CITY OF LAGUNA BEACH

SEWER CONNECTION FEE STUDY

October 26, 2020

FINAL REPORT

HF&H Consultants, LLC

City of Laguna Beach
505 Forest Avenue
Laguna Beach, CA 92651

Sewer Connection Fee Study

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October 26, 2020

Ms. Mary Vondrak
Senior Water Quality Analyst
505 Forest Avenue
Laguna Beach, CA 92651

Subject: Sewer Connection Fee Study – Final Report

Dear Ms. Vondrak:

HF&H is pleased to submit this connection fee report to the City of Laguna Beach for your review and comment. The report updates the City's sewer connection fees based on the current value of capacity that benefits new connections, or increased capacity demands of existing connections, to the City. The update recommends a change in the fee structure to improve equity and consistency with the City's rate structures for monthly sewer service. The report describes the methodology and summarizes our results and recommendations.

Sincerely,

HF&H CONSULTANTS, LLC

John W. Farnkopf, P.E., Senior Vice President
Richard J. Simonson, C.M.C., Vice President

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ACRONYMS

CIP	Capital Improvement Plan
BOD	Biochemical Oxygen Demand
EDU	Equivalent Dwelling Unit
ENR CCI	*Engineering News Record* Construction Cost Index
FY	Fiscal Year
GPD	Gallons per Day
PAYGo	Pay-As-You-Go, a form of capital financing derived from equity and reserves as opposed to from borrowed funds
RCN	Replacement Cost New
TSS	Total Suspended Solids

AKNOWLEGEMENTS

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City of Laguna Beach

Sewer Connection Fee Study

I. EXECUTIVE SUMMARY

New development connecting to the City of Laguna Beach's (City's) sewer system, or current connections that increase their need for capacity through expansion, is charged a connection fee at the time of connection/expansion. Publicly-owned wastewater system's assets are typically paid for by the contributions of existing customers through rates, charges, and taxes. Existing customers' investment in the existing system capacity allows newly connecting customers, or customers looking to expand, to take advantage of unused surplus capacity. To further economic equity among new and existing customers seeking additional capacity or new connectors will typically buy-in to the existing, effectively putting them on par with existing customers.

As the City is primarily built out, it is expected that the majority future connection fee revenue will be generated through expansion of current connections resulting from remodels/rebuilds. The connection fee is based on the reasonable cost of capacity per service connection, or the incremental capacity needed as a result of the expansion of the residence or business. Such new or expanded connections shall be collectively defined as "Growth" for the remainder of this report. The reasonable cost is derived based on the value of the City's sewer system facilities that provide capacity for Growth. This report updates the City's sewer connection fees.

FINDINGS AND RECOMMENDATIONS

Current Sewer Connection Fees

Figure 1-1 summarizes the current connection fees.

Figure 1-1. Current Connection Fees (by Customer Class)

Customer Class	Fee
Residential unit including single family homes, indiviudal units in a duplex or triplex, each apartment	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375
Hotel, Motel Units	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375
Car Wash	$17,190 per connection
Car Washes which recycled 50% or more of water utilized on the operation	$8,590 per connection
Restaurants	$2,970 plus $210 per 100 sq. ft. of floor area
Industrial	$2,970 plus $210 per 100 sq. ft. of floor area
Commercial	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375
All other buildings and structures	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375
Each dwelling unit created by remodeling an existing structure	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375

Proposed Sewer Connection Fees

The City's current sewer connection fee is appropriate for recovering flow-related costs associated with the collection system. Square footage of floor area is used to approximate the

level of capacity that the new connection will need. This method may have some merit since, in many cases, the larger the structure, the more wastewater that is discharged. Furthermore, a consideration for strength is included by having separate, higher charges for restaurant and industrial classes.

The updated connection fee will expand the consideration for strength by including three levels: light, medium, and heavy. This structure is consistent with the City's sewer service charges, and improves the proportional allocation of, not only flow but also strength differences among customer classes. Like the sewer service charges, commercial customers are considered to discharge light, medium, or heavy strength wastewater, which are subject to different rates. Similarly, the City's multi-family customers are subject to different connection fees based on the number of dwelling units, which is consistent with the City's sewer service charges. The Equivalent Dwelling Unit (EDU) relates multi-family and commercial connections to an equivalent single family residential connection, based on the ratio of estimated average daily water use and strength of sewer discharge to the same characteristics of a single family residence. The use of strength factors (summarized in **Figure 3-9**) for commercial customers would replace the use of square footage which improves the proportionality of capacity demands between potential new connections.

We used two widely-used methodologies for deriving the updated sewer connection fees: 1) the replacement cost new (RCN) method; and, 2) the replacement cost new less depreciation (RCNLD) method. The RCN values in **Figure 1-2** are higher because they recover the cost of the facilities without deducting depreciation and, by doing so, the RCN value recovers the value of the facilities and the subsequent maintenance costs since original construction. The RCNLD values in **Figure 1-2** deduct the depreciation and thereby only recover the value of the facilities.

Figure 1-2. Current and Proposed Sewer Connection Fees

Customer Class	Current Fee per Connection	Recommended - RCN Method Fee per Connection	Alternative - RCNLD Method Fee per Connection
Single Family	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375	$15,278 per dwelling unit	$4,722 per dwelling unit
Accessory Dwelling Units and Additions/Remodels [5]	N/A	$694 per 100 square feet[1]	$215 per 100 square feet[1]
Multi Family	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375		
Condominiums		$15,026 per dwelling unit	$4,644 per dwelling unit
Apartments (2 units)		$13,494 per dwelling unit	$4,171 per dwelling unit
Apartments (3+ units)		$12,382 per dwelling unit	$3,827 per dwelling unit
Commercial	Varies based on Type of Business - See **Figure 1-1**	$15,278 per EDU (as calculated below)	$4,722 per EDU (as calculated below)
Light Strength		EDUs = est. gpd[2] ÷ 175[3] x 0.69[4]	EDUs = est. gpd[2] ÷ 175[3] x 0.69[4]
Medium Strength		EDUs = est. gpd[2] ÷ 175[3] x 1.00[4]	EDUs = est. gpd[2] ÷ 175[3] x 1.00[4]
Heavy Strength		EDUs = est. gpd[2] ÷ 175[3] x 2.98[4]	EDUs = est. gpd[2] ÷ 175[3] x 2.98[4]

[1] Derived from an average single family home of 2,200 square feet per City staff estimate
[2] est. gpd = Applicant's estimated gallons per day of indoor water use
[3] Equivalent to estimated gallons per day of single family indoor water use
[4] Strength factors based on baseline single family strengths of 200 mg/L of BOD and 200 mg/L of TSS
[5] Additions and remodels of existing structures which add square footage and include an additional fixture which drains to the sewer system (e.g., sink, shower, dishwasher) are charged based on the net increase in square footage

The two approaches establish a range. Given the age of the City's facilities, there is a significant difference between the higher RCN value and the lower RCNLD value. The City has the latitude to set the connection fee within this range. While setting the fee on the higher end of the range reflects recovering a larger portion of costs that current rate payers have incurred to maintain the facilities since original construction, there may be economic or other reasons to implement a connection fee on the lower end of the range. Generally, the RCNLD valuation approach is used as developers/redevelopers may find a fee set on the higher end to be cost-prohibitive along with other City fees, thus stunting growth and revitalization that the City may want to encourage to spur economic growth. Recently, the Moulton Niguel Water District and the Ross Valley Sanitary District adopted connection fees based on the lower RCNLD value, while other jurisdictions have adopted their fees based on the RCN, including, but not limited to: North Coast County Water District, Foster City, West Sacramento, and the Westborough Water District.

