The Fiscal Impact of New Residential Subdivisions on the City of San Antonio, Texas

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Contents

Summary

Residential development is an integral part of a growing, dynamic community. New residential growth creates additional revenue for the local city government, which is then used to provide services and make needed capital improvements required by new neighborhoods. This new revenue does not come without cost to the city however, because the city is obligated to provide municipal services to these new areas. Additional costs are incurred when the city must make capital improvements to the urban infrastructure to connect the new subdivisions to existing facilities or create suburban branch facilities.

The fundamental question addressed by this study is: Does a typical new residential subdivision generate sufficient revenue to the city government to pay for (a) the annual cost of municipal services to that subdivision and (b) the capital improvements paid for by the city that serve the new subdivision.

The following is a case study of San Antonio, Texas. San Antonio was selected because it is representative of a large metropolitan area that is not heavily subdivided into smaller incorporated cities. The *Annual Report of the City of San Antonio* was used to identify and quantify all of the new city revenues created by the residential subdivision development within the city limits. Five recently-completed subdivisions were analyzed. In addition, the annual cost to provide municipal services and the costs incurred by the city to provide capital improvements have been identified based on their fiscal impact on the San Antonio general fund, debt service fund and the San Antonio Water System (SAWS). The criteria for selecting the subdivisions were diversity in house price, geographic location and proximity to urbanized areas in the community. This study is done in conjunction with a similar study in Tyler, Texas.

This research indicates that the average San Antonio household pays approximately $487 into the general fund account which finances public services such as police and fire protection, parks and recreation, libraries and municipal courts. Each of the five subdivisions analyzed pays substantially more each year into the general fund than the average San Antonio household. Assuming that the new subdivisions will consume the same level of municipal services as the rest of the households in the community, then each of the five subdivisions has a positive fiscal impact on the city's general fund. This means that the average household in each of the subdivisions pays more than enough annually to pay for the required services. This "surplus income" can then be used to provide enhanced services to other areas of the community.

Finally, the results show that four of the five new subdivisions have had a positive fiscal impact on the debt service fund as well. The amount of debt service that can be supported by the revenues from the new subdivisions exceeds the amount of capital improvements that have been provided to these areas. This means that these new subdivisions more than pay for the costs of capital improvements (arterial streets, storm water drainage, police and fire substations and parks). Once again, this surplus revenue can then be used to make capital improvements to older areas of the community.

There has been considerable debate about the fiscal impact of new subdivisions on the local municipal government budgets. The question is whether or not new subdivisions generate sufficient revenue to offset the costs incurred by the city to provide municipal services to the new areas. This case study, representing five "typical" new neighborhoods within a broad price range shows that in most cases, the subdivisions produce sufficient revenues to more than pay for the incremental costs incurred by the city.

Introduction

This research measures the fiscal impact of five new residential subdivisions on the city of San Antonio. Each house built in a new subdivision creates an additional stream of revenue to the city. The same house also creates new demand for city services and requires the extension of city infrastructure to connect the new house into existing capital facilities. The developer, the homebuilders and the homeowners in the new subdivisions pay for many of these infrastructure improvements. However, the cost of providing services to these new houses and some of the capital improvements required to provide services to these new areas are costs that must be borne by the city (the existing taxpayers in the community).

There is a perception among some urban residents that older residential neighborhoods suffer from infrastructure deterioration because capital improvements are focused on new suburban perimeter residential development. Their feeling is that if perimeter development were stopped or restricted, then capital improvement funds could be re-directed to renovate older neighborhoods nearer the urban core.

A different perception exists among the homebuilders and developers. Many of these individuals feel that new development produces sizable revenue streams to the city in the form of taxes, fees and special assessments. Their feeling is that households in new subdivisions pay taxes at a higher level than the average city household but require less than the average level of city services in return. For example, some would argue that the demand for police services in these new subdivisions is less than the city-wide average. Some of the new subdivisions provide extensive on-site park facilities and create little demand for city parks.

This report quantifies as many facts as possible about the "costs" and "revenues" associated with new residential subdivision development. The research question addressed in this study is whether or not the revenues created by a new subdivision are sufficient to pay for the services and improvements that are provided by the city of San Antonio.

Methodology

In this case study, an attempt was made to identify and quantify all revenues paid to San Antonio in the form of taxes, fees and permits by the developer, homebuilders and homeowners in each subdivision. Similarly, an attempt was made to identify and quantify all costs incurred by the city to provide the necessary infrastructure and public services to the subdivisions. The fiscal impact was measured by comparing the revenue produced by an average household to the actual costs expended by the city for an average household within each subdivision.

Subdivisions Studied

Subdivisions chosen for this study were selected based on the following criteria:

- located within the city limits of San Antonio,
- housing value diversity,
- geographic location diversity,
- perimeter and nonperimeter development diversity and
- served by the San Antonio Water System.

In addition, only recently-developed subdivisions were chosen because it is easier to find and quantify the actual costs and revenues associated with newer projects. Based on these criteria, the following subdivisions were analyzed:

Subdivision	Location	Average Sales Price	Perimeter Development
The Gardens at Guilbeau Park	NW	$ 75,000	Yes
Estates of Northwest Crossing	NW	137,000	No
Hollow at Inwood	N	225,000	Yes
Bluff Creek	N	130,000	No
Brookside	SE	75,000	Yes

Additional information about each subdivision is in Appendix A.

Development Costs

Every city incurs certain costs to provide municipal services to new residential subdivisions. These costs can be grouped into two categories:

- one-time capital improvements for public infrastructure not paid for by the developer, homebuilders and new homeowners and
- municipal services (funded by tax dollars) provided on a daily basis to all households in the community.

Capital Improvements: Who Typically Pays for Them?

The first category consists of one-time capital improvements to provide public utilities and infrastructure to each new subdivision. These costs are incurred to connect the new subdivision to the existing municipal facilities, including the sewer and water system, storm water drainage system and the arterial road network. Many of these capital improvements are paid for by the developer during the process of subdividing the development or by the homebuilder during the construction of the home.

San Antonio pays for other necessary capital improvements. These include police substations, fire stations, branch libraries, neighborhood parks, arterial street improvements and storm water drainage projects. These improvements represent a cost to all San Antonio taxpayers. Many other capital improvements, however, are paid for entirely by the developer. (See Appendix D for a summary of major capital expenditures and who typically pays for them in San Antonio).

