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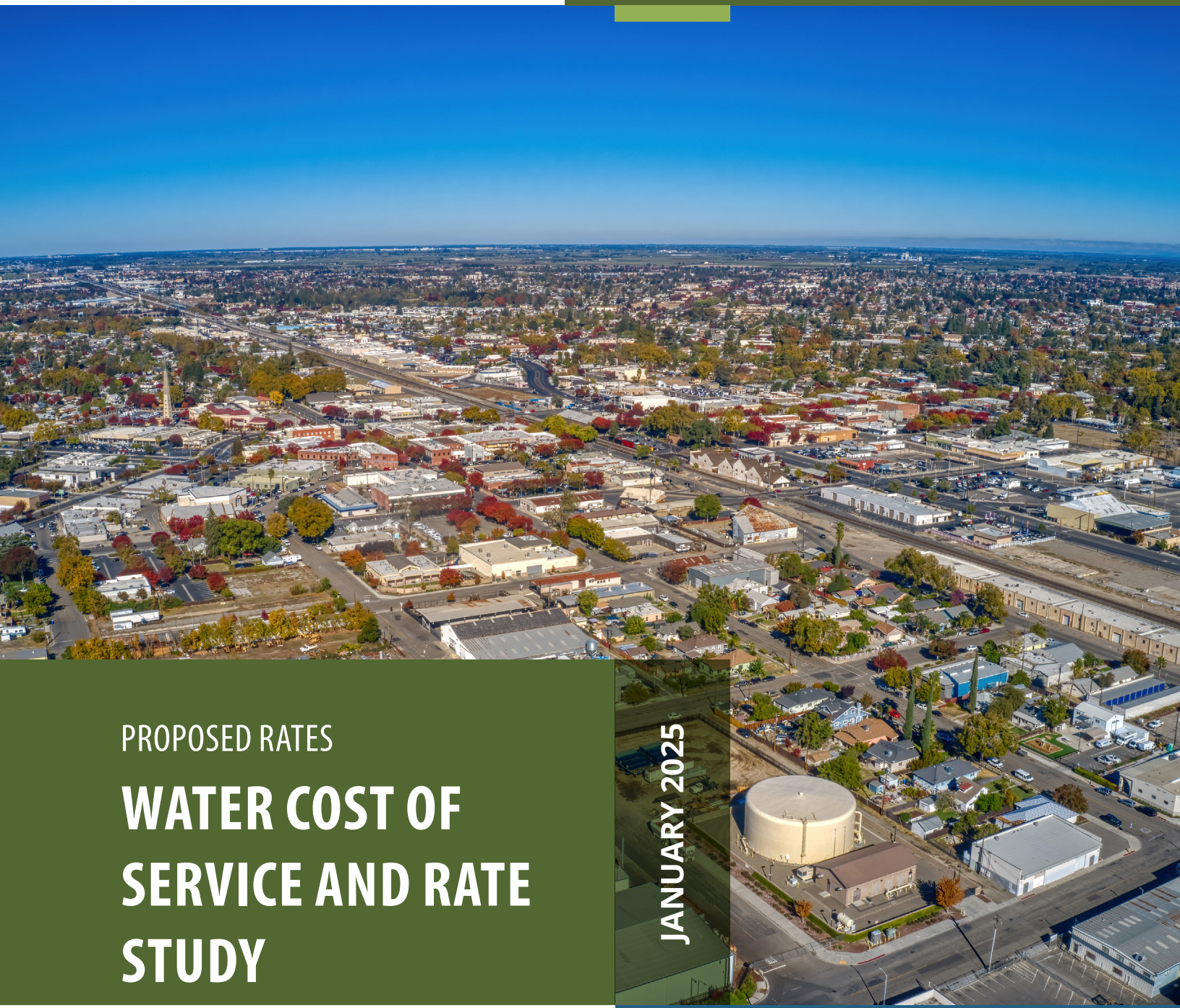

PROPOSED RATES

WATER COST OF SERVICE AND RATE STUDY

JANUARY 2025

TID WATER & POWER

Serving Central California since 1887

Prepared for:
Turlock Irrigation District

Proposed Rates | January 2025

Water Cost of Service and Rate Study

Turlock Irrigation District

Prepared by:

NewGen Strategies & Solutions

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Section 1
PROJECT SUMMARY

Introduction

Turlock Irrigation District (TID or the District) is located in the heart of California's Central Valley and has a proud history of providing the Southern half of Stanislaus County and a portion of Northern Merced County with low cost, reliable electric service and water for agriculture, drinking, and other uses.

The District retained NewGen Strategies and Solutions, LLC (NewGen) to develop cost of service (COS) and proposed Rate Design Studies (Studies) for its electric and water services. The Studies determined the total cost of providing electric and water services, the allocation of costs to the various customer classes, and the design of rates to safeguard the financial integrity of the District and to support the District's financial policies. The total cost of providing water services includes operations and maintenance (O&M) expenses, debt service, and other cash capital outlays required to operate and maintain the system with high reliability.

One purpose of the Studies was to evaluate the revenues and costs for the District to serve its customers and to determine if the water and electric operations are appropriately recovering their costs. Additionally, the Studies were conducted to review the cost allocations utilized by the District to determine if they are reasonable. A final objective for the Studies was to quantify the rate impact due to proposed changes in rates for each customer class. This Water Rate Study Report (Water Report) focuses on the District's water operations; a separate report provides a detailed analysis of the District's electric operations. The purpose of this Water Report is to present the processes, analyses, and recommendations related to the Water COS Study (referred to herein as the Study).

The District's fiscal year (FY) is from January 1 to December 31. Unless otherwise stated in this Water Report, all data presented herein is shown in FYs. The Study included an analysis of estimated revenue requirements, a COS analysis based on the forecasted Test Year (TY) period FY 2027, an irrigation rate design analysis, and the development of proposed new irrigation rates.

District water billing data from 2023 serves as the basis for the Study's demand forecast. NewGen used actual billing information for 2023 to create a base year demand profile and then forecasted this demand profile forward with no increase or decrease in demand to create the 2027 TY billing determinates. Various financial policy issues related to the District's water operations were included as guiding principles of the Study.

