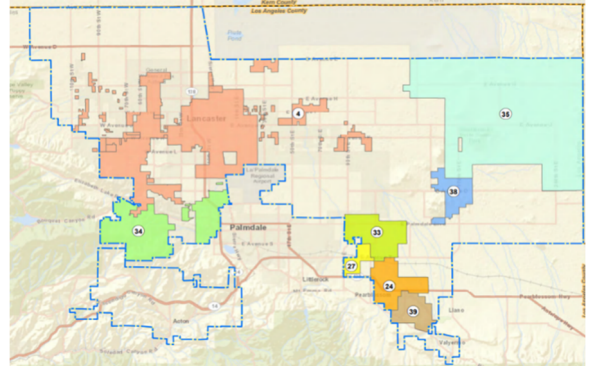


Final Report



Los Angeles County Public Works District 40 System Capacity Charge Study *September 2026*





September 28, 2026

Rasta Naderi, P.E.
Civil Engineer
Los Angeles County Public Works
900 S. Fremont Ave.
Alhambra, CA

Subject: Los Angeles County Public Works District 40 System Capacity Charge Study Report

Dear Mr. Naderi:

Please find enclosed the final report regarding the District 40 System Capacity Charges study for Los Angeles County Public Works (County). The District 40 System Capacity Charges include the Meter Component, the Fire-Flow Component, and the Water Supply Component. These components are different in their establishment and assessment but work in tandem to support District 40.

The focus of this report is the creation of cost-based and proportional System Capacity Charges to support the impact of growth on the District 40 water system. This report has been prepared using generally accepted financial and engineering principles. District 40 financial, planning, and engineering data were the primary sources for the information contained in this report.

HDR appreciates the opportunity to assist the County in this matter. We also would like to thank the County staff for the assistance provided to us. We look forward to future opportunities to assist Los Angeles County Public Works.

Sincerely yours,
HDR Engineering, Inc.

A handwritten signature in black ink, appearing to read 'Shawn Koorn', written in a cursive style.

Shawn Koorn
Associate Vice President



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Abbreviations and Acronyms

County	Los Angeles County Public Works
AVEK	Antelope Valley East-Kern Water Agency
AWWA	American Water Works Association
CIP	Capital Improvement Plan
EDU	Equivalent Dwelling Unit
RCN	Replacement Cost New
RCNLD	Replacement Cost New Less Depreciation
WSMP	Water Supply Master Plan
UWMP	Urban Water Management Plan

Definitions

Allowable Capacity Charge: Is the maximum cost-based charge which can be implemented. As a matter of policy, a capacity charge which is less than the allowable capacity charge may be implemented.

Buy-In Methodology: A generally accepted methodology used to calculate a capacity charge which considers only the value of the existing assets of the utility available to provide service (e.g., capacity).

Capacity Charge Eligible: The assets (i.e., infrastructure) and value of those assets which are included within the calculation of the capacity charge. For example, the value of contributed or donated assets are not capacity charge eligible and are excluded from the calculation of the capacity charge.

Combined Methodology: A generally accepted methodology used to calculate a capacity charge which considers both the value of the existing assets of the utility along with the value of future capacity/expansion related improvements.

Equivalent Dwelling Unit (EDU): One EDU is the level of service in gallons per day for an average residential dwelling.

Existing Facilities: Assets which are currently in service and booked as an asset on the County's asset records.

Gallons Per Day (GPD): The average gallons per day (gpd) that a customer or group of customers use. Gallons per day may be further defined as being related to average day use or peak day use.

Master Plan: A planning document used by the utility to assess current and future conditions and needs, particularly as they relate to future customer growth and expansion infrastructure. A master plan is typically accepted and adopted by the utility governing body.

System Capacity Charge: For the purposes of this analysis, California Government Code defines System Capacity Charges as follows: "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, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities. A "capacity charge" does not include a commodity charge."



Executive Summary

Introduction

The County commissioned this Study to determine cost-based System Capacity Charges for the District 40 water system. District 40 was formed in accordance with Division 16, Section 55000 through 55991 of the state water code to supply water to the Antelope Valley area. Specifically, District 40 supplies water to the Cities of Lancaster and Palmdale and several unincorporated County communities. District 40 is comprised of eight regions: Regions 34 and 4, which serve the Cities of Lancaster and Palmdale; Region 24 (Pearblossom); Region 27 (Littlerock), Region 33 (Sun Village), Region 39 (Rock Creek), Region 35 (Northeast Los Angeles County), and Region 38 (Lake Los Angeles). Regions 4 and 34 are operated as a single system; Regions 24, 27, 33, and 39 operate as a single system; and Regions 35 and 38 operate as a single system. District 40 provides water service to approximately 205,000 people. District 40's water is supplied via a combination of groundwater wells and imports from the Antelope Valley-East Kern Water Agency (AVEK)¹.

The purpose of this report is to document the development of the proposed System Capacity Charges for District 40. The purpose of the System Capacity Charges is to recover the costs of public facilities in existence at the time the fee is imposed and the cost of future capital investments identified as part of this Study that provide additional system capacity. These fees are charged to new customers connecting to the system, and to existing customers increasing their demands compared to the value of their existing (pre-expansion) capacity. By establishing cost-based System Capacity Charges, the County's goal is to have growth-pay-for-growth by having new customers pay their proportional share of the infrastructure in place which will serve them, while also reflecting the system costs that the existing utility customers have funded for available capacity in the current system. The System Capacity Charges will not remove the necessity of developer agreements, as they will only account for a portion of the cost of providing capacity for future growth. Where applicable, developer agreements will still be needed to account for additional capacity needs that exceed the current system's ability to provide capacity.

The System Capacity Charges include three components: a Meter Component, a Fire-Flow Component, and a Water Supply Component. The Meter Component is a charge reflecting the development's proportionate share of the capacity of the District's distribution system attributable to the size and capacity of the water meter required to serve the property. The Fire-Flow Component is in place to account for the water infrastructure available to provide water in sufficient quantities and pressures to fight fire on parcels served by the District. This component is imposed as the existing rate payers have invested into the system's ability to provide public fire protection, and a new customer will buy into the portion of the system available to address the fire capacity. Finally, the Water Supply Component is based on the cost of acquiring new groundwater supplies. Thus, it includes the cost of purchasing new groundwater rights.

