathered from over 3,200 studies that were reported to the Institute by public agencies, developers and consulting firms.

Pass-by and Diverted Trips Adjustments

The actual "traffic impact" of a specific site for CRF purposes is based on the amount of traffic added to the street system. To accurately estimate new trips generated by a new development, adjustments must be made to trip generation rates and equations to account for pass-by and diverted trips. The added traffic is adjusted so that each development is assigned only for a portion of trips associated with that particular development, reducing the possibility of over-counting by counting only primary trips generated.

Pass-by trips are those trips that are already on a particular route for a different purpose and simply stop at a particular development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of CRFs of a convenience store.

A diverted trip is a similar situation, except that a diversion is made from the regular route to make an interim stop. On a system-wide basis, this trip places a slightly additional burden on the street system but in many cases, this burden is minimal.

Trip generation rates were reduced by the percentages presented in **Table 4** in an effort to isolate the primary trip purpose. Adjustments were based on studies conducted by ITE and other published studies.

The resulting recommended trip rates are illustrated as part of the Land Use/Vehicle-Mile Equivalency Table illustrated later in this chapter. Rates were developed in lieu of equations to simplify the assessment of CRFs by the City and likewise, the estimation of CRFs by persons who may be required to pay a CRF in conjunction with a development project.

With approval by the City Engineer, a local study may also be conducted by an Applicant to confirm rates in *Trip Generation* or to change rates reflecting local conditions. In such cases, a minimum of three similar sites should be counted. Selected sites should be isolated in nature with driveways that specifically serve the development and not other land uses. The results should be plotted on the scatter diagram of the selected land use contained in *Trip Generation* for comparison purposes. It is recommended that no change be approved unless the results show a variation of at least fifteen percent across the range of the sample size surveyed.

TABLE 4: TRIP REDUCTION ESTIMATES (PM PEAK HOUR)

Land Use Category	ITE Code	Development Unit	Trip Gen Rate (PM Peak)	Pass-by Rate (%)	Diverted Rate (%)	Trip Rate w/ Reductions (PM Peak)
RESIDENTIAL						
Single-Family Detached Housing	210	Dwelling Units	0.99	0%	0%	0.99
Multifamily Housing (Low-Rise)	220	Dwelling Units	0.56	0%	0%	0.56
Multifamily Housing (Mid-Rise)	221	Dwelling Units	0.44	0%	0%	0.44
Off-Campus Student Apartment	225	Bedrooms	0.25	0%	0%	0.25
Mid-Rise Residential with 1st-Floor Commercial	231	Dwelling Units	0.36	0%	0%	0.36
Senior Adult Housing - Detached	251	Dwelling Units	0.3	0%	0%	0.30
Senior Adult Housing - Attached	252	Dwelling Units	0.26	0%	0%	0.26
Congregate Care Facility	253	Dwelling Units	0.18	0%	0%	0.18
Assisted Living	254	Beds	0.26	0%	0%	0.26
Continuing Care Retirement Community	255	Dwelling Units	0.16	0%	0%	0.16
OFFICE						
General Office Building	710	1,000 Sq Ft GFA	1.15	0%	0%	1.15
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 Sq Ft GFA	2.45	0%	0%	2.45
Corporate Headquarters Building	714	1,000 Sq Ft GFA	0.6	0%	0%	0.60
Single Tenant Office Building	715	1,000 Sq Ft GFA	1.71	0%	0%	1.71
Medical-Dental Office Building	720	1,000 Sq Ft GFA	3.46	0%	0%	3.46
United States Post Office	732	1,000 Sq Ft GFA	11.21	70%	0%	3.36
COMMERCIAL/RETAIL						
Lodging						
Hotel	310	Rooms	0.6	0%	0%	0.60
All Suites Hotel	311	Rooms	0.36	0%	0%	0.36
Recreational						
Golf Course	430	Holes	2.91	0%	0%	2.91
Miniature Golf Course	431	Holes	0.33	0%	0%	0.33
Golf Driving Range	432	Driving Positions	1.25	0%	0%	1.25
Batting Cages	433	Cages	2.22	0%	0%	2.22
Rock Climbing Gym	434	1,000 Sq Ft GFA	1.64	0%	0%	1.64
Movie Theater	444	Screens	14.6	0%	0%	14.60
Health/Fitness Club	492	1,000 Sq Ft GFA	3.45	0%	0%	3.45
Medical						
Hospital	610	1,000 Sq Ft GFA	0.97	0%	0%	0.97
Nursing Home	620	1,000 Sq Ft GFA	0.59	0%	0%	0.59
Clinic	630	1,000 Sq Ft GFA	3.28	0%	0%	3.28
Animal Hospital/Veterinary Clinic	640	1,000 Sq Ft GFA	3.53	0%	0%	3.53
Free-Standing Emergency Room	650	1,000 Sq Ft GFA	1.52	0%	0%	1.52
Retail						
Shopping Center	820	1,000 Sq Ft GLA	3.81	34%	26%	1.52
Tractor Supply Store	810	1,000 Sq Ft GFA	1.4	0%	0%	1.40
Construction Equipment Rental Store	811	1,000 Sq Ft GFA	0.99	0%	0%	0.99
Building Materials and Lumber Store	812	1,000 Sq Ft GFA	2.06	25%	0%	1.55
Free-Standing Discount Store	815	1,000 Sq Ft GFA	4.83	17%	35%	2.32
Hardware/Paint Store	816	1,000 Sq Ft GFA	2.68	26%	28%	1.23
Nursery (Garden Center)	817	1,000 Sq Ft GFA	6.94	25%	0%	5.21
Supermarket	850	1,000 Sq Ft GFA	9.24	36%	38%	2.40
Discount Supermarket	854	1,000 Sq Ft GFA	8.38	36%	38%	2.18
Discount Club	857	1,000 Sq Ft GFA	4.18	30%	0%	2.93
Sporting Goods Superstore	861	1,000 Sq Ft GFA	2.02	40%	0%	1.21
Home Improvement Superstore	862	1,000 Sq Ft GFA	2.33	48%	24%	0.65
Electronic Superstore	863	1,000 Sq Ft GFA	4.26	40%	33%	1.15

TABLE 4 (CONTINUED): TRIP REDUCTION ESTIMATES (PM PEAK HOUR)

Land Use Category	ITE Code	Development Unit	Trip Gen Rate (PM Peak)	Pass-by Rate (%)	Diverted Rate (%)	Trip Rate w/ Reductions (PM Peak)
Baby Superstore	865	1,000 Sq Ft GFA	1.82	30%	0%	1.27
Pet Supply Superstore	866	1,000 Sq Ft GFA	3.55	30%	0%	2.49
Office Supply Superstore	867	1,000 Sq Ft GFA	2.77	30%	0%	1.94
Book Superstore	868	1,000 Sq Ft GFA	15.83	30%	0%	11.08
Bed and Linen Superstore	872	1,000 Sq Ft GFA	2.22	30%	0%	1.55
Department Store	875	1,000 Sq Ft GFA	1.95	30%	0%	1.37
Apparel Store	876	1,000 Sq Ft GFA	4.12	30%	0%	2.88
Arts and Crafts Store	879	1,000 Sq Ft GFA	6.21	30%	0%	4.35
Pharmacy/Drugstore w/o Drive-Through Window	880	1,000 Sq Ft GFA	8.51	49%	13%	3.23
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 Sq Ft GFA	10.29	49%	13%	3.91
Furniture Store	890	1,000 Sq Ft GFA	0.52	53%	31%	0.08
Services						
Walk-in Bank	911	1,000 Sq Ft GFA	12.13	47%	26%	3.28
Drive-in Bank	912	Drive-in Lanes	27.15	47%	26%	7.33
Hair Salon	918	1,000 Sq Ft GFA	1.45	25%	0%	1.09
Copy, Print, and Express Ship Store	920	1,000 Sq Ft GFA	7.42	40%	0%	4.45
Dining						
Fast Casual Restaurant	930	1,000 Sq Ft GFA	14.13	43%	26%	4.38
Quality Restaurant	931	1,000 Sq Ft GFA	7.8	44%	27%	2.26
High-Turnover (Sit-Down) Restaurant	932	1,000 Sq Ft GFA	9.77	43%	26%	3.03
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 Sq Ft GFA	32.67	50%	23%	8.82
Coffee/Donut Shop w/ Drive-Through Window	937	1,000 Sq Ft GFA	43.38	50%	23%	11.71
Automotive						
Quick Lubrication Vehicle Shop	941	Service Positions	2.43	0%	0%	2.43
Automobile Care Center	942	1,000 Sq Ft GFA	3.75	0%	0%	3.75
Automobile Parts Service Center	943	1,000 Sq Ft GFA	0.77	0%	0%	0.77
Gasoline/Service Station	944	Fueling Positions	3.98	28%	10%	2.47
Gasoline/Service Station w/ Convenience Market	945	Fueling Positions	9.24	36%	38%	2.40
Self-Service Car Wash	947	Wash Stalls	49.11	63%	26%	5.40
Automated Car Wash	948	Wash Tunnels	49.29	63%	26%	5.42
Car Wash and Detail Center	949	Wash Stalls	23.04	63%	26%	2.53
INDUSTRIAL						
Port and Terminal						
Intermodal Truck Terminal	030	1,000 Sq Ft GFA	1.87	0%	0%	1.87
Park-and-Ride Lot w/Transit Service	090	Parking Spaces	0.43	0%	0%	0.43
Industrial						
General Light Industrial	110	1,000 Sq Ft GFA	0.63	0%	0%	0.63
Industrial Park	130	1,000 Sq Ft GFA	0.4	0%	0%	0.40
Manufacturing	140	1,000 Sq Ft GFA	0.67	0%	0%	0.67
Warehousing	150	1,000 Sq Ft GFA	0.19	0%	0%	0.19
Mini-Warehouse	151	1,000 Sq Ft GFA	0.17	0%	0%	0.17
INSTITUTIONAL						
Private School (K-8)	534	Students	0.26	0%	0%	0.26
Private School (K-12)	536	Students	0.17	0%	0%	0.17
Charter Elementary School	537	Students	0.14	0%	0%	0.14
Junior/Community College	540	Students	0.11	0%	0%	0.11
University/College	550	Students	0.15	0%	0%	0.15
Church	560	1,000 Sq Ft GFA	0.49	0%	0%	0.49
Day Care Center	565	Students	0.79	75%	0%	0.20

Trip Length

Trip lengths (in miles) are used in conjunction with site trip generation to estimate vehicle-miles of travel. Trip length data was based on information gathered from the Houston-Galveston Area Council (H-GAC) travel demand model and the 2017 National Household Travel Survey (NHTS), tailored to the City of League City.

Table 5 summarizes the average trip lengths compiled from the forecast model. These trip lengths represent the average distance that a vehicle will travel between an origin and destination of which either the origin or destination contains the land-use category identified below. A localization adjustment of was made to these to net out the portion of trip length on the federal highway system since the CRF system does not include federal facilities in the Chapter 395 legislation. Based on the H-GAC travel demand model, an analysis revealed approximately 86% of vehicle-miles for trips were on the local network, with the remaining on the federal highway system.

Origin and Destination Adjustments

The assessment of an individual development's CRF is based on the premise that each vehicle-trip has an origin and a destination and that the development end should pay for one-half of the cost necessary to complete each trip. To prevent the potential of double charging, trip lengths were divided by two to reflect half of the vehicle trip associated with development. **Table 5** illustrates the adjusted trip length.

Finally, as the service area structure was based on a six-mile boundary, those land uses that exhibited trip lengths greater than six miles would be truncated to this threshold.

TABLE 5: TRIP LENGTHS AND ADJUSTMENTS

Land Use Category	ITE Code	Development Unit	Average Trip Length (mi)	Localized Trip Length (mi)	O-D Adjusted Trip Length (mi)
RESIDENTIAL					
Single-Family Detached Housing	210	Dwelling Units	9.42	8.10	4.05
Multifamily Housing (Low-Rise)	220	Dwelling Units	9.42	8.10	4.05
Multifamily Housing (Mid-Rise)	221	Dwelling Units	9.42	8.10	4.05
Off-Campus Student Apartment	225	Bedrooms	9.42	8.10	4.05
Mid-Rise Residential with 1st-Floor Commercial	231	Dwelling Units	9.42	8.10	4.05
Senior Adult Housing - Detached	251	Dwelling Units	8.52	7.33	3.66
Senior Adult Housing - Attached	252	Dwelling Units	8.52	7.33	3.66
Congregate Care Facility	253	Dwelling Units	8.52	7.33	3.66
Assisted Living	254	Beds	8.52	7.33	3.66
Continuing Care Retirement Community	255	Dwelling Units	8.52	7.33	3.66
OFFICE					
General Office Building	710	1,000 Sq Ft GFA	12.56	10.80	5.4
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 Sq Ft GFA	12.56	10.80	5.4
Corporate Headquarters Building	714	1,000 Sq Ft GFA	12.56	10.80	5.4
Single Tenant Office Building	715	1,000 Sq Ft GFA	12.56	10.80	5.4
Medical-Dental Office Building	720	1,000 Sq Ft GFA	11.30	9.72	4.86
United States Post Office	732	1,000 Sq Ft GFA	12.56	10.80	5.4
COMMERCIAL/RETAIL					
Lodging					
Hotel	310	Rooms	7.13	6.13	3.07
All Suites Hotel	311	Rooms	7.13	6.13	3.07
Recreational					
Golf Course	430	Holes	11.12	9.56	4.78
Miniature Golf Course	431	Holes	11.12	9.56	4.78
Golf Driving Range	432	Driving Positions	11.12	9.56	4.78
Batting Cages	433	Cages	11.12	9.56	4.78
Rock Climbing Gym	434	1,000 Sq Ft GFA	11.12	9.56	4.78
Movie Theater	444	Screens	11.12	9.56	4.78
Health/Fitness Club	492	1,000 Sq Ft GFA	11.12	9.56	4.78
Medical					
Hospital	610	1,000 Sq Ft GFA	11.30	9.72	4.86
Nursing Home	620	1,000 Sq Ft GFA	11.30	9.72	4.86
Clinic	630	1,000 Sq Ft GFA	11.30	9.72	4.86
Animal Hospital/Veterinary Clinic	640	1,000 Sq Ft GFA	11.30	9.72	4.86
Free-Standing Emergency Room	650	1,000 Sq Ft GFA	11.30	9.72	4.86
Retail					
Shopping Center	820	1,000 Sq Ft GLA	7.13	6.13	3.07
Tractor Supply Store	810	1,000 Sq Ft GFA	7.13	6.13	3.07
Construction Equipment Rental Store	811	1,000 Sq Ft GFA	7.13	6.13	3.07
Building Materials and Lumber Store	812	1,000 Sq Ft GFA	7.13	6.13	3.07
Free-Standing Discount Store	815	1,000 Sq Ft GFA	7.13	6.13	3.07
Hardware/Paint Store	816	1,000 Sq Ft GFA	7.13	6.13	3.07
Nursery (Garden Center)	817	1,000 Sq Ft GFA	7.13	6.13	3.07
Supermarket	850	1,000 Sq Ft GFA	7.13	6.13	3.07
Discount Supermarket	854	1,000 Sq Ft GFA	7.13	6.13	3.07
Discount Club	857	1,000 Sq Ft GFA	7.13	6.13	3.07
Sporting Goods Superstore	861	1,000 Sq Ft GFA	7.13	6.13	3.07
Home Improvement Superstore	862	1,000 Sq Ft GFA	7.13	6.13	3.07
Electronic Superstore	863	1,000 Sq Ft GFA	7.13	6.13	3.07

TABLE 5 (CONTINUED): TRIP LENGTHS AND ADJUSTMENTS

Land Use Category	ITE Code	Development Unit	Average		
			Trip Length (mi)	Localized Trip Length (mi)	O-D Adjusted Trip Length (mi)
Baby Superstore	865	1,000 Sq Ft GFA	7.13	6.13	3.07
Pet Supply Superstore	866	1,000 Sq Ft GFA	7.13	6.13	3.07
Office Supply Superstore	867	1,000 Sq Ft GFA	7.13	6.13	3.07
Book Superstore	868	1,000 Sq Ft GFA	7.13	6.13	3.07
Bed and Linen Superstore	872	1,000 Sq Ft GFA	7.13	6.13	3.07
Department Store	875	1,000 Sq Ft GFA	7.13	6.13	3.07
Apparel Store	876	1,000 Sq Ft GFA	7.13	6.13	3.07
Arts and Crafts Store	879	1,000 Sq Ft GFA	7.13	6.13	3.07
Pharmacy/Drugstore w/o Drive-Through Window	880	1,000 Sq Ft GFA	1.20	1.03	0.52
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 Sq Ft GFA	1.20	1.03	0.52
Furniture Store	890	1,000 Sq Ft GFA	7.13	6.13	3.07
Services					
Walk-in Bank	911	1,000 Sq Ft GFA	7.13	6.13	3.07
Drive-in Bank	912	Drive-in Lanes	7.13	6.13	3.07
Hair Salon	918	1,000 Sq Ft GFA	7.13	6.13	3.07
Copy, Print, and Express Ship Store	920	1,000 Sq Ft GFA	7.13	6.13	3.07
Dining					
Fast Casual Restaurant	930	1,000 Sq Ft GFA	5.65	4.86	2.43
Quality Restaurant	931	1,000 Sq Ft GFA	5.65	4.86	2.43
High-Turnover (Sit-Down) Restaurant	932	1,000 Sq Ft GFA	5.65	4.86	2.43
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 Sq Ft GFA	5.65	4.86	2.43
Coffee/Donut Shop w/ Drive-Through Window	937	1,000 Sq Ft GFA	5.65	4.86	2.43
Automotive					
Quick Lubrication Vehicle Shop	941	Service Positions	7.13	6.13	3.07
Automobile Care Center	942	1,000 Sq Ft GFA	7.13	6.13	3.07
Automobile Parts Service Center	943	1,000 Sq Ft GFA	7.13	6.13	3.07
Gasoline/Service Station	944	Fueling Positions	1.20	1.03	0.52
Gasoline/Service Station w/ Convenience Market	945	Fueling Positions	1.20	1.03	0.52
Self-Service Car Wash	947	Wash Stalls	7.13	6.13	3.07
Automated Car Wash	948	Wash Tunnels	7.13	6.13	3.07
Car Wash and Detail Center	949	Wash Stalls	7.13	6.13	3.07
INDUSTRIAL					
Port and Terminal					
Intermodal Truck Terminal	030	1,000 Sq Ft GFA	12.56	10.80	5.4
Park-and-Ride Lot w/Transit Service	090	Parking Spaces	12.56	10.80	5.4
Industrial					
General Light Industrial	110	1,000 Sq Ft GFA	12.56	10.80	5.40
Industrial Park	130	1,000 Sq Ft GFA	12.56	10.80	5.4
Manufacturing	140	1,000 Sq Ft GFA	12.56	10.80	5.4
Warehousing	150	1,000 Sq Ft GFA	12.56	10.80	5.4
Mini-Warehouse	151	1,000 Sq Ft GFA	12.56	10.80	5.4
INSTITUTIONAL					
Private School (K-8)	534	Students	6.23	5.36	2.68
Private School (K-12)	536	Students	6.23	5.36	2.68
Charter Elementary School	537	Students	6.23	5.36	2.68
Junior/Community College	540	Students	6.99	6.01	3.01
University/College	550	Students	6.99	6.01	3.01
Church	560	1,000 Sq Ft GFA	6.99	6.01	3.01
Day Care Center	565	Students	6.23	5.36	2.68

Service Unit Equivalency Table

The result of combining the trip generation and trip length information is an equivalency table which establishes the service unit rate for various land uses. These service unit rates are based on an appropriate development unit for each land use. For example, a dwelling unit is the basis for residential uses, while 1,000 gross square feet of floor area is the basis for office, commercial, and industrial uses. Other less common land uses use appropriate independent variables.

Separate rates have been established for specific land uses within the broader categories of residential, commercial, industrial, and institutional to reflect the differences between land uses within the categories. However, even with these specific land use types, information is not available for every conceivable land use; so engineering judgement must be used when needed. The equivalency table is illustrated in **Table 6**.

TABLE 6: LAND USE VEHICLE-MILE EQUIVALENCY

Land Use Category	ITE Code	Development Unit	Trip Rate w/ Reductions (PM Peak)	O-D Adjusted Trip Length (mi)	Service Unit Equivalency
RESIDENTIAL					
Single-Family Detached Housing	210	Dwelling Units	0.99	4.05	4.01
Multifamily Housing (Low-Rise)	220	Dwelling Units	0.56	4.05	2.27
Multifamily Housing (Mid-Rise)	221	Dwelling Units	0.44	4.05	1.78
Off-Campus Student Apartment	225	Bedrooms	0.25	4.05	1.01
Mid-Rise Residential with 1st-Floor Commercial	231	Dwelling Units	0.36	4.05	1.46
Senior Adult Housing - Detached	251	Dwelling Units	0.30	3.66	1.1
Senior Adult Housing - Attached	252	Dwelling Units	0.26	3.66	0.95
Congregate Care Facility	253	Dwelling Units	0.18	3.66	0.66
Assisted Living	254	Beds	0.26	3.66	0.95
Continuing Care Retirement Community	255	Dwelling Units	0.16	3.66	0.59
OFFICE					
General Office Building	710	1,000 Sq Ft GFA	1.15	5.4	6.21
Small Office Building (<5,000 Sq Ft GFA)	712	1,000 Sq Ft GFA	2.45	5.4	13.23
Corporate Headquarters Building	714	1,000 Sq Ft GFA	0.60	5.4	3.24
Single Tenant Office Building	715	1,000 Sq Ft GFA	1.71	5.4	9.23
Medical-Dental Office Building	720	1,000 Sq Ft GFA	3.46	4.86	16.82
United States Post Office	732	1,000 Sq Ft GFA	3.36	5.4	18.14
COMMERCIAL/RETAIL					
Lodging					
Hotel	310	Rooms	0.60	3.07	1.84
All Suites Hotel	311	Rooms	0.36	3.07	1.11
Recreational					
Golf Course	430	Holes	2.91	4.78	13.91
Miniature Golf Course	431	Holes	0.33	4.78	1.58
Golf Driving Range	432	Driving Positions	1.25	4.78	5.98
Batting Cages	433	Cages	2.22	4.78	10.61
Rock Climbing Gym	434	1,000 Sq Ft GFA	1.64	4.78	7.84
Movie Theater	444	Screens	14.60	4.78	69.79
Health/Fitness Club	492	1,000 Sq Ft GFA	3.45	4.78	16.49
Medical					
Hospital	610	1,000 Sq Ft GFA	0.97	4.86	4.71
Nursing Home	620	1,000 Sq Ft GFA	0.59	4.86	2.87
Clinic	630	1,000 Sq Ft GFA	3.28	4.86	15.94
Animal Hospital/Veterinary Clinic	640	1,000 Sq Ft GFA	3.53	4.86	17.16
Free-Standing Emergency Room	650	1,000 Sq Ft GFA	1.52	4.86	7.39
Retail					
Shopping Center	820	1,000 Sq Ft GLA	1.52	3.07	4.67
Tractor Supply Store	810	1,000 Sq Ft GFA	1.40	3.07	4.3
Construction Equipment Rental Store	811	1,000 Sq Ft GFA	0.99	3.07	3.04
Building Materials and Lumber Store	812	1,000 Sq Ft GFA	1.55	3.07	4.76
Free-Standing Discount Store	815	1,000 Sq Ft GFA	2.32	3.07	7.12
Hardware/Paint Store	816	1,000 Sq Ft GFA	1.23	3.07	3.78
Nursery (Garden Center)	817	1,000 Sq Ft GFA	5.21	3.07	15.99
Supermarket	850	1,000 Sq Ft GFA	2.40	3.07	7.37
Discount Supermarket	854	1,000 Sq Ft GFA	2.18	3.07	6.69
Discount Club	857	1,000 Sq Ft GFA	2.93	3.07	9
Sporting Goods Superstore	861	1,000 Sq Ft GFA	1.21	3.07	3.71
Home Improvement Superstore	862	1,000 Sq Ft GFA	0.65	3.07	2
Electronic Superstore	863	1,000 Sq Ft GFA	1.15	3.07	3.53

TABLE 6 (CONTINUED): LAND USE VEHICLE-MILE EQUIVALENCY

Land Use Category	ITE Code	Development Unit	Trip Rate w/ Reductions (PM Peak)	O-D Adjusted Trip Length (mi)	Service Unit Equivalency
Baby Superstore	865	1,000 Sq Ft GFA	1.27	3.07	3.9
Pet Supply Superstore	866	1,000 Sq Ft GFA	2.49	3.07	7.64
Office Supply Superstore	867	1,000 Sq Ft GFA	1.94	3.07	5.96
Book Superstore	868	1,000 Sq Ft GFA	11.08	3.07	34.02
Bed and Linen Superstore	872	1,000 Sq Ft GFA	1.55	3.07	4.76
Department Store	875	1,000 Sq Ft GFA	1.37	3.07	4.21
Apparel Store	876	1,000 Sq Ft GFA	2.88	3.07	8.84
Arts and Crafts Store	879	1,000 Sq Ft GFA	4.35	3.07	13.35
Pharmacy/Drugstore w/o Drive-Through Window	880	1,000 Sq Ft GFA	3.23	0.52	1.68
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 Sq Ft GFA	3.91	0.52	2.03
Furniture Store	890	1,000 Sq Ft GFA	0.08	3.07	0.25
Services					
Walk-in Bank	911	1,000 Sq Ft GFA	3.28	3.07	10.07
Drive-in Bank	912	Drive-in Lanes	7.33	3.07	22.5
Hair Salon	918	1,000 Sq Ft GFA	1.09	3.07	3.35
Copy, Print, and Express Ship Store	920	1,000 Sq Ft GFA	4.45	3.07	13.66
Dining					
Fast Casual Restaurant	930	1,000 Sq Ft GFA	4.38	2.43	10.64
Quality Restaurant	931	1,000 Sq Ft GFA	2.26	2.43	5.49
High-Turnover (Sit-Down) Restaurant	932	1,000 Sq Ft GFA	3.03	2.43	7.36
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 Sq Ft GFA	8.82	2.43	21.43
Coffee/Donut Shop w/ Drive-Through Window	937	1,000 Sq Ft GFA	11.71	2.43	28.46
Automotive					
Quick Lubrication Vehicle Shop	941	Service Positions	2.43	3.07	7.46
Automobile Care Center	942	1,000 Sq Ft GFA	3.75	3.07	11.51
Automobile Parts Service Center	943	1,000 Sq Ft GFA	0.77	3.07	2.36
Gasoline/Service Station	944	Fueling Positions	2.47	0.52	1.28
Gasoline/Service Station w/ Convenience Market	945	Fueling Positions	2.40	0.52	1.25
Self-Service Car Wash	947	Wash Stalls	5.40	3.07	16.58
Automated Car Wash	948	Wash Tunnels	5.42	3.07	16.64
Car Wash and Detail Center	949	Wash Stalls	2.53	3.07	7.77
INDUSTRIAL					
Port and Terminal					
Intermodal Truck Terminal	030	1,000 Sq Ft GFA	1.87	5.4	10.1
Park-and-Ride Lot w/Transit Service	090	Parking Spaces	0.43	5.4	2.32
Industrial					
General Light Industrial	110	1,000 Sq Ft GFA	0.63	5.40	3.40
Industrial Park	130	1,000 Sq Ft GFA	0.40	5.4	2.16
Manufacturing	140	1,000 Sq Ft GFA	0.67	5.4	3.62
Warehousing	150	1,000 Sq Ft GFA	0.19	5.4	1.03
Mini-Warehouse	151	1,000 Sq Ft GFA	0.17	5.4	0.92
INSTITUTIONAL					
Private School (K-8)	534	Students	0.26	2.68	0.7
Private School (K-12)	536	Students	0.17	2.68	0.46
Charter Elementary School	537	Students	0.14	2.68	0.38
Junior/Community College	540	Students	0.11	3.01	0.33
University/College	550	Students	0.15	3.01	0.45
Church	560	1,000 Sq Ft GFA	0.49	3.01	1.47
Day Care Center	565	Students	0.20	2.68	0.54

5.0 EXISTING CONDITIONS ANALYSIS

An inventory of major roadways that are designated as arterial and/or collector facilities on the Master Mobility Plan was conducted to determine: 1) capacity provided by the existing roadway system, 2) the demand currently placed on the system, and 3) the potential existence of deficiencies on the system. Any deficiencies found to occur will be carried over in the capital recovery fee (CRF) calculations (netting out capacity made available by the CIP). Data for the inventory were obtained from the concurrent Master Mobility Plan study, field reconnaissance, and peak hour traffic volume count data.

