LAST MINUTE AGENDA INFORMATION

01/23/13 Regular Meeting

(Agenda Related Writings/Documents provided to a majority of the City Council after distribution of the Agenda Packet for the January 23, 2013 Regular meeting.)

ITEM NO.	DESCRIPTION
6.3	**REPORT ON SEWER SERVICE CHARGE AND CAPACITY FEE STUDY BY CONSULTANT, KARYN KEESE, ATKINS NORTH AMERICAN, INC. (0830-37)** a. Attachment 1 - Consultant Preliminary Sewer Service Charge and Capacity Fee Study

Draft 3
Sewer Service Charge and Capacity Fee Study
City of Imperial Beach

January 15, 2013

Prepared for:
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Abbreviations

BOD	Biochemical Oxygen Demand
CIP	Capital Improvement Plan
EDU	Equivalent Dwelling Unit
ENR-CCI	Engineering News Record Construction Cost Index
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
GIS	Geographical Information System
HCF	Hundred Cubic Feet
JURUMP	Jurisdictional Urban Runoff Management Program
Metro	City of San Diego Metropolitan Wastewater System
mg/l	Milligrams per Liter
O&M	Operations and Maintenance
TSS	Total Suspended Solids

Executive Summary

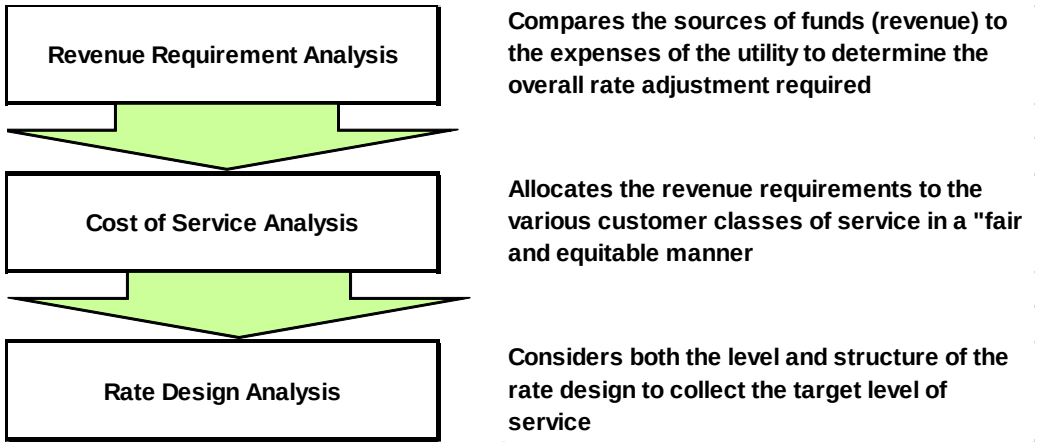
ES.1 Introduction

Atkins was retained by the City of Imperial Beach to perform a comprehensive sewer user and capacity fee rate study. A comprehensive rate study determines the adequacy of the existing rates and provides the basis for adjustments to maintain cost-based rates. This report describes the methodology, findings, and conclusions of the sewer user and capacity fee rate study.

ES.2 Overview of the Sewer User Rate Study Process

A comprehensive rate study typically utilizes three interrelated analyses to address the adequacy and equity of the utility's rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. The process is illustrated in Figure ES-1.

Figure ES-1 Overview of the Comprehensive Rate Study Analysis



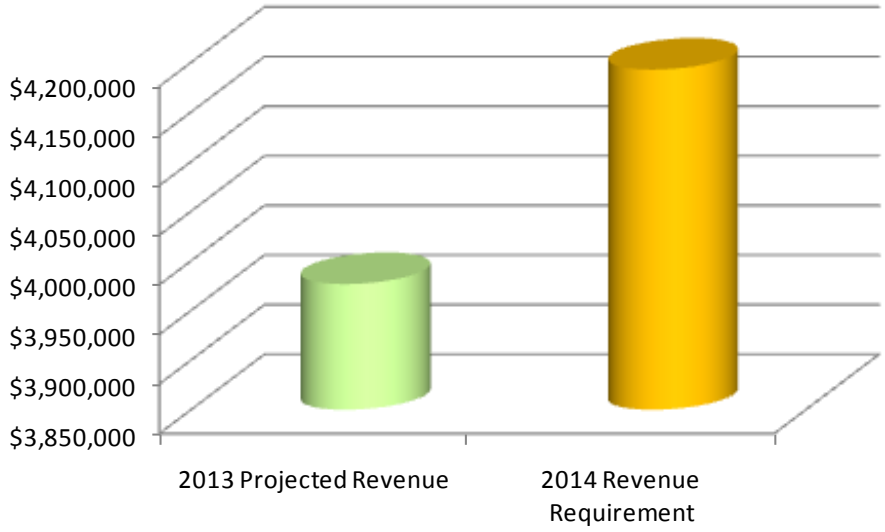
The City's sewer utility was evaluated on a "stand-alone" basis. That is, no subsidies between the utility or other City funds occur. By viewing the utility on a stand-alone basis, the need to adequately fund both operations and maintenance (O&M) and capital infrastructure must be balanced against the rate impacts on utility customers.

A detailed and comprehensive process was used to review the City's rates. As a part of the rate study process a number of on-site project meeting and conference calls were used to review the results with City management, staff, and the City Council. From this process, final proposed rates were developed.

The steps shown in Figure ES-1 produced the following results for establishing rates for Fiscal Year (FY) 2013/2014:

Revenue Requirement Analysis: The City's sewer utility FY 2012/2013 revenue requirement was increased from $3.7 to $4.2 million to respond to increased costs from the City of San Diego Metropolitan Wastewater System (Metro) for transportation, treatment, and disposal costs for the City's wastewater and for the inclusion of a $400,000 annual capital replacement fund to repair the City's aging sewer infrastructure. Figure ES-2 shows the projected FY 2012/2013 sewer user revenue that has been placed on the San Diego County Property Tax Roll or hand-billed to government agencies of $ 3,976,620. With the inclusion of the increased costs the FY 2013/2014 revenue requirement (budget less non-operating revenues) increases to $4,192,748. The sewer user rates included in this study are established based on this increased revenue requirement.

Figure ES-2 2013 Projected Revenue versus 2014 Revenue Requirement



Cost of Service Analysis: The cost of service analysis revealed that the City's multi-family and commercial and industrial customers have not been providing their required funding for the utility's fixed costs. In addition the sewage strength allocations for commercial/industrial customers were brought up to current industry standards.

Rate Design Analysis: The City's current sewer rate structure only provides for a base charge to recover fixed costs in the single family rate structure. In addition, rate of returns have not been applied to all customer classes to discount the annual water usage for water not returned to the sewer system for such purposes as landscaping. Thus the following modifications to the City's current rate structure are:

1. All classes of users will pay an annual base charge based on the size of their water meter. The size of the water meter is used to allocate fixed costs based on the capacity that the user has purchased in the City's sewer system.

2. Industry standard rate of returns of water that flows through a water meter and returns to the sewer are applied on each customer class to determine sewer flow.

As shown in Table ES-1 a base charge has been established for all user classes to recover fixed costs and current industry standard strength allocations have been assigned to non-residential users. This results in the reduction of most non-residential commodity rates by removing fixed costs from the commodity rate and putting it in the base charge where it belongs.

Table ES-1 Comparison of Current versus Proposed Sewer User Rates

Classes of Users	Current FY 2012/2014 Rates		Proposed FY 2013/2014 Rates	
	Base Charge	Commodity Rate ($ /HCF)	Base Charge (5/8" Water Meter)	Commodity Rate ($ /HCF)
Single Family	$173.75	$2.58	$140.24	$4.08
Non-Residential (Includes Multi-Family)				
Rest/Bakeries/Mort./Groc.		$8.38	$140.24	$9.18
Small Commercial		$4.35	$140.24	$3.65
Car Wash/Laundries		$3.97	$140.24	$3.46
Public Agency/Institutional		$3.67	$140.24	$3.33
Heavy Commercial		$7.65	$140.24	$5.82
Mixed Use Light		$4.44	$140.24	$4.37
Mixed Use Heavy		$6.46	$140.24	$5.28
Navy		$5.02	$140.24	$4.87
Multi-Family		$4.38	$140.24	$4.08

Table ES-2 summarizes and contrasts the current FY 2012/2013 user rates for each class' average users to the proposed FY 2013/2014 annual rates.

Table ES-2 Comparison of Average User Rates

Class of Users	Average Annual Consumption (HCF)	FY 2012/2013 Rates & Structure			FY 2013/2014 Rates & Structure				% Change
		Base Charge	Commodity Charge	Total Annual Charge	Base Charge 5/8" Meter	Commodity Charge	Total Annual Charge	Dollars	
Single Family	96	$173.75	$247.49	$421.23	$140.24	$293.75	$433.99	$12.76	3.0%
Multi-Family	212	$0.00	$927.88	$927.88	$140.24	$821.68	$961.92	$34.04	3.7%
Small Commercial	114	$0.00	$495.93	$495.93	$140.24	$374.04	$514.29	$18.35	3.7%
Restaurant	260	$0.00	$2,177.89	$2,177.89	$140.24	$2,148.36	$2,288.61	$110.72	5.1%
Car Wash	621	$0.00	$2,462.45	$2,462.45	$140.24	$2,149.35	$2,289.59	-$172.86	-7.0%
Public Agency	530	$0.00	$1,946.32	$1,946.32	$140.24	$1,766.80	$1,907.04	-$39.28	-2.0%

ES.3 Overview of the Capacity Fee Rate Study

At the time of connection to a public agency's utility system, or at the expansion of existing units on a connection line, customers are typically charged a capacity fee. The capacity fee requires new users, to pay for their share of costs to construct facilities required to provide their utility service or, in the case of increased density, their increased intensity of use. Revenues generated through capacity fees can be used to directly offset system expansion costs, repay debt issued to finance system expansion (if applicable), or for renewal and replacement of capital projects (depending on the capacity fee methodology). Use of capacity fee revenues to offset these capital and debt service costs reduces the amount of revenue required from rates

assessed to existing users. This way, capacity fee revenues in effect, reimburse existing users (through lower rates) for costs they have incurred to build and maintain capacity for new users.

In discussions with City staff Atkins was requested to update the City's sewer capacity fees to reflect the true value of its capital facilities, to ensure that these fees are in accordance with current industry guidelines and practice, and to properly value the City's investment in the Metro System. The City's current capacity fee was set in June 2005 at $1,230 per equivalent dwelling unit (EDU[1]). The 2005 capacity fee did not include the full valuation of the Metro System or the replacement costs of the City's pipelines. It is a common practice to index capacity fees by the increased construction cost inflation as measured by the Engineering News Record Construction Cost Index (ENR-CCI). If the City had annually indexed their current fee the capacity fee would be $1,479 (not including improvements and the Metro System capacity valuation).

Atkins reviewed capacity fee alternatives with City staff and ultimately the capacity fees were calculated using the buy-in approach[2] and are shown in Table ES-3. The buy-in approach requires a valuation of both the City's and the Metro wastewater systems. The two most common approaches are replacement costs and replacement cost less depreciation. These two valuation methods for capacity fees are often considered to represent the most accurate value of utility facilities. Original cost valuations are less common since the original cost of the wastewater system likely does not represent the true value of the system in today's dollars. An appropriate analogy is that a house is often worth more than its original purchase price.

Table ES-3 shows the three components of the City's capacity fee. The upper portion of the table shows the capacity fee based on the value of the City's wastewater system (line 2). The middle portion of the table shows the value of the City's pump stations and the related capacity fee (line 4). The lower portion of the table shows the Metro component of the capacity fee (line 6). Each component of the capacity fee is calculated by taking the value of facilities (under each valuation method) and dividing by the EDUs. Line 7 shows the total capacity fee for one sewer unit, summing all components, under each valuation method. For each new customer or for increased density, the City will ascertain, at the time of capacity fee assessment, the number of new EDUs required and charge the fee accordingly.

Figure ES-3 provides a summary of Metro agency capacity fees and shows the City's current and proposed capacity fees. It shows that the proposed fee of $4,776 is in line with other Metro agencies that have recently updated their capacity fees and include the Metro component.

California state law regarding capacity fees requires a valuation of an agencies system as was prepared by this study. Once the total value of the system is established as shown in Table ES-3 an agency can establish their capacity fee up to the maximum valuation. However, an agency can choose to adopt a lower capacity fee. Due to the large differential between the cost of service capacity fee provided in this study and the City's current capacity fee the City may wish

[1] One EDU is equivalent to the assumed gallons per day of a single family residential user. Imperial Beach uses 232 gallons per day for a single family residential user. All other users are assigned EDUs at the time they purchase a capacity fee in their proportional relationship to a single family user.