¹ District 40, Antelope Valley Water System Master Plan, Executive Summary I-III

Study Overview

The System Capacity Charges for District 40 are calculated in conformance with generally accepted rate and fee making practices, California legal requirements, and are based on District 40's planning and design criteria and customer characteristics. As noted, System Capacity Charges are based on the available capacity in existing infrastructure, and the portion of planned future improvements providing additional capacity, divided by the number of equivalent dwelling units (EDUs) that will be served by the available capacity. A component by component (distribution, wells, pumping, etc.) approach is often taken in developing the System Capacity Charges as each component can have different planning and design criteria. The District 40 service area has some additional capacity remaining across the District, and at this time some projects have been identified that will provide some additional capacity on the system. Since the Water Supply Component will be applied to the costs of new groundwater rights, it accounts for the future component of the District's supply. The planned future capital cost will also be applied to the growth it can support. As a result, the analysis and development of the System Capacity Charges is based on existing infrastructure, the cost of future supplies, and the cost of eligible planned future capital. This approach is categorized as a form of the "combined" methodology as it accounts for both existing capacity and future costs.

The American Water Works Association (AWWA) states:

*"The Combined 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 (e.g., source of supply), but new or incremental capacity will need to be built in other parts (e.g., treatment plant) to serve new development at some point in the future."*²

For District 40, future capital improvements have been included, which will provide some additional capacity. As a result, the existing capacity of the system, the eligible future capital, and future supplies will be used to support growth. This makes District 40 most suitable for the combined approach. It should be noted that the System Capacity Charges are based on the cost of adding additional connections to the system based on current planning. It will not eliminate the need for developer agreements to address the need for additional capacity expansion not included in this study to serve new connections.

At its simplest form, the District 40 System Capacity Charges are based on the value of existing capital infrastructure divided by the number of total EDUs served by the available capacity and planned future capacity-enabling infrastructure divided by the number of additional (future) EDUs served by the additional capacity provided. The calculations also take into account the financing mechanisms of capital improvements. Based on the sum of the value of the existing component costs, the net allowable water System Capacity Charges are determined. "Net" refers to the calculated "gross" System Capacity Charges, net of any debt service credits or contributions made from developers or grant funding. A debt service credit avoids double charging the customer for the asset value in the existing or buy-in component of the System Capacity Charges, given the debt service component included within the current water rates. The System Capacity Charges are based on infrastructure the County funded and therefore the

² American Water Works Association (AWWA), M-1 Manual, 7th Edition, p. 330.

developer contributions or grant funding is not included in the calculations. District 40 does not currently have any debt related to capital. Therefore, the maximum allowable fee may be calculated without the inclusion of any debt credits. “Allowable” refers to the concept that the calculated System Capacity Charges are District 40’s maximum cost-based charge. The County, as a matter of policy, may charge any amount up to the cost-based System Capacity Charges, but not in excess of the calculated amount.

The System Capacity Charges include three components: a Meter Component, a Fire-Flow Component, and a Water Supply Component. The Meter Component is a charge reflecting the development's proportionate share of the capacity of the District's distribution system attributable to the size and capacity of the water meter required to serve the property. The Water Supply Component is based on the cost per acre-foot required to increase supplies. Thus, it is the cost of a new groundwater right (per ac-ft). The Fire-Flow Component is the cost of the percentage of water mains that can contribute to fire protection needs, excluding smaller mains related to distribution. The Fire-Flow Component also includes reservoirs with sufficient capacity to aid fire control. That cost is then divided across the fire flow requirements in the District. In essence, the Fire-Flow Component addresses the portion of the system that can serve both water needs and fire protection needs. This was determined through a system capacity analysis, and through separating out infrastructure that does not directly contribute to fire protection. For example, the small customer distribution lines are not included in the Fire-Flow Component calculation as those assets do not contribute to the system’s overall fire flow capacity. A portion of the costs of these assets is removed from the Meter Component calculation and used in the Fire-Flow Component calculation. Therefore, the Fire-Flow Component does not “double count” asset costs contained in the Meter Component.

The System Capacity Charges should be implemented according to the capacity requirement (i.e., the impact) each new EDU places on the water system. This way, the System Capacity Charges are related to the costs the new customers place on the system and the benefit they derive from infrastructure in place to serve them. It is recommended that the customer meter size be used as the basis for implementing the Meter Component as it reflects capacity demands of the customer. Table ES-1 provides the calculated Meter Component based on the meter size.

Table ES-1
Summary of the Calculated Meter Component

Meter Size	District 40
3/4"	\$11,437
1"	\$22,874
1 1/2"	\$34,311
2"	\$57,185
2 1/2"	\$80,059
4"	\$194,429
6"	\$377,420
8"	\$606,160
10"	\$880,647
12"	\$1,143,698

[1] Based on "Combined" methodology established in AWWA M1, Seventh Edition, pages 331-332.

Note: It is recommended that the Calculated Meter Component for meter sizes above 2" be reviewed by County staff.

The result of the Meter Component analysis is \$11,437 for the standard single family home meter size (3/4").

The Fire-Flow Component should be implemented based on the fire-flow requirements a new connection requires. The Fire-Flow Component is set by the gallon and different sized fire-flow requirements are charged according to the gallons of fire-flow required and a fire-flow factor applied to account for the disproportionate burden of large fire-flows. Fire-flow factors were based on the County's existing fire flow factors. Table ES-2 lists the calculated Fire-Flow Component by fire-flow need.

Table ES-2
Summary of the Calculated Fire-Flow Component

Fire-Flow Demand (gpm)	Fire-Flow Duration (min)	Fire-Flow Cost per Gallon	Fire-Flow Factor	Fire-Flow Component
1,250	60	\$0.0232	1	\$1,740
1,500	60	\$0.0232	1.2	\$2,506
2,000	120	\$0.0232	3.2	\$17,818
2,500	120	\$0.0232	4	\$27,840
3,000	180	\$0.0232	7.2	\$90,202
3,500	180	\$0.0232	8.4	\$122,774
3,750	180	\$0.0232	9	\$140,940
4,000	240	\$0.0232	12.8	\$285,082

This analysis valued the assets at Replacement Cost New Less Depreciation (RCNLD). RCNLD is the original cost escalated to current-day dollars and depreciated according to the age of the asset. The RCNLD method reflects the value of the existing system at the time the new customer is connected to the system and therefore reflects the carrying costs of the capacity built into the system in advance of the new customer's connection.

