CITY OF

THOUSAND OAKS

2020 Water and Wastewater Connection Fees Update Study

Final Report / September 3, 2020

RAFTELIS

City of Thousand Oaks

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1. Executive Summary

1.1. Background of the Study

The City of Thousand Oaks (City) provides water service to approximately 17,000 water connections as well as wastewater service to about 38,000 wastewater connections. In conjunction with the Water and Wastewater Financial Plan Update Study, the City also engaged Raftelis to conduct a Water and Wastewater Connection Fees Update Study. The City last updated its connections fees in 2013. Raftelis conducted this connection fee study using updated asset valuation data in order to develop proposed connection fees that accurately reflect changes in the water and wastewater system asset bases since the prior study in 2013.

Connection fees are one-time fees, collected as a condition of establishing a new connection to the City's systems. The purpose of these fees is to pay for development's share of the costs of existing and/or new facilities. These fees are designed to be proportional to the demand placed on the systems by the new connections. The recommended connection fees for the City reflect the reasonable costs of providing access to the water and wastewater system, and are of proportional benefit to the property being charged. This report documents the data, methodology, and results of this Water and Wastewater Connection Fees Update Study.

1.2. Existing Connection Fees

The methodology for calculating the existing water and wastewater connection fees was the Equity Buy-In Method, which essentially calculates the cost of new development buying into the value of the existing system. Raftelis' valuation of the City's water and wastewater system was based on the original cost (adjusted for inflation) of each system's fixed assets. The City was projecting minimal additional development in 2013 and the capacity of each system was sufficient to meet the needs of such growth. Table 1-1 provides the current connection fees for each system. Fees have been increased annually since the prior connection fee study based on the annual change in the Engineering News-Record (ENR) Construction Cost Index (CCI) for Los Angeles.

Table 1-1: Current Calendar Year 2020 Connection Fees

Enterprise	Current Connection Fee (per unit)	Unit
Water	$8,600	Equivalent Meter Unit (EMU)
Wastewater	$8,455	Service Unit (SU)

1.3. Proposed Connection Fees

Because the City continues to project minimal growth in development, Raftelis calculated proposed water and wastewater fees using the Equity Buy-In Method. This approach is consistent with the methodology used in the prior 2013 study to calculate the existing water and wastewater connection fees. The buy-in method entails calculating the net system value (asset value less outstanding debt principal) and then dividing by the relevant units of service (Equivalent Meter Units [EMU] for water and Service Units [SU] for wastewater) to determine the proposed connection fee. The current and proposed per unit connection fees are shown below in Table 1-2.

While the proposed wastewater connection fee per SU represents an increase of $442 over the current fees, the proposed water fee per EMU is decreasing by $385. Resultantly, a single family residential new connection (one

wastewater SU with a 3/4" water meter) with both water and wastewater service provided by the City of Thousand Oaks will see a total increase of $57 in combined water and wastewater connection fees.

Table 1-2: Current and Proposed Water and Wastewater Connection Fees

Line No.	Enterprise	Current per Unit Connection Fee	Proposed per Unit Connection Fee	Difference
1	Water	$8,600/EMU	$8,215/EMU	($385)
2	Wastewater	$8,455/SU	$8,897/SU	$442
3	**Combined Connection Fees**	**$17,055**	**$17,112**	**$57**

2. Introduction

2.1. Project Overview

Connection fees are also commonly known as developer fees, development impact fees, connection fees, tap fees, and system development charges, among others. All are one-time capital charges, assessed against a new development, to recover the proportional share of capital facility investment, previously constructed by a utility (or will be constructed), to accommodate growth. Connection fees are codified in the California Government Code Sections 66013, 66016, 66022, and 66023. Connection fees must reflect the link between the fee imposed on, and the benefit received by, a new connection to the system. The fee charged may not exceed the proportional share of costs associated with providing the service. There are broadly three different methodologies to calculate connection fees: Buy-In, Incremental, and Hybrid; with variations of each dictated by local community and system characteristics, as well as policy objectives. Utilities have broad latitude in the method and approach used to calculate fees provided the fees reflect the benefit and do not exceed the proportional share of costs for providing service to the connection.