2 The buy-in approach is appropriate for an older system which is mostly built-out. New customers are served by existing capacity in the current system. It is calculated as the value of current facilities divided by the equivalent dwelling units (or sewer units) which can be served by the existing system.

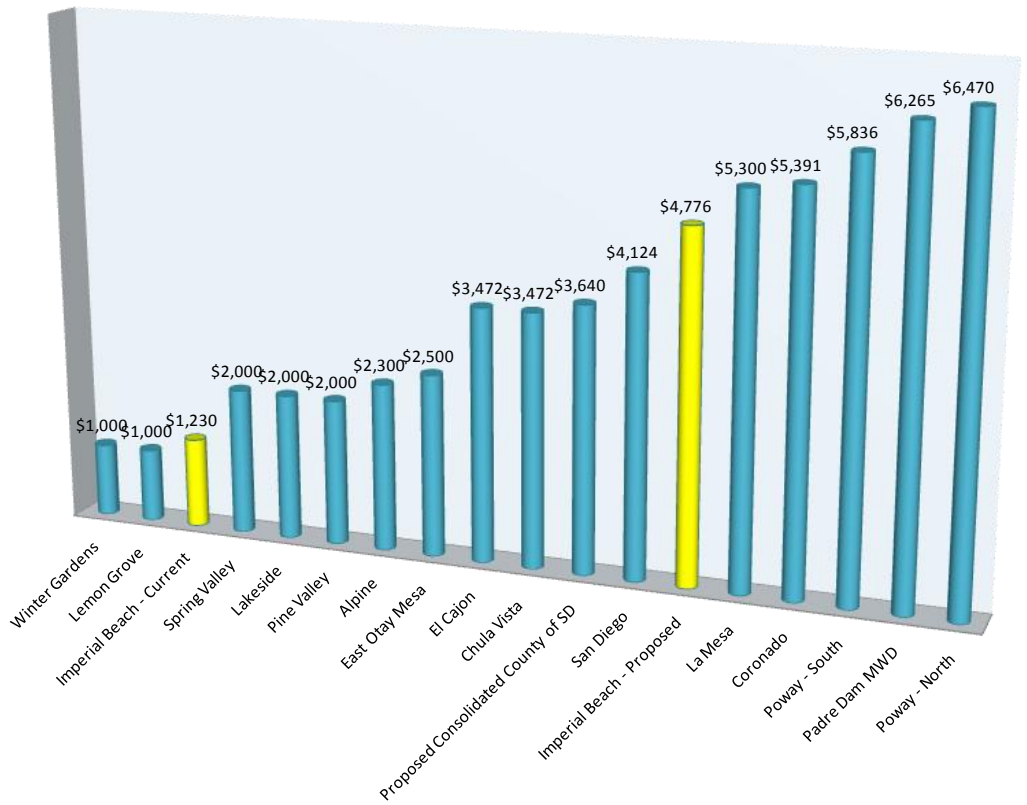
to only adopt the $2,176 for your pipelines and the $491 for your pump stations or $2,667. If so desired the Metro portion of the capacity fee valuation could be phased in over time.

Table ES-3 Proposed Sewer Capacity Fee

(A) Line No.	(B) Valuation Component	(C) Replacement Costs	(D) Replacement Cost Less Depreciation
1	Pipelines	$46,031,303	$23,015,652
2	Cost Per EDU *(a)*	$4,352	$2,176
3	Pump Stations	$15,596,987	$5,197,589
4	Cost Per EDU *(a)*	$1,475	$491
5	Metro Assets	$32,818,033	$22,300,011
6	Cost Per EDU *(a)*	$3,103	$2,108
7	Total Cost Per EDU	$8,929	$4,776
	(a) Total EDUs	$10,577	$10,577

Note: Pipelines and Pump Stations are based on replacement costs Metro Assets are valued as Reproduction Cost from Raftelis 2005 Study brought to present value using the June 2012 ENR

Figure ES-3 Sewer Capacity Fees for Metro Agencies

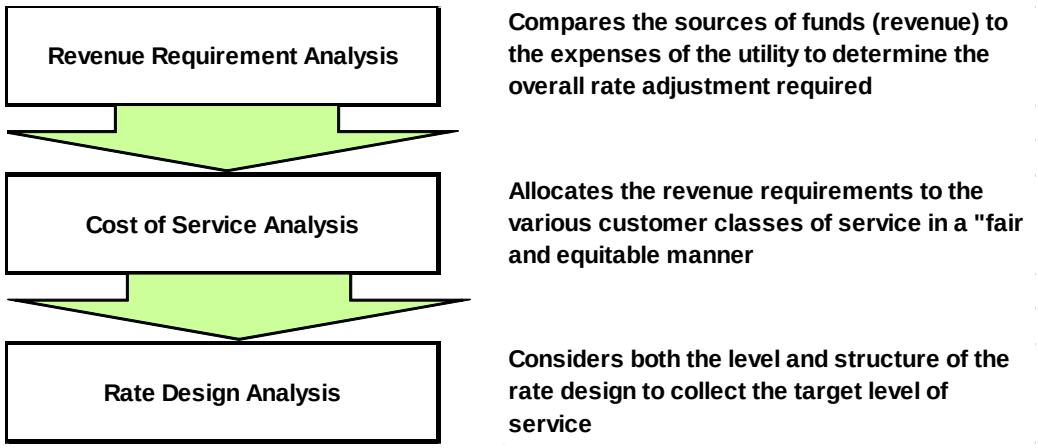


Section 1
Overview of the Sewer User Rate Setting Process

1.1 Overview of the Rate Study Process

A comprehensive rate study typically utilizes three interrelated analyses to address the adequacy and equity of the utility's rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. The process is illustrated in Figure 1-1.

Figure 1-1 Overview of the Comprehensive Rate Study Analysis



The City's sewer utility was evaluated on a "stand-alone" basis. That is, no subsidies between the utility or other City funds occur. By viewing the utility on a stand-alone basis, the need to adequately fund both operations and maintenance (O&M) and capital infrastructure must be balanced against the rate impacts on utility customers.

1.2 Generally Accepted Rate Setting Principles

As a practical matter, utilities should consider setting their rates around some generally accepted or global principles and guidelines. Utility rates should be:

- Cost-based, equitable, and set at a level that meets the utility's full revenue requirement
- Easy to understand and administer

- Design to conform with generally accepted rate setting techniques
- Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements
- Established at a level that is stable from year-to-year from a customer's perspective
- Established to meet any legal (e.g. Proposition 218) or regulatory requirements

These principles and guidelines were applied, to the degree possible, in the development of the rate analyses developed for the City.

1.3 Prudent Financial Planning

The establishment of financial planning and rate setting policies are intended to provide guidance in the financial planning and rate-setting process, and in the day-to-day financial management of the City's sewer utility.

Adoption and use of financial policies provides a strong foundation for the long-term sustainability of the utility and provides the outside financial community with a better understanding of the City's commitment to managing the utility in a financially prudent manner. Atkins also recommended some financial practices as part of developing the revenue requirement for the City's sewer utility. These recommended financial policies and practices are summarized below:

- ***Establishing Minimum Rate Stabilization Fund Balance (Operating Reserve):*** The City strives to maintain a cash balance sufficient to meet the day-to-day cash flow requirements and operating expenses of the utility. The City bills their sewer user charges on the San Diego County property tax roll and although the City's operating budget starts July 1st of each year the first time user revenue is received is in January of the following year. Thus prudent financial management would advise that the City should maintain six-months of operating cash to pay the bills in the first six months prior to receiving user rate revenue. The City's projected 2014 revenue requirement is $4.2 million thus the Operating Reserve should be established at $2 million.

- ***Establishing Minimum Capital Reserve Funds:*** Capital reserves are established to fulfill the cash flow requirements of capital infrastructure construction costs, which can vary significantly annually, depending on each year's projects and the funding sources available. Within the utility industry, capital reserves are generally established based on an average of projected annual capital expenditures, excluding unusually large "one-time" capital needs. The City should attempt to maintain a capital reserve approximately equal to one-year of renewal/replacement projects, or a six-year average of typical renewal and replacement (routine) type projects, not including large one-time expenses. Based on the City's historic renewal and replacement projects the minimum in this reserve should be $400,000. This study incorporated the funding of this reserve over multiple years starting in FY 2015/2016.

- ***Rate Funding for Renewal and Replacement Capital Projects:*** The funding of on-going renewal and replacement capital projects should primarily be funded from rates. The use of debt should be reserved for only extraordinarily large capital projects with a useful life of 30 years or more. In order to adequately support this funding method, the City should budget and fund, at a minimum, an amount equal to or greater than annual

replacement costs or depreciation expense. The City's projected replacement costs during the planning period are $400,000 per year. It is recommended that funding for this should start in the 2014 revenue requirements and gradually increase to a level approaching depreciation over the next 10 years. Any capital money not spent should be placed in the Capital Reserve Fund to offset unanticipated capital projects.

1.4 Determining the Revenue Requirement

In developing the revenue requirement the City's 2013 budget was analyzed on a "stand-alone" basis. That is no other funds were used to subsidize utility services. The following paragraphs describe the general methodology and approach that Atkins used to develop the City's sewer user rate study.

1.4.1 Establishing a Projected Time Frame

Reviewing a multi-year period is recommended to identify any major expenses that may be on the horizon. The financial planning model developed by Atkins for the City contains a seven-year planning horizon. This is based on two-years after the five-year time period of FY2014 to FY2018 that was used for establishing rates. This was done to allow for planning of any additional Metro Costs associated with their waiver renewal process from secondary treatment that may arise but are unknown at this time.

1.4.2 Establishing a Methodology and Approach

The second step in determining the revenue requirement for the City was to decide on the basis of accumulating costs. For the City's revenue requirements, a "cash basis" approach was utilized. For municipal utilities, the cash basis approach is the most frequently used methodology. Table 1-1 provides a summary of the cash basis methodology used to develop the sewer revenue requirement.

Table 1-1 Overview of "Cash Basis" Revenue Requirement Methodology

+ Operations and Maintenance
+ Transfer Payments
+ Capital Projects Based on Rates
= Total Revenue Requirement
- Miscellaneous Revenues
= Net Revenue Requirement from Rates

In addition to the above cost components, some utilities may include a component for a "change in working capital" which is a use of, or additional funding for, operating or capital reserves. This component is either used to help mitigate the need for a rate adjustment, or to replenish operating and capital reserves. This is the case with the gradual increase in the rate for funding for renewal and replacement projects over the five year period.

1.5 Cost of Service Analysis

After the total revenue requirement is determined it is allocated to the users of the service. The equitable allocation of a utility's cost is usually accomplished via a cost of service analysis. A cost of service analysis allocates cost in a manner that fairly reflects the cost relationships for producing and delivering services.

A cost of service study requires three steps:

1. Costs are ***functionalized*** or grouped into the various cost categories related to providing service (for example for a sewer rate study costs are functionalized to customer, capacity, collection, and treatment).

2. The functionalized costs are then **classified** to specific cost components. Classification refers to the arrangement of the functionalized data into cost components. Sewer utility costs are typically classified between volume of flow, strength of wastewater, and customer related costs, etc.

3. Once costs are classified into cost components, they are ***allocated*** to the customer classes of service (residential, multi-family, commercial, etc.). The allocation is based on each customer class' relative contribution to the cost component. For example, customer-related costs are proportionally allocated to each class of service based on the total number of customer in that class of service. Once costs are allocated, the required revenues for achieving cost-based rates can be determined. Average unit costs (cost-based rates) are also determined within the cost of service and can be used as a starting point for establishing final proposed rate designs.

1.6 Designing Rates

The final step of the comprehensive rate study process is the development of rates to collect the desired levels of revenues, based on the results of the revenue requirement and cost of service analysis. In reviewing rate designs, consideration is give to the *level* of the rates and the *structure* of the rates. Level refers to the amount of revenue to be collected, while structure refers to the way in which the revenue is collected (e.g. fixed versus variable costs).

1.6.1 Rate Design Criteria

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of the rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the utility to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage conservation, economic development, etc.)
- Yield the total revenue requirements
- Provide revenue stability from month to month and year to year
- Promote efficient allocation of the resource.
- Equitable and non-discriminatory (cost based)

It is impossible to achieve all of these rate design goals and objectives in a single rate. Given that, the rate design goals and objectives noted above need to be prioritized in order to be able to achieve the utility's overall rate design goals and objectives. For the most part, a major focus should be on establishing rates which are cost-based, equitable and generate sufficient revenues from year-to-year. For this particular study, we believe that each one of those three goals was achieved.