To capture the future component of the fee structure, the costs associated with eligible planned future capital are captured in the Meter Component, and the costs associated with acquiring additional water supply are reflected in the Water Supply Component based on the estimated cost of groundwater rights. The calculated Water Supply Component is shown in Table ES-3.

Table ES-3 Summary of the Calculated Water Supply Component	
Fee Component	Cost per Acre Foot
New Groundwater Right	\$10,000 ^[1]

[1] Estimated cost per acre foot of acquiring future groundwater rights.

Consultant's Recommendation

Based on the review and analysis of the District 40 planning materials and asset costs, HDR makes the following recommendations:

- ✓ The County should adopt the District 40 System Capacity Charges for new EDUs which are no greater than the net allowable System Capacity Charges as set forth in this report.
- ✓ The System Capacity Charges will work in tandem with developer agreements when additional capacity improvements are needed to support new expansion infrastructure not covered by the System Capacity Charges calculation.
- ✓ Existing connection fees will be evaluated and updated if/when the System Capacity Charges are implemented so not to double count or over recover costs.
- ✓ The County should update the District 40 actual calculations for the System Capacity Charges at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated, or every five years.

Disclaimer

HDR, in the calculations presented in this report, has used generally accepted engineering, planning, and rate and fee setting principles. This should not be construed as a legal opinion with respect to California law. HDR recommends that County legal counsel provide guidance on the final charge level and implementation approach prior to adoption for compliance with California legal and legislative requirements.

Summary

The System Capacity Charges for District 40 as presented in this report are based on the planning and engineering design criteria of the District 40 water system, the value of the existing assets,

identified future capacity improvements, and generally accepted principles. The calculated fees will provide multiple benefits to District 40 by accounting for the addition of new customers in accordance with the additional burden they impose on existing systems and future supplies.



1.0 Introduction and Overview

1.1 Introduction

The purpose of a System Capacity Charge is to fund a proportionate share of capacity related costs for both existing and planned future infrastructure in the District 40 water system. However, it is important to note that not all capacity improvements have been identified at the current time. Given this, future capacity enabling projects not included in this study would be applicable for a developer agreement. The objective of the analysis is to calculate the cost-based fees for new customers connecting to, or requesting additional capacity on, the District 40 water system. By establishing cost-based System Capacity Charges, the County has growth-pay-for-growth by having new customers connecting to the system and customers enlarging their connections pay their proportional share of the infrastructure that will serve them, while also capturing the value of the portion existing customers have paid for funding the available capacity in the existing system, thereby shielding existing customers from the financial impacts of growth to the extent possible. General industry recommendations are to update the charges every three to five years, or when comprehensive planning documents for the system have been updated.

1.2 Overview of District 40 Water System

District 40 was formed in accordance with Division 16, Section 55000 through 55991 of the state water code to supply water to the Antelope Valley area. Specifically, District 40 supplies water to the Cities of Lancaster and Palmdale and several unincorporated County communities. District 40 is comprised of eight regions: Regions 34 and 4, which serve the Cities of Lancaster and Palmdale; Region 24 (Pearblossom); Region 27 (Littlerock), Region 33 (Sun Village), Region 39 (Rock Creek), Region 35 (Northeast Los Angeles County), and Region 38 (Lake Los Angeles). Regions 4 and 34 are operated as a single system; Regions 24, 27, 33, and 39 operate as a single system; and Regions 35 and 38 operate as a single system. District 40 provides water service to approximately 205,000 people. District 40's water is supplied via a combination of groundwater wells and imports from the Antelope Valley-East Kern Water Agency (AVEK)³. The water system consists of roughly 1,057 miles of water lines and 71 potable water tank reservoirs.