Our Water Report contains the following five sections:

- **Section 1 – Project Summary**: Provides an overview of Study and the District.
- **Section 2 – Revenue Requirement**: Discusses the development of the revenue requirement.
- **Section 3 – Cost of Service**: Provides the COS results for Water System.
- **Section 4 – Rate Design**: Presents the proposed irrigation water rates.
- **Section 5 – Conclusions and Recommendations**: Summarizes conclusions and recommendations.

Turlock Irrigation District Utility Operations

The District was established in 1887 as the first publicly owned irrigation district in the State of California, and today it is one of only four irrigation districts that provide retail electric service to their customers. TID delivers irrigation water through 250 miles of canals and irrigates approximately 150,000 acres of farmland. TID owns and operates an integrated electric system that includes generation, transmission, and distribution assets that serve over 92,000 customer accounts across a 662 square mile area.

During the TY, the District is projected to serve its retail customers with average annual electricity sales of approximately 2.3 million megawatt-hours (MWh; 1 MWh is 1,000 kilowatt-hours [kWh]) per year and approximately 6.6 million gallons of water for domestic and public facility water service and 380,000 acre-feet of water for irrigation customers.

Turlock Electric System Background

The District generates or obtains power from a variety of sources, including natural gas, hydroelectric, wind, solar, biomass, and geothermal resources. The District also transacts on an hourly basis with the California Independent System Operator (CAISO), the wholesale power market. The District operates high voltage transmission systems that consist of 230 kilovolt-ampere (kVa), 115 kVa, and 69 kVa transmission lines connected to a system of approximately 45 electric substations throughout its service territory. Some of the larger transmission assets are jointly owned by the District and other entities. The District's distribution system consists of a total of approximately 2,235 circuit miles of conductor operated at 12 kVa. A detailed description of the District's electric system components, costs, and rates can be found in NewGen's report titled "Turlock Irrigation District – Electric Rate Study."

Turlock Water Sources

The District obtains its water from a variety of sources, including some of the oldest water rights in the State of California. Water resources include Don Pedro Reservoir, Turlock Lake, regulating reservoirs, as well as groundwater.

Turlock Water Operations

The District owns over 250 miles of canals, laterals, and drains that convey water to its customers. Water is first released from Don Pedro Reservoir, then it is diverted a La Grange Dam, where it travels approximately 8.7 miles in the Upper Main Canal to Turlock Lake, and thence to the irrigation distribution system downstream of Turlock Lake. Irrigation water is delivered to the individual irrigation customers through sidegates along the irrigation distribution system. Domestic water is diverted from the Upper Main Canal, approximately 2 miles downstream of La Grange Dam, where it is filtered and delivered to the domestic customers through water meters.

Water Usage Characteristics by Class

The COS analysis examines detailed customer usage characteristics by customer class. Table 1-1 summarizes the number of customers in each class, according to the District's statistics.

Table 1-1
Test Year Summary of Customer Class Water Demand

Class/Service	Number of Customers	Number of Acres	Annual Water Demand	Demand Units
Domestic (1)	62	N/A	6,197,965	Gallons
Irrigation (2)	6,616	148,892	382,932 (3)	AF

(1) Domestic Water includes customers in La Grange and Public Facilities.
(2) Irrigation includes Irrigation and Garden Heads, but not Wholesale water demand.
(3) Assumes Garden Heads at 48" per acre.

Cost of Service Results

Section 3 of the Water Report describes the COS process. The result of the COS analysis is an assessment of the costs required to serve each customer class. Customer class costs are compared to the projected revenues under current rates to determine if current rates are sufficient to meet costs. Once completed, the COS analysis is the basis for rate design. A comparison of the revenue requirement by class and revenues collected under current tariffs is shown in Table 1-2.

Table 1-2
Comparison of Current Rate Revenues with Cost-of-Service Results (1)

Class	TY 2027 Revenue Requirement ($)	Revenues Under Current Rates ($)	Projected Over / (Under) Recovery ($)	Increase to meet COS (%)
Irrigation	$10,685,363	$10,064,809	($620,553)	6.2%
Domestic	$35,191	$35,191	$0	0.0%
Total	**$10,720,553**	**$10,100,000**	**($620,553)**	**6.1%**

(1) Numbers may not add due to rounding.

The COS indicates that current rate revenues are insufficient to meet projected TY 2027 system costs by 6.1%. At the class level, the entire revenue need is related to Irrigation customers, and Domestic customers show no indication of necessary revenue increases.

Rate Design

Rate design is the culmination of a COS study as the rates and charges for each customer class are designed to recover the systemwide COS and customer class revenue requirements equitably and fully by the end

of the rate period. Section 4 of the Water Report describes proposed rate design for the District's irrigation customers.[1] The District's irrigation rates include the following components:

- **Base Charge:** A fixed annual charge per acre that does not depend on the amount of irrigation water provided. Base charges vary for Normal Year and Dry Year water allocations.
- **Volumetric Rate:** A charge for each AF per acre defined within a four-tier volumetric rate structure. The amount of irrigation water in each tier changes between Normal and Dry years.

Base charges were applied to the appropriate annual irrigation billing determinants (e.g., acres) and volumetric rates were applied to the appropriate irrigation volumes to develop rate revenues for the irrigation class. These projected revenues from the proposed rates were compared to the revenue requirement to ensure that rates generate sufficient revenue to recover the COS. For this Study, the District intends to equalize the rate for the first three irrigation volumetric tiers.

It was determined that new irrigation rates would be implemented over the three-year period on an annual basis. The rates are proposed to be effective January 1, 2025, January 1, 2026, and January 1, 2027. The intent is for the District's irrigation rate revenue to meet its projected revenue requirement for the 2027 TY. Additional information and analysis for the District's proposed rates are included in Section 4 of the Water Report.

[1] Because the COS result does not indicate a need to increase Domestic rates, NewGen does not recommend any increase to Domestic rates, and there is no rate design discussion regarding Domestic rates in this Water Report.

Section 2
REVENUE REQUIREMENTS

As part of the Study, NewGen developed a forecasted Test Year (TY) Revenue Requirement for the District inclusive of all the District's cash operating and capital expenses to be recovered from water rates. The TY Revenue Requirement represents projected expenses for the District in FY 2027 and is therefore referred to as TY 2027. The TY 2027 Revenue Requirement is based on a reasonable forecast of FY 2024 budgeted costs and financial results. NewGen developed the TY 2027 Revenue Requirement by studying and analyzing cost information provided by the District, including its adopted budget, capital improvement plans, and financial metric needs.

