



# Final Report



**Water Capacity Fee Study**  
*Sweetwater Authority*  
*May 2021*





May 31, 2021

Mr. Richard Stevenson  
Director of Finance  
Sweetwater Authority  
505 Garrett Ave  
Chula Vista, CA 91910

Subject: Final Report Sweetwater Authority Water Capacity Fee Study

Dear Mr. Stevenson:

Enclosed please find HDR's final report regarding the water capacity fee study for Sweetwater Authority (Authority). This report has been prepared using generally accepted financial and engineering principles. The Authority's financial, planning, and engineering data were the primary sources for much of the information contained in this report.

The water capacity fees within this report were presented to the Engineering Committee on May 19, 2021 and the Board on May 26, 2021. The Board at that meeting directed staff to add the Capacity Fee of \$5,490 to the Authority's Supplement to the Rates and Rules to be effective on July 1, 2021.

HDR would recommend that prior to implementing the fees, the capacity fees be reviewed by the Authority legal counsel for compliance with California State law. HDR appreciates the opportunity to assist the Authority in this matter. We also would like to thank you and your staff for the assistance provided to us. We look forward to future opportunities to work with the Authority.

Sincerely yours,  
HDR Engineering, Inc.

A handwritten signature in black ink, appearing to read 'Shawn Koorn'. The signature is fluid and cursive.

Shawn Koorn  
Associate Vice President



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## Introduction

The purpose of capacity fees is to recover the costs of public facilities in existence at the time the fee is imposed, and for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged. These fees are charged to new customers connecting to the system, or the incremental increase for existing customers increasing their demands compared to value of their existing (pre-expansion) capacity. By establishing cost-based water capacity fees, the Authority attempts to have growth-pay-for-growth by having new customers pay their equitable share of the infrastructure in place which will serve them, while also reflecting the system costs existing utility customers have funded for available capacity in the system.

HDR Engineering Inc. (HDR) was retained by Sweetwater Authority (Authority) to review and update the water capacity fees. The Authority's current capacity fees were last reviewed in 2016 and adopted under Resolution 17-02. General industry practice recommends adjusting these capacity fees annually for changes in the costs of construction, and to update the capacity fees every three to five years, or whenever comprehensive planning documents for the systems are updated. Review of the capacity fees is prudent for the Authority to determine parity between existing and new utility customers.

## Study Overview

The capacity fees are calculated in conformance with generally accepted rate making practices, California legal requirements, and are based on the Authority's planning and design criteria. As noted, capacity fees are based on the existing infrastructure, and if applicable future capital improvements needed to serve growth, divided by the number of equivalent dwelling units (EDUs) that will be served by the new capacity. A component buy-in (existing) and expansion (future) approach is often taken in developing the capacity fees because each component can have different planning and design criteria. Since the Authority is nearly built out, and there is not planned future expansion, this analysis will focus on the buy-in component only.

The Authority has previously used the "buy-in methodology" for calculating the fees. The American Water Works Association (AWWA) states "The buy-in method is typically used where there is sufficient capacity in the existing system such that it is capable of meeting both near-term and long-term capacity needs. Under the buy-in methodology, new development "buys" a proportionate share of capacity at cost (value) of the existing facilities."<sup>1</sup> The District's Resolution 17-02 clarifies the buy-in method and states "collection of capacity fees is necessary to allocate the cost of existing infrastructure to new water connections or to existing water connections which require additional capacity to serve the property due to change in use or expansion of use."<sup>2</sup> The Authority's capacity fees are based upon the value of existing capital infrastructure

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<sup>1</sup> American Water Works Association (AWWA), M-1 Manual, 7<sup>th</sup> Edition, p. 331.

<sup>2</sup> Sweetwater Authority, Resolution 17-02, Section V.

needed to accommodate future growth, divided by the number of equivalent dwelling units (EDUs) served by that capacity.

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 utility capacity fee is determined. “Net” refers to the calculated “gross” capacity fee, net of any debt service credits or contributions made from developers or grant funding. “Allowable” refers to the concept that the calculated capacity fees are the District’s maximum cost-based charge. The District, as a matter of policy, may charge any amount up to the cost-based capacity fee, but not in excess of that amount.

These capacity fees should be implemented according to the capacity requirement (i.e., the impact) each new connection places on the water system. This way, the capacity fees are related to the costs the new customer places on the systems and the benefit they derive from infrastructure in place to serve them.

The Authority implements the water capacity fees based on per equivalent dwelling unit (EDU) basis. For the Authority, an EDU is defined as one dwelling unit including an accessory dwelling unit (ADU), accessory second dwelling unit, duplex as designated by the respective municipality or similar habitable living spaces that is separated from the primary residence and there is a separate address for each dwelling unit. It should be noted that new legislation (i.e. Government Code section 65852.2, as amended last year) limits the ability to impose capacity fees on ADUs. For ADUs that are not within the existing space of a single-family residential dwelling or accessory unit, a capacity fee can be imposed only based on square footage or drainage fixture units. The District has an existing methodology to address ADUs based on a fixture unit approach. Non-residential (Multi-family, Mobile Home, Irrigation or Commercial) are based on number of EDUs per connection. Table ES-1, below, shows the existing and calculated water capacity fees.

| Table ES – 1<br>Summary of the Water Capacity Fees |                        |            |           |
|--|------------------------|------------|-----------|
| Type of Use  | Present <sup>[1]</sup> | Calculated | \$ Change |
| Equivalent Dwelling Unit                           | \$5,778                | \$5,490    | (\$288)   |

[1] Based on Resolution 17-02.

The water capacity fee decreases from the present \$5,778 to \$5,490 or a decrease of \$288. The decrease in capacity fees from the present to the calculated is the result of many factors. The asset listing in this analysis eliminated all non-backbone infrastructure such as fishing program, equestrian trail, meters and services, office furniture and equipment, transportation and field equipment, and finally elimination of assets that were not funded by the Authority and were instead funded by grants or developer. This analysis valued the assets at Replacement Cost New Less Depreciation (RCNLD). RCNLD is the original cost escalated to current-day dollars, less

accumulated replacement cost depreciation.<sup>3</sup> Given the buy-in approach, and no growth or expansion component, the fee may vary depending on the actual assets replaced and actual depreciation expense of the existing assets.

The Authority, as a matter of policy, may charge any amount up to the cost-based capacity fee but not over that amount. Charging an amount greater than the net allowable capacity fee would not meet the practical basis of charging cost-based capacity fees that are proportionally related to the benefit derived by the customer.

## Consultant's Recommendation

Based on our review and analysis of the Authority's water capacity fees, HDR makes the following recommendations:

1. The Authority should adopt the water capacity fees for new connections which are no greater than the net allowable water capacity fees as set forth in this report.
2. The Authority should update the actual calculations for the water capacity fees at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated by the Authority, or every five years.

## Disclaimer

HDR, in its calculation of the capacity fees for water presented in this report, has used generally accepted engineering, planning, and ratemaking principles. This should not be construed as a legal opinion with respect to California law. HDR recommends that the Authority have its legal counsel review the capacity fees for water as set forth in this report to ensure compliance with California law.

## Summary

The water capacity fees presented in this report are based on the planning and engineering design criteria of the Authority's water system, the value of the existing assets, past financing of system infrastructure, and generally accepted principles. The calculated water capacity fees will provide multiple benefits to the Authority and will continue the practice of establishing equitable and cost-based water capacity fees for new customers connecting to the Authority's water system. Table ES-2, below, shows the existing and calculated water capacity fees.

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<sup>3</sup> AWWA M1 Manual, Seventh Edition, page 332.

