

Draft Report | July 2023

City of Brea, CA

Water and Sewer Impact Fee Study

Prepared by:

**NewGen
Strategies & Solutions**

DRAFT

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July 17, 2023

Kristin Griffith
Administrative Services Director
City of Brea
1 Civic Center Circle
Brea, CA 92821

Subject: Water and Sewer Impact Fee Study Draft Report

Dear Ms. Griffith:

NewGen Strategies and Solutions, LLC (NewGen) is pleased to submit to the City of Brea this draft report detailing our completed Water and Sewer Impact Fee Study. This report details the results of our calculation of cost based Impact Fees for the City's water and sewer systems.

We appreciate the opportunity to provide our professional services to the City and would like to express our sincere appreciation to City staff. The dedication and assistance provided by City staff was essential to the completion of this study. It has been a distinct pleasure to work with the City of Brea.

Very truly yours,

Eric Callocchia
Principal
NewGen Strategies and Solutions, LLC

Tianna Carnes
Senior Consultant
NewGen Strategies and Solutions, LLC

Table of Contents

Section 1 Project Background and Scope.....3
 Study Background..... 3
 Impact Fee Definition 3
 California Government Code 3
 Study Methodology 4

Section 2 Water Impact Fees6
 Application..... 6
 Current Pressure Zones and Fee Districts 6
 Water Master Plan Recommended Capital 7
 Water Master Plan Estimated Build-Out Demand 9
 Water Impact Fee Calculation 11

Section 3 Sewer Impact Fees12
 Sewer Connection Fees 12
 Sewer Impact Fees..... 14

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List of Tables and Figures

Figure 1-1 Representation of the System Buy-In Cost Approach	4
Figure 1-2 – Representation of the Incremental Cost Approach	5
Figure 2-1 – Brea Water Impact Fee District Map	7
Table 2-1 WMP Projects to Meet Existing Deficiencies	8
Table 2-2 WMP Projects to Improve System Reliability	8
Table 2-3 WMP Projects to Meet Build-Out Demand.....	9
Table 2-4 Future Increased Water Demand of System Build-Out	10
Table 2-5 Updated Water Impact Fee Calculation.....	11
Table 3-1 Current Sewer Connection Fees	13
Table 3-2 Recommended Sewer Connection Fees	14
Table 3-3 Calculated Sewer Impact Fee – System Buy-In Approach	15
Table 3-4 Recommended Sewer Impact Fees - System Buy-In Approach	15

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Section 1

PROJECT BACKGROUND AND SCOPE

Study Background

The City of Brea (City) operates a water distribution system with over 13,000 customer connections, over 100 miles of pipes, and various pumps and reservoirs. Due to the lack of potable groundwater in the City, the City's main water supply comes from two wholesale water producers, the California Domestic Water Company (CDWC or CalDomestic) and Municipal Water District of Orange County (MWDOC).

The City's Sewer System is made up of a network of gravity sewers, pump stations, and force mains. The sewer collection system generally ties into Orange County Sanitation District (OCSD). Most of the gravity system is 8-inch diameter vitrified clay pipe. Some of the collection system was constructed as early as 1925.

The City of Brea recently completed both a Water System Master Plan (May 2021) and Sewer System Master Plan (November 2021). These plans detail the infrastructure improvements necessary to meet current system deficiencies, enhance system reliability, and increase capacity to provide service to the City's customers as the water and sewer systems grow into the future. Therefore, the City desired to update its water Impact Fees given the new cost and demand information provided by the 2021 Water Master Plan. Also, the City wanted to evaluate the possibility of implementing a sewer Impact Fee to fund sewer projects recommended by the 2020 Sewer Master Plan.

The City engaged NewGen Strategies and Solutions, LLC (NewGen) to conduct a Water and Sewer Impact Fee Study.