Test Year Revenue Requirement

To remain financially sound, the District's rates must produce sufficient revenues to recover the total costs of providing electric and water service to its customers. These costs imposed on the System by customers are commonly referred to as the utility's "revenue requirement" and consist of operating expenses, debt service, capital improvements, non-operating expenses, and reserve requirements. These total revenue requirements are then compared to revenues to evaluate the need for rate changes. The revenue requirement acts as the foundation of a COS study.

The first step in the COS process involves separating the District's electric and water costs. For example, power purchases are within the power supply costs and are assigned to the electric operations. Similarly, all water purchases are assigned to water. For the remainder of the costs, we relied on the District's internal cost allocation process, as well as other cost allocators for this Study.

Another item included in this revenue requirement is the allocation of Discretionary Revenue. This is applied to customer classes based on Board discretion as allowed by the nature of the revenues.

The analysis shows that approximately 97% of the District's costs are associated with its electric operations and 3% are associated with its water operations. This includes the transfer of costs from water to electric as determined by the "Water for Fuel Study" as described herein. The following sections provide additional detail on the various fund/accounts as utilized by the District.

As stated previously, the Test Year in this Study is a forecasted three-year revenue need, and is stated as a TY 2027 representing a three-year forecast beyond FY 2024 financial results.

O&M Expenses

The O&M expenses consist of the General Manager's office, the External Affairs office, the Financial Services Administration, Water Resources, Electric Engineering and Operations, and non-power generation expense in the Power Supply Administration. Additionally, O&M expenses include those for the Don Pedro Joint Area (DPJA, which is shared between TID, MID, and the City and County of San Francisco) and the Don Pedro Recreational Area (DPRA), as provided in Table 2-1. These costs were allocated between electric and water based on the results of the District's internal cost allocation survey. The DPJA fund includes costs allocated to both electric and water. The DPRA fund is entirely allocated to the electric department. Overall, the TY O&M expenses of approximately $403 million are allocated 96% to the electric department and 4% to the water department.

Table 2-1
O&M Funds – Allocated to Electric and Water [1]

Account	Test Year 2027 [2]	Electric	Water
General Manager	$10,108,000	$7,140,000	$2,968,000
Financial Services Administration	$27,768,000	$24,850,000	$2,918,000
Water Resources	$25,605,000	$7,975,000	$17,631,000
Electrical Engineering & Operations	$36,562,000	$35,370,000	$1,193,000
Power Supply Administration	$295,692,000	$295,521,000	$171,000
Subtotal O&M	**$395,735,000**	**$370,856,000**	**$24,881,000**
O&M Expenses – DPJA [3]	$5,181,000	$5,079,000	$102,000
O&M Expenses – DPRA [3]	$2,067,000	$2,067,000	$0
Total O&M Expenses	**$402,983,000**	**$378,001,000**	**$24,981,000**

(1) Numbers may not add due to rounding.

(2) The Test Year is a three-year forecasted Test Year, representing the revenue need at the end of a three-year forecast beginning FY 2025.

(3) DPJA – Don Pedro Joint Area; DPRA – Don Pedro Recreational Area (see text).

Total Debt Service

Total Debt Service includes the principal and interest payments due from the District's existing bond issues, which include the 2016 TID Bonds, 2019 TID Bonds, 2020 TID Bonds, and 2024 TID Bonds (Refunding of 2014 TID Bonds). This also includes refunding bond issues and interest associated with the District's issuance of Commercial Paper. Total Debt Service was allocated 99% to the electric department and 1% to the water department based on the need for the projected uses for the debt proceeds.

Total debt service is anticipated to be approximately $40.7 million during the TY. This value was determined by NewGen from existing debt service amortization schedules and anticipated debt service from the issuance of new debt to support capital investment over the three-year period ending in the TY. The new debt issued for this three-year period is anticipated to be approximately $247 million at an interest rate of 3.5% amortized over a period of 30 years, which results in a Test Year period increase of approximately $10.6 million per year. The new debt is assumed to be primarily for electric department investment.

Capital Funded by Cash

In addition to issuing debt, the District funds capital from its rate revenue. Capital funded by cash is allocated by project based on the function it is intended to serve. For example, the District's TY budget includes an electric transmission and distribution system upgrade of approximately $1.9 million, which is allocated entirely to electric functions. Overall, the capital funded by cash is anticipated to be approximately $29 million in the TY. Approximately 94% of the total is allocated to electric and 6% is allocated to water. Appendix A of this Water Report details the allocation of cash funded capital between the electric and water systems.

Value of Hydroelectric Power from Don Pedro (Water for Fuel)

TID owns 68.46% (139 Megawatts) of the Don Pedro hydropower facility (Don Pedro) located on the Tuolumne River. The Modesto Irrigation District owns the rest of the Don Pedro hydropower facility. TID uses the power from this facility to serve a portion of its electric load.

The value of the hydropower provided by Irrigation to Electric is based on (1) the value of forecasted energy associated with the hydropower generated by Don Pedro in the TY less (2) the costs related to Don Pedro that are already paid by electric customers through costs reflected elsewhere in electric's net revenue requirements. This Study relied on forward prices to determine the market value of energy from Don Pedro. For future energy prices District used Kiodex Market data published April 29, 2024.

In order to avoid double-counting TID incurred Don Pedro-related expenses paid by electric that are already included in electric's cost of service, it is necessary to subtract those expenses from the gross value of energy and capacity provided to electric by water (irrigation). Those costs include TID's portion of:

- Electric's portion of certain water rights
- Don Pedro generation O&M expenses
- Various capital projects at Don Pedro
- Relicensing costs for Don Pedro

Customers of the electric business line receive this value from the water (irrigation) business line. Thus, to compensate the water business line for the value it provides to electric (or that is foregone by water by not selling the generation from Don Pedro on the open market), water's revenue requirements are reduced by approximately $8.5 million and electric's revenue requirements are increased by approximately $8.5 million. The approximate $8.5 million cost is indicated in Table 2-2.

Table 2-2
Hydro-Related Cost Transfer Detail – TY 2027

Hydro Generation (MWH)	Energy Value	Hydro Costs Paid by Electric	Net Hydro Value Received by Electric
392,000	$24,496,000	$16,000,000	$8,496,000

Tables detailing the calculation of each of the values in Table 2-2 are provided in Appendix B.

