UTILITY ALTERNATIVE FINANCING STUDY

CORPUS CHRISTI, TEXAS

prepared by duncan associates

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TABLE OF CONTENTS

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LIST OF TABLES

EXECUTIVE SUMMARY

This report explores alternative methods for securing developer participation in the cost of expanding the wastewater collection system and the storm water drainage system to accommodate the demands of growth. The City has used "acreage fees" since 1981 to reimburse developers for the cost of oversizing wastewater lines beyond what is needed to serve their projects. Developers are reimbursed on a "first-come, first-served" basis as long as funding is available. The fees amount to about $300 per unit, and are proving inadequate to reimburse developers. The City does not have a formal program to fund storm water system improvement needs associated with growth, and relies on water rate revenues to pay for storm water improvements.

City officials commissioned this study due to concern about two major issues related to facility financing: shortfalls in the wastewater trunk fund, which is used to reimburse developers who oversize wastewater trunk lines, lift stations and force mains, and concern about rapidly rising utility rates. The City Council recently approved a 5.75-percent increase in utility rates, after several years of 6-percent increases.

Wastewater Acreage/Pro Rata Fees

A survey of ten other Texas cities of similar size reveals that the City's acreage fee approach is relatively unique. Most of these cities enter into agreements with developers to oversize water and wastewater lines needed to serve their projects, and collect "pro rata" fees from subsequent developers who tie into those lines in order to reimburse the original developer. These pro rata fees are calculated on a case-by-case basis, generally based on front foot costs. None of the other cities use an acreage fee like Corpus Christi's to deal with line oversizing.

Ever since the City determined that developers should be eligible to receive reimbursements for oversizing lift stations and force mains, the acreage fees have proven to be too low to keep the trust funds solvent. Acreage fee rates were not increased at that time to account for the increase in funding needed for additional developer reimbursements.

An impact fee could not be calculated to cover oversizing costs, because the very nature of oversizing costs means that they cannot be calculated apart from a specific development proposal. A wastewater impact fee could, in theory, be calculated to cover major collection system improvements, such as lift stations and force mains, related to growth. However, the City does not currently have the collection system master plans needed to develop such an impact fee, although work on some of the necessary plans is currently underway.

Our recommendation is that the City update the wastewater acreage fee for force mains, trunk mains and lift station reimbursements. Fee revenue should be held and reimbursements made from the trunk main component of the wastewater fund. At some future date, when capital facility plans are available, the City should consider phasing out the acreage fee in favor of a wastewater impact fee.

Collection line oversizing should continue to be funded with an updated pro rata scheme that is more in tune with what other Texas cities do. If there are no outstanding reimbursements, the current flat-rate pro rata fee could be discontinued. When developers are required to oversize collection lines in the future, the City should enter into an agreement that calculates pro rata fees and stipulates that the City will collect such fees from future connections to the oversized line and reimburse the developer who paid for the oversized line.

Wastewater Impact Fee

Corpus Christi has now reached the size where most other Texas cities have adopted water and wastewater impact fees. The existing master plans are insufficient for calculation of an impact fee, although the City is working on sub-basin master plan updates for the wastewater collection system. The master plans would need to distinguish between capacity-expanding improvements related to growth and projects meant to remedy existing deficiencies in order to support development of an impact fee. For projects that remedy existing deficiencies and add additional capacity; the plans should identify what portion of the project is meant to remedy existing deficiencies and what portion adds capacity. Project cost estimates should be provided in the report.

In the short term, we recommend that the City update its acreage fee/pro rata fee system used to reimburse developers for line oversizing. In the long term, however, the City should consider moving to an impact fee system to put more of the growth-related cost of central treatment facility expansion on new development, while also generating funding for City-initiated extension of master plan lines.

Drainage Impact Fee

The City has discussed establishing a drainage acreage fee similar to the one for wastewater. For the reasons discussed above, a drainage acreage fee is not recommended. Instead, a drainage impact fee is a preferable approach to having growth pay for itself while leveling the playing field between developers.

An up-to-date storm water master plan is generally required to provide the basis for a drainage impact fee. The City is currently developing a storm water master plan and is in the process of revising its drainage development standards; however, the drainage consultant's scope of services does not currently include the preparation of cost estimates. In order to implement a drainage impact fee, the City's master plan would need to identify capacity-expanding storm water projects that are growth-related, provide cost estimates for these projects, and include an existing inventory of the current storm water system to determine a current level of service.

The City has used a pro rata agreement on only one occasion (Ditch #31) to reimburse a developer who was required to make off-site drainage improvements. Pro rata fees are recommended to fund oversizing of minor facilities such as collection systems and for major channels during the interim period until the master plan is complete, at which time a storm water impact fee should be developed to fund major growth-related facilities.

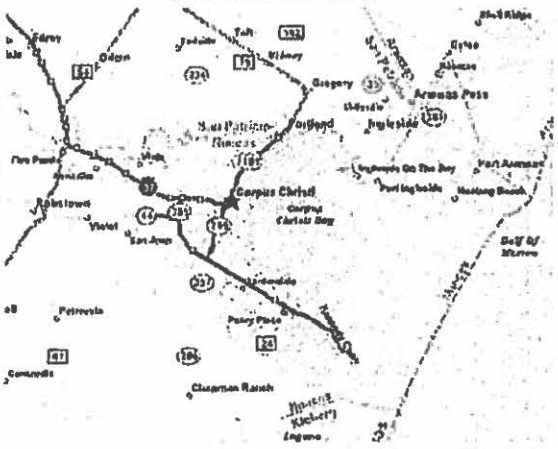
Storm Water Utility Fee

Most other Texas cities the size of Corpus Christi have created storm water utilities and implemented storm water utility fees. The City essentially has a storm water utility fee, but it is buried within the water rate structure, and is not identified separately on the water utility bill. All drainage maintenance and capital improvement costs are currently paid for with water rate revenue. But while drainage needs have a funding source, the lack of a funding source that is earmarked solely for storm water management is likely to result in the under-funding of storm water needs. This is because storm water infrastructure problems are much less visible on a daily basis than problems with the water system, so inevitably the water system needs will be given a higher priority.

The creation of a storm water utility fee would reduce water rates, which would no longer need to fund storm water, but of course it would not reduce overall utility rates paid by consumers. In fact, overall rates would likely increase, if storm water needs are more adequately funded with a separate utility fee. The City has considered and rejected a storm water utility fee several times over the last dozen years. Nevertheless, a storm water utility could help to ensure a functioning storm water management system that prevents future flooding and complies with clean water requirements.

INTRODUCTION

Figure 1
LOCATION MAP



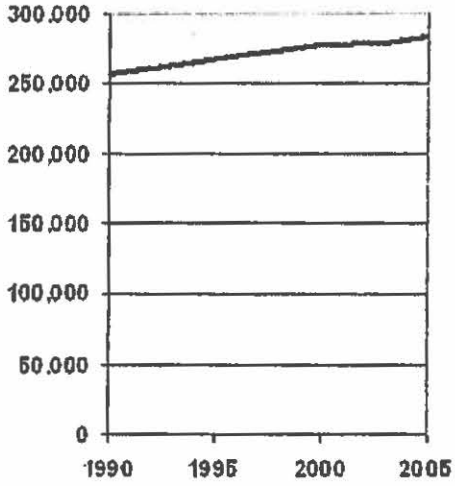
Since 1981, the City of Corpus Christi has imposed "acreage fees" on new development in order to reimburse developers who oversize wastewater lines to their projects. In recent years, the amount of the acreage fees is proving to be inadequate to meet developer reimbursement needs. The City recently placed a temporary freeze on the wastewater acreage fee fund, which expired October 10, 2006.

The City does not have a formal program to fund drainage system improvement needs associated with growth. Water utility rate revenues are used to pay for storm water system maintenance and improvements.

The purpose of this project is to explore alternatives and make recommendations to the City of Corpus Christi relating to developer participation in the cost of major wastewater and storm water facilities. The report addresses four main topics:

- Current facility financing policies for wastewater and storm water, including a brief discussion of facility needs;
- Alternative financing options available to the city, including advantages and disadvantages of particular strategies;
- Facility financing policies of similar Texas cities; and
- Recommendations based on the presented analyses.

Figure 2
POPULATION, 1990-2005



Corpus Christi is located on the southwest coast of Texas adjacent to the Gulf of Mexico (See Figure 1). The city is known for its naval port and as the home of the USS Lexington. It is the largest coastal city in Texas and has the sixth largest port in the nation. Corpus Christi has been experiencing modest growth over the past few years as illustrated in Figure 2. Corpus Christi has grown 2.23% over the period from 2000-2005, with a compound annual growth rate over the period of 0.44%. The City's estimated 2005 population was 283,474 persons, making it the eighth largest city in the state of Texas. Corpus Christi is a home rule city with a mayor, an eight-member city council, and a city manager, who functions as the chief executive officer of the City.

FINANCING ALTERNATIVES

Cities have many different types of facility financing options. This section describes these options and presents advantages and disadvantages of the different strategies. A comparison of the alternative techniques based on a number of pertinent criteria is also presented at the conclusion of the section.

Wastewater Rate Revenues

Utility extensions can be financed from current revenues, which are from utility rate payments made during the current year. Current-year rate revenues are often accumulated in a "carryover" balance from one year to another. The City currently uses rate revenue to retire revenue bonds that are issued to fund many of its capital projects.

The attractive aspect of using current rate revenues to finance utility expansions is that it avoids debt and associated interest costs, and thus represents a pay-as-you-go strategy. However, using current revenues to fund expansions imposes growth costs on current ratepayers for the benefit of future customers. Using impact fee revenues would achieve the same purpose, but would impose growth costs on new customers. On the other hand, the utility depreciates annually and each year some elements of the systems must be replaced or renovated. Use of current revenues for these purposes could be viewed as funding depreciation expenses, where renovation costs are roughly equivalent to annual depreciation. In this manner, current customers will maintain the system that is required for their service needs.

For these reasons, it would be advisable to use current rate revenues primarily to fund renovation and replacement, and to use a combination of bonding and impact fees to finance growth-related infrastructure. In doing so, the costs of growth will be spread over a larger group of benefitting customers, while renovation costs will be assigned to those currently using the system. It should be noted, however, that in some instances it may be desirable to use current revenues for expansion, in order to maintain the utility's financial standing with bonding authorities. Thus, any decision on use of current revenues must balance the desire for equity against the need to maintain a favorable bond rating and associated lower rates.

Storm Water Utility Fees

Drainage is generally the neglected step-child of municipal infrastructure. This is because it typically does not have a dedicated funding source, and problems associated with it are invisible except during exceptional storm events.

Increasingly, cities in Texas and elsewhere are financing drainage maintenance and expansion costs with storm water utility fees instead of general funds. Storm water utility fees can be used for operating expenses, maintenance and growth-related capital improvements. Many storm water systems are neglected and have existing deficiencies, making storm water utility fees a good funding alternative to impact fees, which cannot be used to fund existing deficiencies. A storm water utility is essentially an assessment district that generates revenue for storm water services that are provided in a storm water service area. The City must establish a boundary known as a service area where storm water facilities are provided to the community in developing a storm water utility fee. Storm water utility fees are equitable because those who do not benefit from storm water service will not pay for utility improvements.

