COST OF SERVICE STUDY
MAY 2015
San Diego County Water Authority
Calendar Year 2016 Rates and Charges
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The San Diego County Water Authority (Water Authority) is a public agency serving the San Diego region as a wholesale supplier of water. The Water Authority purchases water from the Metropolitan Water District of Southern California (MWD) and obtains additional supplies pursuant to agreements commonly referred to as the Quantification Settlement Agreement (QSA). The Water Authority also has a water purchase agreement for desalinated water with Poseidon Resources, LLC. The Water Authority’s mission is to provide a safe and reliable supply of water to its 24 member agencies serving the San Diego region.

The Water Authority engaged Carollo Engineers (Carollo) to perform a Cost-of-Service Study to review and validate the Proposed Calendar Year (CY) 2016 water rates and charges, as well as calculate the new Supply Reliability Charge based on the Board’s direction. In meeting this scope, Carollo developed an independent rate model and reviewed the Water Authority’s existing cost of service methodology and financial model for compliance with American Water Works Association (AWWA) cost-of-service standards, industry best practices, Board policies, as described in Report Section 2.3, and California legal requirements, as described in Report Section 2.4. Together, these establish the cost-of-service standard that is referenced throughout this report.

Based on our independent review and consistent with the finding in the 2014 Cost of Service Report, Carollo has determined that the amount of money reasonably anticipated to be generated through the Water Authority’s proposed CY 2016 water rates and charges, when combined with other Water Authority revenues, is reasonable to recover the costs of the Water Authority’s activities. It is our professional opinion that the manner in which each of the rates and charges are allocated to the Water Authority’s member agencies bears a fair, reasonable, and logical relationship to each member agency’s burdens on or benefits from Water Authority services, thus complying with legal requirements, cost-of-service standards, industry best practice, and Board policy requirements as discussed in this report.

1.1 Fiscal Sustainability Process

The Board, member agencies, and Water Authority staff engaged in an 18-month collaborative process to identify and address issues necessary to maintain the long-term fiscal sustainability of the Water Authority. Central to this effort was a detailed review of the Water Authority’s revenue structure, and evaluating potential enhancements that would strengthen the Water Authority’s future fiscal health. From this process, three rates and charges recommendations were unanimously approved by the Board and are being implemented in CY 2016. The modifications are as follows:
Supply Reliability Charge (SRC) – This charge recognizes the importance of equitably recovering the cost of the Water Authority’s investments in long-term water supply reliability in accordance with cost of service principals and California law. As adopted by the Board, the SRC recovers a portion of the water purchase agreement costs associated with the Carlsbad Desalination supply and the Imperial Irrigation District’s (IID) water transfers. In summary, the SRC is designed to:

- Recognize the cost and benefit of supply diversification
- Balance with local supply development
- Ensure member agency and inter-generational equity

The adopted SRC establishes a rate that benchmarks the cost differential between MWD water, the Water Authority’s least reliable water supply, and the new, firm supply.

Non-Commodity Revenue Offsets – Based on the CY 2014 Cost of Service recommendations, it was determined that the Treatment Rate should proportionally benefit from offsetting revenues to which the rate contributes. The Treatment Rate was implemented after the other four rate categories had been established and was originally considered as a separate and stand-alone charge. Beginning in CY 2016, the Treatment Rate will receive a revenue offset similar to all other rate categories.

Transitional Special Agricultural Water Rate (TSAWR) Program – The TSAWR provides a discounted cost of water to participating agricultural customers in exchange for a reduced level of water reliability. There are two components to the TSAWR rates - storage charge exemption and supply discount. TSAWR participants are exempt from funding the storage charge as they have agreed to curtail water demands during shortages. The supply discount also allows participants to purchase water at MWD’s Tier 1 rate, because these customers would be required to reduce demands to stay within the Tier 1 allocation.

Carollo believes that the three rates and charges recommendations proposed as part of the Fiscal Sustainability Process, and adopted by the Board, align with cost of service principles, and reflect the cost of providing services to different system users.

1.2 RATE AND CHARGES

The Water Authority imposes several different types of water rates and charges that are collected from the member agencies. These include volumetric commodity rates that are collected monthly per unit of metered water delivered to each agency (e.g., the supply, transportation, and treatment rates) and service charges that are apportioned among the member agencies according to their respective three or five-year rolling average of water
purchases from the Water Authority (e.g., three years for customer service and storage, and five years for supply reliability charges). The water rates are set as a unit price per acre-foot for actual water delivered. The customer service and storage charges recover costs for facilities and services that are provided generally and are apportioned in a manner that is designed to account for annual fluctuations in water demands and demand patterns commonly resulting from weather conditions and conservation requirements.¹

In addition to these water rates and charges, the Water Authority recovers at least 25 percent of fixed annual expenditures through a combination of ad valorem property taxes and a water availability standby charge, which are imposed on properties within the Water Authority’s service area, and through the Infrastructure Access Charge (IAC), which is an annual service charge imposed on member agencies and apportioned based on their respective total connected meter capacity, a measure of an agency’s maximum potential to take water from the Water Authority. The Water Authority also imposes System Capacity and Treatment Capacity Charges on ultimate users of water obtaining new and updated water meters in order to fairly and reasonably recover the cost to provide system capacity for new users and collects revenues through the Standby Availability Charge and property taxes.

A description of each water rate and charge category is as follows:

**Customer Service:**

The Customer Service charge is a commodity based fixed charge set to recover costs that are necessary to support the functioning of the Water Authority, to develop policies and to implement system-wide programs.

**Storage:**

The Storage charge is a commodity based fixed charge set to recover costs associated with the Emergency Storage Program (ESP) and Carryover Storage Program (CSP). The ESP and CSP are a system of reservoirs, interconnected pipelines, and pumping stations designed to make water available to the San Diego region in the event of an interruption in imported water deliveries and in the case of the CSP to provide operational flexibility and drought protection.

**Supply Reliability Charge:**

The Supply Reliability Charge is a new commodity based fixed charge established to recover a portion of the Carlsbad Desalination Plant and the IID transfer water costs. The charge is set equal to the difference between the supply cost of desalination and IID transfer water purchases and a like amount of water purchased at the MWD Tier 1 rate

¹ Customer Service Charge allocation excludes member agency wheeled water.
multiplied by 25% and apportioned according to a five-year rolling average of water purchases.

**Supply:**
The Supply rate is a volumetric charge that recovers the cost of water supply incurred by the Water Authority, including the full cost of purchase of water from MWD at the delivery point, payments to the IID for transfer of conserved water, costs associated with obtaining conserved water from the Coachella and All-American Canal Lining Projects, costs of MWD wheeling for non-MWD water supplies (e.g. QSA supply exchange costs), other costs associated with acquisition of supplies and implementation of the Quantification Settlement Agreement (QSA), and supply and acquisition costs related to the Poseidon water purchase agreement associated with the Carlsbad Desalination Project.

**Transportation:**
The Transportation rate is a volumetric charge set to recover capital, operating, and maintenance costs of the Water Authority’s water delivery facilities, including all facilities used to physically transport the water to member agency meters.  

**Treatment:**
The Treatment rate is a volumetric charge designed to recover the Water Authority’s cost of treating water. The Melded M&I Treatment Rate includes the costs of purchasing treated water from MWD, the operating and capital costs associated with the Water Authority’s agreement with Helix Water District’s Levy Water Treatment Plant, operating costs associated with the Olivenhain Treatment Plant, and the operating and capital costs associated with the Twin Oaks Valley Treatment Plant.

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2Costs associated with facilities covered by the East County Facility Agreements are not included in Transportation, but relate to treatment services in connection with the Helix Water District’s Levy Water Treatment Plant and recovered through the Treatment rate.
1.3 WATER AUTHORITY RATE-SETTING PROCESS

On an annual basis, the Water Authority develops proposed rates and charges, which it
presents to the Board of Directors for adoption. Each year, the Water Authority undertakes
the following cost of service processes to determine water rates and charges:

**Step 1:**
Establish the revenue requirement – determine the total amount of revenues needed to the
recover the Water Authority’s annual operating and capital expenditures.

**Step 2:**
Allocate the revenue requirement and offsetting non-commodity revenues to rate categories
to determine the net revenue requirement for each category.

**Step 3:**
Determine the legal rates and charges based upon the net revenue requirements, water sales
projections, and other key financial management metrics.

**Step 4:**
Allocate fixed charges to member agencies based on specific allocation methodologies.

The Water Authority’s methodology and application remains consistent with the AWWA for
cost-of-service guidelines, as well as existing Board policies and legal requirements stated
herein. Rates are designed to recover all direct, indirect, and other costs of providing water
and water services that are not recovered through other revenues such as taxes, assessments,
or other charges. Throughout the process, the Water Authority identifies major cost drivers
and aligns them to specific rate and charge categories.

1.4 CAROLLO INDEPENDENT REVIEW PROCESS

Carollo independently performed Steps 2 through 4 above, when developing the proposed
CY 2016 rates and charges. The purpose of this cost-of-service process is to: (1) identify
which costs are recovered through water rates and charges; (2) allocate the Water Authority
costs into functional rate categories; (3) update the rates and use of offsetting revenues to
fairly and reasonably recover system expenditures from member agencies; and, (4)
appropriately calculate non-commodity revenues.

In order to determine the costs to be recovered by water rates and charges, Carollo relied
upon cost projections, reserve requirements, and revenue policies provided by the Water
Authority. To perform its analysis Carollo relied upon the proposed Fiscal Years (FY) 2016
and 2017 budget cost projections provided by the Water Authority’s Finance Department
and reviewed the 2014 Comprehensive Annual Financial Report, debt service schedules,
Board policies, bond official statements, and summary outputs from the Water Authority’s
rate model. Additionally, Carollo worked with the Water Authority’s Finance staff to review the cost-of-service methodology and process.

In our 2014 Cost of Service review, Carollo conducted interviews with select divisions within the Water Authority to discuss the functional allocation approach and metrics for assigning operating costs to rate categories. The Water Authority’s allocation approach is consistent with the 2014 study and remains unchanged.