Impact Fee Definition

In general, a development impact fee is a fee other than a tax or special assessment that is charged by a local governmental agency to an applicant in connection with approval of a development project for the purpose of defraying all or a portion of the cost of public facilities related to the development project. A development impact fee is not a tax or special assessment; by its definition, a fee is voluntary and must be reasonably related to the cost of the service provided by the local agency.

California Government Code

The legal requirements for enactment of development impact fee program are set forth in California Government Code §§ 66000-66025 (the "Mitigation Fee Act"), the bulk of which were adopted as 1987's AB 1600 and thus are commonly referred to as "AB 1600 requirements." The Code refers to water and sewer impact fees as capacity charges since their purpose is to recover an equitable share of costs for capacity in infrastructure.

Section 66013 of the Code specifically governs water and sewer capacity charges and states that the fee "*shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed*". If a development impact fee does not relate to the impact created by development or exceeds the reasonable cost of providing the public service, then the fee may be declared a special tax and must then be subject to a two-thirds voter approval. (Cal. Const., Art. XIII A, § 4.)

Section 1

The Code also states that "*Capacity charge means a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged.*" The Code does not detail any specific method for determining an appropriate fee, however the reference to existing facilities or new facilities is consistent with industry standard approaches.

The City's Water Impact Fees are designed to ensure that the City's ongoing ratepayers are not required to subsidize the costs of facilities benefiting new development and that both ratepayers and new connections each pay their proportionate share of costs for water system infrastructure and assets. This approach complies with the Government Code and Article XIII, D, Section 6 of the California Constitution, commonly referred to as Proposition 218. If adopted, the City's sewer Impact fee would be designed similarly.

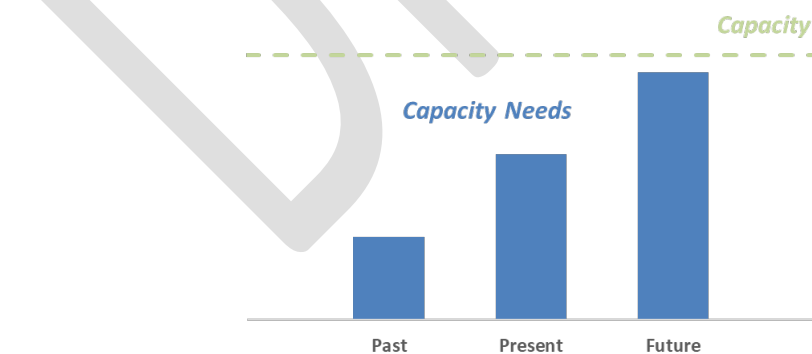
Study Methodology

The calculation process for development impact fees for water and sewer systems is outlined in the two industry manuals: the American Water Works Association (AWWA) Manual M1 – Principles of Water Rates, Fees, and Charges and the Water Environment Federation (WEF) Manual of Practice 27 – Financing and Charges for Wastewater Systems.

There are three methods that may be used to calculate cost-based Development Impact Fees:

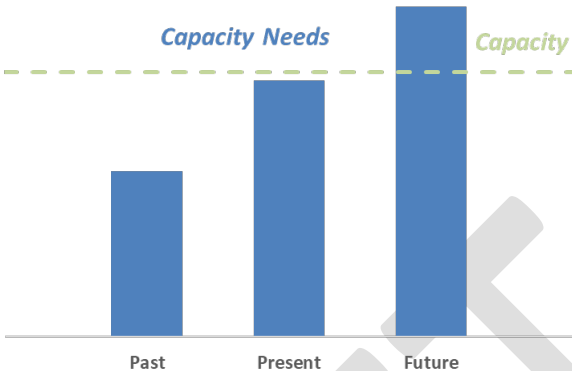
1. The system buy-in method is based on the value of the existing system's capacity, calculated either on an Original Cost Less Depreciation (OCLD) or Replacement Cost New Less Depreciation (RCNLD) basis. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.