Section 2
Development of the Sewer User Rate Study

2.1 Introduction

This section describes the development of the sewer rate study for the City. One of the objectives of the study is to develop cost-based rates using current industry standard guidelines. While the City has performed rate studies from time to time to insure that your revenue requirements are met the actual rate structure was established in 1992 and has not been reviewed since.

2.2 Determining the Sewer Revenue Requirement

The sewer revenue requirement assumes the full and proper funding on a stand-alone basis needed to operate and maintain the system on a financially sound and prudent basis. The primary financial inputs in this process were the City's accounting and billing records, capital plan, and budget. Provided below is a detailed discussion of the steps and key assumptions contained within the development of the City's revenue requirement analysis.

2.2.1 Determination of Time Period and Method of Accumulating Costs

The initial step in calculating the revenue requirement for the City was to establish a "time period", or time frame of reference for the revenue requirement analysis. As discussed in Section 2, Atkins forecasted the City's sewer revenue requirements for the seven -year period of FY 2013/2014 to FY 2019/2020. By reviewing costs over an extended time period, the City can anticipate and plan around any significant changes or needs in operating and capital requirements. By planning around these anticipated needs, the City can minimize short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirements for the City was to decide on the basis of accumulating costs. As noted in Section 1.4.2, a "cash basis" approach is typically used for this analysis.

Given a time period around which to develop the City's revenue requirements, and a method to accumulate those costs, the focus now shifts to the development of the revenues and expenses for the sewer utility, and ultimately to the development of a seven-year financial plan.

2.2.2 Capital Improvements

To forecast and examine the City's revenue requirements, Atkins and District Staff analyzed annual historical trends for replacement capital improvement plan (CIP) costs. The City has historically funded $400,000 of capital improvements on a pay-as-you-go basis. CIP costs for future years were escalated at 3% annually beginning in FY 2014/2015 to keep up with construction inflation.

2.2.3 Projection of Operation and Maintenance Expenses

O&M expenses are incurred by the City to provide sewer service to the City's customers. O&M expenses are accounted for during the current year and are not capitalized or amortized over an extended period of years. For the purpose of forecasting O&M expenses, the City provided its latest budget estimates for FY 2012/2013.

The City groups its O&M expenses into categories including wages, benefits, professional series, utilities, materials and supplies, and other supplies necessary to maintain the City sewer collection system. Atkins reviewed escalation factors with City staff to use in budget forecasts for future years. The escalation factors used in this study range of 2.0% to 4% per year, depending on the type of cost and recent inflationary trends general inflation and employee related costs.

To project future O&M expenses, Atkins used the City's budget numbers from FY 2012/2013. Beyond FY 2012/2013, Atkins escalated O&M expenses based on the previously mentioned escalation factors.

Total sewer O&M expenses, less non-operating revenues, are projected to be approximately $4.2 million in FY 2013/2014. This amount is projected to increase to approximately $4.6 million by FY 2019/2020.

2.2.4 Projection of Direct Costs

The largest single item in the City's budget is the payment for transportation, treatment, and disposal of the wastewater generated by the City's customers. The City is a participating agency in the Metro system. Table 2-1 summarizes the current and projected Metro costs. For FY 2013/2014, sewer Metro costs were projected to be $2.5 million which is $100K higher than FY2012/2013 because of increased sewer flows. Sewer Metro costs were projected to remain constant until FY 2015/2016 when they will escalate with inflation. Any additional increases in direct costs above inflation are recommended to be addressed by the City as a "pass- through" cost and rates are adjusted at that time as discussed in Section 2.5.

Table 2-1 Summary of Project San Diego Metro Transportation and Treatment Costs

	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Treatment & Disposal	$2,379,434	$2,491,584	$2,491,584	$2,541,416	$2,617,658	$2,696,188	$2,777,074	$2,888,156
Transportation	$6,030	$6,151	$6,274	$6,399	$6,591	$6,789	$6,993	$7,272
Palm City Trunk Sewer	$249,982	$249,982	$124,991					
Metro TAC	$8,160	$8,160	$8,160	$8,323	$8,573	$8,830	$9,095	$9,459
Total	**$2,643,606**	**$2,755,877**	**$2,631,009**	**$2,556,138**	**$2,632,822**	**$2,711,807**	**$2,793,161**	**$2,904,888**

2.2.5 Forecast of Sewer Non-Rate Revenues

The City collects non-rate revenues that reduce the revenue required from sewer rates. These non-rate revenues include Jurisdictional Urban Runoff Management Program charges ($115,000) and other miscellaneous revenues. The City's miscellaneous sewer revenues are minimal. The City provided its FY 2012/2013 projection of $32,000 in miscellaneous revenues. At the City's request, Atkins maintained that amount as the annual forecast of miscellaneous revenues for the entire planning period.

2.2.6 Summary of the Sewer Revenue Requirements

The prior components of the revenue requirements come together to develop the overall sewer revenue requirements for the City. In developing the final revenue requirements, consideration was given to the financial planning considerations of the City. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational activities and capital projects throughout the planning period.

The sewer financial planning model that Atkins developed for the City is designed to calculate the necessary overall adjustments to annual rate revenue in order to meet the City's existing and future revenue requirements. Based on the revenue requirements described above, less non-rate revenues, Atkins calculated annual rate revenue adjustments that met the City's goals including minimal annual impacts on Customers, while meeting all of the needs of the sewer utility's operations and capital infrastructure. Summaries of the annual sewer rate revenue adjustments and example single family customer impacts are shown in Table 2-2. An average single family customer in Imperial Beach uses 96 hundred cubic feet (HCF) of water per year. When adjusted for the single family rate of return for the sewer to exclude capturing outside irrigation in the sewer rate the average customer is billed on 72 HCF annually.

Table 2-2 Summary of Average Single Family Annual Bill Impacts

Fiscal Year	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Rate Adjustment		3.0%	1.6%	1.6%	1.6%	1.6%
Example Annual Bill	$421.23	$433.99	$441.12	$448.27	$455.38	$462.88
Example Annual Change		$12.76	$7.13	$7.15	$7.11	$7.49

Based on the annual rate revenue adjustments shown in Table 2-2, Atkins projected that the City will need to annually adjust their sewer revenue requirement by an average of 1.6% per year in order to meet its sewer revenue requirements for the planning period. A summary of the sewer revenue requirements is shown in Table 2-3. Note that total sources and uses of funds pertaining to the City's sewer revenue requirements match in each year of the forecast. Table 2-3 includes the proposed annual sewer rate adjustments.

Table 2-3 Summary of Annual Sewer Revenue Requirements

Expense Description	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Operation & Maintenance									
Total Sewer Enterprise Fund	$3,648,40	$3,802,958	$3,939,933	$3,840,369	$3,791,417	$3,902,190	$4,016,287	$4,133,806	$4,291,024
Total	-	-	-	-	-	-	-	-	-
Nonoperating Expenditures									
Capital Improvements	-	-	$400,000	$412,000	$424,360	$437,091	$450,204	$463,710	$477,621
Increase Operations Reserve	-	-	-	-	-	-	-	-	-
Establish Capital Reserve	-	-	-	$150,000	$250,000	$190,000	$130,000	-	-
Subtotal Expenditures	$3,648,402	$3,802,958	$4,339,933	$4,402,369	$4,465,777	$4,529,281	$4,596,490	$4,597,516	$4,768,645
Less Non-Operating Revenues	$147,185	$147,185	$147,185	$147,185	$147,185	$147,185	$147,185	$147,185	$147,185
Revenue Requirement	$3,501,217	$3,655,773	$4,192,748	$4,255,184	$4,318,592	$4,382,096	$4,449,305	$4,450,331	$4,621,460

2.2.7 Conclusions of the Sewer Revenue Requirements Analysis

Based on the revenue requirement analysis and rate revenue adjustments developed herein, assuming a 1.6% annual sewer revenue requirement adjustment, the City is projected to meet its revenue requirements for the planning period. The City should regularly review its revenue and expenses and recommend adjustments as necessary. The City will have Atkins's financial planning tool for use in these regular reviews in the future.

2.3 Sewer Cost of Service Analysis

A cost of service analysis is a method to equitably allocate the total sewer revenue requirements to the various customer groups (classes of service) served by the utility. For the sewer cost of service study, the customer classes of service were defined as residential single family, multi-family and commercial/industrial.

The cost of service analysis process functionalized, classified and allocated the sewer revenue requirement the customer classes in the manner in which the utility incurs the expense. When available, utility specific data was utilized. Where City specific data was not available, Atkins estimated the classification based upon its experience with previous sewer cost of service studies of a similar nature.

2.3.1 Classification of Costs

Classification determines why the expenses were incurred or what type of need is being met. The City's accounts and revenue requirement were reviewed and classified using the following cost classifiers:

- Volume Related Costs
- Strength Related Costs
- Customer Related Costs
- Capacity Related Costs
- Revenue Related Costs
- Direct Assignments

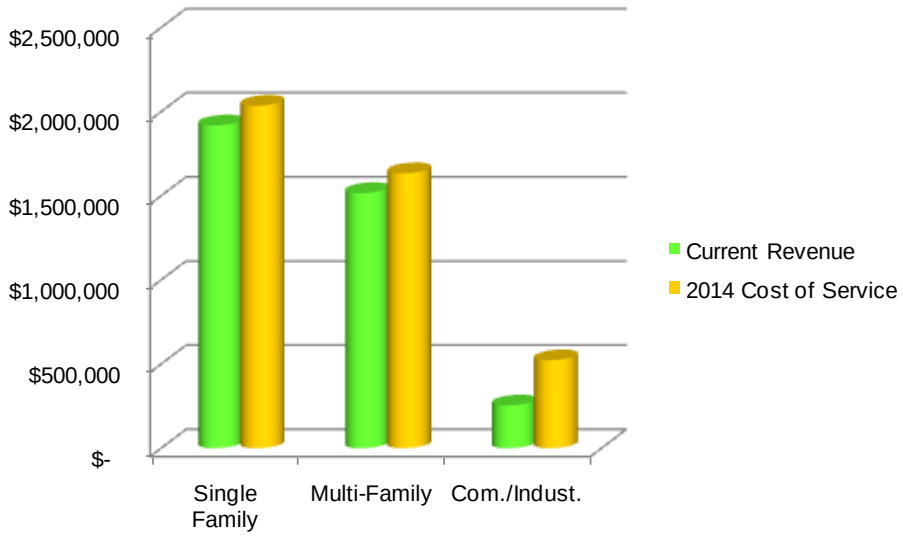
2.3.2 Summary of the Cost of Service Results

In summary form, the sewer cost of service analysis began by functionalizing the utility's plant asset records and then the operating expenses. The functionalized plant and expense accounts were then classified into their various cost components.

The individual classification totals were then allocated to the various customer groups based upon the appropriate allocation factors. The allocated expenses for each customer group were aggregated to determine each customer group's overall revenue responsibility. The present rate revenue from each customer class of service, along with the equitably allocated costs were placed in the context of $/HCF. A summary of the detailed cost responsibility developed by customer class is shown in Figure 2-1.

Terminology of a Sewer Cost of Service Analysis
Functionalization – The arrangement of the cost data by functional category (e.g. treatment, collection etc.)
Classification – The assignment of functionalized costs to cost components (e.g. volume, strength, and customer related).
Volume Costs – Costs that are classified as volume related vary with the total flow of wastewater (e.g. electrical use for pumping facilities).
Strength Costs – Costs classified as strength related refer to the wastewater treatment function. Typically, strength-related costs are further defined as biochemical oxygen demand (BOD) and total suspended solids (TSS).
Customer Costs – Costs classified as customer related vary with the number of customers on the system, e.g. billing costs.
Capacity Costs – If all customers used the utility in the same way over time (average annual daily volume flows), capacity costs would not need to be recognized. However various customer classes' peaks are realized throughout the year and even throughout the day. Residential customers peak during weekday mornings and commercial accounts tend to peak seasonally due to visitors (conventions or summer visitors). The costs associated with peaking (capacity) are allocated to these customers through the recognition of capacity costs. WW treatment plants and sewers are designed with peak flows in mind and thus a portion of O&M costs can also be attributed to peak flows (using the design basis cost allocation). Capacity cost can be more important when assigning capital costs to volume or capacity since sewers and treatment plants are designed with capacity in mind.
Direct Assignment – Costs that can be clearly identified as belonging to a specific customer group or group of customers.
Customer Classes of Service – The grouping of customers into similar groups based usage characteristics and/or facility requirements

Figure 2-1 Summary of Sewer Cost of Service Analysis



As part of this study a fresh approach to customer cost allocations was used to bring the City's rate structure up to industry standards. Sewage strength levels were revised in the non-residential user class to equate to current industry standards. A full listing of non-residential customers and their estimated sewage strengths is included in Appendix A to this study.