The roadways were divided into segments based on changes in lane configuration, major intersections, city limits or area development that may influence roadway characteristics. For the assessment of individual segments, lane capacities were assigned to each segment based on roadway functional class defined by the City's Master Mobility Plan and type of existing cross-section, as listed in **Table 7**. Roadway hourly volume capacities are defined by link-level carrying capacity values based upon generally accepted capacities defined by the H-GAC travel demand modeling description for the suburban context. The H-GAC modeling capacities describe a level-of-service (LOS) "E/F" operation which has been tailored to the context of League City and reduced by a factor of 20% to reflect minimum acceptable traffic operational condition by the city of LOS "D/E" operation.

TABLE 7: ROADWAY FACILITY VEHICLE-MILE LANE CAPACITIES

Roadway Facility Functional Classification	Designation	Hourly Vehicle-mile Capacity per Lane Mile of Roadway Facility
Divided Arterial*	DA/SA*	665
Divided Collector*	DC/SC*	565
Undivided Arterial	UA	590
Undivided Collector	UC	510
*Facilities with a two-way left turn lane (TWLTL) treated as a divided facility and marked with a Special Arterial (SA) or Special Collector (SC) designation.		

5.1 EXISTING VOLUMES

Existing directional PM peak hour volumes were obtained from traffic counts in 2016 or 2017 and utilized in the City's Master Mobility Plan process on major roadways throughout the city. This information was supplemented with data from TxDOT's traffic count system.

These data were compiled for roadway segments throughout the City and entered into the database for use in calculations. A summary of volumes by roadway segment is included in the **Appendix B** as part of the existing capital improvements database.

5.2 VEHICLE-MILES OF EXISTING CAPACITY SUPPLY

An analysis of the total capacity for each service area was performed. For each roadway segment, the existing vehicle-miles of capacity supplied were calculated using the following:

$$\text{Vehicle-Miles of Capacity} = \text{Link capacity per peak hour per lane} \times \text{No. of Lanes} \times \text{Length of segment (miles)}$$

A summary of the current capacity available on the roadway system by service area is detailed in **Table 8**.

5.3 VEHICLE-MILES OF EXISTING DEMAND

The level of current usage in terms of vehicle-miles was calculated for each roadway segment. The vehicle-miles of existing demand were calculated by the following equation:

$$\text{Vehicle-Miles of Demand} = \text{PM peak hour volume} \times \text{Length of segment (miles)}$$

The total vehicle-miles of demand by service area is also listed in **Table 8**.

5.4 VEHICLE-MILES OF EXISTING EXCESS CAPACITY AND DEFICIENCIES

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated and are listed in **Table 8**. Each direction was evaluated to determine if vehicle demands (volumes) exceeded the available capacity. If demand in either direction exceeded capacity, this deficiency in the roadway network was documented as the excess demand over available capacity in that segment. The total deficiencies in the network is deducted from the capacity supply associated with the CRF capital improvement plan in order to account for excess demand in the network from existing development. A summary of peak hour excess capacity and deficiencies is also shown in **Table 8**. Any deficiencies identified under current operations will be carried over to the CRF calculation. A detailed listing of existing excess capacity and deficiencies by roadway segment is also located in the **Appendix B**.

TABLE 8. PEAK HOUR VEHICLE-MILES OF EXISTING CAPACITY, DEMAND, EXCESS CAPACITY AND DEFICIENCIES

Service Area	Capacity	Demand	Excess Capacity	Existing Deficiencies
1	80,109	50,252	32,291	2,070
2	34,330	21,842	12,993	505
3	34,514	23,168	13,106	1,760
4	12,805	8,890	4,140	224
Total	161,758	104,152	62,530	4,559

6.0 PROJECTED CONDITIONS ANALYSIS

Chapter 395 requires a description of all capital improvements or facility expansions and their costs necessitated by and attributable to new development within the service area. This section describes the projected growth, vehicle-miles of new demand, capital improvements program, vehicle-miles of new capacity supplied, and costs of the roadway improvements.

6.1 PROJECTED GROWTH

The projected growth for the roadway service areas is represented by the increase in the number of new vehicle-miles of demand generated over the 10-year planning period. The basis for the calculation of new demand is the population and employment projections that were described in the previous Section 3.0.

Population growth in dwelling units will be used to calculate vehicle-miles of demand from this demographic type. Using estimated employees per square foot for the employment classes based on a range of values commonly found in modeling, employment growth data presented in the LUA were converted to square feet of development. The conversion of population to dwelling units and employment to square feet of development aligns the growth assumptions with the service unit equivalencies for each demographic allowing for the calculation of a total projected vehicle-miles of new demand in this 10-year planning period. A summary of the projected growth is summarized in **Table 3**.

6.1.1 Projected Vehicle-Miles of New Demand

Projected vehicle-miles of demand were calculated based on the net growth expected to occur over the 10-year planning period, and on the associated service unit generation for each of the population and employment data components (basic, service and retail). Separate calculations were performed for each data component and were then aggregated for each service area. Vehicle-miles of demand for population growth were based on dwelling units (residential). Vehicle-miles of demand for employment were based on the number of employees, and then converted to square footage of building space using estimates of square footage per employee for industrial, office and retail uses.

The 10-year projected vehicle-miles of demand by service area are summarized in **Table 9**. The **Appendix C** details the derivation of the projected demand calculations.

TABLE 9. 10-YEAR PROJECTED SERVICE UNITS OF DEMAND

Service Area	Projected 10-Year Growth (Vehicle-Miles)
1	29,116
2	4,563
3	43,676
4	27,991
Total	105,346

6.2 CAPITAL IMPROVEMENTS PLAN

The capital recovery fee (CRF) CIP is aimed at facilitating long-term growth in League City. The City has identified the City-funded transportation projects needed to accommodate the projected growth within the City. The City's Master Mobility Plan identified short-, mid-, and long-term project needs which served as a basis for incorporating projects into this CRF program. Other considerations for which the CIP for Roadway CRFs includes:

- Recently completed projects with excess capacity available to serve new growth;
- Projects currently under construction; and
- Remaining projects needed to complete the City's Master Mobility Plan.

Arterial and collector class facilities in the current adopted Thoroughfare Plan were included in the CRF CIP to provide flexibility in the development of the community due to the anticipated rates of development.

6.2.1 Eligible Projects

Legislative mandate stipulates that the capital recovery fee CIP contain only those roadways classified as arterial or collector status facilities that are included in the City's adopted Thoroughfare Plan. Capital recovery fee legislation also allows for the recoupment of costs for previously constructed facilities and projects currently under construction. All these projects conform to the Master Mobility Plan requirements and will consider only the costs incurred by the City for facility implementation. Standalone traffic signal projects were omitted from the CIP to focus on major "facility expansions" and avoid potential "modernization" projects which are not allowed per LGC Chapter 395.

6.2.2 Eligible Costs

In general, those costs associated with the design, right-of-way acquisition, and construction and financing of all items necessary to implement the roadway projects identified in the capital improvements plan are eligible. These estimates are based on the ultimate roadway section identified by functional classification in the Master Mobility Plan. It is important to note that upon completion of the capital improvements identified in the CIP, the city must recalculate the CRF using the *actual* costs and make refunds if the actual cost is less than the CRF paid by greater than 10 percent. To prevent this situation, conservative (low) estimates of project cost are considered.

Chapter 395.012 identifies roadway costs eligible for CRF recovery. The law states that:

"An impact fee may be imposed only to pay the cost of constructing capital improvements for facility expansions, including and limited to the construction contract price, surveying and engineering fees, land acquisition costs, including land purchases, court awards and costs, attorney 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 who is not an employee of the political subdivision."

"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."

The following details the individual cost components of the capital recovery fee CIP.

Construction: Construction costs include those costs which are normally associated with construction, including: paving, dirt work (including sub-grade preparation, embankment fill and excavation), clearing and grubbing, retaining walls or other slope protection measures, and general drainage items which are necessary in order to build the roadway and allow the roadway to fulfill its vehicle carrying capability. Individual items may include; bridges, culverts, inlets and storm sewers, junction boxes, manholes, curbs and/or gutters, and channel linings and other erosion protection appurtenances. Other items included in cost estimates may include: sidewalks, traffic control devices at select locations (initial cost only), ancillary adjustments to existing utilities, and minimal sodding/landscaping.

Engineering: These are the costs associated with the design and surveying necessary to construct the roadway. Because the law specifically references fees, it has generally been understood that in-house City design and surveying cannot be included. Only those services that are contracted out can be included and it may be necessary to use outside design and surveying firms to perform the work. For planned projects, a percentage based on typical engineering contracts was used to estimate these fees.

Right-of-Way: Any land acquisition cost estimated to be necessary to construct a roadway can be included in the cost estimate. For planning purposes, only the additional amount of land needed to bring a roadway right-of-way to thoroughfare standard was considered. For example, if a 120' right-of-way for an arterial road was needed and 80' of right-of-way currently existed, only 40' would be considered in the acquisition cost.

The cost for right-of-way may vary based on location of project and was based on data from the most current County Appraisal District data.

Debt Service: Predicted interest charges and finance costs may be included in determining the amount of CRFs only if the CRFs are used for the payment of principle and interest on bonds, notes, or other obligations issued by the city to finance capital improvements identified in the CRF capital improvements plans. They cannot be used to reimburse bond funds for other facilities.

Previous Assessments: The cost for any previous assessments collected by the City on projects identified on the capital recovery fee CIP must be removed from program consideration. As this is a new CRF program, there are no previous assessments to consider in the initial calculation.

Study Updates: The fees 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 can be included in the CRFs.

Only the cost necessitated by new development is considered for CRF calculations. For example, if only 60% of the capacity provided by the capital recovery fee CIP is needed over the ten-year window, then only 60% of the cost associated with those facilities will be considered.

6.2.3 Capital Recovery Fee CIP

The proposed CIP consists of 40 project segments over the four (4) service areas and advance the implementation of the Master Mobility Plan network, as seen in **Figure 2**.

Project costs were developed based on unit cost estimates compiled by Freese and Nichols. Individual project costs were developed for engineering, right-of-way, and construction, as found in the **Appendix E**. Where more detailed cost estimate information was available from the City, these numbers were used. Each roadway segment uses the Master Mobility Plan's defined functional classification to determine the ultimate roadway standard for each link. Additionally, CRF study update costs were attributed to the project costs. For recently completed projects, actual costs must be input to meet legislative mandates. The cost for the capital recovery fee CIP (CRFCIP) program totals \$347.1 million. **Figure 2** and **Table 10** illustrate and list the capital improvement projects and their associated total cost for the CRF program.

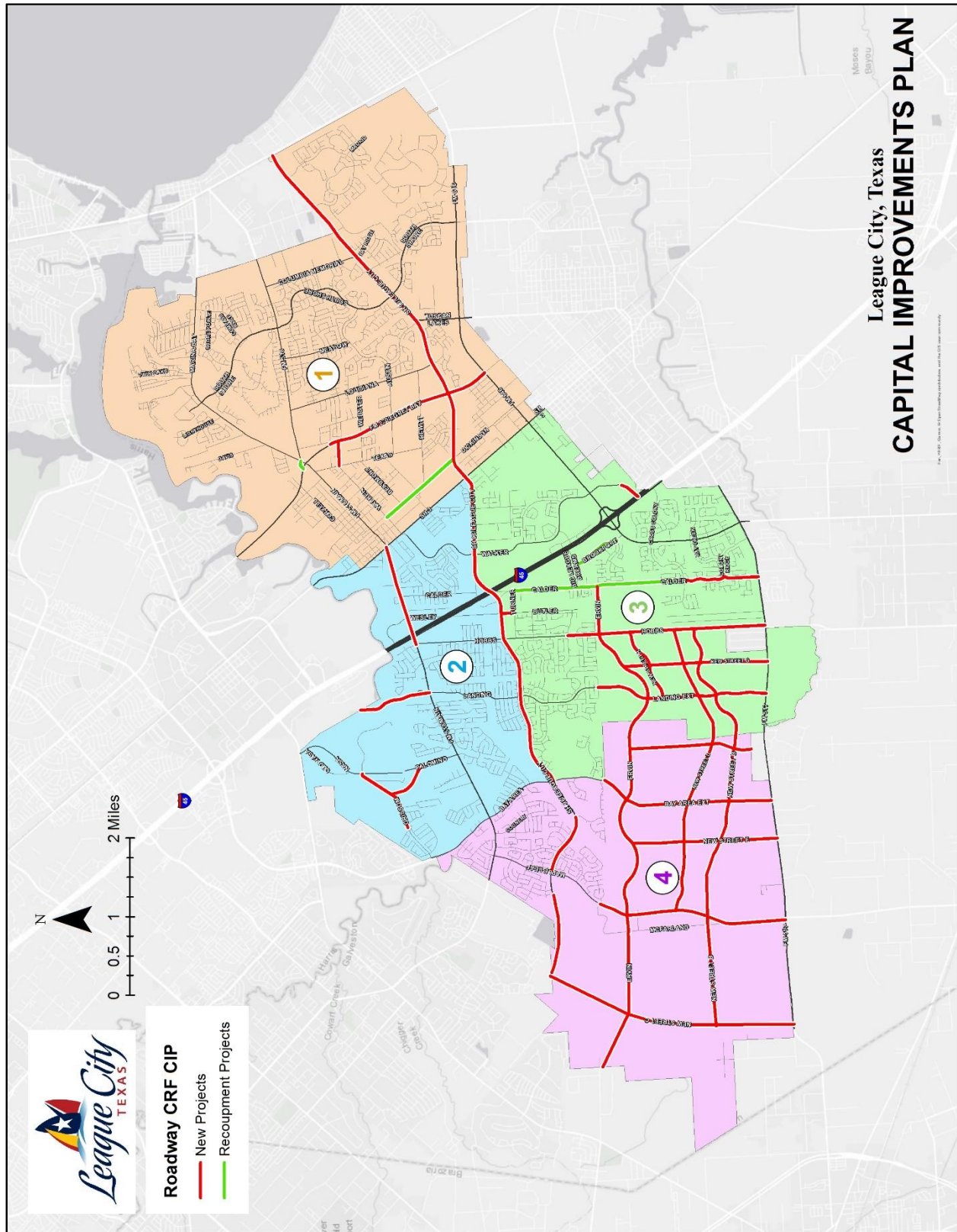


FIGURE 2: CAPITAL RECOVERY FEE CIP

TABLE 10: CAPITAL RECOVERY FEE CIP LISTING

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type
1	1		R	FM 518/Deke Slayton Hwy	FM 2094/Main St	FM 270/Egret Bay Blvd	0.14	4	DA
2	1		N	FM 270/Egret Bay Blvd	Abilene St	FM 646	2.18	4	DA
3	1		R	Dickinson	Walker St	SH 96/League City Pkwy	1.12	3	SC
4	1		N	Walker St	Texas Ave	FM 270/Egret Bay Blvd	0.31	2	UC
5	1		R	SH 96/League City Pkwy	@ South Shore Turn Lanes		0.28	2	UC
6	1		N	SH 96/League City Pkwy	SH 3	E City Limits (SH 146)	4.95	2	DA
Sub-Total Service Area 1							8.99		
7	2		N	Grissom Rd	Abigail Ln	W NASA Blvd.	1.01	4	DC
8	2		N	Palomino Ln Extension	Clear Creek	Grissom Rd	0.59	4	DC
9	2		N	Landing Blvd Extension	N End of Landing Blvd	N City Limits	0.93	4	DA
10	2	3	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA
11	2	3	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA
12	2	3	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA
13	2		N	FM 518/Main St	Hobbs Rd	SH 3	1.29	2	DA
Sub-Total Service Area 2							7.98		
14	3		R	Calder Rd	Turner St	Cross Colony	2.20	3	SC
15	3		N	Calder Rd	Cross Colony	FM 517	0.97	3	SC
16	3		R	Brookport Extension	Big League Dreams	Marble Cove Dr	0.61	4	DC
17	3		N	Turner-Butler	SH 96/League City Pkwy	Calder Dr	0.42	3	SC
18	3	2	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA
19	3	2	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA
20	3	2	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA
21	3		N	Ervin Ave	Calder Rd	Hobbs Rd	0.60	4	DA
22	3		N	Ervin Ave	Hobbs Rd	Landing Blvd	1.08	4	DA
23	3		N	Ervin Ave	Landing Blvd	Service Area Limit	0.33	4	DA
24	3		N	Hobbs Rd Extension	Ervin Ave	FM 517	2.12	4	DA
25	3		N	Landing Blvd Extension	Sandvalley Way	Ervin Ave	0.67	4	DA
26	3		N	Landing Blvd Extension	Ervin Ave	FM 517	1.52	4	DA
27	3		N	Walker St Extension	S. End of Walker St	IH-45 Frontage Rd	0.25	2	UA
28	3		N	New Street B	Landing Blvd	Hobbs Rd	0.94	4	DA
29	3		N	New Street B	SA Limit	Landing Blvd	0.64	4	DA
30	3		N	New Street D	SA Limit	Hobbs Rd	1.48	4	DC
31	3		N	New Street G	Ervin Ave	FM 517	1.84	4	DC
32	3		N	New Street H	Landing Blvd	Hobbs Rd	0.97	4	DC
Sub-Total Service Area 3							20.79		
33	4		N	League City Pkwy Extension	1,600' W of Maple Leaf	City Limits	0.36	4	DA
34	4		N	League City Pkwy	Misty Trails	Maple Leaf	0.80	2	DA
35	4		N	Ervin Ave	W City Limits	Service Area Limit	4.64	4	DA
36	4		N	Maple Leaf Extension	N. Side of American Canal	New Street B	1.41	4	DA
37	4		N	Maple Leaf Ext/McFarland	New Street B	FM 517	1.02	4	DA
38	4		N	Bay Area Blvd Extension	N. Side of American Canal	FM 517	2.24	4	DA
39	4		N	New Street B	New Street C	Service Area Limit	3.78	4	DA
40	4		N	New Street C	League City Pkwy Ext	FM 517	3.23	4	DA
41	4		N	New Street D	Maple Leaf Ext	Service Area Limit	2.30	4	DC
42	4		N	New Street E	Ervin Ave	FM 517	1.85	4	DA
43	4		N	New Street F	Ervin Ave	S City Limits	1.56	4	DC
Sub-Total Service Area 4							23.18		

Notes:

DA - Divided Arterial
 UA - Undivided Arterial
 SA - Special Arterial with two-way left turn lane (TWLTL)
 DC - Divided collector
 UC - Undivided Collector
 SC - Special Collector with two-way left turn lane (TWLTL)
 N - New Project
 R - Recoupment Project

6.2.4 Projected Vehicle-Miles Capacity Available for New Growth

The vehicle-miles of new capacity supply were calculated similar to the vehicle-miles of existing capacity supplied. The equation used was:

$$\text{Vehicle-Miles of New Capacity} = \text{Link capacity per peak hour per lane} \times \text{No. of Lanes} \times \text{Length of segment (miles)}$$

Vehicle-miles of new supply provided by the CIP are listed in **Table 11**. While projects listed in the CIP have not been built, the existing utilization on CIP roadways and system deficiencies on the current network (by service area) have been removed from the total supply to properly account for new “net” capacity available for consumption by new growth. **Table 11**, Column E, depicts net availability of supply by the CIP. **Appendix D** details capacity calculations provided by the CIP program.

TABLE 11: CAPACITY AND NET CAPACITY PROVIDED BY THE PROPOSED CIP

	A	B	C = A – B	D	E = C – D
Service Area	Capacity Supplied by CIP (veh-mi)	Existing Utilization on CIP Roadways (veh-mi)	Excess Capacity (veh-mi)	Current Network Deficiencies* (veh-mi)	Net Capacity Supplied by CIP (veh-mi)
1	14,638	3,254	11,384	2,070	9,314
2	10,569	702	9,867	505	9,362
3	39,199	969	38,230	1,760	36,470
4	59,055	20	59,035	224	58,811
Total	123,461	4,945	118,516	4,559	113,957

*All current network deficiencies (Table 8).

A comparison of net capacity provided by the proposed CIP relative to 10-year needs is listed below in **Table 12**. An analysis reveals an adequately matched overall capital recovery fee CIP program to address growth attributable to new development.

**TABLE 12: PROJECTED DEMAND AND NET CAPACITY
PROVIDED BY THE PROPOSED CIP**

	A	B	B / A (Max 100%)
Service Area	Net Capacity Supplied by CIP (veh-mi)	Projected 10-Year Growth (Vehicle-Miles)	Pcnt. Of CIP Attributable to New Dev. (10-Yr.)
1	9,314	29,116	100.0
2	9,362	4,563	48.7
3	36,470	43,676	100.0
4	58,811	27,991	47.6
Total	113,957	105,346	92.4

6.2.5 Cost of Roadway Improvements

The total CRFCIP cost, including study update costs, and cost of net capacity supplied to implement the roadway improvements plan projects by service area is shown in **Table 13**. If traffic exists on proposed CIP project roadways or there are any deficiencies present on the current network in each respective service area (existing utilization), the total system cost is adjusted to reflect the net capacity being made available by the capital recovery fee program. In other words, only the unused portion of the CIP and its associated costs are considered eligible. A detailed listing by project segment in each service area can be found in **Appendix E**. **Appendix G** details system costs by service area.

Per Chapter 395, the cost of the CIP must be credited for ad-valorem tax generated through new development either through a credit analysis or a flat 50% credit. The City has opted to credit the CIP by the 50 percent, as shown in the last column.

TABLE 13: SUMMARY OF ROADWAY IMPROVEMENTS PLAN COST ANALYSIS

Service Area	Total Cost of Proposed IFCIP Projects (Including CRF Study Update Cost)	Credited Cost of Proposed IFCIP Projects (Including CRF Study Update Cost)	Credited Cost to Meet Existing Utilization on CIP Roadways	Credited Cost of Net Capacity Supplied by CIP
1	\$29,638,467	\$14,819,234	\$5,389,917	\$9,429,317
2	\$76,779,256	\$38,389,628	\$4,384,169	\$34,005,459
3	\$108,336,912	\$54,168,456	\$3,771,160	\$50,397,296
4	\$132,363,857	\$66,181,928	\$273,447	\$65,908,482
Total	\$347,118,492	\$173,559,246	\$13,818,693	\$159,740,553

7.0 CALCULATION OF CAPITAL RECOVERY FEES

This chapter discusses the calculation of the cost per service unit and the calculation of roadway capital recovery fees (CRFs). The roadway CRF will vary by the particular land use, service area, and size of the development. Examples are included to better illustrate the method by which the roadway CRFs are calculated.

7.1 COST PER SERVICE UNIT

The cost per service unit is calculated by dividing the cost of the CIP necessitated and attributable to new demand (net cost) by the projected service units of growth over the 10-year planning period.