**Table ES – 2**  
**Summary of the Present and Calculated Water Capacity Fees**

| Type of Use                  | EDU <sup>[1]</sup> | GPD <sup>[2]</sup> | Present   |                        | Calculated         |      |                           | \$ Difference |
|------------------------------|--------------------|--------------------|-----------|------------------------|--------------------|------|---------------------------|---------------|
|                              |                    |                    | % of Base |                        | % of Base          |      |                           |               |
|                              |                    |                    | EDU       | Present <sup>[3]</sup> | GPD <sup>[4]</sup> | EDU  | Calculated <sup>[5]</sup> |               |
| Single-Family <sup>[6]</sup> | 1.0                | 299                | 100%      | \$5,778                | 297                | 100% | \$5,490                   | (\$288)       |
| Multi-Family                 | 1.0                | 169                | 57%       | 3,236                  | 165                | 56%  | 3,050                     | (186)         |
| M.H. Park                    | 1.0                | 109                | 36%       | 2,106                  | 107                | 36%  | 1,978                     | (128)         |
| Commercial                   | 1.0                | 299                | 100%      | 5,778                  | 297                | 100% | 5,490                     | (288)         |

[1] Equivalent Dwelling Unit = Single-family residential accounts

[2] Based on gallons per capita per day pursuant to the Authority's 2015 Urban Water Management Plan of 91 gpcd, and the average household size per US Census data of 3.29 persons per household.

[3] Based on Resolution 17-02.

[4] Based on gallons per capita per day pursuant to the Authority's draft 2020 Urban Water Management Plan of 90 gpcd, and the average household size per US Census data of 3.3 persons per household.

[5] Based on "Buy-In" methodology established in AWWA M1, Seventh Edition, Table VII.2-1, page 333.

[6] An ADU added to the site of an existing or proposed single-family dwelling shall be charged an Authority capacity fee that is proportional to the burden of the proposed ADU based on the number of its fixture units.

The water capacity fees within this report were presented to the Engineering Committee on May 19, 2021 and the Board on May 26, 2021. At the May 26, 2021 Board meeting the Board directed staff to add the Capacity Fee of \$5,490 to the Authority's Supplement to the Rates and Rules to be effective on July 1, 2021.



# 1.0 Introduction and Overview of Capacity Fees

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## 1.1 Introduction

The purpose of capacity fees is to fund a fair and a proportionate share of capital costs for the Authority's water system. The objective of the analysis is to calculate the cost-based charges for new customers connecting to, or requesting additional capacity on, the Authority's water system. By establishing cost-based capacity fees, the Authority has growth-pay-for-growth by having new customers pay their equitable share of the infrastructure in place which 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.

The capacity fees were last updated in 2017 by Resolution 17-02. The Authority does not annually adjust the fees for inflation. General industry recommendations are to update the charges every three to five years, or when comprehensive planning documents for the system have been updated when not adjusted annually by an inflationary factor. Given the use of a buy-in methodology, HDR would recommend maintaining the Authority's current approach of not adjusting the fees for inflation and updating the fees more regularly. Given that the capacity fees have not been updated since 2017, a review of the capacity fees is prudent at this time to maintain parity between existing and new Authority customers.

## 1.2 Defining Capacity Fees

The first step in establishing cost-based capacity fees, sometimes referred to as system development charges (SDC), is to gain a better understanding of the definition of a capacity fee. For the purposes of this analysis, a capacity fee (or system development charge) is defined as follows:

*"System development charges are one-time charges paid by new development to finance construction of public facilities needed to serve them."<sup>4</sup>*

Capacity fees are generally imposed as a condition of service. The objective of capacity fees is not to generate revenue for the utility, but to create a fiscal balance between existing customers and new customers. In this way, all customers seeking to connect to the utility's system bear an equitable share of the cost of capacity that is invested in both the existing and any future growth-related expansions. Through the implementation of equitable and cost-based capacity fees, existing customers will not be burdened with the cost of new development (e.g., system expansion). If cost-based capacity fees are not implemented, then existing utility customers will bear (i.e., pay for) a significant portion of the costs associated with new development. Ultimately, the adoption of the final capacity fees is a policy decision by the Authority's Board regarding the sharing of costs between new development and existing customers. The adoption of a cost-based capacity fees moves towards a proportional balance of growth-pays-for-growth.

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<sup>4</sup> Arthur C. Nelson, System Development Charges for Water, Sewer, and Stormwater Facilities, Lewis Publishers, New York, 1995, p. 1,



### 1.3 Requirement Under California State Law

In establishing capacity fees (system development charges, connection fees), an important requirement is that they be developed and implemented in conformance with State and local laws. California law provides the basis for the determination of capacity fees through a uniform framework for the imposition of capacity fees by local governments. Specifically, the requirement for the calculation of capacity fees in California are found in the California Government Code sections 66013, 66016, and 66022, which are interspersed within the ‘Mitigation Fee Act’.

A summary of the relevant statutes required in the calculation of capacity fees under California law is as follows:

*“66013 (a) Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity fees, 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 of the fee or charge imposed 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.”*

*“66013 (b) (3) ‘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, 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.”*

*“66022 (a) Any judicial action or proceeding to attack, review, set aside, void, or annul an ordinance, resolution, or motion adopting a new fee or service charge, or modifying or amending an existing fee or service charge, adopted by a local agency, as defined in Section 66000, shall be commenced within 120 days of the effective date of the ordinance, resolution, or motion.”*

In addition to the determination of “the estimated reasonable cost of providing the service for which the fee is imposed,” California law also requires the following:

- That notice (of the time and place of the meeting, including a general explanation of the matter to be considered) and a statement that certain data is available be mailed to those who filed a written request for such notice,
- That certain data (the estimated cost to provide the service and anticipated revenue sources) be made available to the public,
- An opportunity for public input at an open and public meeting to adopt or modify the fee, and

- That revenue in excess of actual cost be used to reduce the fee creating the excess.

In 1996, the voters of California approved Proposition 218, which required that the imposition of certain fees and assessments by municipal governments require a vote of the people to change or increase the fee or assessment. In *Richmond v. Shasta Community Services Dist.*, 32 Cal.4th 409 (2004), the California Supreme Court held that capacity fees are not “assessments” under Proposition 218 because they are imposed only on those who are voluntarily seeking water and wastewater service, rather than being charged to particular identified parcels, and therefore such fees are not subject to the procedural or substantive requirements of Proposition 218. The court also held that such fees can properly be enacted by either ordinance or resolution.

In November 2010 the voters of California passed Proposition 26, an initiative based state constitutional amendment that provided a new definition of the term “tax” in the California Constitution. Under Proposition 26 a fee or charge imposed by a public agency is a tax unless it meets one of seven exceptions. “Connection fees” would be included within exceptions 1 and/or 2. These two exception note that the connection fee or charge is:

- (1) “A charge imposed for a specific benefit conferred... directly to the payor that is not provided to those not charged, and which does not exceed the reasonable cost to the local government of conferring the benefit...,”
- (2) “A charge imposed for a specific government service... directly to the payor that is not provided to those not charged, and which does not exceed the reasonable cost to the local government of providing the service or product.”

In the case of the Authority’s water capacity fee, the Authority does not charge one fee payer more in order to charge another fee payer less (i.e., a cross-subsidy), and it does not exceed the reasonable costs to the local government of providing the service. Given this, the fee is not a tax within the meaning of Proposition 26.

In simplified terms, the basic principle that needs to be followed under California law is that the capacity fee be based on a proportionate share of the costs of the system required to provide service and that the requirements for adoptions and accounting be followed in compliance with California law.