The City should review cost of service at the time of the next rate study to determine whether these cost relationships are still appropriate. Details of the sewer cost of service analysis are provided in Appendix B.

2.3.3 Consultant's Conclusions and Recommendations

As was noted in Figure 2-1, some minor differences in cost appear to exist between the customer classes of service. Given the overall objective of the sewer utility financially standing on its own, it is recommended the overall level of rates be adjusted to collect the revenue requirements over the time period. All sewer customer classes of service should be adjusted based on their cost of service. Details of the cost of service analysis are provided in Appendix B.

2.4 Sewer Rate Design Analysis

The final step of the sewer rate study process is the design of sewer rates to collect the desired levels of revenues, based on the results of the revenue requirement analysis. In reviewing sewer rate designs, consideration is given to the level and the structure of the rates.

2.4.1 Review of the Overall Sewer Rate Adjustments

As indicated in the revenue requirement analyses, a priority for the sewer utility was to adjust and transition the overall level of the sewer rates to meet the overall financial needs of the utility for both operations and capital replacement needs.

2.4.2 Review of the Method of Determining Billing Units

Sewer customers are not metered for their wastewater discharge. As a result, the City must use an alternative method or approach to approximate wastewater flows. The City has historically used an approach in which the volume a customer is billed is based upon a review of the customer's Cal Am water account for the prior year and 100% of the prior year's annual water usage is used to establish the upcoming years sewer rate.

An initial step in the sewer rate design analysis was to review rate structure alternatives to the City's current rate structure. These included the following:

Flat Rate Method – A flat rate method simply ignores the volumetric use (as measured by the City's current methodology of using 100% of annual water usage) and charges each customer a flat rate. The advantage of this method is it simplifies the issue of volumetric contribution, but in doing so, some customers will perceive this method as being unfair. The individual living by themselves will pay the same flat rate as the family with five children. Flat rates were common many years ago when sewer rates were fairly low. However, as rates have risen, the use of flat rates has fallen out of favor. Atkins and City staff felt that while viable this is an antiquated rate structure and the City has progressively used annual water usage to establish their volumetric rate for many years.

Metered Water Consumption with a Rate of Return – This method is similar to the City's current rate structure. Annual metered water consumption is a surrogate for sewer wastewater flow (contributions). This approach addresses the short-comings of the flat rate method. It also addresses the shortcomings of the City's current rate structure in dealing with interior versus exterior water usage. Sewer volumetric rates are based as closely as possible to equate to only indoor usage as water used for landscaping does not return to the sewer system and therefore does not contribute to the cost of service. Industry standard rates of return were applied to each customer class's annual water usage as shown in Table 2-4 in Column B.

Table 2-4 Summary of Rate of Returns by User Class

Units of Service and Loadings:		Flow:		
User Group	No. of Accounts	(A) Annual Consumption per User Class (HCF)	(B) Rate of Return	(C) Adjust for Rate of Return (HCF)
Residential				
Single Family	4,682	450,570	75.0%	337,928
Subtotal Residential	**4,682**	**450,570**		**337,928**
Non-Residential				
Commercial				
Rest/Bakeries/Mort./Groc.	48	12,560	90.0%	11,304
Small Commercial	114	13,051	90.0%	11,746
Car Wash/Laundries	13	8,081	90.0%	7,273
Public Agency/Institutional	71	37,632	75.0%	28,224
Heavy Commercial	7	2,929	90.0%	2,636
Mixed Use Light	33	6,852	90.0%	6,167
Mixed Use Heavy	2	333	90.0%	300
Navy	5	30,180	90.0%	27,162
Multi-Family	1,627	346,541	95.0%	329,214
Subtotal Non-Residential	**1,920**	**458,159**		**424,025**
Total	**6,602**	**908,729**		**761,953**

Average Winter Water Usage – An alternative to address the problems associated with using metered water consumption, an alternative is to utilize a customer's average winter water use as a surrogate for their indoor use (i.e. wastewater contributions). This method uses a pre-defined winter period (e.g. November to February) and calculates an average monthly use. This average monthly water usage is then annualized to become the total volume to be included in each sewer user's rate. While this is widely used for single family it is not normally used for multi-family and commercial/industrial users as they normally do not have a large irrigate-able area and their usage is based more on tenant occupancy for multi-family and business cycles for commercial/industrial. In discussions with City staff it was determined that they were having very few customer complaints and that changing the way they determined the customer charge could lead to confusion with very little change in the outcome.

Include a Base Charge for all Users –While customers may have very low use or vacant properties, it is still important to understand that a large proportion of the costs associated with the sewer system are generally fixed in nature. That is, even if a customer does not contribute any wastewater to the system, there are still costs associated with the system which should be met by all customers. These fixed charges are normally recovered from each customer based on their assumed capacity in the system as measured by the size of their water meter. Single family residential customers are assumed to all have a 5/8" water meter as any larger meters are for external usage such as landscape irrigation which is not assumed to be returned to the sewer system. Non-residential customers normally have little or no landscaping and thus their water meter is sized to provide system capacity for internal water usage. The distribution of the City's sewer customers by water meter size is shown in Table 2-5.

Table 2-5 Sewer Customers by User Class and Water Meter Size

User Group	5/8"	3/4"	1"	1 1/2"	2"	3"	4"	6"
Single Family	4,682							
Multi-family	1,267		207	101	51	1		
Rest/Bakeries/Mort./Groc.	36		7	4	1			
Small Commercial	83		19	10	2			
Car Wash/Laundries	4	1	1	8				
Public Agency/Institutional	12		11	15	30		2	
Heavy Commercial	2		4		1			
Mixed Use Light	17		13	1	2			
Mixed Use Heavy	1		1					
Navy	1			2				2
Total	**6,105**	**1**	**263**	**141**	**87**	**1**	**2**	**2**

After review of the rate structure alternatives Atkins and City staff determined that the following changes to the City's current rate structure would establish a more equitable allocation of costs to your customers.

1. Include a Base Charge for all Users – Atkins developed a fixed variable analysis of the City's sewer costs and concluded that approximately 25% of the City's sewer costs are fixed in nature. In the past the City has only charged residential customers fixed or base charges. Atkins is recommending that every account should be charged a base charge and for non-residential this should be based on the size of their water meter.

2. Establish a Rate of Return for Each User Class – Atkins recommended and City staff concurred that the rates of return as shown per user class in Table 2-4 should be applied to each user's annual water usage to remove the potential for charging for external water usage.

2.4.3 Review of the Sewer Charge Formula

The City serves three distinct sewer customer groups; single-family residential, multi-family and commercial/industrial. For each of these customer groups, the City has a specific sewer charge formula. This study has recommended changes in only the multi-family and commercial/ industrial user's formulas to include base fees. In addition, industry standard rates of returns are applied to each user's annual water usage as discussed in Section 2.4.2. The following are the recommended sewer charge formulas:

Single-Family Residential Sewer Charge Formula
Annual Water Consumption x Return to Sewer 75% = Billing Units
(Billing Units x Residential Sewer Rate) + (Base Fee) = Total Sewer Monthly Bill

Multi-Family Sewer Charge Formula
Annual Water Consumption x Return to Sewer 95% = Billing Units
(Billing Units x Residential Sewer Rate) + (Base Fee per Water Meter Size) = Total Sewer Monthly Bill

Commercial Sewer Charge Formula
Annual Water consumption x Return to Sewer % = Billing Units
(Billing Units x Strength Rate) + (Base Fee per Water Meter Size) = Total Sewer Monthly Bill

As can be seen, for each of these groups (rate schedules) a slightly different sewer charge formula is used. Embedded within each of these formulas are a fixed base fee and a volumetric sewer rate. Provided in the following subsections is an overview of the present and proposed rates for each of these rate schedules.

2.4.4 Present and Proposed Single Family Sewer Rates

In developing the proposed rate designs, the City's existing rate structures were reviewed. As stated in subsection 3.4.3 then present single-family residential sewer rate is composed of a base sewer fee and a volumetric sewer rate. The base sewer fee is stated in $/year as the City bills sewer service charges on the County of San Diego County Tax Assessor's Property Tax Roll.

The proposed single-family residential sewer rate has maintained the same structure except that a rate of return of 75% has been used to adjust for landscape irrigation. As shown on Table 2-6 the base charge is decreasing. This is because the fixed costs recovered by the base charge are being spread across all users. This will lower the residential rate for the low end users. The volumetric or commodity rate is increasing as are all other commodity rates for other user classes due to increased City of San Diego costs and the inclusion of funding for needed sewer collection system capital replacement projects. Table 2-6 shows the projected rate adjustments for all single family users up to the current cap of $938.36 per year. The median single family user (87 HCF per year) will see a 2.1% rate increase or $8.42 per year. The average single family user (96 HCF per year) will see a rate adjustment of 3% or $12.76 per

year. The table also summarizes how many single family users fall into each of the billing bins, the percentage of users in each bin, and the cumulative percentage of users.

Table 2-6 Summary of Proposed FY 2013/2014 Single Family Sewer User Rates

Annual Consumption (HCF)	Number of Users	Percent of Users	Cumulative Percent	FY2013 Current (At 100%)			FY2014 Proposed (At 75%)			Difference	
				Base Charge	Consumption Charge	Total Charge	Base Charge	Consumption Charge	Total Charge	Dollars	%
0	26	0.56%	0.56%	$173.75	$2.58	$176.32	$140.24	$4.08	$144.32	-$32.00	-18.1%
5	45	0.96%	1.52%	$173.75	$12.89	$186.64	$140.24	$15.30	$155.54	-$31.09	-16.7%
10	70	1.50%	3.01%	$173.75	$25.78	$199.53	$140.24	$30.60	$170.84	-$28.68	-14.4%
15	74	1.58%	4.59%	$173.75	$38.67	$212.42	$140.24	$45.90	$186.14	-$26.27	-12.4%
20	90	1.92%	6.51%	$173.75	$51.56	$225.31	$140.24	$61.20	$201.44	-$23.87	-10.6%
25	107	2.29%	8.80%	$173.75	$64.45	$238.20	$140.24	$76.50	$216.74	-$21.46	-9.0%
30	111	2.37%	11.17%	$173.75	$77.34	$251.09	$140.24	$91.80	$232.04	-$19.05	-7.6%
35	125	2.67%	13.84%	$173.75	$90.23	$263.98	$140.24	$107.10	$247.34	-$16.64	-6.3%
40	124	2.65%	16.49%	$173.75	$103.12	$276.87	$140.24	$122.39	$262.64	-$14.23	-5.1%
45	162	3.46%	19.95%	$173.75	$116.01	$289.76	$140.24	$137.69	$277.94	-$11.82	-4.1%
50	158	3.37%	23.32%	$173.75	$128.90	$302.65	$140.24	$152.99	$293.24	-$9.41	-3.1%
55	152	3.25%	26.57%	$173.75	$141.79	$315.54	$140.24	$168.29	$308.54	-$7.00	-2.2%
60	189	4.04%	30.61%	$173.75	$154.68	$328.43	$140.24	$183.59	$323.84	-$4.59	-1.4%
65	168	3.59%	34.19%	$173.75	$167.57	$341.32	$140.24	$198.89	$339.14	-$2.18	-0.6%
70	191	4.08%	38.27%	$173.75	$180.46	$354.21	$140.24	$214.19	$354.44	$0.23	0.1%
75	173	3.70%	41.97%	$173.75	$193.35	$367.10	$140.24	$229.49	$369.73	$2.64	0.7%
80	172	3.67%	45.64%	$173.75	$206.24	$379.99	$140.24	$244.79	$385.03	$5.05	1.3%
87	164	3.50%	49.15%	$173.75	$224.29	$398.03	$140.24	$266.21	$406.45	$8.42	2.1%
90	161	3.44%	52.58%	$173.75	$232.02	$405.77	$140.24	$275.39	$415.63	$9.87	2.4%
96	144	3.08%	55.66%	$173.75	$247.49	$421.23	$140.24	$293.75	$433.99	$12.76	3.0%
100	157	3.35%	59.01%	$173.75	$257.80	$431.55	$140.24	$305.99	$446.23	$14.68	3.4%
105	152	3.25%	62.26%	$173.75	$270.69	$444.44	$140.24	$321.29	$461.53	$17.09	3.8%
110	152	3.25%	65.51%	$173.75	$283.58	$457.33	$140.24	$336.59	$476.83	$19.50	4.3%
115	119	2.54%	68.05%	$173.75	$296.47	$470.22	$140.24	$351.89	$492.13	$21.91	4.7%
120	116	2.48%	70.53%	$173.75	$309.36	$483.11	$140.24	$367.18	$507.43	$24.32	5.0%
125	119	2.54%	73.07%	$173.75	$322.25	$496.00	$140.24	$382.48	$522.73	$26.73	5.4%
130	121	2.58%	75.65%	$173.75	$335.14	$508.89	$140.24	$397.78	$538.03	$29.14	5.7%
135	99	2.11%	77.77%	$173.75	$348.03	$521.78	$140.24	$413.08	$553.33	$31.55	6.0%
140	102	2.18%	79.94%	$173.75	$360.92	$534.67	$140.24	$428.38	$568.63	$33.96	6.4%
145	84	1.79%	81.74%	$173.75	$373.81	$547.56	$140.24	$443.68	$583.93	$36.37	6.6%
150	88	1.88%	83.62%	$173.75	$386.70	$560.45	$140.24	$458.98	$599.23	$38.78	6.9%
155	77	1.64%	85.26%	$173.75	$399.59	$573.34	$140.24	$474.28	$614.52	$41.19	7.2%
160	71	1.52%	86.78%	$173.75	$412.48	$586.23	$140.24	$489.58	$629.82	$43.60	7.4%
165	72	1.54%	88.32%	$173.75	$425.37	$599.12	$140.24	$504.88	$645.12	$46.01	7.7%
170	49	1.05%	89.36%	$173.75	$438.26	$612.01	$140.24	$520.18	$660.42	$48.42	7.9%
175	48	1.03%	90.39%	$173.75	$451.15	$624.90	$140.24	$535.48	$675.72	$50.82	8.1%
180	46	0.98%	91.37%	$173.75	$464.04	$637.79	$140.24	$550.78	$691.02	$53.23	8.3%
185	49	1.05%	92.42%	$173.75	$476.93	$650.68	$140.24	$566.08	$706.32	$55.64	8.6%
190	33	0.70%	93.12%	$173.75	$489.82	$663.57	$140.24	$581.38	$721.62	$58.05	8.7%
195	43	0.92%	94.04%	$173.75	$502.71	$676.46	$140.24	$596.68	$736.92	$60.46	8.9%
200	26	0.56%	94.60%	$173.75	$515.60	$689.35	$140.24	$611.97	$752.22	$62.87	9.1%
205	28	0.60%	95.19%	$173.75	$528.49	$702.24	$140.24	$627.27	$767.52	$65.28	9.3%
210	21	0.45%	95.64%	$173.75	$541.38	$715.13	$140.24	$642.57	$782.82	$67.69	9.5%
215	18	0.38%	96.03%	$173.75	$554.27	$728.02	$140.24	$657.87	$798.12	$70.10	9.6%
220	18	0.38%	96.41%	$173.75	$567.16	$740.91	$140.24	$673.17	$813.42	$72.51	9.8%
225	18	0.38%	96.80%	$173.75	$580.05	$753.80	$140.24	$688.47	$828.72	$74.92	9.9%
230	16	0.34%	97.14%	$173.75	$592.94	$766.69	$140.24	$703.77	$844.01	$77.33	10.1%