Connection fees are one-time fees, collected as a condition of establishing a new connection to the City's systems. The purpose of these fees is to pay for development's share of the costs of existing and/or new facilities. These fees are designed to be proportional to the demand placed on the systems by the new connections. The recommended connection fees for the City do not exceed the estimated reasonable costs of providing the facilities for which they are collected and are of proportional benefit to the property being charged. This report documents the data, methodology, and results of the Water and Wastewater Connection Fees Update Study.

The City of Thousand Oaks (City) provides water service to approximately 17,000 water connections as well as wastewater service to about 38,000 wastewater connections. The City's current water and wastewater system infrastructure is largely sufficient to accommodate projected growth. In conjunction with the Water and Wastewater Financial Plan Update Study, the City also engaged Raftelis to conduct a Water and Wastewater Connection Fees Update Study. The City last updated its connections fees in 2013. Raftelis conducted this connection fee study using updated asset valuation data in order to develop proposed connection fees that accurately reflect changes in the water and wastewater system asset bases since the prior study in 2013.

2.2. Economic Framework

For publicly owned systems, most of the assets are typically paid for by the contributions of existing customers through rates, charges, securing debt, and taxes. In service areas that incorporate new customers, the infrastructure developed by previous customers is generally extended towards the service of new customers. Existing customers' investment in the existing system connection allows newly connecting customers to take advantage of unused surplus connection. To further economic equality amongst new and existing customers, new connectors will typically "buy-in" to the existing and pre-funded facilities based on the existing assets, effectively putting them on par with existing customers. In other words, the new users are buying into the existing system based on the value of existing assets to continue to provide the same level of service to new customers through repairs, expansions, and upgrades to the system.

The basic economic philosophy behind connection fees is that the costs of providing service should be paid for by those that receive utility from the product. To effect fair distribution of the value of the system, the charge should reflect a reasonable estimate of the cost of providing connection to new users and not unduly burden existing users

through a comparable rate increase. Accordingly, many utilities make this philosophy one of their primary guiding principles when developing their connection fee structure.

The philosophy that service should be paid for by those that receive utility from the product is often referred to as "growth-should-pay-for-growth." The principal is summarized in the American Water Works Association (AWWA) Manual M26: Water Rates and Related Charges:

> *The purpose of designing customer-contributed-capital system charges is to prevent or reduce the inequity to existing customers that results when these customers must pay the increase in water rates that are needed to pay for added plant costs for new customers. Contributed capital reduces the need for new outside sources of capital, which ordinarily has been serviced from the revenue stream. Under a system of contributed capital, many water utilities are able to finance required facilities by use of a 'growth-pays-for-growth' policy.*

This principle, in general, applies to water, wastewater, and storm drainage systems. In the excerpt above, customer-contributed-capital system charges are equivalent to connection fees.

2.3. Legal Framework and California Requirements

In establishing connection fees, it is important to understand and comply with local laws and regulations governing the establishment, calculation, and implementation of them. The following sections summarize the regulations applicable to the development of connection fees for the City.

Connection fees must be established based on a reasonable relationship to the needs and benefits brought about by the development or expansion. Courts have long used a standard of reasonableness to evaluate the legality of development charges. The basic statutory standards governing connection fees are embodied by California Government Code Sections 66013, 66016, 66022, and 66023. Government Code Section 66013 contains requirements specific to determining utility development charges:

> *Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount the fee or charge in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue.*

Section 66013 also includes the following general requirements:

- Local agencies must follow a process set forth in the law, making certain determinations regarding the purpose and use of the charge; they must establish a nexus or relationship between a development project and the public improvement being financed with the charge.
- The capacity charge revenue must be segregated from the general fund in order to avoid commingling of capacity fees and the General Fund.