The results of this independent review and analysis confirm the CY 2016 rates and charges calculated by the Water Authority. The details of this analysis are presented within the body of this report.

1.5 SUMMARY OF FINDINGS

The Water Authority has developed a clear and defensible process to allocate system expenditures to rate categories and fairly and reasonably recover those expenditures from member agencies. The analysis performed by Carollo has confirmed that the Water Authority’s cost-of-service approach and the proposed CY 2016 rates and charges as determined in this report comply with cost-of-service principles, industry best practices, and applicable legal requirements.

Based on our independent review and rate development, the proposed CY 2016 cost of service water rates and charges are illustrated in Table 1 below.

**TABLE 1 SUMMARY OF PROPOSED CY 2016 WATER RATES AND CHARGES**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service Charge ($M)</td>
<td>$26.4</td>
</tr>
<tr>
<td>Storage Charge ($M)</td>
<td>$63.2</td>
</tr>
<tr>
<td>Supply Reliability Charge ($M)</td>
<td>$26.0</td>
</tr>
<tr>
<td>Melded M&amp;I Supply Rate ($/AF)</td>
<td>$780</td>
</tr>
<tr>
<td>Melded M&amp;I Treatment Rate ($/AF)</td>
<td>$280</td>
</tr>
<tr>
<td>Transportation Rate ($/AF)</td>
<td>$105</td>
</tr>
</tbody>
</table>
2 Introduction

Carollo conducted an independent review of the Water Authority’s CY 2016 water rates and charges. The purpose of this Cost-of-Service Study was to calculate the proposed CY 2016 water rates and charges consistent with cost-of-service principles and the AWWA M1 guidelines, Board policy, and legal requirements. The results of this study are outlined within the body of this report.

The cost-of-service and rate development review process consisted of the following steps:

- **Revenue Requirement Analysis**
  - Reviewed the total revenues required to fund operations, capital, debt service and coverage, and policy requirements.

- **Functional Allocation by Rate Category**
  - Allocate the revenue requirements and offsetting revenues to the Water Authority’s five water rate and charge categories in a fair and equitable manner.

- **Water Rates and Charges**
  - Set rates to recover the revenue requirements from member agencies based on water sales projections.

- **Member Agency Allocation**
  - Allocate expenditures to each member agency based on water demand patterns and other key metrics.

Based on this study review and in our professional opinion, we have concluded that the Water Authority’s CY 2016 rates and charges are consistent with AWWA cost-of-service principles, Board policies and legal requirements, and appropriately recover costs from Member Agencies as described herein.

2.1 Background on Existing Rates and Charges

The Water Authority sets water rates and charges, when combined with other revenues, which are sufficient to pay operating expenses, provide for maintenance and repair of facilities, provide for payment of principle and interest on debt, and provide reasonable reserves consistent with bond covenants and sound fiscal management. As a public agency, the Water
Authority sets rates and collects other revenues to meet all reasonably anticipated costs of its operations as required by law.

On June 27, 2002, the Water Authority adopted Ordinance No. 2002-03 establishing the current revenue structure, which consists of: ad valorem property taxes, including payments of member agencies in-lieu of taxes; a Water Standby Availability Charge levied pursuant to § 5.2 of the County Water Authority Act; an Infrastructure Access Charge imposed on member agencies as a condition of maintaining connections to Water Authority facilities; a capacity charge levied pursuant to § 5.9 of the County Water Authority Act; and rates and charges for delivery and supply of water, use of facilities, and provision of other services. This revenue structure is reflected in § 5.00.050 of the Water Authority Administrative Code.

The June 2002 Board action unbundled the then uniform commodity rate, creating separate commodity rates and charges for customer service, storage, supply, and transportation. This action was the result of a multi-year work effort involving the member agencies, Water Authority staff, and consultants. The unbundled rates and charges took effect January 1, 2003. With the development of the Twin Oaks Water Treatment Plant, treatment was later added as the final functional rate category in 2006. In March 2015, the Board added a Supply Reliability Charge for inclusion in CY 2016 rates and charges as described in this report.

2.2 CRITERIA FOR FINDINGS AND RECOMMENDATIONS

To confirm the appropriateness and general application of AWWA cost-of-service principles, Board policies, and legal requirements, Carollo applied the following framework throughout the review:

- Does the cost allocation approach result in a fair, reasonable, and quantifiable connection between cost of service and benefit received?
- Is the allocation approach and methodology consistent with standards established in the AWWA M1 manual, meet Board policies, and adhere to applicable legal requirements?
- Have the policies and standards been applied consistently by the Water Authority? Is it likely that the allocation approach will be appropriate for use by the Water Authority in the future?
- Are there issues or processes that may be appropriate to highlight for possible financial review?

The review presented in this report applies these criteria to the existing revenue requirement and water rate and charge methodology utilized by the Water Authority.
2.3 KEY GOVERNING BOARD POLICIES

In setting its rates and charges, the Water Authority must first meet cost-of-service requirements, in which rates and charges may not exceed the reasonable cost of providing the services, as well as clearly demonstrating the nexus between the costs allocated and services provided to customers. As this requirement is achieved, the rates must also adhere with adopted Board policies, which serve as the basis for the determination of the total revenue requirement as well as the proportion of the revenue requirement to be recovered by fixed charges and variable commodity rates. Several key Board Policies are highlighted below and can be found in the appendix of this report.

2.3.1 Infrastructure Access Charge

In 1998, Resolution No. 98-26, the Board established the Infrastructure Access Charge (IAC). The intent of the IAC is to provide the Water Authority with a more appropriate balance of fixed and commodity revenues. Prior to the implementation of the IAC, the Water Authority’s revenues had a greater dependency on variable revenues that fluctuated with demand and did not adequately align with the existing cost structure. As such, the IAC was designed to be independent of commodity sales and the new business development cycle and generate a minimum 25 percent ratio of fixed revenues to fixed expenditures. Resolution No. 98-26 is included as Appendix A.

2.3.2 Ordinance No. 2002-03

Following development and implementation of the IAC, the Water Authority reviewed the existing rate structure and redesigned the rate structure in 2002. Ordinance No. 2002-03 transitioned the rate structure from a historical unit price (“postage stamp”) water rate to assigning the revenue requirements to functional categories. The rate structure was split into fixed and variable components. The fixed water rate categories are comprised of the Storage and Customer Service charges. The variable water rate categories encompass the Transportation, Melded M&I treatment, and Melded M&I Supply rates. This transition further aligned the Authority’s expenditure and cost recovery nexus. The ordinance in its entirety is included as Appendix B.

2.3.3 Financial Management Amendment (2006)

In 2006, following the recommendations of the Rate Model Workgroup (RMWG) and Administrative and Finance Committee, the Board amended the Water Authority’s financial policies regarding the Rate Stabilization Fund (RSF) and Debt Service Coverage Ratio (DSCR). As part of the amendments, the Board established a target funding level for the RSF that better protects the Water Authority against the financial impact of 2.5 years of wet weather (3.5 years max). In addition, it established a target DSCR of 1.50x, which is above the minimum legal bond covenant of 1.20x.
The overall benefits of the amendments included reduced rate volatility, increased protection against wet weather, a transparent and flexible RSF framework, and increased cash funding of the Capital Improvement Program (CIP). The RSF also provides a mechanism for rate smoothing and source of emergency funding, as necessary. Furthermore, it strengthened key financial ratios—higher debt service coverage ratio, decreased debt ratio and increased cash days—to support the maintenance of the Water Authority’s AA+ credit ratings and access to lower interest rates. The Board Action, implementing the RMWG Financial Policy Proposal is included as Appendix C.

2.3.4 Administrative and Finance Committee Recommendations (March 2015)

Following a collaborative effort over the previous 18 months, on March 26, 2015, the Board approved the Administrative and Finance Committee’s Fiscal Sustainability and Transitional Special Agricultural Water Rate Program recommendations. The committee was tasked with identifying issues related to the long-term fiscal sustainability of the Water Authority’s revenue structure and evaluating enhancements that would strengthen the Water Authority’s fiscal health.

The resulting and approved recommendations included (1) the addition of the Supply Reliability Charge, as defined in the A&N Technical Services memorandum to the Water Authority’s rate and charge structure; (2) the allocation of non-commodity revenues to all rate and charge categories including treatment, as recommended in the 2014 Cost of Service Report; (3) the permanent application of the debt and equity payments for the Carlsbad Desalination Plant to the Supply Rate; and (4), the extension of the Transitional Special Agricultural Water Rate Program through December 31, 2020.

2.4 Overview of Legal Cost-of-Service Requirements

The Water Authority’s rates must adhere to California constitutional and statutory requirements. In general, California law requires agencies imposing water rates and charge to demonstrate a nexus between the cost of providing services and the service or benefits received. Beyond the cost-of-service requirements imposed by the constitution and general statutory law, the Water Authority must also adhere to the County Water Authority Act.

Section 7 (i) of the County Water Authority Act states that the “board of directors, so far as practicable, shall fix such rate or rates for water as will result in revenue which will pay the operating expenses of the authority, provide for repairs and maintenance, and provide for the payment of interest and principal of the bonded debt.” The revenue requirement (e.g., “costs”) described in this report is grounded on this statutory requirement, the Water Authority’s General Resolution, and sound fiscal management. These costs are then apportioned to the member agencies through the allocation of fixed charges and variable rates described in the adopted rate structure according to service function. The apportionment is accomplished in accordance with standards established by California law,
including the provisions summarized below, which, while stated a bit differently, essentially describe the same cost-of-service standard.

**Proposition 26** – This proposition was adopted by the voters in November 2010. Among other things, it amended California Constitution article XIII C, section 1 to add a definition of “tax.” As defined by Proposition 26, a tax means “any levy, charge, or exaction of any kind imposed by a local government” with certain enumerated exceptions. There are two applicable exceptions:

- The exception for a “charge imposed for a specific benefit conferred or a privilege granted 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 conferring the benefit or granting the privilege,” and
- The exception for a “charge imposed 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.”

Proposition 26 establishes that: “The local government 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.”