The State of Texas authorized municipalities to establish storm water utilities through the Municipal Drainage Utility Systems Act, which was enacted in 1987. A public hearing is required before a city passes a storm water ordinance and before a fee schedule is set. Drainage revenues must be located in a segregated account that is transparent to the public (Chapter 402, Texas Statutes). Municipalities may charge a storm water utility fee on any basis besides the value of the property; as long as the fee is directly related to the amount of drainage from the property. Cities have set up fees based on parcel size, land use, number of water meters, and impervious surface area (See Appendix). Impervious surface area is a common and particularly equitable basis of storm water utility fees, since it is directly related to runoff volumes, chronic flood control problems and pollutant loadings in storm water.[1]

Revenue and General Obligation Bonds

Water and wastewater utilities are generally structured as enterprise funds intended to be self-supporting. Most cities finance utility expansions with revenue bonds that are retired solely through rate revenues of active customers over the life of the bonds. The use of revenue bonds generally ensures that only the beneficiaries of utility service (customers) pay for improvements. Moreover, payments are made by customers in amounts that are roughly proportional to the cost each imposes on the system.

General obligation (GO) bonds are also sometimes used to fund utility improvements. GO bonds are tax-backed bonds. Cities may or may not transfer revenues from utility funds to retire utility-related general obligation bonds, but ultimately property owners assume the risk and often the cost of such bonds. If general obligation bonds are retired from property tax revenues, costs to individual property owners will be proportional to property values rather than utility use. Moreover, property owners who do not benefit from service will pay for utility improvements through property taxes.

Revenue bonds are an appropriate mechanism for funding enterprise fund facilities, such as utility expansions. Moreover, they recover the cost of expansion over a long period of time and thereby spread costs over current and future customers who benefit from the improvements. The use of general obligation bonds should be avoided, particularly if some customers are located outside the city limits.

Developer Contributions

Developer contributions come in many forms, including cash and in-kind contributions of on-site and off-site facilities. Contributions may be *required* as a condition of development approval or *offered* by a developer to secure service prior to the time that the City had originally scheduled service to an area. In some cases, contributions are secured through contracts between a city and one or more developers.

A key consideration when requiring developers to provide land, improvements or monetary payments toward infrastructure needed to serve their projects is that there must be "rough proportionality" between the impacts of the development and the required exaction. The 1994 decision of the U.S. Supreme Court in *Dolan v. City of Tigard*, held that Tigard, Oregon's requirement that Florence Dolan dedicate land to the city for use as a floodway, a greenway and a bike path in return for permission to expand her hardware store amounted to an unconstitutional taking of her land. The Court suggested that the calculation of proportionality should be based on an "individualized determination." Following the Supreme Court's guidance, lower courts are reviewing local government exactions more closely to ensure

[1] http://www.florida-stormwater.org/manual/chapter1/1-6.html

that they are not out of proportion with the actual impact of a development project on the need for capital facilities.

One type of developer contribution comes in the form of "oversized" construction requirements and "subsequent user" fees. Under the "oversize and payback" approach, developers will oversize (build or fund larger facilities than needed to serve their project) a utility line to meet city specifications, and then be reimbursed by the city from subsequent user fees paid by later developments that tie-in to the oversized line.

Under the oversize and payback approach, all subsequent users pay to the city a pro-rata share of the cost of the line. These fees are often referred to as "pro rata" fees. Pro rata fees are based on the amount of line needed to connect the individual property to the larger water or wastewater system. Fees are generally estimated by multiplying the average cost per foot of line by the number of front feet on a lot. The city then conveys such fees directly to the original developer who funded the improvements. In doing so, the city in essence serves as a middleman to ensure that the original developer is compensated by other line users. In most cases, there is a cut-off date for subsequent user payments–typically ten years from the date of construction. The approach is attractive to cities because it places the potential risks of premature development on the original developer, while ensuring that risks to the original developer will be minimal if market forces support his or her judgement. Sometimes cities themselves oversize lines and collect subsequent pro rata fees.

Although the City may adopt an impact fee program for major wastewater facilities, it should probably retain its requirement for off-site improvements. The requirements of each development are unique. Thus, the most reasonable means of achieving equity is to require each development to provide its own off-site improvements needed to connect to the utility system, plus a development or impact fee for other major facilities. The continued requirement for off-site contributions will ensure that the most risky elements in service provision (internal lines and connecting mains) are funded by those who will reap the benefits of new development.

Impact Fees

Impact fees are up-front payments for major capital improvements needed to serve new development. Impact fees may take the form of either cash or in-kind (facility) contributions. Texas in 1987 was the first state to pass legislation specifically authorizing the use of impact fees to fund growth-related capital improvements. Under the Texas statute, impact fees are authorized for road, water, wastewater and storm water projects. Impact fees in Texas must be developed in accordance with Chapter 395 of the Texas Local Government Code. The State law lays out very specific requirements for the technical development of these fees as well as the procedures necessary for enactment of such fee programs. The Texas statute defines impact fees as a charge imposed against new development in order to generate revenue for funding or recouping the cost of capital improvements or expansion attributable to new development (Chapter 395, Texas Statutes).

The Texas legislature made some significant amendments to Chapter 395 in 2001.[2] The major change was on the issue of revenue credits. Credits against the impact fees for other taxes or fees that would be paid by new development and used for capital improvements of the same facility type as the impact fee are now required. As an alternative to performing a revenue credit calculation, cities can simply

[2] Senate Bill 247 was signed by the governor on May 26, 2001 and became effective on September 1, 2001.

reduce the impact fees by fifty percent. Another change was to increase the time between mandatory updates from three to five years. The requirement that the fees be recalculated after the Capital Improvements Plan is completed based on actual costs and any overcharge refunded if the recalculated fees exceeded the fees being charged by more than ten percent was eliminated. Finally, the number of public hearings required before impact fees could be updated was reduced from two to one (two are still required for initial adoption).

Revised impact fees do not apply to lots platted while the previous fee schedule was in place. Chapter 395 states that the impact fee schedule that is in effect at the time a lot is platted is the one that applies to the property, regardless of when development occurs. This occurs through a process called "assessment." Assessment must occur at the time of plat recording, or, for property already platted or not required to be platted, at the time of development approval or building permit, whichever occurs first. The statute makes clear that no action by the local government is required for assessment to occur. Essentially, impact fee assessment locks in the fee schedule in place at the time assessment occurs. Any subsequent revision to the impact fee schedules does not affect the impact fees owed for the development.

The City's current wastewater acreage fee is not considered an impact fee under the State impact fee statute. Given this fact, any subdivision platted while the acreage fee was in effect would not be exempt from any subsequent impact fee of the same type. However, even if it would not be legally required, the City might want to credit the payment of the acreage fee against the impact fee owed in order to avoid double-charging.

Impact fees offer a means to comprehensively address the issue of developer contributions and ensure fair assessments among all projects. Texas impact fees must be based on a CIP (capital improvements plan), which should not be confused with the City's current CIP (capital improvements program). Normally, the cost of such a study is more than justified by potential revenues to be gained. Impact fee studies develop standard fees for different classes of properties based on each class's contribution to additional facility needs. The development of a fee program (which must take into account and provide credits for all other contributions) will promote equity among developments and alleviate developer and builder concerns about ad hoc contribution requirements. Fees can be developed for different geographical areas, provided data exists to do so and provided there is substantial cost variation to justify different fees. Also, impact fees can be imposed in a manner that supports other community objectives regarding infill, efficient use of existing facilities and environmental sustainability.

Evaluation of Alternative Financing Techniques

Alternative financing strategies can be evaluated according to a number of criteria. Although all of the criteria are examined as if they were of equal importance, in reality some are more critical than others. For example, it is essential that financing strategies adopted by the City have a sound legal basis. Table 1 evaluates each financing technique according to the following criteria:

Cost of Service. The first test applied to all of the financing techniques is whether it will ensure that those who impose costs on utilities will pay their proportionate share of those costs.

Legal Basis. A critical criterion is whether a particular financing technique has a sound legal basis.

Generational Equity. Communities choose to require developer contributions because the public perception is that existing utility customers–many of whom have been customers for years–are unfairly

paying the costs of new growth. In such an environment, existing customers want new customers to "buy-in" to the system.

Geographic Equity. Different geographic areas may have varying service costs due to differences in topography, soils, distance to central facility and other features. This is especially true for wastewater service that operates by gravity. Older established areas may have lower costs than newer areas without facilities. Although many communities choose to look at utility costs on a system-wide basis, it may be desirable to establish area-specific rates and fees if cost differences are substantial.

Growth-Related Risk. Financing facility expansions involves some risk, particularly in regard to lines, storage and pumping facilities (treatment capacity is usually not reserved for growth in a particular area, but may be used by growth anywhere). This evaluation criterion examines the extent to which private entities assume the risk of growth through private financing of expanded facilities.

Rate Effects. Ultimately, most utility finance alternatives are developed in order to keep monthly rates for existing customers lower than what they would be otherwise and to allow for financing of water and wastewater improvements mandated by federal and state regulations. Consequently, each financing strategy was examined for its potential impact on monthly utility rates.

Housing Affordability. There are two aspects to housing affordability: purchase price and operating costs (monthly payments). Different communities may emphasize one aspect or the other. Generally, financing techniques that work to decrease purchase price tend to increase operating costs and vice versa.

Technical Requirements. Each of the alternative financing strategies requires some technical expertise and study products. They may require, for example, that the city's billing system accommodate necessary adjustments or that accounting changes be made. Some require technical coordination with other governmental or private entities. The "Technical Requirements" criterion evaluates the general magnitude of effort needed to initially establish each financing approach.

Administrative Ease. Administrative ease refers to the ongoing administrative effort and cost involved in the application of each financing strategy. Some financing strategies require little or no change in current City practices, while others may require significant changes in organization and administration.

Ratepayer Acceptability. There are many elements of a community with various points of view. This criterion reflects how the majority of existing ratepayers are expected to accept each financing strategy. There are other members of the community, such as developers and new homebuyers, who may not share these opinions.

Table 1
EVALUATION OF UTILITY FINANCING TECHNIQUES

Techniques	Cost of Service	Legal Basis	Generational Equity	Geographic Equity	Growth-Related Risk	Rate Effects	Housing Affordability	Technical Requirements	Administrative Ease	Ratepayer Acceptability
Current Rate Revenue	o	●	-	-	-	-	●	●	●	-
Storm Water Utility Fees*	o	●	-	-	-	-	●	●	●	-
Revenue and GO Bonds	o	●	o	-	-	o	●	●	●	o
Developer Contributions	●	●	●	●	●	●	-	-	-	●
Impact Fees	●	●	●	●	●	●	-	-	o	●

● Positive Effect o Mixed Effect – Negative Effect
*Assuming that storm water utility fees are based on impervious area calculations

TEXAS UTILITY FEE SURVEY

This section of the study compares facility financing schemes and monthly fee rates for water, wastewater and storm water utilities in ten Texas cities: Arlington, Plano, Garland, Lubbock, Laredo, Irving, Austin, Fort Worth, El Paso and Amarillo. These cities were chosen because they were closest in population to Corpus Christi. The survey presents the cities' various funding strategies and compares monthly rates for storm water, wastewater and water service. Full rate schedules, additional information on alternative financing strategies, and data sources are included in the appendix of this report.