³ District 40, Antelope Valley Water System Master Plan, Executive Summary I-III

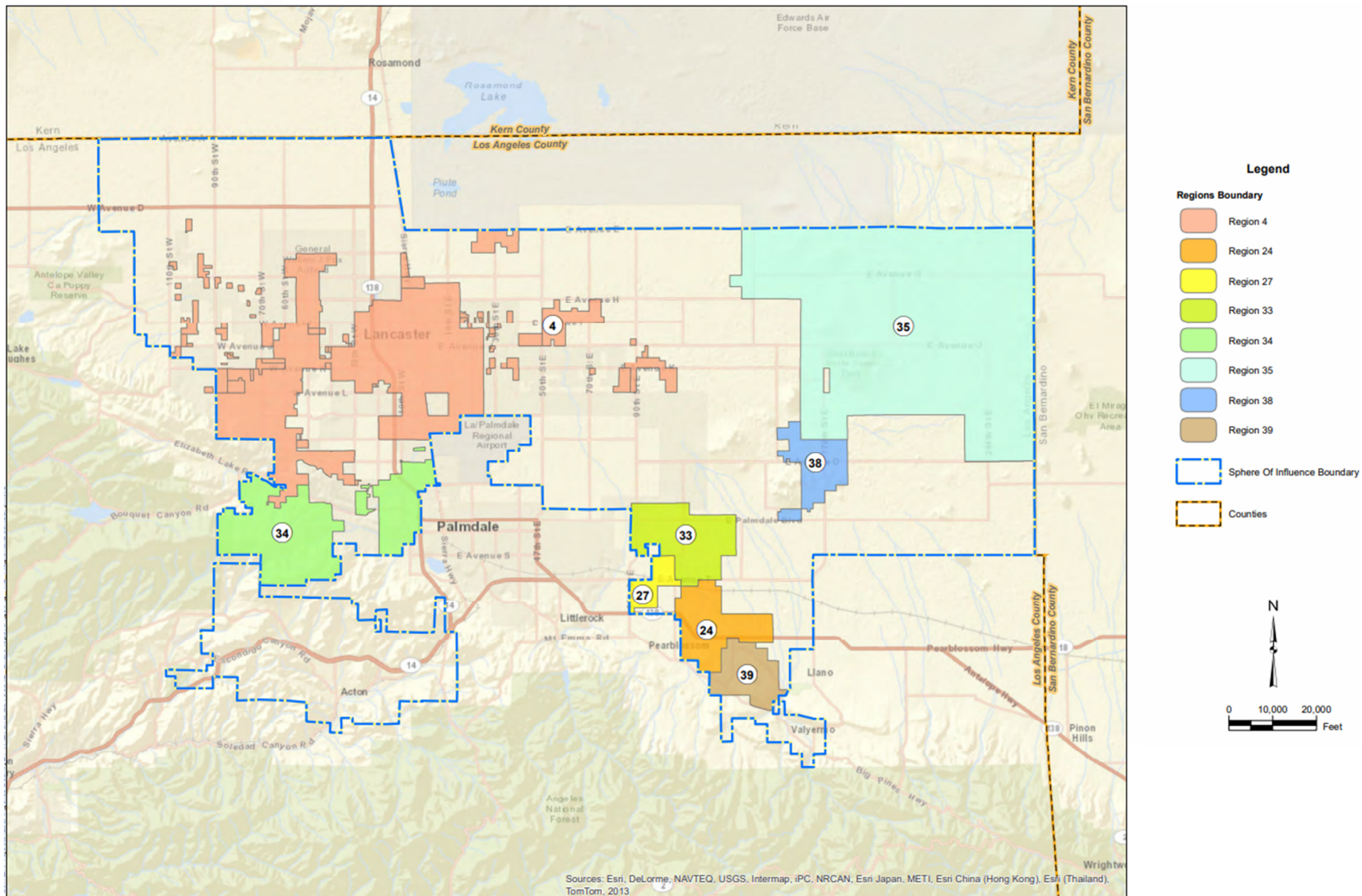


Figure 1. Map of District 40

1.3 Existing Fees

The County has an existing fee program in place that applies to new connections on the system. If, and when, the System Capacity Charges are implemented, it will be necessary to review and determine if existing fees overlap and result in a double charge to the customer for the same purpose and adjust the current fee program as necessary. The existing fees are summarized in Table 1-1.

Table 1-1
Definitions of Existing Fees

Fee Title	Abbreviated Description
Capital Improvement (Tank Capacity Unit) Charge (Rule 4-A – 1b)	The charge for participation in the construction of additional water storage and other water facilities in addition to the Capital Improvement (acreage) charges.
Local System Improvement Charge (Rule 3-A-4a)	The charge for equitable participation in the local system improvements of a District as a condition precedent to the supplying of water to be a benefited premises having a benefited frontage.
Meter Processing Fee (Rule 3-A-11k)	For the County to process water service applications, including issuance of standard plans and specifications, inspection of the installation, and processing of a new account for billing purposes.
Water Banking Fee (Rule 4-A-1t(1))	The purpose of the Water Banking Fee is to establish a water-banking program to store water in groundwater basins.
Groundwater Supply Fee (Rule 4-A-1t(2))	The purpose of the Groundwater Supply Fee is for the construction of wells and associated facilities that may be used for the injection or extraction of water.
Capital Improvement (Acreage) Charge (Rule 4-A-1b(5))	Capital Improvement Charge based on the number of acres benefitted by the use of District water.
Recycled Water Fee (Rule 4-A-1t(3))	The purpose of the Recycled Water Fee is to establish a recycled water program that will increase the reliability of the District's water supplies by decreasing reliance on imported water and local groundwater supplies.

1.4 Defining System Capacity Charges

The first step in establishing cost-based System Capacity Charges is to gain an understanding of the definition of a System Capacity Charge. For the purposes of this analysis, California Government Code defines System Capacity Charges as follows:

“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, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the

*local agency involving capital expense relating to its use of existing or new public facilities.
A “capacity charge” does not include a commodity charge.”*

System Capacity Charges are generally imposed as a condition of service. The objective of System Capacity Charges is not to generate revenue for the utility, but to create a fiscal balance (proportionality) between existing customers and new customers. In this way, all customers seeking to connect to the utility system bear a proportional share of the cost of capacity that is invested in the existing system. Through the implementation of proportional and cost-based System Capacity Charges, existing customers will not be unduly burdened with the cost of new development (e.g., system expansion).

1.5 Methodology to Establish System Capacity Charges

There are various approaches that can be used to establish System Capacity Charges which ultimately depend on the available capacity in the utility system to meet customer demands. The AWWA M-1 Manual discusses three generally accepted System Capacity Charges methods:

- The **buy-in method** is based on the value of the existing system’s capacity. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.
- The **incremental cost method** is based on the value or cost to expand the existing system’s capacity. This method is typically used when the existing system has limited or no capacity to serve new development now and into the future.
- The **combined 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 (e.g., water or wastewater treatment), but new or incremental capacity will need to be built in other parts (e.g., water storage, wastewater lift station) to serve new development at some point in the future.⁴

For District 40 there is limited capacity available within the existing system. Combined with the fact that some of the planned improvements will provide additional capacity in the system, a “Combined” method (existing assets + eligible future capital) was deemed to be the appropriate methodology to establish the Meter Component and Fire-Flow Component for District 40. The County is only applying the System Capacity Charges to account for the burden placed on the existing system and future capital by new connections not accounted for in developer agreements. The Water Supply Component constitutes another future component of the overall fee structure. This means that the calculation of the overall fee structure is also in line with the combined method incorporating existing and future systems.

⁴ AWWA M-1 Manual, 7th Edition, p. 330-337.

Within the generally accepted System Capacity Charge methodologies⁵, there are a number of different steps used to establish cost-based and proportional System Capacity Charges. These steps are as follows:

Step 1 – Determination of system planning criteria

Step 2 – Determination of connections

Step 3 – Valuation of system component costs

Step 4 – Determination of any credits

Step 1 – Determination of System Planning Criteria

The first step in establishing System Capacity Charges is the determination of the system planning criteria. This implies calculating the amount of capacity required per EDU. The use of an adopted facility plan or master plan for the utility provides the basis for the System Capacity Charges system planning criteria. These planning documents provide the rational planning basis and criteria for the facilities and investment needed to operate and maintain the system properly and adequately. In this case, it was based on the number of equivalent meters and additional growth on the system to reflect current capacity on the system.

Step 2 – Determination of Number of EDUs

The next step is the determination of the number of EDUs. An EDU provides a “common denominator” for assessing impacts on a utility system. The determination of the total system connections is an important calculation in that it provides the linkage between the amounts of infrastructure necessary to provide service to a set number of customers. This implies that the expected growth over the duration of time the system is expected to provide for must be the denominator to divide any cost dedicated to that expansion. To establish the value in existing systems, the County conducted an evaluation to determine the level of additional capacity available in the system under existing conditions. This resulted in an additional 480 EDUs that could be served in District 40 absent additional capacity improvements.