Annual Consumption (HCF)	Number of Users	Percent of Users	Cumulative Percent	FY2013 Current (At 100%)			FY2014 Proposed (At 75%)			Difference	
				Base Charge	Consumption Charge	Total Charge	Base Charge	Consumption Charge	Total Charge	Dollars	%
235	11	0.23%	97.37%	$173.75	$605.83	$779.58	$140.24	$719.07	$859.31	$79.74	10.2%
240	16	0.34%	97.71%	$173.75	$618.72	$792.47	$140.24	$734.37	$874.61	$82.15	10.4%
245	10	0.21%	97.93%	$173.75	$631.61	$805.36	$140.24	$749.67	$889.91	$84.56	10.5%
250	12	0.26%	98.18%	$173.75	$644.50	$818.25	$140.24	$764.97	$905.21	$86.97	10.6%
255	9	0.19%	98.38%	$173.75	$657.39	$831.14	$140.24	$780.27	$920.51	$89.37	10.8%
260	7	0.15%	98.53%	$173.75	$670.28	$844.03	$140.24	$795.57	$935.81	$91.78	10.9%
260+	69	1.47%	100.00%	$173.75	$764.61	$938.36	$140.24	$798.12	$938.36	$0.00	0.0%

As can be seen, the bill comparison indicates that there will be little change in the typical bills for median and average customers. This bill comparison is for FY 2013/2014, or the time period of the initial rate adjustment.

The proposed single-family residential sewer rates have been developed for a five-year period of 2014 through 2018. It is the intent of the City to have these rates become effective July 1 of each year. Presented below in Table 2-7 is the City's proposed single-family residential sewer rates for the five year period.

The rate adjustments in the following years should provide similar bill comparisons since all components of the sewer rate were adjusted by the overall targeted rate adjustment of 1.6% per year.

Table 2-7 Summary of the Proposed Single-Family Residential Sewer Rate

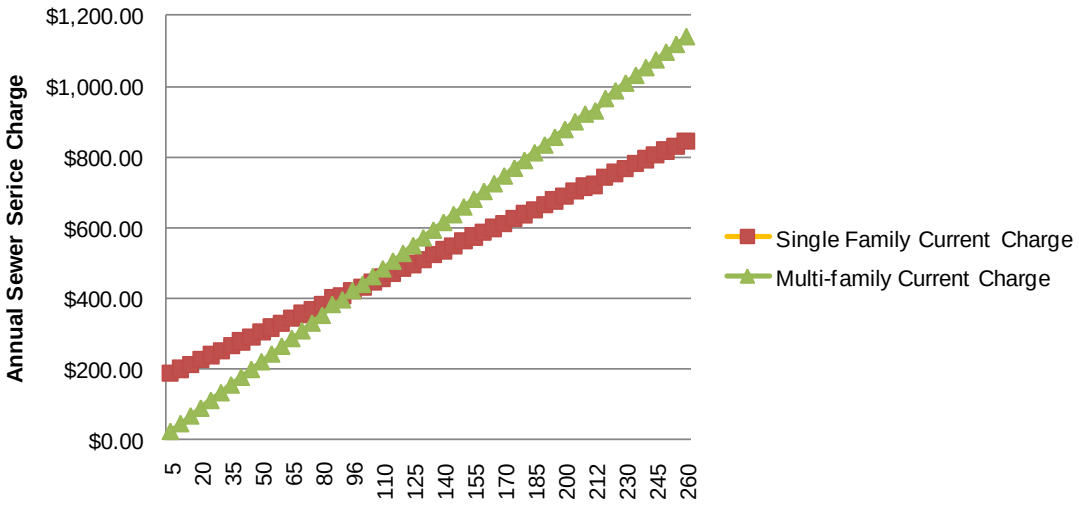
	Current	Proposed				
	2013	2014	2015	2016	2017	2018
Base Sewer Fee ($/Year)	$173.75	$140.24	$143.47	$146.78	$150.89	$155.13
Sewer Rates ($/HCF)	$2.58	$4.08	$4.13	$4.19	$4.23	$4.27

Note: Residential Sewer Charge Formula: Base Sewer Fee plus previous year's annual water usage X 75% X $/HCF.

2.4.5 Present and Proposed Multi-Family Sewer Rates

The present multi-family sewer rate is similar in structure to the single-family residential rate structure except that it does not include a base charge and recovers a portion of fixed costs in the volumetric (commodity) rate. As both are residential users and have the same sewage strength they should be paying the same commodity charge and have the same base charge. The current rate structure does not have the multi-family users at the same level of HCF annually paying the same amounts for sewer service. This is illustrated in Figure 2-2 which shows the current annual charges paid by single family and multi-family for FY 2012/2013. In a comparison between Table 2-7 (Single Family Rates) and Table 2-10 (multi-family rates) the commodity rate is lower for single family but a base charge is included. This causes the average and median single family users to be paying more than multi-family users and less at higher HCF per year.

Figure 2-2 Single Family Versus Multi-Family Annual Charges



As shown in Table 2-8 when full cost of service is applied the non-residential over-all annual rate will increase 3.7% or $34.04 per year. It should be noted that this increase will be spread over multiple living units and thus should be similar to the impacts on single family residences.

Table 2-8 Summary of the Present and Proposed Multi-Family Sewer Rate

Annual Consumption (HCF)	FY2013 Current (At 100%)			FY2014 Proposed (At 95%)			Difference	
	Base Charge	Commodity Charge	Total Charge	Base Charge (5/8" Meter)	Commodity Charge	Total Charge	Dollars	%
100	$0.00	$437.68	$437.68	$140.24	$387.58	$527.83	$90.15	20.6%
105	$0.00	$459.56	$459.56	$140.24	$406.96	$547.21	$87.64	19.1%
110	$0.00	$481.45	$481.45	$140.24	$426.34	$566.59	$85.14	17.7%
120	$0.00	$525.22	$525.22	$140.24	$465.10	$605.34	$80.13	15.3%
125	$0.00	$547.10	$547.10	$140.24	$484.48	$624.72	$77.62	14.2%
130	$0.00	$568.98	$568.98	$140.24	$503.86	$644.10	$75.12	13.2%
135	$0.00	$590.87	$590.87	$140.24	$523.24	$663.48	$72.61	12.3%
140	$0.00	$612.75	$612.75	$140.24	$542.62	$682.86	$70.11	11.4%
145	$0.00	$634.64	$634.64	$140.24	$562.00	$702.24	$67.60	10.7%
150	$0.00	$656.52	$656.52	$140.24	$581.38	$721.62	$65.10	9.9%
155	$0.00	$678.40	$678.40	$140.24	$600.76	$741.00	$62.60	9.2%
160	$0.00	$700.29	$700.29	$140.24	$620.13	$760.38	$60.09	8.6%
165	$0.00	$722.17	$722.17	$140.24	$639.51	$779.76	$57.59	8.0%
170	$0.00	$744.06	$744.06	$140.24	$658.89	$799.14	$55.08	7.4%
175	$0.00	$765.94	$765.94	$140.24	$678.27	$818.52	$52.58	6.9%
180	$0.00	$787.82	$787.82	$140.24	$697.65	$837.90	$50.07	6.4%
185	$0.00	$809.71	$809.71	$140.24	$717.03	$857.27	$47.57	5.9%
190	$0.00	$831.59	$831.59	$140.24	$736.41	$876.65	$45.06	5.4%
200	$0.00	$875.36	$875.36	$140.24	$775.17	$915.41	$40.05	4.6%
205	$0.00	$897.24	$897.24	$140.24	$794.55	$934.79	$37.55	4.2%
210	$0.00	$919.13	$919.13	$140.24	$813.93	$954.17	$35.04	3.8%
212	$0.00	$927.88	$927.88	$140.24	$821.68	$961.92	$34.04	3.7%

Annual Consumption (HCF)	FY2013 Current (At 100%)			FY2014 Proposed (At 95%)			Difference	
	Base Charge	Commodity Charge	Total Charge	Base Charge (5/8" Meter)	Commodity Charge	Total Charge	Dollars	%
215	$0.00	$941.01	$941.01	$140.24	$833.31	$973.55	$32.54	3.5%
225	$0.00	$984.78	$984.78	$140.24	$872.06	$1,012.31	$27.53	2.8%
230	$0.00	$1,006.66	$1,006.66	$140.24	$891.44	$1,031.69	$25.02	2.5%
235	$0.00	$1,028.55	$1,028.55	$140.24	$910.82	$1,051.07	$22.52	2.2%
240	$0.00	$1,050.43	$1,050.43	$140.24	$930.20	$1,070.45	$20.01	1.9%
245	$0.00	$1,072.32	$1,072.32	$140.24	$949.58	$1,089.82	$17.51	1.6%
250	$0.00	$1,094.20	$1,094.20	$140.24	$968.96	$1,109.20	$15.00	1.4%
255	$0.00	$1,116.08	$1,116.08	$140.24	$988.34	$1,128.58	$12.50	1.1%
260	$0.00	$1,137.97	$1,137.97	$140.24	$1,007.72	$1,147.96	$9.99	0.9%
265	$0.00	$1,159.85	$1,159.85	$140.24	$1,027.10	$1,167.34	$7.49	0.6%
270	$0.00	$1,181.74	$1,181.74	$140.24	$1,046.48	$1,186.72	$4.98	0.4%

The proposed multi-family sewer rate structure has been revised to include a base charge based on the size of the property's water meter. In addition a 95% rate of return has been applied to discount for exterior water usage. As discussed earlier this base charge is established using the size of each customer's water meter. Table 2-9 illustrates the American Water Works Association (AWWA) hydraulic capacities for each meter size, the adjusted billing equivalencies which are applied to each meter size, and the resulting annual base charge per meter size. This same base charge is used for commercial/industrial users.