3. Methodologies

There are two primary steps in calculating connection fees: (1) determining the value and/or cost of capital required to serve new connections or accommodate an increase in density generated by in-fill projects, and (2) allocating those values and/or future costs equitably to various types of connections based on the demand placed on the utilities' systems.

There are three general methodologies that are widely used to develop connection fees. These are the "Buy-In Method", the "Incremental-Cost Method", and the "Hybrid Method" (which combines elements of both the Buy-In Method and Incremental-Cost Method). Note that the Buy-In Method includes two similar but distinct variations, the "Equity Buy-In Method" and "Capacity Buy-In Method."

3.1. Asset Valuation Approaches

There are various methods employed to estimate the asset value of existing facilities and derive an updated connection fee based on the existing asset value. The principal methods commonly used to value a utility's existing assets are Original Cost (nominal), Original Cost (real), Original Cost Less Depreciation (nominal), and Original Cost Less Depreciation (real).

ORIGINAL COST (NOMINAL)

The principal advantages of Original Cost (nominal) valuation are relative simplicity and stability since the recorded costs of fixed assets are held constant. The major criticism levied against Original Cost (nominal) is the disregard of changes in the time value of money, and future capital costs, which are attributable to inflation and other factors. As evidenced by history, prices tend to increase rather than to remain constant or decrease. This situation may be exacerbated since most water and sewer systems are developed over time on a piecemeal basis as demanded by the customer base and service area growth. Consequently, each asset addition is paid for with dollars of different purchasing power. When these outlays are added together to obtain a plant value, the result can be misleading. Additionally, Original Cost (nominal) does not account for the depreciation of facilities and other assets as they age which may not be representative of the state of the systems. We discuss depreciation in further detail below.

ORIGINAL COST (REAL)

Changes in the value of the dollar over time, represented by general inflation, is recognized by Original Cost (real) valuation. The Original Cost (real) represents the original purchase cost of the existing water and sewer facilities adjusted for inflation using the ENR Cost Construction Index (CCI) . This approach recognizes price level changes that have occurred since plant construction and subsequent investments. An obvious advantage of this approach is that it accounts for changes in the value of money over time. However, it does not account for the depreciation of facilities and system assets.

ORIGINAL COST LESS DEPRECIATION (NOMINAL)

The current value of water and wastewater facilities is also materially affected by the effects of age. All assets have estimated useful lives, which vary by type. For example, pumps may have a 20-year life, buildings of 50 years, and pipeline of 80 years. Each year an asset is devalued by the fraction of its useful life to original cost. At the end of an asset's useful life it is worth zero dollars on paper, though it may still be in service. Depreciation accounts for estimated devaluation in system assets caused by wear and tear, decay, inadequacy, and obsolescence. To provide appropriate recognition of the effects of depreciation on existing water and sewer systems, the Original Cost (nominal) valuation can be expressed net of depreciation to yield Original Cost Less Depreciation (nominal).

Accumulated depreciation was provided for each asset by City staff, and was used to deduct losses in valuation based on age or condition, from the respective Original cost of each asset.

ORIGINAL COST LESS DEPRECIATION (REAL)

Original Cost Less Depreciation (real) is identical to the Original Cost Less Depreciation (nominal) valuation method, with the exception that asset cost and asset depreciation is in today's dollars rather than the value of the dollar when the asset was placed in service. Original cost and depreciation are inflated using the ENR CCI to reflect today's dollars. Depreciation is also adjusted for inflation and subtracted from the asset's value to yield Original Cost Less Depreciation (real). This allows for an accounting of system assets in present value, while also accounting for proportional devaluation via depreciation.

3.2. Connection Fee Methodologies

EQUITY BUY-IN METHOD

The Equity Buy-In Method is based on the premise that new customers are entitled to service at the same price as existing customers. Under this approach, new customers pay only an amount equal to the current system value based on one of the four asset valuation methodologies discussed above. This net investment, or value of the system, is then divided by the current demand of the system to determine the Buy-In cost per equivalent unit.