7.1.1 Cost Attributable to New Development

Generally, the cost per service unit varies by service area because of; the net capacity being provided by the proposed projects, variations in cost of CIP and, the number of service units necessitated by new growth in each CRF service area. Where net capacity supplied is greater than demand, the cost per service unit is simply the cost of the net capacity divided by the number of service units provided. In this case, only the portion of the CIP necessitated by new development is used in the calculation. If net capacity supplied is *less* than projected new demand, then the cost per service unit is calculated by dividing the total cost of net supply by the portion of new demand attributable and necessary by development. The result is generally a decrease in the cost per service unit, because such cost is spread over the larger number of service units of growth. This is shown in **Table 14** in Columns A-C calculating the cost attributable to new development through the percent of CIP capacity attributable calculated in **Table 12**.

TABLE 14: ROADWAY IMPROVEMENTS PLAN COST ATTRIBUTABLE TO NEW DEVELOPMENT

	A	B	C = A x B
Service Area	Credited Cost of Net Capacity Supplied by CIP (Table 14)	Pcnt. Of CIP Attributable to New Development (Table 13)	Credited Cost Attributable to New Development
1	\$9,429,317	100.0	\$9,429,317
2	\$34,005,459	48.7	\$16,574,120
3	\$50,397,296	100.0	\$50,397,296
4	\$65,908,482	47.6	\$31,369,035
Total	\$159,740,553	92.4	\$107,769,767

7.1.2 Maximum Cost per Service Unit Calculation

Table 15 lists the results of the cost per service unit calculation by service area. The base cost per service unit reflects the true burden to the City for the implementation of the roadway capital improvements program. As per state law, a credit for the portion of ad-valorem tax revenues generated by improvements over the program period must be given. Based on the credit analysis the maximum collection rate after credit reflects the maximum amount per service unit that can be charged to be in compliance with the state statute. **Appendix G** details the maximum fee per service unit calculation for each service area.

TABLE 15: COST PER SERVICE UNIT SUMMARY

	A	B	C	D = B / A	E = C / A
Service Area	Projected 10-Year Growth (Vehicle-Miles)	Full Cost Attributable to New Development	Credited Cost Attributable to New Development	Base Cost per Service Unit	Maximum Allowable Cost per Service Unit (After Credit)
1	29,116	\$18,858,634	\$9,429,317	\$646	\$323
2	4,563	\$33,148,240	\$16,574,120	\$7,264	\$3,632
3	43,676	\$100,794,591	\$50,397,296	\$2,306	\$1,153
4	27,991	\$62,738,070	\$31,369,035	\$2,240	\$1,120
Total	105,346	\$215,539,535	\$107,769,767	\$2,502	\$1,251

7.2 CALCULATION OF ROADWAY CAPITAL RECOVERY FEES

The calculation of roadway capital recovery fees for new development involves a two-step process. *Step One* is the calculation of the total number of service units that will be generated by the development. *Step Two* is the calculation of the capital recovery fee due by the new development.

Step 1: Determine number of service units (vehicle-miles) generated by the development using the equivalency table.

$$\begin{array}{ccccc} \text{No. of Development} & & \times & & \text{Vehicle-miles} & = & \text{Development's} \\ \text{Units} & & & & \text{per development unit} & & \text{Vehicle-miles} \end{array}$$

Step 2: Calculate the CRF based on the fee per service unit for the service area where the development is located.

$$\begin{array}{ccccc} \text{Development's} & & \times & & \text{Fee per} & = & \text{CRF due from} \\ \text{Vehicle-miles} & & & & \text{vehicle-mile} & & \text{Development} \end{array}$$

Examples: The following fees would be assessed to new developments in League City in Service Area 4 if the cost per service unit were \$1,120.00

Single-Family Dwelling

1 dwelling unit x 4.01 vehicle-miles/dwelling unit = 4.01 vehicle-miles

4.01 vehicle-miles x \$1,120.00/vehicle-mile = \$4,491.20

10,000 square foot (s.f.) Office Building

10 (1,000 s.f. units) x 6.21 vehicle-miles/1,000 s.f. units = 62.10 vehicle-miles

62.10 vehicle-miles x \$1,120.00/vehicle-mile = \$69,552.00

20,000 s.f. Retail Center

20 (1,000 s.f. units) x 4.67 vehicle-miles/1,000 s.f. units = 93.40 vehicle-miles

93.40 vehicle-miles x \$1,120.00/vehicle-mile = \$104,608.00

100,000 s.f. Warehouse

100 (1,000 s.f. units) x 3.40 vehicle-miles/1,000 s.f. units = 340.00 vehicle-miles

340.00 vehicle-miles x \$1,120.00/vehicle-mile = \$380,800.00

APPENDICES

Appendix A:
Roadway Capital Recovery Fee Definitions

ROADWAY CAPITAL RECOVERY FEE DEFINITIONS

Average Trip Length - the average actual travel distance between two points. The average trip length by specific land use varies.

Diverted Trip - similar to pass-by trip, but a diversion is made from the regular route to make an interim stop.

Impact Fee (Capital Recovery Fee) - a charge or assessment imposed by a city against new development to generate revenue for funding or recouping roadway improvements necessitated and attributable to new development.

Maximum Fee Per Service Unit - the highest capital recovery fee that may be collected by the City per vehicle-mile of supply. Calculated by dividing the costs of the capital improvements by the total number of vehicle-miles of demand expected in the 10-year planning period.

Pass-by Trip - a trip made as an intermediate stop on the way from an origin to a primary trip destination. For example, a stop at a convenience store on the way to office from home.

PM Peak Hour - the hour when the highest volume of traffic typically occurs. Data collection revealed the peak hour of travel to be between 5:00 and 6:00 pm.

PM Peak Hour Traffic Counts - the number of vehicles passing a certain point during the peak hours of travel. Traffic counts are conducted during the PM peak hour because the greatest demand for roadway capacity occurs during this hour.

Primary Trip - a trip made for the specific purpose of visiting a destination; for example, from home to office.

Roadway Demand - the demand placed on the roadway network as a result of development. Determined by multiplying the trip generation of a specific land use by the average trip length.

Roadway Supply (or Capacity) - the number of service units provided by a segment of roadway over a period of time. Determined by multiplying the lane capacity by the roadway length.

Service Area - the area within the city boundaries to be served by capital improvements. Criteria for developing the service area structure include: 1) restricted to six-mile limit by legislation (to ensure proximity of roadway improvements to development), 2) conforms to census or forecast model boundaries, 3) projects on CIP as boundaries, 4) effort to match roadway supply with projected demand, and 5) city limit boundaries.

Service Unit - a measure of use or generation attributable to new development for roadway improvements. Also used to measure supply provided by existing and proposed roadway improvements.

Trip - a single, one-direction vehicle movement from an origin to a destination.

Trip Generation - the total trip ends for a land use over a given period of time or the total of all trips entering and exiting a site during that designated time. Used in the development of 10-year traffic demand projections and the equivalency table. Based primarily on data prepared by the Institute of Transportation Engineers (ITE).

Vehicle - for capital recovery fee purposes, any motorized appurtenance that carries passengers and/or goods on the roadway system during peak periods of travel.

Vehicle-mile - a unit used to express both supply and demand provided by, and placed on, the roadway system. A combination of a number of vehicles traveling during a given time period and the distance which those vehicles travel in miles

Appendix B:
Existing Conditions Analysis

DEFINITIONS

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial DC = divided collector UC = undivided collector SC = special collector (roadway with continuous left turn) SA = special arterial (roadway with continuous left turn)
PK-HR VOLUME	The existing volume of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel. A and B indicate the two directions of travel. Direction A is a northbound or eastbound and direction B is southbound or westbound. If only one half of the roadway is located within the service area (see % in service area), the opposing direction will have no volume in the service area.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
EXISTING DEFICIENCIES PK-HR VEH-MI	The number of service units of demand in excess of the service units supplied.

NOTE: Excess capacity and existing deficiencies are calculated separately for each direction. It is possible to have excess capacity in one direction and an existing deficiency in the other. When both directions have excess capacity or deficiencies, the total for both directions are presented.

League City Roadway Capital Recovery Fee Study
Existing Capital Improvements Analysis

Serv Area	Shared Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume	A	B	Total	VTM Supply Pk Hr Total	VTM Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
1	1	FM 2094/Marina Bay Dr.	E City Limits	Compass Rose Blvd.	0.41	4	DA	665	100%	832			860	1,091	694	397	0
1	1	FM 2094/Marina Bay Dr.	Compass Rose Blvd.	South Shore Blvd.	1.22	4	DA	665	100%	962			885	3,245	2,253	992	0
1	1	FM 2094/Marina Bay Dr.	South Shore Blvd.	Lighthouse Blvd.	0.30	4	DA	665	100%	1,092			910	798	601	197	0
1	1	FM 2094/Marina Bay Dr.	Lighthouse Blvd.	Davis Rd.	0.66	4	DA	665	100%	1,224			930	1,756	1,422	334	0
1	1	FM 2094/Marina Bay Dr.	Davis Rd.	FM 518/Deke Slayton Hwy	0.50	4	DA	665	100%	1,964			951	1,330	1,458	190	317
1	1	FM 518/Main St.	FM 2094/Marina Bay Dr.	FM 270/Egret Bay Blvd.	0.10	5	SA	665	100%	1,392			1,070	266	246	26	6
1	1	FM 518/Main St.	FM 270/Egret Bay Blvd.	Texas Ave.	0.16	5	SA	665	100%	1,042			1,126	426	347	79	0
1	1	FM 518/Main St.	Texas Ave.	Iowa Ave.	0.77	5	SA	665	100%	1,118			1,089	2,048	1,699	349	0
1	1	FM 518/Main St.	Iowa Ave.	SH 3	0.56	4	UA	590	100%	1,060			1,050	1,322	1,182	140	0
1	1	FM 518/Deke Slayton Hwy	E City Limits	Columbia Mem. Pkwy.	0.37	4	DA	665	100%	641			731	984	508	477	0
1	1	FM 518/Deke Slayton Hwy	Columbia Mem. Pkwy.	South Shore Blvd.	0.55	4	DA	665	100%	740			630	1,463	754	710	0
1	1	FM 518/Deke Slayton Hwy	South Shore Blvd.	Meadow Pkwy.	0.40	4	DA	665	100%	808			756	1,064	626	438	0
1	1	FM 518/Deke Slayton Hwy	Meadow Pkwy.	Louisiana Ave.	0.66	4	DA	665	100%	760			875	1,756	1,079	677	0
1	1	FM 518/Deke Slayton Hwy	Louisiana Ave.	FM 2094/Main St.	0.65	4	DA	665	100%	786			904	1,729	1,099	631	0
1	1	SH 96/League City Pkwy.	E City Limits	Columbia Mem. Pkwy.	1.12	4	DA	665	100%	801			709	2,979	1,691	1,288	0
1	1	SH 96/League City Pkwy.	Columbia Mem. Pkwy.	South Shore Blvd.	0.67	4	DA	665	100%	1,140			1,080	1,782	1,487	295	0
1	1	SH 96/League City Pkwy.	South Shore Blvd.	Tuscan Lakes Blvd.	0.47	4	DA	665	100%	1,480			1,452	1,250	1,378	0	128
1	1	SH 96/League City Pkwy.	Tuscan Lakes Blvd.	FM 270/Egret Bay Blvd.	0.99	4	DA	665	100%	1,421			1,514	2,633	2,906	0	272
1	1	SH 96/League City Pkwy.	FM 270/Egret Bay Blvd.	SH 3	1.12	4	DA	665	100%	1,300			2,600	2,979	2,912	67	0
1	1	FM 646/16th St.	E City Limits	Tuscan Lakes Blvd.	1.91	2	UA	590	100%	454			680	2,254	2,166	260	172
1	1	FM 646/16th St.	Tuscan Lakes Blvd.	FM 270/Egret Bay Blvd.	0.79	2	UA	590	100%	1,039			693	932	1,368	0	436
1	1	FM 646/16th St.	FM 270/Egret Bay Blvd.	SH 3	0.85	2	UA	590	100%	1,049			1,000	1,003	1,742	0	739
1	1	Columbia Mem. Pkwy.	FM 518/Deke Slayton Hwy	SH 96/League City Pkwy.	1.19	2	UC	510	100%	267			273	1,214	643	571	0
1	1	South Shore Blvd.	Harbor	FM 2094/Marina Bay Dr.	0.19	4	DA	665	100%	86			340	505	81	424	0
1	1	South Shore Blvd.	FM 2094/Marina Bay Dr.	Compass Rose Blvd.	0.99	4	DA	665	100%	463			366	2,633	821	1,813	0
1	1	South Shore Blvd.	Compass Rose Blvd.	FM 518/Deke Slayton Hwy	0.47	4	DA	665	100%	299			550	1,250	399	851	0
1	1	South Shore Blvd.	FM 518/Deke Slayton Hwy	Austin St.	1.46	4	DA	665	100%	336			329	3,880	970	2,910	0
1	1	South Shore Blvd.	Austin St.	SH 96/League City Pkwy.	0.49	4	DA	665	100%	719			735	1,454	709	588	0
1	1	South Shore Blvd.	SH 96/League City Pkwy.	FM 646/16th St.	1.47	4	DA	665	100%	576			609	3,918	1,746	2,173	0
1	1	South Shore Blvd.	FM 646/16th St.	S City Limits	0.12	4	DA	665	100%	297			308	324	74	250	0
1	1	Meadow Pkwy.	FM 518/Deke Slayton Hwy	Austin St.	0.88	2	UC	510	100%	213			235	448	394	503	0
1	1	Austin St.	South Shore Blvd.	Meadow Pkwy.	0.55	2	UC	510	100%	308			198	561	278	283	0
1	1	Austin St.	Meadow Pkwy.	Louisiana Ave.	0.82	2	UC	510	100%	308			198	836	415	421	0
1	1	Austin St.	Louisiana Ave.	FM 270/Egret Bay Blvd.	0.48	2	UC	510	100%	231			149	490	182	307	0
1	1	Austin St.	FM 270/Egret Bay Blvd.	Texas Ave.	0.47	2	UC	510	100%	149			231	479	179	301	0
1	1	Tuscan Lakes Blvd.	Austin St.	SH 96/League City Pkwy.	0.73	2	UC	510	100%	278			302	745	423	321	0
1	1	Tuscan Lakes Blvd.	SH 96/League City Pkwy.	FM 646/16th St.	0.54	2	UC	510	100%	465			380	551	456	95	0
1	1	Tuscan Lakes Blvd.	FM 646/16th St.	S City Limits	0.14	2	UC	510	100%	418			342	143	106	36	0
1	1	Louisiana Ave.	FM 518/Deke Slayton Hwy	Webster St.	0.91	3	SC	565	100%	150			216	1,028	333	695	0
1	1	Louisiana Ave.	Webster St.	SH 96/League City Pkwy.	1.00	3	SC	565	100%	193			250	1,130	443	687	0
1	1	Webster St.	Louisiana Ave.	FM 270/Egret Bay Blvd.	0.57	3	SC	565	100%	102			120	222	127	518	0
1	1	Webster St.	FM 270/Egret Bay Blvd.	Texas Ave.	0.35	2	UC	510	100%	112			127	357	84	273	0
1	1	Hewitt St.	Louisiana Ave.	FM 270/Egret Bay Blvd..	0.41	2	UC	510	100%	23			20	418	18	401	0
1	1	Hewitt St.	FM 270/Egret Bay Blvd..	Dickinson Ave.	1.05	2	UC	510	100%	23			20	1,071	45	1,026	0

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume			VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
										A	B	Total				
1	1	FM 270/Egret Bay Blvd.	N City Limits	FM 518/Main St.	1.51	7	SA	665	100%	1,483	1,627	3,110	6,025	4,696	1,329	0
1	1	FM 270/Egret Bay Blvd.	FM 518/Main St.	Abilene St.	0.40	5	SA	665	100%	1,001	946	1,947	1,064	779	285	0
1	1	FM 270/Egret Bay Blvd.	Abilene St.	Webster St.	0.42	3	SA	665	100%	834	770	1,604	559	674	0	*
1	1	FM 270/Egret Bay Blvd.	Webster St.	Austin St.	0.44	2	UA	590	100%	715	715	1,490	519	656	0	*
1	1	FM 270/Egret Bay Blvd.	Austin St.	Hewitt St.	0.40	2	UA	590	100%	715	660	1,375	472	550	0	*
1	1	FM 270/Egret Bay Blvd.	Hewitt St.	SH 96/League City Pkwy.	0.38	2	UA	590	100%	656	605	1,261	448	479	0	*
1	1	FM 270/Egret Bay Blvd.	SH 96/League City Pkwy.	FM 646/16th St.	0.56	2	UA	590	100%	596	550	1,146	661	642	22	*
1	1	Texas Ave.	FM 518/Main St.	Hewitt St.	1.39	2	UC	510	100%	122	133	255	1,418	354	1,063	0
1	1	Cornell St.	FM 270/Egret Bay Blvd.	Wisconsin Ave.	0.62	2	UC	510	100%	50	45	95	632	59	574	0
1	1	Walker St.	Texas Ave.	SH 3	1.18	2	UC	510	100%	143	143	286	1,204	337	866	0
1	1	Beaumont St.	Texas Ave.	Dickinson Ave.	0.77	2	UC	510	100%	83	83	166	785	128	658	0
1	1	Dickinson Ave.	Walker St.	SH 96/League City Pkwy.	1.13	2	UC	510	100%	104	104	208	1,153	235	918	0
1	1	Dickinson Ave.	SH 96/League City Pkwy.	FM 646/16th St.	1.00	2	UC	510	100%	90	90	180	1,020	180	840	0
1	1	Houston St.	SH 3	FM 518/Main St.	0.67	2	UC	510	100%	90	56	146	683	98	586	0
1	2	SH 3	Byron St	FM 518/Main St.	0.42	4	DA	665	50%	809	0	809	559	340	219	0
1	2	SH 3	FM 518/Main St.	SH 96/League City Pkwy.	1.35	5	SA	665	50%	656	0	656	1,796	886	910	0
1	3	SH 3	SH 96/League City Pkwy.	FM 646/16th St.	1.10	5	SA	665	50%	504	0	504	1,463	554	909	0
1	3	SH 3	FM 646/16th St.	City Limits	0.14	5	SA	665	50%	461	0	461	186	65	122	0
Sub-Total Service Area 1					44.39								80,109	50,252	32,291	2,070
2	2	SH 3	City Limits	Byron St	0.68	4	DA	665	100%	809	1,072	1,881	1,809	1,279	530	0
2	1	SH 3	Byron St	FM 518/Main St.	0.42	4	DA	665	50%	0	1,291	1,291	559	542	16	0
2	1	SH 3	FM 518/Main St.	SH 96/League City Pkwy.	1.35	5	SA	665	50%	0	957	957	1,796	1,292	504	0
2	2	FM 518/Main St.	SH 3	IH-45	1.18	5	SA	665	100%	1,111	1,213	2,324	3,139	2,742	396	0
2	2	FM 518/Main St.	IH-45	Landing Blvd.	0.76	5	SA	665	100%	1,132	1,840	2,972	2,022	2,259	150	388
2	2	FM 518/Main St.	Landing Blvd.	Bay Area Blvd.	1.76	5	SA	665	100%	985	1,345	2,330	4,682	4,101	607	26
2	3	League City Pkwy.	SH 3	Walker St.	1.00	4	DA	665	50%	0	1,421	1,421	1,330	1,421	0	91
2	3	League City Pkwy.	Walker St.	IH-45	0.55	4	DA	665	50%	0	1,295	1,295	732	712	19	0
2	3	League City Pkwy.	IH-45	Hobbs Rd.	0.66	4	DA	665	50%	0	1,169	1,169	878	772	106	0
2	3	League City Pkwy.	Hobbs Rd.	Landing Blvd.	0.79	4	DA	665	50%	0	1,044	1,044	1,051	825	226	0
2	3	League City Pkwy.	Landing Blvd.	Bay Area Blvd.	1.20	4	DA	665	50%	0	604	604	1,596	725	871	0
2	3	League City Pkwy.	SH 3	League City Pkwy.	1.18	2	UA	590	100%	355	340	695	1,392	820	572	0
2	2	Calder Dr.	FM 518/Main St.	Link Rd.	0.96	3	SC	565	100%	221	218	439	1,085	421	663	0
2	2	Wesley Dr.	IH-45	FM 518/Main St.	0.51	2	UC	510	100%	100	99	199	520	101	419	0
2	2	Wesley St.	FM 518/Main St.	IH-45	0.46	2	UC	510	100%	117	153	270	469	124	345	0
2	2	Butler Rd	FM 518/Main St.	League City Pkwy.	0.57	2	UC	510	100%	40	40	80	581	46	536	0
2	2	Hobbs Rd.	FM 518/Main St.	League City Pkwy.	1.12	2	UA	590	100%	313	282	595	1,322	666	655	0
2	2	Landing Blvd.	FM 518/Main St.	Jeb Stuart Dr.	0.86	4	DC	565	100%	324	498	822	1,944	707	1,237	0
2	2	Landing Blvd.	Jeb Stuart Dr.	League City Pkwy.	0.32	4	UC	510	100%	324	498	822	653	263	390	0
2	2	Nasa Rd.	FM 528	Grissom Rd.	0.91	4	DC	565	100%	271	241	512	2,057	466	1,591	0
2	2	Grissom Rd.	Nasa Rd.	Abigail Ln.	1.01	2	UC	510	100%	150	153	303	1,030	306	724	0
2	2	Grissom Rd.	Abigail Ln.	Bay Area Blvd.	0.46	4	DC	565	100%	150	153	303	1,040	139	900	0
2	4	Bay Area Blvd.	City Limits	FM 518/Main St.	1.00	4	DA	665	50%	653	0	653	1,330	653	1,330	0
2	4	Bay Area Blvd.	FM 518/Main St.	League City Pkwy.	0.99	4	DA	665	50%	464	0	464	1,317	459	857	0
Sub-Total Service Area 2					20.70								34,330	21,842	12,993	505

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
3	1	SH 3	SH 96/League City Pkwy. FM 646/16th St.	City Limits	1.10	5	SA	665	50%	0	674	674	1,463	741	722	0
3	1	SH 3	FM 646/16th St.	Walker St.	0.14	5	SA	665	50%	0	428	428	186	60	126	0
3		FM 646/16th St.	SH 3	Walker St.	1.20	5	SA	665	100%	1,140	1,124	2,264	3,192	2,717	475	0
3		FM 646/16th St.	Walker St.	IH-45	0.41	5	SA	665	100%	1,600	1,470	3,070	1,091	1,259	0	168
3		FM 646/16th St.	IH-45	Gross Colony Dr.	0.64	4	DA	665	100%	935	1,459	2,394	1,702	1,532	253	83
3		FM 646/16th St.	Gross Colony Dr.	FM 517	1.18	4	DA	665	100%	756	1,291	2,047	3,139	2,415	723	0
3		FM 517	West City Limit	Calder Rd	1.91	3	SA	665	100%	588	882	1,470	2,540	2,808	147	414
3		FM 517	Calder Rd	FM 646/16th St.	0.74	3	SA	665	100%	1,389	1,232	2,621	989	1,948	0	960
3		FM 517	FM 646/16th St.	East City Limits	0.53	5	SA	665	100%	1,557	1,357	2,914	1,418	1,554	0	135
3		Walker St.	League City Pkwy.	FM 646/16th St.	1.95	4	DA	665	100%	478	693	1,171	5,187	2,283	2,904	0
3	2	League City Pkwy.	SH 3	Walker St.	1.00	4	DA	665	50%	1,263	0	1,263	1,330	1,263	67	0
3	2	League City Pkwy.	Walker St.	IH-45	0.55	4	DA	665	50%	1,133	0	1,133	732	623	108	0
3	2	League City Pkwy.	IH-45	Hobbs Rd.	0.66	4	DA	665	50%	1,003	0	1,003	878	662	216	0
3	2	League City Pkwy.	Hobbs Rd.	Landing Blvd.	0.79	4	DA	665	50%	873	0	873	1,051	690	361	0
3	2	League City Pkwy.	Landing Blvd.	Bay Area Blvd.	1.20	4	DA	665	50%	597	0	597	1,596	716	880	0
3		Calder Dr.	League City Pkwy.	Erwin St.	1.28	2	UC	510	100%	153	110	263	1,306	337	969	0
3		Butler Dr.	Erwin St.	FM 517	2.08	2	UC	510	100%	141	102	243	2,122	505	1,616	0
3		Butler Rd.	League City Pkwy.	Turner St.	0.15	2	UC	510	100%	127	100	227	153	34	119	0
3		Hobbs Rd.	Turner St.	Sedona Dr.	0.75	2	UC	510	100%	127	100	227	765	170	595	0
3		Landing Blvd.	League City Pkwy.	Sedona Dr.	0.81	4	DA	665	100%	254	254	508	2,155	411	1,743	0
3		Bay Area Blvd.	League City Pkwy.	Sandvalley Way	1.10	2	UC	510	100%	121	201	322	1,122	354	768	0
3	4		League City Pkwy.	Magnolia Greens Ln.	0.60	2	DA	665	50%	140	0	140	399	84	315	0
Sub-Total Service Area 3					20.78								34,514	23,168	13,106	1,760
4		FM 517	W City Limits	McFarland Rd	1.51	2	UA	590	100%	611	661	1,272	1,777	1,916	0	139
4		FM 517	McFarland Rd	E City Limits	1.65	3	SA	665	100%	656	711	1,367	2,195	2,256	15	76
4	2	Bay Area Blvd.	City Limits	FM 518/Main St.	1.00	4	DA	665	50%	0	819	819	1,330	819	511	0
4	2	Bay Area Blvd.	FM 518/Main St.	League City Pkwy.	0.99	4	DA	665	50%	0	603	603	1,317	597	720	0
4	3	Bay Area Blvd.	League City Pkwy.	Magnolia Greens Ln.	0.60	2	UC	510	50%	0	447	447	306	268	38	0
4		FM 518/Main St.	Bay Area Blvd.	City Limits	0.81	5	SA	665	100%	1,049	1,342	2,391	2,155	1,937	228	10
4		League City Pkwy.	Bay Area Blvd.	Misty Trails Ln.	0.55	4	DA	665	100%	211	271	482	1,463	265	1,198	0
4		League City Pkwy.	Misty Trails Ln.	Westover Park Ave.	0.52	2	UA	590	100%	211	271	482	614	251	363	0
4		League City Pkwy.	Westover Park Ave.	Maple Leaf Dr.	0.27	2	UA	590	100%	211	271	482	319	130	188	0
4		Maple Leaf Dr.	FM 518/Main St.	Westwood Dr.	0.22	2	DA	665	100%	256	232	488	293	107	185	0
4		Maple Leaf Dr.	Westwood Dr.	League City Pkwy.	0.53	2	UA	590	100%	256	232	488	625	259	367	0
4		Maple Leaf Dr.	League City Pkwy.	Westover Park Ave.	0.35	2	UA	590	100%	128	116	244	413	85	328	0
Sub-Total Service Area 4					9.00								12,805	8,890	4,140	224
Total													161,758	104,152	62,530	4,559

Notes:

- * denotes deficiencies absorbed through CRF CIP
- DA - Divided Arterial
- UA - Undivided Arterial
- SA - Special Arterial with two-way left turn lane (TWLTL)
- DC - Divided collector
- UC - Undivided Collector
- SC - Special Collector with two-way left turn lane (TWLTL)

Appendix C:
Projected 10-Year Growth
(Vehicle-Miles of New Demand)

Vehicle-Mile Trip Generation by Service Area, League City Capital Recovery Fee

Based on 2017-2027 Land Use Assumptions dated October 2017

Service Unit Equivalency

Residential	4.01	Service Emp	6.21
Basic Emp	3.40	Retail Emp	4.67

Estimated Residential Growth Vehicle-Mile Trip Generation

Conversion Factor: 2.78 persons/dwelling unit

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	6,895	2,480	4.01	9,945
2	2,276	819	4.01	3,284
3	16,044	5,771	4.01	23,142
4	15,536	5,588	4.01	22,408
Total	40,751	14,658		58,779

Estimated Basic Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 1,500 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	310	465,000	3.40	1,581
2	19	28,500	3.40	97
3	873	1,309,500	3.40	4,452
4	57	85,500	3.40	291
Total	1,259	1,888,500		6,421

Estimated Service Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 500 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	1,762	881,000	6.21	5,471
2	77	38,500	6.21	239
3	2,591	1,295,500	6.21	8,045
4	459	229,500	6.21	1,425
Total	4,889	2,444,500		15,180

Estimated Retail Employment Growth Vehicle-Mile Trip Generation

Conversion Factor: 1,000 square feet/employee

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	2,595	2,595,000	4.67	12,119
2	202	202,000	4.67	943
3	1,721	1,721,000	4.67	8,037
4	828	828,000	4.67	3,867
Total	5,346	5,346,000		24,966

Total Vehicle-Mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	9,945	1,581	5,471	12,119	29,116
2	3,284	97	239	943	4,563
3	23,142	4,452	8,045	8,037	43,676
4	22,408	291	1,425	3,867	27,991
Total	58,779	6,421	15,180	24,966	105,346

Appendix D:
Roadway Capital Improvements Plan

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial SA = special arterial (arterial with continuous left turn) DC = divided collector UC = undivided collector SC = special collector (arterial with continuous left turn)
PK-HR VOLUME	The existing volumes of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY PK-HR TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
CIP VEH-MI DEFICIENCY	The number of service units used by existing traffic in excess of the available service units supplied by the roadway in the afternoon peak hour.