## 1.4 Methodology to Development of Capacity Fees

There are various approaches that can be used to establish capacity fees which ultimately depend on the available capacity in the utility system to meet future customer demands. The AWWA M-1 Manual discusses three generally accepted capacity fees 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.”<sup>5</sup>

The Authority has previously used the “buy-in methodology” for calculating the fees. Since the Authority is nearly built out, and there are not current plans for future expansion, this analysis will focus on the buy-in component. The Authority’s Resolution 17-02 clarifies the buy-in method and states “collection of capacity fees is necessary to allocate the cost of existing infrastructure to new water connections or to existing water connections which require additional capacity to serve the property due to change in use or expansion of use.”<sup>6</sup> The Authority’s capacity fees are based upon the value of existing capital infrastructure needed to accommodate future growth, divided by the number of equivalent dwelling units (EDUs) served by that capacity.

Within the generally accepted capacity fee methodologies<sup>7</sup>, there are a number of different steps used to establish cost-based and equitable capacity fees. These steps are as follows:

- Step 1** - Determination of system planning criteria
- Step 2** - Determination of equivalent dwelling units (EDUs)
- 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 capacity fees is the determination of the system planning criteria. This implies calculating the amount of capacity required by a single-family residential customer. The use of an adopted facility plan or master plan for the utility provides the basis for the capacity fee 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. Generally, for a water system the planning criteria is the peak day demand in gallons per equivalent dwelling unit (EDU). The Authority’s Urban Water Management Plan, Capital Improvement Plan resulting from the specific Master Plans are the documents and information that are referenced for the determination of the system planning criteria.

### **Step 2 – Determination of Equivalent Dwelling Unit (EDU)**

The next step is the determination of the EDUs. An EDU provides a “common denominator” for assessing impact on a utility system. The determination of the total system EDUs 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 if the system is designed to provide service for demands up to the year 2045, then the infrastructure costs are divided by the

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<sup>5</sup> AWWA M-1 Manual, 7<sup>th</sup> Edition, p. 330-337.

<sup>6</sup> Sweetwater Authority, Resolution 17-02, Section V.

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

additional EDUs projected to be connected by 2045 to determine the equitable and proportionate cost per EDU.

### Step 3 – Valuation of System Component Costs

Once the number of EDUs, or capacity for the system are determined, a component by component analysis is undertaken of the assets to determine the portion of the capacity fee attributable to each component in dollars per EDU. In this process, the existing assets must be valued. Existing assets may be valued in a number of different ways. These methods may include the following:

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

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 [capacity fee] 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 [capacity fee] 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.”<sup>8</sup>

As a point of reference for this study, the Authority’s capacity fee analyses will use a RCNLD methodology for all assets in the study. The Authority’s existing assets and corresponding depreciation are valued at “replacement” cost based on original cost escalated to current dollars using a cost index (e.g. the Engineering News Record, Construction Cost Index; (ENR-CCI). This value reasonably reflects the carrying costs of the excess capacity paid by existing customers. Infrastructure not paid by the utility such as developer contributions or grants is also not included in the fee.

The buy-in approach is based on the existing infrastructure valued at today’s cost. Given a value for capacity and the number of EDU capacity units, the basic formula for calculating the capacity fee is relatively straight-forward, and is as follows:

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<sup>8</sup> AWWA M-1 Manual, 7<sup>th</sup> Edition, p. 332.

$$\frac{\text{Value of Existing System (\$)}}{\text{System EDUs}} = \text{Maximum Allowable Capacity Fee \$ per EDU}$$

In the determination of the capacity fee, the cost per EDU as shown above is the “gross capacity fee”. The “gross capacity fee” is calculated before any credits.

#### Step 4 – Determination of Any Credits

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

This component accounts for the outstanding debt principal on existing assets. By segregating the debt service out, the cost can be clearly identified and calculated appropriately. To avoid double-counting of the assets financed with debt, the future principal associated with those assets was deducted from the existing infrastructure value.

## 1.5 Summary

This section of the report has defined capacity fees; provided an overview of the requirements under California state law, the capacity fee approach which must be established between new development and the new or expanded facilities required to accommodate new development, and appropriate apportionment of the cost to the new development in relation to benefits reasonably to be received. The next section of the report will provide a discussion of the calculation of the Authority’s water capacity fees.



## 2.0 Development of Water Capacity Fees

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### 2.1 Introduction

This section of the report presents the key assumptions and details used in calculating the Authority's water capacity fees. The calculation of the Authority's water capacity fees is based on Authority-specific accounting and planning information. Specifically, the charges are based upon the Authority's fixed asset records; the Authority's current capital improvement plans; existing equivalent dwelling units (EDUs) and projection of future EDUs.

To the extent that the cost and timing of future planning or capital improvements change, then the capacity fees presented in this section of the report should be updated to reflect the changes.

### 2.2 Overview of Authority's Water System

The Sweetwater Authority was formed in 1977 and provides potable water service to a 36 square mile service area which includes National City, Bonita, and the western and central portions of Chula Vista. The Authority operates under a Joint Powers Agency between the City of National City and the South Bay Irrigation District. The Authority is a publicly owned agency governed by five directors elected by division by the citizens of South Bay Irrigation District, and two directors appointed by the Mayor of National City.

Treated water is supplied from the Robert A. Perdue Water Treatment plant, Richard A. Reynolds Desalination Facility, and the National City Wells. The Authority historically used the 30-million gallons per day (mgd) Perdue Plant as the primary water production facility to meet most of the system's maximum day demand. The Authority has the ability to purchase imported raw and treated water through San Diego County Water Authority (SDCWA). Local runoff collected in Sweetwater and Loveland Reservoirs is treated and can supplement this supply with raw water from the aqueduct system owned and operated by SDCWA. In addition to the raw water connection, there is a connection to the SDCWA's treated water aqueduct pipeline which can deliver water to the clear well at the Perdue Plant and supply the Authority's treated water delivery system. At present, there are no plans to expand the Authority service area.

The Authority has 20 storage tanks that represent approximately 43.5 million gallons of treated water capacity throughout its system, including a major buried reservoir with a capacity of 18 million gallons. The system has 23 pumping stations, with a total pumping capacity of approximately 36,000 gallons per minute from all distribution pumping sources. Pipeline sizes range from 2-inch to 48-inch, with a collective length of approximately 388 miles.

### 2.3 Existing Water Capacity Fees

The Authority implements the water capacity fees based on per equivalent dwelling unit (EDU). For the Authority, an EDU is defined as one dwelling unit including an accessory dwelling unit (ADU), accessory second dwelling unit, duplex as designated by the respective municipality or similar habitable living spaces that is separated from the primary residence and there is a separate address for each dwelling unit. It should be noted that new legislation (i.e. Government Code section 65852.2, as amended last year) limits the ability to impose capacity fees on ADUs.

For ADUs that are not within the existing space of a single-family residential dwelling or accessory unit, a capacity fee can be imposed only based on square footage or drainage fixture units. The District has an existing methodology to address ADUs based on a fixture unit approach. Table 2-1, below, shows the existing water capacity fees.

| Type of Use                  | EDU <sup>[1]</sup> | GPD <sup>[2]</sup> | % of Base EDU | Present <sup>[3]</sup> |
|------------------------------|--------------------|--------------------|---------------|------------------------|
| Single-Family <sup>[4]</sup> | 1.0                | 299                | 100%          | \$5,778                |
| Multi-family                 | 1.0                | 169                | 57%           | 3,236                  |
| Mobile Home Park             | 1.0                | 109                | 36%           | 2,106                  |
| Commercial                   | 1.0                | 299                | 100%          | 5,778                  |

[1] Equivalent Dwelling Unit = Single-family residential accounts, based on gallons per capita per day pursuant to the Authority’s 2015 Urban Water Management Plan of 91 gpcd, and the average household size per US Census data of 3.29 persons per household.