Major Funding Sources for Capital Improvements

This subsection describes the various strategies that the cities employ to fund infrastructure improvements. Most of the cities rely primarily on water, wastewater and storm water rates to fund major capital facilities expansion for these utilities, as illustrated in Table 2. Many cities also require developers to construct improvements that directly serve the development and have implemented pro rata fees to reimburse developers for construction of oversized lines that serve future development.

Table 2
COMPARISON OF MAJOR CAPITAL FUNDING SOURCES

City	2005 Population	Growth Rate*	Wastewater	Water	Storm Water
Austin	690,252	0.79%	Rates/Impact Fee	Rates/Impact Fee	Storm Water Utility/Fee-in-Lieu
Fort Worth	624,067	2.78%	Rates/Impact Fee	Rates/Impact Fee	Gen. Fund/Storm Water Utility
El Paso	598,590	1.16%	Rates/Impact Fee	Rates/Impact Fee	General Fund (Property Tax)
Arlington	362,805	1.62%	Rates/Impact Fee	Rates/Impact Fee	Storm Water Utility Fee
Corpus Christi	**283,474**	**0.44%**	**Utility Rates**	**Utility Rates**	**Water Utility Rates**
Plano	250,096	2.22%	Rates/Impact Fee	Rates/Impact Fee	Storm Water Utility Fee
Garland	216,346	0.03%	Utility Rates	Rates/Impact Fee	Gen. Fund/Storm Water Utility**
Lubbock	209,737	0.98%	Utility Rates	Utility Rates	Storm Water Utility Fee
Laredo	208,754	3.11%	Utility Rates	Utility Rates	Storm Water Utility Fee
Irving	193,649	0.17%	Utility Rates	Utility Rates	Gen. Fund /Storm Water Utility
Amarillo	183,021	1.02%	Utility Rates	Utility Rates	General Fund/Sales Tax

* Compounded average annual population growth rate, 2000-2005
** Storm water fees not used for capital improvements
Source: Duncan Associates survey, August 2006; 2005 population estimate from US Census as of July 1.

Impact fees are used in six out of the ten cities surveyed to offset the capital costs associated with water and wastewater facilities improvements and expansion related to growth. Corpus Christi appears to be at the size where cities begin charging water and wastewater impact fees. All the cities with populations of 250,000 or more except for Corpus Christi have enacted utility impact fees; while all of the smaller cities have not, with the exception of Garland's water impact fee.

Texas cities as of late are relying more heavily on storm water utility fees to fund major drainage improvements. Eight of the ten cities surveyed collect utility fees for storm water, although one of these, Garland, does not use the utility fee revenue to fund capital improvements. Two cities, Irving and Fort Worth, which have traditionally funded drainage improvements through general fund revenue, indicated that storm water utility rates, which were raised recently, would increasingly fund the costs of capital improvements. Overall, the use of storm water rate revenue is mixed; some cities utilize a portion of rate

revenue to pay off major capital improvements that are initially bonded, others utilize rate revenue solely for maintenance and fund capital projects through the general fund. Many storm water capital improvements are also exacted from developers under pro rata systems. The City of Amarillo requires developers to construct all on-site storm water facilities. If forced to oversize facilities; developers are reimbursed through pro rata fees collected on future development. The cities of Austin and El Paso exact small facilities from developers and fund other improvements through other funding sources (See Table 13).

None of the cities surveyed has a storm water impact fee. One city, Austin, has a fee-in-lieu program for large-scale drainage improvements. Within designated watersheds, a developer can opt to pay a fee on the basis of development acreage instead of providing on-site drainage controls, after receiving approval from the City. While rare, storm water impact fees are not unheard of in Texas. The cities of Watauga and New Braunfels recently enacted storm water impact fees.

Utility Rate Comparison of Texas Cities

Texas cities use various types of rate schedules in charging customers for utility service. A table comparing rate schedules for the cities surveyed is included in the appendix to this report. The most common type of charge combines a flat fee for monthly service with a consumption charge or charge per unit (gallon/cubic foot) of water used or wastewater produced. Base charges vary; some communities charge a flat fee for residential and commercial service, others charge a base fee contingent upon the size of water meter. Some communities charge different rates for commercial and residential use, and charge different rates for connections within the city limits as opposed to connections outside city limits. Many cities also have inverted rates that increase the more water consumed or wastewater produced. Most storm water charges are allotted based on the amount of impervious area or square footage of development, however, a few cities base storm water rates on the number of water meters required for a particular development.

This subsection of the report compares average water, wastewater and storm water charges for residential and commercial development for each city. Calculations for residential and commercial water and wastewater rates are made assuming monthly usage of 5,000 gallons per month for both water and wastewater. For storm water fees; residential properties are assumed to be 2,000 square feet and commercial properties are assumed to be 100,000 square feet (of impervious area).

Table 3 displays a comparison of residential utility rates. Corpus Christi has the third highest residential wastewater rate at the 5,000 gallon level of all the cities included in the survey. It might be tempting to infer that these higher rates are at least in part due to the fact that Corpus Christi does not impose a wastewater impact fee. However, the City does charge an acreage fee, which at roughly $300 per unit is close to the average impact fee charged by the communities surveyed. It is likely that other factors, such as economies of scale, have more to do with wastewater rates than whether the City charges an impact fee.

One might also expect Corpus Christi to have a higher water rate compared to cities with storm water fees and impact fees given that the City funds drainage operations and improvements from its water utility rates and also doesn't have water impact fees. However, Corpus Christi' residential water rate is about average of the cities surveyed, and is in fact slightly lower than the average rate for those cities with water impact fees. Again, it is likely that other factors have more of an effect on water rates than whether a city levies an impact fee or a storm water utility fee.

Table 3
RESIDENTIAL UTILITY RATE COMPARISON

City	2005 Population	Wastewater Rate	Water Rate	Storm Water Rate	Wastewater Impact Fee
Austin	690,252	$34.36	$15.80	$7.15	$1,200
Fort Worth	624,067	$21.27	$17.37	$4.35	$185
El Paso	598,590	$12.15	$7.45	n/a	$338
Arlington	362,805	$17.90	$15.20	$1.30	$380
Corpus Christi	283,474	$27.26	$14.62	n/a	n/a
Plano	250,096	$24.11	$13.38	$2.25	$329
Garland	216,346	$20.70	$20.30	$1.20	n/a
Lubbock	209,737	$12.29	$19.16	$4.99	n/a
Laredo	208,754	$9.53	$10.87	$1.25	n/a
Irving	193,649	$11.54	$12.46	$2.16	n/a
Amarillo	183,021	$32.22	$13.70	n/a	n/a
Average	347,345	$20.30	$14.57	$3.08	$326

Notes: All rates and impact fees reflect rates within the City and not in the ETJ.; wastewater and water rates are calculated assuming a 5/8"x3/4" water meter and the use of 5,000 gallons (or the equivalent 668 cubic feet) per month. Storm water fees were calculated based on the assumed average housing unit size of 2,000 square feet. Wastewater impact fees are based on 5/8"x3/4" meter.
Source: Duncan Associates survey, August 2006 (see Appendix).

Table 4 illustrates the comparison between commercial utility rates. The commercial wastewater utility rate for Corpus Christi at $31.90 is well under the average of the cities surveyed, which is $48.61. However, Corpus Christi has the second highest wastewater rate of the six cities not using wastewater impact fees (Garland only has water fees). Corpus Christi' water utility rate for commercial properties, however, was the second highest of the entire sample and at $162.76 is over double the average of those communities that have commercial storm water rates and those that use water impact fees, which were $77.66 and $78.27, respectively.

Table 4
COMMERCIAL UTILITY RATE COMPARISON

City	Population	Wastewater Rate	Water Rate	Storm Water Utility Fee	Wastewater Impact Fee
Austin	690,252	$33.31	$41.55	$406.32	$19,200
Fort Worth	624,067	$23.00	$60.16	$111.53	$3,219
El Paso	598,590	$126.72	$30.74	n/a	$5,405
Arlington	362,805	$64.67	$117.30	$19.50	$10,720
Corpus Christi	**283,474**	**$31.90**	**$162.76**	**n/a**	**n/a**
Plano	250,096	$113.14	$181.59	$56.00	$3,519
Garland	216,346	$21.50	$38.25	$60.00	n/a
Lubbock	209,737	$70.17	$146.21	$33.12	n/a
Laredo	208,754	$14.25	$24.78	$70.00	n/a
Irving	193,649	$22.75	$12.46	$73.75	n/a
Amarillo	183,021	$13.27	$79.48	n/a	n/a
Average	347,345	$48.61	$81.30	$103.78	$5,853

Notes: All rates and impact fees reflect rates within the city and not in the ETJ; wastewater and water rates assume a 3" water meter and the use of 5,000 gallons (or the equivalent 668 cubic feet) per month; storm water fees based on the assumed average size for a retail building of 100,000 square feet; wastewater impact fees based on 3" meter.
Source: Duncan Associates survey, August 2006 (see Appendix).

While rates charged by different cities may not correlate well with whether the city charges an impact fee, it stands to reason that, all other things being equal, requiring new customers to pay more of the cost of growth-related improvements would lead to lower rates for existing customers.

WASTEWATER

Current Facility Financing Strategies

The City currently funds major wastewater treatment plant expansion and line replacement primarily through the use of revenue bonds, which are paid using wastewater rate revenue. The expansion of the collection system in response to the needs of development, on the other hand, is primarily funded by developers. The City charges acreage fees on new subdivisions, and uses the money to reimburse developers who construct oversized wastewater trunk mains, force mains and lift stations. The City also charges pro rata fees to developers who connect onto smaller oversized collection lines (up to 15 inches in diameter), and uses the revenue to reimburse developers who oversize such lines. Finally, the City charges a surcharge on each new connection and divides the money among the trunk line and collection line reimbursement funds.

The acreage fee is used to reimburse developers who oversize wastewater trunk lines beyond the capacity required to serve their subdivision. If the cost to the developer to oversize lines is less than the acreage fees that would otherwise be required, the acreage fees are reduced by the amount of the oversizing cost. To the extent that a developer's oversizing cost exceeds the acreage fee, he is reimbursed using acreage fee revenue paid by other developers. Developers enter into a contract with the City for reimbursement and are refunded on a first-come, first-served basis as long as sufficient funding exists for reimbursement. All acreage fee revenue is placed in the wastewater trunk fund, which is used for large diameter "trunk" line or master plan lift station/force main reimbursements.

The acreage fees themselves were originally calculated in 1981, and it is unclear how they were initially derived. The fees preceded passage of the 1987 Texas Impact Fee Act, which specifically states that acreage fees are not considered impact fees. The acreage fees have been updated periodically based on increases in the Consumer Price Index.