Proj No.	Serv Area	Shared SvcArea	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Lane Type	Capacity	Pct. in Serv. Area	Peak Hour Volume A	Peak Hour Volume B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
1	1		R	FM 518/Deke Slayton Hwy	FM 2094/Main St	FM 270/Egret Bay Blvd	0.14	4	DA	665	100%	0	0	0	378	0	378	0
2	1		N	FM 270/Egret Bay Blvd	Abilene St	FM 646	2.18	4	DA	665	100%	715	660	1375	5,799	2,998	2,801	0
3	1		R	Dickinson	Walker St	SH 96/League City Pkwy	1.12	3	SC	565	100%	104	104	208	1,267	234	1,033	0
4	1		N	Walker St	Texas Ave	FM 270/Egret Bay Blvd	0.31	2	UC	510	100%	0	0	0	320	0	320	0
5	1		R	SH 96/League City Pkwy	@ South Shore Turn Lanes		0.28	2	UC	510	100%	40	40	80	290	22	268	0
6	1		N	SH 96/League City Pkwy	SH 3	E City Limits (SH 146)	4.95	2	DA	665	100%	0	0	0	6,584	0	6,584	0
Sub-Total Service Area 1							8.99								14,638	3,254	11,383	0
7	2		N	Grissom Rd	Abigail Ln	W NASA Blvd.	1.01	4	DC	565	100%	297	395	692	2,292	702	1,590	0
8	2		N	Palomino Ln Extension	Clear Creek	Grissom Rd	0.59	4	DC	565	100%	0	0	0	1,331	0	1,331	0
9	2		N	Landing Blvd Extension	N End of Landing Blvd	N City Limits	0.93	4	DA	665	100%	0	0	0	2,465	0	2,465	0
10	2	3	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA	665	50%	0	0	0	1,316	0	1,316	0
11	2	3	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA	665	50%	0	0	0	415	0	415	0
12	2	3	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA	665	50%	0	0	0	1,031	0	1,031	0
13	2		N	FM 518/Main St	Hobbs Rd	SH 3	1.29	2	DA	665	100%	0	0	0	1,719	0	1,719	0
Sub-Total Service Area 2							7.98								10,569	702	9,867	0
14	3		R	Calder Rd	Turner St	Cross Colony	2.20	3	SC	565	100%	153	110	263	2,484	578	1,906	0
15	3		N	Calder Rd	Cross Colony	FM 517	0.97	3	SC	565	100%	141	102	243	1,094	236	858	0
16	3		R	Brookport Extension	Big League Dreams	Marble Cove Dr	0.61	4	DC	565	100%	50	50	100	1,370	60	1,310	0
17	3		N	Turner-Butler	SH 96/League City Pkwy	Calder Dr	0.42	3	SC	565	100%	127	100	227	475	95	380	0
18	3	2	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA	665	50%	0	0	0	1,316	0	1,316	0
19	3	2	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA	665	50%	0	0	0	415	0	415	0
20	3	2	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA	665	50%	0	0	0	1,031	0	1,031	0
21	3		N	Ervin Ave	Calder Rd	Hobbs Rd	0.60	4	DA	665	100%	0	0	0	1,601	0	1,601	0
22	3		N	Ervin Ave	Hobbs Rd	Landing Blvd	1.08	4	DA	665	100%	0	0	0	2,879	0	2,879	0
23	3		N	Hobbs Rd Extension	Landing Blvd	Service Area Limit	0.33	4	DA	665	100%	0	0	0	887	0	887	0
24	3		N	Landing Blvd Extension	Ervin Ave	FM 517	2.12	4	DA	665	100%	0	0	0	5,629	0	5,629	0
25	3		N	Walker St Extension	Sandvalley Way	Ervin Ave	0.67	4	DA	665	100%	0	0	0	1,774	0	1,774	0
26	3		N	New Street B	S. End of Walker St	IH-45 Frontage Rd	1.52	2	UA	590	100%	0	0	0	4,053	0	4,053	0
27	3		N	New Street B	Landing Blvd	Hobbs Rd	0.94	4	DA	665	100%	0	0	0	292	0	292	0
28	3		N	New Street D	SA Limit	Landing Blvd	0.64	4	DA	665	100%	0	0	0	2,499	0	2,499	0
29	3		N	New Street G	SA Limit	Hobbs Rd	1.48	4	DC	565	100%	0	0	0	1,703	0	1,703	0
30	3		N	New Street H	Ervin Ave	FM 517	1.84	4	DC	565	100%	0	0	0	3,345	0	3,345	0
31	3		N	New Street I	Landing Blvd	Hobbs Rd	0.97	4	DC	565	100%	0	0	0	4,154	0	4,154	0
Sub-Total Service Area 3							20.79								39,199	969	38,231	0

Proj No.	Serv Area	Shared SvcArea	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Lane Type	Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
30	4	N		League City Pkwy Extension	1,600' W of Maple Leaf	City Limits	0.36	4	DA	665	100%	0	0	0	957	0	957	0
31	4	N		League City Pkwy	Misty Trails	Maple Leaf	0.80	2	DA	665	100%	0	0	0	1,058	0	1,058	0
32	4	N		Erwin Ave	W City Limits	Service Area Limit	4.64	4	DA	665	100%	0	0	0	12,342	0	12,342	0
33	4	N		Maple Leaf Extension	N. Side of American Canal	New Street B	1.41	4	DA	665	100%	0	0	0	3,740	0	3,740	0
34	4	N		Maple Leaf Ext/McFarland	New Street B	FM 517	1.02	4	DA	665	100%	10	10	20	2,709	20	2,689	0
35	4	N		Bay Area Blvd Extension	N. Side of American Canal	FM 517	2.24	4	DA	665	100%	0	0	0	5,952	0	5,952	0
36	4	N		New Street B	New Street C	Service Area Limit	3.78	4	DA	665	100%	0	0	0	10,057	0	10,057	0
37	4	N		New Street C	League City Pkwy Ext	FM 517	3.23	4	DA	665	100%	0	0	0	8,601	0	8,601	0
38	4	N		New Street D	Maple Leaf Ext	Service Area Limit	2.30	4	DC	565	100%	0	0	0	5,193	0	5,193	0
39	4	N		New Street E	Erwin Ave	FM 517	1.85	4	DA	665	100%	0	0	0	4,915	0	4,915	0
40	4	N		New Street F	Erwin Ave	S City Limits	1.56	4	DC	565	100%	0	0	0	3,531	0	3,531	0
Sub-Total Service Area 4															59,055	20	59,035	0
Totals:															123,461	4,945	118,516	0

Notes:

- DA - Divided Arterial
- UA - Undivided Arterial
- SA - Special Arterial with two-way left turn lane (TWLTL)
- DC - Divided collector
- UC - Undivided Collector
- SC - Special Collector with two-way left turn lane (TWLTL)
- N - New Project
- R - Recoupment Project

Appendix E:
Roadway Improvement Plan Cost Analysis

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type	Roadway Costs				Total Project Cost
										Engineering	ROW	Construction	Finance	
1	1		R	FM 518/Deke Slayton Hwy	FM 2094/Main St	FM 270/Egret Bay Blvd	0.14	4	DA	\$ 610,000	\$ 3,050,000	\$ 2,440,000	\$ 6,110,000	\$ 12,210,000
2	1		N	FM 270/Egret Bay Blvd	Abilene St	FM 646	2.18	4	DA	\$ 660,000	-	\$ 3,912,000	\$ 1,554,480	\$ 6,126,480
3	1		R	Dickinson	Walker St	SH 96/League City Pkwy	1.12	3	SC	\$ 1,000,000	-	-	-	\$ 1,000,000
4	1		N	Walker St	Texas Ave	FM 270/Egret Bay Blvd	0.31	2	UC	\$ 122,000	\$ 135,000	\$ 1,360,000	\$ 549,780	\$ 2,166,780
5	1		R	SH 96/League City Pkwy	@ South Shore Turn Lanes		0.28	2	UC	\$ 69,000	-	\$ 532,000	\$ 601,000	\$ 1,202,000
6	1		N	SH 96/League City Pkwy	SH 3	E City Limits (SH 146)	4.95	2	DA	\$ 404,600	-	\$ 5,780,700	\$ 736,051	\$ 6,921,351
Sub-Total Service Area 1										\$ 2,865,600	\$ 3,185,000	\$ 14,024,700	\$ 9,551,311	\$ 29,626,611
7	2		N	Grissom Rd	Abigail Ln	W NASA Blvd.	1.01	4	DC	\$ 1,000,000	\$ 1,875,000	\$ 9,300,000	-	\$ 12,175,000
8	2		N	Palomino Ln Extension	Clear Creek	Grissom Rd	0.59	4	DC	\$ 2,250,000	\$ 1,000,000	\$ 14,750,000	\$ 14,750,000	\$ 32,750,000
9	2		N	Landing Blvd Extension	N End of Landing Blvd	N City Limits	0.93	4	DA	\$ 3,469,000	\$ 3,571,000	\$ 17,960,000	-	\$ 25,000,000
10	2	3	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA	\$ 156,950	-	\$ 2,242,200	\$ 285,499	\$ 2,684,649
11	2	3	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA	\$ 34,000	-	\$ 226,000	-	\$ 260,000
12	2	3	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA	\$ 163,650	\$ 40,920	\$ 2,337,650	\$ 302,524	\$ 2,844,744
13	2		N	FM 518/Main St	Hobbs Rd	SH 3	1.29	2	DA	\$ 60,900	\$ 13,650	\$ 869,420	\$ 112,332	\$ 1,056,302
Sub-Total Service Area 2										\$ 7,134,500	\$ 6,500,570	\$ 47,685,270	\$ 15,450,355	\$ 76,770,695
14	3		R	Calder Rd	Turner St	Cross Colony	2.20	3	SC	\$ 1,065,000	\$ 1,190,600	\$ 7,826,400	-	\$ 10,082,000
15	3		N	Calder Rd	Cross Colony	FM 517	0.97	3	SC	\$ 945,000	\$ 324,000	\$ 7,670,000	\$ 6,120,000	\$ 15,059,000
16	3		R	Brookport Extension	Big League Dreams	Marble Cove Dr	0.61	4	DC	\$ 237,000	\$ 70,000	\$ 2,400,000	\$ 2,600,000	\$ 5,307,000
17	3		N	Turner-Butler	SH 96/League City Pkwy	Calder Dr	0.42	3	SC	\$ 355,923	\$ 608,354	\$ 3,450,000	\$ 230,000	\$ 4,644,277
18	3	2	N	SH 96/League City Pkwy	Bay Area	Hobbs Rd	1.98	2	DA	\$ 156,950	-	\$ 2,242,200	\$ 285,499	\$ 2,684,649
19	3	2	N	SH 96/League City Pkwy	Hobbs Rd	IH-45	0.62	2	DA	\$ 34,000	-	\$ 226,000	\$ 30,940	\$ 290,940
20	3	2	N	SH 96/League City Pkwy	IH-45	SH 3	1.55	2	DA	\$ 163,650	\$ 40,920	\$ 2,337,650	\$ 302,524	\$ 2,844,744
21	3		N	Ervin Ave	Calder Rd	Hobbs Rd	0.60	4	DA	\$ 775,000	\$ 500,000	\$ 4,510,000	-	\$ 5,785,000
22	3		N	Ervin Ave	Hobbs Rd	Landing Blvd	1.08	4	DA	\$ 300,700	\$ 571,500	\$ 4,295,000	\$ 614,897	\$ 5,782,097
23	3		N	Ervin Ave	Landing Blvd	Service Area Limit	0.33	4	DA	\$ 92,800	\$ 176,000	\$ 1,325,200	\$ 189,686	\$ 1,783,686
24	3		N	Hobbs Rd Extension	Ervin Ave	FM 517	2.12	4	DA	\$ 595,000	\$ 1,117,300	\$ 8,499,600	\$ 1,215,216	\$ 11,427,116
25	3		N	Landing Blvd Extension	Sandvalley Way	Ervin Ave	0.67	4	DA	\$ 185,400	\$ 352,200	\$ 2,649,000	\$ 379,205	\$ 3,565,805
26	3		N	Landing Blvd Extension	Ervin Ave	FM 517	1.52	4	DA	\$ 430,700	\$ 804,600	\$ 6,153,400	\$ 879,255	\$ 8,267,955
27	3		N	Walker St Extension	S. End of Walker St	IH-45 Frontage Rd	0.25	2	UA	\$ 80,300	\$ 117,700	\$ 996,900	\$ 142,193	\$ 1,337,093
28	3		N	New Street B	Landing Blvd	Hobbs Rd	0.94	4	DA	\$ 260,800	\$ 496,100	\$ 3,725,700	\$ 533,429	\$ 5,016,029
29	3		N	New Street B	SA Limit	Landing Blvd	0.64	4	DA	\$ 185,800	\$ 338,100	\$ 2,654,700	\$ 378,253	\$ 3,556,853
30	3		N	New Street D	SA Limit	Hobbs Rd	1.48	4	DC	\$ 390,600	\$ 703,300	\$ 5,580,500	\$ 794,254	\$ 7,468,654
31	3		N	New Street G	Ervin Ave	FM 517	1.84	4	DC	\$ 474,900	\$ 873,500	\$ 6,784,500	\$ 967,815	\$ 9,100,715
32	3		N	New Street H	Landing Blvd	Hobbs Rd	0.97	4	DC	\$ 251,500	-	\$ 3,592,600	\$ 457,448	\$ 4,301,548
Sub-Total Service Area 3										\$ 6,981,023	\$ 8,284,174	\$ 76,919,350	\$ 16,120,615	\$ 108,305,162

Proj No.	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	No. of Lanes	Type	Engineering	ROW	Construction	Finance	Total Project Cost
30	4	N		League City Pkwy Extension	1,600' W of Maple Leaf	City Limits	0.36	4	DA	\$ 124,200	\$ 190,000	\$ 1,773,700	\$ 248,460	\$ 2,336,360
31	4	N		League City Pkwy	Misty Trails	Maple Leaf	0.80	2	DA	\$ 1,500,000	\$ -	\$ -	\$ -	\$ 1,500,000
32	4	N		Erwin Ave	W City Limits	Service Area Limit	4.64	4	DA	\$ 1,421,100	\$ 2,449,900	\$ 20,300,900	\$ 2,876,456	\$ 27,048,356
33	4	N		Maple Leaf Extension	N. Side of American Canal	New Street B	1.41	4	DA	\$ 496,000	\$ 742,300	\$ 7,086,200	\$ 990,616	\$ 9,315,116
34	4	N		Maple Leaf Ext/McFarland	New Street B	FM 517	1.02	4	DA	\$ 338,300	\$ 537,800	\$ 4,832,900	\$ 679,371	\$ 6,388,371
35	4	N		Bay Area Blvd Extension	N. Side of American Canal	FM 517	2.24	4	DA	\$ 696,100	\$ 1,181,400	\$ 9,944,900	\$ 1,406,866	\$ 13,229,266
36	4	N		New Street B	New Street C	Service Area Limit	3.78	4	DA	\$ 1,132,700	\$ 1,996,200	\$ 16,180,800	\$ 2,297,854	\$ 21,607,554
37	4	N		New Street C	League City Pkwy Ext	FM 517	3.23	4	DA	\$ 1,059,700	\$ 1,707,300	\$ 15,138,600	\$ 2,130,766	\$ 20,036,366
38	4	N		New Street D	Maple Leaf Ext	Service Area Limit	2.30	4	DC	\$ 599,300	\$ 1,092,000	\$ 8,560,900	\$ 1,220,012	\$ 11,472,212
39	4	N		New Street E	Erwin Ave	FM 517	1.85	4	DA	\$ 564,700	\$ 975,600	\$ 8,067,200	\$ 1,143,293	\$ 10,750,793
40	4	N		New Street F	Erwin Ave	S City Limits	1.56	4	DC	\$ 456,100	\$ 742,400	\$ 6,515,200	\$ 917,930	\$ 8,631,630
Sub-Total Service Area 4										\$ 8,388,200	\$ 11,614,900	\$ 98,401,300	\$ 13,911,624	\$ 132,316,024
Totals:										\$ 25,369,323	\$ 29,584,644	\$ 237,030,620	\$ 55,033,905	\$ 347,018,492

Summary:

Engineering Cost	\$25,369,323
Right-of-Way Cost	\$29,584,644
Construction Cost	\$237,030,620
Finance Cost	\$55,033,905
TOTAL NET COST	\$347,018,492
Future CRF Update Cost	\$100,000

TOTAL IMPLEMENTATION COST	\$347,118,492
50% Percent Credit	\$173,559,246

Notes:

- DA - Divided Arterial
- UA - Undivided Arterial
- SA - Special Arterial with two-way left turn lane (TWLTL)
- DC - Divided collector
- UC - Undivided Collector
- SC - Special Collector with two-way left turn lane (TWLTL)
- N - New Project
- R - Recoupment Project

Appendix F:
Roadway Project Cost Estimates

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

Deke Slayton Highway (FM 518)
Main St (FM 2094) to Egret Bay Blvd (FM 270)

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	750		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New intersection connection to ultimate section		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	2,440,000
Engineering/Survey/Testing		\$	610,000
Right-of-Way Acquisition		\$	3,050,000
Capital Recovery Fee Project Cost Estimate Total:		\$	6,100,000
		Project Debt Service:	\$ 6,110,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

EGRET BAY BOULEVARD (FM 270)

Abilene St to FM 646

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	11,510		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Widen thoroughfare to ultimate section. Anticipated 80/20 split between		
	TxDOT and City of total \$22,860,000 project		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	3,912,000
Engineering/Survey/Testing		\$	660,000
Right-of-Way Acquisition		\$	-
Capital Recovery Fee Project Cost Estimate Total:		\$	4,572,000
		Project Debt Service:	\$ 1,554,480

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

DICKINSON

Walker St to League City Pkwy (SH 96)

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	3
Length (lf):	5,920		
Right-of-Way Width (ft.):	80		
Median Type:	TWLTL		
Pavement Width (BOC-BOC):	37		
Description:	Widen thoroughfare to ultimate section. County paying for construction.		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	-
Engineering/Survey/Testing		\$	1,000,000
Right-of-Way Acquisition		\$	-
Capital Recovery Fee Project Cost Estimate Total:		\$	1,000,000
		Project Debt Service:	\$ -

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

WALKER STREET
Texas Ave to Egret Bay Blvd (FM 270)

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	2
Length (lf):	1,658		
Right-of-Way Width (ft.):	60		
Median Type:	None		
Pavement Width (BOC-BOC):	25		
Description:	New roadway connection		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	1,360,000
Engineering/Survey/Testing		\$	122,000
Right-of-Way Acquisition		\$	135,000
Capital Recovery Fee Project Cost Estimate Total:		\$	1,617,000
		Project Debt Service:	\$ 549,780

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate
LEAGUE CITY PARKWAY (SH 96)
 South Shore

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	2
Length (lf):	1,500		
Right-of-Way Width (ft.):	200		
Median Type:	None		
Pavement Width (BOC-BOC):	N/A; turn bays		
Description:	Major intersection improvements through extended dedicated turn bays		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	532,000
Engineering/Survey/Testing		\$	69,000
Right-of-Way Acquisition		\$	-
Capital Recovery Fee Project Cost Estimate Total:		\$	601,000
		Project Debt Service:	\$ 601,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LEAGUE CITY PARKWAY (SH 96)

SH 3 to East City Limits (SH 146)

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	2
Length (lf):	26,137		
Right-of-Way Width (ft.):	200		
Median Type:	None		
Pavement Width (BOC-BOC):	40		
Description:	Add two additional lanes to roadway (5th & 6th lanes) and rebuild shoulder		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	262	STA	\$ 2,500.00	\$ 655,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	49,000	CY	\$ 7.00	\$ 343,000
4	8" Concrete Pavement w/ 6" Curb	116,200	SY	\$ 55.00	\$ 6,391,000
5	6" Lime Stabilized Subgrade	127,800	SY	\$ 2.25	\$ 287,550
6	Lime for Stabilization (105 lbs/SY)	6,710	TON	\$ 150.00	\$ 1,006,500
7	4" Concrete Sidewalk and Ramps	209,100	SF	\$ 5.50	\$ 1,150,050
8	Block Sodding and Topsoil	441,420	SY	\$ 5.00	\$ 2,207,100
Paving Estimate Subtotal:					\$ 12,040,200
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 240,900
10	Traffic Control			5%	\$ 602,100
11	Erosion Control			3%	\$ 361,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 3,010,100
Other Components Estimate Subtotal:					\$ 4,214,400
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	1 - Minor Culvert	\$	100,000	\$ 100,000
15	Bridge Structures	RR/Dickinson	\$	7,920,000	\$ 7,920,000
16	Traffic Signals	5 - Signals	\$	750,000	\$ 750,000
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:					\$ 8,770,000
I, II, & III Construction Subtotal:					\$ 25,024,600
Mobilization				5%	\$ 1,251,300
Contingency				10%	\$ 2,627,600
Construction Cost Estimate Total:					\$ 28,903,500

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction	TxDOT Participation (City 20%)	-	\$ 5,780,700	
Engineering/Survey/Testing		7%	\$ 404,600	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ -	\$ -
Capital Recovery Fee Project Cost Estimate Total:				\$ 6,185,300

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

GRISSOM ROAD
 Abigail Ln to W NASA Blvd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	5,355		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	49		
Description:			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Item Cost	
Construction	All costing from City	\$	9,300,000
Engineering/Survey/Testing		\$	1,000,000
Right-of-Way Acquisition		\$	1,875,000
Capital Recovery Fee Project Cost Estimate Total:		\$	12,175,000
		Project Debt Service:	\$ -

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

PALOMINO EXTENSION

Clear Creek to Grissom Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,110		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	62		
Description:	Extension of Palamino Rd across Clear Creek.		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	14,750,000
Engineering/Survey/Testing		\$	2,250,000
Right-of-Way Acquisition		\$	1,000,000
Capital Recovery Fee Project Cost Estimate Total:		\$	18,000,000
		Project Debt Service:	\$ 14,750,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LANDING BOULEVARD EXTENSION