Step 3 – Valuation of System Component Costs

Once the number of EDUs, or capacity for the system, is determined, a component-by-component analysis is undertaken of the assets to determine the portion of the System Capacity Charge attributable to each component in dollars per connection basis. In this process, the existing assets must be valued. Existing assets may be valued in a number of different ways. Valuation methods may include the following:

- Original Cost (OC), which is the cost of construction in year of construction
- Original Cost Less Depreciation (OCLD)
- Replacement Cost New (RCN), which is the current day dollars of replacing existing plant (infrastructure)
- Replacement Cost New Less Depreciation (RCNLD)

⁵ Methodologies established in industry documents referenced as System Development Charges for Water, Wastewater, and Stormwater Facilities, by Arthur C. Nelson; AWWA M-1 Manual, 7th Edition.

Given these four different methods for valuing the assets, the selection of the valuation method certainly arises. The American Water Works Association M-1 Manual notes the following concerning these various generally accepted valuation methods:

“Using the OC and OCLD valuations, the SDC [System Capacity Charge] reflects the original investment in the existing capacity. The new customer “buys in” to the capacity at the OC or the net book value cost (OCLD) for the facilities and as a result pays an amount similar to what the existing customers paid for the capacity (OC) or the remaining value of the original investment (OCLD).

Using the RCN and the RCNLD valuations, the SDC [System Capacity Charge] reasonably reflects the cost of providing new expansion capacity to customers as if the capacity was added at the time the new customers connected to the water system. It may be also thought of as a valuation method to fairly compensate the existing customers for the carrying costs of the excess capacity built into the system in advance of when the new customers connect to the system. This is because, up to the point of the new customer connecting to the system, the existing customers have been financially responsible for the carrying costs of that excess capacity that is available to development.”⁶

As a point of reference for the Study, the District 40 System Capacity Charge analysis will use the RCNLD methodology for all assets in the Study. District 40’s existing assets are valued at replacement cost based on original cost escalated to current dollars then depreciated based on the installation date. For this study this value reasonably reflects the carrying costs of the excess (available) capacity paid by existing customers. In the case of District 40, since the system has limited capacity available, the cost will account for the additional burden generated by the addition of new or upsized connections.

The next step in the analysis is to determine the valuation of the system infrastructure. The combined approach is based on existing infrastructure and future capital. To evaluate existing infrastructure, the County provided asset data sorted by region and pressure zone. The cost of each asset type was calculated according to relevant design features (storage, horsepower, etc.), installation date, and engineering cost. The installation data allowed for the RCN value (i.e., today’s value) to be converted to the RCNLD value (i.e., the depreciated value).

Step 4 – Determination of Credits

The last step in the calculation of the System Capacity Charge is the determination of credits. The credit takes into account the method used to finance infrastructure on the system so that customers are not paying twice for infrastructure – once through the System Capacity Charges and again through rates. The double payment can come in through the imposition of System Capacity Charges and then the requirement to pay debt service within a customer’s user rates.

This component accounts for the outstanding debt principal on existing assets. By segregating the debt service, the cost can be clearly identified and calculated appropriately. To avoid double-counting of the assets financed with debt, the remaining principal associated with those assets would be deducted from the existing infrastructure value. Since District 40 does not have

⁶ AWWA M-1 Manual, 7th Edition, p. 332.

outstanding debt principal for the assets included in the calculation, a credit is not necessary to ensure the customers will not double pay for an asset through rates and a System Capacity Charge.

The “gross System Capacity Charge” less any debt credits, results in the net “maximum allowable charge”. As a matter of policy, the County’s Board of Supervisors (Board) can set the final System Capacity Charges up to this level.

1.6 Summary

This section of the report has defined System Capacity Charges and provided an overview of the approach, which establishes an appropriate apportionment of costs to the new connections in relation to benefits those connections will reasonably receive from the system. The next section of the report will provide a discussion of the calculation of District 40’s System Capacity Charges.



2.0 Calculation of the System Capacity Charges

2.1 Introduction

This section of the report presents the key assumptions and details used in calculating the District 40 System Capacity Charges. The System Capacity Charges are a one-time charge for new connections or existing connections requesting to increase their capacity needs. The calculation of the System Capacity Charges is based on District 40-specific accounting, financial, and planning information. Specifically, the charges are based on the fixed asset records for the District 40 service area. As noted, the System Capacity Charge includes three components, a Meter Component, Fire-Flow Component, and Water Supply Component. Each of these components is discussed in more detail in the following sections.

2.2 Calculation of the Meter Component

As discussed in Section 1, the process of calculating the Meter Component of the System Capacity Charges is based on a four-step process. In summary form, these steps are as follows:

- **Step 1** - Determination of system planning criteria
- **Step 2** - Determination of EDUs
- **Step 3** - Valuation of system component costs
- **Step 4** - Determination of any credits

Each of these steps is discussed in more detail below.

2.2.1 Water System Planning Criteria

Almost every region in District 40 is nearing maximum capacity in terms of adding additional connections under existing conditions; however, some excess capacity still exists in the system. There is planned investment in eligible future capital for the system which should provide additional available capacity in the system. Any additional growth not supported entirely through future capital included in the System Capacity Charges will place some degree of burden on existing facilities. As a result, additional capacity improvements not included in the System Capacity Charges would be recovered through developer agreements.

2.2.2 Water System Determination of EDUs

The County provided meter data to aid in the estimation of the number of EDUs. Meter sizes were assigned a multiplier to assign the proper number of equivalents to each meter. The 3/4" and 5/8" meters were assigned a factor of 1 since both are treated as standard sizes, although the 5/8" meter is no longer used for new connections in the district. This means that a 3/4" meter equates to one EDU and larger meters equate to progressively more EDUs. Based on this system, District 40 contains 105,162 EDUs as shown in Table 2-1.

Table 2-1 Meter Component – Determination of EDUs			
Meter Size	Number of Meters	EDU Factor	Number of EDUs
3/4" or 5/8"	55,033	1	55,033
1"	2,710	2	5,420
1 1/2"	899	3	2,697
2"	1,331	5	6,655
2 1/2"	4	7	28
3"	18	11	198
4"	129	17	2,193
6"	178	33	5,874
8"	244	53	12,932
10"	176	77	13,552
12"	1	100	100
Future Growth ^[1]	--	--	480
Total	60,723	--	105,162

[1] Regions 35 and 38 were determined to have 480 additional EDUs worth of capacity making the total: 104,682+480.