The acreage fee is currently $1,331 per acre or $332 per lot, whichever is greater, and is collected at time of final plat. The acreage fees differ from impact fees in that they are charged based on a fixed amount per acre or lot, rather than on the amount of development or size of the water meter, characteristics that likely have a stronger relationship to demand for wastewater facilities. The national average wastewater impact fee is about $2,500 per single-family connection. Even if only half of this is for lines, the City's acreage fee is only about one-fourth of the national average. However, the City's acreage fee is about the same as the average wastewater impact fee collected by Texas cities included in the survey.

In 2003, the types of improvements that could be reimbursed from the wastewater trunk fund were expanded to include reimbursement for lift stations and force mains. However, the fee was not increased at this time to reflect the addition of the trunk main and lift station facilities. By April 2005, reimbursement requests for the wastewater trunk fund had far exceeded the fund balance, and the Council borrowed $3.5 million to repay certain developers and temporarily prohibited any new applications for reimbursements from the trunk fund. Some developers argued that the acreage fee should be abolished if the City was unwilling to make reimbursements. The ban on new reimbursement applications was lifted on October 10, 2006.

The City charges what it calls "pro rata" fees to developers who connect to collection lines of 15 inches diameter or smaller. The pro rata fees are currently assessed at a flat rate of $9.91 per linear foot of frontage on the collection line. All pro rata fee revenue is held in the collection line trust fund, which

is used for developer reimbursement and for other collection line projects. Developers are provided reimbursements from the collection line account if they oversize collection lines. Developers enter into a contract with the City for reimbursement and are refunded on a first-come, first-served basis as long as sufficient funding exists for reimbursement.

The City's approach to pro rata fees is different in two fundamental respects from that used by most Texas cities that charge a fee with a similar name and purpose. First, most cities calculate pro rata fees on a case-by-case basis, based on the actual cost of an oversizing project and the capacity available for other developers. Second, pro rata fees paid are transmitted directly to the developer who oversized the line, rather than being placed in a city-wide reimbursement fund.

Finally, the City charges a $234 surcharge on every wastewater connection, regardless of the size of the project or line. The surcharge revenue is split so that 75 percent is deposited in the trunk line component of the wastewater fund, and 25 percent is placed in the collection line component of the wastewater fund. The surcharge has been in place since the mid 1980s, but the purpose or basis of the charge is unclear.

The shortages experienced by the wastewater fund are primarily the result of the acreage fee being insufficient to fund the level of reimbursement required for developer oversizing of lift stations and force mains due to the issues mentioned above.

Wastewater Funding Needs

To put it in context, the amount of money that could be raised by acreage fees is relatively modest compared to overall planned City expenditures on growth-related wastewater improvements. For example, an acreage fee of $2,850 would generate about $1.7 million annually, or $5.4 million over three years. This would almost cover the costs of growth-related collection system improvements programmed in the City's current three-year CIP (see Table 5). Of course, the acreage fee money could not be used for City-initiated projects, and this comparison is only intended to illustrate the magnitude of potential revenue.

Table 5
FUNDED WASTEWATER IMPROVEMENTS

	Treatment Plant	Collection System	Total
Growth*	$28,300,000	$5,540,000	$33,840,000
Non-Growth	$66,206,700	$24,415,000	$90,621,700
Total	$94,506,700	$29,955,000	$124,461,700
Growth*	29.9%	18.5%	27.2%
Non-Growth	70.1%	81.5%	72.8%
Total	100.0%	100.0%	100.0%

Source: City of Corpus Christi, *Proposed FY 2007 Capital Budget and Capital Improvement Planning Guide*, 2006.
*Growth-related improvements were those that were deemed to be capacity-expanding and that were cited to be a result of projected future development

As can be seen from Table 5, the cost of non-growth-related improvements (maintenance, repair and existing deficiencies) dwarfs the cost of growth-related improvements in the City's capital plan. Most

of the approved funding is scheduled for treatment plant work. The vast majority of these projects are to be funded through the use of revenue bonds, which will ultimately be paid off with wastewater rate revenue.

The 2007 CIP also includes a list of long-range unfunded improvement needs, which include an additional $34 million in growth-related line projects and an additional $41 million in growth-related plant projects. All told, the CIP identifies about $108 million in needed growth-related improvements, including about $39 million in growth-related needs in the wastewater collection system and $69 million in growth-related treatment plant improvements, as illustrated in Table 6. Growth- related improvements account for approximately 37% of the total identified improvements.

Table 6
TOTAL IDENTIFIED WASTEWATER IMPROVEMENTS

	Treatment Plant	Collection System	Total
Growth*	$69,300,000	$39,240,000	$108,540,000
Non-Growth	$95,056,700	$91,115,000	$186,171,700
Total	$164,356,700	$130,355,000	$294,711,700
Growth*	42.2%	30.1%	36.8%
Non-Growth	57.8%	69.9%	63.2%
Total	100.0%	100.0%	100.0%

Source: City of Corpus Christi, *Proposed FY 2007 Capital Budget and Capital Improvement Planning Guide*, 2006.
*Growth-related improvements were those that were deemed to be capacity-expanding and that were cited to be a result of projected future development

While the City does plan to spend considerable money on expanding the capacity of the wastewater collection system ($39 million), most of the identified growth-related improvements replace lines that are already over-capacity with larger lines that will also create capacity for future growth.

Feasibility of Alternative Financing Strategies

Neither the City's acreage fees nor the pro rata fees are impact fees. The city's acreage fees are designed to pay the costs of oversizing wastewater trunk lines, force mains and lift stations and are not applicable to City-initiated trunk line improvements or treatment plant projects. Pro rata charges are used to recoup the cost of collection lines constructed by the City and to refund developers for oversizing collection lines.

There are major conceptual differences between these kinds of fees and impact fees. Oversizing costs can only be determined in relation to a concrete development proposal. What is oversizing for one project may be required for another project based on the development density and intensity. Consequently, it is impossible to calculate a fee to cover oversizing costs in advance using an impact fee methodology, because one cannot know in advance the nature and size of future development projects. Instead, impact fees are generally calculated on the basis of development intensity and its contribution to demand for utility service. This approach establishes a more direct linkage than basing fees on the acreage of a development and ignoring the type and intensity of a development.

Impact fees must specify the type or class of improvements that are covered by the impact fee in advance of any specific development proposal. For example, a wastewater impact fee could be calculated to cover the cost of treatment plants, lift stations, force mains over 6 inches in diameter and gravity lines over 15 inches in diameter. In this example, if a developer needed a 12-inch gravity line to serve his development, the City could require the developer to build it at his own expense. However, if the City determined that an 18-inch line is needed in order to also serve other development in the area, the City would need to reimburse the developer for the entire cost of the larger line. The reimbursement could come from impact fees paid by other developers, and could be spread out over a number of years if needed. In sum, the City's wastewater acreage fee could be replaced with an impact fee, but the impact fee would work very differently from the acreage fee.

The City's current wastewater acreage fees are problematic. They are too low to serve their intended purpose, which is to reimburse developers for oversizing wastewater force and trunk mains and lift stations. They cannot be updated based on impact fee principles, since oversizing by definition depends on the facilities needed to serve a specific development proposal. However, it would be possible to update the acreage fees in order to account for the true costs of the facilities in question. This could be done by estimating the annual reimbursement and debt payment demands on the acreage fee fund, and dividing by the average acres of land platted each year.

The primary difference between the City's acreage fees and pro rata fees is that the pro rata fees are charged on the basis of the linear feet of frontage of the subdivision on the oversized line, rather than on the acreage of the subdivision. The City's current pro rata program is devoted to recouping the cost of collection lines smaller than 15 inches in diameter installed by the City and previous developers. Pro rata fees could also be used for other types of lines as well. However, pro rata fees should not be used to cover the cost of improvements that are already covered by the acreage fee, in order to avoid double-charging for the same facilities.

The pro rata fees could be updated using an approach similar to that recommended for the acreage fees, but this does not appear to be necessary at present. Alternatively, the City could modify the pro rata program to make it consistent with how most other cities in Texas structure pro rata fees. This would involve calculating pro rata fees separately for each line oversized by a developer, and remitting pro rata fees paid by subsequent developers who connect to that line directly back to the initial developer.

While there would appear to be advantages to converting the acreage fee to an impact fee, this is not feasible at present. Current collection system master plans are available only for the Allison treatment plant's service area, although master plans for other areas are in process. The master plan identifies existing collection system characteristics, projects future capacity needs based on population and land use forecasts, and includes cost estimates for needed line and lift station improvements. This provides sufficient information for preparation of a wastewater collection system impact fee in this area. However, since master plans have not been completed for the rest of the city, an impact fee for the collection system would currently only be able to focus on this service area. Future master plans would need to distinguish between growth-related improvements and existing deficiencies, and provide cost estimates for the capacity-related projects in order to be sufficient for calculation of a wastewater collection impact fee.

While funding treatment plant expansion costs is not a purpose of the acreage fee and not a major focus of this analysis, it appears that the development of a city-wide wastewater impact fee limited to the costs of treatment plant expansions would be feasible. The existing plants are summarized in Table 7. The City's Capital Improvements Program identifies necessary near-term treatment plant improvements and

provides cost estimates for these improvements. Capacity-related improvements in the 2007 CIP call for expansion of the Greenwood and Allison wastewater treatment plants. The total cost of these projects amounts to approximately $28.3 million. The City currently plans on funding these projects with new debt (commercial paper/revenue bonds) that will be retired with wastewater rate revenue. City staff has also indicated that the service areas of the three other plants (Oso, Laguna Madre and Whitecap) will experience growth in the future, and they anticipate future expansion of these plants.

Table 7
EXISTING WASTEWATER TREATMENT PLANTS

Plant Facility	Permitted Capacity (MGD)	Year to Date Avg. Flows (MGD)	Percent Capacity
Broadway WWTP	10.0	4.1	41.0%
Oso WWTP	16.2	11.5	71.0%
Greenwood WWTP	8.0	6.0	75.0%
Allison WWTP	5.0	3.0	60.0%
Laguna Madre WWTP	3.0	1.7	56.7%
Whitecap WWTP	2.5	1.1	44.0%

Source: City of Corpus Christi Wastewater Department, September 6, 2006.

In sum, current acreage fees are low compared to national average impact fees, are not generating enough revenue to reimburse developers for oversizing costs, and cannot readily be converted to an impact fee. Impact fees may provide a better method for assessing the fiscal impact of new development because the fee structure is more closely linked to the demand development places on the system, but impact fees for wastewater trunk line, lift stations and force main improvements are not feasible at present.

Recommendations

The acreage fees may be problematic, but they are needed in the short-term because there is insufficient information for implementation of an impact fee for trunk line, lift station and force main improvements and because revenue is needed to repay the recent $3.5 million loan taken out for developer reimbursement. The fees should be increased to a level that will cover estimated annual reimbursement requests as well as debt service to repay the loan.

Pro rata fees that are calculated on a case-by-case basis for each oversizing project constructed by a developer would be preferable to the acreage fee approach. However, pro rata fees would not generate revenue to repay the City's loan to the trunk line trust fund.