This expense is a transfer of dollars from the electric revenue requirement to the water revenue requirement to represent the value to the water system and the cost to the electric system associated with the generation of hydro-electric power at the Don Pedro Hydro facility.

Deposits to Meet Financial Metrics

The District's policy is to maintain compliance with two financial metrics, one relating to debt service coverage and one related to cash reserves.

- Debt Service Coverage Ratio: In any year, the District should maintain a Debt Service Coverage Ratio (DSCR) of at least 1.50.

- Days Cash on Hand: At the end of each Fiscal Year, the District should maintain a minimum of 225 days of annual Operating and Maintenance costs in cash reserves, also known as Days Cash On Hand (DCOH). The District may reserve a maximum of 275 days of annual Operating and Maintenance costs in cash reserves. Per its reserve policy, if the District falls below 225 DCOH, it has three years to increase cash levels to meet the minimum DCOH of 225 days.

NewGen's Study identified annual contributions to reserves necessary to meet the financial policies described above. In TY 2027, the contribution necessary to meet both the DSCR and DCOH policies is approximately $12.3 million, about a million of which is assigned to the water system.

Discretionary Revenue

The purpose of the COS analysis is to determine the revenue requirement associated with the retail operations of the District, i.e., the rates charged to its retail customers. Therefore, the revenue requirement is reduced to reflect discretionary, non-rate revenues and expenses. For the District, this includes interest income, wholesale water sales revenue, penalties for late payments, property taxes from Stanislaus County, and MID's share of the La Grange operating expenses. While discretionary, some of these non-rate revenues, such as some wholesale water sales, are limited in how they can be used. NewGen's Study is consistent with these limitations. The two largest discretionary revenues included in TY 2027 are related to two agreements TID has with other local agencies:

- **Side Agreement:** To implement a 1995 Settlement Agreement with the Federal Energy Regulatory Commission (FERC), San Francisco Public Utilities Commission (SFPUC) agreed to pay TID and Modesto Irrigation District (MID) $3.5 million per year to satisfy its obligation under the agreement. In the Agreement with SFPUC, the Districts agreed to provide the water required to satisfy the minimum flow schedule in the Settlement Agreement with FERC. In return, SFPUC agreed to pay the Districts $3.5 million annually and this amount is adjusted annually for inflation. SFPUC's payment adjusted for inflation amounted to more than $5 million in 2024, of which TID received 68.46%.
- **Water Accounting Structure Agreement:** In 2024, the TID entered into a Water Accounting Structure Agreement with the East Turlock Groundwater Sustainability Agency (ETS GSA) to resolve a dispute over the accounting of groundwater in the Turlock Subbasin. To settle the dispute over the accounting of groundwater resources in the Turlock Subbasin, the ETS GSA entered into a 20-year agreement with TID. ETS GSA agreed to pay TID approximately $5.7 million per year during the first five years of the agreement. As a result of the Agreement, the ETS GSA agreed to restrict groundwater pumping over time and in return, TID agreed to allocate a portion of its groundwater to ETS GSA to allow the agency to move to groundwater sustainability over time rather than abruptly.

Non-rate revenues are anticipated to be approximately $10.8 million for the water system in TY 2027. The Board has discretion regarding the use of these funds, including funding of cash reserves, advanced debt repayment, capital investment, or other uses. For this Study, discretionary revenues are applied to reduce the revenue requirement for both electric and water retail customers.

Net Water Revenue Requirement

Table 2-3 provides a summary of the District's various operation accounts and the results of the allocation between electric and water.

Table 2-3
Net District Revenue Requirement – Allocated to Electric and Water [1]

Account	Test Year 2027 [2]	Electric	Water
Power Supply	$295,692,000	$295,521,000	$171,000
Non-Power Supply O&M	$107,290,000	$82,480,000	$24,810,000
Total O&M	**$402,982,000**	**$378,001,000**	**$24,981,000**
Existing Debt Service	$30,091,000	$28,473,000	$1,618,000
New Debt Service	$10,597,000	$9,863,000	$734,000
Capital Funded by Cash	$29,111,000	$27,388,000	$1,723,000
Hydro-Related Cost Transfer (Water for Fuel Study)	$0	$8,496,000	($8,496,000)
Subtotal Revenue Requirement	**$472,781,000**	**$452,221,000**	**$20,560,000**
Deposit to Reserves for Metrics	$12,355,000	$11,367,000	$988,000
Discretionary Revenues	($102,222,000)	($91,394,000)	($10,828,000)
Total Revenue Requirement [3]	**$382,914,000**	**$372,195,000**	**$10,720,000**

(1) Numbers may not add due to rounding.
(2) Forecasted TY 2027 represents a three-year forward looking revenue need.
(3) Also known as the "Water for Fuel Study" (WFF).

Based on NewGen's analysis, the amount of TY 2027 revenue that must be generated from water customers, both domestic and irrigation, is $10.72 million.

Section 3
COST OF SERVICE

Water System Cost Allocation

The core purpose of NewGen's cost of service Study is to determine the revenue needed to be generated from the District's water customers in the forecasted FY 2027 Test Year. For the water system, that means assigning costs between the District's two types of water service: Domestic and Irrigation. These costs were allocated between irrigation and domestic based on the results of the District's internal cost allocation survey. Table 3-1 demonstrates the allocation of costs between the District's two types of water service.

Table 3-1
Net Water Revenue Requirement Allocated to Irrigation and Domestic (1)

Category	Test Year 2027 (2)	Irrigation	Domestic
Total Power Supply Administration	$171,000	$171,000	$0
Total Operation and Maintenance (less PSA and WFF)	$24,810,000	$24,295,000	$515,000
Existing Debt Service	$1,618,000	$1,618,000	$0
New Debt Service	$734,000	$734,000	$0
Capital Funded by Cash	$1,723,000	$1,723,000	$0
Hydro-Related Cost Transfer (3)	($8,496,000)	($8,496,000)	$0
Subtotal Revenue Requirement	**$20,560,000**	**$20,045,000**	**$515,000**
Deposit to Reserves for Metrics	$988,000	$988,000	$0
Total Revenue Requirement	**$21,548,000**	**$21,033,000**	**$515,000**
Less: Discretionary Revenues	($10,828,000)	($10,348,000)	($480,000)
Net Revenue Requirement	**$10,720,000**	**$10,685,000**	**$35,000**

(1) Numbers may not add due to rounding.
(2) Forecasted TY 2027 represents a three-year forward looking revenue need.
(3) Also known as the Water for Fuel Study.