These EDUs will serve as the denominator to divide the cost of assets for the system to calculate the Meter Component.

2.2.3 Water Valuation of System Components

The next step of the analysis is to review the major functional system infrastructure to determine the Meter Component for the system. This includes the system and infrastructure in place today that provides service (buy-in). The methodology and approach used to calculate each of these components is described below.

EXISTING BUY-IN COMPONENT – To calculate the value of the existing assets for the buy-in component, the methodology considered the original cost of each asset. The County provided the most recent District 40 asset listing for the existing infrastructure and the installation date of each asset as of January 2026. The original cost of the asset was then adjusted to today's value to reflect replacement cost. As was noted in Section 1, there are different methods for valuing existing assets. In this case, a replacement cost new less depreciation method was used to reflect the value of the infrastructure in place to serve new customers. This method reflects the value of the capacity that has been installed and funded by existing customers at today's value, less depreciation based on the age of the asset. To accomplish this, the original cost of each asset was escalated to current, January 2026 dollars. The RCN asset total was \$2.4 billion, and the depreciated asset total was \$1.2 billion. Either total may be used in the calculation of the System Capacity Charges. For the County's study, the depreciated value was used to determine the value of the existing assets in the system.

DEBT SERVICE COMPONENT – The final component of the buy-in fee is the debt service component. The inclusion of a debt service credit avoids double charging the customer for the asset value in the buy-in component of the Meter Component and in the debt service component of the rates.

By segregating out the debt service, the cost can be clearly identified and calculated appropriately. District 40 does not have any outstanding debt associated with capital improvement or expansion. Because there is no outstanding debt, there is no potential for customers to be double charged, and because there is no outstanding debt and no potential for customers to be double charged, a debt credit does not apply.

SUMMARY OF EXISTING (BUY-IN) METER COMPONENT - Based on the existing system infrastructure, the net existing (buy-in) component was calculated to be \$9,716 per EDU. It is important to note that the existing components are divided through by total existing EDUs. Table 2-2 lists a summary of the calculation of the Meter Component for a standard meter size (3/4”).

Table 2-2 Meter Component Existing Component			
District	RCNLD Total	Number of EDUs	\$/EDU
District 40	\$1,021,777,243	105,162	\$9,716

FUTURE COMPONENT – The next component in the Meter Component calculation is the linkage between the anticipated future growth, or expansion, on the system and the planned improvements that will add additional capacity on the system. County staff reviewed the short-term capital improvement plan and given the improvements identified, some additional capacity will be provided in the system as a result of these improvements. Given this, the proportion of each project that provides additional capacity on the system was included in the future component. The planned capital projects were divided into two primary categories, Mains and Wells. The proportion of these two categories reflects the additional capacity provided by the improvements. The number of EDUs served by the Wells were based on the number of acre feet of production it could support. This number was then divided by the average use of a single EDU with a peaking factor of 2.0 applied. The Mains category improvements were divided through by the number of new EDUs that could be served by the improvement. Provided in Table 2-3 is a summary of the future component calculation.

Table 2-3 Meter Component Future Component					
Project Type	Cost	Eligible %	Eligible Cost	Number of EDUs	\$/EDU
Mains	\$25,500,000	20.0%	\$5,100,000	20,936 ^[1]	\$205
Wells	\$50,000,000	2.5%	\$1,250,000	825	\$1,515

[1] Based on an anticipated 20% increase in serviceable EDUs.

2.2.4 Maximum Allowable Meter Component

The methodology used to establish the Meter Component is a combined approach. The buy-in component reflects the existing capacity and the future component reflects the cost of planned future improvements which provide additional system capacity, resulting in the maximum allowable Meter Component. Note that additional capacity needs for new growth not included

in the Meter Component would be recovered through specific developer agreements. “Allowable” refers to the concept that the calculated Meter Component are the District 40 cost-based Meter Component. The County, as a matter of policy, may charge any amount up to the allowable Meter Component, but not over that amount. Charging an amount greater than the allowable Meter Component would not meet the practical basis of the cost-based charge.

Based on the sum of the component costs calculated above, the net allowable Meter Component is \$11,437 per EDU. The assets that were not funded by the County, such as developer contributions or grants, were not included in the analysis. This analysis valued the assets at replacement cost new less depreciation. RCNLD is the original cost escalated to current-day dollars less the depreciation of the asset over time.⁷ The RCNLD method reflects the cost of the existing facilities capacity and therefore reflects the costs of the capacity built into the system in advance of the new customer’s connection. Table 2-4 provides the calculated Meter Component by meter size.

Table 2-4 Summary of the Calculated Meter Component	
Meter Size	District 40
3/4"	\$11,437
1"	\$22,874
1 1/2"	\$34,311
2"	\$57,185
2 1/2"	\$80,059
4"	\$194,429
6"	\$377,420
8"	\$606,160
10"	\$880,647
12"	\$1,143,698

Note: It is recommended that the Meter Component for meter sizes above 2" be reviewed by County staff.

2.3 Calculation of the Fire-Flow Component

The Fire-Flow Component is based on the infrastructure required to provide fire service to the properties in the District. The same approach developed to determine the value of infrastructure for the Meter Component was used to establish the Fire-Flow Component. Note that the infrastructure component for the Fire-Flow Component was subtracted from the Meter Component so not to double count between the two different components. The components of the system that are most relevant to providing public fire service are the transmission and storage capacity. To calculate the value of the existing rate payers’ investments in those systems, the Fire-Flow Component is calculated based on the portion of the mains and reservoirs capable of aiding fire service. Since a large portion of the cost in mains is related to distribution to customers, only the portion of the system dedicated to transmission was captured in the calculation of the Fire-Flow Component. Similarly, since larger reservoirs are more capable of aiding fire-flow, only

⁷ AWWA M1 Manual, Seventh Edition, page 332.

reservoirs with storage of 1 million gallons or greater were included in the calculation of the Fire-Flow Component. Since the reservoirs are not exclusively for fire service, the cost of reservoirs was only applied at a rate of 33% of the total cost. As noted, the portion of both the mains and reservoirs costs included in the Fire-Flow Component were removed from the Meter Component to prevent “double counting” of assets.

The cost of the infrastructure in these two categories was then divided by the amount of fire-flow in gallons the District requires to reach a Fire-Flow Component per gallon. Table 2-5 lists the calculated Fire-Flow Component by fire-flow requirement.