**Government Code Section § 50076** – This section of the Government Code was adopted in 1979, following the adoption of Proposition 13 in 1978. It provides that special taxes “shall not include any fee which does not exceed the reasonable cost of providing the service or regulatory activity for which the fee is charged.”

**Government Code Section § 54999.7** – This is another section that grounds public agency rate-setting on cost-of-service principles and states that fees “for public utility service, other than electricity or gas, shall not exceed the reasonable cost of providing the utility service.” It also provides that the fees will be “established in consideration of service characteristics, demand patterns, and other relevant factors.”

**County Water Authority Act Section 5 (13)** – This provision of the County Water Authority Act provides that in setting rates, “the board may establish reasonable classifications among different classes and conditions of service, but rates shall be the same for similar classes and conditions of service.” The Water Authority’s General Counsel has advised Carollo that this provision requires that rates be non-discriminatory and that differences in rates or rate apportionment be based on service differences, such as with the non-allocation of storage charge to agricultural customers. The General Counsel has also advised that this section may be construed consistently with the Constitutional and statutory cost-of-service requirements described above.
2.5 OVERVIEW OF GENERALLY ACCEPTED RATE-SETTING STANDARDS

In addition to formal Board policies and objectives, the AWWA established a general set of principles used to guide the development of water rates. These principles were developed and published in the M1 Manual – Principles of Water Rates, Fees, and Charges. These guiding principles outline a consistent, universal approach and minimum standard that is employed by most agencies when setting rates and charges. The M1 Manual denotes that there is no prescribed single approach for establishing cost-based rates. Rather, agencies must exercise judgment to align rates and charges with local conditions and requirements, as well as applicable state law.

These guidelines, along with applicable California law, the Board’s policies, and industry best practices have been utilized within the Water Authority’s rate-setting framework to help develop water rates and charges that are cost based and fairly, reasonably, and lawfully quantified and allocated to comply with the legal requirements outlined in Report Section 2.4. Throughout this report, compliance with industry standards shall refer to the AWWA M1 manual and industry best practices.
3 REVENUE REQUIREMENTS

A revenue requirements analysis defines the annual system revenue to be recovered through water rates and charges. The revenue requirement is typically derived of five components: Operations & Maintenance Expenditures; Annual Debt Service; Policy Requirements & Coverage; Capital Expenditures; and, Offsetting Revenues.

Table 2 outlines the Water Authority’s CY 2016 revenue requirements.

<table>
<thead>
<tr>
<th>REVENUE COMPONENT</th>
<th>CY 2016 TOTAL</th>
<th>DESCRIPTION</th>
<th>REPORT SECTION</th>
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<tbody>
<tr>
<td>Operating Costs</td>
<td>$47.07</td>
<td>The Operating Departments Budget funds the day-to-day operations of the Water Authority.</td>
<td>3.1</td>
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<tr>
<td>Debt Service (LTD + STD)</td>
<td>$122.80</td>
<td>The Water Authority uses debt to fund capital and refund previous debt (long-term debt only).</td>
<td>3.3.1</td>
</tr>
<tr>
<td>Offsetting Revenues</td>
<td>($75.95)</td>
<td>Additional revenues generated from sources, outside traditional water rates and charges are applied as a credit to reduce required rates and charges revenues. Includes the IAC, standby availability charges, system and treatment capacity charges, property taxes, interest earnings, and miscellaneous revenues.</td>
<td>3.4</td>
</tr>
<tr>
<td>Operating Rev Req Before Coverage</td>
<td>$93.92</td>
<td>Revenue requirements associated with the Water Authority’s operating costs, debt service, and offsetting revenues.</td>
<td></td>
</tr>
<tr>
<td>Misc. Cost Recovery</td>
<td>$17.55</td>
<td>Miscellaneous Cost Recovery includes seepage and evaporation, recovery of working capital for the San Vicente dam raise, local supply development, and Twin Oaks Valley WTP reimbursement</td>
<td>3.2</td>
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<tr>
<td>Rev Req Before Coverage</td>
<td>$111.47</td>
<td>Revenue requirements including miscellaneous cost recovery.</td>
<td></td>
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<tr>
<td>Remaining Coverage &amp; Reserve Driven Needs</td>
<td>$43.74</td>
<td>Revenue requirements associated with meeting the Water Authority’s Financial Management Policies.</td>
<td>3.7</td>
</tr>
<tr>
<td>Water Sales Rev Req</td>
<td>$155.21</td>
<td>Total required revenues including coverage and reserve needs.</td>
<td></td>
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The following Report Section delineates the cost categories included in the Water Authority’s annual revenue requirement analysis.

### 3.1 OPERATIONS AND MAINTENANCE COSTS

As part of the multi-year budget, an operating forecast is developed by the Water Authority’s various departments. For the Water Authority, operating budget expenditures account for most of the day-to-day expenditures for operation. The operating budget expenditures include: Administrative Services, Colorado River Program, Engineering, Finance, General Counsel, General Manager, MWD Program, Operations and Maintenance, Public Outreach and Conservation, and Water Resources. For CY 2016, the Water Authority’s operating costs are projected to be $47.07 million.

<table>
<thead>
<tr>
<th>TABLE 3 DETERMINATION OF OPERATING COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPARTMENT</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>FY 2016 Operating Budget</td>
</tr>
<tr>
<td>FY 2017 Operating Budget</td>
</tr>
<tr>
<td>Total FY 2016 and 2017 Operating Costs used for rates and charges</td>
</tr>
<tr>
<td>Calculated CY 2016 Operating Costs$^{(2)}</td>
</tr>
</tbody>
</table>

**Notes:**

(1) Presented in million dollars, calculations in tables may not foot due to rounding.

(2) CY 2016 Operating Costs are calculated by dividing the Total FYs 2016 and 2017 Operating Costs used for rates and charges by two, as the calendar year rates will collect half of each fiscal year costs.

### 3.2 MISCELLANEOUS COST RECOVERY

Miscellaneous Cost Recovery consists of expenses not included in annual Operating Costs and other cost recoveries to the Water Authority. Miscellaneous Cost Recovery is an important element of the Water Authority’s annual revenue requirements.

Miscellaneous Cost Recovery totals $17.55 million in CY 2016, which is allocated to rate categories based on the nature of the cost that was incurred. Miscellaneous Cost Recovery includes the following:

**Stored Water Fund:** This is the working capital cost to purchased water for the filling of the San Vicente Dam. Due to the long-term benefit of water reliability, the cost of the dam fill is amortized over 6 years in order to fairly and reasonably spread the expenditure across member agencies based on a multi-year water demand trend. Costs are allocated to the storage rate component to adequately recover the associated cost while mitigating the overall rate impact. A total of $5.98 million will be recovered through the CY 2016 rates.

**Emergency Storage Project Evaporation:** This cost accounts for the cost of purchased water that is lost due to surface water evaporation. As this is a function of storage, the $6.77 million
cost has been allocated to the storage rate component and will be recovered through the CY 2016 rates. The CY 2016 cost represents an increase from CY 2015 due to greater expected storage and evaporation levels.

**Local Water Supply Development:** This is the cost to implement local water supply projects within the Water Authority’s service area in order to provide a long-term reliable and sustainable supply. The cost is recovered through the Customer Service charge to recognize the general region benefit. A total of $4.03 million will be recovered through the CY 2016 rates.

**Twin Oaks Reimbursement:** This reimbursement reflects a 25-year payback to customer service for the upfront investment in the implementation of the Twin Oaks Valley Water Treatment Plant. This original investment was funded through use of Pay-as-you-Go (PAYGO) funds, which had been historically collected from the non-treatment functional rate categories. The cost is recovered through the treatment charge. A total of $0.77 million will be recovered through the CY 2016 rates.

### 3.3 CAPITAL COSTS

The Water Authority’s existing CIP is based on the results of planning studies, including the 2010 Urban Water Management Plan (UWMP) and the 2002 Regional Water Facilities Master Plan and extends through 2030. These CIP projects include a mix of new facilities that will add capacity to existing conveyance, storage, and treatment facilities, as well as repair and replace aging infrastructure. The Water Authority utilizes both PAYGO and debt financing to fund capital improvements.

#### 3.3.1 Annual Debt Service

The Water Authority finances major capital improvements, in part, by issuing debt for two primary reasons. First, given the size of recent capital projects, the Water Authority does not have the financial reserves available that would otherwise be required to fund the CIP nor would it be reasonable to increase the water rates and charges in order to cash fund these improvements. Secondly, spreading the debt service costs for the project over the repayment period provides intergenerational equity by effectively spreading the financial burden between both existing and future users of the system. This approach allows the Water Authority to better match the cost of improvements with those benefitting from the improvements. This methodology is internally consistent with the development of the Water Authority’s System and Treatment Capacity Charges.

Finally, as an auxiliary benefit to the use of debt, the cash generated from meeting the Water Authority’s coverage requirements provides additional cash that can be used to fund PAYGO projects.
Excluding the Build America Bonds (BABs) subsidy and Helix apportioned debt, the net FY 2016 long-term debt service expenditure for allocation is $115.62 million. Short-term debt service expenditures, excluding Helix, for FY 2016 are projected at $8.91 million. Helix related debt is $1.21 and $0.18 million for long-term and short-term debt service respectively. The sum of these debt obligations reflect the Water Authority's recent debt restructuring and ability to take advantage of optimal market conditions in order to reduce its debt burden. These actions include the following:

- **Series 2004A Certificates of Participation (COPs)** – The defeasance of these bonds reduced FY 2016 debt service by $2.2 million or provided approximately $8/AF in rate and charge relief given the current reduced water sales projections and reduced senior lien debt service coverage.

- **Series 2008A COPs** – Restructured FY 2016 debt service payments by defeasing $12.1 million in principal or provided approximately $52/AF in rate and charge relief given the current reduced water sales projections and reduced senior lien debt service coverage. This action is a one-time reduction in debt service and only impacts FY 2016 debt service payments.

- **Rate Stabilization Fund draw** – With the recent debt reductions, the Water Authority is projected to be able to draw $8 million from the RSF in FY 2016, which will help to mitigate the CY 2016 rate and charge increases.