Single family and multi-family connections would be charged per EDU based on the number of dwelling units. Commercial customers would be charged per EDU based on their estimated indoor water use and a strength factor for light, medium, and heavy strength sewer discharge. The use of strength factors would replace the use of square footage. This recommended structure is consistent with the sewer service charge structure.

Each sewer customer class is charged on a per EDU basis. Single family residences are charged 1.0 EDU. Accessory Dwelling Units (ADUs)[1] and expansions of primary residences are charged based on square footage of the proposed ADU or expansion of primary residence which includes additional appliances or fixtures (e.g., showers, sinks, dishwashers) which increase wastewater, and therefore increase the capacity needed. Multi-family residences are charged less per dwelling unit than single family residences as a result of their average water use being less than the average water use of a single family residence. Commercial connections are charged based on their estimated water use (gallons per day) and wastewater strength (low, medium, or high). **Appendix D** provides examples of wastewater strength classifications by type of business, which is based on the State Water Resources Control Board's *Revenue Program Guidelines*.

Implementation

Once the City has adopted updated sewer connection fees based on the findings of this study, we recommend annual updates in order to maintain the connection fee in current dollars going forward. We recommend that the City annually update the connection fees by the percentage change in the *Engineering News Record* Construction Cost Index (ENR CCI), beginning July 1, 2022.

Every five years the City should plan on evaluating whether to conduct a new sewer connection fee study. If any major assumptions of this analysis changes, such as substantially increased growth, then the analysis should be revisited.

[1] An ADU is defined as "an attached or a detached residential dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence."

When new accounts connect to the City's sewer system, the City needs to determine the type of sewer customer it will be and charge the appropriate fee and monthly service charges. **Appendix C** provides examples of what types of commercial customers belong in each category.

II. INTRODUCTION

BACKGROUND

The City provides sewer service to approximately 11,000 residential, commercial, and industrial accounts. The City owns and operates the collection system, which conveys customer wastewater to a treatment plant owned and operated by the South Orange County Wastewater Authority.

Current and Proposed Connection Fee Structure

Figure 2-1 summarizes the current connection fees.

Figure 2-1. Current Connection Fees (by Customer Class)

Customer Class	Fee
Residential unit including single family homes, indiviudal units in a duplex or triplex, each apartment	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375
Hotel, Motel Units	$1,500 plus $105 per 100 sq.ft. of floor area per unit Minimum $4,375
Car Wash	$17,190 per connection
Car Washes which recycled 50% or more of water utilized on the operation	$8,590 per connection
Restaurants	$2,970 plus $210 per 100 sq. ft. of floor area
Industrial	$2,970 plus $210 per 100 sq. ft. of floor area
Commercial	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375
All other buildings and structures	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375
Each dwelling unit created by remodeling an existing structure	$1,500 plus $105 per 100 sq. ft. of floor area minimum of $4,375

The City's current method for assessing connection fees is summarized in Figure 2-1 above. Each customer class is charged a fixed fee plus a charge-per-square-foot of the floor area fee. This applies to all customer classes except car washes which are charged just a fixed fee which is substantially higher than the other classes. Additionally, there is a minimum charge associated with residential units, hotel/motels units, commercial (excluding restaurants), and other buildings and structures. Restaurants and industrial connections do not have a minimum charge.

The connection fee will be set to reflect differences in wastewater hydraulic loading and strength between the various classes and, for the commercial class, among light, medium, and heavy strength connections. This structure will allow the assets associated with treatment facility to be

equitably apportioned among the classes. The use of square footage for commercial connections is an indirect measure of the capacity that is needed and as a result may also not be as equitable. This structure will also be more consistent with the City's sewer service charge structure.

CONNECTION FEES

Connection fees are a type of development impact fee that public agencies may impose as a condition of development under the authority of California Government Code Section 66000 et seq., the Mitigation Fee Act (Act). It is common for agencies that charge connection fees to give them names that denote their specific purpose. For purposes of this report, the Water Storage and Supply Fees are referred to simply as connection fees.

The purpose of connection fees is to ensure that development pays its fair share of the costs associated with providing system capacity. Connection fees are a one-time charge paid at the time the connection is made. The Act requires that "those fees or charges shall not exceed the estimated reasonable cost of providing the service". Because the Act does not prescribe a formula or procedure for determining "the estimated reasonable cost," it is the responsibility of the analyst to employ a method that yields a reasonable result.

The courts generally regard fees as being reasonable if they are not capricious, arbitrary, or discriminatory. Fees are capricious if there is no factual basis for the underlying data used to make the calculations. Fees are arbitrary if there is no logical rationale for choosing among alternatives. Fees are discriminatory if they disproportionately allocate costs to one class of service at the expense of another class.

The purpose of this report is to document that the conditions have been met to establish that the City's connection fees recover the reasonable cost of providing capacity.

ANALYTICAL APPROACH

Three steps are required to determine the reasonable costs that can be recovered with connection fees: (1) facilities that benefit Growth must be identified, (2) the cost of those facilities must be derived, and (3) the capacity provided by those facilities must be determined. The approach used in this report to address each of these steps is described below.

Facilities That Benefit Growth

Connection fees are used to recover Growth's fair share of the costs of existing facilities that were funded by rate payers and that provide capacity for Growth. Because the City is largely built out, Growth occurs as infill and expansion, which can occur anywhere within the service area. Hence, all of the facilities required to serve the City's current customers are the same facilities that provide service for Growth. In effect, the City's current sewer collection system and ownership share of the treatment facility is an integral network that can provide capacity for Growth.

The connection fee also includes projected capital improvements that benefit Growth over the next five years. Those future facilities are included with the existing facilities because five years

is the typical period for which connection fees are set before another update should be conducted.

Value of Facilities

The determination of reasonable costs begins by determining the value of the facilities. The value should reflect the cost of constructing the facilities in place today plus any subsequent costs incurred by rate payers to maintain the facilities so that they are capable of providing capacity for Growth, when and if it occurs. A reasonable approach to determining this value is referred to as "replacement cost new" (RCN) by utility valuation specialists. RCN value represents the original cost escalated from the construction date based on construction cost inflation. In effect, the RCN value represents the cost to construct capacity today.

RCN value recovers the original cost of construction, in today's dollars by escalating the original cost by the Construction Cost Index published by the Engineering News-Record. The RCN value also compensates rate payers for incurring the subsequent costs of maintaining facilities. By maintaining facilities, the capacity for both existing users and Growth retains its ability to provide service. Rate payers are entitled to recover the cost of maintenance because they have no choice but to maintain not only the capacity they are using but also the unused capacity available for Growth, when and if it occurs. Rate payers are entitled to receive reimbursement from Growth for having maintained Growth's share of capacity.