It should be noted that NewGen assigned discretionary revenue to Domestic water service to maintain the currently effective Domestic water rates.

Indicated Revenue Increase Need

To determine the necessary revenue increase (if any) for the irrigation or domestic water systems, NewGen compared the results of the cost allocation above to the forecasted revenues at current rates for both classes of service. Table 3-2 demonstrates the results of the costs of service analysis.

Table 3-2
Water Class Cost of Service Result (1)

Category	Water Test Year 2027	Irrigation	Domestic
TY 2027 Net Revenue Requirement	$10,720,000	$10,685,000	$35,000
FY 2027 Revenue at Current Rates	$10,100,000	$10,065,000	$35,000
Over / (Under) COS	($620,000)	($620,000)	$0
Indicated Three-Year Revenue Increase / (Decrease)	6.1%	6.2%	0.0%
Average Increase per Year (2025–2027)	**2.0%**	**2.1%**	**0.0%**

(1) Numbers may not add due to rounding.

As demonstrated, NewGen's cost of service analysis resulted in no indication that Domestic water rates need to be increased to meet the net revenue requirement of the Domestic service system. Therefore, the remainder of this Water Report will detail the recommended rate design to generate the necessary revenue from the District's irrigation customers.

Section 4
RATE DESIGN

California Constitution – Article XIII D, Section 6 (Proposition 218)

Proposition 218, a portion of which is set out in the California Constitution as Article XIII D, was enacted in 1996 to ensure that public agency utility service rates, fees, and charges are reasonable and proportional to the cost of providing the applicable services. The principal requirements for application of such rates, fees, and charges, as they relate to public water service, are as follows:

1. A property-related rate/fee/charge imposed by a public agency on a parcel shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the rate/fee/charge shall not be used for any purpose other than that for which it was imposed.
3. The amount of the rate/fee/charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. Rates must reflect services immediately available to a fee payor.
5. Rates may not fund general governmental services, like police and fire services.

The American Water Works Association Manual M1 – *Principles of Water Rates, Fees, and Charges, 7th Edition* (Manual M1) states that water rates and charges should be recovered from types of customers in proportion to the cost of serving those customers. Proposition 218 requires that water rates/fees/charges be reasonable, meaning that the rate-setting methodology must be sound and that there must be a nexus between the costs and the rates charged. NewGen followed industry standard cost of service process rate-setting methodologies set forth by Manual M1, adhering to Proposition 218 requirements when developing TID's irrigation rates to ensure that they do not exceed the proportionate cost of providing the corresponding services.

While this Water Report should not be considered legal guidance, as it does not offer any assurances of compliance with any other state, federal, or other laws, our methodology is guided by the best available legal guidance and strives to match that guidance. Specifically, In the *San Juan Capistrano* case, the court stated that any rates, including tiered rates, must "correspond to the actual cost of providing service at a given level of usage." Furthermore, the court stated:

> And, we emphasize, there is nothing at all in [California Constitution Article XIII D, section 6,] subdivision (b)(3) or elsewhere in Proposition 218 that prevents water agencies from passing on the incrementally higher costs of expensive water to incrementally higher users. That would seem like a good idea. But subdivision (b)(3) does require they figure out the true cost of water, not simply draw lines based on water budgets... . Our courts have made it clear they interpret the Constitution to allow tiered pricing; but the voters have made it clear they want it done in a particular way.

This statement from the court outlines several fundamental principles for this rate analysis:

- Rates must be based on the cost of providing water service.
- Tiered pricing is an acceptable methodology under Proposition 218.

- Increasing block rates that pass incrementally higher costs of expensive water onto incrementally higher demand users is an acceptable methodology of proportionately allocating the costs of service under Proposition 218.

2010's Proposition 26 adopted similar, but less demanding, requirements for government service charges not subject to Proposition 218, like the groundwater augmentation charges at issue in *City of San Buenaventura v. United Water Conservation District* (2017) 3 Cal.5th 1191. Such a charge must be "for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product." (California Constitution, article XIII C, section 1(e).) In addition, the ratemaking agency "bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity." (California Constitution, article XIII C, section 1(e) (final paragraph).) Although the District takes the position that its Irrigation charges are subject to Proposition 26 and, therefore, not Proposition 218, its Irrigation charges comply with both measures in the interest of a transparent relationship with those it serves.

Current Irrigation and Garden Head Rates

The District's currently effective irrigation rates were last adopted in 2015. The District currently has two types of irrigation customers.

- **Garden Heads:** A Garden Head is an irrigation demand from parcels that are typically five acres or less in size. Garden head parcels are delivered irrigation water as a group, where possible and typically every two weeks, with a standardized irrigation flow consistent with the capacity of the irrigation facilities. Irrigation service to a group of Garden Heads is referred to as a Garden Head Rotation. Garden Head Rotations are determined by the District for operational efficiency, water conservation, or to minimize impact to irrigation facilities. Because of the nature of Garden Head parcels, the District is unable to precisely measure the amount of water provided to each Garden Head parcel each year.
- **Irrigation Service**: Irrigation customers are provided water based on an arranged demand delivery "call system" whereby the flow rate of water delivery, typically between 15 and 20 cubic feet per second (cfs), is consistent, but the frequency and duration of the water delivery is requested by the Irrigator. District staff schedules irrigation requests in such a manner that they will not adversely affect other irrigation customers, irrigation facilities, or cause water to be spilled into the rivers. The District can measure the amount of water provided to each irrigation parcel.

Each year the District determines the amount of irrigation water that will be made available to irrigation customers. The determination is based on precipitation and the resulting storage level at the Don Pedro facility. For example, the TID Board of Directors reduced the amount of water available to TID growers in 2020 and 2021 from the normal 48 inches to 42 and 34 inches, respectively. Then, for the 2022 Irrigation Season, the Board reduced water availability further to 27 inches of water – nearly a 45 percent reduction from normal. The Tuolumne River Watershed received significant precipitation and carry-over storage from the 2023 irrigation season, meaning that Don Pedro was effectively full coming into the 2024 irrigation season. Therefore, TID made 48 inches per acre available to growers in 2024. For the purposes of this Study and Water Report, this annual allocation is called "Available Water."