[2] Based on the fiscal year water use presented in the 2015 Urban Water Management Plan.

[3] Based on Resolution 17-02.

[4] An ADU added to the site of an existing or proposed single-family dwelling shall be charged an Authority capacity fee that is proportional to the burden of the proposed ADU based on the number of its fixture units.

As can be seen in Table 2-1, non-single family (Multi-family, Mobile Home, Commercial) are calculated based on equivalent dwelling units based on the percentage of the base EDU for single-family. The gallon per day is based on the Year 2015 demand of 91 gallons per capita per day from the 2015 Urban Water Management Plan and the average household size per US Census data of 3.29 persons per household.

## 2.4 Calculation of the Water Capacity Fees

As discussed in Section 1, the process of calculating capacity fees is based on a four-step process. In summary form, these steps are as follows:

- Determination of system planning criteria
- Determination of equivalent dwelling units (EDUs)
- Calculation of the capacity fee by system component costs
- Determination of capacity fee credits

Each of these steps is discussed in more detail below.

### 2.4.1 Water System Planning Criteria

System planning criteria typically involves calculating the amount of water demand required by a single-family residential customer. The peak water demand represents the basis for system design. The 2020 Urban Water Management Plan (draft), based on a ten year average from 2010 to 2020, defined 90 gallons per capita per day per EDU, 3.3 people per household based on the 2019 Census data, and a 1.50 peaking factor or a total peak day demand in gallons per EDU of



445.5 (90 X 3.3 X 1.5 = 445.5). A summary of the system criteria is presented in Table 2-2. Details of the system planning criteria are shown on Exhibit 6 in the Technical Appendix.

**Table 2-2  
Water Capacity Fee – Planning Criteria**

| Description   | Total           |
|---|-----------------|
| Gallons per capita per day <sup>[1]</sup>               | 90.0            |
| Number of persons per household <sup>[2]</sup>          | <u>3.3</u>      |
| <b>Average Day Demand in gallons</b>                    | <b>297</b>      |
| Peaking factor <sup>[3]</sup>                           | <u>1.50</u>     |
| <b>Peak Day Demand in Gallons per EDU</b>               | <b>445.5</b>    |
| <b>Maximum Day Demand Capacity in MGD<sup>[4]</sup></b> | <b>22.8 MGD</b> |

[1] Draft 2020 Water Distribution System Master Plan Update, Section 3.3, 90 gallons per capita per day.

[2] 2019 - ACS 2019 Census Report, 3.3 persons per household.

[3] Draft 2020 Water Distribution System Master Plan, Section 3.21, 1.5 peaking factor.

[4] 2020 CA Water Board Annual Report.

### 2.4.2 Water Equivalent Dwelling Units

System planning criteria are used to establish the capacity needs of an equivalent dwelling unit (EDU). The maximum peak day demand for the system capacity in mgd is divided by the peak day demand to estimate the build out EDUs. The current system max day demand is 22.8 mgd reflecting existing EDUs of 51,178 (22.8/445.5 gallons per day = 51,178 EDUs). A summary of the buildout EDUs is presented in Table 2-3.

**Table 2-3  
Water Capacity Fee – Equivalent Dwelling Units**

| Description  | Total         |
|--|---------------|
| Maximum Peak Day Demand Capacity in MGD <sup>[1]</sup> | 22.8          |
| Peak Day Demand in gallons per EDU                     | <u>445.5</u>  |
| <b>Total Buildout EDUs</b>                             | <b>51,178</b> |

[1] 2020 CA Water Board Annual Report.

### 2.4.3 Water Capacity Fee Calculation

The next step of the analysis is to review the major functional system infrastructure to determine the capacity fee for the system. In calculating the capacity fees for the Authority, existing components, and debt service for existing facilities were included. The methodology used to calculate each of these components is described below.



**EXISTING OR BUY-IN COMPONENT** – To calculate the value of the existing assets for the buy-in component, the Authority’s methodology considered the original cost of each asset. The Authority provided the most recent asset listing for the various existing components and their installation dates as of June 2020. The original cost of the asset was then adjusted to today’s value for replacement cost. As was noted in Section 1, there are different methods for valuing existing assets. In this case, a replacement cost new method less depreciation was used. To accomplish this, the original cost of each asset, and corresponding accumulated depreciation value, was escalated to current, April 2021 dollars, based on the Construction Cost Index (CCI) for the 20-City average area published in the City Engineering News & Record (ENR). The ENR asset at RCNLD totaled \$293.3 million. This amount was reduced by \$36.8 million which is the amount that was contributed by developers or grants since they were not funded by the Authority. Contributed capital amounted to a net of \$36 million after depreciation. The total original cost of the demineralization and desal facility was approximately \$55.4 million with approximately \$40.1 million (72%) contributed from Grants and the City of San Diego and \$15.3 million Authority paid.

Given the value of the asset, the next step was to determine the portion of the project costs that were deemed eligible to be included in the calculation of the capacity fee. The term capacity fee eligible simply describes the amount of the asset to be included within the calculation of the fee. Within this study, the fishing program, equestrian trail, meters and services, office furniture and equipment, transportation and field equipment were not considered capacity related, and were not included in the capacity fee calculation. All remaining assets were considered to be 100% eligible. Total existing net assets at current cost was \$256.5 million. A summary of the existing assets valuation can be seen on Exhibit 2 of Technical Appendix A.

In addition to existing assets, work in progress projects were included that were not completed and booked as an asset yet. The total eligible work in progress amounts to \$33.5 million. These projects will be funded from the 2017 bond reserves. Details of the construction work in progress are shown on Exhibit 3 in the Technical Appendix.

**DEBT SERVICE COMPONENT** - As part of the buy-in component calculation, a debt service component was also developed. This inclusion of a “debt service credit” avoids double charging the customer for the asset value in the existing or buy-in component of the capacity fee, and also in the debt service component of the rates. The principal portion of the debt service balance on existing assets is removed from the value prior to calculating the buy-in portion of the fee. By segregating the debt service out, the cost can be clearly identified and calculated appropriately.

The Authority has two outstanding debt issues: the 2016 bond and the 2017 bond. The 2016 bond has a remaining principal balance of \$3.2 million, which will be completed in April 2022. The 2017 bond has a remaining principal balance of \$21.8 million. The total debt credit amounts to \$25.0 million. Details of the debt service are shown on Exhibit 4 in the Technical Appendix.

**OTHER COMPONENTS** - The capital fund reserves are designated for specific in progress public facility projects and considered to be asset valuation adjustments to the overall water system since they are capacity infrastructure costs that relate to the water system as a whole. The total capacity

eligible fund reserves, as of June 2020 is \$15.8 million. Further detail can be seen on Exhibit 5 of the Technical Appendix.