The incremental difference between the original cost and the RCN is presumed to recover the cost of maintenance, although no exacting calculation has been made of the amount of maintenance that has ensued since the original construction. Such a calculation would be very difficult, particularly if no data is available. However, for purposes of cost recovery, the incremental difference is deemed to be a reasonable proxy for maintenance costs.

We note that rate payers are not only entitled to recover their original construction investment and the subsequent maintenance that they have advanced on behalf of Growth, but are also entitled to earn a reasonable return on their outlay. A separate determination of this reasonable return has not been made but is assumed to be included in the incremental difference along with the recovery of maintenance costs.

Capital facilities are typically funded either directly from rate revenue on a pay-as-you-go (PAYGo) basis or from borrowed funds such as bonds or loans. When borrowed funds are used, it is reasonable for rate payers to be reimbursed for the debt service they have retired but not for the outstanding debt. Hence, in the case of debt-funded infrastructure, it is appropriate to include the cumulative principal and interest cost that rate payers have incurred instead of the full acquisition cost. In this way, Growth is not reimbursing rate payers for borrowed funds.

As previously discussed, the cost of infrastructure for which rate payers are due reimbursement does not end with the original construction of the assets. There are certain post-construction costs that should be considered. Maintenance and repair costs at least partially offset depreciation. These costs can be reimbursed by not deducting depreciation. In addition, rate

payers incur the cost of carrying capital costs until they receive reimbursement from Growth. It is assumed that rate payers are indirectly reimbursed for this opportunity cost by not deducting depreciation.

We note that, while it is common for depreciation to be deducted from the RCN value in deriving connection fees, we believe this deduction fails to provide full cost recovery to rate payers. Deducting depreciation from replacement costs results in a value that is referred to by valuation experts as "Replacement Cost New Less Depreciation" or RCNLD. RCNLD value is generally regarded by the courts as a reasonable estimate of fair market value for purposes of transferring ownership of utility assets. RCNLD value represents the value of the utility that a willing buyer might pay a willing seller to purchase the utility.

Contributed capital can be excluded for facilities that do not provide system-wide capacity such as in-tract facilities, which includes customer meters, services, and laterals. In-tract facilities are facilities constructed by developers specifically for the benefit of subdivisions without any additional capacity for other connections. Data is often not available to estimate exactly how much capital was contributed by developers. However, reasonable estimates can be made to minimize how much contributed capital is included in the connection fee calculation so that double counting is avoided.

Capacity in Facilities

The capacity of the facilities should correspond to the facilities that are included in determining the value of capacity. The City does not anticipate significant Growth in the near future. Hence, the capacity of the current number of connections in the water and sewer systems are the current capacities that are ascribed to each system.

The current number of sewer connections is converted to a standard connection referred to as an equivalent dwelling unit (EDU). An EDU relates multi-family and commercial connections to an equivalent single family residential connection based on the ratio of the customer's estimated daily water use and strength of wastewater discharge compared to that of a single family residence.

Unit Cost of Capacity

The connection fee for an EDU represents the unit cost of capacity. Dividing the value of the sewer system facilities by the number of EDUs served determines the unit cost of the City's sewer system.

In effect, the connection fees represents the unit cost associated with the capacity that rate payers have funded. By paying this unit cost, each EDU attains the same level of capital participation in the facilities as an existing rate payer. The connection fee should not be viewed as the cost of a share in the facilities. Paying a connection fee does not convey an ownership share in the facilities. Paying a connection fee only provides reimbursement to those who bore the cost of providing capacity for future connections.

III. CALCULATION METHODOLOGY

SEWER FACILITIES INCLUDED IN CALCULATION

The City's Sewer Service Enterprise operates and maintains a sanitary sewer system that transmits the City's wastewater to a treatment plant owned and operated by the South Orange County Wastewater Authority.

The South Coast Water District and Emerald Bay Service District are allocated a percentage of flow to SOCWA's Coastal Treatment Plant. The City is allocated 58% of the treatment plant.

VALUE OF SEWER FACILITIES

The determination of reasonable costs begins by determining the value of the facilities. The sewer system comprises the collection, transmission, treatment, and disposal of wastewater.

Existing Facilities

The existing sewer collection system and transmission facilities were valued by escalating the original construction costs to current year costs using the *Engineering News-Record's* Construction Cost Index as of July 2020. The inventory of the existing collection and transmission facilities was compiled by the City and is current as of June 30, 2019. The inventory includes the acquisition date, original cost, and estimated service lives for each asset, based on the City's records. A copy of the inventory of existing sewer facilities and the RCN and RCNLD calculations is shown in **Appendix A**.

Future Facilities

The City's most-recent Capital Improvement Plan is used to project the next five years of capital for purposes of this study. FY 2020-21 through FY 2024-25 were included at present value to be allocated to each EDU. The CIP includes the capital improvements related to SOCWA facilities as well as maintenance on the City operated collection system.

Summary of Value

The value of the City's existing and future sewer system is summarized in **Figure 3-1**. The majority of the value is in the RCN for the existing local sewer system assets, which totals $157.7 million. This amount is 2.4 times the historical cost of the local sewerage. The incremental difference represents cost recovery for the maintenance and a return on investment. Approximately 10% or $17.5 million of the total value is the future capital improvements over the next five years. We note that the City's fixed asset listing includes the assets purchased/constructed through borrowed funds. When borrowed funds are used, it is reasonable for rate payers to be reimbursed for the debt service they have retired, but not for the outstanding indebtedness. Hence, as shown in **Figure 3-1**, it is appropriate to include the cumulative principal and interest cost that rate payers have incurred instead of the full acquisition cost. In this way, growth is not reimbursing rate payers for borrowed funds.

Figure 3-1. Value of City's Sewer Facilities

	Historical Cost	RCN	RCNLD	Source
City's Sewer System Assets				
Sewer Pipes	$3,998,277	$42,244,841	$188,095	Appendix A
SOCWA Assets	$36,532,495	$82,046,546	$13,284,456	Appendix A
Other Infrastucture	$25,221,601	$33,390,332	$24,944,945	Appendix A
Subtotal	$65,752,372	$157,681,718	$38,417,496	
Less: Assets paid for via debt	($15,456,000)	($18,814,532)	($17,722,842)	
Plus: Retired debt service		$7,495,210	$7,495,210	
Plus: Capital Improvements (FYE 2021 - FY 2025)		$24,674,000	$24,674,000	Appendix B
Total	**$50,296,372**	**$171,036,397**	**$52,863,864**	a

CAPACITY IN SEWER FACILITIES

Determining the capacity of the sewer system requires converting the number of commercial accounts and residential dwelling units to Equivalent Dwelling Units (EDUs). An EDU relates multi-family and commercial connections to an equivalent single family residential connection, based on the ratio of the respective customer class' estimated average daily water use and strength to the estimated average daily water use and strength characteristics of a single family residence. Utilizing the customer account, flow, and strength data in **Figure 3-2**, which is from the City's billing system and State Revenue Guidelines, we derived the total capacity, in EDUs, of the City's sewer system, as shown in **Figure 3-3** (9,491 residential EDUs), **Figure 3-4** (207 mixed use EDUs), and **Figure 3-5** (1,497 commercial EDUs).