Water

Cost	Payer
Design and engineering costs	Developer pays the entire cost
Service connection to all lots in the subdivision	Developer pays the entire cost
Main supply lines within the subdivision	Developer pays the entire cost
Oversized supply lines required to service the subdivision	City pays only for the cost of oversizing the lines, developer pays the remainder
Extension of water lines from new area to existing network	Developer pays the entire cost and receives some reimbursement as new homes connect to the system within five years
Pumping stations to pump water to the subdivision	City pays the entire cost but collects an impact fee[1] to pay for it
On-ground and elevated water storage facilities	City pays the entire cost but collects an impact fee to pay for it
Water treatment facilities	City pays the entire cost but collects an impact fee to pay for it
Water supply wells	City pays the entire cost but collects an impact fee to pay for it
Water supply source	City pays the entire cost but collects an impact fee to pay for it

Sewer

Cost	Payer
Design and engineering costs	Developer pays the entire cost
All sewer distribution pipes within the subdivision	Developer pays the entire cost
Sewage lift stations, if needed share of any excess capacity in the lift station	Developer pays the entire cost, less pro-rata
Extension of sewer lines from new area to existing network	Developer pays the entire cost, unless oversizing is required, then city pays for the cost of oversized pipe
Sewer interceptor lines that transport sewage to treatment area	City pays the entire cost but collects impact fee to pay for it
Sewage treatment facilities	City pays the entire cost, but collects an impact fee to pay for it

Storm Water Drainage

Cost	Payer
Design and engineering costs	Developer pays the entire cost
All drainage improvements within the subdivision	Developer pays the entire cost
All improvements to connect subdivision drainage into existing drainage channels	Developer pays the entire cost
Drainage improvements under major arterial streets and highways	City pays for these improvements, except for those funded with federal or state grants

Streets

Cost	Payer
Design and engineering costs	Developer pays the entire cost
All local access streets within the subdivision	Developer pays the entire cost
Larger collector streets within the subdivision	Developer pays the entire cost
Widening arterial perimeter streets	Developer frequently pays the entire cost

Note: If the developer chooses to create a new subdivision with private streets (a “gated community”), the homeowners are responsible also for annual upkeep and maintenance of the streets.

Municipal Services Funded by the General Fund

The second type of development cost consists of services provided to new subdivisions that are continuously provided to all households by the city of San Antonio. These services are paid for almost entirely out of the city's general fund and include salaries and operating expenses for the following services:

Service Category	Annual Expenditure	Percent of General Fund
General government services (administration, municipal court, city hall)	$ 41,258,244	12.2
Public safety (police, fire, inspections)	224,243,941	66.3
Roadways and streets	7,952,831	2.3
Health services	10,110,888	3.0
Parks and libraries	37,721,057	11.1
Welfare	9,497,854	2.8
Other	7,662,951	2 .3
Total general fund expenditure	$338,447,766	100%

Source: *Annual Report of the City of San Antonio* for the fiscal year ended September 30, 1995.

Revenues from New Subdivisions

New residential subdivisions create two categories of revenue that accrue to the city of San Antonio to pay for on-going municipal services and infrastructure capital improvements. The categories include: (a) one-time revenues collected during the development process and after the homes are completed, and (b) annual tax revenues from these new households.

One-time Revenues

The following revenues are collected from the developers and the subdivision homebuilders:

Paid by the developer

- Zoning application fees
- Fees for platting the subdivision

Paid by the homebuilder

- Sales tax on building materials
- Building permit
- Plumbing permit and inspection fee
- Electrical permit and inspection fee
- Heating and cooling inspection fee

Planning and Zoning Application Fees

New subdivisions often incur two application fees: first, to get the land properly zoned and second, to plat the land for residential development. Residential zoning applications cost $2,240 for properties in excess of 25 acres. Platting fees are $555 plus an additional $57 per lot, plus $410 per acre of open space not dedicated for streets. Revenues from these application fees accrue to the city's general fund.

Sales Tax on Building Materials

Homebuilders pay sales tax on the cost of the materials used, although expenditures for labor are not subject to sales tax. The amount of sales tax a builder pays for the materials on an individual home is proprietary information, however, 1 percent of the sales tax collected by the city general fund has been estimated to be .22 percent of the sales price of a new home.[2]

Building Permits and Inspection Fees

The city receives revenues from new residential subdivisions in the form of building permits and inspection fees. Funds generated from permits and inspection fees also go into the general fund. Revenues from permits and fees are designed to match the city's cost for inspection services. The cost of a building permit is calculated as follows:

- For values between $25,001 and $75,000 the permit fee is $178.25 plus $5.50 per thousand more than $25,000;
- For values more than $75,000 the permit fee is $453.25 plus $1.20 per thousand more than $75,000.

Inspection fees also are collected for electrical, plumbing, sewer, heating and cooling systems, sidewalks and blueprint-checking fees.

See Table 1 for permit and inspection fees that were paid by a builder for a typical home in The Hollow at Inwood subdivision.

Table 1. Building Permit and Inspection Fees

Fees paid on an average house built in The Hollows at Inwood	
Building permit	$653
Blueprint-check fee	81
Electrical permits	80
Plumbing and sprinkler permits	151
Heating and air conditioning permit	112
Total permit and inspection fees	$1,077

Annual Tax Revenues

The second revenue category consists of annual revenues collected from each household in the city. These annual revenues flow into the general fund, as well as the debt service fund. The major tax revenue sources paid by each San Antonio household into the general fund are:

- general property tax,
- local sales tax and
- franchise taxes.

General Property Taxes

San Antonio collects a substantial portion of its annual revenues from general property taxes. Table 3 illustrates the relative contribution of property tax revenue from the various land-use categories. It reflects assessed valuations for 1994, 1995 and 1996. Residential households provided approximately 58 percent of the general tax revenue in these years.