Table 2-9 Multi-Family and Commercial/Industrial Base Charge Per Meter Size.

Size of Water Meter	AWWA Hydraulic Capacity	Billing Equivalence Based on Customer & Capacity Costs	Annual Base Charge Per Meter Size
5/8 inch	1.00	1.00	$140.24
3/4 inch	1.00	1.00	$140.24
1 inch	1.67	1.50	$209.83
1 1/2 inch	3.33	2.74	$383.78
2 inch	5.33	4.23	$592.53
3 inch	10.00	7.70	$1,079.61
4 inch	16.67	12.66	$1,775.44
6 inch	33.33	25.06	$3,515.02

Table 2-10 uses the base rate for a 5/8" meter as this is the most frequent multi-family meter size. Rates have been developed for a five-year period of 2014 through 2018. Presented in Table 2-10 is the City's proposed multi-family sewer rates.

Table 2-10 Summary of the Proposed Multi-Family Sewer Rate

	Current	Proposed				
	2013	2014	2015	2016	2017	2018
Base Sewer Fee ($/Year)	-	$140.24	$143.47	$146.78	$150.89	$155.13
Sewer Rates ($/HCF)	$4.38	$4.08	$4.13	$4.19	$4.23	$4.27

Note: Example is based on a 5/8" water meter.
Multi-Family Sewer Charge Formula: Base Sewer Fee plus previous year's annual water usage X 95% X $/HCF

2.4.6 Present and Proposed Commercial Sewer Rates

The present commercial rates contain a volumetric rate which varies by strength level. As will be recalled from the sewer cost of service analysis, "strength" refers to the characteristics of the wastewater. Strength is generally defined in terms of biochemical oxygen demand (BOD) and total suspended solids (TSS). The City uses these same measures to categorize customers into the various strength related parameters.

It should be noted that the proposed rates will maintain the same strength categories and no change in the categorization of customers has been proposed within this study. However the commercial/ industrial user strength classifications have been update to current industry standards. Table 2-11 illustrates the strength factors shown in milligrams per liter (mg/l) that are used in determining the strength coefficient of commercial/industrial user rates.

Table 2-11 Combined BOD and TSS Strength Coefficients

User Class	Current mg/l	Proposed mg/l
Residential	400	400
Restaurant, etc.	1600	1600
Small Commercial	340	300
Car Wash/Laundries	230	260
Public Agency/Institutional	300	230
Heavy Commercial	1400	800
Mixed Use Light	370	460
Mixed Use Heavy	1000	690
Navy	572	572

It is sometimes easier to understand the relationships of sewage strengths and billing rates when viewed graphically. The City of San Diego charge's Imperial Beach based on a formula of 47.8% for volumetric flow and 52.2% for sewage strengths. Higher strength sewage such as restaurants' cost more to treat than a single family's sewage and thus the strength portion of their volumetric rate of must be based proportionately. Figure 2-3 not only shows the proportions of the sewage strength between the user classes but also illustrates graphically the proposed sewage strength adjustments in the commercial/industrial user classes.

Table 2-12 summarizes the current and proposed commercial/industrial user rates during the planning period. The example is based on a 5/8" water meter which is the most prevalent meter size in this user class. It should be noted that while most of the general commercial rates increase slightly each year the higher strength users (restaurants and heavy commercial) go down in FY 2015 because of decreased San Diego Metro costs as shown on Table 2-1. Higher strength commercial pick up proportionately larger share of treatment costs and since these rates are set on cost of service as are other user classes they vary with the annual treatment costs more significantly than a lower strength user.

Figure 2-3 Current versus Proposed Changes in Commercial/Industrial Sewage Strengths

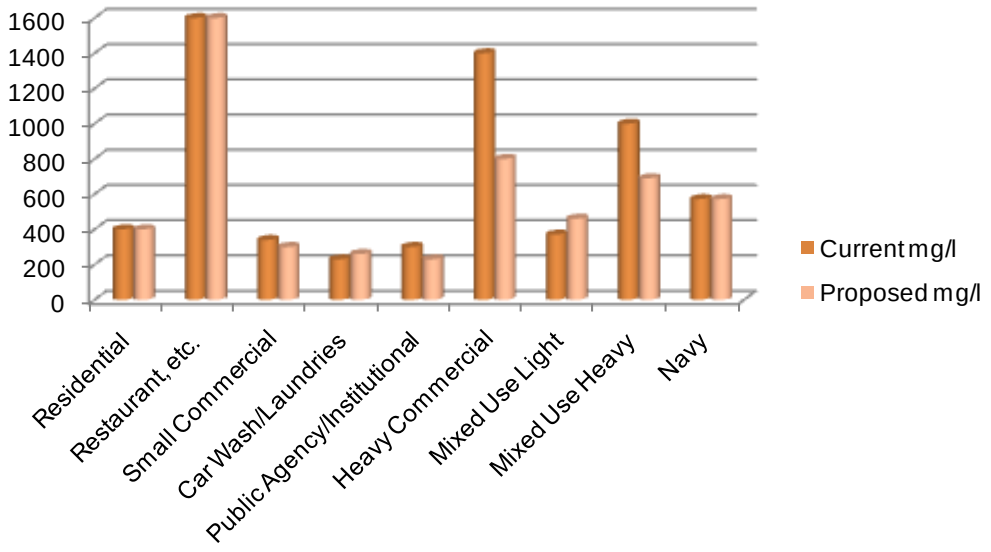


Table 2-12 Summary of Proposed Commercial/Industrial

	Current	Proposed				
	2013	**2014**	**2015**	**2016**	**2017**	**2018**
Base Sewer Fee ($/Year)[(1)]	$0.00	$140.24	$143.47	$146.78	$150.89	$155.13
Sewer Rates ($/HCF)						
Rest/Bakeries/Mort./Groc.	$8.38	$9.18	$8.99	$8.90	$9.09	$9.29
Small Commercial	$4.35	$3.65	$3.72	$3.79	$3.82	$3.85
Car Wash/Laundries	$3.97	$3.46	$3.54	$3.62	$3.64	$3.67
Public Agency/Institutional	$3.67	$3.33	$3.42	$3.50	$3.52	$3.54
Heavy Commercial	$7.65	$5.82	$5.79	$5.79	$5.88	$5.98
Mixed Use Light	$4.44	$4.37	$4.41	$4.45	$4.50	$4.56
Mixed Use Heavy	$6.46	$5.28	$5.28	$5.30	$5.37	$5.46
Navy	$5.02	$4.87	$4.89	$4.92	$4.99	$5.05

[(1)] Example is based on a 5/8" water meter.
Commercial/Industrial Sewer Charge Formula: Base Sewer Fee plus previous year's annual water usage X rate of return per user class X $/HCF

2.5 Other Billing Issues

As part of this study City staff requested that the City's current definition of a multi--family unit. The City's definition of multi-family is:

- **Multi-family residential** means the residential customer classification with more than one living unit served by a single water meter, and shall include all residential accounts other than single-family residential.
- **Single-family residential** means the residential customer classification where one living unit is served by one water meter with the exception of that where four or more living units are attached then they are treated as multi-family residential regardless of the number of water meters.

Atkins gathered multi-family definitions from other Metro member agencies. One of the clearer definitions provided by other agencies is from the Otay Water District (Section 53.09 Basis for Determination of EDUs).

- **Residential Facilities EDUs** – The number of EDUs for sewer service shall be determined on the following basis:
  - Single-Family Residence (Includes manufactured homes, and mobile homes which are on private lots. A secondary structure with a kitchen is considered an additional EDU;
  - Apartments and Multiple Family Housing – Each individual living unit;
  - Residential condominiums – Each individual living unit;
  - Mobile Home and Trailer Parks – Per each individual space
- **Multi-Residential Rate Charges** – Defined as sewer service for master metered water service for multiple-residential households including for example; duplex, townhomes, apartments, and mobile homes.

The City of La Mesa further defines what a single dwelling unit is. One dwelling unit would be what Otay refers to as "an EDU". It should be noted that La Mesa considers a duplex to be a single family living unit (in other words a duplex is considered to be two single family units). Accessory dwelling units are also considered to be single family as long as they comply with the definitions that follow:

- **Dwelling unit** is one independent living facility in a building or buildings intended for or providing permanent residence. The presence of independent living facilities for purposes of this title may be based on the existence of such facilities as:
  - Kitchen facilities (room or space used, intended for, or designated for food preparation, cooking and eating)
  - Toilet facilities
  - Bathing facilities
  - Separate connections to, or separate metering of, any utility
  - Separate access from outdoors
  - Lack of access from the interior of any other dwelling or structure
- **Accessory dwelling unit** means either a detached or attached dwelling unit which provides complete, independent living facilities for one or two persons. It shall include

permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel or parcels as the primary unit is situated.

City staff should continue discussions with their planning consultants to see if the description of multi-family should be amended to include some of the suggested wording of this subsection.

2.6 Sewer Pass-Through Costs

The sewer rates as shown and proposed within this study do not include any increases to rates from direct costs and sewer treatment providers except for adjustments for inflation. Actual future pass-through rate information is not available at this time. The City in their enabling ordinance should establish the ability "pass-through" higher than anticipated costs in the following areas:

1. Any increase in the cost to treat and dispose of the City's wastewater by the City of San Diego. This study only identifies projected costs based on inflationary factors as determined in discussions with City of San Diego staff. It does not include any costs associate with San Diego's waiver process from secondary treatment at Pt. Loma wastewater treatment plant and the possible outcome. It should be noted that San Diego's waiver is the only one remaining in the United States as the only other waiver holder was Honolulu, Hawaii. Honolulu gave up their waiver last year and will be moving forward with upgrading their treatment plants to secondary treatment and is required to achieve it by the Federal Environmental Protection Agency (EPA) to have designed and constructed the facilities within 10 years. If San Diego is forced to give up their waiver by the State of California, the Coastal Commission, and/or EPA the estimated cost is $1 billion. Imperial Beach is currently responsible for 1.3% of the total costs of the Metro System. This would equate to a total cost to Imperial Beach customer of $13 million. These costs of course would be spread over years and the construction portion would be financed but San Diego staff is predicting that sewer rates will double for all users in the Metro System. Per San Diego staff the waiver is due no later than 7/30/15. The ruling on the application would come sometime during FY 2015/2016.

2. Any increase in energy rates imposed on the City by energy providers for the pumping of water. SDG&E has numerous rate cases before the Public Utilities Commission of the State of California that could impact public agency clients significantly.

If either higher cost should materialize the City would only pass-through the costs needed to pay for unknown increases at the time this study was prepared. Pass-through increases are necessary in order to maintain the safety and reliability of the City's sewer system and avoid deficits and depletion of financial reserves when costs arise that is out of the City's control.

2.7 Summary of the Sewer Rate Study

This completes the analysis for the City's sewer utility. The proposed sewer rate adjustments and corresponding rate design were developed using generally accepted rate setting methodologies and are based on accounting, budgeting and customer records information provided by the City. The proposed rates are intended to provide adequate revenue to maintain the sewer utility system in a sustainable manner.

Section 3
Introduction to Capacity Fees

3.1 Capacity Fee Methodologies

There are three main capacity fee methodologies:

- Buy-in method,
- Incremental (growth) method, and
- Combined method.

Each one of these methodologies is defined in the next three subsections.

3.1.1 System Buy-In Method

The system buy-in method is based on the average investment in the water system by current customers. Raftelis in the Comprehensive Guide to Water and Wastewater Finance and Pricing, Second Edition (1993) describes the system buy-in methodology as follows:

> *"Under this approach, capital recovery charges are based upon the 'buy-in' concept that existing users, through service charges, tax contributions, and other up-front charges, have developed a valuable public capital facility. The charge to users is designed to recognize the current value of providing the capacity necessary to serve additional users."*

The American Water Works Association (AWWA) Manual M26 suggests that a system buy-in charge be calculated by taking the net equity investment (net investment less depreciation) and dividing by the number of customers (or equivalent customers). Once new customers have paid their fee, they become equivalent to (or on par with) existing customers and share equally in the responsibility for existing and future facilities.

The system buy-in methodology has several distinct advantages:

- The buy-in methodology is a common, easily explained and well-accepted methodology for calculating capacity fees. The method is popular with developers because it can result in lower capacity fees than other methods (depending on valuation methods used).

- The buy-in methodology includes only cost of existing facilities and excludes costs of future or planned facilities; it therefore does not require a formal capital improvement program. The buy-in methodology does not necessarily depend on an assessment of existing capacity availability, and therefore does not require more detailed analyses required to justify fees based on other methodologies.
- Capacity fees based on the buy-in method are a reimbursement for past capital costs; therefore, the *use* of fees is to reimburse the agency (or existing customers). Once reimbursed, a utility is able to spend capacity fee revenue as it desires on either replacement or expansion capital facilities. As a result, detailed accounting of capacity fee expenditures is greatly simplified.