Figure 1-1 Representation of the System Buy-In Cost Approach



2. The incremental cost method is based on the cost to expand the existing system's capacity, usually defined by a specific list of capital projects or a system master plan. This method is typically used when the existing system has limited or no capacity to serve new development and new facilities are needed to serve the next increment of new development.

Figure 1-2 – Representation of the Incremental Cost Approach



- 3. The combined or hybrid approach is based on a blended value of both the existing and expanded system’s capacity. This method is typically used where some capacity is available in parts of the existing system, but new or incremental capacity will need to be built in other parts to serve new development.

The City’s current Water Impact Fees are based on the incremental method, with the cost basis being defined as the results of the 2002 Water Master Plan, indexed to future costs based on increases in the Engineering News Record (ENR) 20 City average Construction Cost Index (CCI).

Based on discussions with the City regarding the intent of the Sewer Impact Fee, NewGen calculated a cost based sewer Impact Fee using the system buy-in method using OCLD, which is the lowest cost approach.

Section 2

WATER IMPACT FEES

In July 1995, the Brea City Council adopted Ordinance 967, establishing Water Impact Fees for certain new development projects in Brea and its sphere-of-influence. In March 2003, the Brea City Council adopted an updated Water Master Plan, and at that time Water Impact Fees were modified according to the updated plan. Since 2003, the City's water Impact fees have increased based on increases in the Engineering News Record (ENR) 20 City average Construction Cost Index (CCI).

The City updated its 2003 Water Master Plan in 2009. The City's 2009 Water Master Plan Update (WMPU) was limited to the existing City water distribution system, its Sphere of Influence (SOI), and existing water demands.

The City's 2021 Water Master Plan (WMP) addressed planned developments and associated demands defined by zoning, the General Plan, and Traffic Analysis Zone (TAZ) areas. The 2021 WMP completed a supply analysis, demand analysis, and updated the City's hydraulic model. The impact fees calculated as a part of this study are based on the recommendations resulting from the 2021 WMP.

Application

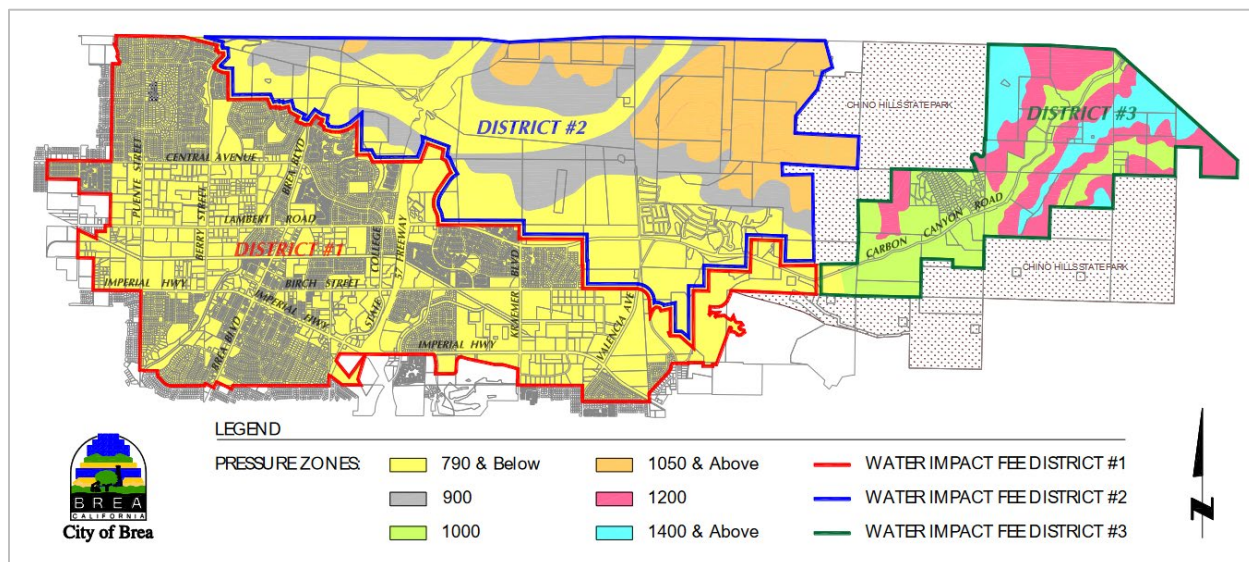
All new development projects are subject to the Water Impact Fees, except:

- Alterations to an existing building;
- Reconstruction (within two years), when a building has been destroyed by fire, wind, earthquakes, vandalism, or other natural or man-made disasters; and
- Additions to a single-family or multiple-family residence and construction of public schools.

Current Pressure Zones and Fee Districts

The fee per 1" meter equivalent varies depending upon a project's geographical location and elevation. In some instances, the exact fee amount will only be able to be determined when the actual elevation or pressure service zone is precisely defined by the proposed development improvement plans. Figure 2-1 shows the City's current water Impact Fee Districts and pressure zones.

Figure 2-1 – Brea Water Impact Fee District Map



Based on the pressure zone information in the 2021 WMP, NewGen is not recommending changes to the City’s fee districts.

Water Master Plan Recommended Capital

There are three categories of capital improvements to the City’s water system recommended by the 2021 WMP. The three categories are projects to:

- Meet Existing Deficiencies
- Improve System Reliability
- Meet Build-out Demand

Each project is also identified by district and pressure zone. The district designation is based on the City’s current water Impact Fee districts. The following tables detail the projects recommended by the 2021 WMP.

**Table 2-1
WMP Projects to Meet Existing Deficiencies**

District	Recommended Improvement	Project #	Cost
1	Berry Street High Pressure Pump	1	\$350,000
1	Valencia Ave Transmission Improvement	2	\$2,162,000
1	Puente Street, Site Drive, and State College Boulevard Replacements	3	\$4,738,000
1	Valencia Pipeline Replacement	4	\$4,111,000
1	Decommission Puente Pump Station	5	\$200,000
1	Lotus Place Pipe Improvements	6	\$2,947,000
1	Roscoe St Pipe Improvements	7	\$416,000
1	Brea Corsica Villas Improvement	8	\$2,867,000
1	Olinda Village Pipe Improvements	9	\$1,027,000
Total Cost			\$18,818,000

Recommended Projects to meet existing deficiencies are projects that address current issues in the system and are recommended to be completed when funding is available.

**Table 2-2
WMP Projects to Improve System Reliability**

District	Recommended Improvement	Project #	Cost
1	Carbon Canyon Reservoir Disinfection System	SR #1	\$350,000
1	Replace Generator at Berry Street Booster Pump Station	SR #2	\$300,000
1	Berry Street Low Pressure Pump	SR #3	\$350,000
1	790 Zone Loop Completion	SR #4	\$1,688,000
Total Cost			\$2,688,000

Recommended projects to improve system reliability are optional projects that do not address a deficiency, but will improve the system, reduce operations costs, or provide other system benefits.

**Table 2-3
WMP Projects to Meet Build-Out Demand**

District	Recommended Improvement	Project #	Cost
2		1A	\$15,114,000
2	Expand 790 Zone Transmission/Distribution Piping	1B	\$200,000
2		1C	\$1,700,000
2		2A	\$18,804,000
2	Eastside 900 Zone Transmission Pipelines	2B	\$1,300,000
2		2C	\$1,300,000
2		2D	\$6,000,000
2		2E	\$6,750,000
2		2F	\$400,000
2		1050 Zone Improvements	3A
2	3B		\$5,100,000
3	Expansion of CC 1000 Zone System	4A	\$7,312,000
3		4B	\$2,550,000
3		4C	\$11,250,000
3	CC 1200 Zone Improvements	5A	\$825,000
3		5B	\$1,500,000
3	CC 1400 Zone Improvements	6A	\$8,895,000
3		6B	\$450,000
3		6C	\$1,500,000
3		6D	\$10,700,000
3		6E	\$800,000
		Total Cost	\$103,833,000

Recommended projects to meet build-out demand of potential development are projects that will be necessary to provide water to undeveloped areas of the City and its SOI. These projects should be implemented as the areas are developed.