N End of Landing Blvd to N City Limits

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	4,893		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Project both in and out of city limits. City paying \$25M of total \$49M project with TxDOT paying the remaining \$24M.		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Item Cost	
Construction	All costing from City	\$	17,960,000
Engineering/Survey/Testing		\$	3,469,000
Right-of-Way Acquisition		\$	3,571,000
Capital Recovery Fee Project Cost Estimate Total:		\$	25,000,000
		Project Debt Service:	\$ -

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LEAGUE CITY PARKWAY (SH 96)

Bay Area to Hobbs Rd

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	2
Length (lf):	10,450		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC-BOC):	24		
Description:	Add two additional lanes to roadway (5th & 6th lanes)		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	105	STA	\$ 2,500.00	\$ 262,500
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	15,400	CY	\$ 7.00	\$ 107,800
4	8" Concrete Pavement w/ 6" Curb	27,900	SY	\$ 55.00	\$ 1,534,500
5	6" Lime Stabilized Subgrade	32,600	SY	\$ 2.25	\$ 73,350
6	Lime for Stabilization (105 lbs/SY)	1,720	TON	\$ 150.00	\$ 258,000
7	4" Concrete Sidewalk and Ramps	0	SF	\$ 5.50	\$ -
8	Block Sodding and Topsoil	46,440	SY	\$ 5.00	\$ 232,200
Paving Estimate Subtotal:					\$ 2,468,350
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 49,400
10	Traffic Control			5%	\$ 123,500
11	Erosion Control			3%	\$ 74,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 617,100
Other Components Estimate Subtotal:					\$ 864,100
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	1 - Major Culvert	\$	250,000	\$ 250,000
15	Bridge Structures	None	\$	-	\$ -
16	Traffic Signals	2 - Signals	\$	300,000	\$ 300,000
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:					\$ 550,000
I, II, & III Construction Subtotal:					\$ 3,882,450
Mobilization				5%	\$ 194,200
Contingency				10%	\$ 407,700
Construction Cost Estimate Total:					\$ 4,484,400

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$ 4,484,400	
Engineering/Survey/Testing		7%	\$ 313,900	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00 \$ -	\$ -	
Capital Recovery Fee Project Cost Estimate Total:				\$ 4,798,300

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LEAGUE CITY PARKWAY (SH 96)

Hobbs Rd to IH 45

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	2
Length (lf):	3,295		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	56		
Description:			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	452,000
Engineering/Survey/Testing		\$	68,000
Right-of-Way Acquisition		\$	-
Capital Recovery Fee Project Cost Estimate Total:		\$	520,000
		Project Debt Service:	\$ -

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LEAGUE CITY PARKWAY (SH 96)

IH-45 to SH 3

Roadway Information:				
Functional Classification:	Major Arterial	No. of Lanes:	2	
Length (lf):	8,184			
Right-of-Way Width (ft.):	200			
Median Type:	None			
Pavement Width (BOC-BOC):	24			
Description:	Add two additional lanes to roadway (5th & 6th lanes)			

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	82	STA	\$ 2,500.00	\$ 205,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	10,100	CY	\$ 7.00	\$ 70,700
4	8" Concrete Pavement w/ 6" Curb	21,900	SY	\$ 55.00	\$ 1,204,500
5	6" Lime Stabilized Subgrade	25,500	SY	\$ 2.25	\$ 57,375
6	Lime for Stabilization (105 lbs/SY)	1,340	TON	\$ 150.00	\$ 201,000
7	4" Concrete Sidewalk and Ramps	114,576	SF	\$ 5.50	\$ 630,168
8	Block Sodding and Topsoil	103,660	SY	\$ 5.00	\$ 518,300
Paving Estimate Subtotal:					\$ 2,887,043
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 57,800
10	Traffic Control			5%	\$ 144,400
11	Erosion Control			3%	\$ 86,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 721,800
Other Components Estimate Subtotal:					\$ 1,010,700
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	None	\$	-	\$ -
15	Bridge Structures	None	\$	-	\$ -
16	Traffic Signals	1 - Signals	\$	150,000	\$ 150,000
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:					\$ 150,000
I, II, & III Construction Subtotal:					\$ 4,047,743
Mobilization				5%	\$ 202,400
Contingency				10%	\$ 425,100
Construction Cost Estimate Total:					\$ 4,675,300

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$ 4,675,300	
Engineering/Survey/Testing		7%	\$ 327,300	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00 \$ 81,840	\$ 81,840	
Capital Recovery Fee Project Cost Estimate Total:				\$ 5,084,440

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

FM 518/MAIN STREET

Hobbs Rd to SH 3

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	2
Length (lf):	6,825		
Right-of-Way Width (ft.):	200		
Median Type:	None		
Pavement Width (BOC-BOC):	24		
Description:	Add two additional lanes to roadway (5th & 6th lanes)		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	69	STA	\$ 172,500
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	8,400	CY	\$ 58,800
4	8" Concrete Pavement w/ 6" Curb	18,200	SY	\$ 1,001,000
5	6" Lime Stabilized Subgrade	21,300	SY	\$ 47,925
6	Lime for Stabilization (105 lbs/SY)	1,120	TON	\$ 168,000
7	4" Concrete Sidewalk and Ramps	54,600	SF	\$ 300,300
8	Block Sodding and Topsoil	81,900	SY	\$ 409,500
Paving Estimate Subtotal:				\$ 2,158,025
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	43,200
10	Traffic Control	5%	\$	108,000
11	Erosion Control	3%	\$	64,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	539,600
Other Components Estimate Subtotal:				\$ 755,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	1 - Major Culvert	\$ 250,000	\$ 250,000
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	4 - Signals	\$ 600,000	\$ 600,000
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 850,000
I, II, & III Construction Subtotal:				\$ 3,763,625
Mobilization				5% \$ 188,200
Contingency				10% \$ 395,200
Construction Cost Estimate Total:				\$ 4,347,100

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction	TxDOT Participation (City 20%)	-	\$	869,420
Engineering/Survey/Testing		7%	\$	60,900
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 13,650	\$ 13,650
Capital Recovery Fee Project Cost Estimate Total:				\$ 943,970

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

CALDER ROAD
Turner St to Cross Colony

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	3
Length (lf):	11,607		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	37		
Description:	Total project cost estimated at \$14.12M with a County contribution of \$4.038M.		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Item Cost	
Construction	All costing from City	\$	7,826,400
Engineering/Survey/Testing		\$	1,065,000
Right-of-Way Acquisition		\$	1,190,600
Capital Recovery Fee Project Cost Estimate Total:		\$	10,082,000
		Project Debt Service:	\$ -

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

CALDER ROAD
 Cross Colony to FM 517

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	3
Length (lf):	5,114		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	37		
Description:			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Item Cost	
Construction	All costing from City	\$	7,670,000
Engineering/Survey/Testing		\$	945,000
Right-of-Way Acquisition		\$	324,000
Capital Recovery Fee Project Cost Estimate Total:		\$	8,939,000
		Project Debt Service:	\$ 6,120,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

BROOKPORT EXTENSION

Big League Dreams to Marble Cove Dr

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	3,200		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	2,400,000
Engineering/Survey/Testing		\$	237,000
Right-of-Way Acquisition		\$	70,000
Capital Recovery Fee Project Cost Estimate Total:		\$	2,707,000
		Project Debt Service:	\$ 2,600,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

TURNER-BUTLER

League City Parkway (SH96) to Calder Dr

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	3
Length (lf):	2,220		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	37		
Description:	Widening of Turner St (Hobbs to Butler) and Butler Rd (LCP to Turner)		

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	3,450,000
Engineering/Survey/Testing		\$	355,923
Right-of-Way Acquisition		\$	608,354
Capital Recovery Fee Project Cost Estimate Total:		\$	4,414,277
		Project Debt Service:	\$ 230,000

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

ERVIN AVENUE
 Calder Rd to Hobbs Rd

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	3,177		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC-BOC):	50		
Description:			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	4,510,000
Engineering/Survey/Testing		\$	775,000
Right-of-Way Acquisition		\$	500,000
Capital Recovery Fee Project Cost Estimate Total:		\$	5,785,000
Project Debt Service:			\$ -

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

ERVIN AVENUE

Hobbs Rd to Landing Blvd

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	5,715		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	58	STA	\$ 2,500.00 \$ 145,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	14,500	CY	\$ 7.00 \$ 101,500
4	8" Concrete Pavement w/ 6" Curb	31,800	SY	\$ 55.00 \$ 1,749,000
5	6" Lime Stabilized Subgrade	36,900	SY	\$ 2.25 \$ 83,025
6	Lime for Stabilization (105 lbs/SY)	1,940	TON	\$ 150.00 \$ 291,000
7	4" Concrete Sidewalk and Ramps	45,700	SF	\$ 5.50 \$ 251,350
8	Block Sodding and Topsoil	26,670	SY	\$ 5.00 \$ 133,350
Paving Estimate Subtotal:				\$ 2,754,225
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	55,100
10	Traffic Control	5%	\$	137,800
11	Erosion Control	3%	\$	82,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	688,600
Other Components Estimate Subtotal:				\$ 964,200
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,718,425
Mobilization				5% \$ 186,000
Contingency				10% \$ 390,500
Construction Cost Estimate Total:				\$ 4,295,000

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 4,295,000
Engineering/Survey/Testing		7%	\$ 300,700
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00 \$ 571,500	\$ 571,500
Capital Recovery Fee Project Cost Estimate Total:			\$ 5,167,200

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

ERVIN AVENUE

Landing Blvd to Service Area Limit

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	1,760		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	18	STA	\$ 2,500.00 \$ 45,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	4,500	CY	\$ 7.00 \$ 31,500
4	8" Concrete Pavement w/ 6" Curb	9,800	SY	\$ 55.00 \$ 539,000
5	6" Lime Stabilized Subgrade	11,400	SY	\$ 2.25 \$ 25,650
6	Lime for Stabilization (105 lbs/SY)	600	TON	\$ 150.00 \$ 90,000
7	4" Concrete Sidewalk and Ramps	14,100	SF	\$ 5.50 \$ 77,550
8	Block Sodding and Topsoil	8,210	SY	\$ 5.00 \$ 41,050
Paving Estimate Subtotal:				\$ 849,750
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	17,000
10	Traffic Control	5%	\$	42,500
11	Erosion Control	3%	\$	25,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	212,500
Other Components Estimate Subtotal:				\$ 297,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 1,147,250
Mobilization				5% \$ 57,400
Contingency				10% \$ 120,500
Construction Cost Estimate Total:				\$ 1,325,200

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,325,200
Engineering/Survey/Testing		7%	\$ 92,800
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 176,000	\$ 176,000
Capital Recovery Fee Project Cost Estimate Total:			\$ 1,594,000

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

HOBBS ROAD EXTENSION

Ervin Ave to FM 517

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	11,173		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Hobbs Rd		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	112	STA	\$ 2,500.00	\$ 280,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	28,300	CY	\$ 7.00	\$ 198,100
4	8" Concrete Pavement w/ 6" Curb	62,100	SY	\$ 55.00	\$ 3,415,500
5	6" Lime Stabilized Subgrade	72,100	SY	\$ 2.25	\$ 162,225
6	Lime for Stabilization (105 lbs/SY)	3,790	TON	\$ 150.00	\$ 568,500
7	4" Concrete Sidewalk and Ramps	89,400	SF	\$ 5.50	\$ 491,700
8	Block Sodding and Topsoil	52,140	SY	\$ 5.00	\$ 260,700
Paving Estimate Subtotal:				\$	5,376,725
II. Non-Paving Construction Components					
Item No.	Item Description		Pct. Of Paving		Item Cost
9	Pavement Markings & Signage		2%	\$	107,600
10	Traffic Control		5%	\$	268,900
11	Erosion Control		3%	\$	161,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)		25%	\$	1,344,200
Other Components Estimate Subtotal:				\$	1,882,100
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$ -	\$	-
14	Drainage Structures	1 - Minor Culvert	\$ 100,000	\$	100,000
15	Bridge Structures	None	\$ -	\$	-
16	Traffic Signals	None	\$ -	\$	-
17	Other	None	\$ -	\$	-
Special Components Estimate Subtotal:				\$	100,000
I, II, & III Construction Subtotal:				\$	7,358,825
Mobilization				5%	\$ 368,000
Contingency				10%	\$ 772,700
Construction Cost Estimate Total:				\$	8,499,600

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 8,499,600
Engineering/Survey/Testing		7%	\$ 595,000
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 1,117,300	\$ 1,117,300
Capital Recovery Fee Project Cost Estimate Total:			\$ 10,211,900

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LANDING BOULEVARD EXTENSION

Sandvalley Way to Ervin Ave

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	3,522		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Landing Blvd		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	36	STA	\$ 2,500.00 \$ 90,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	8,900	CY	\$ 7.00 \$ 62,300
4	8" Concrete Pavement w/ 6" Curb	19,600	SY	\$ 55.00 \$ 1,078,000
5	6" Lime Stabilized Subgrade	22,700	SY	\$ 2.25 \$ 51,075
6	Lime for Stabilization (105 lbs/SY)	1,200	TON	\$ 150.00 \$ 180,000
7	4" Concrete Sidewalk and Ramps	28,200	SF	\$ 5.50 \$ 155,100
8	Block Sodding and Topsoil	16,440	SY	\$ 5.00 \$ 82,200
Paving Estimate Subtotal:				\$ 1,698,675
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	34,000
10	Traffic Control	5%	\$	85,000
11	Erosion Control	3%	\$	51,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	424,700
Other Components Estimate Subtotal:				\$ 594,700
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 2,293,375
Mobilization				5% \$ 114,700
Contingency				10% \$ 240,900
Construction Cost Estimate Total:				\$ 2,649,000

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,649,000
Engineering/Survey/Testing		7%	\$ 185,400
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 352,200	\$ 352,200
Capital Recovery Fee Project Cost Estimate Total:			\$ 3,186,600

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LANDING BOULEVARD EXTENSION

Ervin Ave to FM 517

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	8,046		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Landing Blvd		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	81	STA	\$ 2,500.00	\$ 202,500
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	20,400	CY	\$ 7.00	\$ 142,800
4	8" Concrete Pavement w/ 6" Curb	44,700	SY	\$ 55.00	\$ 2,458,500
5	6" Lime Stabilized Subgrade	51,900	SY	\$ 2.25	\$ 116,775
6	Lime for Stabilization (105 lbs/SY)	2,730	TON	\$ 150.00	\$ 409,500
7	4" Concrete Sidewalk and Ramps	64,400	SF	\$ 5.50	\$ 354,200
8	Block Sodding and Topsoil	37,550	SY	\$ 5.00	\$ 187,750
Paving Estimate Subtotal:					\$ 3,872,025

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	\$ 77,500
10	Traffic Control	5%	\$ 193,700
11	Erosion Control	3%	\$ 116,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$ 968,100
Other Components Estimate Subtotal:			\$ 1,355,500

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	Minor crossing	\$ 100,000	\$ 100,000
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 100,000

I, II, & III Construction Subtotal: \$ 5,327,525

Mobilization 5% \$ 266,400

Contingency 10% \$ 559,400

Construction Cost Estimate Total: \$ 6,153,400

Capital Recovery Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 6,153,400
Engineering/Survey/Testing		7%	\$ 430,700
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 804,600	\$ 804,600

Capital Recovery Fee Project Cost Estimate Total: \$ 7,388,700

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

WALKER STREET EXTENSION
S. End of Walker St to IH-45 Frontage Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	2
Length (lf):	1,308		
Right-of-Way Width (ft.):	90		
Median Type:	None		
Pavement Width (BOC-BOC):	25		
Description:	Extension of Walker St		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	14	STA	\$ 2,500.00 \$ 35,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	1,700	CY	\$ 7.00 \$ 11,900
4	7" Concrete Pavement w/ 6" Curb	3,700	SY	\$ 50.00 \$ 185,000
5	6" Lime Stabilized Subgrade	4,300	SY	\$ 2.25 \$ 9,675
6	Lime for Stabilization (105 lbs/SY)	230	TON	\$ 150.00 \$ 34,500
7	4" Concrete Sidewalk and Ramps	10,500	SF	\$ 5.50 \$ 57,750
8	Block Sodding and Topsoil	8,280	SY	\$ 5.00 \$ 41,400
Paving Estimate Subtotal:				\$ 375,225
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	7,600
10	Traffic Control	5%	\$	18,800
11	Erosion Control	3%	\$	11,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	93,900
Other Components Estimate Subtotal:				\$ 131,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	Bridge crossing	\$ 486,000	\$ 486,000
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 486,000
I, II, & III Construction Subtotal:				\$ 992,825
Mobilization				5% \$ 49,700
Contingency				10% \$ 104,300
Construction Cost Estimate Total:				\$ 1,146,900

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction	\$150k Developer contribution	\$ (150,000)	\$ 996,900
Engineering/Survey/Testing		7%	\$ 80,300
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 117,700	\$ 117,700
Capital Recovery Fee Project Cost Estimate Total:			\$ 1,194,900

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET B

Landing Blvd to Hobbs Rd

Roadway Information:				
Functional Classification:	Minor Arterial	No. of Lanes:	4	
Length (lf):	4,961			
Right-of-Way Width (ft.):	100			
Median Type:	Raised			
Pavement Width (BOC-BOC):	50			
Description:	New roadway			

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	50	STA	\$ 2,500.00	\$ 125,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	12,600	CY	\$ 7.00	\$ 88,200
4	8" Concrete Pavement w/ 6" Curb	27,600	SY	\$ 55.00	\$ 1,518,000
5	6" Lime Stabilized Subgrade	32,000	SY	\$ 2.25	\$ 72,000
6	Lime for Stabilization (105 lbs/SY)	1,680	TON	\$ 150.00	\$ 252,000
7	4" Concrete Sidewalk and Ramps	39,700	SF	\$ 5.50	\$ 218,350
8	Block Sodding and Topsoil	23,150	SY	\$ 5.00	\$ 115,750
Paving Estimate Subtotal:					\$ 2,389,300
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 47,800
10	Traffic Control			5%	\$ 119,500
11	Erosion Control			3%	\$ 71,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 597,400
Other Components Estimate Subtotal:					\$ 836,400
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	None	\$	-	\$ -
15	Bridge Structures	None	\$	-	\$ -
16	Traffic Signals	None	\$	-	\$ -
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:					\$ -
I, II, & III Construction Subtotal:					\$ 3,225,700
Mobilization				5%	\$ 161,300
Contingency				10%	\$ 338,700
Construction Cost Estimate Total:					\$ 3,725,700

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 3,725,700
Engineering/Survey/Testing		7%	\$ 260,800
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 496,100
Capital Recovery Fee Project Cost Estimate Total:			\$ 4,482,600

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET B

Service Area Limit to Landing Blvd

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	3,381		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	34	STA	\$ 2,500.00 \$ 85,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	8,600	CY	\$ 7.00 \$ 60,200
4	8" Concrete Pavement w/ 6" Curb	18,800	SY	\$ 55.00 \$ 1,034,000
5	6" Lime Stabilized Subgrade	21,800	SY	\$ 2.25 \$ 49,050
6	Lime for Stabilization (105 lbs/SY)	1,150	TON	\$ 150.00 \$ 172,500
7	4" Concrete Sidewalk and Ramps	27,000	SF	\$ 5.50 \$ 148,500
8	Block Sodding and Topsoil	15,780	SY	\$ 5.00 \$ 78,900
Paving Estimate Subtotal:				\$ 1,628,150
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	32,600
10	Traffic Control	5%	\$	81,500
11	Erosion Control	3%	\$	48,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	407,100
Other Components Estimate Subtotal:				\$ 570,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	1 - Minor Culvert	\$ 100,000	\$ 100,000
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 100,000
I, II, & III Construction Subtotal:				\$ 2,298,250
Mobilization				5% \$ 115,000
Contingency				10% \$ 241,400
Construction Cost Estimate Total:				\$ 2,654,700

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 2,654,700
Engineering/Survey/Testing		7%	\$ 185,800
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 338,100	\$ 338,100
Capital Recovery Fee Project Cost Estimate Total:			\$ 3,178,600

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET D

Service Area Limit to Hobbs Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	7,814		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	79	STA	\$ 197,500
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	19,800	CY	\$ 138,600
4	7" Concrete Pavement w/ 6" Curb	43,500	SY	\$ 2,175,000
5	6" Lime Stabilized Subgrade	50,400	SY	\$ 113,400
6	Lime for Stabilization (105 lbs/SY)	2,650	TON	\$ 397,500
7	4" Concrete Sidewalk and Ramps	62,500	SF	\$ 343,750
8	Block Sodding and Topsoil	27,780	SY	\$ 138,900
Paving Estimate Subtotal:				\$ 3,504,650
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	70,100
10	Traffic Control	5%	\$	175,300
11	Erosion Control	3%	\$	105,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	876,200
Other Components Estimate Subtotal:				\$ 1,226,800
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	1 - Minor Culvert	\$ 100,000	\$ 100,000
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 100,000
I, II, & III Construction Subtotal:				\$ 4,831,450
Mobilization				5% \$ 241,600
Contingency				10% \$ 507,400
Construction Cost Estimate Total:				\$ 5,580,500

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 5,580,500
Engineering/Survey/Testing		7%	\$ 390,600
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 703,300	\$ 703,300
Capital Recovery Fee Project Cost Estimate Total:			\$ 6,674,400

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET G
Ervin Ave to FM 517

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	9,705		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	98	STA	\$ 2,500.00 \$ 245,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	24,600	CY	\$ 7.00 \$ 172,200
4	7" Concrete Pavement w/ 6" Curb	54,000	SY	\$ 50.00 \$ 2,700,000
5	6" Lime Stabilized Subgrade	62,600	SY	\$ 2.25 \$ 140,850
6	Lime for Stabilization (105 lbs/SY)	3,290	TON	\$ 150.00 \$ 493,500
7	4" Concrete Sidewalk and Ramps	77,600	SF	\$ 5.50 \$ 426,800
8	Block Sodding and Topsoil	34,510	SY	\$ 5.00 \$ 172,550
Paving Estimate Subtotal:				\$ 4,350,900
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	87,100
10	Traffic Control	5%	\$	217,600
11	Erosion Control	3%	\$	130,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	1,087,800
Other Components Estimate Subtotal:				\$ 1,523,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 5,874,000
Mobilization				5% \$ 293,700
Contingency				10% \$ 616,800
Construction Cost Estimate Total:				\$ 6,784,500

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 6,784,500
Engineering/Survey/Testing		7%	\$ 474,900
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 873,500	\$ 873,500
Capital Recovery Fee Project Cost Estimate Total:			\$ 8,132,900

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET H Landing Blvd to Hobbs Rd

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	5,135		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	52	STA	\$ 2,500.00 \$ 130,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	13,000	CY	\$ 7.00 \$ 91,000
4	7" Concrete Pavement w/ 6" Curb	28,600	SY	\$ 50.00 \$ 1,430,000
5	6" Lime Stabilized Subgrade	33,100	SY	\$ 2.25 \$ 74,475
6	Lime for Stabilization (105 lbs/SY)	1,740	TON	\$ 150.00 \$ 261,000
7	4" Concrete Sidewalk and Ramps	41,100	SF	\$ 5.50 \$ 226,050
8	Block Sodding and Topsoil	18,260	SY	\$ 5.00 \$ 91,300
Paving Estimate Subtotal:				\$ 2,303,825
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	46,100
10	Traffic Control	5%	\$	115,200
11	Erosion Control	3%	\$	69,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	576,000
Other Components Estimate Subtotal:				\$ 806,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ -
I, II, & III Construction Subtotal:				\$ 3,110,325
Mobilization				5% \$ 155,600
Contingency				10% \$ 326,600
Construction Cost Estimate Total:				\$ 3,592,600

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 3,592,600
Engineering/Survey/Testing		7%	\$ 251,500
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ -	\$ -
Capital Recovery Fee Project Cost Estimate Total:			\$ 3,844,100

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

LEAGUE CITY PARKWAY (SH 96) EXTENSION

1600' W of Maple Leaf to City Limits

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	1,900		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of League City Parkway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	19	STA	\$ 2,500.00 \$ 47,500
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	4,800	CY	\$ 7.00 \$ 33,600
4	8" Concrete Pavement w/ 6" Curb	10,600	SY	\$ 55.00 \$ 583,000
5	6" Lime Stabilized Subgrade	12,300	SY	\$ 2.25 \$ 27,675
6	Lime for Stabilization (105 lbs/SY)	650	TON	\$ 150.00 \$ 97,500
7	4" Concrete Sidewalk and Ramps	15,200	SF	\$ 5.50 \$ 83,600
8	Block Sodding and Topsoil	8,440	SY	\$ 5.00 \$ 42,200
Paving Estimate Subtotal:				\$ 915,075
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	18,400
10	Traffic Control	5%	\$	45,800
11	Erosion Control	3%	\$	27,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	228,800
Other Components Estimate Subtotal:				\$ 320,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	2 - Signals	\$ 300,000	\$ 300,000
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 300,000
I, II, & III Construction Subtotal:				\$ 1,535,575
Mobilization				5% \$ 76,800
Contingency				10% \$ 161,300
Construction Cost Estimate Total:				\$ 1,773,700

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 1,773,700
Engineering/Survey/Testing		7%	\$ 124,200
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 190,000	\$ 190,000
Capital Recovery Fee Project Cost Estimate Total:			\$ 2,087,900

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

League City Parkway
Misty Trails to Maple Leaf

Roadway Information:				
Functional Classification:	Major Arterial	No. of Lanes:	2	
Length (lf):	4,200			
Right-of-Way Width (ft.):	120			
Median Type:	None			
Pavement Width (BOC-BOC):	25			
Description:	Completion of additional 2 lanes to finish full 4-lane divided section			