### 3.3.2 Non-Debt Capital Expenditures

To maintain its targeted capital structure, the Water Authority augments its use of short and long-term debt by funding a portion of its capital program with cash through its PAYGO Funds. The Water Authority amortizes the cash funds used for capital to reduce the immediate and cyclical impact on rates. In addition, as stated above, excess funds derived from meeting the Water Authority’s targeted debt coverage ratio enables cash funding of capital projects. The Water Authority is projecting an estimated $25 million in cash expenditures for capital projects.

### 3.3.3 Depreciation

The Water Authority does not adjust rates to recover system depreciation. Rather, the Water Authority operates on a cash basis and the cost to rehabilitate and improve the system is accounted for through direct capital reinvestments. The cost of renewing the system over time is captured in the on-going renewal and replacement related CIP as included in the 30-year budget. This approach also creates consistency with the Water Authority’s capacity charge methodology, which excludes depreciated asset values from the buy-in cost basis of the charge, and then recovers a proportionate share of the CIP through the charge. It is important to note that once a meter is connected to the system, the user is then obligated to fund a proportionate share of future capital improvements and ongoing debt obligations through the water rates and charges.
3.4 OFFSETTING REVENUES TO REDUCE REVENUE REQUIREMENTS

Beyond water rates and charges, the Water Authority collects revenues through other various funding sources. These revenues provide a credit against the total revenues that must otherwise be collected annually from rates. Offsetting revenues include the IAC, standby availability charges, system and treatment capacity charges, property taxes, interest earnings, and miscellaneous revenues.

Table 4 details the offsetting revenues and provides a brief description source of revenue.

<table>
<thead>
<tr>
<th>REVENUE COMPONENT</th>
<th>CY 2016 REVENUES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Capacity Charge</td>
<td>$13.84</td>
<td>The charge is designed to recover a proportionate share of the capital costs associated with providing services to new connections in the Water Authority’s service area.</td>
</tr>
<tr>
<td>Treatment Capacity Charge</td>
<td>$0.30</td>
<td>Helps fund the Water Authority’s regional water treatment facility. The charge recovers a portion of the capital costs from the future users of the Treatment facility.</td>
</tr>
<tr>
<td>Standby Availability Charge</td>
<td>$11.25</td>
<td>This fixed charge, which is in the nature of a special assessment, is limited by statute and funds some of the capital costs associated with maintaining the system and is $10 per acre per year, or $10 for a parcel less than one acre per year. The charge was first established prior to the adoption of Proposition 218, and has been continuously levied pursuant to law at pre-Proposition 218 levels.</td>
</tr>
<tr>
<td>PAYGO Earnings</td>
<td>$1.01</td>
<td>Interest earnings on the Water Authority’s PAYGO Fund.</td>
</tr>
</tbody>
</table>
### OPERATING OFFSETS

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Tax</td>
<td>$11.82</td>
<td>The Water Authority receives a portion of the 1% property tax pursuant to the Revenue and Taxation Code.</td>
</tr>
<tr>
<td>IAC</td>
<td>$30.5</td>
<td>The IAC is an annual service charge that is imposed on member agencies and apportioned based on all retail water meters within the Water Authority’s service area. The IAC maintains a minimum ratio of projected fixed revenues to projected fixed expenditures of 25% in any future fiscal year, excluding fixed water rate revenues.</td>
</tr>
<tr>
<td>Interest Earnings</td>
<td>$1.94</td>
<td>Interest earnings on operating funds.</td>
</tr>
<tr>
<td>Twin Oak Reimbursement</td>
<td>$0.77</td>
<td>Cost reflects a 25-year payback to customer service for the upfront investment in the implementation of the Twin Oaks Valley Water Treatment Plant.</td>
</tr>
<tr>
<td>Misc. Revenue</td>
<td>$4.33</td>
<td>Misc. Revenues primarily consists of revenues from the Water Authority’s long-term agreements to sell hydroelectric power generated from two locations to San Diego Gas and Electric (SDG&amp;E). In addition, it includes reimbursements for operating grants and other nominal revenues.</td>
</tr>
</tbody>
</table>

**Total Offsets** $75.95

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### 3.5 INFRASTRUCTURE ACCESS CHARGE

In addition to revenues generated through the five rate and charge categories, the Water Authority has additional revenues used to meet the annual rate revenue requirements. The most significant of these offsetting revenues is the IAC. The IAC was implemented in 1998 by Board policy to reduce financial vulnerability due to fluctuations in annual Water Authority revenues. This is accomplished by increasing the amount of fixed expenditures recovered through fixed charges. The IAC was designed to generate a minimum 25 percent ratio of fixed revenues to fixed expenditures.

Consistent with the Board policy, the IAC is comprised of 25 percent of the forecasted four-year average of Debt Service (long- and short-term debt) and 80 percent of forecasted four-year average O&M costs, times 110 percent. Based on the results of an expenditures analysis at the time of implementation, the Water Authority concluded that roughly 80 percent of the agency’s operating costs were fixed (e.g., personnel costs) and did not vary based on water sales. Additionally, the level of fixed expenditures to be recovered through the IAC was established to mitigate fluctuations in net revenues due to water sales volatility that the Water Authority had experienced. Finally, in establishing the IAC Policy, the
Board increased the 25 percent fixed expenditure recovery by 10 percent to account for potential fluctuations in expenditures and offsetting revenues, as well as cost yet to be identified in the four year budget forecast.

From this, the forecasted four-year average of the Water Authority’s Standby Availability Charge and property tax revenues are credited to recognize other fixed revenues. As detailed below, the IAC provides $30.50 million in revenue offsets against the required water rate and charges required revenues. The IAC is allocated to each member agency based upon the previous year’s total household meter equivalents (as reported by the member agencies). A meter equivalent is based on a meter size less than 1-inch. For CY 2016, the monthly IAC is proposed at $2.76 per household meter equivalent. Table 5 illustrates the calculation of the proposed IAC.

**TABLE 5 INFRASTRUCTURE ACCESS CHARGE CALCULATION ($ IN MILLIONS)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Term Debt Service</td>
<td>$126.54</td>
</tr>
<tr>
<td>Misc LTD Fees</td>
<td>0.02</td>
</tr>
<tr>
<td>Total Short Term Debt Service and Costs</td>
<td>11.75</td>
</tr>
<tr>
<td>Administration and Maintenance times 80%</td>
<td>38.40</td>
</tr>
<tr>
<td>Transportation O&amp;M times 80%</td>
<td>0.04</td>
</tr>
<tr>
<td>Total Local Supply Development Costs times 80%</td>
<td>3.22</td>
</tr>
<tr>
<td>ESP Evaporation and System Losses times 80%</td>
<td>6.74</td>
</tr>
<tr>
<td>Desalination FY Pipeline Cost</td>
<td>8.95</td>
</tr>
<tr>
<td><strong>Total Fixed Costs</strong></td>
<td><strong>$195.66</strong></td>
</tr>
<tr>
<td>Total Fixed Costs Times 110% Times 25%</td>
<td><strong>$53.81</strong></td>
</tr>
<tr>
<td>Less:</td>
<td>($12.06)</td>
</tr>
<tr>
<td>Other Tax Receipts</td>
<td>(11.25)</td>
</tr>
<tr>
<td><strong>Remaining Fixed Cost Need (IAC Revenue)</strong></td>
<td><strong>$30.50</strong></td>
</tr>
<tr>
<td>Average Number of Meters Used in Calculation</td>
<td>920,190</td>
</tr>
<tr>
<td>Proposed CY 2016 IAC Per Meter Equivalent (Monthly in dollars)</td>
<td>$2.76</td>
</tr>
</tbody>
</table>
3.6 REVENUE SUFFICIENCY

Water Authority revenues must be sufficient on a fiscal year basis to meet two tests – (1) cash flow and (2) bond coverage. These sufficiency tests are commonly used to determine the amount of annual revenue that must be generated from an agency’s rates.

- **Cash Flow Sufficiency Test:**
  The cash flow test defines the amount of annual revenues that must be generated in order to meet annual expenditure obligations of the utility. These needs can include direct cash expenditures as well as planned transfers or additions to reserves.

- **Bond Coverage Sufficiency Test:**
  Bond coverage refers to the collection in revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service. The Water Authority has a legally required minimum bond coverage ratio of 1.20x and a policy target of 1.50x. The Water Authority, as do many utilities, established a policy target in excess of legal requirements to retain or attain high bond ratings with correspondingly lower interest costs.

The revenue requirement analysis sets water rate and charge revenues at a level sufficient to pass both tests. Revenue requirements are considered either “cash flow” or “coverage” driven based on the test that requires a greater adjustment. The Water Authority’s current annual revenue requirements are coverage driven – it must generate revenues in excess of its cash needs in order to meet its legal and policy debt requirements. These excess revenues then become available to fund future capital projects, non-cash items, and reserves.

3.7 FINANCIAL POLICIES

The Water Authority has a legally required minimum bond coverage ratio of 1.20x on senior lien debt service\. In order to maintain strong bond ratings and mitigate the impacts of annual water demand fluctuations, the Board sets rates to meet a senior lien debt service coverage target of 1.50x, inclusive of RSF transfers, and 1.00x excluding capacity charge revenues.

As shown on the figure below, the Water Authority is projected to meet the Board policy target of 1.50x for FY 2016 after having allowed short-term deviations from the Board target in order to mitigate rate increases due to water demand reductions associated with statewide drought conditions and water pumping restrictions from the Bay-Delta. Although the

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3 This requirement is established by the Water Authority General Resolution as amended. This resolution and amendments are attached as Appendix D of this report.
coverage ratio fell below the Board target, the Water Authority’s coverage ratio remained well above its legal requirement.

**SENIOR DEBT SERVICE COVERAGE**

In addition to annual bond coverage requirements, the Water Authority sets aside money into the RSF, which, by covenant, may be used to meet the Water Authority’s legal bond coverage requirement in a year that other revenues are insufficient. The RSF is a critical short-term water rate management tool and helps the Water Authority manage weather related revenue risk and stabilize annual revenue needs through rate smoothing. Given the forecasted loss of 100,000 AF in demands, as a result of the drought mandates, the Water Authority has forecasted a withdrawal of nearly $8.0 million in FY 2016.