Local Sales Tax

In fiscal year 1994-95, the San Antonio sales tax rate was 7.75 percent. As mentioned earlier, 1 percent of the local sales tax revenue goes to the general fund. Sales tax revenue generated from each subdivision was estimated in the following manner. First, the average household income in each subdivision was estimated. This was done by estimating the amount of income required to qualify to purchase a home of average value in each subdivision (assuming the house was purchased with a 90 percent loan at 8 percent interest for 30 years). Annual sales tax revenue to the local general fund was then estimated based on research findings published by the Texas comptroller of Public Accounts.[3]

Franchise Tax

The franchise tax is another source of annual revenue. The city collects a franchise tax from each household from their bills for electricity, natural gas, cable television, sewer, water and telephone. While the franchise fee revenue is collected directly from the utility companies, each customer pays it. Franchise taxes are like a sales tax on utility bills. Each household in San Antonio pays franchise taxes in the following amounts:

Utility	Franchise tax—percent of gross revenue collected
Electricity	14
Natural gas	14
Water-sewer	2.7
Telephone[4]	10
Cable TV	5.2

Table 2 shows the distribution of franchise fee revenue paid by each utility and estimates the percentage of franchise fees paid by residential households (including owners and renters). The results indicate that households pay approximately 50 percent of franchise fees generated.

Table 2. Franchise Tax Revenue From Residential Households
(Year ended September 30, 1995)

Source	Total Revenue	Percent Residential	Residential Revenue
City public service	$119,237,659	48	$57,234,076
Telephone	8,680,741	60[5]	5,208,444
Cable TV	4,396,669	100	4,396,669
Water system	8,106,006	60	4,863,603
Bingo tax	363,992	100	363,992
Taxicabs	159,075	50	79,537
Total franchise fees[6]	$140,944,142		$72,146,321
Percentage of franchise tax from residential:		51.19 percent	

Table 3. Residential Portion of Property Tax Base
(Billions $)

	1996	1995	1994
Total appraised value	40.925	39.035	36.106
Total value for county tax purposes	36.554	34.872	32.117
Value of residential property			
Single-family residential	21.996	20.721	19.101
Multi-family residential	2.254	2.220	2.045
Mobile homes	.070	.057	.053
Less over-65/disabled exemptions	(2.729)	(2.612)	(2.520)
Less veterans exemptions	(.119)	(.074)	(.072)
Total taxable residential	21.472	20.312	18.606
Taxable residential portion of total taxable value	58.74%	58.25%	57.93%

Source: Bexar County Appraisal District

In conclusion, each household in the community provides the city general fund with annual revenue from three major sources: (1) property tax, (2) local sales tax and (3) franchise fees. In addition, when the land is platted initially, the developer pays a one-time fee for zoning and platting the new subdivision. The homebuilder then pays a one-time fee for the building permit and inspections, as well as the sales tax on the materials purchased to build the house. All of this revenue goes into the city general fund, except for a portion of the property tax that goes into the debt service fund. Table 4 shows where these revenues are allocated within city funds for future spending.

Table 4. Destination of Revenues Paid to San Antonio
Major Revenue Sources From Residential Households
(Year Ended September 30, 1995)

	General Fund (Percent)	Debt Service Fund (Percent)	SAWS Fund (Percent)
Annual Revenue			
Property tax	62	38	
Sales tax (1%)	100		
Franchise tax	100		
One-time Revenue			
Platting fees	100		
Zoning fees	100		
Building permits	100		
Building inspections	100		
Sales tax on building materials	100		
Sewer impact fee			100
Water impact fee			100

Definitions

General fund. The majority of all operating expenditures of the city other than proprietary fund activities. Police, fire, planning, library and park services are examples.

Debt service fund. Accounts for the accumulation of resources and payment of general long-term debt principal, interest and related costs of all the city's general long-term debt.

SAWS fund: A special revenue fund for the San Antonio water system. Funds that go into this account can only be spent on activities related to the water and sewer utility.

Fiscal Impact of Five New Subdivisions

The fiscal impact of each new subdivision was measured by comparing the revenues generated by an average household with the costs actually incurred by the city of San Antonio to provide needed capital improvements and regular government services to these new areas.

To examine the fiscal impact of new development on San Antonio, three separate city funds must be analyzed because these funds are autonomous, and revenues received in one account cannot be transferred to pay for activities funded in another. New subdivision development has a fiscal impact on each one. These funds are the:

- general fund
- debt service fund
- SAWS budget

Fiscal Impact on General Fund

To determine the net fiscal impact of a new subdivision on the general fund, three premises were developed.

Premise one. The average existing San Antonio household pays into the general fund to purchase an average level of governmental services. These services include city administration, police and fire protection, emergency medical service, libraries, museums, street maintenance, municipal court and other services.

Premise two. Each new household within the city limits will create demand for additional city services, for which the average household pays about $487, according to the *Annual Report for the City of San Antonio* (fiscal year ended September 1995). Specific details of how this was calculated are presented in Appendix B.

Premise three. Each new household also creates a new stream of revenue for the general fund, including revenues from property taxes, sales tax, franchise fees, user fees, fines, penalties and permits. Any surplus revenue that a household generates more than the city-wide average of $487 can be used at the discretion of the city council to benefit the existing households in the community. The estimated revenues paid into the general fund by an average household in each of the five new subdivisions is presented in Appendix B. Summary results of these revenues are shown in Table 5.

Table 5. Comparison of General Fund Revenues Paid From Households in the Five Subdivisions With the Average Household in San Antonio

Subdivision	General fund revenue paid by an average household in each subdivision	General fund revenue paid by the average existing household in San Antonio	Surplus general fund revenue per new household
Guilbeau Park	$ 589	$487	$ 102
Northwest Crossing	993	487	506
Hollow at Inwood	1,538	487	1,051
Bluff Creek	1,017	487	530
Brookside	664	487	177

The revenue surplus per lot generated by a new subdivision is directly correlated with the average value of the homes. The smallest revenue surplus of $102 occurs in Guilbeau Park, which has an average home value of $75,000. In comparison, an average house in the Hollow at Inwood (average value of $225,000) generates an annual revenue surplus of approximately $1,051.

Fiscal Impact on Debt Service Fund

Analysis of the fiscal impact of new subdivisions on the debt service fund was based upon four premises.

Premise one. Each new household must pay for its pro-rata share of the infrastructure required to create the new subdivision and connect it to the existing infrastructure of the community. These capital improvements include streets, storm water drainage and sidewalks.

Premise two. Many of these capital improvements are paid for directly by the developer, the homebuilder or the new homeowner. A list of capital improvements paid for by developers in San Antonio was listed previously.

Premise three. Some capital improvements are paid for by bonded indebtedness of the city (or agencies owned or controlled by the city) in the form of general obligation bonds or revenue bonds. These bonds are amortized during a term of ten-to-20 years. Such improvements are a "cost" to the city-at-large (the existing residents of the community) and include new police substations, fire stations, parks, branch libraries, additions to sewer[7] treatment facilities, water supply, storage and transmission and other capital improvements needed to meet the additional demand from the new households.