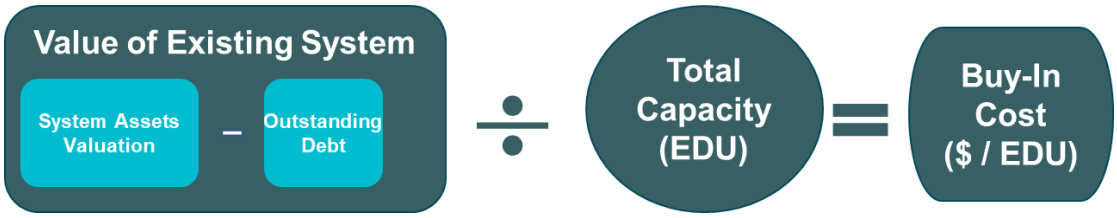
For example, if the existing system has 100 units of average usage and the new connector uses an equivalent unit, then the new customer would pay 1/100 of the total value of the existing system. By contributing this connection fee, the new connector has bought into the existing system. The user has effectively acquired a financial position on par with existing customers and will face future capital re-investment on equal financial footing with those customers. This approach is suitable when: (1) agencies have built most of their facilities and only a small portion of future facilities are needed for build-out, (2) agencies do not have a detailed adopted long-term capital improvement plan, or (3) the "build-out" date is so far out in the future that it is difficult to accurately project growth and required facilities with precision. Figure 3-1 shows the framework for calculating the Buy-In connection fee. In the figure below, the units of service labeled MEU represents "meter equivalent units."

Figure 3-1: Formula for Equity Buy-In Approach

CAPACITY BUY-IN METHOD

The Capacity Buy-In Method is based on the same premise as that for the Equity Buy-In Method – that new customers are entitled to service at the same rates as existing customers. The difference between the two approaches is that for the Capacity Buy-In Approach, for each major asset, the value is divided by its capacity. This approach presents a major challenge as determining the capacity of each major asset may be problematic or not available. The system is designed for peak use and customer behavior fluctuates based on economic and weather conditions. Figure 3-2 shows the framework for calculating a fee based on the Capacity Buy-In Method.

Figure 3-2: Formula for Capacity Buy-In Approach

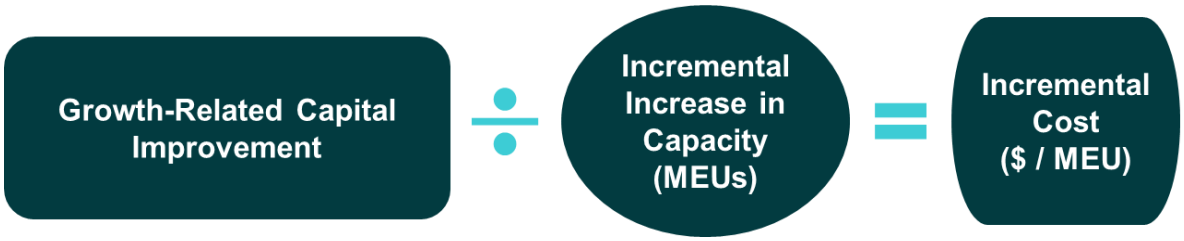


INCREMENTAL-COST METHOD

The Incremental-Cost Method states that new development (new users) should pay for the additional capacity and expansions necessary to accommodate them. This method is typically used when there are specific capital improvements needed to furnish growth for development. Under the Incremental-Cost Method, growth-related capital improvements are allocated to new development based on their estimated usage or capacity requirements, irrespective of the value of past investments made by existing customers.

For instance, if it costs X dollars ($X) to provide 100 additional equivalent units of capacity for average usage and a new connector uses one of those equivalent units, then the new user would pay $X/100 to connect to the system. In other words, new customers pay the incremental cost of capacity. Incorporating the use of this method is generally included when detailed facilities are identified for the capacity required to serve new customers. Figure 3-3 shows the framework for calculating the Incremental-Cost connection fee.