The rates that apply to each volumetric Tier remain constant – the amount of water that is billed in each tier is normalized based on the Available Water. In this way, the District can reasonably predict the amount

of volumetric revenue generated by rates each year based on demand habits of its irrigation customers relative to how much water they use given a certain amount of Available Water.

Table 4-1 shows the current effective Irrigation and Garden Head rates, which were adopted January 13, 2015. Note the difference in volumetric tiers between Normal and Dry years, as per the discussion above.

Table 4-1
Currently Effective Irrigation and Garden Head Rates

Rate Component	Normal Year	Dry Year
Garden Heads		
Annual Fee per Garden Head (1)	$350	$360
Irrigation		
Annual Fixed Fee per Acre	$60	$68
Volumetric Rates (Normal Year):		
Tier 1 (0–2 AF per AC)	$2.00	
Tier 2 (2–4 AF per AC)	$3.00	
Tier 3 (4–5 AF per AC)	$15.00	
Tier 4 (Over 5 AF per AC)	$20.00	
Volumetric Rates (Dry Year):		
Tier 1 (0–1 AF per AC)		$2.00
Tier 2 (1–2.5 AF per AC)		$3.00
Tier 3 (2.5–3.5 AF per AC)		$15.00
Tier 4 (Over 3.5 AF per AC)		$20.00

(1) Garden Heads fees are not fixed based on normal or dry year, rather they are calculated based on the normal or dry year irrigation rates. The GH annual fee will vary depending on the amount of water that is made available that year.

Irrigation Customer Reorganization

As stated previously, the District has two types of irrigation customers: Garden Heads and Irrigation Service. Based on discussions with the District, NewGen's Study included a consolidation of Garden Heads and Irrigation Service customers under the Irrigation Service rate structure. This necessitated the estimation of water demand of Garden Heads given a certain amount of Available Water. NewGen assumed each acre served by a Garden Head would use exactly the annual allocation of Available Water. Table 4-2 demonstrates the number of customers, parcels, and annual water demand in each type of service for TY 2027 using this assumption.

Table 4-2
Current Organization of Water Customer Classes and Demand – TY 2027

Class/Service	Number of Customers	Number of Acres	Annual Water Demand (AF)
Garden Heads	680	1,115	4,461 (1)
Irrigation Service	5,936	147,777	378,471

(1) Estimated amount of annual water demand for Garden Heads based on a normal water year.

Using this assumption of Normal Year demand, NewGen calculated the demand profile of the District's TY 2027 irrigation customers under the current tiered volumetric rate structure, shown in Table 4-3. Assuming each Garden Head used the annual allocation of 48 inches, TY 2027 Garden Head customer demand includes 24 inches of water in Tier 1 and 24 inches of water in Tier two per Garden Head acre. This totals to 4,461 AF a shown below.

Table 4-3
Total Test Year Water Demand – Current Normal Year Rate Structure

Volumetric Tier	Irrigation	Garden Heads	Total
Tier 1 (0–2 AF per AC)	252,464	2,230	254,694
Tier 2 (2–4 AF per AC)	106,833	2,230	109,063
Tier 3 (4–5 AF per AC)	10,720	0	10,720
Tier 4 (Over 5 AF per AC)	8,455	0	8,455
Total	**378,471**	**4,461**	**382,932**

Irrigation Volumetric Cost Allocation

The District's tiered volumetric rate structure has an intentional purpose. The tiered structure allows the District to effectively track the amount of water provided to each parcel on a per acre basis to ensure that the District can track when irrigators are using excess water above that year's Available Water.

As stated previously, for this Study the District directed NewGen to calculate an equalized rate for the first three volumetric tiers at a cost justified level for costs that are incurred to provide irrigation water up to the annual amount of Available Water and a fourth tier that captures costs the District incurs related to

irrigators that use more than Available Water. There are two components of costs the District incurs at a higher level when irrigators exceed the amount of Available Water:

- **Operating and Maintenance Costs:** The District incurs additional labor costs associated with winter groundwater recharge efforts. The forecasted test year amount of this additional groundwater recharge operating expense is approximately $135,000.
- **Capital Costs:** The District incurs annual capital costs related to compliance with the Sustainable Groundwater Management Act (SGMA). The annual amount of SGMA capital costs is $470,000. For the TY, $250,000 of capital costs related to SGMA capital are assigned to demand above the Available Water.

The District's volumetric tiers will continue to be adjusted in Normal and Dry years to properly capture demand within the Available Water in Tiers 1–3 and demand more than the Available Water in Tier 4. Therefore, NewGen's determination of a proper volumetric rate for each tier is based on the distinction between costs for demand up to the Available Water and costs for demand over the Available Water. For the purposes of this analysis, costs related to demand up to the Available Water are referred to as "Base" costs, and costs related to demand over the Available Water are referred to as "Extra" costs.

To determine cost-based volumetric tiers for the District's irrigation customers, it is necessary to determine the net amount of TY revenue required from the District's volumetric rates. Table 3-2 demonstrates the net TY 2027 revenue requirement of the irrigation system. However, the district generates most of its irrigation revenue from its fixed per acre fee. Table 4-4 demonstrates the amount of this revenue requirement that must be generated by the District's volumetric irrigation rates given that it gets a significant amount of revenue from its fixed annual fee per parcel.

Table 4-4
Volumetric Revenue Requirement Determination

	TY 2027 Revenue Requirement
Net Irrigation Revenue Requirement	$10,685,000
Less: Fixed Fee Revenue	$8,908,000
Net Volumetric Revenue Needed	$1,777,000
Base Volumetric COS (1)	$1,392,000
Extra Volumetric COS (2)	$385,000

(1) Base Volumetric COS equals Net Volumetric Revenue Needed less Extra Volumetric COS, which has been defined previously.

(2) As defined previously as additional groundwater recharge and SGMA costs.

Recommended TY 2027 Irrigation Volumetric Rates

Given the demonstration of Base and Extra volumetric costs in Table 4-4, the final volumetric rate calculation step is to assign costs and water demands to each volumetric tier and determine the cost-based rate for each tier. Table 4-5 demonstrates the cost assignment and resulting rate for Irrigation volumetric Tiers 1–3, which will be adjusted each year to capture 100% of Available Water.