#### 2.4.4 Maximum Allowable Water Capacity Fee

Based on the sum of the component costs calculated above, the allowable water capacity fee were determined. “Allowable” refers to the concept that the calculated capacity fees are the Authority’s cost-based water capacity fees. The Authority, as a matter of policy, may charge any amount up to the allowable capacity fee, but not over that amount. Charging an amount greater than the allowable capacity fee would not meet the practical basis of a cost-based capacity fee. Table 2-4 shows a summary of the allowable water capacity fee. Details are provided in Exhibit 2 of the Technical Appendix.

| Table 2-4<br>Maximum Allowable Water Capacity Fee |                      |        |                |
|---|----------------------|--------|----------------|
| Component   | Total                | EDUs   | \$/EDU         |
| Existing Water System (RCNLD)                     | \$293,361,381        | 51,178 | \$5,732        |
| Less: Contributed Capital                         | <u>(36,854,451)</u>  | 51,178 | <u>(720)</u>   |
| <b>Net Assets</b>                                 | <b>\$256,506,930</b> |        | <b>\$5,012</b> |
| Plus: Construction in Progress                    | \$33,593,139         | 51,178 | 656            |
| Less: Outstanding Debt Principal                  | (25,030,000)         | 51,178 | (489)          |
| Plus: Capital Fund Reserves                       | <u>15,808,009</u>    | 51,178 | <u>309</u>     |
| <b>Net Capacity Fee</b>                           | <b>\$280,878,078</b> |        | <b>\$5,490</b> |
| <i>Present Water Capacity Fee</i>                 |                      |        | <i>\$5,778</i> |
| <i>\$ Change</i>                                  |                      |        | <i>(\$288)</i> |

As can be seen in Table 2-4, the calculated water capacity fee was determined to be \$5,490 per EDU which represents a \$288 decrease from the present fee (\$5,490 - \$5,778 = \$288 decrease).

## 2.5 Key Assumptions

In developing the capacity fees for the Authority’s water system, a number of key assumptions were utilized. These are as follows:

- The Authority’s capacity fees were developed on the basis of planning documents, and capacity connections.
- The Authority projections of EDUs was based on the most recent Urban Water Management and System Plans.
- The Authority’s asset records as of June 2020 were used to determine the existing infrastructure assets.
- The year 2021 was used as the basis for the CIP.
- The calculation of the debt credit component included current outstanding principal on existing assets.

## 2.6 Consultant’s Recommendations

Based on our review and analysis of the Authority’s water capacity fees, HDR makes the following recommendations:

1. The Authority should adopt the water capacity fees for new connections which are no greater than the net allowable water capacity fees as set forth in this report
2. The Authority should update the actual calculations for the water capacity fees at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated by the Authority, or every five years.

## 2.7 Summary

The water capacity fees developed and presented in this report are based on the planning and engineering design criteria of the Authority’s water system, the value of the existing assets, and generally accepted ratemaking principles. Annually updating the fee based on the Engineering New Record construction cost index and reviewing the capacity fees every five years would continue to create equitable and cost-based charges for new customers connecting to the Authority’s water systems. Table 2-5 is a summary of the capacity fees reviewed. Further detail can be seen on Exhibit 1 of the Technical Appendix.

**Table 2-4**  
**Summary of the Present and Calculated Water Capacity Fees**

| Type of Use                  | EDU <sup>[1]</sup> | GPD <sup>[2]</sup> | Present       |                        | Calculated    |                           | \$ Difference |         |
|------------------------------|--------------------|--------------------|---------------|------------------------|---------------|---------------------------|---------------|---------|
|                              |                    |                    | % of Base EDU | Present <sup>[3]</sup> | % of Base EDU | Calculated <sup>[5]</sup> |               |         |
| Single-Family <sup>[6]</sup> | 1.0                | 299                | 100%          | \$5,778                | 297           | 100%                      | \$5,490       | (\$288) |
| Multi-Family                 | 1.0                | 169                | 57%           | 3,236                  | 165           | 56%                       | 3,050         | (186)   |
| M.H. Park                    | 1.0                | 109                | 36%           | 2,106                  | 107           | 36%                       | 1,978         | (128)   |
| Commercial                   | 1.0                | 299                | 100%          | 5,778                  | 297           | 100%                      | 5,490         | (288)   |

[1] Equivalent Dwelling Unit = Single-family residential accounts

[2] Based on gallons per capita per day pursuant to the Authority’s 2015 Urban Water Management Plan of 91 gpcd, and the average household size per US Census data of 3.29 persons per household.

[3] Based on Resolution 17-02.

[4] Based on gallons per capita per day pursuant to the Authority’s draft 2020 Urban Water Management Plan of 90 gpcd, and the average household size per US Census data of 3.3 persons per household.

[5] Based on "Buy-In" methodology established in AWWA M1, Seventh Edition, Table VII.2-1, page 333.

[6] An ADU added to the site of an existing or proposed single-family dwelling shall be charged an Authority capacity fee that is proportional to the burden of the proposed ADU based on the number of its fixture units.

The water capacity fees within this report were presented to the Engineering Committee on May 19, 2021 and the Board on May 26, 2021. At the May 26, 2021 Board meeting the Board directed staff to add the Capacity Fee of \$5,490 to the Authority’s Supplement to the Rates and Rules to be effective on July 1, 2021.



## Technical Appendix

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Sweetwater Authority

Exhibit 1

Present and Calculated Water Capacity Fee

| Item                                      | Replacement Cost<br>New, Less<br>Depreciation<br>RCNLD |
|---|--|
| Existing Capacity Fee Plant               | \$280,878,078  |
| <b>Total EDUs</b>                         | <b>51,178</b>  |
| <b>Calculated Capacity Fee</b>            | <b>\$5,490</b>   |
| Present Water Capacity Fee <sup>(1)</sup> | \$5,778  |
| \$ Difference                             | -\$288   |
| % Change                                  | -5.0%  |

| Number of<br>EDUs | Present<br>Capacity Fee <sup>(1)</sup> | Calculated<br>Capacity Fee <sup>(2)</sup> | \$<br>Difference |
|-------------------|--|---|------------------|
| 1                 | \$5,778                                | \$5,490                                   | (\$288)          |
| 2                 | 11,556                                 | 10,980                                    | (576)            |
| 3                 | 17,334                                 | 16,470                                    | (864)            |
| 4                 | 23,112                                 | 21,960                                    | (1,152)          |
| 5                 | 28,890                                 | 27,450                                    | (1,440)          |
| 6                 | 34,668                                 | 32,940                                    | (1,728)          |
| 7                 | 40,446                                 | 38,430                                    | (2,016)          |
| 8                 | 46,224                                 | 43,920                                    | (2,304)          |
| 9                 | 52,002                                 | 49,410                                    | (2,592)          |
| 10                | 57,780                                 | 54,900                                    | (2,880)          |

| Type of Use               | GPD <sup>(3)</sup> | % of Base EDU | Present | Calculated | \$ Change |
|---------------------------|--------------------|---------------|---------|------------|-----------|
| All Customers-Base        | 297                | 100%          | \$5,778 | \$5,490    | (\$288)   |
| Multi-Family Services     | 165                | 56%           | 3,236   | 3,050      | (186)     |
| Mobile Home Park Services | 107                | 36%           | 2,106   | 1,978      | (128)     |
| Commercial                | 297                | 100%          | 5,778   | 5,490      | (288)     |

**NOTES:**

(1) Present capacity fee established Resolution 17-02 on January 25, 2017.

(2) Based on "Buy-In" methodology established in AWWA M1, Seventh Edition, Table VII.2-1, page 333.

(3) Based on 2020 Urban Water Management Plan of 90 gpcd X 3.3 persons per household.