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes		Item Cost
Construction	All costing from City	\$	-
Engineering/Survey/Testing		\$	1,500,000
Right-of-Way Acquisition		\$	-
Capital Recovery Fee Project Cost Estimate Total:		\$	1,500,000
Project Debt Service:			\$ -

City of League City Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

ERVIN AVE

W City Limits to Service Area Limits

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	24,499		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	245	STA	\$ 612,500
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	61,900	CY	\$ 433,300
4	8" Concrete Pavement w/ 6" Curb	136,200	SY	\$ 7,491,000
5	6" Lime Stabilized Subgrade	157,900	SY	\$ 355,275
6	Lime for Stabilization (105 lbs/SY)	8,290	TON	\$ 1,243,500
7	4" Concrete Sidewalk and Ramps	196,000	SF	\$ 1,078,000
8	Block Sodding and Topsoil	114,330	SY	\$ 571,650
Paving Estimate Subtotal:				\$ 11,785,225
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	235,800
10	Traffic Control	5%	\$	589,300
11	Erosion Control	3%	\$	353,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	2,946,400
Other Components Estimate Subtotal:				\$ 4,125,100
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	Minor crossing	\$ 100,000	\$ 100,000
15	Bridge Structures	2- bridges (Dickinson Bayou & drain)	\$ 1,566,000	\$ 1,566,000
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 1,666,000
I, II, & III Construction Subtotal:				\$ 17,576,325
Mobilization				5% \$ 878,900
Contingency				10% \$ 1,845,600
Construction Cost Estimate Total:				\$ 20,300,900

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 20,300,900
Engineering/Survey/Testing		7%	\$ 1,421,100
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 2,449,900	\$ 2,449,900
Capital Recovery Fee Project Cost Estimate Total:			\$ 24,171,900

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

MAPLE LEAF EXTENSION

N Side of American Canal to New Street B

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	7,423		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Maple Leaf		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	75	STA	\$ 2,500.00	\$ 187,500
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	18,800	CY	\$ 7.00	\$ 131,600
4	8" Concrete Pavement w/ 6" Curb	41,300	SY	\$ 55.00	\$ 2,271,500
5	6" Lime Stabilized Subgrade	47,900	SY	\$ 2.25	\$ 107,775
6	Lime for Stabilization (105 lbs/SY)	2,520	TON	\$ 150.00	\$ 378,000
7	4" Concrete Sidewalk and Ramps	59,400	SF	\$ 5.50	\$ 326,700
8	Block Sodding and Topsoil	32,990	SY	\$ 5.00	\$ 164,950
Paving Estimate Subtotal:					\$ 3,568,025
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 71,400
10	Traffic Control			5%	\$ 178,500
11	Erosion Control			3%	\$ 107,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 892,100
Other Components Estimate Subtotal:					\$ 1,249,100
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	Minor crossing	\$	100,000	\$ 100,000
15	Bridge Structures	American Canal	\$	918,000	\$ 918,000
16	Traffic Signals	2 - Signals	\$	300,000	\$ 300,000
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:					\$ 1,318,000
I, II, & III Construction Subtotal:					\$ 6,135,125
Mobilization				5%	\$ 306,800
Contingency				10%	\$ 644,200
Construction Cost Estimate Total:					\$ 7,086,200

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 7,086,200
Engineering/Survey/Testing		7%	\$ 496,000
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 742,300
Capital Recovery Fee Project Cost Estimate Total:			\$ 8,324,500

City of League City
Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

MAPLE LEAF EXTENSION/MCFARLAND

New Street B to FM 517

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	5,378		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Maple Leaf		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	54	STA	\$ 2,500.00	\$ 135,000
2	Remove Existing Pavement	36	STA	\$ 1,000.00	\$ 36,000
3	Unclassified Street Excavation	13,600	CY	\$ 7.00	\$ 95,200
4	8" Concrete Pavement w/ 6" Curb	29,900	SY	\$ 55.00	\$ 1,644,500
5	6" Lime Stabilized Subgrade	34,700	SY	\$ 2.25	\$ 78,075
6	Lime for Stabilization (105 lbs/SY)	1,830	TON	\$ 150.00	\$ 274,500
7	4" Concrete Sidewalk and Ramps	43,000	SF	\$ 5.50	\$ 236,500
8	Block Sodding and Topsoil	23,900	SY	\$ 5.00	\$ 119,500
Paving Estimate Subtotal:				\$	2,619,275
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 52,400
10	Traffic Control			5%	\$ 131,000
11	Erosion Control			3%	\$ 78,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 654,900
Other Components Estimate Subtotal:				\$	916,900
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	None	\$	-	\$ -
15	Bridge Structures	Dickinson Bayou	\$	648,000	\$ 648,000
16	Traffic Signals	None	\$	-	\$ -
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:				\$	648,000
I, II, & III Construction Subtotal:				\$	4,184,175
Mobilization				5%	\$ 209,300
Contingency				10%	\$ 439,400
Construction Cost Estimate Total:				\$	4,832,900

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 4,832,900
Engineering/Survey/Testing		7%	\$ 338,300
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 537,800	\$ 537,800
Capital Recovery Fee Project Cost Estimate Total:			\$ 5,709,000

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

Bay Area Blvd Extension N Side of American Canal to FM 517

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	11,814		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	Extension of Bay Area Boulevard		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	119	STA	\$ 2,500.00 \$ 297,500
2	Remove Existing Pavement	0	STA	\$ 1,000.00 \$ -
3	Unclassified Street Excavation	29,900	CY	\$ 7.00 \$ 209,300
4	8" Concrete Pavement w/ 6" Curb	65,700	SY	\$ 55.00 \$ 3,613,500
5	6" Lime Stabilized Subgrade	76,200	SY	\$ 2.25 \$ 171,450
6	Lime for Stabilization (105 lbs/SY)	4,010	TON	\$ 150.00 \$ 601,500
7	4" Concrete Sidewalk and Ramps	94,500	SF	\$ 5.50 \$ 519,750
8	Block Sodding and Topsoil	52,510	SY	\$ 5.00 \$ 262,550
Paving Estimate Subtotal:				\$ 5,675,550
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	113,600
10	Traffic Control	5%	\$	283,800
11	Erosion Control	3%	\$	170,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	1,418,900
Other Components Estimate Subtotal:				\$ 1,986,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	Dickinson Bayou bridge	\$ 648,000	\$ 648,000
16	Traffic Signals	2 - Signals	\$ 300,000	\$ 300,000
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 948,000
I, II, & III Construction Subtotal:				\$ 8,610,150
Mobilization				5% \$ 430,600
Contingency				10% \$ 904,100
Construction Cost Estimate Total:				\$ 9,944,900

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 9,944,900
Engineering/Survey/Testing		7%	\$ 696,100
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00 \$ 1,181,400	\$ 1,181,400
Capital Recovery Fee Project Cost Estimate Total:			\$ 11,822,400

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET B

New Street C to Service Area Limit

Roadway Information:			
Functional Classification:	Major Arterial	No. of Lanes:	4
Length (lf):	19,962		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:			

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	200	STA	\$ 500,000
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	50,500	CY	\$ 353,500
4	8" Concrete Pavement w/ 6" Curb	110,900	SY	\$ 6,099,500
5	6" Lime Stabilized Subgrade	128,700	SY	\$ 289,575
6	Lime for Stabilization (105 lbs/SY)	6,760	TON	\$ 1,014,000
7	4" Concrete Sidewalk and Ramps	159,700	SF	\$ 878,350
8	Block Sodding and Topsoil	93,160	SY	\$ 465,800
Paving Estimate Subtotal:				\$ 9,600,725
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	192,100
10	Traffic Control	5%	\$	480,100
11	Erosion Control	3%	\$	288,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	2,400,200
Other Components Estimate Subtotal:				\$ 3,360,500
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	Minor crossing	\$ 100,000	\$ 100,000
15	Bridge Structures	Dickinson Bayou bridge	\$ 648,000	\$ 648,000
16	Traffic Signals	2 - Signals	\$ 300,000	\$ 300,000
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 1,048,000
I, II, & III Construction Subtotal:				\$ 14,009,225
Mobilization				5% \$ 700,500
Contingency				10% \$ 1,471,000
Construction Cost Estimate Total:				\$ 16,180,800

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 16,180,800
Engineering/Survey/Testing		7%	\$ 1,132,700
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 1,996,200	\$ 1,996,200
Capital Recovery Fee Project Cost Estimate Total:			\$ 19,309,700

City of League City Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET C

League City Parkway Ext to FM 517

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	17,073		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	171	STA	\$ 427,500
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	43,200	CY	\$ 302,400
4	8" Concrete Pavement w/ 6" Curb	94,900	SY	\$ 5,219,500
5	6" Lime Stabilized Subgrade	110,100	SY	\$ 247,725
6	Lime for Stabilization (105 lbs/SY)	5,790	TON	\$ 868,500
7	4" Concrete Sidewalk and Ramps	136,600	SF	\$ 751,300
8	Block Sodding and Topsoil	79,670	SY	\$ 398,350
Paving Estimate Subtotal:				\$ 8,215,275
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving		Item Cost
9	Pavement Markings & Signage	2%	\$	164,400
10	Traffic Control	5%	\$	410,800
11	Erosion Control	3%	\$	246,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	2,053,900
Other Components Estimate Subtotal:				\$ 2,875,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	2- bridges (Dickinson Bayou & drain)	\$ 1,566,000	\$ 1,566,000
16	Traffic Signals	3 - Signals	\$ 450,000	\$ 450,000
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 2,016,000
I, II, & III Construction Subtotal:				\$ 13,106,875
Mobilization				5% \$ 655,400
Contingency				10% \$ 1,376,300
Construction Cost Estimate Total:				\$ 15,138,600

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 15,138,600
Engineering/Survey/Testing		7%	\$ 1,059,700
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 1,707,300	\$ 1,707,300
Capital Recovery Fee Project Cost Estimate Total:			\$ 17,905,600

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET D

Maple Leaf Ext to Service Area Limit

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	12,133		
Right-of-Way Width (ft.):	90		
Median Type:	None		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	122	STA	\$ 305,000
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	27,700	CY	\$ 193,900
4	7" Concrete Pavement w/ 6" Curb	67,500	SY	\$ 3,375,000
5	6" Lime Stabilized Subgrade	78,200	SY	\$ 175,950
6	Lime for Stabilization (105 lbs/SY)	4,110	TON	\$ 616,500
7	4" Concrete Sidewalk and Ramps	97,100	SF	\$ 534,050
8	Block Sodding and Topsoil	43,140	SY	\$ 215,700
Paving Estimate Subtotal:				\$ 5,416,100
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	108,400
10	Traffic Control	5%	\$	270,900
11	Erosion Control	3%	\$	162,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	1,354,100
Other Components Estimate Subtotal:				\$ 1,895,900
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	Minor crossing	\$ 100,000	\$ 100,000
15	Bridge Structures	None	\$ -	\$ -
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 100,000
I, II, & III Construction Subtotal:				\$ 7,412,000
Mobilization				5% \$ 370,600
Contingency				10% \$ 778,300
Construction Cost Estimate Total:				\$ 8,560,900

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$	8,560,900
Engineering/Survey/Testing		7%	\$	599,300
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 1,092,000	\$ 1,092,000
Capital Recovery Fee Project Cost Estimate Total:				\$ 10,252,200

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET E

Ervin Ave to FM 517

Roadway Information:			
Functional Classification:	Minor Arterial	No. of Lanes:	4
Length (lf):	9,756		
Right-of-Way Width (ft.):	100		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:					
I. Paving Construction Cost Estimate					
Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	98	STA	\$ 2,500.00	\$ 245,000
2	Remove Existing Pavement	0	STA	\$ 1,000.00	\$ -
3	Unclassified Street Excavation	24,700	CY	\$ 7.00	\$ 172,900
4	8" Concrete Pavement w/ 6" Curb	54,200	SY	\$ 55.00	\$ 2,981,000
5	6" Lime Stabilized Subgrade	62,900	SY	\$ 2.25	\$ 141,525
6	Lime for Stabilization (105 lbs/SY)	3,310	TON	\$ 150.00	\$ 496,500
7	4" Concrete Sidewalk and Ramps	78,000	SF	\$ 5.50	\$ 429,000
8	Block Sodding and Topsoil	45,530	SY	\$ 5.00	\$ 227,650
Paving Estimate Subtotal:				\$	4,693,575
II. Non-Paving Construction Components					
Item No.	Item Description			Pct. Of Paving	Item Cost
9	Pavement Markings & Signage			2%	\$ 93,900
10	Traffic Control			5%	\$ 234,700
11	Erosion Control			3%	\$ 140,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)			25%	\$ 1,173,400
Other Components Estimate Subtotal:				\$	1,642,900
III. Special Construction Components					
Item No.	Item Description	Notes	Allowance		Item Cost
13	Landscaping/Illumination	None	\$	-	\$ -
14	Drainage Structures	Minor crossing	\$	100,000	
15	Bridge Structures	Dickinson Bayou bridge	\$	648,000	\$ 648,000
16	Traffic Signals				
17	Other	None	\$	-	\$ -
Special Components Estimate Subtotal:				\$	648,000
I, II, & III Construction Subtotal:				\$	6,984,475
Mobilization				5%	\$ 349,300
Contingency				10%	\$ 733,400
Construction Cost Estimate Total:				\$	8,067,200

Capital Recovery Fee Cost Estimate Summary				
Item Description	Notes	Allowance	Item Cost	
Construction		-	\$ 8,067,200	
Engineering/Survey/Testing		7%	\$ 564,700	
Right-of-Way Acquisition	Cost per sq. ft.:	\$ 1.00	\$ 975,600	\$ 975,600
Capital Recovery Fee Project Cost Estimate Total:				\$ 9,607,500

City of League City

Capital Recovery Fee Engineer's Opinion of Probable Construction Cost Estimate

NEW STREET F

Ervin Ave to South City Limits

Roadway Information:			
Functional Classification:	Collector	No. of Lanes:	4
Length (lf):	8,249		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC-BOC):	50		
Description:	New roadway		

Roadway Construction Cost Estimate:				
I. Paving Construction Cost Estimate				
Item No.	Item Description	Quantity	Unit	Item Cost
1	Right of Way Preparation	83	STA	\$ 207,500
2	Remove Existing Pavement	0	STA	\$ -
3	Unclassified Street Excavation	20,900	CY	\$ 146,300
4	7" Concrete Pavement w/ 6" Curb	45,900	SY	\$ 2,295,000
5	6" Lime Stabilized Subgrade	53,200	SY	\$ 119,700
6	Lime for Stabilization (105 lbs/SY)	2,800	TON	\$ 420,000
7	4" Concrete Sidewalk and Ramps	66,000	SF	\$ 363,000
8	Block Sodding and Topsoil	29,330	SY	\$ 146,650
Paving Estimate Subtotal:				\$ 3,698,150
II. Non-Paving Construction Components				
Item No.	Item Description	Pct. Of Paving	Item Cost	
9	Pavement Markings & Signage	2%	\$	74,000
10	Traffic Control	5%	\$	185,000
11	Erosion Control	3%	\$	111,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	25%	\$	924,600
Other Components Estimate Subtotal:				\$ 1,294,600
III. Special Construction Components				
Item No.	Item Description	Notes	Allowance	Item Cost
13	Landscaping/Illumination	None	\$ -	\$ -
14	Drainage Structures	None	\$ -	\$ -
15	Bridge Structures	Dickinson Bayou bridge	\$ 648,000	\$ 648,000
16	Traffic Signals	None	\$ -	\$ -
17	Other	None	\$ -	\$ -
Special Components Estimate Subtotal:				\$ 648,000
I, II, & III Construction Subtotal:				\$ 5,640,750
Mobilization				5% \$ 282,100
Contingency				10% \$ 592,300
Construction Cost Estimate Total:				\$ 6,515,200

Capital Recovery Fee Cost Estimate Summary			
Item Description	Notes	Allowance	Item Cost
Construction		-	\$ 6,515,200
Engineering/Survey/Testing		7%	\$ 456,100
Right-of-Way Acquisition	Cost per sq. ft.: \$ 1.00	\$ 742,400	\$ 742,400
Capital Recovery Fee Project Cost Estimate Total:			\$ 7,713,700

Appendix G:
Roadway Service Area Analysis Summary

League City Roadway Capital Recovery Fee Study Roadway Service Area Analysis Summary

Roadway Service Area Analysis Summary													
	A	B	C	D	E	F	G	H	I	J	K	L	M
				A - B - C		E x (50%)	F x (D / A)	F - G		I / D	G x J	K / I	L / (50%)
Service Area	Capacity Supplied by CIP	Existing Utilization	Existing Deficiencies	Net Capacity Supplied by CIP	Total Project Cost of CIP	Credited Project Cost of CIP	Cost of Net Capacity	Cost to Meet Existing Utilization	Projected New Development (10-Yr Demand)	Percent of CIP Attributable to New Dev.	Credited Cost Attributable to New Dev.	Credited Cost per Service Unit (Maximum Allowable)	Actual Cost per Service Unit (Full Cost)
1	14,638	3,254	2,070	9,314	\$29,638,467	\$14,819,234	\$9,429,317	\$5,389,917	29,116	100.0	\$9,429,317	\$323.00	\$646.00
2	10,569	702	505	9,362	\$76,779,256	\$38,389,628	\$34,005,459	\$4,384,169	4,563	48.7	\$16,574,120	\$3,632.00	\$7,264.00
3	39,199	969	1,760	36,470	\$108,336,912	\$54,168,456	\$50,397,296	\$3,771,160	43,676	100.0	\$50,397,296	\$1,153.00	\$2,306.00
4	59,055	20	224	58,811	\$132,363,857	\$66,181,928	\$65,908,482	\$273,447	27,991	47.6	\$31,369,035	\$1,120.00	\$2,240.00
Totals	123,461	4,945	4,559	113,957	\$347,118,492	\$173,559,246	\$159,740,553	\$13,818,693	105,346	92.4	\$107,769,767	\$1,251.00	\$2,502.00
												Weighted Average	

Appendix H:
2017 Land Use Assumptions Report

FINAL LAND USE ASSUMPTIONS REPORT FOR CAPITAL RECOVERY FEES

Prepared for:

City of League City



October 2017

Prepared by:

FREESE AND NICHOLS, INC.
2711 North Haskell Avenue, Suite 3300
Dallas, Texas 75204
214-217-2200

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APPENDIX

Demographics by Traffic Analysis Zone

1.0 PURPOSE

Chapter 395 of the Texas Local Government Code prescribes the process by which cities in Texas must formulate capital recovery fees. An initial step in the update process is the establishment of land use assumptions that address growth and development for a ten-year planning period (TLGC Section 395.001(5)) for the years 2017-2027. These land use assumptions, which also include population and employment projections, will become the basis for the preparation of capital recovery fee capital improvement plans for water, wastewater, and roadway facilities.

Statutory requirements mandate that capital recovery fees be updated (at least) every five years. This report, in conjunction with the water and wastewater capital improvements plans, forms the initial key components for the update of League City's capital recovery fee program. This LUA Report would also be considered for a possible roadway capital recovery fee program.

To assist the City of League City in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. The purpose of this report is to formulate growth and development projections based upon assumptions pertaining to the type, location, quantity and timing of various future land uses within the community and to establish and document the methodology used for preparing the growth and land use assumptions.

1.1 LAND USE ASSUMPTIONS REPORT ELEMENTS

This report contains the following components:

- **Methodology** - Explanation of the general methodology used to prepare the land use assumptions.
- **Data Collection Zones and Service Areas** - Explanation of data collection zones (traffic analysis zones), and division of the City into capital recovery fee service areas for roadway, water and wastewater facilities.
- **Base Year Data** – Historical population trends for League City and information on population, employment, and land use for League City as of 2017 for each capital service area.
- **Ten-Year Growth Assumptions** - Population and employment growth assumptions for ten years by service areas.
- **Summary** - Brief synopsis of the land use assumptions report.

2.0 METHODOLOGY

Based upon the growth assumptions and the capital improvements needed to support growth, it is possible to develop a capital recovery fee structure that fairly allocates improvement costs to growth areas in relation to their impact upon the entire infrastructure system. The data in this report has been formulated using reasonable and generally accepted planning principles for the preparation of capital recovery fee systems in Texas.

These land use assumptions and future growth projections take into consideration several factors influencing development patterns, including the following:

- The character, type, density, and quantity of existing development,
- Anticipated future land use based on the City's recently approved update to the Future Land Use Plan (FLUP),
- Availability of land for future expansion,
- Current and historical growth trends of population and development within the City,
- Location and configuration of vacant land,
- Growth of employment (per the Houston-Galveston Area Council, H-GAC), and
- Known or anticipated development projects as defined by City Staff. Key development plans include the Duncan Tract, Lakes of Quail Pointe, Westwood, and UTMB to name a few.

A series of work tasks were undertaken in the development of this report and are described below:

1. A kick-off meeting was held to describe the general methodological approach in the study. Service areas were defined for roadway, water, and wastewater capital recovery fee systems.
2. Current and historic data of population, housing, and employment was collected from the City and other acceptable sources to serve as a basis for future growth.
3. A base year (2017) estimate was developed using population and employment data from H-GAC and the City.
4. A growth rate was determined based upon an analysis of data from recent building permit data, past growth trends, and anticipated development to occur over the next ten-year planning period. A compound annual growth rate of **3.4%** was used for the planning period to track the Thoroughfare Plan update growth projections and other concurrent City studies.
5. A ten-year projection (2027) was prepared using the approved growth rate and the FLUP for allocations of population and employment data. Adjustments were then made to consider known or anticipated development activity within the ten-year planning period.

6. Base and ten-year demographics were prepared for the respective service areas for water, wastewater, and roads. Build-out demographics were also prepared for water and wastewater service areas based on the FLUP.

3.0 DATA COLLECTION ZONES & SERVICE AREA MAPS

3.1 DATA COLLECTION ZONES

Data collection zones used for land use assumptions are based upon small geographic areas known as traffic analysis zones (TAZs). These zones, established by the Houston-Galveston Area Council (H-GAC), cover the Metropolitan Planning Organization's (MPO) planning area and serve as the basis for socio-demographic data used in the regional travel forecast model. TAZs were originally formulated based on homogeneity and traffic generation potential using major arterials, creeks, railroad lines and other physical boundaries for delineation.

Population and employment demographics were compiled by these H-GAC TAZs and then aggregated into larger areas to form the service areas for capital recovery fees. Adjustments were made based on City Staff input to account for recent or upcoming known developments affecting these demographics.

3.2 SERVICE AREAS

Chapter 395 requires that service areas be defined for capital recovery fees to ensure that facility improvements are located in close proximity to areas generating needs. Legislative requirements stipulate that roadway service areas be limited to a 6-mile maximum and must be located within the current City limits. Transportation service areas are different from water and wastewater systems, which can include the City limits and its extra-territorial jurisdiction (ETJ) or other defined service area. This is primarily because roadway systems are "open" to both local and regional (non-City) use as opposed to a defined level of utilization from residents within a water and wastewater system. The result is that new development can only be assessed a capital recovery fee based on the cost of necessary capital improvements within that service area.

For roadways, the entirety of the City limits is divided into four service areas. For water and wastewater, a single service area encompasses the City limits as well as Water Control and Improvement District #1 (WCID-1). **Figures 1 and 2** illustrate service areas for Road, Water and Wastewater capital recovery fees. The roadway, water and wastewater service areas with TAZ boundaries can be found in the **Appendix**, respectively.