Table 4-5
Calculation of Irrigation Volumetric Tiers – Base Costs

Volumetric Tier	Demand	Cost Allocation	TY 2027 Cost	Rate per AF
Tier 1–Tier 3 (Up to Available Water)	363,757	100%	$1,392,000	$3.83

Table 4-6 demonstrates the cost assignment and resulting rate for Irrigation volumetric Tier 4, which will capture irrigation demand more than Available Water.

Table 4-6
Calculation of Irrigation Volumetric Tiers – Extra Costs

Volumetric Tier	Demand	Cost Allocation	TY 2027 Cost	Rate per AF
Tier 4 (Over Available Water)	19,175	100.00%	$385,000	$20.08

It should be noted that Tiers 1 – 3 and Tier 4 will continue to be adjusted on a Normal Year and Dry Year basis, and that the calculated rates in the tables above will apply to different quantities of water in each tier depending on the Available Water each year.

Table 4-7 summarizes the cost-based TY 2027 Normal Year and Dry Year irrigation rates given the consolidation of Garden Heads into irrigation rate structure, the assignment of Base costs to Tiers 1 through 3, and Extra demand costs assigned to Tier 4. Note that although NewGen's COS calculated a cost-justified rate of $20.08 per AF for Tier 4 demand, we recommend that the District adopt a Tier 4 rate of $20.00.

Table 4-7
Recommended TY 2027 Irrigation Water Rates – All Customers

Rate Component	Normal Year	Dry Year
Annual Fixed Fee per Acre	$60	$68
Volumetric Rates (Normal and Dry Year):		
Tier 1–Tier 3 (Up to Available Water)	$3.83	$3.83
Tier 4 (Above Available Water)	$20.00	$20.00

As stated previously, NewGen's Test Year is a forecasted 2027 Test Year. The rates demonstrated in Table 4-9 represent cost-based rates for FY 2027. Based on the need of the District to meet its financial policies, it must increase irrigation rates in FY 2025, FY 2026, and FY 2027. NewGen's recommended rates in each of these fiscal years are demonstrated in Table 4-8.

Table 4-8
Cost Based Irrigation Rate Forecast

Rate Component	FY 2025	FY 2026	TY 2027
Annual Fixed Fee per Acre (Normal Year)	$60.00	$60.00	$60.00
Annual Fixed Fee per Acre (Dry Year)	$68.00	$68.00	$68.00
Volumetric Rates (All Years):			
Tier 1–Tier 3 (Up to Available Water)	$2.70	$3.23	$3.83
Tier 4 (Above Available Water)	$20.00	$20.00	$20.00

NewGen assumes that the District will maintain the practice of adjusting the annual allocation of water for Dry Year rates and the corresponding adjustment to the fixed annual fee to $68 per acre.

NewGen also recommends that due to the minimum amount of administrative effort required, a minimum charge of $200 per parcel be established. For example, if an irrigator owns a one-acre parcel, then according to the TY 2027 rates, that irrigator's bill would be $75.32 ($60 x 1 + $3.83 x 4). In this case, the irrigator would pay the minimum charge of $200 for that parcel.

Customer Impacts

If the District were to adopt the rates shown in Table 4-8, then the following customers would experience the changes in their annual bills as shown in Table 4-9. The table shows the impact to three typical Garden Head customers, one that is 1 acre, one that is 3 acres, and another that is 5 acres.

Three representative Irrigation customers are shown, each with a 40 AC parcel. The first is a "low user," using only 18" in a Normal Year. The second is representative of the District's average irrigation customer, with usage of 33" per acre in a Normal Year. The third represents a high, i.e., over allocation user, with use of 72" per acre.

Table 4-9
Sample Irrigation Customer Bills – 48 Inch Annual Allocation (1)

	FY 2024	FY 2025	FY 2026	TY 2027
Small Garden Head – 1 AC, 4 AF	$350	$200	$200	$200
$ Difference		*($150)*	*$0*	*$0*
% Difference		*(42.9%)*	*0.0%*	*0.0%*
Average Garden Head – 3 AC, 12 AF	$350	$212	$219	$226
$ Difference		*($138)*	*$6*	*$7*
% Difference		*(39.3%)*	*3.0%*	*3.3%*
Large Garden Head – 5 AC, 20 AF	$350	$354	$365	$377
$ Difference		*$4*	*$11*	*$12*
% Difference		*1.1%*	*3.0%*	*3.3%*
Low Irrigator – 40 AC, 60 AF	$2,520	$2,562	$2,594	$2,630
$ Difference		*$42*	*$32*	*$36*
% Difference		*1.7%*	*1.2%*	*1.4%*
Average Irrigator – 40 AC, 110 AF	$2,650	$2,697	$2,755	$2,821
$ Difference		*$47*	*$58*	*$66*
% Difference		*1.8%*	*2.2%*	*2.4%*
High Irrigator – 40 AC, 240 AF	$4,200	$4,432	$4,517	$4,612
$ Difference		*$232*	*$85*	*$96*
% Difference		*5.5%*	*1.9%*	*2.1%*

(1) Dollar and percent differences may not be exact due to rounding.

Section 5
CONCLUSIONS AND RECOMMENDATIONS

NewGen arrived at the following conclusions during the Study.

Conclusions

- The District's water system needs to increase rate revenues by approximately 6.1% cumulatively over the three-year period from 2025 through 2027.
- The District's Domestic water rates do not need to change over the period 2025–2027.
- The District should transition its Garden Head parcels into its Irrigation Service rate structure and charge them according to the annual available water each year.

Recommendations

- Do not change Domestic water rates in any year from 2025 through 2027.
- Transition Garden Heads to the Irrigation Service rate structure and, for the purposes of calculating and applying rates, assume each Garden Head uses the full available water per acre for each parcel.
- Increase volumetric irrigation rates to generate approximately 2.0% more irrigation revenue annually, as shown in Table 4-8 of this Water Report.
- Implement a minimum fee of $200 per year for each parcel.