**Sweetwater Authority****Exhibit 2****Development of Water Capacity Fees - Buy-In Method**

| <b>Plant Description</b>                           | <b>RCNLD</b>         | <b>Reference</b>                         |
|--|----------------------|--|
| <b>Assets</b>                                      |                      |  |
| Land   | \$19,945,432         |  |
| Source of Supply                                   | 72,531,216           |  |
| Pumping  | 5,406,460            |  |
| Treatment  | 38,706,599           |  |
| Transmission and Distribution                      | 150,758,253          |  |
| Office Furniture and Equipment                     | 2,052,459            |  |
| Laboratory Equipment                               | 128,137              |  |
| Field Equipment                                    | 289,720              |  |
| Structures & Improvements                          | 3,543,106            |  |
| <b>Total Assets</b>                                | <b>\$293,361,381</b> |  |
| <b>Less: Contributed Capital<sup>(3)</sup></b>     |                      |  |
| Source of Supply                                   | (\$36,839,485)       | Demineralization, Desal Grants/San Diego |
| Transmission and Distribution                      | (\$14,966)           |  |
| <b>NET ASSETS</b>                                  | <b>\$256,506,930</b> |  |
| Plus: Construction Work in Progress <sup>(4)</sup> | \$33,593,139         | Exhibit 3                                |
| Less: Outstanding Debt Principal <sup>(5)</sup>    | (25,030,000)         | Exhibit 4                                |
| Plus: Capital Fund Reserves <sup>(6)</sup>         | 15,808,009           | Exhibit 5                                |
| <b>TOTAL</b>                                       | <b>\$280,878,078</b> |  |
| <b>Total EDUs</b>                                  | 51,178               | Exhibit 6                                |
| <b>Calculated Capacity Fee</b>                     | <b>\$5,490</b>       |  |
| Present Water Capacity Fee                         | \$5,778              |  |
| \$ Change  | (\$288)              |  |

**NOTES:**

(1) Asset listing as of June, 2020.

(2) Service date of asset and April 2021 ENR, CCI for 20-City Average.

(3) Contributed capital \$40 million (72%) from Grants and City of San Diego for Desal construction.

(4) Construction work in progress as of June 2020. See Exhibit 3.

(5) Remaining principal as of June 2021. See Exhibit 4.

(6) Cash reserves as of June 2020 which are capacity fee eligible. See Exhibit 5.

Sweetwater Authority  
 Exhibit 3  
 Development of Construction Work in Progress  
 For the Year Ended June 30, 2020

| CATEGORY                                       | PROJECT NUMBER | DESCRIPTION  | DATE       | ENR-CCI             |            | 11,849              | 2021       | April               |
|--|----------------|--|------------|---------------------|------------|---------------------|------------|---------------------|
|  |                |  |            | TOTAL COST          | ENR FACTOR | 2021 COST           | % ELIGIBLE | \$ ELIGIBLE         |
| 17 - Trans & Dis - Transmission & Distribution | 20205004       | Conduit Rd, Watercrest Dr to San Miguel Rd, BN                   | 2020-06-30 | \$187,490           | 1.03       | \$193,764           | 100.0%     | \$193,764           |
| 17 - Trans & Dis - Transmission & Distribution | 20205005       | Valley Vista Rd, Mesa Vista Way to Valley Vista Fork, BN         | 2020-06-30 | 274,596             | 1.03       | 283,784             | 100.0%     | 283,784             |
| 17 - Trans & Dis - Transmission & Distribution | 20215001       | Easement, Gretchen Rd to Claire Vista Tank Site , CV             | 2020-06-30 | 154,590             | 1.03       | 159,762             | 100.0%     | 159,762             |
| 17 - Trans & Dis - Transmission & Distribution | 20215002       | Valve Replacement Program  | 2020-06-30 | 76,535              | 1.03       | 79,096              | 100.0%     | 79,096              |
| 83 -Trans. Equip - Transportation Equipment    | 20215003       | Vehicle Replacement Program                                      | 2020-06-30 | 46,303              | 1.03       | 47,853              | 100.0%     | 47,853              |
| 17 - Trans & Dis - Transmission & Distribution | 20014016       | Central Wheeler Tank Construction & System Improvements          | 2020-06-30 | 311,602             | 1.03       | 322,029             | 100.0%     | 322,029             |
| Expense  | 20054016       | Study of San Diego Formation Aquifer by USGS                     | 2020-06-30 | 5,606,205           | 1.03       | 5,793,803           | 100.0%     | 5,793,803           |
| 14 - Srce Supply - Source of Supply            | 20114012       | Sweetwater Dam and South Dike Improvements                       | 2020-06-30 | 1,394,162           | 1.03       | 1,440,815           | 100.0%     | 1,440,815           |
| 17 - Trans & Dis - Transmission & Distribution | 20134008       | 36-in Transmission Main Replacement                              | 2020-06-30 | 17,195,310          | 1.03       | 17,770,708          | 100.0%     | 17,770,708          |
| 15 - Pumping - Pumping                         | 20158005       | OD Arnold Fire Flow Pump Station                                 | 2020-06-30 | 2,072,837           | 1.03       | 2,142,199           | 100.0%     | 2,142,199           |
| 15 - Pumping - Pumping                         | 20188003       | Distribution Remote Terminal Unit Evolution Study                | 2020-06-30 | 3,855,560           | 1.03       | 3,984,576           | 100.0%     | 3,984,576           |
| 17 - Trans & Dis - Transmission & Distribution | 20194006       | Douglas Street Interconnection Improvements                      | 2020-06-30 | 9,305               | 1.03       | 9,616               | 100.0%     | 9,616               |
| 17 - Trans & Dis - Transmission & Distribution | 20194017       | Rehabilitation of Morris, Starr and Bonita Highlands #2 Tanks    | 2020-06-30 | 39,921              | 1.03       | 41,257              | 100.0%     | 41,257              |
| 17 - Trans & Dis - Transmission & Distribution | 20204001       | Paving-Avenida San Miguel, 400 LF W to 100 LF W of Aliso Dr, BN  | 2020-06-30 | 50,670              | 1.03       | 52,366              | 100.0%     | 52,366              |
| 17 - Trans & Dis - Transmission & Distribution | 20204004       | Paving - Conduit Rd, Watercrest Dr to San Miguel Rd, BN          | 2020-06-30 | 993                 | 1.03       | 1,026               | 100.0%     | 1,026               |
| 17 - Trans & Dis - Transmission & Distribution | 20204005       | Paving-Valley Vista Rd, Mesa Vista Way to Valley Vista Fork, BN  | 2020-06-30 | 139,617             | 1.03       | 144,289             | 100.0%     | 144,289             |
| Expense  | 20204008       | Study to Maximize Reservoir Assets & Expand Local Water Supply   | 2020-06-30 | 300,000             | 1.03       | 310,039             | 100.0%     | 310,039             |
| 14 - Srce Supply - Source of Supply            | 20204010       | San Diego Formation Well No. 1 & 6 Rehabilitation & Replacement  | 2020-06-30 | 62,061              | 1.03       | 64,138              | 100.0%     | 64,138              |
| 14 - Srce Supply - Source of Supply            | 20204013       | Urban Runoff Diversion System Facility Maintenance & Repairs     | 2020-06-30 | 76,550              | 1.03       | 79,111              | 100.0%     | 79,111              |
| 14 - Srce Supply - Source of Supply            | 20204017       | Paradise Valley Creek WQ & Community Enhancement Project         | 2020-06-30 | 20,295              | 1.03       | 20,974              | 100.0%     | 20,974              |
| Expense  | 20204018       | City of San Diego Direct Transfer Facility                       | 2020-06-30 | \$8,275             | 1.03       | \$8,552             | 100.0%     | \$8,552             |
| Expense  | 20214002       | Reservoir Sediment Characterization Study - Sweetwater Reservoir | 2020-06-30 | 395,839             | 1.03       | 409,085             | 100.0%     | 409,085             |
| 17 - Trans & Dis - Transmission & Distribution | 20214003       | Engineering Design Program                                       | 2020-06-30 | 9,217               | 1.03       | 9,526               | 100.0%     | 9,526               |
| 17 - Trans & Dis - Transmission & Distribution | 20214004       | J St, Myra Ave to Nacion Ave, CV                                 | 2020-06-30 | 2,727               | 1.03       | 2,818               | 100.0%     | 2,818               |
| 17 - Trans & Dis - Transmission & Distribution | 20214005       | Myra Ave, East J St to Claire Vista Tank, CV                     | 2020-06-30 | 2,727               | 1.03       | 2,818               | 100.0%     | 2,818               |
| 17 - Trans & Dis - Transmission & Distribution | 20214006       | Pipeline Replacement Program - Trench Pavement (Distribution)    | 2020-06-30 | 3,235               | 1.03       | 3,343               | 100.0%     | 3,343               |
| 17 - Trans & Dis - Transmission & Distribution | 20214010       | FY21 Pavement Maintenance  | 2020-06-30 | 1,935               | 1.03       | 2,000               | 100.0%     | 2,000               |
| 14 - Srce Supply - Source of Supply            | 20214011       | Stairway and Valve Replacement at Loveland Dam                   | 2020-06-30 | 24,422              | 1.03       | 25,239              | 100.0%     | 25,239              |
| 86 -Strcts & Imp - Structures & Improvements   | 20214012       | San Miguel Sidewalk Street Improvement                           | 2020-06-30 | 6,624               | 1.03       | 6,846               | 100.0%     | 6,846               |
| 86 -Strcts & Imp - Structures & Improvements   | 20214013       | Cienega Valve Relocation   | 2020-06-30 | 9,933               | 1.03       | 10,266              | 100.0%     | 10,266              |
| 86 -Strcts & Imp - Structures & Improvements   | 20206001       | IS Office and Server Room Improvements                           | 2020-06-30 | 6,000               | 1.03       | 6,201               | 100.0%     | 6,201               |
| 86 -Strcts & Imp - Structures & Improvements   | 20218001       | Desal Facility Operations and Assembly Building Roof Replacement | 2020-06-30 | 147,725             | 1.03       | 152,668             | 100.0%     | 152,668             |
| 16 - Treatment - Treatment                     | 20218003       | National City Wells Iron and Manganese Removal System            | 2020-06-30 | 3,545               | 1.03       | 3,664               | 100.0%     | 3,664               |
| 15 - Pumping - Pumping                         | 20218004       | Booster Pump and Motor Replacement Efficiency Program            | 2020-06-30 | 8,621               | 1.03       | 8,910               | 100.0%     | 8,910               |
| <b>TOTAL</b>                                   |                |  |            | <b>\$32,505,428</b> |            | <b>\$33,593,139</b> |            | <b>\$33,593,139</b> |