The City currently uses what it calls "pro rata" fees to reimburse developers for oversizing smaller collection lines, but these fees do not function in the same way as pro rata fees charged by most other Texas cities. Basing the fees on a flat rate per linear foot of frontage may eventually result in similar problems to those being encountered with the acreage fees. If there are no outstanding reimbursements owed, the City might consider ceasing to charge pro rata fees except where developers are tying into lines that were oversized by a previous developer who had entered into an agreement with the City to be reimbursed by subsequent connections onto the oversized line. Such a pro rata system could be expanded to essentially replace the current acreage fee once the acreage fee fund has paid off all debt and reimbursement obligations.

Ultimately the City should consider a wastewater impact fee that covers all major capital elements related to growth (including treatment plants). Developers could still be required to fund off-site improvements needed to connect to the system, and pro rata agreements could be used to reimburse developers when they are required to oversize such lines. All of the other Texas cities of similar size have wastewater impact fees. Implementation of such fees would shift the burden of financing improvements onto new development which necessitates facility expansion, and would reduce the need to increase rates for existing customers to fund such expansion. Based on the current national average impact fees and the average annual number of residential permits issued in recent years, the City could raise $4 million annually based on residential wastewater impact fees alone.[3] All other things equal, this amount of additional funding would allow a 10.4-percent decrease in the City's wastewater rates.

[3]Assuming 1,274 single-family and 415 multi-family units permitted per year (average for 2004 and 2005 from US Census Bureau building permit data for the City), the national average wastewater impact fee of $2,590 per single-family unit from Duncan Associates survey, a multi-family rate of $1,839 based on the ratio of average household size of multi-family to single-family units, and 2005 wastewater rate revenue of $39.1 million.

STORM WATER

Current Facility Financing Strategies

The City currently funds major storm water facility expansion primarily through the use of revenue bonds that are retired using water utility rate revenue. The City has made one agreement with a developer who had to make a major off-site ditch improvement (Ditch 31) to collect pro rata fees from subsequent developers who connected to the ditch and turn the fees collected over to the initial developer. However, there has been little subsequent development in the area and therefore little or no reimbursement.

There has been some discussion among City officials about the possibility of establishing an acreage fee for storm water comparable to the one for wastewater, or, alternatively, establishing a drainage impact fee. As noted under the wastewater section, however, there is a major conceptual problem with calculating a pre-determined fee schedule to cover oversizing costs.

A drainage impact fee, if feasible to develop, would place more of the costs of growth-related drainage improvements on new development, and reduce pressure for water rate increases to fund such improvements. A credit system could also be established to reduce fees for developers who construct major master planned storm water facilities. The use of pro rata fees is another option that allows subsequent development to reimburse an initial developer for oversizing costs.

An alternative that can be used either in place of or in conjunction with a drainage impact fee is a storm water utility fee. The City has made several efforts to establish a storm water utility, beginning in 1993, when the City Council adopted a resolution to take steps to create a storm water utility. Corpus Christi in 1994 went as far as developing a database model for a potential storm water utility, and in 1995 developed a fee which amounted to $0.16 per month per 100 square feet of improved surface, drafted an ordinance, and took steps to notify the public of the changes. Towards the end of 1995, after numerous public meetings, the City Council appointed a Drainage Ad-Hoc Committee to determine a level of service standard and related rate structure to present to Council. In July of 1996, the Drainage Ad-Hoc Committee recommended that the Council not establish a storm water utility, based primarily on the inability of the public to see the benefits of a storm water utility.

In 1997 the City Council established a Storm Water Management Advisory Committee (SWMAC) as a result of regulation review associated with the City's Environmental Protection Agency permit compliance schedule to review technical issues. The committee originally was to be abolished in 1999. In 1999, the City Council identified several priority issues, which included establishing a storm water utility. Staff prepared an action plan that proposed the initiation of charges by April 2000. In June 1999, the City Council amended the ordinance to continue the existence of the SWMAC and included the additional duty to advise the Mayor and Council on the establishment of a drainage utility. In 2002, the SWMAC delivered its opinion that the City not establish a storm water utility and recommended alternatives including: additional bonding, utility rate increases, consideration of a Storm Water Capital Improvement Fee, and that the City impose higher drainage standards in the platting process. City Council deferred action on the findings until the Drainage Master Plan was completed. Completion of the master plan has been delayed due to disagreements over levels of protection and who should be responsible for funding deficiencies. To-date, the City has not implemented a storm water utility fee.

Storm Water Funding Needs

The City has many outstanding storm water capital improvement needs. Most of those included in the City's three-year Capital Improvements Plan (CIP), however, are related to existing deficiencies rather than growth needs. Only about $2.3 million out of a total of $47 million worth of projects identified in the City's three-year CIP are clearly growth-related. The cost of future unfunded projects amounts to about $164.5 million, out of which only around $5.5 million is identified as directly attributable to growth. Total identified projects will cost approximately $212 million. Planned storm water improvement projects are listed in Table 8.

Table 8
PLANNED DRAINAGE IMPROVEMENTS

3-Year CIP Projects	Cost
Downtown Drainage Improvements	$7,000,000
Lindale/Chenoweth Area	$10,809,000
Mansheim Area	$3,447,100
Master Channel 27	$14,400,000
McNorton Channel	$2,340,000
Rolled Curb and Gutter Replacement	$868,000
Bridge Replacement	$2,103,200
Other*	$6,974,900
Total 3-Year CIP Projects**	$47,942,200
Future Projects	**Cost**
Windsor Park Clarement Subdiv	$7,901,100
Bellaire Park Subdiv	$8,134,700
Central Park Subdiv	$11,442,600
Cupier/Portairs/Edgewood Park	$11,593,100
LaVolla/Kelley Channel Excavation	$17,546,000
Master Channel 31 Excavation	$11,126,700
Schanen Water Quality Improvements	$5,093,800
Horne Rd Ditch Improvements	$4,377,200
Inwood Village Area	$4,820,000
Oso Place Sudivision	$6,828,000
SPID Intersection	$6,380,000
Sam Houston Subdivision	$6,286,000
Solar Estates	$5,625,100
Williams Drive	$5,539,300
Other Projects	$51,797,961
Total Future Planned	$164,491,561
Total Planned	$212,433,761

Source: City of Corpus Christi, *Proposed FY 2007 Capital Budget and Capital Improvement Planning Guide*, 2006.
*Other includes: Unforseen Expenses, Project Management/Inspection
**Absent unfunded projects, utility relocation costs omitted

Feasibility of Alternative Financing Strategies

There are relatively few drainage impact fees in Texas or nationally due to two factors. First, drainage improvements are typically under-funded due to the lack of dedicated funding and the relative invisibility of problems, consequently, most cities' drainage systems have many existing deficiencies that impact fees cannot be used to correct. Second, drainage systems are very complex, making a master plan almost mandatory to support an impact fee study, and few communities have up-to-date comprehensive drainage master plans.

A review of the City's CIP indicates that most of the scheduled storm water improvements are designed to address existing deficiencies, which cannot be funded with impact fees. However, many funded and unfunded projects in the CIP may be partially related to increased development. In addition, there are additional projects not included in the CIP that will be needed to accommodate the future growth of the city. The City is currently working on a storm water master plan that could be used as the foundation for a storm water impact fee with a few additions to the existing scope of services for the project. An impact fee could provide a source of funding for growth-related projects identified in the upcoming master plan and could be applied to projects that were partly necessitated by development, if cost estimates are included for the portions of those projects that are growth-related. New impact fee revenue for growth-related projects would allow the City to devote more water rate revenue to existing deficiencies or maintenance projects, or to establish a storm water utility to fund non-growth-related projects.

The City has commissioned a Storm Water Master Plan, but its completion has been held up in order to address developer and Council concerns about drainage design standards. Based on the scope of services for the Storm Water Master Plan, the plan is set to identify an inventory of existing and future storm water infrastructure needs. However, it is not going to provide cost estimates for the recommended improvements, which will limit its ability to be used as the basis of a impact fee study. The contract would need to be amended in order to include cost estimates, and the master plan would need to distinguish between existing deficiencies and growth-related improvements in order to be sufficient for calculation of a storm water impact fee. The City would also need to distinguish which facilities are to be provided by developers to avoid double charging.

A storm water utility fee would be feasible. The data and planning requirements for developing a storm water utility fee are much less stringent than for a impact fee, and some of the work has already been done. A storm water utility fee could be used for maintenance, capital improvements needed to remedy existing deficiencies, as well as growth-related improvements.

Recommendations

The development of an acreage fee for storm water is not recommended, due to the conceptual problems with such a fee discussed in the above section. A drainage impact fee is not feasible at this time, due to the lack of a comprehensive drainage master plan; however, the City is currently in the process of developing a storm water master plan that could be used as the basis of such a fee. A drainage impact fee would shift the burden of financing improvements onto new development that necessitates facility expansion, and would reduce the need to increase rates for existing water customers to fund such expansion. Based on national average fees and recent growth trends, a drainage impact fee on residential

development alone would generate an estimated $1.8 million annually. Other things equal, this additional funding could allow a 2.3-percent decrease in water rates for existing customers.[4]

An impact fee analysis must define a class of improvements that will be paid for by the fees, and for which the developer will receive credit if he installs them (regardless of whether all or a portion of those lines are needed for his development). The City is currently negotiating with developers to determine which improvements should be contributed by the development community. The current scope of services for the master plan does not include cost estimates, and would need to be amended to include cost estimates to be used as the basis of an impact fee calculation. The master plan will distinguish between existing and future needs, but will also need to distinguish between growth-related projects and projects meant to remedy existing deficiencies.

It is recommended that the City continue to require developers to contribute on-site storm water facilities that directly serve their projects. The City should also expand its use of pro rata agreements with developers for off-site improvements or oversizing as a condition of development approval until approval of a storm water impact fee. The City would need to eliminate pro rata fees for facilities covered by an impact fee to avoid double-charging.

The City should once again consider creation of a storm water utility and the assessment of a monthly storm water utility fee, especially given the magnitude of projects included in the 2007 CIP that are currently unfunded and the large number future projects that are non-growth-related. Continued funding of drainage maintenance and improvement costs out of the water utility fund risks continuing to under-fund drainage needs, which are visible only in the aftermath of severe storm events. Most other Texas cities of similar size have created storm water utilities. While the creation of a new storm water utility fee would most likely not reduce total utility fees paid by existing customers, it would provide dedicated funding for this often neglected part of the City's infrastructure. Ultimately, the City should be able to fund most growth-related projects with drainage impact fee revenue, and cover operating costs, maintenance projects, and capital projects meant to address existing deficiencies with storm water utility rate revenue.

[4]Assuming 1,274 single-family and 415 multi-family units permitted per year (average for 2004 and 2005 from US Census Bureau building permit data for the City), the national average drainage impact fee of $1,187 per single-family unit from Duncan Associates survey, a multi-family rate of $847 based on the ratio of average household size of multi-family to single-family units, and 2005 water rate revenue of $81.8 million.