Table 2-5 Summary of the Calculated Fire-Flow Component				
Fire-Flow Demand (gpm)	Fire-Flow Duration (min)	Fire-Flow Cost per Gallon	Fire-Flow Factor	Fire-Flow Fee
1,250	60	\$0.0232	1	\$1,740
1,500	60	\$0.0232	1.2	\$2,506
2,000	120	\$0.0232	3.2	\$17,818
2,500	120	\$0.0232	4	\$27,840
3,000	180	\$0.0232	7.2	\$90,202
3,500	180	\$0.0232	8.4	\$122,774
3,750	180	\$0.0232	9	\$140,940
4,000	240	\$0.0232	12.8	\$285,082

2.4 Calculation of the Water Supply Component

The Water Supply Component reflects the cost of adding additional supply to account for the needs of future growth. Because District 40 acquires a large portion of its water supply from groundwater wells, calculating the cost of adding additional groundwater supplies was chosen as the approach for this fee. The cost of extracting additional groundwater primarily consists of the cost of the groundwater right needed for the water. Based on discussions with the County, the average cost of a groundwater right was estimated to be \$10,000 per acre foot. Establishing 1 acre foot as the charge unit resulted in a cost of \$10,000 per acre foot to acquire additional groundwater rights. Table 2-6 lists the Water Supply Fee per acre foot for the District.

Table 2-6 Summary of the Calculated Water Supply Component	
Fee Component	Cost per Acre Foot
New Groundwater Right	\$10,000 ^[1]

[1] Estimated cost per acre foot of acquiring future groundwater rights.

2.5 Total System Capacity Charges

The Meter Component, Fire-Flow Component, and Water Supply Component are recommended for implementation by the County. If a new connection qualifies for all the fees, then the new connection will pay the sum of the components according to its meter size, fire-flow requirement, and demand, which would constitute the System Capacity Charges for the new connection.

2.6 Key Assumptions

In developing the System Capacity Charges for the District 40 water system, a number of key assumptions were utilized. These are as follows:

- The County's District 40 fees were developed on the basis of planning documents, and capacity EDUs.
- The County provided the asset records for District 40 as of January 2026 which were used to determine the value of existing infrastructure assets.
- Future growth was accounted for through the cost of future groundwater supplies and eligible future capital.
- There was no applicable debt to use as a credit toward the fees.

2.7 Consultant's Recommendations

Based on our review and analysis of District 40's capacity infrastructure, HDR makes the following recommendations:

1. The County should adopt the District 40 System Capacity Charges for new EDUs which are no greater than the net allowable System Capacity Charges as set forth in this report.
2. The System Capacity Charges will work in tandem with developer agreements when additional capacity improvements are needed to support new expansion infrastructure not covered by the System Capacity Charges calculation.
3. Existing connection fees should be evaluated and updated when the System Capacity Charges are implemented to not over recover costs or double charge new connections.
4. The County should update the District 40 actual calculations for the fees at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated, or every five years.

2.8 Summary

The System Capacity Charges—consisting of the Meter Component, Water Supply Component, and Fire-Flow Component—developed and presented in this report are based on the planning and engineering design criteria of the County's District 40 water system, the value of the existing assets, and generally accepted rate and fee setting principles. Reviewing the fees every five years would continue to maintain proportional and cost-based charges for new customers connecting to the County's District 40 water system.



Technical Appendix

Los Angeles County Public Works
Exhibit 1
Calculated System Capacity Charge
District 40

Meter Component

Meter Size	Number of EDUs	Calculated Capacity Charge
3/4"	1	\$11,437
1"	2	\$22,874
1 1/2"	3	\$34,311
2"	5	\$57,185
2 1/2"	7	\$80,059
4"	17	\$194,429
6"	33	\$377,420
8"	53	\$606,160
10"	77	\$880,647
12"	100	\$1,143,698

Water Supply Component

Calculated Water Supply Fee District 40

\$10,000 per ac-ft

Fire Flow Component

Fire Flow Demand (gpm)	Fire Flow Duration (min)	Fire Flow Cost per Gallon	Fire Flow Factor	Fire Flow Fee
1,250	60	\$0.0232	1	\$1,740
1,500	60	\$0.0232	1.2	\$2,506
2,000	120	\$0.0232	3.2	\$17,818
2,500	120	\$0.0232	4	\$27,840
3,000	180	\$0.0232	7.2	\$90,202
3,500	180	\$0.0232	8.4	\$122,774
3,750	180	\$0.0232	9	\$140,940
4,000	240	\$0.0232	12.8	\$285,082

Los Angeles County Public Works
Exhibit 2
Development of System Capacity Charges - Combined Method
District 40

Meter Component		
Plant Description	Asset Cost Less Fire Component (RCN)	Asset Cost Less Fire Component (RCNLD)
Assets		
Water Mains	\$1,253,722,816	\$684,924,451
Supply Reservoirs	\$270,036,235	\$130,206,684
Pumping	\$149,925,400	\$63,986,108
Wells	\$420,000,000	\$142,660,000
Total Assets	\$2,093,684,451	\$1,021,777,243
Less: Contributed Capital		
Water Mains	\$0	\$0
Supply Reservoirs	\$0	\$0
Pumping	\$0	\$0
Wells	\$0	\$0
NET ASSETS	\$2,093,684,451	\$1,021,777,243
Less: Outstanding Debt Principal		
	\$0	\$0
SELECTED TOTAL		\$1,021,777,243
Plant Description		
Equivalent Dwelling Units		105,162
Existing Cost Component per EDU		\$9,716
Future Cost Component per EDU		\$1,721
Total Existing and Future Cost per EDU		\$11,437

Fire Flow Fee		
	Fire Component (RCN)	Fire Component (RCNLD)
Assets (Fire Allocation)		
Water Mains (Fire Allocation)	\$233,875,969	\$127,769,366
Supply Reservoirs (Fire Allocation)	\$103,573,965	\$53,696,534
Pumping (Fire Allocation)	N/A	N/A
Wells (Fire Allocation)	N/A	N/A
Total Assets (Fire Allocation)	\$337,449,934	\$181,465,900
Less: Contributed Capital (Fire Allocation)		
Water Mains (Fire Allocation)	\$0	\$0
Supply Reservoirs (Fire Allocation)	\$0	\$0
Pumping (Fire Allocation)	\$0	\$0
Wells (Fire Allocation)	\$0	\$0
NET ASSETS (Fire Allocation)	\$337,449,934	\$181,465,900
Less: Outstanding Debt Principal		
	\$0	\$0
SELECTED TOTAL	\$181,465,900	
Future Cost (Fire Allocation)	\$801,807	
Total Fire Cost Allocation (Future + Existing)	\$182,267,707	
Cost per Gallon of Fire Protection	\$0.0232	

Los Angeles County Public Works
Exhibit 3
Water Debt
District 40

Item	
Outstanding Principal Payments	\$0
Water Capacity Fee Eligible	0.0%
Total Allocable to Capacity Fee	\$0

NOTES:

District has no outstanding debt related to capacity.