The buy-in fee calculation is:

$$\frac{\text{Existing Asset Value}}{\text{Existing EDUs or Equivalent Meters}}$$

3.1.2 Growth (Incremental Cost) Method

The growth methodology is also a fairly common approach for establishing capacity fees, particularly for communities experiencing considerable new growth. The approach is based on the cost of future capital facilities. The cost of growth-related future facilities is allocated to new development that is to be served by the facilities. No allowance is made for existing capacity that may also serve new connections. Under this approach, new customers pay for the incremental investment necessary for system expansion. The incremental approach is most commonly applied when extensive new facilities are required to provide capacity for new development.

The calculation of capacity fees using the growth method is:

$$\frac{\text{Value of Future Facilities}}{\text{Future EDUs or Equivalent Meters}}$$

Revenue from growth capacity fees must be set aside and used only for funding growth related capital projects.

3.1.3 Combined Approach

Frequently, aspects of both system buy-in and growth methodologies are combined when calculating capacity fees. This might occur when the water system has excess capacity in some elements but insufficient capacity in other elements (e.g., wastewater treatment plant). Under this example, a combined approach might include cost of existing capital facilities in a buy-in component and cost of upsizing of the treatment plant through an incremental cost component. A combined or hybrid approach is not the sum of the buy-in and incremental fees but rather the weighted average. The combined capacity fee is calculated as:

$$\frac{\text{Existing and Future Asses Value}}{\text{Existing and Future EDUs or Equivalent Meters}}$$

The future asset value in the numerator is the present value in today's dollars. The combined approach does complicate accounting of capacity fees since the growth portion of combined fee revenue must be spent on growth related projects.

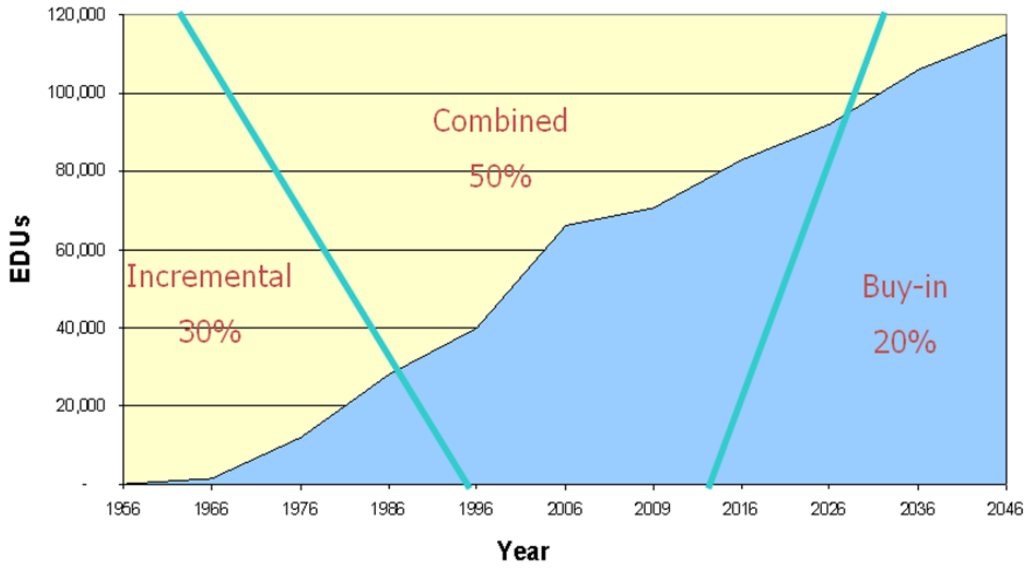
3.2 Applicability of Each Capacity Fee Methodology

The suitability of each of the methods mentioned in Section 3.1 normally depends on the degree to which future customers can be served by the existing utility system, which is also related to where a utility is in its growth cycle. This is illustrated in the Figure 3-1 which is graphic of a fictitious City.

The incremental method is most suitable for a young agency and/or an agency which requires extensive new infrastructure to serve new customers or those with increased density. As shown in the graphic this method is the most suitable up to about 30% of an agencies build-out. The buy-in method is most appropriate when an agency is mostly built-out and/or when new customers or those with increased density can be served by the existing system. An agency that falls somewhere in between, in which customers will use existing system capacity while also requiring capacity in newly constructed facilities, would be best served by the combined methodology which is most appropriate up until the 80% percentile of build-out.

After examining all three methodologies it was determined by Atkins and City Staff that the buy-in methodology is the most appropriate for the City since the City is essentially built-out and new customers or those with increased density would be served by the existing wastewater system.

Figure 3-1 Applicability of Capacity Fee Methodologies



3.3 Valuation Methodologies Used in Capacity Fee Calculation

The buy-in methodology requires a valuation of the utility system. The most prevalent cost-based valuation methods for utility systems are:

- Original cost,
- Reproduction cost,
- Reproduction cost less depreciation,
- Replacement cost, and
- Replacement cost less depreciation

Capacity fees using original cost valuation methods are usually the least popular since original cost usually does not reflect the true, current asset value. There is a subtle difference between reproduction cost and replacement cost. Reproduction cost is the cost to reproduce an *exact* replica of existing assets. Replacement cost is the cost to replace the *functionality* of an asset given any technological advances that may have come about since the asset was originally constructed. A relevant example for wastewater utilities is the cost of pipelines. Reproduction cost normally involves (but is not limited to) escalating the original cost of pipelines using a construction cost index: the ENR-CCI. Since the computed cost is for the exact same pipeline assets, it constitutes a reproduction cost. When a cost per linear foot by diameter (obtained from recent construction cost estimates) is applied to the current pipeline inventory, it more than likely represents replacement cost since the construction costs often represent the latest pipeline materials (e.g. PVC, HDPE) and construction methods which were used to a lesser degree in the past. Valuations using construction cost estimates are rarely close to those constructed using escalated original costs.

Some agencies choose to subtract depreciation from the reproduction or replacement costs of their assets. While this is not a scientific condition assessment, depreciation does recognize that the asset is not new and has been subject to wear and tear. There are arguments for and against using depreciation. Arguments for include the fact that the existing assets that a new user is connecting to have been subject to wear and tear. Arguments against include the fact that ongoing maintenance that keeps the assets at required service levels is not capitalized and thus is not included in an agency's fixed asset records.

Section 4
Capacity Fees

4.1 Current Capacity Fee

The City's current wastewater capacity fee is $1,230 per single family residence and $1,230 for each EDU for non-residential users. This fee was established in 2005 and has not been updated since that time. In addition it does not include the full valuation of the City's capacity in the Metro System.

4.2 Collection System Buy-in Capacity Fee

As discussed previously, the City is best suited for a capacity fee calculated under the buy-in approach. The buy-in capacity fee is based on the premise that new customers, or those with increased density, should pay a fee equal to the equity in the system attributable to existing customers. Under capacity fee revenue regulations, the City is free to use buy-in capacity fee revenue for any capital projects (growth or non-growth related). The basic buy-in capacity calculation is:

$$\frac{\text{Value of Existing System}}{\text{Total EDUs Served by Existing System}}$$

The buy-in capacity fee methodology requires a utility asset valuation. Atkins valued the City's assets using the two methods shown in Table 4-1. Note that only the City's pipes and manholes were valued using replacement cost and replacement cost less depreciation. The length of pipe and number of manholes were obtained from the City's Geographical Information System (GIS). The remaining assets (pump stations) were valued using the values from an insurance appraisal.

Using replacement cost (recent unit pipeline construction estimates applied to a pipeline inventory) to value pipelines is quite common since pipeline construction estimates are readily available, easy to use and likely produce a more accurate cost to construct pipeline networks for a particular area. Replacement cost is also used because, in many cases, a wastewater agency may not have an accurate or up-to-date inventory of pipes in its financial statements (balance sheet) but often has a more accurate piping inventory in its GIS database. Therefore, the ease and accuracy with which the calculation can be performed makes it a preferred capacity fee alternative for many agencies.

Table 4-1 shows the three components of the City's capacity fee. The upper portion of the table shows the capacity fee based on the replacement value of the City's sewer system (line 2). The middle portion of the table shows the value of the City's pump stations and the related capacity fee (line 4). Each of the two components value is divided by the current number of EDUs in the City's sewer system as shown on line 8 (10,577). Per the City's master plan one sewer EDU is equal to 232 gallons per day. The estimated total EDUs as shown on line 8 are determined by dividing the current system flow by the average EDU.

4.3 San Diego Metro Component of the Capacity Fee

The City has purchased capacity to treat wastewater in San Diego's Metro System. The value of this capacity is considered an asset which must be incorporated into the total wastewater capacity fee. The bottom half of Table 4-1 shows the Metro component of the capacity fee. The value of capacity in the Metro System has been initially assessed by Raftelis Financial Consultants, Inc. (RFC) (2005), and updated by Atkins (2012).

Table 4-1, line 5, shows the updated value of capacity in the Metro System under each of the valuation method. The Metro component of the capacity fee is calculated by dividing the sewer units into the value of the City's portion of the Metro System (line 6). Line 7 shows the total capacity fee under each valuation alternative for a single family residence or one sewer EDU. The fee for each customer would vary with the number of sewer EDUs as prescribed by the City's Director of Public Services.

Table 4-1 Buy-in Capacity Fee Calculation

(A) Line No.	(B) Valuation Component	(C) Replacement Costs	(D) Replacement Cost Less Depreciation
1	Pipelines	$46,031,303	$23,015,652
2	Cost Per EDU *(a)*	$4,352	$2,176
3	Pump Stations	$15,596,987	$5,197,589
4	Cost Per EDU *(a)*	$1,475	$491
5	Metro Assets	$32,818,033	$22,300,011
6	Cost Per EDU *(a)*	$3,103	$2,108
7	Total Cost Per EDU	$8,929	$4,776
8	*(a)* Total EDUs	10,577	10,577

Note: Pipelines and Pump Stations are based on replacement costs Metro Assets are valued as Reproduction Cost from Raftelis 2005 Study brought to present value using the June 2012 ENR

Section 5
User Rate and Capacity Fee Comparisons

5.1 Sewer User Rate Comparison

Comparing two public agencies rate for sewer service is an imprecise science because it requires an apple to apples comparison and no two agencies have the same footprint. Gathering financial information is challenging because no two agencies prepare their budgets in the same format or account for their revenue and expenses in the same manner. Thus results from the use rate and capacity fee comparison must be used with care because the data is often misleading and most general surveys inaccurately use and compare data for many reasons. Utilities recover different portions of costs in user rates or have off-setting non-rate revenues. Examples of this are:

- Some agencies are growth agencies and can fund significant portions of their replacement and expansion costs through capacity fees while agencies that are close to build out have to fund all of their capital replacement costs in their user rates.

- Some special districts receive property taxes or standby fees which allow them to lower their revenue requirement recovered by user rates and thus have lower fees.

- Some agencies recover the costs of pumping through direct charges to the user based on pump zones while other agencies spread the costs to all users and thus their user rates are higher to reflect these costs.

Other significant factors that can influence rates and thus make rate comparisons challenging are:

- Sewage Treatment Costs. Sewage treatment costs are based on whether an agency treats their own sewage or is part of a regional system. There are definite economies of scale as multiple studies have shown that larger treatment facilities normally are more cost effective than small treatment plants. In this rate comparison we have three different treatment facilities. The first is a small treatment facility but was paid for 100% by a developer and then turned over to the District. The second is the Encina system where the original facilities were paid for 94% with U.S. Environmental Protection Agency (EPA) grants. And the final, of which Imperial Beach is a member, is the Metro system. As opposed to the two other systems, Metro did not take advantage of EPA grants and has incurred $1 billion in debt to finance the existing facilities.

- Debt Service on Facilities. Not only do the costs of regional facilities influence the rate to the end user but also internal debt costs for each agency comes into play. All agencies differ in their policies for funding capital facilities. Some agencies require all developers to put in their required facilities while others only require in-tract facilities. Some agencies are aggressive in securing grants and low interest loans or fund capital facilities on pay-as-you-go and others rely on debt financing for major capital facilities. The amount of debt included in user rates can have a significant impact on low versus higher user rates.

- Reserve Funds. An agencies reserve policies and the amount of money in their reserves can have a significant impact on user fees. For instance if an agency has a fully funded replacement reserve then they will not need to incur debt for replacement capital projects and pay the associated interest expense that is associated with bond issues. But this can mean either higher or lower rates than surrounding agencies based on the level of funding versus bond expense.