Water Master Plan Estimated Build-Out Demand

To determine the appropriate cost allocation to the various districts and pressure zones, the future increased demand for each zone and pressure zone must be determined. Table 2-4 shows the estimated future demand in gallons per day that would result from the build-out development of each district and zone.

**Table 2-4
Future Increased Water Demand of
System Build-Out**

District	Zone	Future Increased Demand (gpd)
1	All	1,275,708
2	790	3,169,859
	900	1,143,605
	1,050	41,008
3	790	-
	1,000	637,853
	1,200	-
	1,400	1,386,401

Water Impact Fees are levied based on the number of equivalent one-inch meters added to the system by a new connection or group of connections. The City’s most recent fee calculation assumed a one-inch meter would demand 1,000 gallons per day (gpd) from the system. Based on historical demand trends and the overall reduction in per capita water use since the previous study in 2002, NewGen recommends that the City assume 500 gallons per day (gpd) of demand per one-inch equivalent connection. This increases the number of connections able to be served by the estimated future capacity, and reduces the cost allocated to each one-inch connection.

Water Impact Fee Calculation

Based on the total cost of recommended WMP projects by district and pressure zone and the assumption that a one-inch meter flow requirement is 500 gpd, Table 2-5 shows the calculation of cost-based water Impact Fees for the City's system.

**Table 2-5
Updated Water Impact Fee Calculation**

District	Zone	Future Increased Demand (gpd)	# of Equivalent 1" Meters in Zone	# of Equivalent 1" Meters for Cost Spreading	Cost of Improvements	Sub-Area Fee (1" Meter)	Calculated Fee (1" Meter)	Current Fee (1" Meter)
1	All	1,275,708	2,551	15,309	\$21,156,000	1,382	\$1,382	\$608
2	790	3,169,859	6,340	8,709	\$17,014,000	1,954	\$3,336	\$4,668
	900	1,143,605	2,287	2,369	\$34,554,000	14,585	\$17,920	\$34,729
	1,050	41,008	82	82	\$6,483,000	79,045	\$96,965	\$126,315
3	790	-	-	4,049	-	-	\$1,382	\$608
	1,000	637,853	1,276	4,049	\$21,112,000	5,215	\$6,597	\$25,408
	1,200	-	-	2,773	\$2,675,000	965	\$7,561	\$27,561
	1,400	1,386,401	2,773	2,773	\$22,345,000	8,059	\$15,620	\$27,561

The fee for each pressure zone is based on the cumulative number of one-inch equivalent meters in the zone and all zones of higher elevation. Therefore, because District 1 is comprised entirely of pressure zone 790 and below, the District 1 fee is based on District 1 costs divided by the total estimated build-out demand stated in one-inch meter equivalents. The fee for District 3, pressure zone 1,400 is based on project costs in that zone divided by only the meter equivalents in that zone, as it is the higher pressure zone. Accordingly, the fee for each zone is the sum of the fees for that zone and all lower pressure zones.

The difference between the calculated fees and existing fees varies due the differences in project costs and the number of equivalent one-inch meters in each zone when compared to the previous fee calculation.

The fees calculated in Table 2-5 are stated in 2023 dollars. The City should adjust Water Impact Fees annually based on increases in the Engineering News Record (ENR) 20 City average Construction Cost Index (CCI) until the time a new water master plan is completed, at which time the City should re-calculate Water Impact Fees based on the new master plan.