Premise four. Each new household generates annual revenue for the debt service fund from a portion of their property taxes. As mentioned previously, approximately 38 percent of general property tax revenue goes into the debt service fund. If the revenues from a new household to the debt service fund are sufficient to amortize a level of debt that exceeds the costs of installing the necessary infrastructure identified in premise three, then the household is "paying its way" and is not being subsidized by tax revenues from existing households. If not, then debt service funding supported by existing households that could be used for improvements citywide must be diverted to provide the improvements needed to support the new subdivision.

Revenues from New Development to Debt Service Fund

The annual debt service fund revenue generated from an average household was estimated for each of the five subdivisions. As illustrated in Table 6 for example, the average household in the Hollows at Inwood paid approximately $511 in general property taxes into the debt service fund in 1995. Based on a typical general obligation bond with a 20-year term and an interest rate of 6 percent, this $511 annual income would support a bonded indebtedness of approximately $5,933. Similarly, an average household in Brookside pays approximately $170 into the debt service fund from their general property taxes. This annual revenue would support a 20-year bond in the amount of $1,974.

Table 6. Debt Service Fund Revenue Contribution Per Household (From general property taxes based on general obligation bond with 20-year term and 6 percent interest rate)

Subdivision	Revenue Per Household	Debt Service Supported
Guilbeau Park	$170	$1,974[8]
Northwest Crossing	311	3,611
Hollow at Inwood	511	5,933
Bluff Creek	296	3,437
Brookside	$170	$1,974

Costs of Capital Improvements Paid from Debt Service Fund

Fiscal impact analysis of the debt service fund requires that the cost of capital improvements that benefit the subdivisions in this study be compared with the revenues produced by them. City officials were asked to identify any capital improvements that were made (or are planned in the near future) to support the five subdivisions. The following capital improvements and their costs were identified.

Police Protection

According to Police Media Services, there are six police substations serving the estimated 400,000 households in San Antonio. Consequently, each substation serves approximately 66,667 households.

The most recently-constructed substation is the Prue Road Service Center at 7020 Prue Road, which was built in 1990. The size of a typical new substation is 10,135 square feet, with a fueling station and car wash. City police officials report that the average cost of a substation is $2 million. Consequently, the average capital cost for a police substation is estimated to be $30 per household.

Parks

According to park officials, there is no master plan that obligates the city to provide a park for every new subdivision. New residents, however, are invited to use the existing parks in the community. Park improvements are part of the political process of capital budgeting, along with other proposed capital projects.

Most recently, Golden Park was developed in the southwestern perimeter of the city. Nearly 16 acres of land was purchased for $80,000 with Phase I developments completed in October 1996 at a cost of $160,755. These improvements included site grading, a parking lot, sidewalks, playground surface and structure, metal pavilions and picnic tables, a water fountain, shade trees and landscaping. Phase II developments are planned at an estimated cost of $85,000, which include a lighted basketball court. When these improvements are completed, the total cost of this park, including land will be approximately $325,000.

Golden Park is a typical neighborhood park that is designed to serve residents within a one-mile radius (a little more than three square miles). This area includes an estimated 3,300 households and, therefore, the cost per household for the park is approximately $99.

Storm Water Drainage

According to officials of the San Antonio Public Works Department, there have been no capital improvement funds expended for drainage projects that support the five subdivisions reviewed in this research.

Library Services

The desired service area for a branch library, according to library officials, is within a three-mile radius of the branch. This translates into a desired service area of 28.27 square miles. Estimates from the San Antonio Planning Department indicate the average housing density within the city limits is 1,061 households per square mile. Therefore, the desired service area of a branch library would include approximately 30,000 households. Currently, the city is served by 18 branch library facilities serving the 412,300 households, which means that the actual service area of an average branch library is 22,905 households.

The standard branch library is a freestanding building with 12,000 square feet. The most recent facility is the Great Northwest branch that was built in 1994 at a cost of $1,915,000 (including land, building and furnishings). In conclusion, the city incurs capital expenses of approximately $2 million to provide library service for a desired service area containing approximately 22,905 households. Consequently, the capital cost for branch library service for houses in new subdivisions is roughly $87 per household.

Streets

Officials of the San Antonio Public Works Department provided the following information about street improvements associated with the subdivisions reviewed in this project.

Local Access Roads

The developers in all five subdivisions have paid for local access roads within their subdivision.

Collector Streets

Some of the subdivisions do not have collector streets. However, if they do have them, the developer was required to pay for them.

Arterial Roads

Arterial roads are major thoroughfares providing access from the subdivision to the rest of the city and must be expanded when new development generates sufficient traffic to warrant street improvements. Two-lane roads often are expanded to four-lane or five-lane roads. The entire cost of improving the arterial

streets was paid by developers as a condition for new development approval in four of the five subdivisions reviewed in this report.

Guilbeau Park. The developer paid for the entire cost of constructing New Guilbeau Road, a four-lane, divided arterial street, located on the northern border of the subdivision. Therefore, the city incurred no cost in the improvement of this road.

Northwest Crossing. The county paid to improve Tezel Road, also a four-lane, divided arterial street, before it was annexed into the city. The city incurred no cost in these improvements either.

The Hollows at Inwood. Both Bitters Road and Heubner have been improved to four-lane arterials to serve this area of the city. These two road improvements were paid for entirely by the developers. Again, the city incurred no cost.

Bluff Creek. This subdivision is not served directly by an arterial street. Bitters Road is the main street that serves the site, and it remains a modest two-lane road in this area. Therefore, the city has incurred no cost in the improvement of this road as a result of this new subdivision.

Brookside. Goliad Road is the major arterial street with approximately 1.75 miles of improved surface. The 1992 cost to the city was $2,764,516, including street, sewer and water improvements. Brooks AFB occupies a large part of the benefit district for this road improvement. Consequently, the privately-owned land in this benefit district is estimated to be only 1.5 square miles. The average housing density is approximately 1,061 households per square mile, so roughly 1,600 households could be in the benefit district. Therefore, the cost per household for the Goliad Road improvement and the sewer and water improvements is approximately $1,727.