Finally, for CY 2016, the Water Authority’s revenue requirements are coverage driven. In order to meet this policy bond coverage target and allocate revenues to the RSF, the Water Authority must collect an additional $43.74 million above its operating costs and debt service obligations. The bond coverage target is calculated based on net revenues, excluding capital expenses and policy requirements, such as additions to reserves. Revenues collected to fund these excluded expenditures help to meet the annual bond coverage requirement.

Rate setting cannot be viewed as a single year process nor in a vacuum. There are many variables that fluctuate from year to year causing changes to demands as well as expenditures. Additionally, there may be known costs in the future that need to be proactively funded to prevent rate shock. Reserve and rate smoothing policies provide a mechanism to normalize and smooth rates over a multi-year process. These policies prevent a whipsaw effect of rates and greater predictably to its member agencies.
The purpose of a cost-of-service analysis is to provide a reasonable basis for distributing the full costs of the Water Authority's operations and capital investments to rate categories and then the member agencies in proportion to the demands placed on or benefits received from the system. The Water Authority currently maintains five functional rate categories. These components are developed and designed to mirror the nature in which expenditures are incurred. The Water Authority's operating budget is allocated, by division, to a specific rate category as part of the development of the two-year budget process. This process is based on clear, concise, and consistent rate and charge category definitions. In the allocation process, if work performed in a department or program is not specifically applicable to one of the five rate categories defined below, it is considered General and Administrative (G&A). This category is applicable to departments who support the internal operations of the Water Authority, such as Finance and Administrative Services.

Debt issuances and the associated annual debt services are allocated to rate categories based on the specific capital improvement projects financed through bond sales. Additionally, the Water Authority utilizes a combination of cash and PAYGO reserves to pay for capital projects. However, in an effort to minimize the immediate impact to rates, the Water Authority amortizes cash expenditures directly to the related rate category. The Water Authority uses its calculated weighted cost of capital as the interest rate on cash used for capital expenditures in each respective year. The Water Authority assumes a 1.5 percent reserve factor and a 30-year amortization term to calculate the projected annual cash payment stream. The annual cash payments are allocated to rate categories based on the same percentages developed to allocate long-term debt service.

### 4.1 ALLOCATION CATEGORIES

The Water Authority allocates its annual operating budget to the five functional rate categories. As applicable and identifiable, these expenditures are assigned directly to rate categories. For expenditures incurred for the general operations of the Water Authority, costs are allocated to G&A and then redistributed to five functional categories based on their weighted average of directly assignable operating costs. A description of each category is as follows:

#### 4.1.1 Customer Service

The Customer Service charge is set to recover costs that are necessary to support the functioning of the Water Authority, to develop policies and to implement system-wide programs. Cost recovered through the customer service charge include, but are not limited to customer billing, public relations, and expenses associated with the Board of Directors.
4.1.2 **Storage**

The Storage charge is set to recover costs associated with the ESP and CSP. The ESP is a system of reservoirs, interconnected pipelines, and pumping stations designed to make water available to the San Diego region in the event of an interruption in imported water deliveries. An example of expenditures or programs allocated to this category would be a division which works in support of the ESP projects such as Olivenhain Dam and Reservoir Operations in the Operations and Maintenance Department. Agriculture customers do not benefit from the Storage charge as addressed in Report Section 5.3.

4.1.3 **Supply**

The Supply rate recovers the cost of water supply incurred by the Water Authority, including the purchase of water from MWD, the IID, the Coachella and the All-American Canals, costs of MWD wheeling for non-MWD water supplies, desalination water costs, and certain other costs associated with the Quantification Settlement Agreement (QSA).

4.1.4 **Transportation**

The Transportation rate is set to recover capital, operating, and maintenance costs of the Water Authority’s aqueduct system, including all facilities used to physically transport the water to member agency meters, excluding certain distribution facilities covered under the East County Treatment Agreement. An example of this category would be the maintenance division in the Operations & Maintenance Department. This division maintains the valves, pipelines, and facilities that are integral to the aqueduct system.

4.1.5 **Treatment**

The Treatment rate is designed to recover the Water Authority’s cost of treating water. The Melded M&I Treatment Rate includes the costs of purchasing treated water from MWD, the operating and capital costs associated with the Water Authority’s agreement with Helix Water District’s Levy Water Treatment Plant, operating costs associated with the Olivenhain Treatment Plant, and the operating and capital (debt service) costs associated with the construction of the Twin Oaks Valley Treatment Plant.

4.1.6 **General & Administrative**

Expenditures that cannot reasonably be allocated directly to a rate category are assigned to G&A, which supports the general function of the Water Authority. An example of a cost that is assigned to G&A is accounting. Approximately 25 percent of the operating budget is allotted to the G&A allocation category for the CY 2016 rates. As no rate component directly relates to G&A, these costs are reallocated to the other rate components based on total direct budget allocation to customer service, storage, supply, transportation, and treatment.
4.2 ALLOCATION SUMMARY

As part of the 2014 rate setting process, Carollo held interviews with select departments and divisions in order to confirm the appropriateness of the application of the annual budget allocation based on cost of service principles. The interviews evaluated the basis of the percentage allocations and developed the reasoning that allocations varied from the previous process, if applicable. In most cases, costs were allocated based on the historical and forecasted employee utilization and direct expenditures.

Based on Carollo’s review of FY 2016 and 2017 operating expenditures, the provided allocations appear reasonable and continue to be based on sound and defensible definitions.

4.2.1 Allocation of Operating Costs

Table 6 illustrates the allocation of CY 2016 operating costs to each rate category based upon the total weighted average FY 2016 and FY 2017 expenditure allocation.

<table>
<thead>
<tr>
<th>CY 2016 &amp; 17 ALLOCATION</th>
<th>CY 2016 EXPENDITURES</th>
<th>CUSTOMER SERVICE</th>
<th>STORAGE</th>
<th>TRANSPORTATION</th>
<th>SUPPLY</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Allocation</td>
<td>100%</td>
<td>32.1%</td>
<td>6.6%</td>
<td>37.5%</td>
<td>22.8%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cost Allocation</td>
<td>$47.07</td>
<td>$15.11</td>
<td>$3.08</td>
<td>$17.67</td>
<td>$10.75</td>
<td>$0.47</td>
</tr>
</tbody>
</table>

4.2.2 Allocation of Debt Service

For each debt issuance, the Water Authority actively allocates its use of long-term and short-term debt. Each issuance is apportioned to rate components based on specific projects funded. As a result, the Water Authority’s debt service is allocated in a defensible and equitable manner. Table 7 provides a summary allocation of the total FY 2016 debt service by functional rate category. As noted earlier, debt service excludes super subordinate debt related to the Desalination Pipeline.
### Allocation to Functional Categories

#### TABLE 7 Debt Service Allocation Summary ($ in Millions)

<table>
<thead>
<tr>
<th>Revenue Requirement</th>
<th>FY 2016 Total</th>
<th>Customer Service</th>
<th>Storage</th>
<th>Transportation</th>
<th>Supply</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTD Service</td>
<td>$113.70</td>
<td>$11.89</td>
<td>$50.03</td>
<td>$38.91</td>
<td>$7.27</td>
<td>$5.59</td>
</tr>
<tr>
<td>STD Service</td>
<td>9.10</td>
<td>0.78</td>
<td>3.98</td>
<td>2.38</td>
<td>0.96</td>
<td>0.99</td>
</tr>
<tr>
<td>Total Debt Service</td>
<td>$122.80</td>
<td>$12.67</td>
<td>$54.01</td>
<td>$41.29</td>
<td>$8.24</td>
<td>$6.59</td>
</tr>
</tbody>
</table>

**Notes:**
(1) Includes Super Subordinate rate for Desalination Pipeline (Transportation - LTD)

### 4.2.3 Allocation of Offsetting Revenues

Offsetting revenues provide a credit against rate revenue needs. Operating revenue offsets are allocated to each functional rate category proportionate to the two-year average expenditures by rate category. Based on the finding of the 2014 Report and the Board approved recommendations, these revenue offsets now incorporate treatment. As the treatment rate was implemented after the other four rate categories had been established, it was originally considered as a separate and stand-alone charge. However, this rate is now handled in a similar fashion to all other rate components.

Table 9 provides the allocation factors that are used to distribute each offsetting revenue.

#### TABLE 8 Allocation Factors for Offsetting Revenues

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Applicable Offsetting Revenues</th>
<th>Customer Service</th>
<th>Storage</th>
<th>Transportation</th>
<th>Supply</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Excluding Treatment</td>
<td>System Capacity Charges</td>
<td>10.4%</td>
<td>46.3%</td>
<td>35.2%</td>
<td>8.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total Capital</td>
<td>Water Standby Charges PAYGO Earning</td>
<td>9.88%</td>
<td>44.08%</td>
<td>33.54%</td>
<td>7.78%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>IAC Property Taxes &amp; In-Lieu Charges Investment Income Other Revenue</td>
<td>15.8%</td>
<td>38.6%</td>
<td>31.7%</td>
<td>10.4%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>
Operating revenue offsets include property taxes, IAC revenue, interest earnings, and miscellaneous revenues. The Water Authority also accounts for system capacity charge revenue, water standby availability charges, and interest earning on PAYGO reserves. These capital related offsets are allocated to the Water Authority’s customer service, storage, supply, transportation, and treatment rate components based on its respective share of the total capital expenditures for the two-year budget period. System capacity charge revenue continues to exclude treatment as no treatment costs are recovered in this charge. Finally, treatment capacity charges are allocated directly to the Water Authority’s treatment rate category as a reimbursement for treatment-related capital expenditures.

Table 9 illustrates the offsetting revenues and allocated offsets to each rate component.