Figure 3-2. Historical Flow and Strength Characteristics by Class[2]

Residential	DUs	Avg Flow (gpd)	BOD (mg/l)	TSS (mg/l)
Ultra-Low Single Family	475	143	200	200
Single Family & ADUs	5,640	175	200	200
Condominiums	684	172	200	200
Apartments (2 units)	1,136	155	200	200
Apartments (3+ units)	2,204	142	200	200
Mixed Use	**Accts**	**Avg Flow (gpd)**	**BOD (mg/l)**	**TSS (mg/l)**
Mixed Use	207	175	200	200
Commercial	**Accts**	**Total Flow (gpd)**	**BOD (mg/l)**	**TSS (mg/l)**
Commercial Light	278	99,478	130	80
Commercial Medium	31	61,323	200	200
Commercial Heavy	54	44,309	1,000	600

[2] Strength characteristics were taken from the *Revenue Program Guidelines* published by the State Water Resources Control Board (**Appendix D**). Commercial Light was assumed to be Professional Office, Commercial Medium set equal to Single Family Residential, and Commercial Heavy assumed to be a Restaurant. Average flows for residential classifications were derived by taking the ratio of each classification's sewer service charge to the sewer service charge of the single family residential class.

Figure 3-3. Derivation of Residential EDUs

Calculation of Current # of Residential EDUs

	Class Summary a	EDU Baseline b	Baseline Ratio c = b ÷ a	Weight d	e = c * d		
Ultra-Low Single Family							
Total Flow	68,053	175	388.87	33%	128		128
BOD	200	200	1.00	33%	0.33	389	128
TSS	200	200	1.00	34%	0.34	389	132
					Total Ultra-Low Single Family EDUs		**389**
Single Family & ADUs							
Total Flow	987,000	175	5,640.00	33%	1,861		1,861
BOD	200	200	1.00	33%	0.33	5,640	1,861
TSS	200	200	1.00	34%	0.34	5,640	1,918
					Total Single Family & ADUs EDUs		**5,640**
Condominiums							
Total Flow	117,727	175	672.73	33%	222		222
BOD	200	200	1.00	33%	0.33	673	222
TSS	200	200	1.00	34%	0.34	673	229
					Total Condominiums EDUs		**673**
Apartments (2 units)							
Total Flow	175,588	175	1,003.36	33%	331		331
BOD	200	200	1.00	33%	0.33	1,003	331
TSS	200	200	1.00	34%	0.34	1,003	341
					Total Apartments (2 units) EDUs		**1,003**
Apartments (3+ units)							
Total Flow	312,587	175	1,786.21	33%	589		589
BOD	200	200	1.00	33%	0.33	1,786	589
TSS	200	200	1.00	34%	0.34	1,786	607
					Total Other EDUs		**1,786**
					Total Residential EDUs [1]		**9,491**

1. to **Figure 3-6**

Figure 3-4. Derivation of Mixed Use EDUs

Calculation of Current # of Mixed Use EDUs

	Class Summary a	EDU Baseline b	Baseline Ratio c = b ÷ a	Weight d	e = c * d	Average Flow	
Mixed Use							
Mixed Use							
Total Flow	36,225	175	207.00	33%	68.31		68.31
BOD	200	200	1.00	33%	0.33	207.00	68.31
TSS	200	200	1.00	34%	0.34	207.00	70.38
					Total Mixed Use EDUs [1]		**207**

1. to **Figure 3-6**

Figure 3-5. Derivation of Commercial EDUs

Calculation of Current # of Commercial/Industrial EDUs							
	Class Summary	EDU Baseline	Baseline Ratio	Weight		Average Flow	
	a	b	c = b ÷ a	d	e = c * d		
Commercial Light Strength							
Total Flow	99,478	175	568.45	33%	187.59		187.59
BOD	130	200	0.65	33%	0.21	568.45	121.93
TSS	80	200	0.40	34%	0.14	568.45	77.31
					Total Commercial Light Strength EDUs		**387**
Commercial Medium Strength							
Total Flow	61,323	175	350.42	33%	115.64		115.64
BOD	200	200	1.00	33%	0.33	350.42	115.64
TSS	200	200	1.00	34%	0.34	350.42	119.14
					Total Commercial Medium Strength EDUs		**350**
Commercial Heavy Strength							
Total Flow	44,309	175	253.19	33%	83.55		83.55
BOD	1,000	200	5.00	33%	1.65	253.19	417.77
TSS	600	200	3.00	34%	1.02	253.19	258.26
					Total Commercial Heavy Strength EDUs		**760**
					Total Commecial EDUs [1]		**1,497**

1. to **Figure 3-6**

CONNECTION FEES - SEWER

The value of the sewer facilities in **Figure 3-1** serves as the basis for the connection fee. The connection fee is determined by dividing the value by the capacity (in EDUs) shown in **Figure 3-3, Figure 3-4,** and **Figure 3-5.** The derivation of the connection fee using the RCN and RCNLD method is shown in **Figure 3-6**.

Figure 3-6. Sewer Connection Fee Calculation

	Historical Cost	RCN	RCNLD	Source
City's Sewer System Assets				
Sewer Pipes	$3,998,277	$42,244,841	$188,095	Appendix A
SOCWA Assets	$36,532,495	$82,046,546	$13,284,456	Appendix A
Other Infrastucture	$25,221,601	$33,390,332	$24,944,945	Appendix A
Subtotal	$65,752,372	$157,681,718	$38,417,496	
Less: Assets paid for via debt	($15,456,000)	($18,814,532)	($17,722,842)	
Plus: Retired debt service		$7,495,210	$7,495,210	
Plus: Capital Improvements (FYE 2021 - FYE 2025)		$24,674,000	$24,674,000	Appendix B
Total	**$50,296,372**	**$171,036,397**	**$52,863,864**	a
Sewer System Capacity				
Residential EDUs		9,491	9,491	Figure 3-3
Mixed Use EDUs		207	207	Figure 3-4
Commercial EDUs		1,497	1,497	Figure 3-5
Total EDU Capacity		**11,195**	**11,195**	b
Connection Fee per EDU		**$15,278**	**$4,722**	= a / b

EDU Factors

The calculation of the number of EDUs associated with a new connection is calculated using the following assumptions for flow and strength of the wastewater discharged from a single family home: 175 gpd of indoor water use; 200 mg/L of Biochemical Oxygen Demand (BOD); and, 200 mg/L of Total Suspended Solids (TSS). These assumptions are typical of industry norms. **Figure 3-7** shows the formula used to calculate EDUs.

Figure 3-7. Commercial and Industrial EDU Calculation Formula

$$\underbrace{\frac{\text{Est. GPD}}{175\text{ gpd}}}_{\text{Flow Factor}} \times \underbrace{\left[\, 0.34 + \left(\frac{\text{Est. BOD (mg/L)}}{200\text{ mg/L}} \times 0.33\right) + \left(\frac{\text{Est. TSS (mg/L)}}{200\text{ mg/L}} \times 0.33\right)\right]}_{\text{Strength Factor}}$$

A single family connection is charged 1.0 EDU per connection. Accessory Dwelling Units and expansion of a primary residence which increases its number of appliances/fixtures should be calculated based on the proposed increase in square footage relative to the average single family residential square footage. City staff estimated that the average single family home in Laguna Beach is 2,200 square feet. Therefore, each proposed ADU, and primary residence expansion, should be charged 0.045 (or 1/22) of a single family connection per 100 square feet.