Fire Protection

Currently, there are 45 fire stations serving the estimated 412,300 housing units in San Antonio. This indicates that each fire station serves an average of 9,162 households.

According to city fire officials, the most recently-completed fire substations were located in Stoneoak and Westover Hills. A company of 13-15 people staffs the typical substation during a 24-hour period. Capital costs include land acquisition, construction of the permanent facility and the acquisition of an engine unit (pumper). In some circumstances, there are no land costs involved, because the station is located on land already owned by the city or donated to the city. The cost of a pumper is estimated to be about $250,000, and the cost of building the fire station (including land) is estimated to be $1,420,000. Consequently, the total capital cost of a new fire substation (including land, building and pumper) is approximately $1,670,000. When this capital cost for fire protection is spread across the 9,162 households in the service area, the average cost is $182 per household.

Table 7 summarizes results of the fiscal impact on the debt service fund of each of the five subdivisions. The results indicate, for example, that the average household in Guilbeau Park generates enough revenue from general property taxes to support the debt service on a bond of $1,974 and that approximately $398 of capital improvements will be spent on the subdivision. Similar information is presented for each subdivision. Specific details of how the costs were calculated for each subdivision are presented in Appendix C.

The results clearly show that the lots in four of these five subdivisions have not been a net "cost" to the city of San Antonio. The annual revenues contributed to the debt service fund support a bonded indebtedness far in excess of the capital improvements made to date to benefit these areas. The Brookside subdivision is the one exception, because no developer was required to pay the cost of widening the arterial street that supports the subdivision, nor to pay for the sewer and water improvements that were a part of that capital improvement project.

Table 7. Comparison of Actual Costs and Revenues in the Debt Service Fund

Subdivision	Debt Service Supported Per Lot	Costs of Actual Capital Improvements Per Lot
Guilbeau Park	$1,974	$ 398
Northwest Crossing	3,611	398
Hollow at Inwood	5,933	398
Bluff Creek	3,437	398
Brookside	$1,974	$2,125

Fiscal Impact on the Sewer and Water Utility

Capital Improvements for Sewer and Water Service: Who Typically Pays for Them?

There are substantial investments that have to be made to provide sewer and water services to households in new subdivisions. Examples of these capital costs (and who pays for them) are shown below:

Water

Well to pump water from the Edwards Aquifer	SAWS	
High service pumps that transport water to subdivisions	SAWS	
Transmission lines from well to subdivisions	SAWS	
Transmission and distribution lines from pumping stations to subdivisions	SAWS	
Storage reservoirs	SAWS	
Extending existing transmission lines to subdivision		Developer
Main lines (on-site) that connect houses in the subdivision		Developer
Water line from the house to the water main		Developer

Sewer

Sewage treatment facility	SAWS	
Interceptor lines that transport sewage to treatment area	SAWS	
Large main lines connecting subdivision to interceptors	SAWS	
Extending existing (off-site) mains to the subdivision		Developer
Sewer lift stations (as needed)		Developer
Smaller sewer mains within the subdivision		Developer
Sewer line that connects the house to the sewer main		Developer

Water, sewer and storm water services are provided by the San Antonio Water System (SAWS), which is a city-owned and operated utility. It is managed independently from the city and is directed by a quasi-independent board of trustees. It operates as a separate, consolidated entity, and its operations and debt service obligations are paid for with revenues charged to its customers, as well as impact fees charged to developers. SAWS is defined as a "component unit proprietary fund" for financial accounting in the city budget. This means that its revenues and expenses are not included in the general fund, debt service fund or capital projects fund of the city. SAWS collects impact fees from new residential development to recapture the costs of capital improvements that are required to meet water and sewer demand from new growth.

Impact fees to recover the cost of these capital improvements are based upon the following assumptions:

- There will be 99,682 new dwelling units developed in the San Antonio water service area between the years 1996 and 2006, and 105,367 new dwelling units in the waste water service area.
- The average single-family dwelling will consume 400 gallons of water per day and generate 300 gallons of wastewater per day.

SAWS has identified 15 different "service levels" in the community. Each service level is determined largely by elevation. Changes in elevation create different requirements for pumping, storage and pipeline facilities. In general, the higher areas of the city require more extensive pumping, storage and transmission facilities. Consequently, the cost of required capital improvements increases according to elevation.

Calculating Water Impact Fees

The cost of capital improvements incurred by SAWS to provide water services are recaptured by impact fees charged to developers on each new metered connection. The amount of the fees and the rationale behind the fee structure follows.

Production facilities (including wells, high-service pumps and storage reservoir). The impact fees for production facilities were determined by identifying the actual cost of existing (and future) production facilities and determining a cost per dwelling unit for these facilities. For example, the average cost per dwelling unit for a water well is $41. The impact fees for pumping and storage facilities are determined by the actual cost per dwelling for the facilities needed to provide current and future service. These fees vary by service area in the city, reflecting the additional capital costs incurred to provide water service to the higher elevations in the city.

Transmission facilities (including major pipelines that convey water between service levels). Impact fees are charged for these facilities only in the services areas of the city where major pipelines are required to convey water from one service level to the next.

Distribution facilities (such as 12-inch-and-larger pipelines that convey water within each service level). The "buy-in" equity approach was used to calculate the impact fee for distribution facilities. This approach estimates the total equity in the existing water main system. The total equity is then divided by the number of dwelling units that can be serviced by the system. This number is estimated to be $189 per dwelling unit. The premise of the "buy-in method" is that each new dwelling unit will reimburse the utility company for their investment already made in the water distribution facilities.

In summary, the total impact fee charged for a new residential lot is calculated as follows:

	Lowest Cost Areas	Highest Cost Areas
Water well	$ 41	$41
Water distribution system	$189	$189

Additional water impact fees charged according to where the house is located:

Transmission lines	$ 0	$ 339
Pumps, elevated storage, ground storage	$ 16	$ 474
Maximum Water Impact Fee (per dwelling unit)	$246	$1,043

Calculating Sewer Impact Fees

SAWS currently incurs major capital costs involved in providing waste water treatment and interceptors that transport waste to the treatment facility.

San Antonio is currently served by four sanitary treatment facilities. These facilities have sufficient capacity to meet demand for approximately the next 20 years. There is sufficient capacity in the interceptor system to meet estimated demand for the next 20 years as well. Therefore, no additional expansion of treatment facilities or interceptors in the inner service area is expected in the next decade. The impact fees for sewer services have been calculated to allow SAWS to recover the capital costs incurred to provide growth capacity for the next two decades. This impact fee structure provides SAWS with funds to continue capital improvements that are required to support new growth, without having to recover these costs by raising water and sewer rates throughout the system.