**TABLE 9 OFFSETTING REVENUES (IN $ MILLION)**

<table>
<thead>
<tr>
<th></th>
<th>TOTAL REVENUE OFFSETS</th>
<th>CUSTOMER SERVICE</th>
<th>STORAGE</th>
<th>TRANSPORTATION</th>
<th>SUPPLY</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital Offset</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Capacity Charge</td>
<td>$13.84</td>
<td>$1.43</td>
<td>$6.40</td>
<td>$4.87</td>
<td>$1.13</td>
<td>$ -</td>
</tr>
<tr>
<td>Treatment Capacity Charge</td>
<td>0.30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.30</td>
</tr>
<tr>
<td>Standby Availability Charge</td>
<td>11.25</td>
<td>1.11</td>
<td>4.96</td>
<td>3.77</td>
<td>0.88</td>
<td>0.53</td>
</tr>
<tr>
<td>PAYGO Earnings</td>
<td>1.01</td>
<td>0.10</td>
<td>0.45</td>
<td>0.34</td>
<td>0.08</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Operating Offsets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property Tax</td>
<td>$11.82</td>
<td>1.87</td>
<td>4.56</td>
<td>3.74</td>
<td>1.23</td>
<td>$0.42</td>
</tr>
<tr>
<td>IAC</td>
<td>30.5</td>
<td>4.82</td>
<td>11.76</td>
<td>9.65</td>
<td>3.18</td>
<td>1.08</td>
</tr>
<tr>
<td>Interest Earnings</td>
<td>1.94</td>
<td>0.31</td>
<td>0.75</td>
<td>0.61</td>
<td>0.20</td>
<td>0.07</td>
</tr>
<tr>
<td>Twin Oak Reimbursement</td>
<td>0.77</td>
<td>0.77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Misc. Revenue</td>
<td>4.33</td>
<td>0.68</td>
<td>1.67</td>
<td>1.37</td>
<td>0.45</td>
<td>0.15</td>
</tr>
<tr>
<td>Desal Offset</td>
<td>.23</td>
<td>.68</td>
<td>.12</td>
<td>.09</td>
<td>.09</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Total Offsets</strong></td>
<td>$75.95</td>
<td>$11.09</td>
<td>$30.54</td>
<td>$24.48</td>
<td>$7.23</td>
<td>$2.61</td>
</tr>
</tbody>
</table>

### 4.2.4 Additional Expenses

As described in Report Section 3.1, the Water Authority incurs costs beyond those captured within the core budget, such as expenditures which were initially funded using reserves and then recovered from member agencies over time through rates, such as with the filling of the
San Vicente Dam. When developing the rates and charges, the Water Authority accounts for these additional expenditures separately from the base operating expenditures, allocating these expenditures directly to each rate category based on direct benefit.

Table 10 details the additional expenditures that are incurred by each rate category outside the operating budget.

### Table 10: Additional Expenses (in $ Million)

<table>
<thead>
<tr>
<th></th>
<th>TOTAL EXPENSE</th>
<th>CUSTOMER SERVICE</th>
<th>STORAGE</th>
<th>TRANSPORTATION</th>
<th>SUPPLY</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twin Oak Reimbursement</td>
<td>0.77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.77</td>
</tr>
<tr>
<td>Local Water Supply</td>
<td>4.03</td>
<td>4.03</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESP Evaporation</td>
<td>6.77</td>
<td>-</td>
<td>6.77</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stored Water Fund</td>
<td>$5.98</td>
<td>-</td>
<td>5.98</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Expense</td>
<td>$17.55</td>
<td>$4.03</td>
<td>$12.75</td>
<td>$-</td>
<td>$-</td>
<td>$0.77</td>
</tr>
</tbody>
</table>

### 4.2.5 Coverage Driven Requirements

The bond coverage target is calculated based on net revenues, excluding capital expenses and policy requirements, such as additions to reserves. Although the bond coverage requirement applies to all Water Authority rates and charges revenues in aggregate, the Water Authority establishes rates to separately meet the 1.50x coverage test by rate category, proportionate to its share of overall debt. This approach is designed to fairly and reasonably recover bond coverage and reserve costs by rate category.

Based on the revenues requirements defined above, the Water Authority must generate an additional $43.74 million through rates to achieve a 1.50x debt service coverage ratio and provide funding for the RSF. This is illustrated in Table 11.

### Table 11: Remaining Coverage & Reserve Allocation Summary (in $ Million)

<table>
<thead>
<tr>
<th>Revenue Requirement</th>
<th>CY 2016 TOTAL</th>
<th>CUSTOMER SERVICE</th>
<th>STORAGE</th>
<th>TRANSPORTATION</th>
<th>SUPPLY</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining Coverage &amp; Reserve Driven Needs</td>
<td>$43.74</td>
<td>$5.68</td>
<td>$23.89</td>
<td>$8.76</td>
<td>$5.41</td>
<td>$-</td>
</tr>
</tbody>
</table>
### 4.2.6 Summary of Allocation

Table 12 provides a summary of the Water Authority’s revenue requirements and rate component allocations. The water sales revenues requirements reflect only the portion of water rates and charges related to direct Water Authority operating activities and do not include expenditures such as purchased water costs.

<table>
<thead>
<tr>
<th>Revenue Requirement</th>
<th>CY 2016 Total</th>
<th>Customer Service</th>
<th>Storage</th>
<th>Transportation</th>
<th>Supply</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Costs</td>
<td>$47.07</td>
<td>$15.11</td>
<td>$3.08</td>
<td>$17.67</td>
<td>$10.75</td>
<td>$0.47</td>
</tr>
<tr>
<td>Debt Service (LTD + STD)</td>
<td>122.80</td>
<td>$12.68</td>
<td>$54.01</td>
<td>$41.29</td>
<td>$8.24</td>
<td>$6.59</td>
</tr>
<tr>
<td>Offsetting Revenues</td>
<td>(75.95)</td>
<td>(11.09)</td>
<td>(30.54)</td>
<td>(24.48)</td>
<td>(7.23)</td>
<td>(2.61)</td>
</tr>
<tr>
<td>Operating Rev Req Before Coverage</td>
<td>$93.92</td>
<td>$16.70</td>
<td>$27.56</td>
<td>$34.48</td>
<td>$11.75</td>
<td>$4.44</td>
</tr>
<tr>
<td>Additional Expenses</td>
<td>17.55</td>
<td>4.03</td>
<td>12.75</td>
<td>-</td>
<td>-</td>
<td>0.77</td>
</tr>
<tr>
<td>O&amp;M Rev Req Before Coverage</td>
<td>$111.47</td>
<td>$20.72</td>
<td>$39.31</td>
<td>$34.48</td>
<td>$11.75</td>
<td>$5.21</td>
</tr>
<tr>
<td>Remaining Coverage &amp; Reserve Driven Needs</td>
<td>$43.74</td>
<td>$5.68</td>
<td>$23.89</td>
<td>$8.76</td>
<td>$5.41</td>
<td>$-</td>
</tr>
<tr>
<td>Water Sales Rev Req</td>
<td>$155.21</td>
<td>$26.40</td>
<td>$63.20</td>
<td>$43.24</td>
<td>$17.16</td>
<td>$5.21</td>
</tr>
</tbody>
</table>
5 Cost of Service Water Rates and Charges

Based on the resulting revenue requirements analysis and detailed cost of service allocations, the revenue requirements for each rate and charge category are recovered from the member agencies based on water demand and usage factors. The Water Authority serves two classes of customers: Full Service and Transitional Special Agricultural Water Rate (TSAWR) customers. The following Report Section summarizes the proposed CY 2016 water rates and charges and discusses the TSAWR rates.

5.1 Commodity Based Fixed Charges

Fixed revenues are distinguished from variable revenues as they provide a known and predictable annual source of revenue for an upcoming calendar year. The fixed commodity charges are allocated to each agency based on their proportionate share of a three-year rolling average of water demands.

5.1.1 Customer Service Charge

Based on the cost of service analysis, $26.40 million must be recovered through the customer service water rate in CY 2016. These costs are recovered as an annual charge, as these costs do not vary based on current year water demand. Specifically, the costs are allocated among the member agencies based on each agency’s three-year rolling average of all deliveries, excluding member agency wheeled water.

<table>
<thead>
<tr>
<th>TABLE 13 CY 2016 CUSTOMER SERVICE REVENUE REQUIREMENT (IN $ MILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditures (LTD &amp; STD)</td>
</tr>
<tr>
<td>O&amp;M + Share of Agency Operating Expenditures</td>
</tr>
<tr>
<td>Gross Revenue Requirements</td>
</tr>
<tr>
<td>Less: Offsetting Revenues</td>
</tr>
<tr>
<td>Capital Related</td>
</tr>
<tr>
<td>Operating Related</td>
</tr>
<tr>
<td>Specific Offsets - Treatment Payback</td>
</tr>
<tr>
<td>RR before Coverage and RSF Support</td>
</tr>
<tr>
<td>Additional Coverage</td>
</tr>
<tr>
<td>Total Revenue Requirement</td>
</tr>
</tbody>
</table>
5.1.2 Storage

Based on the cost of service analysis, $63.20 million is to be recovered through the storage charge in CY 2016. The storage charge is a flat annual charge that is applied to non-agricultural water deliveries. The storage charge is allocated among the member agencies using a pro rata share of each agency’s three-year rolling average of non-agricultural deliveries (including all users, member agencies, and third-party wheeling throughput). In return for not paying for storage, agricultural customers agree to receive a level of service during an emergency that is less than that received by the Water Authority’s municipal and industrial (M&I) customers.

The Water Authority’s ESP and Carry Over Projects are designed to make water available to the San Diego region in the event of an interruption in imported water deliveries. Because agricultural users that participate in the TSAWR program agree to reduced or interrupted service during times of water emergencies, they will not receive benefit from the Water Authority’s investment in its long-term storage program. It is therefore appropriate to exclude agricultural deliveries from the calculation of the storage rate.