Other types of new residential connections (e.g., condominiums, apartments), those residences that typically discharge less than single family households, should be calculated based on the assumptions found in **Figure 3-2**. For example, if flow, BOD, and TSS are weighted equally, new connections that will be paying the Condominium sewer service rate will be equal to 0.984 EDUs:

$$(172 \div 175) \times [\, 0.34 + (200 \div 200 \times 0.33) + (200 \div 200 \times 0.33)] = 0.984$$

Figure 3-8 shows the EDUs per customer class with its corresponding connection fee.

Figure 3-8. EDUs by Customer Class

Customer Class	EDUs	Connection Fee	
		RCN	RCNLD
Single Family (per dwelling unit)	1.000	$15,278	$4,722
ADUs, Additions/Remodels (per 100 sq. ft.	0.045	$694	$215
Condominiums (per dwelling unit)	0.984	$15,026	$4,644
Apartments: 2 units (per dwelling unit)	0.883	$13,494	$4,171
Apartments: 3+ units (per dwelling unit)	0.810	$12,382	$3,827

Commercial customers are a less homogenous class of customers, the volume and strength of wastewater can vary considerably from one customer to the next. The EDU calculation for commercial customers takes into consideration a customer's estimated indoor water flow and their strength of flow, through a strength factor for low, medium, and high strength wastewater. The following formula shall be used to calculate a commercial customer's number of EDUs:

(Est. GPD/175) x Strength Factor = # of EDUs

To determine the total commercial connection fee, the sewered wastewater flow is estimated and the strength factor assigned depending on whether wastewater strength corresponds to low, medium, or high strength. **Figure 3-9** summarizes the strength factors to be used. The strength factors were derived using the formula in **Figure 3-7** and the historical strength characteristics in **Figure 3-2**.

Figure 3-9. Calculated Strength Factors

Customer Class	BOD (mg/L)	TSS (mg/L)	Strength Factor
Commercial Light	130	80	0.69
Commercial Medium	200	200	1.00
Commercial Heavy	1,000	600	2.98

The BOD and TSS levels used to derive the low, medium, and high strength factors may not be representative for all customers. If a customer can demonstrate wastewater strength characteristics that are not represented above as low, medium or high, the formula shown in **Figure 3-7** can be used to calculate the prospective customer's number of EDUs.

Appendix A: Sewer Facilities Valuation

Fixed Assets

Water Quality Department

As of June 30, 2019

Asset	Class	Description	Purchase Date	Life	Historical Cost	Book Value	Historical ENR CCI (at Purchase)	Current ENR CCI (July 2020)	ENR CCI Ratio Current v. Historial	RCN (Historical Cost x Ratio)	RCNLD (RCN less Depr.)
					Sewer Pipes						
1331	174	Sewer Pipe	01/01/56	50	$218,105.00	$0.00	853	12,056	14.14	$3,083,282.14	$0.00
1332	174	Sewer Pipe	01/01/56	50	$6,000.00	$0.00	853	12,056	14.14	$84,820.12	$0.00
1333	174	Sewer Pipe	01/01/56	50	$17,066.00	$0.00	853	12,056	14.14	$241,256.70	$0.00
1334	174	Sewer Pipe	01/01/56	50	$4,276.00	$0.00	853	12,056	14.14	$60,448.47	$0.00
1335	174	Sewer Pipe	01/01/58	50	$47,322.00	$0.00	935	12,056	12.89	$609,923.06	-$0.01
1336	174	Sewer Pipe	01/01/58	50	$52,088.00	-$0.01	935	12,056	12.89	$671,351.01	-$0.11
1337	174	Sewer Pipe	01/01/58	50	$58,968.00	$0.00	935	12,056	12.89	$760,025.85	-$0.04
1338	174	Sewer Pipe	01/01/58	50	$58,094.00	-$0.01	935	12,056	12.89	$748,761.05	-$0.07
1339	174	Sewer Pipe	01/01/58	50	$157,248.00	-$0.01	935	12,056	12.89	$2,026,735.60	-$0.07
1340	174	Sewer Pipe	01/01/58	50	$152,880.00	$0.00	935	12,056	12.89	$1,970,437.38	-$0.06
1341	174	Sewer Pipe	01/01/58	50	$43,680.00	-$0.01	935	12,056	12.89	$562,982.11	-$0.13
1342	174	Sewer Pipe	01/01/58	50	$19,874.00	-$0.01	935	12,056	12.89	$256,151.70	-$0.08
1343	174	Sewer Pipe	01/01/58	50	$15,731.00	-$0.01	935	12,056	12.89	$202,753.47	-$0.09
1344	174	Sewer Pipe	01/01/58	50	$24,275.00	$0.00	935	12,056	12.89	$312,875.25	-$0.06
1345	174	Sewer Pipes	01/01/58	50	$134,521.00	$0.00	935	12,056	12.89	$1,733,812.19	-$0.05
1346	174	Sewer Pipe	01/01/58	50	$27,846.00	$0.00	935	12,056	12.89	$358,901.10	-$0.02
1347	174	Sewer Pipe	01/01/58	50	$1,365.00	-$0.01	935	12,056	12.89	$17,593.19	-$0.10
1348	174	Sewer Pipe	01/01/58	50	$31,558.00	-$0.01	935	12,056	12.89	$406,744.26	-$0.08
1349	174	Sewer Pipe	01/01/58	50	$70,980.00	-$0.01	935	12,056	12.89	$914,845.93	-$0.08
1350	174	Sewer Pipe	01/01/59	50	$6,366.00	$0.00	982	12,056	12.27	$78,137.96	-$0.04
1351	174	Sewer Pipe	01/01/59	50	$201,001.00	-$0.01	982	12,056	12.27	$2,467,139.11	-$0.10
1352	174	Sewer Pipe	01/01/59	50	$1,042.00	-$0.01	982	12,056	12.27	$12,789.78	-$0.11
1353	174	Sewer Pipe	01/01/59	50	$16,912.00	$0.00	982	12,056	12.27	$207,582.33	$0.00
1354	174	Sewer Pipe	01/01/60	50	$269,783.00	-$0.01	1016	12,056	11.87	$3,202,883.25	-$0.10
1355	174	Sewer Pipe	01/01/60	50	$6,835.00	$0.00	1016	12,056	11.87	$81,145.61	-$0.05
1356	174	Sewer Pipe	01/01/60	50	$11,539.00	$0.00	1016	12,056	11.87	$136,991.84	-$0.06
1358	174	Sewer Pipe	01/01/60	50	$2,509.00	$0.00	1016	12,056	11.87	$29,787.03	-$0.02
1359	174	Sewer Pipe	01/01/62	50	$177,624.00	$0.00	1075	12,056	11.22	$1,992,686.15	-$0.04
1360	174	Sewer Pipe	01/01/62	50	$26,392.00	$0.00	1075	12,056	11.22	$296,080.33	-$0.04
1362	174	Sewer Pipe	01/01/63	50	$3,718.00	-$0.01	1110	12,056	10.86	$40,368.10	-$0.07
1363	174	Sewer Pipe	01/01/63	50	$53,981.00	-$0.01	1110	12,056	10.86	$586,097.51	-$0.10
1364	174	Sewer Pipe	01/01/63	50	$450,340.00	$0.00	1110	12,056	10.86	$4,889,556.55	-$0.05
1365	174	Sewer Pipe	01/01/63	50	$46,966.00	-$0.01	1110	12,056	10.86	$509,932.30	-$0.09
1366	174	Sewer Pipe	01/01/63	50	$23,294.00	$0.00	1110	12,056	10.86	$252,914.09	-$0.03
1367	174	Sewer Pipe	01/01/64	50	$245,940.00	$0.00	1154	12,056	10.45	$2,570,437.57	-$0.01
1368	174	Sewer Pipe	01/01/64	50	$52,741.00	-$0.01	1154	12,056	10.45	$551,221.63	-$0.06
1369	174	Sewer Pipe	01/01/65	50	$46,787.00	$0.00	1197	12,056	10.07	$471,367.58	$0.00
1370	174	Sewer Pipe	01/01/65	50	$3,552.00	$0.00	1197	12,056	10.07	$35,785.53	$0.00
1371	174	Sewer Pipe	01/01/65	50	$11,765.00	$0.00	1197	12,056	10.07	$118,529.50	$0.00
1372	174	Sewer Pipe	01/01/66	50	$15,283.00	$0.00	1256	12,056	9.60	$146,719.61	$0.00
1373	174	Sewer Pipe	01/01/66	50	$10,746.00	$0.00	1256	12,056	9.60	$103,163.58	$0.00
1374	174	Sewer Pipe	01/01/66	50	$6,686.00	$0.00	1256	12,056	9.60	$64,186.83	$0.00