- Geographical Location. The location and topography of an agency can have major impacts on user rates. If an agency is sprawling and has significantly more miles of pipeline and pump stations than a dense flat urban area the maintenance cost per customer will increase. In addition the maintenance policy of each agency differs. If an agency maintains their service facilities to a higher level of standards than another their maintenance expense per customer may be higher. However, deferred maintenance of facilities, especially pipelines, has shown to cost an agency more because of breakages and replacements in their system.

- Timing of last rate adjustment. Some agencies keep up with their cost of service by having annual rate adjustments and others do not. This is important in the comparison because if an agency is using reserves to moderate their rate adjustments or not adjusting their rates to keep up with their cost-of-service then their rates cannot be compared to an agency that is annually recovering their cost-of-service.

- Budget Documents are not in the Same Format. Although there are guidelines for public agencies through the Government Finance of America no two agencies use the same format to exhibit their budget. In addition operational costs are not classified and exhibit uniformly.

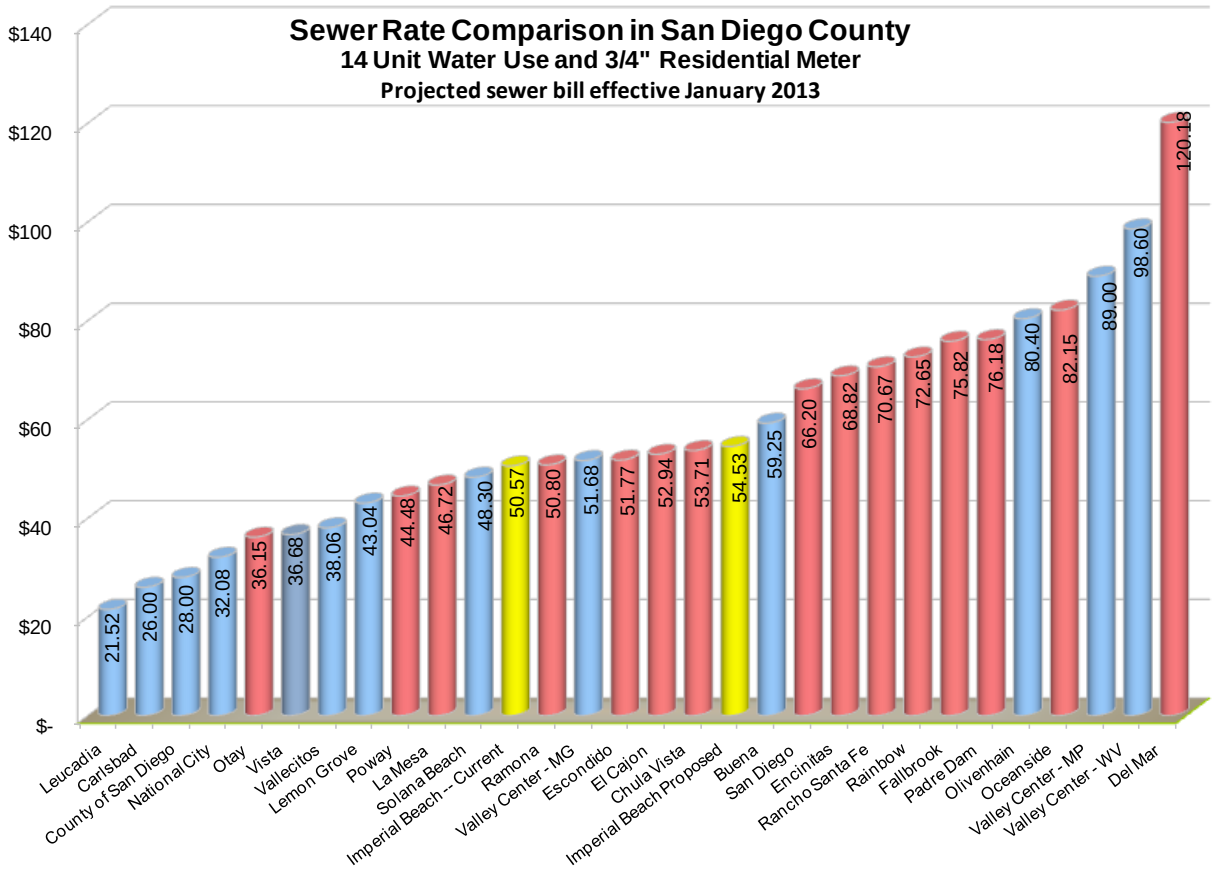
- Require Information Not Always Available. To create apples-to-apples metric similar information is required. But as with the format of budget documents this information is not always readily available based on the transparency of the particular agency.

However public agencies like to see how they compare to other surrounding communities user rates. Figure 5-1 is a recent survey as of January 1, 2013 of County of San Diego sewer agencies user rates. The Otay Water District prepares this survey annually and circulates it to all of the listed agencies. As such it is considered the “go-to” for a sewer rate survey.

The survey is based on 14 HCF monthly for single family residences. The average is $47.97 monthly for all users and the median is $50.68. When calculating the average and median for just Metro members the average increases to $54.90 while the median decreases to $46.72.

The yellow bars represent Imperial Beach's single family user showing both the current and the proposed FY2013/2014 monthly rates. It also shows that the City's proposed rates are very close to the average Metro member rates and thus in-line with other Metro member agencies.

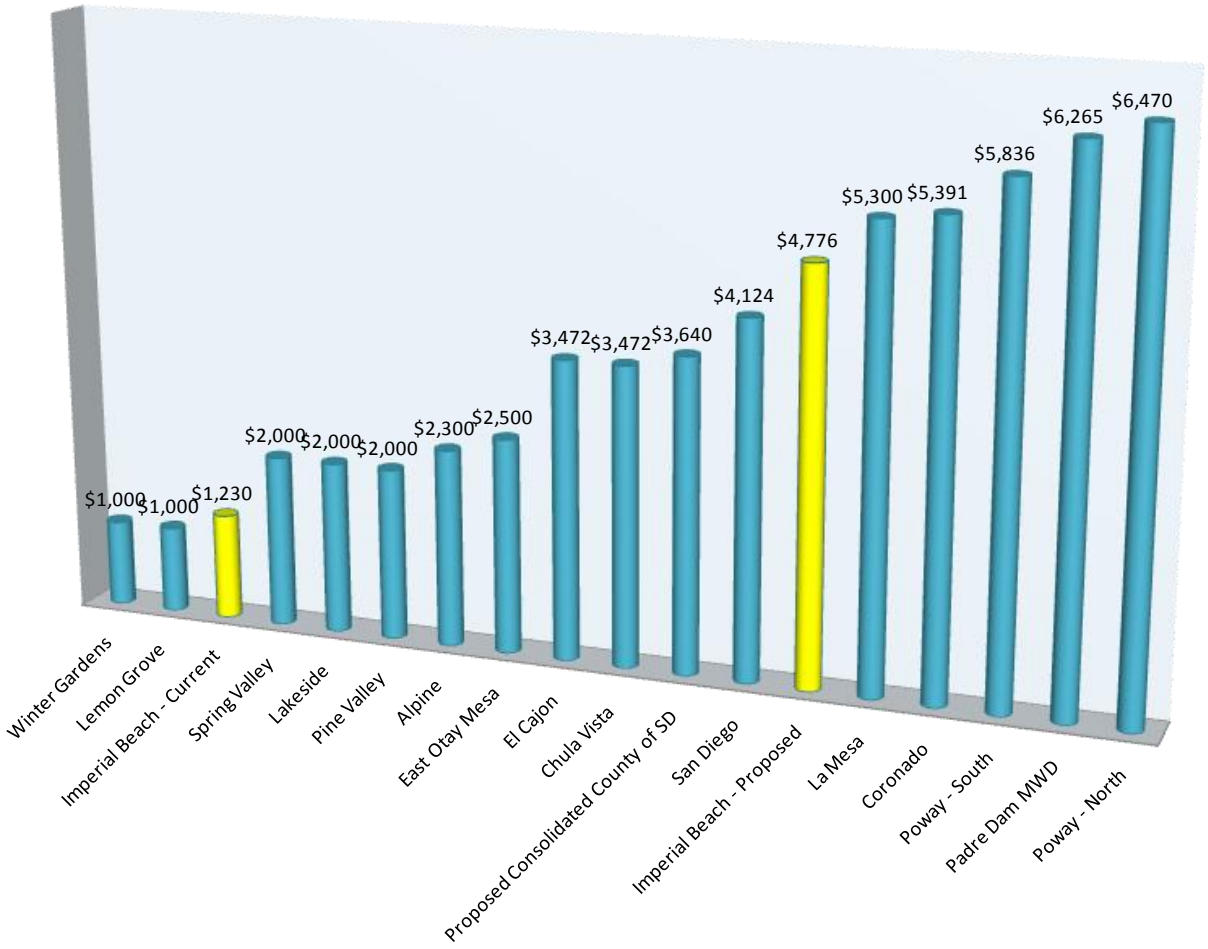
Figure 5-1 Sewer User Survey



5.2 Capacity Fee Comparison

This section compares Imperial Beach's proposed capacity fees with those of other San Diego Metro agencies. The yellow bar on Figure 5-2 show the proposed City capacity fee using replacement cost less depreciation cost, including the Metro component of the fee. The median and mean (average) for the distribution below is $3,472 and $3,488 respectively.

Figure 5-2 Sewer Capacity Fees of San Diego Metro Agencies



It should be noted that the proposed capacity fee for the City of Imperial Beach is comparable to other Metro Agencies that have updated their capacity fees to include the Metro components and valued their assets based on replacement cost or replacement cost less depreciation. These include La Mesa, Coronado, Poway, and Padre Dam. The City of San Diego is currently updating their capacity fees and their study should be complete by mid-2013. The lower end of the capacity fees have not been updated in years and therefore do not provide a valid point of comparison to the capacity fees calculated for this report.

Section 6
Summary and Conclusions

The City proposes to update its sewer user rates and capacity fees. This report proposes several changes to both.

6.1 Sewer User Fee Assumptions and Recommendations

The sewer user fee study made the following assumption:

1. The base year for the study is FY 2012/2013. The budget for FY 2012/2013 is inflated during the planning period as shown in Table 6-1.

Table 6-1 Annual Inflation Rates

Inflation Rates	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
Interest Earnings (on Cash Balances)	Actual	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
General Inflation	Actual	2.0%	2.0%	2.0%	3.0%	3.0%	3.0%	4.0%
Construction Inflation (ENR-CCI-LA)	Actual	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Compound Construction Inflation	Actual	100.0%	100.0%	103.0%	106.1%	109.3%	112.6%	115.9%
Inflation - Labor	Actual	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

2. All user classes will have a base fee to recover fixed costs proportionately. Non-residential customer's base fee will be established on the size of their water meter.

3. Current industry standard sewage strengths will be used for commercial/industrial users.

4. Industry standard rates of returns to the sewer will be used for all user classes to eliminate charging sewer user rates for external irrigations which does not return to the sewer.

The sewer user fees study makes the following recommendations:

1. Continue to use annual water usage for each customer but Include appropriate rates of return to the sewer by user class.

2. Update commercial/industrial user's sewer user strengths to industry standards.

3. Include a base charge for each user. The base charge for non-residential users should be based on the size of each customer's water meter.

4. Adopt a "pass-through" ordinance as discussed in Section 2-6.

5. Adopt the reserve polices contained in this report and establish a formal replacement reserve.

6. Review annual actual revenue to projected revenue to maintain financial stability should use patterns change.

The output from the sewer user model is included as Appendix B.

6.2 Capacity Fee Assumptions and Recommendations

The capacity fee study made the following assumptions:

1. The City's pipelines and manholes were valued at replacement costs. Deprecation of each asset was applied to account for system wear and tear.

2. The City's pump stations were valued based on an insurance appraisal. Depreciation was also applied to these assets.

3. The value of the City's investment in the City of San Diego Metro Wastewater System was determined from a report prepared for San Diego and the PAs by Raftelis Consultancy.

4. Total EDUs for the system were determined by dividing the current total system flow by the average single family user (one EDU).

5. The buy-in methodology was used where the total value of the City's assets less depreciation is divided by the total system EDUs.

This report proposes several changes to the City capacity fees:

1. Adopt new fee based on the replacement cost less depreciation buy-in method including the Metro capacity fee.

2. Review capacity fees every three to five years to reflect changes in depreciation, asset additions and construction costs. In between formal capacity fee studies, we suggest escalating the fees using the ENR-CCI for Los Angeles.

The output from the capacity fee model is included in the Appendix C.

APPENDIX A

APPENDIX B