| CATEGORY   | TOTAL COST          | 2021 COST           | \$ Eligible         |
|--|---------------------|---------------------|---------------------|
| <b>CONSTRUCTION WORK IN PROGRESS</b>             |                     |                     |                     |
| 12 - Land - Land                                 | \$0                 | \$0                 | \$0                 |
| 14 - Srce Supply - Source of Supply              | 1,577,491           | 1,630,277           | 1,630,277           |
| 15 - Pumping - Pumping                           | 5,937,018           | 6,135,685           | 6,135,685           |
| 16 - Treatment - Treatment                       | 3,545               | 3,664               | 3,664               |
| 17 - Trans & Dis - Transmission & Distribution   | 18,460,469          | 19,078,202          | 19,078,202          |
| 18 - Mtrs & Svs - Meters & Services              | 0                   | 0                   | 0                   |
| 81 - Furn & Equip - Office Furniture & Equipment | 0                   | 0                   | 0                   |
| 83 -Trans. Equip - Transportation Equipment      | 46,303              | 47,853              | 47,853              |
| 85 - Field Equip - Field Equipment               | 0                   | 0                   | 0                   |
| 86 -Strcts & Imp - Structures & Improvements     | 170,283             | 175,981             | 175,981             |
| Expense  | 6,310,319           | 6,521,478           | 6,521,478           |
| <b>TOTAL</b>                                     | <b>\$32,505,428</b> | <b>\$33,593,139</b> | <b>\$33,593,139</b> |

Sweetwater Authority  
 Exhibit 4  
 Development of Water Debt  
 For the Year Ended June 30, 2020