<table>
<thead>
<tr>
<th>TABLE 14</th>
<th>CY 2016 STORAGE REVENUE REQUIREMENT (IN $ MILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditures (LTD + STD)</td>
<td>$54.01</td>
</tr>
<tr>
<td>O&amp;M + Share of Agency Operating Expenditures</td>
<td>15.83</td>
</tr>
<tr>
<td>Gross Revenue Requirements</td>
<td>$69.85</td>
</tr>
<tr>
<td>Less Offsetting Revenues</td>
<td></td>
</tr>
<tr>
<td>Capital Related</td>
<td>$(11.81)</td>
</tr>
<tr>
<td>Operating Related</td>
<td>(18.73)</td>
</tr>
<tr>
<td>RR before Coverage and RSF Support</td>
<td>$39.31</td>
</tr>
<tr>
<td>Additional Coverage</td>
<td>23.89</td>
</tr>
<tr>
<td>Total Revenue Requirement</td>
<td>$63.20</td>
</tr>
</tbody>
</table>

5.1.3 Supply Reliability Charge

Based on recommendations from the A&F Committee and approval of the Board in March of 2015, the CY 2016 rates will include the addition of a Supply Reliability Charge. This charge will recover the functional incremental supply costs allocated to enhanced supply reliability. The Committee recognized the importance of equitably recovering the cost of the Water Authority’s investments in long-term water supply reliability in accordance with the cost of service requirements. The concept of a fixed charge for supply reliability was to balance the impact of the fixed costs on member agencies with the allocation of costs associated with long-term investments in supply reliability to member agencies based on a rolling average of M&I deliveries. Access to reliable supply benefits all member agencies regardless of whether the agency uses water every day or intermittently.
Four main rate structure alternatives were evaluated as part of the rate development process. The approved methodology is as follows:

\[
\text{Supply Reliability Charge} = \left[ \text{Desal Water Cost} + \text{IID Water Transfer Costs} \right] - \text{MWD Tier 1 Equivalent Cost} \times 25% \\
\]

For a full detailing of the calculation, the Supply Reliability Charge report prepared by A&N Technical Services, Inc. is provided as Appendix E. Following this methodology, Table 20 details calculation of the proposed CY 2016 Supply Reliability Charge.

| TABLE 15 PROPOSED CALENDAR YEAR 2016 SUPPLY RELIABILITY CHARGE (IN $ MILLION) |
|---------------------------------|----------------|
| Desal Water Costs               | 80.01 |
| IID Water Cost                  | 108.50 |
| MWD Tier 1 Equivalent Cost      | (84.35) |
| Differential                    | 104.17 |
| **Supply Reliability Needs**    | 26.00 |
|                                 | 25%   |

As used in this formula, Desalination Deliveries are 42,000 AF/Y and IID Water Transfer Deliveries are 100,000 AF/Y in CY 2016 and ramp up to 200,000 AF/Y according to the transfer schedule in the Transfer Agreement.

The revenue generated from this charge will only be applied to the supply revenue requirement prior to determining the volumetric Melded Supply Rate. This charge will be allocated to member agencies based on a five-year rolling average of applicable historical water deliveries. This charge will be zero when MWD’s Tier 1 costs are equal or greater than the combined Desalination and IID Water Transfer Costs.

The calculated Supply Reliability Charge follows general water industry cost-of-service-based rate-setting principles. By design, it cannot recover more than the costs allocated to the supply functional costs, as it is calculated as a portion of those functional supply costs. Further, it constitutes a reasonable allocation of functional supply costs in that it better aligns the fixed incremental supply costs incurred by the Water Authority to make highly reliable potable water supplies available to its member agencies with the benefits available to all water customers connected to the Water Authority integrated water system.

As detailed in the A&F findings, the proposed rate addresses fairness by allowing for predictability of incurred charges (based on a rolling five-year average of historical deliveries) and adjustments to future charges imposed on each member agency as demand requirements change in the future due to local supply development or demand management.
As approved, the Water Authority will spread the Supply Reliability cost to member agencies based upon their share of the rolling five-year average M&I deliveries.

5.2 COMMODITY BASED VARIABLE RATES

The commodity based variable water rates and charges are distinguished from fixed revenues as they are recovered based on annual water sales.

5.2.1 Supply (Melded M&I Supply Rate)

The Melded Untreated M&I rate is a volume rate assessed on an acre-foot basis. The rate is a combination of direct and indirect costs. The revenue requirement apportioned to the supply rate component is $17.16 million and is detailed in Table 15.

<table>
<thead>
<tr>
<th>TABLE 16</th>
<th>CY 2016 MELDED SUPPLY REVENUE REQUIREMENT (IN $ MILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditures (LTD + STD)</td>
<td>$8.24</td>
</tr>
<tr>
<td>O&amp;M + Share of Agency Operating Expenditures</td>
<td>10.75</td>
</tr>
<tr>
<td>Gross Revenue Requirements</td>
<td>$18.98</td>
</tr>
<tr>
<td>Less Offsetting Revenues</td>
<td></td>
</tr>
<tr>
<td>Capital Related</td>
<td>$(2.08)</td>
</tr>
<tr>
<td>Operating Related</td>
<td>(5.15)</td>
</tr>
<tr>
<td>RR before Coverage and RSF Support</td>
<td>$11.75</td>
</tr>
<tr>
<td>Additional Coverage and RSF Support</td>
<td>5.41</td>
</tr>
<tr>
<td>Total Revenue Requirement</td>
<td>$17.16</td>
</tr>
</tbody>
</table>

For CY 2016, the total supply costs are projected to total $308.41 million. The Water Authority projected sales of 395,500 acre-feet at a cost of $327.60 million. An additional $25.90 million must be recovered through rates to fund supply’s revenue requirements and costs associated with the IID socioeconomic payment, storage, and QSA costs. Additionally, with the addition of the Supply Reliability Charge, a revenue offset of $26 million is applied. By dividing the total supply cost by total water sales, an acre-foot cost of $780 is calculated.
# TABLE 17 PROPOSED CALENDAR YEAR 2016 MELDED SUPPLY RATE

<table>
<thead>
<tr>
<th>Acre-Foot Sales (A/F) (000’s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MWD Tier I Deliveries</td>
<td>173.30</td>
</tr>
<tr>
<td>Carlsbad Desalination Water Production</td>
<td>42.00</td>
</tr>
<tr>
<td>IID Deliveries</td>
<td>100.00</td>
</tr>
<tr>
<td>Canal Water Deliveries</td>
<td>80.20</td>
</tr>
<tr>
<td>Total A/F Sales</td>
<td>395.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Purchase Costs ($ Millions)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MWD Tier 1 Water Purchases</td>
<td>$103.00</td>
</tr>
<tr>
<td>Carlsbad Desalination Water Supply Cost</td>
<td>80.00</td>
</tr>
<tr>
<td>IID Water Purchases</td>
<td>108.50</td>
</tr>
<tr>
<td>Canal Water Purchases</td>
<td>36.10</td>
</tr>
<tr>
<td>Subtotal Water Purchase Costs</td>
<td>$327.60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional Costs ($ Millions)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>QSA Environmental (1)</td>
<td>$-</td>
</tr>
<tr>
<td>Supply Revenue Requirement &amp; Canal Cost Differential</td>
<td>17.16</td>
</tr>
<tr>
<td>IID Socioeconomic Payment/Settlement &amp; Water Prepayment (1)</td>
<td>-</td>
</tr>
<tr>
<td>Supply Augmentation Costs (Short and Long Term)</td>
<td>0.48</td>
</tr>
<tr>
<td>Total Additional Costs</td>
<td>$17.64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Offsetting Revenues ($ Millions)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Reliability Credit</td>
<td>$(26.00)</td>
</tr>
<tr>
<td>Cash &amp; Reserves (2)</td>
<td>$(10.68)</td>
</tr>
<tr>
<td>Total Supply Cost</td>
<td>$308.56</td>
</tr>
</tbody>
</table>

| Proposed A/F Rate (Total Supply Cost /Total A/F Sales) | $780/AF |

**Notes:**
1. Cost repayment deferred to provide CY 2016 rate relief
2. Consists of operating funds and rate stabilization funds

## 5.2.2 Treatment (Melded M&I Treatment Rate)

The Treatment rate is a volumetric rate, assessed on an acre-foot basis, designed to recover the Water Authority’s cost of treating water. The Water Authority’s direct cost related to Treatment is $5.21 million. In addition, the rate will be set to recover the costs of purchasing treated water from MWD, the Levy and Olivenhain treatment plants, the Water Authority’s Twin Oaks Valley Water Treatment Plant, desalinated water costs allocated to this rate and may recover certain other costs associated with the delivery of treated water.
Table 18 outlines the Water Authority’s forecasted treated acre-foot demand, incurred treatment costs, and corresponding melded treatment rate. Similar to the melded supply rate, the costs associated with the operation of the Twin Oaks Water Treatment Plant ($8.99 million) will be recovered through the CY 2016 rates outside the revenue requirements outlined in Table 17.

Table 19 proposes the CY 2016 melded treatment rate.
The Water Authority spreads the Melded Treatment costs over the forecasted acre-feet demands. The proposed CY 2016 Melded Treatment rate is $280 per acre-foot.

### 5.2.3 Transportation

The Transportation rate is a uniform rate set to recover capital, operating and maintenance costs of the Water Authority’s aqueduct system, including all facilities used to physically transport the water to member agency meters. The transportation rate is charged to member agencies based on water deliveries.

**TABLE 20  PROPOSED CALENDAR YEAR 2016 TRANSPORTATION RATE (IN $ MILLION)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditures (LTD + STD)</td>
<td>$41.29</td>
</tr>
<tr>
<td>O&amp;M + Share of Agency Operating Expenditures</td>
<td>17.67</td>
</tr>
<tr>
<td>Gross Revenue Requirements</td>
<td>$58.96</td>
</tr>
<tr>
<td>LessOffsetting Revenues</td>
<td></td>
</tr>
<tr>
<td>Capital Related</td>
<td>$(8.98)</td>
</tr>
<tr>
<td>Operating Related</td>
<td>(15.50)</td>
</tr>
<tr>
<td>RR before Coverage and RSF Support</td>
<td>$34.48</td>
</tr>
<tr>
<td>Additional Coverage &amp; RSF Support</td>
<td>8.73</td>
</tr>
<tr>
<td>Total Revenue Requirement</td>
<td>$43.24</td>
</tr>
<tr>
<td>Proposed A/F Rate (Total Supply Cost /Total A/F Sales)</td>
<td>$105/AF</td>
</tr>
</tbody>
</table>

The Water Authority spreads the Transportation cost over all forecasted acre-feet demands, less water taken directly from MWD, to generate the Transportation rate. The proposed CY 2016 Transportation rate is $105 per acre-foot.