The impact fees charged to each new home within the inner service area of San Antonio is calculated as follows:

Sanitary sewer interceptor facilities	$203
Wastewater treatment facilities	$224
Total impact fee for sewer	$427

Summary and Conclusions

New residential development has a substantial fiscal impact on three funds in the city's administrative structure: the general fund, debt service fund and the San Antonio Water System fund. The results of this research indicate that each of the five subdivisions pays more into the general fund than the average San Antonio household. This surplus revenue can then be used at the discretion of the city council to enhance or expand city administration, parks, fire and police protection, municipal court and library services to all areas of the city.

The debt service fund is responsible for the administration of San Antonio's bonded indebtedness. Such debt financing is used by the city to provide for capital improvements to the urban infrastructure. Results indicate that the amount of new borrowing capability created by the revenue from four of the five subdivisions greatly exceeds the actual amount spent for capital improvements to support them.

The fifth subdivision required capital costs slightly in excess of its ability to pay, for two atypical reasons. First, the city paid for the improvements of the major arterial road that supports the area. In all of the other subdivisions, the developer was required to pay for this cost. Second, Brooks AFB occupies a substantial portion of the benefit district for the arterial improvement. Consequently, the entire cost of this road improvement is spread over a benefit district that is only a small fraction of a normal situation.

The results indicate that the typical new subdivision has a substantial positive fiscal impact on the city. The revenue provided by property taxes from homeowners in these subdivisions supports a level of capital expenditures that greatly exceeds the amount spent to provide the needed capital improvements. These new subdivisions provide the city with the financial capability to also make additional capital improvements in the community.

The SAWS fund provides resources needed to pay for water and sewer services. The impact fees levied against each new home appear to be equitably calculated to allow SAWS to recover their actual costs expended (per household) to provide the services required.

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Footnotes

[1]While the developer pays the impact fees, the ultimate cost is eventually borne by the homeowner. Developers view the impact fees as another cost of development and price their lots to reflect the higher costs. Consequently, in most markets, the cost of impact fees is translated directly into higher lot prices.

[2]The author was allowed to review the entire file for a house built and sold in Tyler, Texas, in 1997. The house sold for $202,500 and contains 2,500 square feet with 2½ baths, a two-car garage and two living areas. The total sales tax paid on this house by the builder amounted to $3,688[2] and the local sales tax rate was 8.25 percent. Because only 1 percent of the sales tax goes to the general fund of the city, the one-time revenue from the builder of this house amounted to $447. This sales tax revenue to the city general fund amounts to approximately .22 percent of the sales price of the house. As a result, the sales tax revenue for the average house in each subdivision was estimated to be .22 percent of the sales price.

[3]A 1994 study estimated the amount of sales tax paid by households, according to their level of household income. For example, a household with $50,000 income paid approximately $73 for each ½-cent sales tax. This amounts to about .15 percent of their household income per ½-cent sales tax. A household with income of $100,000 paid about $113 or .11 percent of their income for each ½-cent of sales tax.

[4]The formula for franchise fees is complex, but city officials say it is approximately 10 percent of the revenue.

[5]Estimated by the author based on a previous study in Wichita, Kansas. The local telephone company in San Antonio would not disclose the percentage of revenue they receive from residential users.

[6]Including gross receipts, taxes and transfers from the water-sewer operating fund and street-use fees.

[7]Revenues and expenses associated with water and sewer services are accounted for separately in an enterprise fund called the water and sewer fund. Consequently, these improvements are not related to the fiscal impact of the debt service fund. Capital improvements for sewer and water are paid for strictly from revenues collected by the sewer and water utility. The fiscal impact analysis of sewer and water improvements is considered in the analysis of the water and sewer fund.

[8]Determined by dividing the annual revenue by the mortgage constant for a 20-year bond at 6 percent interest.

Appendix A

Average Household Revenue Paid to the General Fund

(All households in San Antonio city limits)
Based on annual report for fiscal year ending September 1995

	Total Revenue Received	Percentage from Residential	Received from Residential	Revenue per Household
Property taxes				
Current taxes	$85,690,446	58	$49,700,459	$124.25
Delinquent taxes	1,447,809	58	839,729	2.10
Judgments collected	68	58	39	0.00
City sales tax	97,667,344	50	48,833,672	122.08
Alcoholic beverage tax	2,353,138	80	1,882,510	4.71
Gross receipts business taxes				
Taxicabs	159,075	0	0	0.00
Texas transportation company	3,500	0	0	0.00
Southwestern Bell Telephone	8,680,741	60	5,208,445	13.02
Cablevision franchise	4,396,669	95	4,176,836	10.44
Bingo tax	363,992	100	363,992	0.91
Other	348,047	100	348,047	0.87
Penalties and interest on delinquent taxes	1,109,725	58	643,641	1.61
Total taxes	202,220,554		111,997,369	279.99
Licenses and permits				
Alcoholic beverages licenses	335,839	0	0	0.00
Health licenses	1,640,761	0	0	0.00
Amusement licenses	266,473	0	0	0.00
Professional/occupational licenses	498,010	0	0	0.00
Animal licenses	170,657	100	170,657	0.43
Building and equipment permits	5,470,288	40	2,188,115	5.47
Street permits	148,400	0	0	0.00
Total licenses and permits	8,530,428		2,358,772	5.90
Intergovernmental revenues				
Library aid from Bexar County	1,609,766	0	0	0.00
Health aid from Bexar County	406,539	0	0	0.00
Total intergovernmental revenue	2,016,305		0	0.00
Revenues from utilities				
City public service	119,237,659	48	57,234,076	143.09
San Antonio Water System	8,106,006	61	4,944,664	12.36
Total revenues from utilities	127,343,665		62,178,740	155.45
Charges for governmental services				
General government	5,273,053	100	5,273,053	13.18
Police department	2,693,624	60	1,616,174	4.04
Fire department	553,326	0	0	0.00
Street repairing and lighting	8,773	0	0	0.00
Barricade fees	5,940	100	5,940	0.01
Animal pound fees	118,594	100	118,594	0.30
Abatement of nuisances	38,547	100	38,547	0.10