FIGURE 1: ROADWAY SERVICE AREA

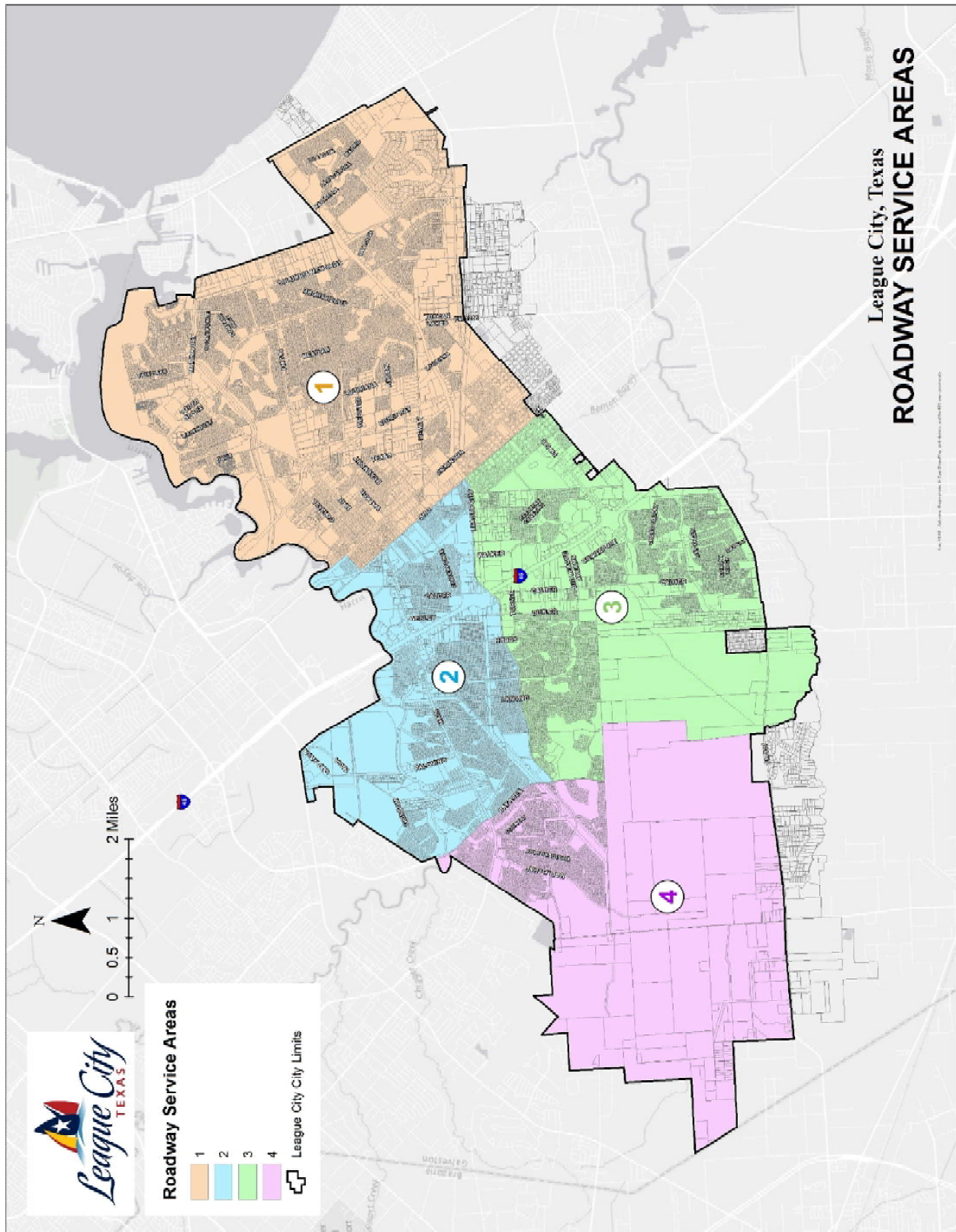
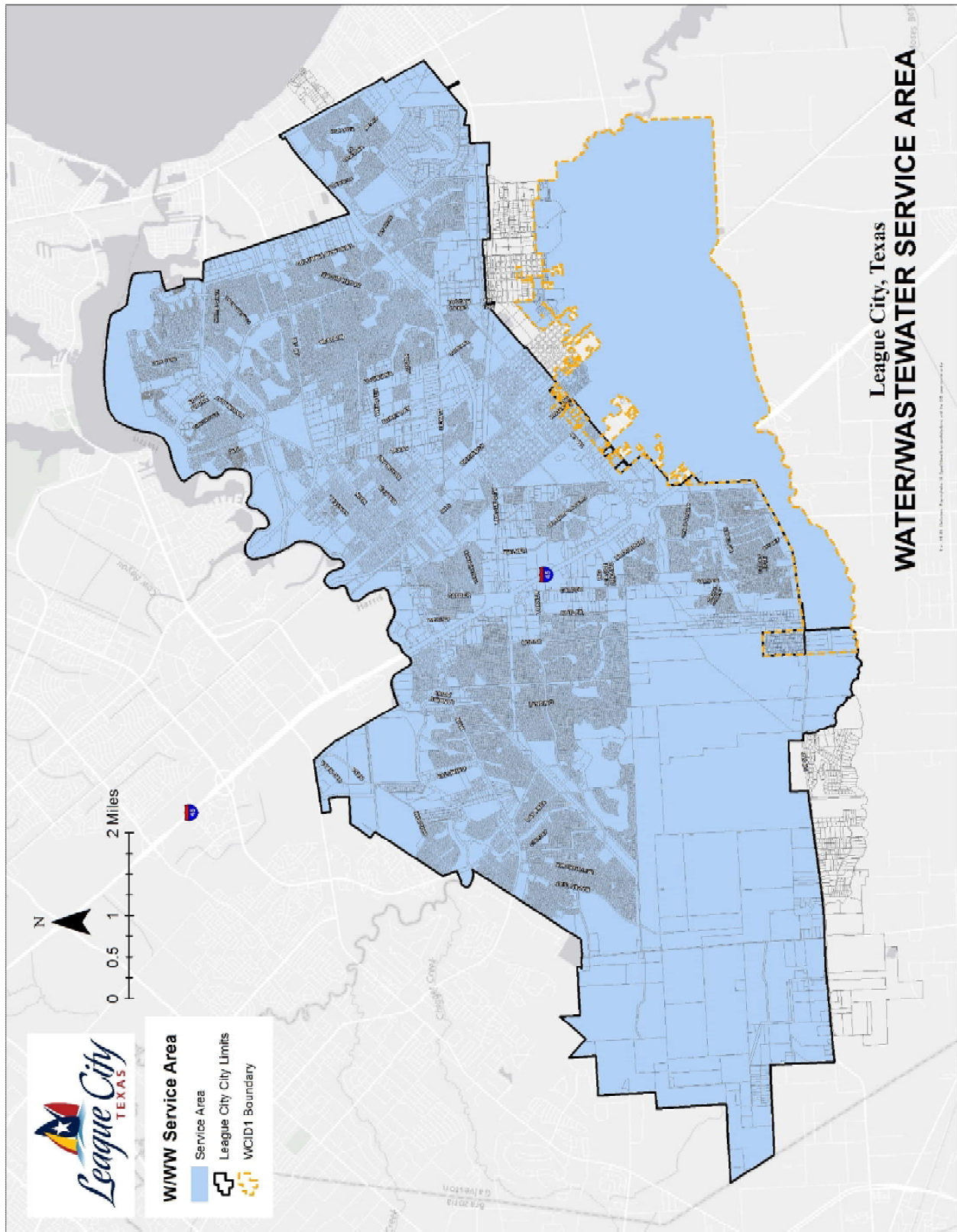


FIGURE 2: WATER AND WASTEWATER SERVICE AREA



3.3 DATA FORMAT

The existing database, as well as the future projections, were formulated according to the following format and categories:

Service Area	Correlates to the proposed roadway, water, and wastewater service areas identified on the attached maps in Section 3.2.
Traffic Analysis Zone (TAZ)	Geographic areas established by the H-GAC Traffic Model which are used for data collection purposes and termed TAZs within this report.
Housing Units (2017)	All living units including single-family, duplex, multi-family and group quarters. The number of existing housing units has been shown for the base year (2017).
Housing Units (2027)	Projected housing units by service zone for 2027 (ten-year growth projections).
Population (2017)	Existing population for the base year (2017).
Population (2027)	Projected population by service zone for the year 2027 (ten-year growth projections).
Employment (2017, 2027)	Employment data is aggregated to three employment sectors and include Retail, Office and Industrial, as provided by the H-GAC. These service sectors serve as the basis for nonresidential trip generation. The following details which types of businesses fall within each of the three sectors. <u>Basic (Industrial)</u> -- Land use activities that produce goods and services such as those that are exported outside the local economy: manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses. <u>Service (Office)</u> -- Land use activities which provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

Retail -- Land use activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.

4.0 BASE YEAR DATA

H-GAC's demographics by TAZ serve as a basis for the base year data analysis of the Land Use Assumption process. This section documents the City's historical growth trends and data used to derive the 2017 base year population estimate for the City of League City. This "benchmark" information provides a starting basis of data for the ten-year growth assumptions that will be presented within the following section.

4.1 HISTORICAL GROWTH

A City's past growth rates are often a good indicator of future growth rates. **Table 1** and **Table 2** show League City's population, numerical change, and compound annual growth rate of recent years and by decade.

From 2010 to 2017, League City has grown consistently, having a peak in the last 2-3 years around 4 percent. Between 2010 and 2017, the compound annual growth rate (CAGR) is 2.9%.

TABLE 1: POPULATION DATA IN RECENT YEARS

Year	Population	Population Change	Percent Change	CAGR
2010	84,088	-	-	
2011	86,278	2,190	2.6%	
2012	88,244	1,966	2.3%	
2013	90,828	2,584	2.9%	
2014	94,264	3,436	3.8%	2.9%
2015	98,149	3,885	4.1%	
2016	100,053	1,904	1.9%	
2017	102,635	2,582	2.6%	

Source: US Census Bureau

Analysis of growth rates since 1970 reveals League City to have had periods of phenomenal growth. Between the years of 2000 and 2010, League City has grown over 80 percent. The 40-year (1970-2010) CAGR is 5.2% and listed in **Table 2**.

TABLE 2: POPULATION DATA BY DECADE

Year	Population	Population Change	Percent Change	CAGR
1970	10,818	-	-	
1980	16,578	5,760	53.2%	
1990	29,903	13,325	80.4%	5.2%
2000	45,327	15,424	51.6%	
2010	83,560	38,233	84.3%	

Source: US Census Bureau

4.2 EXISTING LAND USE

The largest use of developed land within the City limits is single family residential, which alone accounts for approximately 59 percent of all developed land. All residential uses collectively comprise of around 63 percent of the total developed land, which makes League City stand out as a primarily residential community. And are detailed in **Table 3**, **Figure 3**, and **Figure 4**.

TABLE 3: EXISTING LAND USE

Category	Acres	% of Developed	% of Total
Single Family	7,509	59.0%	26.1%
Condominiums	28	0.2%	0.1%
Multi-Family	343	2.7%	1.2%
Mobile Homes	124	1.0%	0.4%
Residential Sub-Total	8,004	62.9%	27.8%
Commercial	3,638	28.6%	12.6%
Industrial	43	0.3%	0.1%
O1	75	0.6%	0.3%
Non-Residential Sub-Total	3,756	29.5%	13.0%
Other or Not Assigned	971	7.6%	3.4%
Total Developed Land	12,731	100.0%	44.2%
Vacant/Ag	16,085	-	55.8%
Total Developable Land	28,816	-	100.0%

FIGURE 3: EXISTING LAND USE

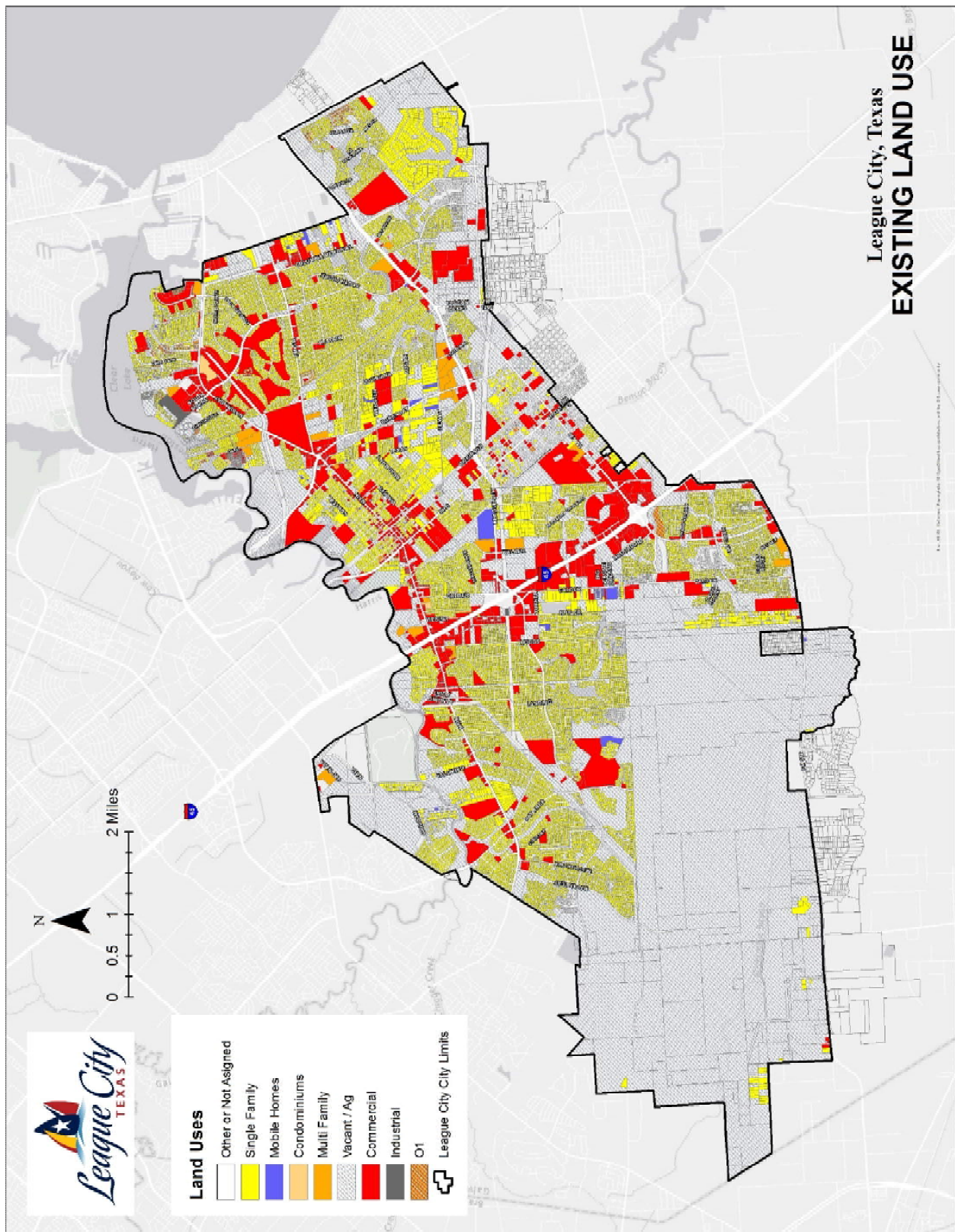
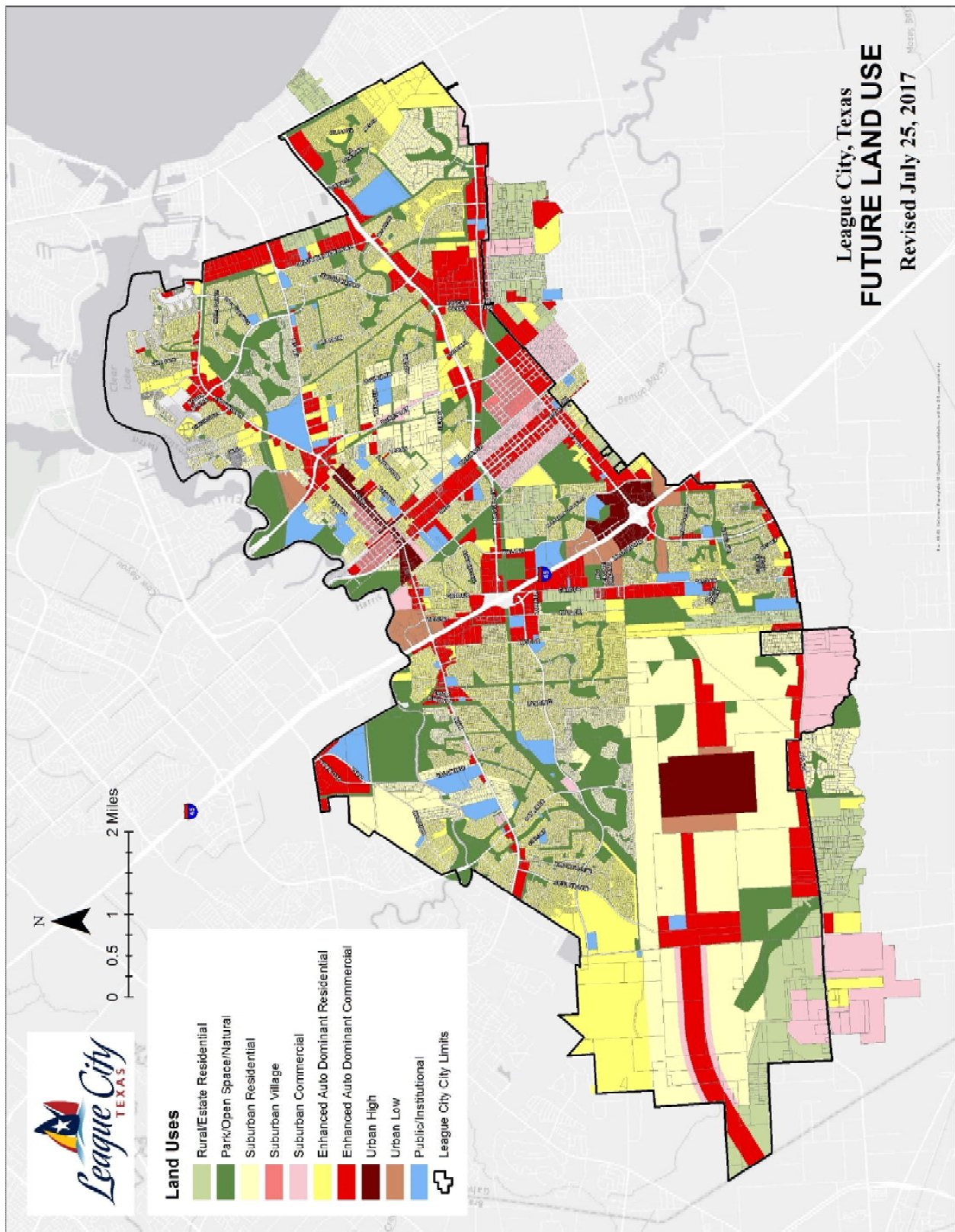


FIGURE 4: FUTURE LAND USE



4.3 2017 POPULATION AND EMPLOYMENT IN LAND USE ASSUMPTIONS PROCESS

For the land use assumptions process, 2017 base population and employment data was calculated using data from the Houston-Galveston Area Council (H-GAC) with verification of this data from City Staff. This information provided a breakdown of employment by traffic analysis zone (TAZ) for 2017, 2030, and 2040. It is important to note that the TSZs do not follow City limits in some locations, so adjustments were made based on the locations of existing land uses and upon the percentage of each TAZ located within City limits. Employment for each TAZ was broken down into basic, retail, and service uses as defined by H-GAC in the modeling demographics. Since Roadway and Water and Wastewater have different service areas, two sets of assumptions has been conducted, each tailored to its own service area.

TABLE 6: SUMMARY OF BASE YEAR (2017) POPULATION AND EMPLOYMENT FOR ROADWAY CAPITAL RECOVERY FEE

Roadway Service Area 2017 Population & Employment	
Population	102,635
Housing Units	36,919
Total Employment	31,133
<i>Basic Employment</i>	<i>4,219</i>
<i>Service Employment</i>	<i>16,125</i>
<i>Retail Employment</i>	<i>10,789</i>
Source: Freese and Nichols, Inc., H-GAC	

TABLE 7: SUMMARY OF BASE YEAR (2017) POPULATION AND EMPLOYMENT FOR WATER AND WASTEWATER CAPITAL RECOVERY FEE

Water and Wastewater Service Area 2017 Population & Employment	
Population	129,234
Housing Units	46,487
Total Employment	36,082
<i>Basic Employment</i>	<i>5,217</i>
<i>Service Employment</i>	<i>18,540</i>
<i>Retail Employment</i>	<i>12,325</i>
Source: Freese and Nichols, Inc., H-GAC	

5.0 TEN-YEAR GROWTH ASSUMPTIONS

Projected growth has been characterized in two forms: population and employment. A series of assumptions were made to arrive at reasonable growth rates for population and employment. The following assumptions have been made as a basis from which ten-year projections could be initiated.

- Future land uses will occur based on similar trends of the past and consistent with the Future Land Use Plan,
- The City will be able to finance the necessary improvements to accommodate continued growth, and
- Densities will be as projected in the Future Land Use Plan.

The ten-year projections are based upon the growth rate that was discussed earlier (**3.4%**) and considers past trends of the City and is in line with concurrent studies.

Both of the assumptions for Roadway Service Area and Water and Wastewater Service Area are presented with 2017 and 2027 population and employment information. However, Water and Wastewater Capital Recovery Fee studies require the build-out population and employment information for that service area, which is why it has been included in the Water and Wastewater Capital Recovery Fee section.

Using the previously mentioned data from H-GAC, linear interpolation was used to develop the interim year 2027 in the data for both population and employment. For population, adjustments were made to account for existing subdivisions with lots remaining and anticipated developments such as the Duncan Tract on the southwest quadrant of the City and the Lakes of Quail Pointe subdivision. For employment, adjustments were made to match growth trends anticipated by the City and modifications in the 2017 Future Land Use Plan with specific areas of growth for The University of Texas Medical Branch (UTMB) campus and Pinnacle Park. **Figure 5** and **Figure 6** depict a distribution map of the 10-year growth for population and employment, respectively.

The build-out demographics were calculated using the H-GAC data by TAZ complemented with an evaluation of existing vacant property in the City to the Future Land Use Plan. The Southwest Side PUD Concept Plan was analyzed to produce a detailed estimate of population and employment at build-out for this large sector of the City.

Tables 8-13 summarize the population and employment demographics for base year (2017), projected year (2027), and build-out for the roadway and water/wastewater service areas.

FIGURE 5: POPULATION GROWTH DISTRIBUTION

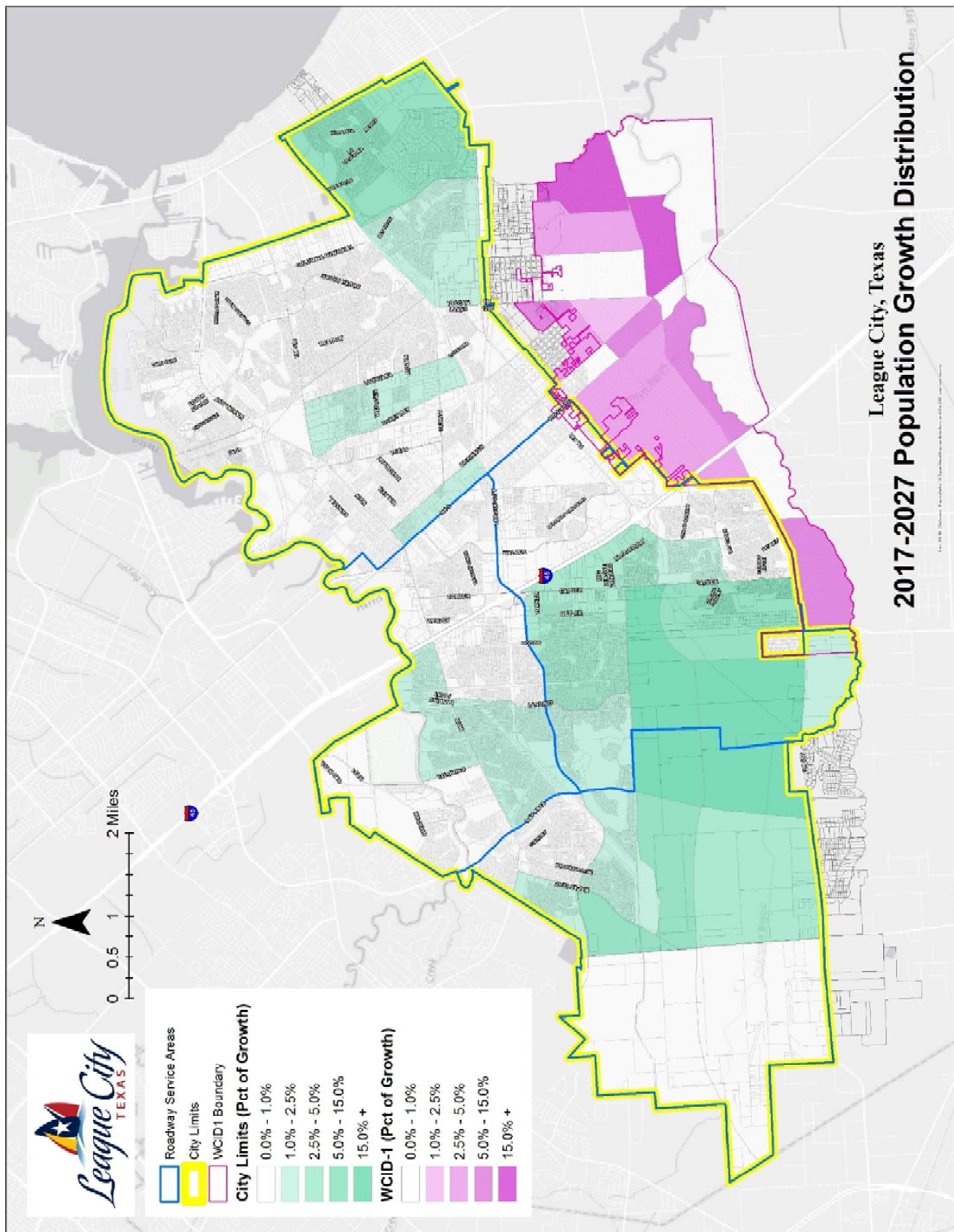
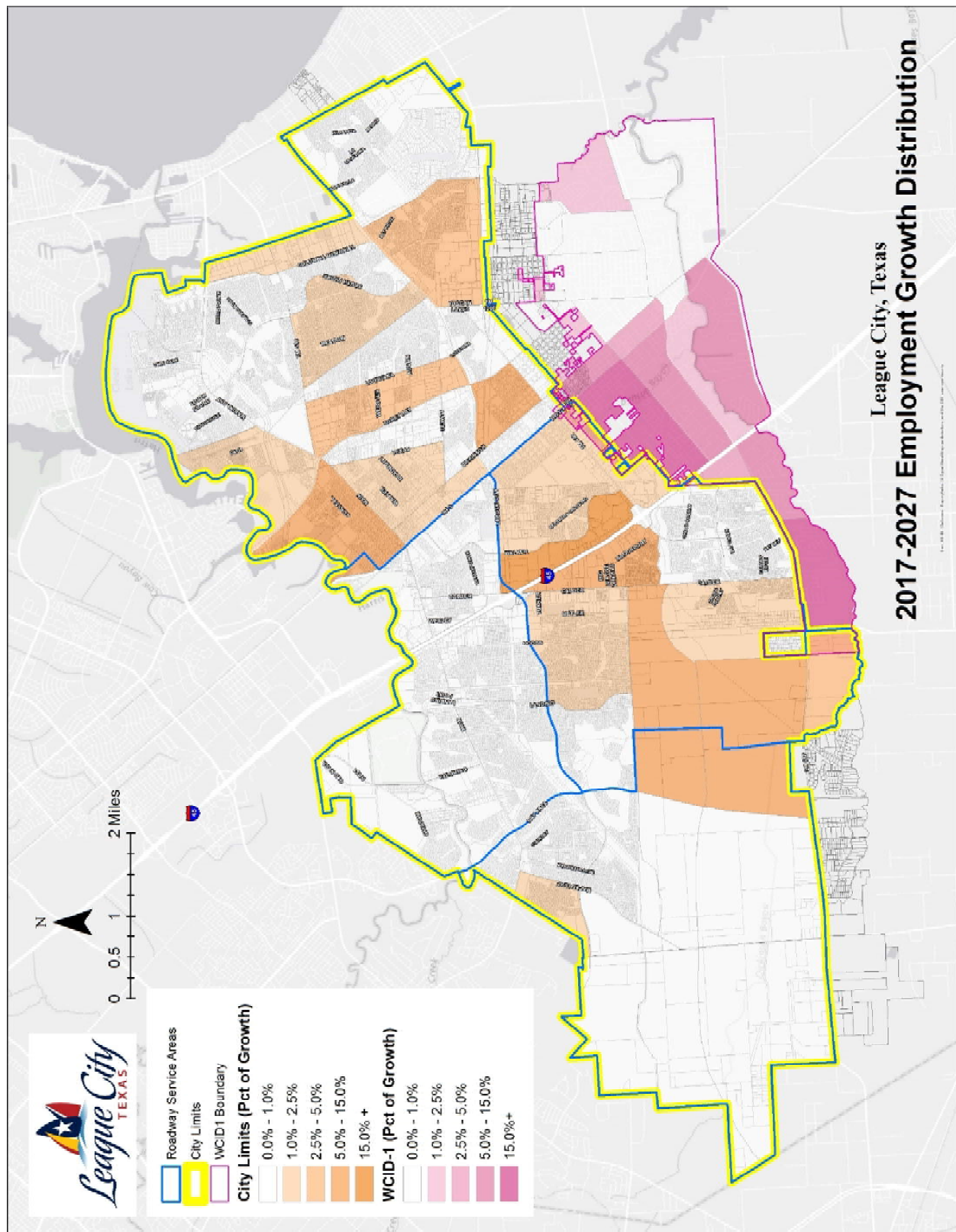