SUMMARY

Recommended Action Plan

Wastewater

1. The City should determine likely reimbursement and debt service needs in order to update the current acreage fees.

2. The City should cease charging the flat rate pro rata fees for wastewater collection lines

3. The City should enter into pro rata agreements with developers who are required to oversize collection lines. The agreements would establish pro rata fees to be paid by future connections to the oversized line. The pro rata fees would be collected by the City and remitted to the developer who oversized the line.

4. Upon completion of the wastewater master plans for all service areas, the City should enter into a contract with a consultant to complete a wastewater impact fee study.

5. Upon completion of the wastewater impact fee study, the City should draft a wastewater impact fee ordinance, and begin the public process associated with such ordinance.

6. With approval of the impact fee ordinance, the City should abolish the acreage fees and the surcharge fee (and pro rata fees if collection lines are to be covered by the impact fee), since credits will be provided to developers under a impact fee for major infrastructure improvements.

Storm Water

1. Steps should be taken to create a storm water utility fee to fund non-growth-related capital improvements. This could be done prior to completion of the storm water master plan.

2. The City should undertake a storm water utility rate study based on operating and maintenance costs and the costs of non-growth-related capital needs. The City should hire an experienced consultant to help expedite the process.

3. The City should develop a storm water utility fee ordinance and begin the public process associated with such an ordinance.

4. The City should enter into pro rata agreements with developers who are required to oversize drainage facilities for subsequent developers. The agreements would establish pro rata fees to be paid by subsequent developers utilizing the oversized facility. The pro rata fees would be collected by the City and remitted to the developer who oversized the facility.

5. The City should update the contract with the storm water master plan consultants to include cost estimates for existing deficiencies and growth-related improvements.

6. Upon completion of the storm water master plan, the City should enter into a contract with a consultant to complete a drainage impact fee study.

7. Upon completion of the drainage impact fee study, the City should draft a drainage impact fee ordinance, and begin the public process associated with such ordinance.

8. Upon approval of the impact fee ordinance, the City should abolish the pro rata fees, to the extent they are for improvements to facilities covered by the impact fee. Any outstanding developer reimbursements for overlapping facilities could be made with impact fee revenue.

Summary of Recommendations

A chart showing best practices and funding recommendations is included in Table 9.

Table 9
SUMMARY OF RECOMMENDATIONS

Type of Facilities	Current	Best Practices	Recommended
Capital			
WWTP Expansion	Revenue Bonds (paid by WW Utility Fees)	Wastewater Impact Fee	**Short Term:** Revenue Bonds **Long Term:** Wastewater Impact Fee
WW: New Trunk Mains	Revenue Bonds (paid by WW Utility Fees), WW Acreage Fees, as part of Development and Pro-Rata Fees	Wastewater Impact Fee	**Short Term:** Developer as part of new construction, Increased Acreage Fees (for oversized facilities) **Long Term:** Wastewater Impact Fee
WW: New Collection Mains	Revenue Bonds (paid by WW Utility Fees), WW Acreage Fees, as part of Development and Pro-Rata Fees	Pro Rata Fees or Wastewater Impact Fee	Developer as part of new construction or Pro-Rata Fees (for oversized facilities)
WW: New Lift Stations	WW Acreage Fees, as part of Development and Pro-Rata Fees	Wastewater Impact Fee	**Short Term:** Developer as part of new construction, Increased Acreage Fees (for oversized facilities) **Long Term:** Wastewater Impact Fee
WW: New Force Mains	Revenue Bonds (paid by WW Utility Fees), WW Acreage Fees, as part of Development and Pro-Rata Fees	Wastewater Impact Fee	**Short Term:** Developer as part of new construction, Increased Acreage Fees (for oversized facilities) **Long Term:** Wastewater Impact Fee
WW: Capital Replacement	Revenue Bonds (Paid with WW Utility Fees)	Revenue Bonds, paid with WW Utility Fees	Revenue Bonds, paid with WW Utility Fees

Type of Facilities	Current	Best Practices	Recommended
SW: New Master Ditches	Revenue Bonds (paid with W Utility Fees), Developers and Pro-Rata Fees	Drainage Impact Fee	**Short Term:** Developer as part of new construction, Pro-Rata Fees (for oversized facilities) **Long Term:** Storm Water Impact Fee
SW: New Bridges	G.O. Bonds (paid with property and sales taxes), Developers and Pro-Rata Fees	G.O. Bonds (paid with property and sales taxes)	G.O.Bonds (paid with property and sales taxes)
SW: New Collection Systems	Revenue Bonds (paid with W Utility Fees), Developers and Pro-Rata Fees	Pro Rata Fees or Drainage Impact Fee	Developer as part of new construction or Pro-Rata Fees (for oversized facilities)
SW: Capital Replacement	Revenue Bonds (paid with W Utility Fees)	Revenue Bonds, paid by SW Utility Fees	**Long Term:** Monthly SW Utility Fees
Repair and Maintenance			
All Wastewater Facilities	Monthly WW Utility Fees	Monthly WW Utility Fees	Monthly WW Utility Fees
All Storm Water Facilities	Monthly W Utility Fees	Monthly SW Utility Fees	**Long Term:** Monthly SW Utility Fees

APPENDIX

Table 10
STORM WATER RATE SURVEY

	Single-Family		Commercial		
City	Basis	Mo. Rate	Basis	Mo. Rate	Comments
Austin	Flat Fee per unit	$7.15	Impervious Area (per acre)	$176.66	Austin employs a flat rate for residential development and charges per acre of impervious area for commercial.
Fort Worth	Living Area (sq. ft.) & garage size 0.5 ERU 1.0 ERU 1.5 ERU 2.0 ERU	 $1.45 $2.90 $4.35 $5.80	Impervious Area (per ERU: 1 ERU= 2,600 sq. ft.)	$2.90	The residential fee is a tiered system based on total living area including the number of garage spaces. Commercial areas are charged based on the amount of impervious surface converted to equiv. residential units (ERUs).
El Paso	no fee	n/a	no fee	n/a	Improvements are funded out of general fund revenue, which is property tax based.
Arlington	per Water Meter	$1.30	Impervious Area (sq. ft.) • 10,000 10,001-50,000 50,000-100,000 100,001-200,000 200,001-350,000 350,001-700,000 700,001-1,000,000 >1,000,000	 $6.50 $13.00 $19.50 $39.00 $78.00 $130.00 $260.00 $390.00	A flat fee for all residential classes is used, based on the number of water meters. Commercial fees are tiered based on the amount of impervious area.
Corpus Christi	no fee	n/a	no fee	n/a	O&M and capital improvements are funded out of water utility revenues.
Plano	Impervious Area (sq. ft.) <4,750 4,750-6,450 >6,450	 $2.25 $3.30 $4.25	Impervious Area (per 100 sq. ft.)	$0.056	Residential fees are tiered flat fees based on the amount of impervious area. Commercial fees are set per 100 sq. ft. of impervious area.
Garland	Lot Area (sq. ft.) • 8,750 3,751-7,500 7,501-11,500	 $1.20 $2.40 $3.60	Impervious Area (per 100 sq. ft.)	$0.06	Residential fees are tiered flat fees based on lot size. Commercial fees are set per 100 square feet of impervious area.
Lubbock	per Water Meter	$4.99	per Water Meter	$33.12	A flat rate is used for residential and commercial classes based on number of active water meters.

City	Single-Family Basis	Single-Family Mo. Rate	Commercial Basis	Commercial Mo. Rate	Comments
Laredo	Flat Fee per unit	$1.25	Building Area (sq. ft.) • 10,000 10,001-40,000 40,001-75,000 75,001-110,000 • 110,001	 $8.00 $23.00 $46.00 $70.00 $120.00	A flat fee per unit is used for residential. Commercial fees are flat rates based on the square footage of development.
Irving	Lot Size (sq. ft.) <5,000 • 5,000	 $2.16 $3.00	Lot Size (sq. ft.) • 10,000 10,001-20,000 20,001-45,000 >45,000	 $6.64 $13.28 $26.56 $.00885/yr/sf	Irving has a flat fee based on lot size for residential and commercial properties. For commercial properties over 45,000 sq. ft. the city employs an annual charge.
Amarillo	no fee	n/a	no fee	n/a	Improvements are funded out of general fund revenue which is property tax based.

Table 11
WASTEWATER RATE SURVEY

	Single-Family			Commercial			
City	Basis	Monthly Rate		Basis	Monthly Rate		Comments
Austin	Customer account charge (base fee) + Volume charge (per 1,000 gal.) • 2,000 >2,000	Inside City $5.91 + $2.48 $5.69	Outside City $5.91 + $3.41 $6.10	Customer account charge (base fee) + Volume charge (per 1,000 gal.)	Inside City $5.91 + $5.48	Outside City $5.91 + $5.48	A base fee is used plus a volume charge per 1,000 gallons of usage. Volume charges vary for residential properties that use >2,000 gallons, and for those inside vs. outside city limits.
Fort Worth	Monthly service charge + Volume charge (per 100 cu. ft.)	Inside City $4.50 + $2.51	Outside City $5.63 + $3.14	Monthly service charge + Volume charge (per 100 cu. ft.)	Inside City $4.50 + $2.77	Outside City $5.63 + $3.46	A flat rate for monthly service charges is used and a monthly volume charge per 100 cubic feet (cu. ft.) of wastewater produced.
El Paso	Base fee for meter <1" using • 400 cu. ft. + Commodity charge (per 100 cu. ft.) for usage >400 cu. ft.	$9.09 + $1.14		Base fee for 3" meter using • 400 cu. ft. + Commodity charge (per 100 cu. ft.) for usage >400 cu. ft.	$123.66 + $1.14		A base fee based on water meter size is used, plus a commodity charge per 100 cubic feet (cf) of wastewater produced for usage greater than 400 cu. ft.
Arlington	Base fee for 3/4" meter using • 2,000 gal. using >2,000 gal + Consumption charge (per 1,000 gal.)	$3.35 $5.75 + $2.43		Base fee for 3" meter + Consumption charge (per 1,000 gal.)	$52.52 + $2.43		A base fee is used based on water meter size, plus a consumption charge per 1,000 gallons wastewater. If residential customers exceed 2,000 gallons/mo. they pay a higher base fee.
Corpus Christi	Base fee for use • 2,000 gal. + Usage charge (per 1,000 gal.) for use >2,000 gal.	Inside City $16.97 + $3.43	Outside City $31.83 + $6.43	Base fee for use • 2,000 gal. + Usage charge (per 1,000 gal.) for >2,000 gal.	Inside City $24.19 + $2.57	Outside City $48.38 + $5.15	A monthly minimum charge is used for the first 2,000 gallons usage, plus a usage charge per 1,000 gallons for use >2,000 gallons.
Plano	Base fee 5/8" & 3/4" + Consumption charge (per 1,000 gal.) for use >1,000 gal.	$8.76 + $3.07		Base fee 3" meter + Consumption charge (per 1,000 gal.) for use >1,000 gal.	$100.86 + $3.07		A base fee based on water meter size is used, plus a consumption charge per 1,000 gallons wastewater produced >1,000 gallons.
Garland	Flat fee + Volume charge (per 1,000 gal.)	$4.10 + $3.32		Flat fee + Volume charge (per 1,000 gal.)	$4.10 + $3.48		A flat fee is used plus a volume charge per 1,000 gallons.
Lubbock	Base fee 3/4" meter + Usage charge (per 1,000 gal. used)	$3.94 + $1.67		Base fee 3" meter + Usage charge (per 1,000 gal. used)	$61.82 + $1.67		A base fee is used based on water meter size, plus a usage charge per 1,000 gallons.