| Year         | Payment   | 2016 Bond          |                  |                    | 2017 Bond           |                     |                     | TOTAL<br>PRINCIPAL  |
|--------------|-----------|--------------------|------------------|--------------------|---------------------|---------------------|---------------------|---------------------|
|              |           | Principal          | Interest         | Total              | Principal           | Interest            | Total               |                     |
| 2021-22      | 10/1/2021 |                    | \$64,000.00      | \$64,000.00        |                     | \$416,565.63        | \$416,565.63        | \$0.00              |
|              | 4/1/2022  | 3,200,000.00       | 64,000.00        | 3,264,000.00       |                     | 416,565.63          | 416,565.63          | 3,200,000.00        |
| 2022-23      | 10/1/2022 |                    |                  |                    |                     | 416,565.63          | 416,565.63          | -                   |
|              | 4/1/2023  |                    |                  |                    | 510,000             | 416,565.63          | 926,565.63          | 510,000.00          |
| 2023-24      | 10/1/2023 |                    |                  |                    |                     | 403,815.63          | 403,815.63          | -                   |
|              | 4/1/2024  |                    |                  |                    | 535,000             | 403,815.63          | 938,815.63          | 535,000.00          |
| 2024-25      | 10/1/2024 |                    |                  |                    |                     | 390,440.63          | 390,440.63          | -                   |
|              | 4/1/2025  |                    |                  |                    | 565,000             | 390,440.63          | 955,440.63          | 565,000.00          |
| 2025-26      | 10/1/2025 |                    |                  |                    |                     | 376,315.63          | 376,315.63          | -                   |
|              | 4/1/2026  |                    |                  |                    | 595,000             | 376,315.63          | 971,315.63          | 595,000.00          |
| 2026-27      | 10/1/2026 |                    |                  |                    |                     | 361,440.63          | 361,440.63          | -                   |
|              | 4/1/2027  |                    |                  |                    | 620,000             | 361,440.63          | 981,440.63          | 620,000.00          |
| 2027-28      | 10/1/2027 |                    |                  |                    |                     | 345,940.63          | 345,940.63          | -                   |
|              | 4/1/2028  |                    |                  |                    | 655,000             | 345,940.63          | 1,000,940.63        | 655,000.00          |
| 2028-29      | 10/1/2028 |                    |                  |                    |                     | 329,565.63          | 329,565.63          | -                   |
|              | 4/1/2029  |                    |                  |                    | 685,000             | 329,565.63          | 1,014,565.63        | 685,000.00          |
| 2029-30      | 10/1/2029 |                    |                  |                    |                     | 312,440.63          | 312,440.63          | -                   |
|              | 4/1/2030  |                    |                  |                    | 720,000             | 312,440.63          | 1,032,440.63        | 720,000.00          |
| 2030-31      | 10/1/2030 |                    |                  |                    |                     | 294,440.63          | 294,440.63          | -                   |
|              | 4/1/2031  |                    |                  |                    | 755,000             | 294,440.63          | 1,049,440.63        | 755,000.00          |
| 2031-32      | 10/1/2031 |                    |                  |                    |                     | 283,115.63          | 283,115.63          | -                   |
|              | 4/1/2032  |                    |                  |                    | 780,000             | 283,115.63          | 1,063,115.63        | 780,000.00          |
| 2032-33      | 10/1/2032 |                    |                  |                    |                     | 271,415.63          | 271,415.63          | -                   |
|              | 4/1/2033  |                    |                  |                    | 800,000             | 271,415.63          | 1,071,415.63        | 800,000.00          |
| 2033-34      | 10/1/2033 |                    |                  |                    |                     | 259,415.63          | 259,415.63          | -                   |
|              | 4/1/2034  |                    |                  |                    | 825,000             | 259,415.63          | 1,084,415.63        | 825,000.00          |
| 2034-35      | 10/1/2034 |                    |                  |                    |                     | 242,915.63          | 242,915.63          | -                   |
|              | 4/1/2035  |                    |                  |                    | 860,000             | 242,915.63          | 1,102,915.63        | 860,000.00          |
| 2035-36      | 10/1/2035 |                    |                  |                    |                     | 225,715.63          | 225,715.63          | -                   |
|              | 4/1/2036  |                    |                  |                    | 895,000             | 225,715.63          | 1,120,715.63        | 895,000.00          |
| 2036-37      | 10/1/2036 |                    |                  |                    |                     | 211,731.25          | 211,731.25          | -                   |
|              | 4/1/2037  |                    |                  |                    | 920,000             | 211,731.25          | 1,131,731.25        | 920,000.00          |
| 2037-38      | 10/1/2037 |                    |                  |                    |                     | 196,781.25          | 196,781.25          | -                   |
|              | 4/1/2038  |                    |                  |                    | 950,000             | 196,781.25          | 1,146,781.25        | 950,000.00          |
| 2038-39      | 10/1/2038 |                    |                  |                    |                     | 181,343.75          | 181,343.75          | -                   |
|              | 4/1/2039  |                    |                  |                    | 985,000             | 181,343.75          | 1,166,343.75        | 985,000.00          |
| 2039-40      | 10/1/2039 |                    |                  |                    |                     | 165,337.50          | 165,337.50          | -                   |
|              | 4/1/2040  |                    |                  |                    | 1,015,000           | 165,337.50          | 1,180,337.50        | 1,015,000.00        |
| 2040-41      | 10/1/2040 |                    |                  |                    |                     | 148,843.75          | 148,843.75          | -                   |
|              | 4/1/2041  |                    |                  |                    | 1,045,000           | 148,843.75          | 1,193,843.75        | 1,045,000.00        |
| 2041-42      | 10/1/2041 |                    |                  |                    |                     | 131,862.50          | 131,862.50          | -                   |
|              | 4/1/2042  |                    |                  |                    | 1,080,000           | 131,862.50          | 1,211,862.50        | 1,080,000.00        |
| 2042-43      | 10/1/2042 |                    |                  |                    |                     | 114,312.50          | 114,312.50          | -                   |
|              | 4/1/2043  |                    |                  |                    | 1,115,000           | 114,312.50          | 1,229,312.50        | 1,115,000.00        |
| 2043-44      | 10/1/2043 |                    |                  |                    |                     | 92,012.50           | 92,012.50           | -                   |
|              | 4/1/2044  |                    |                  |                    | 1,160,000           | 92,012.50           | 1,252,012.50        | 1,160,000.00        |
| 2044-45      | 10/1/2044 |                    |                  |                    |                     | 68,812.50           | 68,812.50           | -                   |
|              | 4/1/2045  |                    |                  |                    | 1,205,000           | 68,812.50           | 1,273,812.50        | 1,205,000.00        |
| 2045-46      | 10/1/2045 |                    |                  |                    |                     | 44,712.50           | 44,712.50           | -                   |
|              | 4/1/2046  |                    |                  |                    | 1,255,000           | 44,712.50           | 1,299,712.50        | 1,255,000.00        |
| 2046-47      | 10/1/2046 |                    |                  |                    |                     | 22,750.00           | 22,750.00           | -                   |
|              | 4/1/2047  |                    |                  |                    | 1,300,000           | 22,750.00           | 1,322,750.00        | 1,300,000.00        |
| <b>TOTAL</b> |           | <b>\$3,200,000</b> | <b>\$128,000</b> | <b>\$3,328,000</b> | <b>\$21,830,000</b> | <b>\$12,617,219</b> | <b>\$34,447,219</b> | <b>\$25,030,000</b> |



**Sweetwater Authority**  
**Exhibit 5**  
**Summary of Reserve Funds**  
**As of January 2021**

| <b>RESERVE FUND BALANCES</b>                          | <b>Prior<br/>June 30, 2020</b> | <b>Year-to-Date<br/>Adjustments</b> | <b>Year-to-Date<br/>January 31, 2021</b> | <b>%<br/>Eligible</b> | <b>\$<br/>Eligible</b> |
|---|--------------------------------|-------------------------------------|--|-----------------------|------------------------|
| Restricted Water Revenue Bond 2017A                   | \$12,132,238                   | \$0                                 | \$12,132,238                             | 0%                    | \$0                    |
| Construction Fund (bond funds)                        | 955,768                        | 0                                   | 955,768                                  | 100%                  | 955,768                |
| Sweetwater River Watershed Land <sup>[1]</sup>        | 703,611                        | 0                                   | 703,611                                  | 100%                  | 703,611                |
| Sweetwater Dam PMF Project                            | 7,134,953                      | 0                                   | 7,134,953                                | 100%                  | 7,134,953              |
| National City Wells Water Quality Improvement Project | 2,000,000                      | 1,621,801                           | 3,621,801                                | 100%                  | 3,621,801              |
| Rate Stabilization Reserve                            | 9,203,369                      | 915,788                             | 10,119,157                               | 0%                    | 0                      |
| Construction Fund (carryover)                         | 3,391,876                      | 0                                   | 3,391,876                                | 100%                  | 3,391,876              |
| <b>TOTAL</b>  | <b>\$35,521,815</b>            | <b>\$2,537,589</b>                  | <b>\$38,059,404</b>                      |                       | <b>\$15,808,009</b>    |

**NOTES:**

[1] July 2020 \$350,922 was withdrawn to purchase land. This was not adjusted on the reserve or assets at this time.

Sweetwater Authority  
 Exhibit 6  
 Development of Equivalent Dwelling Units  
 For the Year Ended June 30, 2020

| <b>EQUIVALENT DWELLING UNITS</b>          |                   |                  |                           |                |                                   |
|---|-------------------|------------------|---------------------------|----------------|-----------------------------------|
| <b>Year</b>                               | <b>Population</b> | <b>Acre Feet</b> | <b>Conversion Gallons</b> | <b>Gallons</b> | <b>Gallons per Capita per Day</b> |
| 2015                                      | 188,296           | 19,232           | 325,851                   | 6,266,766,432  | 91                                |
| 2020                                      | 201,792           | 16,941           | 325,851                   | 5,520,241,791  | 75                                |
| 2045                                      | 234,668           | 23,659           | 325,851                   | 7,709,308,809  | 90                                |
|   |                   |                  |                           | <b>2045</b>    |                                   |
| Gallons per capita per day                |                   |                  |                           | 90.00          | <sup>(1)</sup>                    |
| Number of persons per household           |                   |                  |                           | <u>3.30</u>    | <sup>(2)</sup>                    |
| <b>Average Daily Demand in gallons</b>    |                   |                  |                           | <b>297</b>     |                                   |
| Peaking Factor                            |                   |                  |                           | <u>1.50</u>    | <sup>(3)</sup>                    |
| <b>Peak Day demand in gallons per EDU</b> |                   |                  |                           | <b>445.5</b>   |                                   |
| Max Day Demand (mg)                       |                   |                  |                           | 22.80          | <sup>(4)</sup>                    |
| Total EDUs                                |                   |                  |                           | 51,178         |                                   |

**NOTES:**

- (1) Draft 2020 Water Distribution System Master Plan Update, Section 3.3, 90 gallons per capita per day.
- (2) 2019 - ACS 2019 Census Report.
- (3) Draft 2020 Water Distribution System Master Plan, Section 3.21, 1.5 peaking factor.
- (4) 2020 CA Water Board Annual Report 22.8 maximum day demand.