Average Household Revenue Paid to the General Fund (Continued)

	Total Revenue Received	Percentage from Residential	Received from Residential	Revenue per Household
Health	1,528,494	100	1,528,494	3.82
Hemisfair Plaza	31,046	0	0	0.00
Tower	1,317,207	0	0	0.00
La Villita	437,584	0	0	0.00
Recreation fees	411,184	80	328,947	0.82
Brackenridge park concessions	8,120	80	6,496	0.02
Concessions in other parks	51,227	80	40,982	0.10
River boats	1,622,383	0	0	0.00
San Antonio baseball stadium	604,620	0	0	0.00
Miscellaneous recreation revenue	165,509	80	132,407	0.33
Governor's Palace	29,167	80	23,334	0.06
Swimming pools	124,837	100	124,837	0.31
Community centers	3,348	100	3,348	0.01
Library	417,929	100	417,929	1.04
Market square	1,089,968	0	0	0.00
Cemetaries	136,042	100	136,042	0.34
Total charges for services	16,670,522		9,795,124	24.49
Municipal court fines	8,262,390	100	8,262,390	20.66
Interest earned	3,679,026	0	0	0.00
Sales	1,005,868	0	0	0.00
Recovery of expenditures	1,426,649	0	0	0.00
Contribution from governmental agencies	37,000	0	0	0.00
Interfund charges	2,053,764	0	0	0.00
Rents, leases and concessions	1,192,553	0	0	0.00
Other	369,380	100	369,380	0.92
Total miscellaneous	9,764,240		369,380	0.92
Total revenue to general fund	$374,808,104			
Estimated revenue from residential households			$194,961,776	
Average revenue per household				**$487.40**

Definitions for Appendix A

1995 total revenue. Actual revenue received by the general fund in the year ended September 30, 1995.

Percent residential. The estimated percentage of total revenue contributed by residential households, including owner-occupants and renters.

Residential revenue. Estimated total general fund revenue contributed by residential households in San Antonio.

Revenue per household. The estimated revenue paid by the average household within the city of San Antonio to the general fund in 1995.

Appendix B

Estimating City Revenues Produced per Household in the New Subdivisions

Gardens at Guilbeau Park

Average sales price[1]	$ 75,000	Typical electric-gas bill[2]	$780
Average household income[3]	$34,500	Typical telephone bill[4]	160
City tax rate per $100[5]	.58797	Typical sewer-water bill[6]	300
		Typical cable TV bill[7]	370

Annual Revenues	General Fund	Debt Service Fund
Property tax[8]	$270	$170
Franchise fees[9]		
Electric-gas	109	
Sewer-water	8	
Cable TV	19	
Telephone	16	
Sales tax[10]	110	
Mixed drink and bingo tax[11]	6	
Licenses and permits[12]	6	
Municipal court fines[13]	21	
Charges for current services[14]	24	
Total annual revenue per household	$589	$170

One-time Revenues from Each House in the Subdivision

Sales tax on building materials	$166
Building permit	453
Blueprint-checking fee	35
Electrical inspection	67
Plumbing inspection	95
Heating and air inspection	62
Total additional one-time revenues	$878

One-time Revenues from the Entire Subdivision

Platting fees	$350 plus $57 per lot, plus $410 per acre for open space
Zoning application fees (sites more than 25 acres)	$2,400

Northwest Crossing

Average sales price[1]	$137,000	Typical electric-gas bill[2]	$1,560
Average household income[3]	$63,000	Typical telephone bill[4]	160
City tax rate per $100[5]	.58797	Typical sewer-water bill[6]	500
		Typical cable TV bill[7]	370

Annual Revenues	General Fund	Debt Service Fund
Property tax[8]	$494	$311
Franchise fees[9]		
Electric-gas	218	
Sewer-water	13	
Cable TV	19	
Telephone	16	
Sales tax[10]	176	
Mixed drink and bingo tax[11]	6	
Licenses and permits[12]	6	
Municipal court fines[13]	21	
Charges for current services[14]	24	____
Total annual revenue per household	$993	$311

One-time Revenues from Each House in the Subdivision

Sales tax on building materials	$ 301
Building permit	564
Blueprint-check fee	79
Electrical inspection	75
Plumbing inspection	122
Heating and air inspection	82
Total additional one-time revenues	$1,223

One-time Revenues from the Entire Subdivision

Platting fees	$350 plus $57 per lot, plus $410 per acre for open space
Zoning application fees (sites more than 25 acres)	$2,400

The Hollows at Inwood

Average sales price[1]	$ 225,000	Typical electric-gas bill[2]	$1,815
Average household income[3]	$104,000	Typical telephone bill[4]	160
City tax rate per $100[5]	.58797	Typical sewer-water bill[6]	480
		Typical cable TV bill[7]	370

Annual Revenues	General Fund	Debt Service Fund
Property tax[8]	$811	$511
Franchise fees[9]		
Electric-gas	393	
Sewer-water	13	
Cable TV	19	
Telephone	16	
Sales tax[10]	229	
Mixed drink and bingo tax[11]	6	
Licenses and permits[12]	6	
Municipal court fines[13]	21	
Charges for current services[14]	24	
Total annual revenue per household	$1,538	$511

One-time Revenues from Each House in the Subdivision

Sales tax on building materials	$ 495
Building permit	653
Blueprint-check fee	81
Electrical inspection	80
Plumbing inspection	151
Heating and air inspection	112
Total additional one-time revenues	$1,572

One-time Revenues from the Entire Subdivision

Platting fees	$350 plus $57 per lot, plus $410 per acre for open space
Zoning application fees (sites more than 25 acres)	$2,400

Bluff Creek

Average sales price[1]	$ 130,000	Typical electric-gas bill[2]	$1,860
Average household income[3]	$60,000	Typical telephone bill[4]	160
City tax rate per $100[5]	.58797	Typical sewer-water bill[6]	600
		Typical cable TV bill[7]	370

Annual Revenues	General Fund	Debt Service Fund
Property tax[8]	$469	$296
Franchise fees[9]		
Electric-gas	260	
Sewer-water	16	
Cable TV	19	
Telephone	16	
Sales tax[10]	180	
Mixed drink and bingo tax[11]	6	
Licenses and permits[12]	6	
Municipal court fines[13]	21	
Charges for current services[14]	24	
Total annual revenue per household	$1,017	$296