Figure 3-3: Formula for Incremental-Cost Approach



HYBRID METHOD

The Hybrid Method is typically used where some capacity is available to serve new growth, but additional expansion is still necessary to accommodate new development. Under the Hybrid Method, the connection fee is based on the summation of the existing capacity and any necessary expansions.

In utilizing this methodology, it is important that system capacity costs are not double-counted when combining costs of the existing system with future costs from the Capital Improvement Program (CIP). CIP costs associated with repair and replacement of the existing system should not be included in the calculation unless specific existing facilities which will be replaced through the CIP can be isolated and removed from the existing asset inventory and cost basis. In this case, the rehabilitative costs of the CIP essentially replace the cost of the relevant existing assets in the existing cost basis. Capital improvements that expand system capacity to serve future customers may be included proportionally to the percentage of the cost specifically required for expansion of the system. Figure 3-4 summarizes the framework for calculating the Hybrid connection fee.

Figure 3-4: Formula for Hybrid Approach

3.3. Proposed Method: Equity Buy-In Approach

The City anticipates minimal account growth and that the current assets have capacity to meet this additional demand over the next few years. Based on this information, it is reasonable and appropriate to determine connections based on the Equity Buy-In Method.

3.4. Proposed Valuation: Original Cost (real)

The first step in determining the Buy-In connection fee is to determine the value of the existing system. As mentioned above, there are several methods of determining the current value of assets. Table 3-1 shows the water and wastewater systems' assets under the four asset valuation methodologies previously discussed. The City provided Raftelis with the original purchase cost and remaining value (i.e. book value), which Raftelis then converted into real dollars using the ENR CCI.

Table 3-1: Water and Wastewater System Assets

Description	Water System Asset Value (2019)	Wastewater System Asset Value (2019)
Original Cost (nominal)	$72,358,182	$223,143,748
Original Less Depreciation (nominal)	$36,662,535	$116,626,880
Original Cost (real)	$176,602,549	$483,937,850
Original Less Depreciation (real)	$69,319,179	$190,443,419

For the purposes of this Study, Original Cost (real) was used to determine the current value of the water and wastewater statements. Original Cost (real) was estimated by adjusting the original purchase cost of each asset to reflect the original purchase cost in current dollars. This was achieved by escalating the original construction costs using the ENR CCI 20-City average, which reflects the average annual cost increase in construction materials in the Unites States. Raftelis used a CCI value of 11,261 for 2019 to estimate the Original costs in real dollars. The asset valuations used in this study have increased relative to the previous connection fee study in 2013. This is due to both the addition of new assets over the last five years as well as the effect of inflation. Note however that the asset valuation method used in this study is consistent with what was used in the 2013 study.

4. Water Connection Fees

4.1. Equivalent Meter Unit Calculations

To calculate water connection fees for FY 2019 and beyond, Raftelis incorporated data on existing equivalent meter units (EMUs) in the system and system valuation based on Original Cost (real). EMUs convert accounts by meter size into equivalent capacity demand units in order to divide costs equally across customers. The EMUs were calculated by multiplying the FY 2020 meters by meter size by the relevant AWWA capacity ratio for a 3/4" base meter. For example, a 1" meter has the equivalent maximum safe operating flow capacity of 1.67 times a 3/4" meter (50 gpm/ 30 gpm = 1.67) as given in the AWWA Manual M22 Sizing Water Service Lines and Meters, Third Edition. The resulting total EMUs is 21,499.

Table 4-1: Water EMU Calculations

Water Meter Size	FY 2020 Meter Count	AWWA Capacity (gpm)	AWWA Ratio	EMUs
5/8" x 3/4" or 3/4"	15,398	30	1.00	15,398
1"	1,030	50	1.67	1,720
1 1/2"	350	100	3.33	1,164
2"	309	160	5.33	1,645
3"	67	350	11.67	783
4"	23	630	21.00	484
6"	7	1300	43.33	304
Total Meters/EMUs	**17,183**			**21,499**

The fee charged to a new user to connect to the existing system allows them to use water up to the safe operating maximum flow rate of their respective meter. It is appropriate that the EMUs for the water enterprise be based on AWWA meter capacity ratios to capture potential instantaneous demand, as relying on AWWA meter ratios as a basis for connection fees is a common practice.