City	Single-Family Basis	Single-Family Monthly Rate	Commercial Basis	Commercial Monthly Rate	Comments
Laredo	Flat fee for usage • 4,000 gal. + Usage charge (per 1,000 gal. used) for usage >4,000 gal. • 10,000 10,001-20,000 20,001- 30,000 >30,000	$8.50 + $1.03 $1.08 $1.14 flat rate $36.89	Flat fee for usage • 4,000 gal. + Usage charge (per 1,000 gal.) for usage >4,000 gal. • 10,000 10,001-20,000 20,001-30,000 30,001-40,000 40,001-50,000 50,001-100,000 100,001-150,000 150,001-200,000	$13.00 + $1.25 $1.31 $1.37 $1.43 $1.48 $1.54 $1.60 $1.65 etc...(see code)	A flat fee for usage • 4,000 gallons is used, plus usage charges per 1,000 gallons wastewater produced > 1,000 gallons. The fee schedule is tiered for use > 4,000 gallons so that rates increase as usage increases.
Irving	Base charge for usage • 2,000 gal. + Consumption charge (per 1,000 gal.) for usage >2,000 gal.	$4.37 + $2.39	Base charge for usage • 10,000 gal. + Consumption charge (per 1,000 gal.) for usage> 10,000 gal.	$22.75 + $2.48	A base fee is used for usage up to 2,000 gal. for residential and 10,000 gal. for commercial customers, plus a consumption charge for wastewater usage over the amount included in the flat fees.
Amarillo	Base fee 5/8" meter + Monthly service charge (per 1,000 gal. used)	$5.37 + $1.01 or $1.20	Base fee 3" meter + Monthly service charge (per 1,000 gal. used)	$7.27 + $1.01 or $1.20	A base fee is used based on water meter size, plus a service charge per 1,000 gallons wastewater produced.

Table 12
WATER RATE SURVEY

City	Single-Family Basis	Single-Family Monthly Rate		Commercial Basis	Commercial Monthly Rate		Comments
Austin	Base fee + Meter charge 5/8" + Volume charge (per 1,000 gal.) 0-2,000 2,001-9,000 9,001-15,000 >15,000	$2.90 + $1.45 + $0.86 $2.29 $3.70 $6.42		Base fee + Meter charge 3" + Volume charge (per 1,000 gal.) Nov.-June July-Oct.	Inside City $2.90 + $21.75 + $3.38 $3.62	Outside City $2.90 + $21.75 + $3.67 $3.92	A base fee and a meter charge are used based on meter size as well as volume charges per 1,000 gallons water used. Residential volume charges are tiered and commercial charges differ by time of year.
Fort Worth	Monthly service charge for 5/8" meter + Volume charge (per 100 cu. ft.) • 800 801-2,000 >2,000	Inside City $5.50 + $1.77 $2.44 $3.00	Outside City $6.88 + $2.21 $3.05 $3.75	Monthly service charge for 3" meter + Volume charge (per 100 cu. ft.)	Inside City $47.00 + $1.97	Outside City $58.75 + $2.46	The monthly service charges are based on meter size and volume charges per 100 cubic feet of water used.
El Paso	Minimum charge for meter less than 1" + Additional usage charge (per 100 cu. ft.) >400 cu. ft. up to 150% AWC 150%-250% AWC >250% AWC	$4.31 + $1.17 $3.27 $4.68		Monthly minimum for 3" meter + Additional usage charge (per 100 cu.ft.) >400 cu. ft. up to 150% AWC 150%-250% >250% Additional charges accrue when usage exceeds AWC usage by 4CCF (2,992 gal.)	$27.60 + $1.17 $3.27 $4.68		Monthly minimum charges are based on meter size, plus usage charges for use > 400 cu. ft. Usage charges tiered based on amount over the average monthly winter consumption (AWC--90% of water consumed from the preceding Dec., Jan., and Feb.).
Arlington	Base fee 3/4" meter use • 2,000 gal. use >2,000 gal. + Water conservation rate (per 1,000 gal.) • 2,000 3,000-10,000 11,000-15,000 • 16,000	$4.15 $6.85 + $1.36 $1.67 $2.25 $2.80		Base fee 3" meter + Water conservation rate (per 1,000 gal.) 0-15,000 >15,000	$109.60 + $1.54 $1.84		The base fee is based on water meter size (higher for resid. customers using >2,000 gal.). A tiered consumption charge is used per 1,000 gallons water.

	Single-Family			Commercial			
City	Basis	Monthly Rate		Basis	Monthly Rate		Comments
Corpus Christi	Base fee for 5/8" meter with usage up to 2,000 gal. + Volume charge (per 1,000 gal.) for use >2,000 gal. 2001-15,000 15,001-30,000 30,001-50,000 50,001-100,000	Inside City $7.18 + $2.48 $3.50 $4.29 $5.20	Outside City $15.26 + $5.20 $5.20 $5.20 $5.20	Base fee for 5/8" meter with usage u up to 2,000 gal. + Volume charge (per 1,000 gal.) for use >2,000 gal. 2001-15,000 15,001-100,000 100,001-1,000,000 >1,000,000	Inside City $155.32 + $2.48 $2.21 $1.68 $1.31	Outside City $311.50 + $5.42 $4.86 $3.78 $2.06	The base charge is based on meter size for usage up to 2,000 gallons. A tiered volume charge per 1,000 gallons is used for usage >2,000 gallons.
Plano	Base fee for 5/8" & 3/4" meters + Consumption charge (per 1,000 gal.) 1,000-5,000 >5,000 >20,000	$12.18 + $0.24 $1.43 $2.86		Base fee for 3" meter + Consumption charge (per 1,000 gal.) 1,000-5,000 >5,000 >20,000	$180.39 + $0.24 $1.43 $2.86		The base charge is based on meter size and there is a tiered consumption charge per 1,000 gallons.
Garland	Base fee for 5/8" meter + Volume charge (per 1,000 gal.)	$7.90 + $2.48		Base fee for 3" meter + Volume charge (per 1,000 gal.)	$27.00 + $2.25		The base charge is based on meter size and a volume charge per 1,000 gallons is used
Lubbock	Base fee 3/4" meter + Usage charge (per 1,000 gal.)	$10.01 + $1.83		Base fee 3" meter + Usage charge (per 1,000 gal.) used	$136.76 + $1.69		A base charge based on meter size is used plus a volume charge per 1,000 gallons.
Laredo	Base fee for usage • 2,000 gal. + Consumption charge (per 1,000 gal.) for use >2,000 gal. 2,001-4,000 4001-10,000 10,001-20,000 20,001-30,000 30,001-40,000 40,001-50,000 >50,000	$7.50 + $1.10 $1.17 $1.23 $1.30 $1.37 $1.44 $2.88		Base fee for usage • 2,000 gal. + Consumption charge (per 1,000 gal.) for use >2,000 gal. 2,001-4,000 4,001-10,000 10,001-40,000 40,001-150,000 150,001-300,000 300,001-600,000 600,001-1,000,000	$21.25 + $1.17 $1.19 $1.39 $1.59 $1.79 $2.19 $2.72		A base fee is used plus consumption charges for usage > 2,000 gallons. The fee schedule is tiered so that rates increase as usage increases.
Irving	Base fee for usage • 8,000 gal. + Consumption charge (per 1,000 gal.) for usage > 3,000 gal. • 20,000 >20,000 Oct.-May Jun.-Sept.	$6.18 + $3.14 $3.14 $3.29		Base fee for usage • 8,000 gal. + Consumption charge (per 1,000 gal.) for usage > 3,000 gal. • 20,000 >20,000 Oct.-May Jun.-Sept.	$6.18 + $3.14 $3.14 $3.29		There is a base fee for usage up to 3,000 gal., plus a consumption charge for usage > 3,000 gallons. The city also charges increased rates for usage >20,000 gallons during drought prone months.

	Single-Family			Commercial			
City	Basis	Monthly Rate		Basis	Monthly Rate		Comments
Amarillo	Base fee for 5/8" meter + Consumption charge (per 1,000 gal.) for usage>2,000 gal. 2,000-10,000 >10,000	Inside City $6.85 + $1.37 $1.59	Outside City $10.27 + $2.05 $2.38	Base fee for 3" meter + Consumption charge (per 1,000 gal.) for usage>2,000 gal.	Inside City $75.73 + $1.25	Outside City $113.59 + $1.88	A base charge is used based on meter size for up to 2,000 gal., plus a tiered usage charge for usage >2,000 gallons.

Table 13
IMPACT FEES/CAPITAL FUNDING

City	Wastewater Capital Funding		Water Capital Funding		Storm Water Capital Funding	
Austin	**Residential Impact Fee** Drinking Water Protection Zone In City=$1,200 Outside=$1,300 Desired Devt. Zone In City=$400 Outside=$800 Urban=$400 Central=$300 Major expansion is funded primarily by rates.	**Commercial Impact Fee** Drinking Water Protection Zone In City=$19,200 Outside=$20,800 Desired Devt. Zone In City=$6,400 Outside=$12,800 Urban= $6,400 Central=$4 800 Major expansion is funded primarily by rates.	**Residential Impact Fee** Drinking Water Protection Zone In City=$1,500 Outside=$1,700 Desired Devt. Zone In City=$700 Outside=$1,300 Urban=$600 Central=$500 Major expansion is funded primarily by rates.	**Commercial Impact Fee** Drinking Water Protection Zone In City=$24,000 Outside=$27,200 Desired Devt. Zone In City=$11,200 Outside=$20,800 Urban=$9,600 Central=$8,000 Major expansion is funded primarily by rates.	**Residential Fee in Lieu** Minor facilities are exacted; a fee in-lieu is used for regional drainage **Fee=CCC+LCC** Construction Cost Component (CCC) per acre 0-1=$35,000 1.01-2=$15,000 2.01-5=$10,000 5.01-10=$7,000 10.01-20=$5,000 20.01-50=$3,000 50.01-100=$2,000 • 100.01=$1,500 Land Cost Component (LCC) (Land Cost per acre x .05) x (# acres)	**Commercial Fee in Lieu** Minor facilities are exacted; a fee in-lieu is used for regional drainage **Fee=CCC+LCC** Construction Cost Component (CCC) per acre 0-1=$60,000 1.01-2=$18,000 2.01-5=$8,000 5.01-10=$6,000 10.01-20=$5,000 20.01-50=$4,000 • 50.01=$2,500 Land Cost Component (LCC) (Land Cost per acre x .05) x (# acres)
Fort Worth	**Residential Impact Fee** 5/8"=$185	**Commercial Impact Fee** 3"=$3,219	**Residential Impact Fee** 5/8"=$524	**Commercial Impact Fee** 3"=$9,126	Drainage improvements were traditionally funded through ad valorem revenue (property tax), but will be increasingly paid through recently approved storm water rates.	
	Wastewater capital projects covered using funding primarily from wastewater rates, as well as, impact fee revenue.		Water capital projects covered using funding primarily from water rates, as well as, impact fee revenue.			
El Paso	**Residential Connection Charge** 5/8"=$338	**Commercial Connection Charge** 3"=$5,405	**Residential Connection Charge** 5/8"=$583	**Commercial Connection Charge** 3"=$9,328	Small facilities are exacted from developer; larger facilities are bonded and paid off through general fund revenue which is property tax based.	
	Wastewater capital projects covered using funding primarily from wastewater rates, as well as, impact fee revenue.		Water capital projects covered using funding primarily from water rates, as well as, impact fee revenue.			