Fixed Assets

Water Quality Department

As of June 30, 2019

Asset	Class	Description	Purchase Date	Life	Historical Cost	Book Value	Historical ENR CCI (at Purchase)	Current ENR CCI (July 2020)	ENR CCI Ratio Current v. Historial	RCN (Historical Cost x Ratio)	RCNLD (RCN less Depr.)
1375	174	Sewer Pipe	01/01/66	50	$188,344.00	$0.00	1256	12,056	9.60	$1,808,137.05	$0.00
1377	174	Sewer Pipe	01/01/67	50	$178,178.00	$0.00	1324	12,056	9.11	$1,622,944.02	$0.00
1378	174	Sewer Pipe	01/01/67	50	$50,980.00	$0.00	1324	12,056	9.11	$464,354.11	$0.00
1379	174	Sewer Pipe	01/01/68	50	$87,934.00	$0.00	1423	12,056	8.47	$744,780.99	$0.00
1380	174	Sewer Pipe	01/01/68	50	$1,085.00	$0.00	1423	12,056	8.47	$9,189.70	$0.00
1381	174	Sewer Pipe	01/01/68	50	$29,173.00	$0.00	1423	12,056	8.47	$247,088.68	$0.00
1382	174	Sewer Pipe	01/01/68	50	$847.00	$0.00	1423	12,056	8.47	$7,173.90	$0.00
1383	174	Sewer Pipe	01/01/71	50	$214,320.00	$6,446.59	1948	12,056	6.19	$1,326,125.33	$39,888.89
1384	174	Sewer Pipe	01/01/71	50	$5,346.00	$160.80	1948	12,056	6.19	$33,078.88	$994.98
1385	174	Sewer Pipe	01/01/71	50	$2,259.00	$67.95	1948	12,056	6.19	$13,977.78	$420.45
1386	174	Sewer Pipe	01/01/73	50	$405,768.00	$28,435.37	2335	12,056	5.16	$2,094,702.35	$146,792.32
161	174	Sewer Pipe	01/01/62	50	$364.00	$0.00	1075	12,056	11.22	$4,083.56	-$0.01
		Total Sewer Pipes			**$3,998,277.00**	**$35,110.54**			**Total Sewer Pipes**	**$42,244,840.72**	**$188,094.62**
					SOCWA Assets						
2787	174	Pump-Waste Water	09/07/89	25	$1,077.00	$0.00	5790	12,056	2.08	$2,242.71	$0.00
2823	174	Plant-Coastal Treatment-AWMA	01/03/83	40	$14,505,441.00	$1,272,692.16	5064	12,056	2.38	$34,535,501.18	$3,030,108.60
2824	174	Plant-North Coast Interceptor-SOCWA	01/08/80	40	$6,941,845.00	$90,813.32	4102	12,056	2.94	$20,401,362.56	$266,890.93
2824-1	174	SOCWA Capital Improvements	06/30/13	40	$1,807,780.00	$1,536,480.92	10277	12,056	1.17	$2,120,859.18	$1,802,575.35
2824-2	174	SOCWA Improvements	06/30/14	40	$1,228,000.00	$1,074,411.33	10736	12,056	1.12	$1,379,010.81	$1,206,534.89
2824-3	174	SOCWA Capital Improvements, FY17-18 EXP	07/01/18	40	$1,263,124.00	$1,231,545.90	11936	12,056	1.01	$1,275,888.77	$1,243,991.55
2824-4	174	SOCWA Capital Improvements-FY 2018-19 Exp	06/30/19	40	$846,923.98	$846,923.98	12011	12,056	1.00	$850,103.29	$850,103.29
2825	174	Ocean/Land/Outfall-AWMA	01/02/78	40	$2,251,922.00	$0.00	3421	12,056	3.52	$7,935,743.51	$0.00
2826	174	Plant-Regional, AWMA	01/07/83	40	$3,344,686.00	$294,365.83	5064	12,056	2.38	$7,963,246.85	$700,845.40
4607	174	Plant-SOCWA	08/16/02	40	$1,850,264.00	$1,069,720.29	7403	12,056	1.63	$3,013,420.27	$1,742,192.90
5481	174	Motor @ SOCWA_Pump #2	06/30/07	50	$150,608.64	$114,453.76	8871	12,056	1.36	$204,687.82	$155,550.76
I803	174	Laguna SOCWA Wetwell, FY17-18 EXP	07/01/18	30	$1,616,025.29	$1,562,157.78	11936	12,056	1.01	$1,632,356.38	$1,577,944.50
I803-1	174	Laguna SOCWA Wetwell, FY17-18 EXP	07/01/18	30	$724,797.64	$700,637.72	11936	12,056	1.01	$732,122.24	$707,718.16
		Total SOCWA Assets			**$36,532,494.55**	**$9,794,202.98**			**Total SOCWA Assets**	**$82,046,545.57**	**$13,284,456.33**
					Other Assets						
2551	174	Lift Station #6	06/30/88	40	$198,992.00	$44,758.81	5771	12,056	2.09	$415,734.12	$93,510.12
3211	174	Lift Station #24	06/30/93	40	$337,998.00	$118,274.76	6478	12,056	1.86	$629,075.84	$220,130.86
3821	174	Pump Station #22	06/30/97	40	$290,731.00	$130,807.79	6664	12,056	1.81	$526,023.04	$236,672.08
4050	174	Pump	02/05/99	25	$15,733.00	$2,894.87	6826	12,056	1.77	$27,788.57	$5,113.09
4051	174	Pump	05/28/99	25	$16,098.00	$3,159.51	6826	12,056	1.77	$28,433.26	$5,580.52
4102	174	Power Mate Dolly	08/20/99	10	$4,270.00	$0.00	6826	12,056	1.77	$7,541.93	$0.00
4232	174	Gas Detector	08/31/00	10	$1,822.00	$0.00	7068	12,056	1.71	$3,107.91	$0.00
4534	174	Wetwell Mixer	02/28/01	10	$2,541.00	$0.00	7227	12,056	1.67	$4,239.07	$0.00
4535	174	DRI-Prime Pumpset	06/22/01	10	$47,329.00	-$0.01	7227	12,056	1.67	$78,957.46	-$0.01
4995	174	Sewer Equipment-Large Warthog	06/30/03	10	$1,400.00	$0.00	7532	12,056	1.60	$2,241.04	$0.00
4996	174	Sewer Equipment-Motor	06/30/03	10	$1,214.00	-$0.01	7532	12,056	1.60	$1,943.30	-$0.01