One-time Revenues from Each House in the Subdivision

Sales tax on building materials	$ 286
Building permit	539
Blueprint-check fee	64
Electrical inspection	75
Plumbing inspection	122
Heating and air inspection	82
Total additional one-time revenues	$1,168

One-time Revenues from the Entire Subdivision

Platting fees	$350 plus $57 per lot, plus $410 per acre for open space
Zoning application fees (sites more than 25 acres)	$2,400

Brookside

Average sales price[1]	$ 75,000	Typical electric-gas bill[2]	$1,311
Average household income[3]	$34,500	Typical telephone bill[4]	160
City tax rate per $100[5]	.58797	Typical sewer-water bill[6]	300
		Typical cable TV bill[7]	370

Annual Revenues	General Fund	Debt Service Fund
Property tax[8]	$270	$170
Franchise fees[9]		
Electric-gas	184	
Sewer-water	8	
Cable TV	19	
Telephone	16	
Sales tax[10]	110	
Mixed drink and bingo tax[11]	6	
Licenses and permits[12]	6	
Municipal court fines[13]	21	
Charges for current services[14]	24	
Total annual revenue per household	$664	$170

One-time Revenues from Each House in the Subdivision

Sales tax on building materials	$ 166
Building permit	453
Blueprint-check fee	35
Electrical inspection	67
Plumbing inspection	95
Heating and air inspection	62
Total additional one-time revenues	$ 878

One-time Revenues from the Entire Subdivision

Platting fees	$350 plus $57 per lot, plus $410 per acre for open space
Zoning application fees (sites more than 25 acres)	$2,400

Notes for Appendix B

[1]Average sales price in the subdivision based on MLS sales data.

[2]Based on the actual electric and gas bills for a typical house in the area for the previous 12 months.

[3]Based upon the household income required to purchase a home valued at the average sales price in the subdivision. Assuming a 90 percent loan at 8 percent interest for 30 years and standard underwriting guidelines.

[4]Estimated by author, based upon the current rate for basic service of $8 per month, plus a small amount of long distance.

[5]The tax rate per $100 for the city of San Antonio for 1995.

[6]Based upon the average of the most recent sewer and water bills for a typical house in the subdivision.

[7]Based upon the current rate for basic service.

[8]General fund portion calculated by taking the average sales price (less $5,000 homestead exemption) times the city (1995) general fund rate of .34907 per $100. Debt service portion used the 1995 city rate of .18453 per $100.

[9]Based upon estimated annual utility bills and current franchise tax rates.

[10]Based upon the income level of the owner of an average priced house in the subdivision and estimates from a study done by the Texas comptrollers office that estimates the amount of sales tax revenues for different household income levels.

[11]The average level of spending for all households in San Antonio. Estimated in Appendix A.

[12]Ibid.

[13]Ibid.

[14]Ibid.

Appendix C

Fiscal Impact on Debt Service Fund of Each Subdivision

	Debt Service Supported by Each Lot	Actual Cost of Capital Improvements Per Lot Paid by The City
Guilbeau Park		
From:		
Property tax	$1,974	
Costs:		
Police substation		$ 30
Fire substation		182
Local access streets within the subdivision		0
Collector streets within the subdivision		0
Arterial street widening		0
Storm drainage		0
Branch library		87
Neighborhood park		99
Total	$1,974	$398
Northwest Crossing		
From:		
Property tax	$3,611	
Costs:		
Police substation		$ 30
Fire substation		182
Local access streets within the subdivision		0
Collector streets within the subdivision		0
Arterial street widening		0
Storm drainage		0
Branch library		87
Neighborhood park		99
Totals	$3,611	$398
Hollow at Inwood		
From:		
Property tax	$5,933	
Costs:		
Police substation		$ 30
Fire substation		182
Local access streets within the subdivision		0
Collector streets within the subdivision		0
Arterial street widening		0
Storm drainage		0
Branch library		87
Neighborhood park		99
Totals	$5,933	$398

Fiscal Impact on Debt Service Fund of Each Subdivision (continued)

.	Debt Service Supported by Each Lot	Actual Cost of Capital Improvements Per Lot Paid by The City
Bluff Creek		
From:		
Property Tax	$3,437	
Costs:		
Police substation		$ 30
Fire substation		182
Local access streets within the subdivision		0
Collector streets within the subdivision		0
Arterial street widening		0
Storm drainage		0
Branch library		87
Neighborhood park		99
Totals	$3,437	$398
Brookside		
From:		
Property Tax	$1,974	
Costs:		
Police substation		$ 30
Fire substation		182
Local access streets within the subdivision		0
Collector streets within the subdivision		0
Arterial street, sewer and water improvements (Goliad Road)		1,727
Storm drainage		0
Branch library		87
Neighborhood park		99
Totals	$1,974	$2,125

Definitions

Debt service supported per lot. The amount of revenue paid annually into the debt service fund by the average household in the subdivision (calculations in Appendix B) divided by the mortgage constant for a 20-year, tax-exempt bond with an interest rate of 6 percent.

Actual capital improvements per lot. The amount of capital improvements paid for by the city at large that have been completed to date for the subdivision. The actual cost of the improvements were assessed to each lot on a proportional basis, according the proportion of the benefit district represented by the subdivision and the number of lots in the subdivision. Capital improvements for expansion of water and sewer treatment plants are not included in this report because they are considered separately in the SAWS analysis.

Appendix D

San Antonio Subdivision Capital Improvements. Who Typically Pays for What?

	Developer Pays	City Pays	Both Pay
Water			
Design and engineering	X		
Service connection to lots	X		
Main supply lines within subdivision	X		
Oversized supply lines			X
Extension of water lines	X		
Pumping stations	Impact fee		
Water storage facilities	Impact fee		
Treatment facilities	Impact fee		
Supply wells	Impact fee		
Supply source	Impact fee		
Sewer			
Design and engineering	X		
Distribution pipes within subdivision	X		
Lift stations	X		
Extension lines to existing network	X		
Oversized lines and lift stations		X	
Interceptor lines	Impact fee		
Treatment facilities	Impact fee		
Storm Water Drainage			
Design and engineering	X		
Improvements within subdivision	X		
Connections to existing channels	X		
Improvements under major streets and highways		X	
Streets			
Design and engineering	X		
Subdivision access streets	X		
Larger collector streets in subdivision	X		
Widening arterial perimeter streets	X		