City	Wastewater Capital Funding		Water Capital Funding		Storm Water Capital Funding
Arlington	**Residential Impact Fee** 3/4"=$380	**Commercial Impact Fee** 3"=$10,720	**Residential Impact Fee** 3/4"=$480	**Commercial Impact Fee** 3"=$13,520	Major drainage improvements are funded from the municipal storm water utility fund, which is comprised of storm water utility rates.
	The city employs pro-rata (based on feet of frontage) fees to reimburse developers for oversizing lines. Major capital facilities expansion is funded by revenue bonds which are recouped primarily using funding from wastewater rates, as well as, impact fee revenue.		The city employs pro rata (based on feet of frontage) fees to reimburse developers for oversizing lines. Major capital facilities expansion is funded by revenue bonds which are recouped primarily using funding from water rates, as well as, impact fee revenue.		
Corpus Christi	**Acreage Fee** $1,133/acre		**Acreage Fee** $741/acre ($369 for single-family)		Major capital improvements for storm water are funded from water utility rate revenue.
	Developers are reimbursed for constructing oversized improvements that exceed the cost of the acreage fee. The city also utilizes pro rata fees to recoup costs of collection lines >15 ft. diameter previously installed by the city. Major capital improvements for wastewater are funded primarily through the use of revenue bonds, which are recouped using funding from wastewater utility rates and unreserved fund balances.		Developers are reimbursed for constructing oversized improvements that exceed the cost of the acreage fee. The city also utilizes pro rata fees to recoup costs of collection lines >15 ft. diameter previously installed by the city. Major capital improvements for water are funded primarily through the use of revenue bonds, which are recouped using funding from water utility rates and unreserved fund balances.		
Plano	**Residential Impact Fee** 3/4"=$329	**Commercial Impact Fee** 3"=$3,519	**Residential Impact Fee** 3/4"=$912	**Commercial Impact Fee** 3"=$9,757	Major drainage improvements are funded from the municipal storm water utility fund, which is comprised of storm water utility rates.
	Developers are required to construct lines for their development. The city employs pro rata (based on feet of frontage) fees to reimburse developers for constructing lines. Major capital facilities expansion is funded by revenue bonds which are recouped primarily using funding from wastewater rates, as well as, impact fee revenue.		Developers are required to construct lines for their development. The city employs pro rata (based on feet of frontage) fees to reimburse developers for constructing lines. Major capital facilities expansion is funded by revenue bonds which are recouped primarily using funding from water rates, as well as, impact fee revenue.		

City	Wastewater Capital Funding	Water Capital Funding		Storm Water Capital Funding
Garland	Developers are required to pay the entire cost of construction of lines to serve developments. Developers are reimbursed the difference of the cost of lines greater than 8" if forced to develop facilities over capacity. City imposes pro rata charges for water and sewer line connections equal to ½ the cost of pipe for the particular connection per foot of frontage. Major capital facilities expansion is funded by revenue bonds repaid from wastewater rates.	**Residential Impact Fee** 5/8"=$25	**Commercial Impact Fee** 3"=$275	Capital facilities expansion for drainage facilities are funded through the general fund which is largely property tax based; storm water utility fees are used for everything besides capital projects.
		Pro rata fees assessed on the same basis as wastewater pro rata fees. Major capital facilities expansion are funded by revenue bonds retired with water rates.		
Lubbock	Developers are required to provide water and sewer facilities. The city employs pro rata (front foot based) charges for improvements. Developers are refunded for constructing lines over capacity. Capital facilities expansion is funded by revenue bonds which are recouped using funding from wastewater rates.	Developers are required to provide water and sewer facilities. The city employs pro rata (front foot based) charges for improvements. Developers are refunded for constructing lines over capacity. Capital facilities expansion is funded by revenue bonds which are recouped using funding from water rates.		Capital facilities expansion is funded by revenue bonds which are recouped using funding from storm water rates.
Laredo	Developers are required to pay the entire cost of construction of lines to serve developments. If a developer is required to construct lines over capacity they enter into a contract to be reimbursed by the city, through pro rata fees. Major capital facilities expansion costs are recouped using funding from wastewater rates.	Developers are required to pay the entire cost of construction of lines to serve developments. If a developer is required to construct lines over capacity they enter into a contract to be reimbursed by the city, through pro rata fees. Major capital facilities expansion costs are recouped using funding from water rates.		Major capital facilities costs are recouped using storm water rates.
Irving	Major capital facilities expansion costs are recouped using funding from wastewater rates.	Major capital facilities expansion costs are recouped using funding from water rates.		Traditionally major drainage projects have been funded through G.O. bonds which have been paid off by the general fund (property taxes). However, storm water fees increased within the past year and is it is reasonable to think that these fees will increasingly contribute to larger drainage projects, as they have traditionally been used for smaller projects such as maintenance and upkeep.

City	Wastewater Capital Funding	Water Capital Funding	Storm Water Capital Funding
Amarillo	City imposes frontage fees for connections to existing water mains at ½ the cost of pipe for the particular connection (8 in residential) x feet of frontage. Sewer=$7/foot. Developers or individuals that extend pipe that future residents tie into are refunded from the proceeds raised by frontage fees and are reimbursed $200 for lots connected to branches off the installed main. Capital improvements for major facilities are funded from water and wastewater rates.	City imposes frontage fees for connections to existing water mains at ½ the cost of pipe for the particular connection (8 in residential) x feet of frontage. Water=$6/foot. Developers or individuals that extend pipe that future residents tie into are refunded from the proceeds raised by frontage fees and are reimbursed $200 for lots connected to branches off the installed main. Capital improvements for major facilities are funded from water and wastewater rates.	Onsite drainage improvements funded by developers. If forced to develop over capacity, developer is refunded by the city for improvements deemed over capacity and approved in related master and land use plans. Capital improvements for major drainage facilities funded out of general fund revenue which is primarily property tax based. In some cases expansion is also funded through sales tax on bond issues that are voted on.

Table 14
FEE/RATE SURVEY SOURCES

City	Storm Water	Wastewater	Water	Impact Fee/Exactions
Austin	Email from Diane Luden [diane.luden@ci.austin.tx.us]	http://www.ci.austin.tx.us/water/rateswwr05.htm	http://www.ci.austin.tx.us/water/rateswr05.htm	http://www.ci.austin.tx.us/budget/05-06/downloads/ab0506support.pdf http://www.ci.austin.tx.us/watershed/rsmp.htm Jason Batchelor, Budget Department 512-974-2924
Fort Worth	http://www.fortworthgov.org/tpw/pdf/Rate%20Flyer.pdf	http://www.fortworthgov.org/water/rates/2005RatesWW.htm	http://www.fortworthgov.org/water/Rates/2005Rates.htm	http://www.fortworthgov.org/water/ImpactFees/impactfeesch.htm Confirmed by Peggy Oliver, Finance Department 817-392-8185
El Paso	n/a	http://www.epwu.org/wastewater/wastewater_rates.html	http://www.epwu.org/water/water_rates.html	Water & WW Connection Charges from: annexation agreement pg. 12 of 25 http://www.elpasotexas.gov/city_clerk/agenda/06-27-06/06270614G.pdf Storm water recoupment information provided by Rudy Valdez 915-541-4635
Arlington	http://www.ci.arlington.tx.us/publicworks/drainage_utilityfee.html	http://www.ci.arlington.tx.us/water/customerservice_billing_rates.html	http://www.ci.arlington.tx.us/water/customerservice_billing_rates.html	http://www.ci.arlington.tx.us/water/customerservice_technical_builderfees.html Confirmed by Marcia Sobotka 817-459-6288
Corpus Christi	n/a	http://www.cctexas.com/files/g56/swww2006.pdf	http://www.cctexas.com/files/g56/wtr2006.pdf	http://www.cctexas.com/files/g33/Development%20Services%20Fee%20Schedule%2012-07-05.pdf http://www.cctexas.com/files/g37/FY%5F06%2D07%5FProp%5FBudget%2Epdf

City	Storm Water	Wastewater	Water	Impact Fee/Exactions
Plano	http://www.plano.gov/Departments/CUS/General_Information/bill_svcs.htm	http://www.plano.gov/Departments/CUS/General_Information/water_sewer_rates.htm	http://www.plano.gov/Departments/CUS/General_Information/water_sewer_rates.htm	http://www.plano.gov/Departments/Engineering/Development/impact_fees.htm Storm water from: http://pdf.plano.gov/budget/CMREC0607.pdf Confirmed by Jerry Cosgrove 972-941-5371
Garland	Phillip Welsch 972-205-2189	Garland Municipal Code Title 5: Chapter 50: Article IV http://www.ctspublish.com/garlandtp/tpext.dll?f=templates&fn=frame_default.htm	Garland Municipal Code Title 5: Chapter 50: Article II http://www.ctspublish.com/garlandtp/tpext.dll?f=templates&fn=frame_default.htm	Garland Municipal Code Impact Fees Title 3: Chapter 31: Article XII http://www.ctspublish.com Pro rata Charges Title 5: Chapter 50: Article IV Funding sources for wastewater confirmed by Ron Young, Budget Department. Storm water: Phillip Welsch
Lubbock	http://drainage.ci.lubbock.tx.us/schedule_of_charges.htm	http://water.ci.lubbock.tx.us/documents/Sewer_Service_Rates.pdf	http://water.ci.lubbock.tx.us/documents/Water_Service_Rates.pdf	Melissa Trevino, Finance Department
Laredo	Laredo Municipal Code, Chapter 33, Article VI www.municode.com	Laredo Municipal Code, Chapter 31, Article II www.municode.com	Laredo Municipal Code, Chapter 31, Article III www.municode.com	Humberto Serradell hserradell@ci.laredo.tx.us Storm waterprovided by Gilberto Sanchez, budget department (956) 791-7434
Irving	Irving Municipal Code, Chapter 41, Article IX www.municode.com	Irving Municipal Code, Chapter 52 www.municode.com	Irving Municipal Code, Chapter 52 www.municode.com	Scott Bollinger, Irving Water Utility Storm water provided by Bret Starr 972-721-3750
Amarillo	n/a	http://www.ci.amarillo.tx.us/departments/utilitybilling/rates.htm	http://www.ci.amarillo.tx.us/departments/utilitybilling/rates.htm	Storm water: Mike Smith, Engineering and Dean Frigo 806-378-3040 http://www.ci.amarillo.tx.us/departments/planning/pdf/Development%20Policy%20Manual.pdf