Appendix A
ALLOCATION DETAIL BETWEEN ELECTRIC AND WATER

Table A-1
System Allocation of Debt

Debt Issuance	TY 2027 Amount ($)	Electric System Amount ($)	Water System Amount ($)	Electric System Allocation (%)	Water System Allocation (%)
Existing Debt Service					
Principal 2016 TID Rev Ref Bonds	$5,710,000	$5,527,000	$183,000	97%	3%
Principal 2019 TID Rev Ref Bonds	$5,374,000	$4,130,000	$1,244,000	77%	23%
Principal 2020 TID Rev Ref Bonds	$5,510,000	$5,510,000	$0	100%	0%
2016 TID Rev Refunding Bonds	$5,920,000	$5,729,000	$191,000	97%	3%
2020 TID Rev Refunding Interest	$5,399,000	$5,399,000	$0	100%	0%
2024 TID Rev Refunding Bonds	$2,103,000	$2,103,000	$0	100%	0%
Meter Deposit Interest Expenses	$75,000	$75,000	$0	100%	0%
Total Existing Debt Service	**$30,091,000**	**$28,473,000**	**$1,618,000**	**95%**	**5%**
Proposed Debt Service					
GM	$229,000	$229,000	$0	100%	0%
WRA	$2,024,000	$1,326,000	$698,000	66%	34%
EEOA	$5,425,000	$5,425,000	$0	100%	0%
PSA	$2,920,000	$2,884,000	$36,000	99%	1%
Total Proposed Debt Service	**$10,598,000**	**$9,864,000**	**$734,000**	**93%**	**7%**
Total Debt Service	**$40,689,000**	**$38,337,000**	**$2,352,000**	**94%**	**6%**

Table A-1 details the allocation of existing and proposed debt between the Electric System and Water System. Allocation information was provided to NewGen by TID.

Table A-2
System Allocation of Cash Funded Capital Projects by Fund

Capital Project Fund	TY 2027 Amount ($)	Electric System Amount ($)	Water System Amount ($)	Electric System Allocation (%)	Water System Allocation (%)
Fund 01					
General Manager	$1,080,000	$985,000	$95,000	91%	9%
Financial Services Admin	$1,282,000	$1,158,000	$124,000	90%	10%
Water Services Admin	$4,765,000	$3,574,000	$1,191,000	75%	25%
Engineering and Ops. Admin	$11,988,000	$11,676,000	$313,000	97%	3%
Power Supply Admin	$9,415,000	$9,415,000	$0	100%	0%
Total Fund 01 Capital	**$28,530,000**	**$26,808,000**	**$1,723,000**	**94%**	**6%**
DJPA Capital (1)	$565,000	$565,000	$0	100%	0%
DPRA Capital (2)	$17,000	$17,000	$0	100%	0%
Total Cash Funded Capital	**$29,112,000**	**$27,390,000**	**$1,723,000**	**94%**	**6%**

(1) Don Pedro Joint Account.
(2) Don Pedro Recreation Agency.

Table A-2 details the allocation of cash capital projects to the Electric and Water Systems. Allocations were assigned to each CIP project under the direction of TID. The summary of those allocated capital projects is shown above.

Appendix B
WATER FOR FUEL CALCULATION DETAIL

Table B-1
Total MWH Generation

	Test Year 2027
Conservation Rate	91.0%
Month	
1	21,576
2	40,784
3	47,675
4	43,942
5	48,026
6	38,239
7	46,784
8	36,162
9	28,458
10	18,336
11	5,072
12	16,494
Yearly Total	**391,548**

Table B-2
Value of MWH Generation at NP15

Month	On Peak 2027	Off Peak 2027	Total 2027
1	$1,338,953	$708,628	$2,047,581
2	$1,750,784	$1,056,576	$2,807,360
3	$1,829,170	$897,327	$2,726,497
4	$1,330,268	$659,348	$1,989,616
5	$1,232,544	$687,220	$1,919,765
6	$1,095,324	$641,222	$1,736,546
7	$2,230,648	$991,271	$3,221,919
8	$2,305,952	$932,060	$3,238,012
9	$1,375,196	$622,386	$1,997,583
10	$630,894	$318,257	$949,151
11	$183,320	$107,363	$290,682
12	$1,000,864	$570,296	$1,571,160
Yearly Total	**$16,303,917**	**$8,191,954**	**$24,495,871**

Table B-3
System Hydro Costs Allocation Paid by Electric Utility

Item	Multiplier	TY 2027
Total DJPA O&M [1]		$5,181,001
Total DPRA O&M [2]		$2,066,511
Existing Debt Service – Don Pedro	1.5	$3,005,321
Proposed DJPA Debt Service	1.5	$5,760,168
Proposed DJRA Debt Service	1.5	$342,865
Total DJPA Cash Funded Capital		$564,795
Total DJRA Cash Funded Capital		$16,530
Total		**$16,937,191**

Test Year	Electric	Irrigation	Total
Total DJPA O&M	$5,079,306	$101,695	$5,181,001
Total DJRA O&M	$2,066,511	$0	$2,066,511
Existing Debt Service – Don Pedro	$1,728,280	$275,268	$2,003,548
Proposed DJPA Debt Service	$3,574,164	$265,948	$3,840,112
Proposed DJRA Debt Service	$212,746	$15,830	$228,576
Total DJPA Cash Funded Capital	$564,795	$0	$564,795
Total DJRA Cash Funded Capital	$16,530	$0	$16,530

Test Year Allocation	Electric	Irrigation
Total DJPA O&M	98.0%	2.0%
Total DJRA O&M	100.0%	0.0%
Existing Debt Service – Don Pedro	86.3%	13.7%
Proposed DPJA Debt Service	93.1%	6.9%
Proposed DPRA Debt Service	93.1%	6.9%
Total DJPA Cash Funded Capital	100.0%	0.0%
Total DJRA Cash Funded Capital	100.0%	0.0%

Electric Portion of Test Year Expenses	Notes	2027
Total DJPA O&M	100% Electric	$5,079,306
Total DJRA O&M	100% Electric	$2,066,511
Existing Debt Service – Don Pedro	86.3% Electric	$2,592,420
Proposed DJPA Debt Service	93.1% Electric	$5,361,246
Proposed DJRA Debt Service	93.1% Electric	$319,119
Total DJPA Cash Funded Capital	100% Electric	$564,795
Total DJRA Cash Funded Capital	100% Electric	$16,530
Total Don Pedro Paid by Electric		**$15,999,928**

(1) Don Pedro Joint Account.

(2) Don Pedro Recreation Agency.

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THANK YOU!

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