Section 3 SEWER IMPACT FEES

The City's previous Sewer Master Plan was completed in 2005. The intent of the 2020 Sewer Master Plan, which was completed in November 2021, was to update the City's sewer model, hydraulic analysis, condition assessment, and capital improvement project recommendations based on the latest available information.

Sewer Connection Fees

It is important to make a distinction between the City's current "Sewer Connection Fees" and NewGen's calculated "Sewer Impact Fees". City Ordinance No. 578, titled AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF BREA AMENDING THE BREA CITY CODE AS HERETOFORE AMENDED, BY ADDING ARTICLE V TO CHAPTER 19 THEREOF, TO BE ENTITLED "SEWER CONNECTION FEES" was adopted in 1975, and defines the purpose of the sewer Connection Fees as:

*"The development of buildings and other facilities for human habitation in the City of Brea has created a need for the expansion of City sewer facilities and has increased the cost of maintaining said city's sewerage system. Accordingly, it is the intent of tis Council that any person constructing a new building, or such facility shall pay the fees prescribed in this Article prior to connecting the same to said City's sewerage system. The payment of the fees prescribed in this Article V is required and assessed pursuant to the taxing power of the City of Brea in order to produce revenues to be utilized solely for **the maintenance and repair of the sewerage system of the City of Brea** and to provide new facilities of, general benefit to that system and those persons utilizing it such as, but not limited to, trunk lines."* (emphasis added)

The City currently allocates revenue generated by Sewer Connection Fees to the Sewer Operating Fund in support of the maintenance and repair of the City's sewerage system, consistent with Ordinance No. 578. The City's current Sewer Connection Fees are levied based on the type of fixture being connected to the sewer system, as shown in Table 3-1.

**Table 3-1
Current Sewer Connection Fees**

Fixture Type	Fee per Fixture
Bathtub	\$10.00
Bidet	\$5.00
Dental Units	\$5.00
Drinking Fountain	\$5.00
Floor Drain	\$10.00
Interceptors for grease, oil and solids	\$15.00
Interceptors for sand, auto wash, etc.	\$15.00
Laundry Tub or Washer (self-service)	\$15.00
Laundry Tub or Washer	\$10.00
Mobile Home Park (rach pad)	\$90.00
Receptors	\$15.00
Shower	\$10.00
Showers gang, per head	\$5.00
Sink, Bar	\$5.00
Sink, Bar Commercial	\$10.00
Sink, Kitchen	\$10.00
Sink, Floor	\$5.00
Sinks, Flushing Rim	\$15.00
Sink, Service	\$10.00
Swimming Pool	\$15.00
Urinal, Pedestal	\$10.00
Urinal, Stall	\$10.00
Urinal, Wall Trough	\$20.00
Wash Basin (lavatory)	\$5.00
Wash Basin (set) (double lavatory)	\$10.00
Water Closet (toilet)	\$20.00

The Sewer Connection Fees for the City have not increased since 1975. NewGen recommends that the City update its Sewer Connection Fees to current dollars based on the indexed increases of the Handy-Whitman Index of Public Utility Construction costs, which has been published continuously since 1914. The Handy-Whitman (H-W) index tracks costs by region and asset type. NewGen used the increase in the Pacific Coast Region for Mains – All Types published in H-W Bulletin No. 195 in January 2022 as an appropriate escalation in sewer capital costs recovered by the Sewer Connection Fee. This index indicated a compound annual growth rate (CAGR) of 4.1% per year from 1975 to 2022 for utility mains, which comprise a majority of the City’s sewer infrastructure. Table 3-2 shows the recommended Sewer Connection Fees resulting from escalating the 1975 fees by a CAGR of 4.1% per year to 2022 dollars.