Los Angeles County Public Works
Exhibit 4
Water EDUs
District 40

<i>Size of Meter</i>	<i>5/8"</i>	<i>3/4"</i>	<i>1"</i>	<i>1 1/2"</i>	<i>2"</i>	<i>2 1/2"</i>	<i>3"</i>	<i>4"</i>	<i>6"</i>	<i>8"</i>	<i>10"</i>	<i>12"</i>	<i>Total</i>	<i>% of</i>
<i>Equivalency Factor</i>	<i>1.00</i>	<i>1.00</i>	<i>2.00</i>	<i>3.00</i>	<i>5.00</i>	<i>7.00</i>	<i>11.00</i>	<i>17.00</i>	<i>33.00</i>	<i>53.00</i>	<i>77.00</i>	<i>100.00</i>		<i>Total</i>

Number of Existing EDUs

		Number of Meters														
Single Family	RE	734	52,938	1,658	46	13	0	1	2	1	0	0	1	55,394	91.2%	
Multi Residential	MF	15	525	454	116	307	0	3	19	4	13	5	0	1,461	2.4%	
Commercial	CO	33	600	448	559	738	2	11	94	154	213	160	0	3,012	5.0%	
Industrial	IN	1	35	10	5	20	0	1	1	0	1	0	0	74	0.1%	
Government	GO	1	151	139	173	253	2	2	13	19	17	11	0	781	1.3%	
Other	OT	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0%	
		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	
Total Meters		784	54,249	2,710	899	1,331	4	18	129	178	244	176	1	60,723	100%	
		Equivalent Meters														
Single Family		734	52,938	3,316	138	65	0	11	34	33	0	0	100	57,369	54.8%	
Multi Residential		15	525	908	348	1,535	0	33	323	132	689	385	0	4,893	4.7%	
Commercial		33	600	896	1,677	3,690	14	121	1,598	5,082	11,289	12,320	0	37,320	35.7%	
Industrial		1	35	20	15	100	0	11	17	0	53	0	0	252	0.2%	
Government		1	151	278	519	1,265	14	22	221	627	901	847	0	4,846	4.6%	
Other		0	0	2	0	0	0	0	0	0	0	0	0	2	0.0%	
		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	
Total Existing Equivalent Meters or EDUs		784	54,249	5,420	2,697	6,655	28	198	2,193	5,874	12,932	13,552	100	104,682	100%	

Total Future Equivalent Meters or EDUs	480	0.5%
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Total Existing and Future Equivalent Meters or EDUs	105,162	100.5%
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Notes:

Gallons of Fire Protection	7,851,150,000
Future EDUs of Fire Protection Mains	20,936

Los Angeles County Public Works
Exhibit 5
Water Short Term Capital Improvement Program Projects
District 40

	Classification	Gate Phase	TBD	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31	Total	% Eligible
District 40 Advance Metering Infrastructure	N/A	Construction		\$1,857,143	\$1,857,143	\$1,857,143	\$1,857,143			\$7,428,571	0.0%
New Well	New Well	TBD	\$7,000,000							\$7,000,000	0.0%
Beech Ave Site Improvements	N/A	Construction		\$500,000						\$500,000	0.0%
Avenue J-12 & 50th St. West Site Improvements, Well 4-91	Well	Construction		\$4,350,000	\$4,350,000					\$8,700,000	0.0%
Avenue M and 62nd Street West Tank	Reservoir	Design			\$32,000,000					\$32,000,000	0.0%
Avenue W-14 Water Main Improvement	Main	Pre-Design						\$15,000,000		\$15,000,000	0.0%
Antelope Valley Regional Water Supply Resilience	N/A	Planning	\$24,000,000							\$24,000,000	0.0%
Wellhead Treatment Project	Well	Planning	\$50,000,000							\$50,000,000	2.5%
Avenue K Phase 3 Transmission Main	Main	Planning	\$25,500,000							\$25,500,000	20.0%
Ave W-11 Water Main Improvement	Main				\$1,400,000					\$1,400,000	0.0%
District 40 Valve Replacement	Main				\$1,900,000					\$1,900,000	0.0%
Various Pavement Restoration	N/A		\$1,000,000							\$1,000,000	0.0%
Rock Creek Tank Line Improvement	N/A		\$1,900,000							\$1,900,000	0.0%
Total			\$109,400,000	\$6,707,143	\$41,507,143	\$1,857,143	\$1,857,143	\$15,000,000	\$0	\$176,328,571	-----
Total Connection Charge Eligible Projects			\$6,350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$6,350,000	

Notes:

Based on existing Short Term Capital Improvement Program Projects.

Cost Component	Reservoirs	Mains	Wells	Other	New Well
Total Eligible Cost	\$0	\$5,100,000	\$0	\$0	\$1,250,000
Total Capacity	12,800,000				907
EDUs Served	13,034				825
Fire Capacity	4,224,000				
NonFire Capacity	8,576,000				
Future Capacity for tank per EDU	658				
Fire Cost	\$0	\$801,807			
Capacity Cost	\$0	\$205		\$0	\$1,515

Los Angeles County Public Works
Exhibit 6
Development of Asset Listing
District 40

	REPLACEMENT COST NEW	REPLACEMENT COST NEW LESS DEPR.
ASSETS		
Water Mains	\$1,487,598,785	\$812,693,817
Supply Reservoirs	\$373,610,200	\$183,903,218
Pumping	\$149,925,400	\$63,986,108
Wells	\$420,000,000	\$142,660,000
TOTAL	\$2,431,134,385	\$1,203,243,143
CONTRIBUTED		
Water Mains	\$0	\$0
Supply Reservoirs	\$0	\$0
Pumping	\$0	\$0
Wells	\$0	\$0
TOTAL	\$0	\$0
NET ASSETS	\$2,431,134,385	\$1,203,243,143