4.2. Proposed Water Connection Fee Calculation

The next step is to calculate the per EMU connection fee. Table 4-2 provides the calculation of the water connection fee. Line 1 provides the total asset value (from Table 3-1) of the system. Outstanding debt principal is normally subtracted from the asset valuation. However, the water enterprise does not currently have any debt, so the total value remains the same (Line 1 and Line 3). The total system value is then divided by the current water EMUs (Line 4) calculated in Table 4-1 to arrive at a proposed connection fee per EMU of $8,215 (Line 5). This represents a slight decrease relative to the current water connection fee per EMU (Line 6).

Table 4-2: Water Buy-in Connection Fee Calculation

Line No.	Water Connection Fees	FY 2020
1	Water System Asset Value	$176,602,549
2	Less Outstanding Debt Principal	$0
3	**Water System Value**	**$176,602,549**
4	Current Water EMUs	21,499
5	**Proposed Connection Fee ($/EMU)**	**$8,215**
6	Current Connection Fee	$8,600

5. Wastewater Connection Fees

5.1. Service Unit Derivations

The City utilizes EMUs to fairly and equally allocate the water assets' value across the different meter sizes in service. Similarly, the City uses Service Units (SU) for the wastewater system. A SU represents a unit equal across all customer classes after normalizing for both wastewater flow and strength (as opposed to an Equivalent Residential Unit which only normalizes for wastewater flow). Service units for the customer base total 53,534 and were derived during the 2019 wastewater financial plan update study. Each account is assigned a number of SUs based on how it relates to a typical single-family residential customer's wastewater flow and strength.[1] As with the water enterprise, the wastewater connection fees will use the Buy-In Approach.

5.2. Proposed Per SU Connection Fee Calculation

The next step is to calculate the per SU connection fee. Table 5-1 provides the calculation of the wastewater connection fee. Line 1 provides the total asset value (Table 3-1) of the system. Outstanding debt principal is subtracted from the asset valuation as the City does not fully own the asset associated with the debt until that remaining principal is paid. The debt payments are funded through rate revenues, which new development will pay once connected. The net value of the wastewater system is shown in Line 3. This is divided by the total SUs in Line 4 to arrive at a proposed connection fee of $8,897 per SU. This represents a $451 increase relative to the current wastewater connection fee per SU in Line 6.

Table 5-1: Wastewater Buy-in Connection Fee Calculation

Line No.	Wastewater Connection Fees	FY 2020
1	Wastewater System Asset Value	$483,937,850
2	Less Outstanding Debt Principal	$7,619,364
3	**Wastewater System Value**	$476,318,486
4	Current Wastewater SUs	53,534
5	**Proposed Connection Fee ($/SU)**	**$8,897**
6	Current Connection Fee	$8,455

[1] For more detail on the determination of Service Units (SUs), please refer to the *2020 Wastewater Enterprise Financial Plan and Cost of Service Update Report* provided by Raftelis to the City in October 2019.

6. Residential Connection Fee Impacts

While the proposed wastewater connection fee per SU represents an increase of $442 over the current fees, the proposed water fee per EMU is decreasing by $385. Resultantly, a single family residential new connection (one wastewater SU with a 3/4" water meter) with both water and wastewater service provided by the City of Thousand Oaks will see a total increase of $57 in combined water and wastewater connection fees.

Table 6-1: Current and Proposed Combined Connection Fees

Line No.	Enterprise	Current per Unit Connection Fee	Proposed per Unit Connection Fee	Difference
1	Water	$8,600/EMU	$8,215/EMU	($385)
2	Wastewater	$8,455/SU	$8,897/SU	$442
3	**Combined Connection Fees**	**$17,055**	**$17,112**	**$57**