Fixed Assets

Water Quality Department

As of June 30, 2019

Asset	Class	Description	Purchase Date	Life	Historical Cost	Book Value	Historical ENR CCI (at Purchase)	Current ENR CCI (July 2020)	ENR CCI Ratio Current v. Historial	RCN (Historical Cost x Ratio)	RCNLD (RCN less Depr.)
4997	174	Sewer Equipment-Hose	06/30/03	10	$1,632.00	$0.00	7532	12,056	1.60	$2,612.42	$0.00
4998	174	Sewer equipment-reel and cable	06/30/03	10	$1,986.00	$0.00	7532	12,056	1.60	$3,179.08	-$0.01
5040	174	Relining	06/30/03	40	$388,327.00	$232,967.88	7532	12,056	1.60	$621,612.34	$372,922.06
5076	174	Pump-Waste Water	12/30/03	25	$4,296.00	$1,632.19	7532	12,056	1.60	$6,876.80	$2,612.72
5077	174	Pump-Waste Water	12/30/03	25	$4,296.00	$1,632.19	7532	12,056	1.60	$6,876.80	$2,612.72
5131	174	Relining	06/30/05	40	$5,949,312.00	$3,866,618.76	8193	12,056	1.47	$8,754,508.08	$5,689,791.55
5132	174	Relining	06/30/04	40	$1,941.00	$1,213.00	8192	12,056	1.47	$2,856.59	$1,785.18
5133	174	Relining	06/30/04	40	$87,332.00	$54,576.13	8192	12,056	1.47	$128,527.22	$80,320.14
5134	174	Relining	06/30/05	40	$1,624.00	$1,055.47	8193	12,056	1.47	$2,389.74	$1,553.15
5135	174	Relining	06/30/04	40	$521,160.00	$325,686.99	8192	12,056	1.47	$766,995.47	$479,316.23
5136	174	Relining	06/30/04	40	$28,122.00	$17,574.20	8192	12,056	1.47	$41,387.38	$25,864.09
5137	174	Project-Water Diversion	06/30/04	30	$493,239.00	$246,571.71	8192	12,056	1.47	$725,903.90	$362,881.63
5245	174	Pump Station #4	06/30/05	40	$71,543.00	$46,497.73	8193	12,056	1.47	$105,276.67	$68,422.15
5482	174	Pump#2-Bluebird SOCWA	06/30/07	50	$357,742.26	$271,863.19	8871	12,056	1.36	$486,197.08	$369,481.35
5483	174	Steel Surge Tank-BB SOCWA	06/30/07	50	$211,758.07	$160,923.74	8871	12,056	1.36	$287,794.22	$218,706.77
I717	174	5 Urban Runoff Diversions	09/30/07	50	$1,338,986.90	$1,017,551.74	8871	12,056	1.36	$1,819,778.09	$1,382,924.92
I735	174	Citywide Mainlining-5.5 ml	06/30/07	50	$1,133,549.21	$861,431.16	8871	12,056	1.36	$1,540,573.71	$1,170,746.00
I736	174	Shaw's Cove Reconstruction	06/30/07	50	$2,259,305.72	$1,716,940.25	8871	12,056	1.36	$3,070,556.59	$2,333,443.48
I737	174	Emergency Power-Nyes/Victoria	06/30/07	50	$609,186.22	$462,945.89	8871	12,056	1.36	$827,927.25	$629,176.28
I738	174	Sewer Lines-Bluebird Cyn	06/30/07	999	$921,386.84	$921,386.84	8871	12,056	1.36	$1,252,230.01	$1,252,230.01
I741	174	Brooks Lift Station Supplemental	06/30/07	25	$17,498.27	$9,097.07	8871	12,056	1.36	$23,781.39	$12,363.57
I742	174	Steel Pipe Rehab-Nyes Place	06/30/07	40	$158,371.22	$110,848.30	8871	12,056	1.36	$215,237.71	$150,650.69
I746	174	Pipe Rehab-Nyes Place	06/30/08	50	$1,486,426.14	$1,159,325.45	9183	12,056	1.31	$1,951,452.46	$1,522,018.78
I755	174	Lift Stations Control/SCADA Alarm System	06/30/10	50	$215,696.74	$176,504.30	9762	12,056	1.24	$266,395.29	$217,990.84
I777	174	Rockledge Lift Sta & Gravity System Replacement	06/30/14	50	$982,362.61	$884,069.56	10736	12,056	1.12	$1,103,166.66	$992,786.23
I778	174	Lift Station-Main Beach	07/01/14	50	$3,469,569.72	$3,122,612.75	10736	12,056	1.12	$3,896,233.03	$3,506,609.73
I778-1	174	Main Beach Lift Station Rehab	06/30/16	20	$12,199.44	$10,367.81	11115	12,056	1.08	$13,232.40	$11,245.68
I786	176	Nuisance Water Diversion-Gaviota	06/30/16	20	$289,495.18	$246,030.18	11115	12,056	1.08	$314,007.50	$266,862.20
I789	176	Nuisance Water Diversion-Mountain Rd	06/30/17	50	$245,180.25	$235,359.41	11555	12,056	1.04	$255,819.41	$245,572.41
I796	174	Sewer replacement, 3rd St/Loma Ter	06/30/17	40	$3,039,947.87	$2,887,739.32	11555	12,056	1.04	$3,171,861.01	$3,013,047.64
		Total Other Assets			**$25,221,600.66**	**$19,350,918.92**			**Total Other Assets**	**$33,390,331.87**	**$24,944,944.83**
		Total			**$106,283,143.76**	**$39,009,545.97**				**$157,681,718.15**	**$38,417,495.79**
Assets Paid for via IBank Loan					**Historical Cost**	**Book Value[1]**					
			07/01/04		-$4,000,000	-$2,400,000	8192	12,056	1.47	-$5,886,833	-$3,532,100
			07/01/05		-$3,000,000	-$1,875,000	8193	12,056	1.47	-$4,414,548	-$2,759,093
			07/01/18		-$4,000,000	-$3,800,000	11936	12,056	1.01	-$4,040,423	-$7,070,740
			07/01/19		-$4,456,000	-$4,344,600	12011	12,056	1.00	-$4,472,728	-$4,360,909
		Total Assets Paid for via iBank Loan			-$15,456,000	-$12,419,600				**-$18,814,532**	**-$17,722,842**

[1] Assets constructed with the iBank loans are not easily identifiable. The assumed book value is based on an assumed useful life of 40 years through June 30, 2020.