FIGURE 6: EMPLOYMENT GROWTH DISTRIBUTION



Roadway Capital Recovery Fee

TABLE 8: POPULATION AND DWELLING UNIT PROJECTION FOR ROADWAY SERVICE AREA

Ten-Year Population Projection for Roadway Service Area				
Roadway Service Areas	2017		2027	
	Housing Units	Population	Housing Units	Population
Service Area 1	15,951	44,343	18,431	51,238
Service Area 2	9,122	25,358	9,940	27,634
Service Area 3	8,032	22,330	13,804	38,374
Service Area 4	3,814	10,604	9,403	26,140
Total	36,919	102,635	51,578	143,386

TABLE 9: POPULATION AND DWELLING UNITS ADDED FOR ROADWAY SERVICE AREA

Added Population and Percentage Growth for Roadway Service Area 2017 to 2027			
Roadway Service Areas	Units Added	Population Added	Pct. Change
Service Area 1	2,480	6,895	16%
Service Area 2	819	2,276	9%
Service Area 3	5,771	16,044	72%
Service Area 4	5,588	15,536	147%
Total	10,340	40,751	40%

TABLE 10: EMPLOYMENT PROJECTIONS FOR ROADWAY SERVICE AREA

Ten-Year Employment Projection for Roadway Service Area								
Roadway Service Areas	Basic		Service		Retail		Total	
	2017	2027	2017	2027	2017	2027	2017	2027
Service Area 1	1,495	1,805	11,135	12,897	6,030	8,625	18,660	23,327
Service Area 2	576	595	2,385	2,462	2,628	2,830	5,589	5,887
Service Area 3	2,036	2,909	1,453	4,044	1,086	2,807	4,575	9,760
Service Area 4	102	159	569	1,028	713	1,541	1,384	2,728
Total	4,209	5,468	15,542	20,431	10,457	15,803	30,208	41,702

Water and Wastewater Capital Recovery Fee

TABLE 11: POPULATION AND DWELLING UNIT PROJECTION FOR W/WW SERVICE AREA

Ten-Year Population Projection for Water and Wastewater Service Area					
2017		2027		Build-out	
Housing Units	Population	Housing Units	Population	Housing Units	Population
46,487	129,234	62,411	173,503	87,643	243,647

TABLE 12: POPULATION AND DWELLING UNITS ADDED FOR W/WW SERVICE AREA

Added Population and Percentage Growth for Water and Wastewater Service Area 2017 to 2027		
Units Added	Population Added	Pct. Change
15,924	44,269	34%

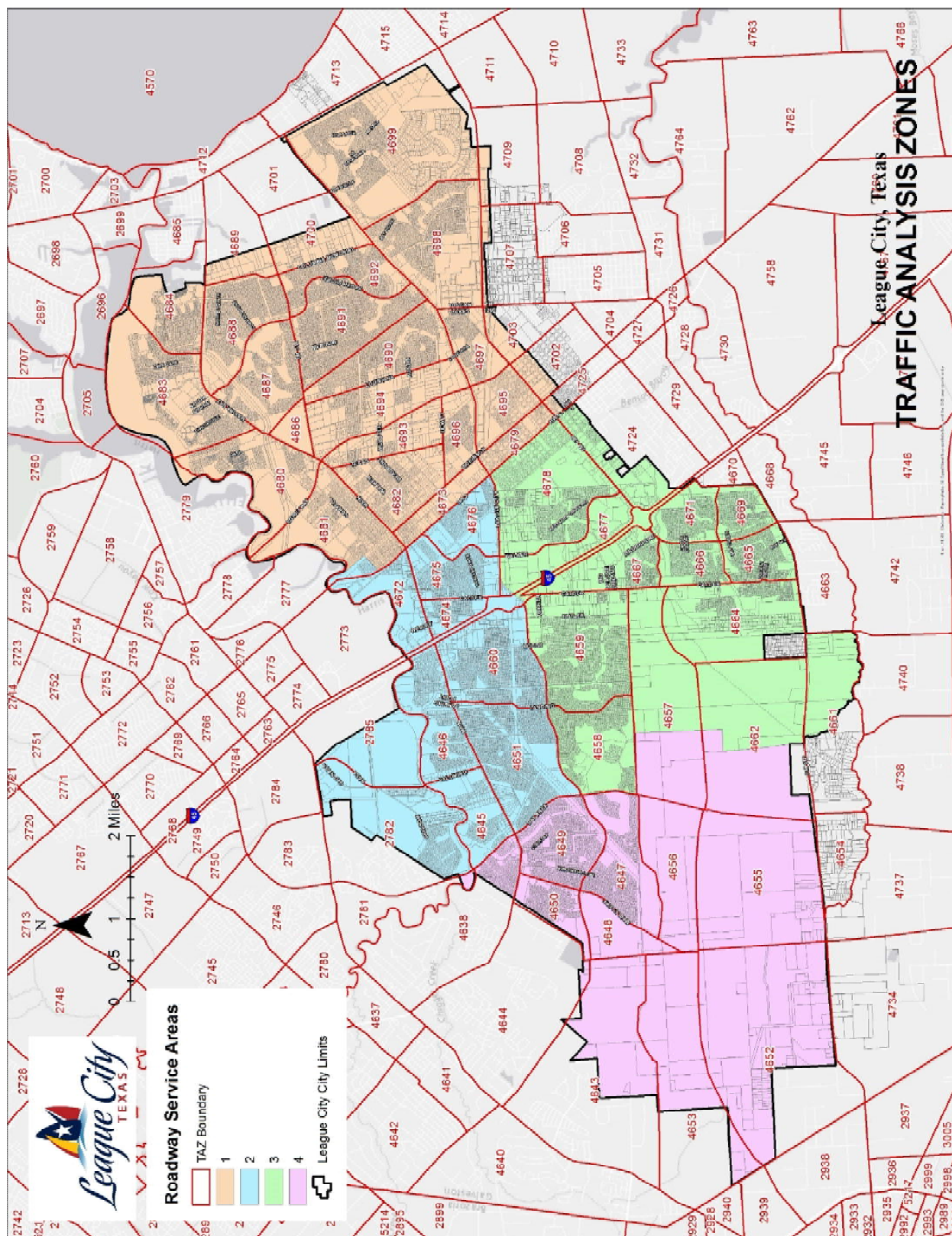
TABLE 13: EMPLOYMENT PROJECTIONS FOR W/WW SERVICE AREA

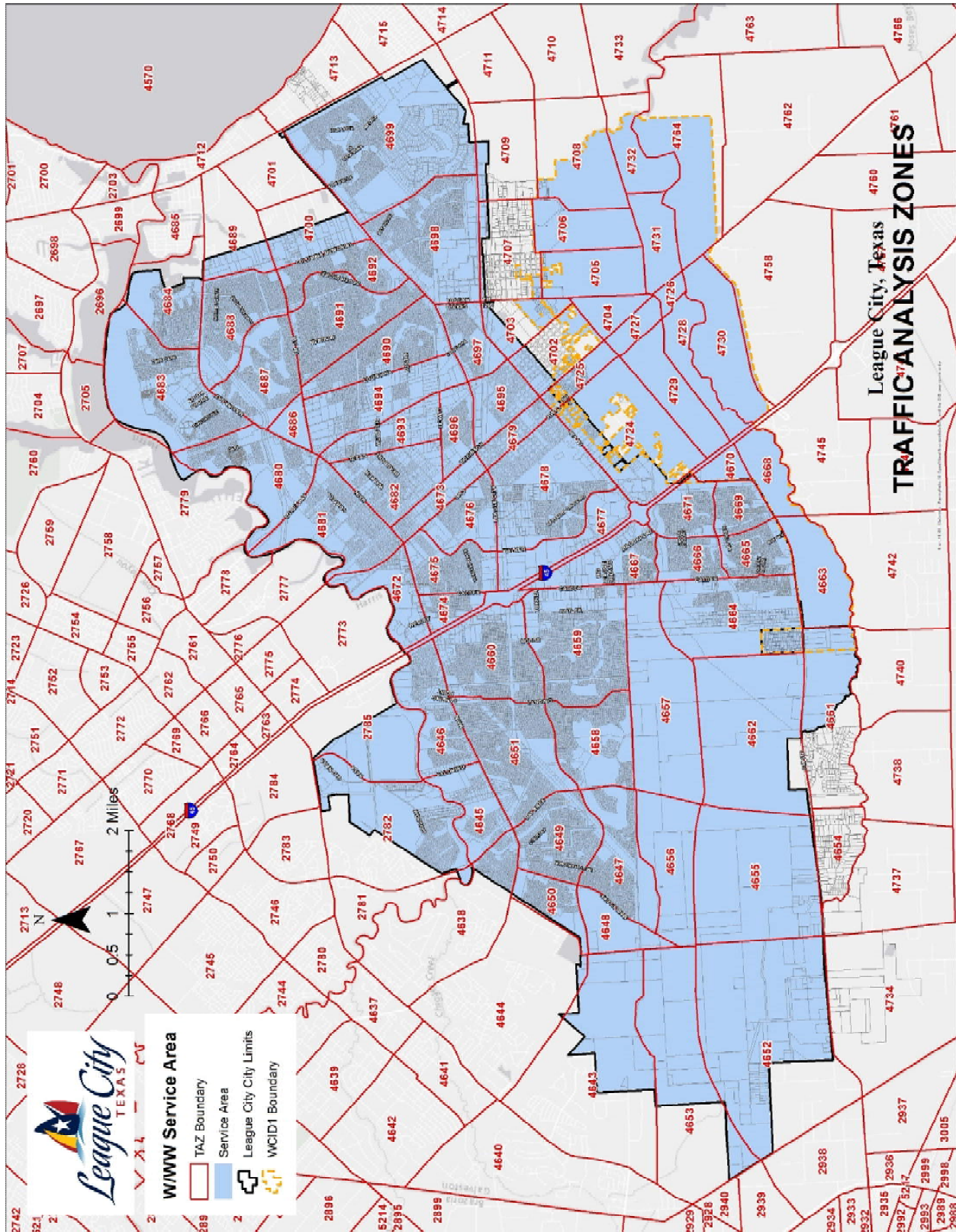
Ten-Year Employment Projection for Water and Wastewater Service Area											
Basic			Service			Retail			Total		
2017	2027	Build-out	2017	2027	Build-out	2017	2027	Build-out	2017	2027	Build-out
5,207	6,873	10,959	17,957	23,498	47,015	11,993	17,703	32,382	35,157	48,074	90,356

6.0 SUMMARY

- From the 2017 Future Land Use Plan, approximately 44 percent of the total developable land within the City limits is developed, with the remaining land available for future development, where infrastructure and topography permit.
- The existing 2017 population for the City limits of League City is approximately 102,635 persons, with an existing estimated employment of around 30,208 jobs.
- An average annual growth rate of 3.4 percent was used to calculate the League City's ten-year growth projections as recommended by the Planning and Zoning Commission in the Future Land Use Plan Update process.
- The ten-year (2027) population growth projection of the Roadway Service Area is 143,386, employment is projected to be a total of 41,702 jobs by 2027 for the Roadway Service Area
- The ten-year (2027) population growth projection of the Water and Wastewater Service Area is 173,503; employment is projected to be a total of 48,074 jobs by 2027 for the Water and Wastewater Service Area. Build-out population is 242,488 and build-out employment is 90,356 for Water and Wastewater Service Area.
- A summary of the 2017 and 2027 demographics broken down by TSZs can be found in the Appendix.

APPENDIX





Roadway Population Demographic Summary (persons)

Service Area 1			
TAZ ID	2017	2027	Build-out
4673	502	1,009	1,129
4679	142	142	194
4680	2,492	2,808	3,289
4681	1,654	1,654	2,914
4682	1,943	1,943	3,050
4683	3,307	3,486	3,770
4684	1,082	1,132	1,213
4687	2,171	2,193	2,494
4688	3,913	4,175	4,456
4689	60	96	1,369
4690	3,742	3,852	4,782
4691	6,684	6,926	7,027
4692	3,197	3,400	3,638
4693	738	988	2,222
4694	4,341	4,789	6,279
4695	324	335	560
4696	1,161	1,363	1,626
4697	496	664	1,480
4698	2,312	3,312	6,360
4699	3,343	5,833	8,331
4700	719	1,069	1,469
4702	10	41	427
4703	10	28	410
4725	0	0	88
Total	44,343	51,238	68,577

Service Area 2			
TAZ ID	2017	2027	Build-out
2782	1,368	1,464	3,246
2785	10	65	796
4645	1,276	1,598	1,598
4646	2,477	2,942	3,411
4651	7,147	7,608	7,631
4660	6,587	6,980	7,405
4672	1,393	1,580	1,777
4674	974	974	1,065
4675	1,750	1,750	2,129
4676	2,336	2,633	3,155
4681	40	40	90
Total	25,358	27,634	32,303

Service Area 3			
TAZ ID	2017	2027	Build-out
4657	0	3,382	3,382
4658	2,599	3,547	3,547
4659	5,772	6,866	6,866
4661	10	490	490
4662	0	4,200	4,200
4664	1,775	4,756	4,756
4665	3,978	4,011	4,599
4666	770	1,357	1,357
4667	576	1,881	2,331
4669	2,153	2,247	2,395
4671	1,573	1,648	2,256
4677	32	248	248
4678	2,981	3,310	4,987
4724	111	431	1,423
Total	22,330	38,374	42,837

Service Area 4			
TAZ ID	2017	2027	Build-out
4638	932	1,053	1,169
4643	0	116	7,776
4647	3,482	3,999	4,616
4648	0	2,320	2,830
4649	4,559	4,648	4,729
4650	1,575	2,410	2,410
4652	56	383	8,680
4653	0	402	6,022
4655	0	1,269	6,381
4656	0	2,200	2,727
4657	0	3,800	7,010
4662	0	3,540	8,760
Total	10,604	26,140	63,110

Roadway Employment Demographic Summary (employees)

Service Area 1								
TAZ ID	2017				2027			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total
2779	37	5,093	919	6,049	37	5,093	919	6,049
4673	87	144	442	673	112	186	571	869
4679	0	2	93	95	0	3	157	160
4680	6	102	330	438	9	150	487	646
4681	5	653	407	1,065	12	1,574	981	2,567
4682	10	503	249	762	12	608	301	921
4683	30	1,868	977	2,875	31	1,920	1,004	2,955
4684	17	152	74	243	21	191	93	305
4686	0	580	0	580	0	611	0	611
4687	0	139	348	487	0	140	350	490
4688	19	639	159	817	21	702	175	898
4689	582	266	787	1,635	635	290	859	1,784
4690	88	26	65	179	100	30	74	204
4691	0	29	128	157	0	58	256	314
4692	0	182	338	520	0	182	338	520
4693	135	27	66	228	167	33	82	282
4694	235	221	97	553	368	346	152	866
4695	0	1	14	15	0	57	799	856
4696	0	0	67	67	0	0	73	73
4697	0	0	17	17	0	0	60	60
4698	0	16	172	188	0	45	485	530
4699	0	9	47	56	0	20	105	125
4700	7	289	103	399	11	434	155	600
4702	151	3	27	181	181	4	32	217
4703	86	11	7	104	88	11	7	106
4707	0	84	13	97	0	103	16	119
4709	0	9	56	65	0	10	63	73
4725	0	87	28	115	0	96	31	127
Total	1,495	11,135	6,030	18,660	1,805	12,897	8,625	23,327

Service Area 2								
TAZ ID	2017				2027			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total
2782	13	31	289	333	13	31	289	333
2785	0	6	24	30	0	19	78	97
4645	0	472	14	486	0	488	14	502
4646	15	104	323	442	15	106	330	451
4651	0	244	141	385	0	259	181	440
4660	46	607	747	1,400	48	617	793	1,458
4672	81	146	520	747	83	150	534	767
4674	0	51	151	202	0	52	153	205
4675	251	703	378	1,332	264	719	417	1,400
4676	170	21	41	232	172	21	41	234
Total	576	2,385	2,628	5,589	595	2,462	2,830	5,887

Roadway Employment Demographic Summary (employees)

Service Area 3								
TAZ ID	2017				2027			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total
4657	63	1	2	66	179	277	103	559
4658	6	87	3	96	6	87	3	96
4659	162	180	73	415	230	255	104	589
4661	74	0	0	74	373	0	0	373
4662	0	0	0	0	0	298	616	914
4664	0	15	78	93	0	40	208	248
4665	0	34	57	91	0	42	70	112
4666	146	0	35	181	223	0	53	276
4667	674	162	302	1,138	730	345	783	1,858
4669	0	60	59	119	0	69	68	137
4671	71	151	86	308	90	192	109	391
4677	127	468	132	727	153	2,063	359	2,575
4678	293	202	158	653	366	252	197	815
4724	420	93	101	614	559	124	134	817
Total	2,036	1,453	1,086	4,575	2,909	4,044	2,807	9,760

Service Area 4								
TAZ ID	2017				2027			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total
2781	0	145	48	193	0	145	48	193
4638	0	20	80	100	0	20	80	100
4643	15	82	84	181	15	82	84	181
4644	56	161	428	645	56	161	428	645
4647	0	0	0	0	0	0	0	0
4648	0	0	0	0	0	0	0	0
4649	0	130	47	177	0	131	47	178
4650	0	0	0	0	0	0	209	209
4652	0	30	25	55	0	30	25	55
4653	0	0	0	0	0	0	0	0
4655	0	0	0	0	0	0	0	0
4656	0	0	0	0	0	0	0	0
4657	31	1	1	33	88	2	391	481
4662	0	0	0	0	0	457	229	686
Total	102	569	713	1,384	159	1,028	1,541	2,728

Water/Wastewater Population Demographic Summary (persons)

TAZ ID	2017	2027	Buildout
2782	1,368	1,464	3,246
2785	10	65	796
4638	932	1,053	1,169
4643	0	116	7,776
4645	1,276	1,598	1,598
4646	2,477	2,942	3,411
4647	3,482	3,999	4,616
4648	0	2,320	2,830
4649	4,559	4,648	4,729
4650	1,575	2,410	2,410
4651	7,147	7,608	7,631
4652	56	383	8,680
4653	0	402	6,022
4655	0	1,269	6,381
4656	0	2,200	2,727
4657	0	7,182	10,392
4658	2,599	3,547	3,547
4659	5,772	6,866	6,866
4660	6,587	6,980	7,405
4661	10	490	490
4662	0	7,740	12,960
4663	1,158	1,438	1,956
4664	2,105	5,086	5,086
4665	3,978	4,011	4,599
4666	770	1,357	1,357
4667	576	1,881	2,331
4668	1,026	1,026	1,049
4669	2,153	2,247	2,395
4670	552	690	1,015
4671	1,573	1,648	2,256
4672	1,393	1,580	1,777
4673	502	1,009	1,129
4674	974	974	1,065
4675	1,750	1,750	2,129
4676	2,336	2,633	3,155
4677	32	248	248
4678	2,981	3,310	4,987

TAZ ID	2017	2027	Buildout
4679	142	142	194
4680	2,492	2,808	3,289
4681	1,694	1,694	3,004
4682	1,943	1,943	3,050
4683	3,307	3,486	3,770
4684	1,082	1,132	1,213
4687	2,171	2,193	2,494
4688	3,913	4,175	4,456
4689	60	96	1,369
4690	3,742	3,852	4,782
4691	6,684	6,926	7,027
4692	3,197	3,400	3,638
4693	738	988	2,222
4694	4,341	4,789	6,279
4695	324	335	560
4696	1,161	1,363	1,626
4697	496	664	1,480
4698	2,312	3,312	6,360
4699	3,343	5,833	8,331
4700	719	1,069	1,469
4702	397	571	1,707
4703	471	769	1,639
4704	1,539	1,624	1,761
4705	3,350	3,367	3,162
4706	2,457	2,588	3,295
4707	49	71	227
4708	3,836	4,817	6,219
4724	2,179	2,644	4,743
4725	791	793	878
4726	197	207	191
4727	842	1,023	1,000
4728	980	1,248	1,451
4729	2,623	2,732	2,695
4730	1,262	1,289	1,667
4731	1,488	2,153	2,597
4732	473	478	468
4764	730	759	1,118
Total	129,234	173,503	243,647

Water/Wastewater Employment Demographic Summary (employees)

TAZ ID	2017				2027				Build-out			
	Basic	Service	Retail	Total	Basic	Service	Retail	Total	Basic	Service	Retail	Total
2779	37	5,093	919	6,049	37	5,093	919	6,049	40	5,363	919	6,322
2781	0	145	48	193	0	145	48	193	0	152	48	200
2782	13	31	289	333	13	31	289	333	13	31	289	333
2785	0	6	24	30	0	19	78	97	0	19	334	353
4638	0	20	80	100	0	20	80	100	0	20	80	100
4643	15	82	84	181	15	82	84	181	15	82	84	181
4644	56	161	428	645	56	161	428	645	56	161	428	645
4645	0	472	14	486	0	488	14	502	0	507	16	523
4646	15	104	323	442	15	106	330	451	39	106	330	475
4647	0	0	0	0	0	0	0	0	0	35	77	112
4648	0	0	0	0	0	0	0	0	361	0	0	361
4649	0	130	47	177	0	131	47	178	0	132	47	179
4650	0	0	0	0	0	0	209	209	0	0	209	209
4651	0	244	141	385	0	259	181	440	102	270	181	553
4652	0	30	25	55	0	30	25	55	7	283	2,790	3,080
4653	0	0	0	0	0	0	0	0	0	0	2,620	2,620
4655	0	0	0	0	0	0	0	0	365	634	479	1,478
4656	0	0	0	0	0	0	0	0	192	247	0	439
4657	94	2	3	99	267	279	494	1,040	273	556	1,172	2,001
4658	6	87	3	96	6	87	3	96	6	87	3	96
4659	162	180	73	415	230	255	104	589	236	276	303	815
4660	46	607	747	1,400	48	617	793	1,458	157	630	793	1,580
4661	148	0	0	148	487	0	0	487	684	1,896	380	2,960
4662	0	0	0	0	0	755	845	1,600	0	2,457	1,924	4,381
4663	9	203	39	251	17	393	76	486	17	494	554	1,065
4664	0	30	156	186	0	57	296	353	0	180	796	976
4665	0	34	57	91	0	42	70	112	47	42	70	159
4666	146	0	35	181	223	0	53	276	223	168	53	444
4667	674	162	302	1,138	730	345	783	1,858	730	781	1,436	2,947
4668	0	148	192	340	0	212	275	487	83	323	443	849
4669	0	60	59	119	0	69	68	137	39	69	68	176
4670	6	59	85	150	9	85	123	217	68	223	123	414
4671	71	151	86	308	90	192	109	391	90	326	109	525
4672	81	146	520	747	83	150	534	767	127	150	534	811
4673	87	144	442	673	112	186	571	869	531	186	571	1,288
4674	0	51	151	202	0	52	153	205	7	52	153	212
4675	251	703	378	1,332	264	719	417	1,400	405	719	417	1,541
4676	170	21	41	232	172	21	41	234	177	21	41	239
4677	127	468	132	727	153	2,063	359	2,575	383	8,363	759	9,505
4678	293	202	158	653	366	252	197	815	535	301	197	1,033
4679	0	2	93	95	0	3	157	160	71	864	1,008	1,943
4680	6	102	330	438	9	150	487	646	19	500	487	1,006
4681	5	653	407	1,065	12	1,574	981	2,567	260	3,778	981	5,019

Water/Wastewater Employment Demographic Summary (employees)

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