**Table 3-2
Recommended Sewer Connection Fees**

Fixture Type	Current Fee per Fixture	Recommended Fee per Fixture
Bathtub	\$10.00	\$66.00
Bidet	\$5.00	\$33.00
Dental Units	\$5.00	\$33.00
Drinking Fountain	\$5.00	\$33.00
Floor Drain	\$10.00	\$66.00
Interceptors for grease, oil and solids	\$15.00	\$98.50
Interceptors for sand, auto wash, etc.	\$15.00	\$98.50
Laundry Tub or Washer (self-service)	\$15.00	\$98.50
Laundry Tub or Washer	\$10.00	\$66.00
Mobile Home Park (each pad)	\$90.00	\$594.00
Receptors	\$15.00	\$98.50
Shower	\$10.00	\$66.00
Showers gang, per head	\$5.00	\$33.00
Sink, Bar	\$5.00	\$33.00
Sink, Bar Commercial	\$10.00	\$66.00
Sink, Kitchen	\$10.00	\$66.00
Sink, Floor	\$5.00	\$33.00
Sinks, Flushing Rim	\$15.00	\$98.50
Sink, Service	\$10.00	\$66.00
Swimming Pool	\$15.00	\$98.50
Urinal, Pedestal	\$10.00	\$66.00
Urinal, Stall	\$10.00	\$66.00
Urinal, Wall Trough	\$20.00	\$131.50
Wash Basin (lavatory)	\$5.00	\$33.00
Wash Basin (set) (double lavatory)	\$10.00	\$66.00
Water Closet (toilet)	\$20.00	\$131.50

Sewer Impact Fees

Based on discussions with City staff, NewGen was tasked with calculating a cost-based sewer Impact Fee that the City could charge to recover historical investments in sewer system assets from new customers that connect to the system. Based on the policy direction of the City, NewGen determined that the most appropriate approach would be to calculate a system buy-in fee based on the depreciated cost of the City's sewer system assets. Therefore, NewGen calculated the Original Cost Less Depreciation (OCLD), which is sometimes referred to as the system's Net Book Value (NBV). Then, NewGen translated this cost to a fee per one-inch equivalent meter using the same flow assumption of 500 gpd used to calculate Water Impact Fees. Another key assumption is that since the City's system is not limited in its treatment capacity due to being a wholesale treatment customer of the OCSD, NewGen used the daily water production

capacity of the City’s water system as the basis for the City’s capacity to transmit flow through its sewer system. The City’s current average water production capacity is 12.40 million gallons per day (MGD).

**Table 3-3
Calculated Sewer Impact Fee – System Buy-In
Approach**

Item	Value
NBV of Sewer Assets	\$17,162,926
Capacity Available (MGD)	12.40
Unit Cost (GPD; in \$)	\$1.38
Impact Fee per 1” Equivalent Meter (500 GPD)	\$692
Rounded Impact Fee	\$700

Typically Impact fees are charged based on meter flow factors calculated by the American Water Works Association, as they reflect the capacity demand on utility systems of larger meter sizes. Table 3-4 shows the recommended sewer Impact Fee incremented for larger meter sizes based on AWWA standard meter ratios, with a one-inch meter being the basis for a single equivalent meter.

**Table 3-4
Recommended Sewer Impact Fees - System Buy-In Approach**

Meter Size	Flow Capacity (gpm)	Ratio to 1” Meter	Calculated Sewer Impact Fee
1"	50	1.00	\$700
1 1/2"	100	2.00	\$1,400
2"	160	3.20	\$2,300
3"	300	6.00	\$4,200
4"	500	10.00	\$7,000
6"	1,000	20.00	\$14,000
8"	1,600	32.00	\$22,400
10"	2,300	46.00	\$32,200
12"	4,300	86.00	\$60,200

The fees calculated in Table 3-4 are stated in 2023 dollars. If adopted, the City should adjust Sewer Impact Fees annually based on increases in the Engineering News Record (ENR) 20 City average Construction Cost Index (CCI) until the time a new sewer master plan is completed, at which time the City should re-calculate Sewer Impact Fees based on the new master plan.