Appendix B: 5-Year Capital Improvement Plan

WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROJECTS LIST
FY 2020/21 - 2024/25

Year No.	Fiscal Year	Project ID	Type of Project	Capital Improvement Project Description	Division 3301 Costs	Division 3302 Costs - SOCWA PC 23	SOCWA PC 15, 17, 24	Total
1	2020-2021	20-100	P	Forest Avenue Pipeline Replacement Project Design (Deleted - No Longer Required)	$ -			
		20-101	P	Pipeline Rehabilitation (Zone 3)	$ 1,070,000			
		20-102	P	CCTV Inspection of Collection System (Zone 5)	$ 138,000			
		20-103	P	ACL and NCI Improvements Design (New)		$ 1,500,000		
		SOCWA	WWTP	SOCWA WWTP Projects			$ 3,172,000	
				Year 1 Subtotal:	***$ 1,208,000***	***$ 1,500,000***	***$ 3,172,000***	***$ 5,880,000***
2	2021-2022	21-100	P	Forest Avenue Pipeline Replacement Project Construction (Deleted - No Longer Required)	$ -			
		21-101	P	Pipeline Rehabilitation (Zone 5)	$ 1,000,000			
		21-103	L	VFD Replacements at Laguna SOCWA and Bluebird SOCWA		$ 80,000		
		SOCWA	WWTP	SOCWA WWTP Projects			$ 2,237,000	
				Year 2 Subtotal:	***$ 1,000,000***	***$ 80,000***	***$ 2,237,000***	***$ 3,317,000***
3	2022-2023	22-100	P	Forcemain Inspection Project	$ 250,000			
		20-103	P	Siphon Inspection Project (Moved from Yr 1)	$ 500,000			
		21-104	L	Miscellaneous Operational Improvements at Main Beach Lift Station (Moved from Yr 2)	$ 60,000			
		21-102	L	Bluebird Canyon Lift Station Reconstruction Design (Moved from Yr 2)	$ 250,000			
		20-104	L	Anita Street Lift Station Reconstruction Construction (moved from Yr 1)	$ 2,500,000			
		SOCWA	WWTP	SOCWA WWTP Projects			$ 725,000	
				Year 3 Subtotal:	***$ 3,560,000***	***$ -***	***$ 725,000***	***$ 4,285,000***
4	2023-2024	23-100	L	Victoria II Lift Station Rehabilitation Design	$ 100,000			
		23-101	L	SCADA Radio System Replacement	$ 250,000			
		23-102	L	Emergency Onsite Generator Replacements at Laguna SOCWA and Bluebird SOCWA		$ 250,000		
		23-103	L	VFD Conversions at SOCWA Lift Stations		$ 250,000		
		22-101	L	Bluebird Canyon Lift Station Reconstruction Construction (Moved from Yr 3)	$ 2,500,000			
		23-104	P	5-Yr CCTV Inspection of Collection System and Manholes	$ 1,000,000			
		23-106	L	Lift Station Assessment Project (Moved from Yr 0)	$ 100,000			
		23-105	O	O2 Odor Control System Upgrades at Bluebird SOCWA		$ 500,000		
		SOCWA	WWTP	SOCWA WWTP Projects			$ 1,870,000	
				Year 4 Subtotal:	***$ 3,950,000***	***$ 1,000,000***	***$ 1,870,000***	***$ 6,820,000***
5	2024-2025	24-100	L	Victoria II Lift Station Rehabilitation Construction	$ 500,000			
		24-101	L	Fishermans Lift Station Structural Rehabilitation Design	$ 90,000			
		24-102	L	Top of the World Onsite Generator Replacement and Backup Power Extension to Bernard Court Lift Station Design	$ 100,000			
		24-103	O	O2 Odor Control System Upgrades at Laguna SOCWA SOCWA		$ 500,000		
		SOCWA	WWTP	SOCWA WWTP Projects			$ 3,182,000	
				Year 5 Subtotal:	***$ 690,000***	***$ 500,000***	***$ 3,182,000***	***$ 4,372,000***
							CIP FY 2020-21 through FY 2024-25	***$ 24,674,000***

Appendix C: Example Commercial Sewer Strength Classifications

Example Commercial Sewer Strength Classifications

Light Strength

- Banks & Financial Institutions
- Barber Shops/Hair Salons (hair cutting only)
- Post Offices/Government
- Retail Stores
- Libraries
- Schools
- Churches, Halls & Lodges

Medium Strength

- Appliance Repair
- Beauty Shops (haircutting w/add'l treatments)
- Dry Cleaners
- Nail Salons
- Pet Groomers
- Commercial Laundromats
- Bars & Taverns
- Tasting Rooms
- Hospitals - General, Convalescent & Veterinarian
- Hotels, Motels, B&Bs, and Vacation Rentals
- Offices - Business and Professional
- Offices - Medical/Dental
- Pools with Restrooms (Clubhouse)
- Theaters
- Warehouses
- Car Washes
- High Tech Medical Manufacturing
- Light Manufacturing/Industrial
- Gym or Health Club
- Machine Shops
- Service Stations, Garages, Auto Repair Shops
- Mini Marts – w/o dish washer or garbage disposal
- Mini Mart with Gas Pumps - w/o dish washer or garbage disposal
- Spa with Various Beauty Treatments

Heavy Strength

- Restaurants
- Coffee Shops
- Ice Cream Parlors
- Catering
- Eatery
- Bakeries
- Butcher Shops
- Fish Market/Shop
- Markets - with Dish Washer or Garbage Disposal
- Markets - with Bakeries or Butcher Shops
- Mini Marts - with Dish Washer or Garbage Disposal
- Wineries
- Market
- Dairies (milk producers, yogurt, ice cream maker)
- Specialty Foods Manufacturing (e.g., cheese or olive oil maker)

Appendix D: Wastewater Strength Characteristics

COMMERCIAL USER STRENGTH CHARACTERISTICS

STANDARD CLASSIFICATIONS	BOD(ppm)	SS(ppm)
Residential (average varies depending on average water usage per capita)	175 to 250	175 to 250
Auto Steam Cleaning	1,150	1,250
Bakery, wholesale	1,000	600
Bars without dining facilities	200	200
Car Wash	20	150
Department and Retail Store	150	150
Hospital and Convalescent	250	100
Hotel with dining facilities	500	600
Hotel/Motel without dining	310	120
Industrial Laundry	670	680
Laundromat	150	110
Commercial Laundry	450	240
Market with garbage grinders	800	800
Mortuary	800	800
Professional Office	130	80
Repair Shop and Service Station	180	280
Restaurant	1,000	600
School and College	130	100
Septage	5,400	12,000
Soft Water Service	3	55

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