### 5.3 SPECIAL AGRICULTURAL WATER RATE PROGRAM

In October 2008, faced with a prolonged drought and rising water costs, the MWD Board voted to terminate the Interim Agricultural Water Program (IAWP) through a five-year phase-out of the program ending December 31, 2012. The IAWP was a discounted rate for surplus system supplies available for the purpose of growing agricultural, horticultural, or floricultural products.

In response to MWD’s phase-out of IAWP, in October 2008, the Water Authority Board approved the Transitional Special Agricultural Water Rate (TSAWR) and formed a SAWR Board Workgroup to develop a recommended permanent program. In March 2010, the Board approved the Workgroup recommendation for a permanent TSAWR that would begin January 1, 2013 and only include the storage charge exemption. On April 26, 2012, the Board voted to extend the TSAWR program for two additional years to provide agricultural
customers with additional time to transition to the higher cost of water. On March 26, 2015, the Board again voted to extend the TSAWR program through December 31, 2020.

Agricultural customers participating in the TSWAR program receive a reduced melded supply rate by agreeing to reduce or suspend water usage during shortages. These customers pay the MWD Tier 1 rate and do not share in the benefits of the QSA or Carlsbad Desalination supplies during water shortages. The second component of the TSAWR exempts agricultural customers from being subject to a member agency's share of the Storage Charge. In return, agricultural customers receive half the level of service under the Emergency Storage Program (ESP) and no service under the Carryover Storage Program (CSP). This approach of providing a rate reduction is consistent with Cost of Service Principles, as the agricultural customers receive a commensurate reduced level of service. The customers are not provided supply reliability and do not contribute to storage costs.

Under the TSAWR program, agricultural users receiving raw water are charged the MWD full service Untreated Tier 1 water rate. In CY 2016, this rate is $594 per acre-foot. Agricultural users receiving treated water are also charged the MWD rate plus the Water Authority's Melded Treatment Charge, which is proposed at $280 per acre-foot in CY 2016, as shown above. Transportation and customer service related costs are recovered through each member agency's Transportation and Customer Service rates.
Based on the independent review performed for this rate study, Carollo confirms the Water Authority’s existing methodology, cost allocations, rate-setting principles, and proposed CY 2016 rates are reasonable and consistent with AWWA cost-of-service principles, Board policies, and California legal requirements. Carollo’s finding for this study are as follows:

- The Water Authority has significant detail and a sound basis for existing and proposed water rates and charges.
- The resulting cost of service allocations and existing methodology provide a clear, reasonable, and provide a defensible nexus between the cost of service provided and rates charged.
- Board policies and cost-of-service guidelines are applied consistently with industry best practices and AWWA M1 standards.
- The Water Authority’s rates and charges adhere to the legal requirements as described within this report.
- The IAC was calculated in compliance with Board policies and adheres to the legal requirements as described within this report.
- The existing methodology yields an appropriate and reasonable method for allocating costs, which could be sustained absent substantial changes in cost drivers or customer discharge patterns occur.
- Revenue adjustments are necessary to cover the Water Authority’s budget requirements. The revenue requirements for CY 2016 are coverage driven, as existing revenues fall below the desired DSCR target of 1.50x and necessary deposits into the RSF.
- The proposed CY 2016 water rates and charges necessitate roughly an $8 million utilization of the RSF and continue to meet the Board’s DSCR target of 1.50x.
7 Appendix

A. INFRASTRUCTURE ACCESS CHARGE RESOLUTION
RESOLUTION NO. 98-26

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY SETTING THE AMOUNT OF THE INFRASTRUCTURE ACCESS CHARGE PURSUANT TO SECTION 15.3.5 OF THE ADMINISTRATIVE CODE

WHEREAS, on January 8, 1998, the Board of Directors adopted an Implementation Plan for Proposed Changes to the Authority’s Revenue Structure; and

WHEREAS, on March 12, 1998, the Board of Directors conducted a public hearing duly noticed by publication to consider a revised revenue structure including a proposed infrastructure access charge; and

WHEREAS, on March 26, 1998, the Board of Directors adopted Resolution No. 98-10, amending Article 15 of the Administrative Code adding Section 15.3.5 establishing an infrastructure access charge the amount of which would be determined by later action of the Board of Directors; and

WHEREAS, Section 15.3.5 of the Administrative Code provides that the infrastructure access charge shall be set at an amount which, when added to the Authority’s Water Standby Availability Charge and property tax revenues, will provide funding for at least 25 per cent of the Authority’s estimated annual fixed costs, and further, that member agencies shall pay the infrastructure access charge based on the number and size of retail water meter connections within their respective jurisdictions; and

WHEREAS, on April 9, 1998, the Board of Directors established June 11, 1998, as the date for a public hearing to consider protests to the infrastructure access charge; and

WHEREAS, notice of the hearing to consider protests regarding the amount of the infrastructure access charge was mailed to owners of real property, as referred to in Articles XIIIc and XIXD of the California Constitution, not less than 45 days prior to the public hearing; and

WHEREAS, on June 11, 1998, the Board of Directors held a public hearing and considered the protests regarding the amount of the infrastructure access charge; and

WHEREAS, the Board of Directors did not receive a majority protest to the amount of the infrastructure access charge; and

WHEREAS, pursuant to Section 15.3.5 of the Administrative Code and as recommended by the “Final Report, Revenue Plan Review (Including Implementation
Steps" dated December 1997 prepared by R. W. Beck, consulting engineers, the Board of Directors hereby declares that the annual fixed costs of the Authority for the purposes of calculating the infrastructure access charge shall include annual payments of principle and interest on debt of the Authority, eighty percent of all operation and maintenance expenses as established by the Board in the annual budget, and payments to member agencies for generation of reclaimed water.

WHEREAS, the Board of Directors has considered the information relating to the infrastructure access charge and has determined that the revenue derived from the charge will, when combined with standby charges and property tax revenues, provide the sum necessary to pay at least twenty-five percent of the estimated annual fixed costs of the Authority, including but not limited to debt service; and

WHEREAS, the Board of Directors has determined that the amount of the infrastructure access charge for each member agency charge as set forth in this resolution complies with the requirements of Section 15.3.5 of the Authority’s Administrative Code; and

NOW, THEREFORE, IT IS HEREBY RESOLVED by the Board of Directors of the San Diego County Water Authority as follows:

1. The foregoing recitations are true and correct.

2. The monthly amount of the infrastructure access charge to be collected from each member agency pursuant to Section 15.3.5 of the Authority’s Administrative Code, commencing on January 1, 1999, is established as follows:

- Carlsbad Municipal Water District $ 25,385
- City of Del Mar $ 2,442
- City of Escondido $ 30,744
- Fallbrook Public Utilities District $ 10,261
- Helix Water District $ 62,433
- City of National City (See Sweetwater Authority)
- City of Oceanside $ 49,222
- Ollivenhain Municipal Water District $ 17,125
- Otay Water District $ 37,988
- Padre Dam Municipal Water District $ 24,678
- City of Poway $ 14,829
- Pendleton Military Reservation $ -0-
- Rainbow Municipal Water District $ 11,157
- Ramona Municipal Water District $ 9,967
- Rincon del Diablo Municipal Water District $ 8,938
- City of San Diego $354,539
- San Dieguito Water District $ 14,591
- Santa Fe Irrigation District $ 10,269
South Bay Irrigation District  (See Sweetwater Authority)  
Sweetwater Authority $ 43,373  
Vallecitos Water District $ 17,194  
Valley Center Municipal Water District $ 12,889  
Vista Irrigation District $ 31,946  
Yuima Municipal Water District $ 564

Pursuant to Section 15.3.5 of the Administrative Code, the Board of Directors, by resolution, may establish a system of credits that member agencies may offset against the charge set by this section.

3. The amount of the monthly infrastructure access charge for each member agency has been determined based upon information provided by member agencies summarized in the table attached hereto as Attachment 1, and is apportioned based upon anticipated water delivery measured by the number of “household meter equivalents” served by each member agency. The infrastructure access charge for the Pendleton Military Reservation has been established at $0.00 due to the unique circumstances and limitations of its current receipt of service from the Authority.

4. The General Manager shall require each member agency to provide sufficient information to permit the Manager, or the Manager’s designee, to evaluate the water use potential of a member agency based upon the number and types of water meters within the member agency as of December 31 of each year. Thereafter the General Manager shall determine the infrastructure access charge according to the procedures set forth in Attachment 2 to this resolution and shall recommend any adjustments to the charge to the Board of Directors.

5. The Board of Directors, by resolution, may from time-to-time adjust the infrastructure access charge to account for changes in capital improvement costs, operation and maintenance expenses, and other fixed costs to assure revenue from the charge, when combined with revenue from property taxes and stand-by charges, is sufficient to pay at least twenty-five percent of the Authority’s fixed costs as defined in this resolution. Based upon current capital improvement plans, it is estimated that the infrastructure access charge will increase to $2.00 per month per household meter equivalent over the next ten years. Further, the charge is subject to future adjustments for inflation and modifications of capital improvement plans. The procedure by which the Board of Directors established and set the infrastructure access charge, or adopted this resolution, shall not be deemed to establish a precedent for future proceedings of the Authority to establish, levy, set, or increase any fee or charge.

PASSED, APPROVED, AND ADOPTED this 11th day of June, 1998.

AYES: Unless noted below, all Directors voted aye.
NOES: Chenelle, Mason, & Pocklington

ABSTAIN:

ABSENT: Fowler, Krauel, Madigan, & McMillan

Chris Frahm, Chair
Board of Directors

ATTEST:

Harold W. Ball, Secretary
Board of Directors

I, Janet R. Maltman, Board Secretary of the Board of Directors of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of said resolution No. 98-28 of said Board and that the same has not been amended or repealed.

Janet R. Maltman, Board Secretary
Board of Directors
### SDCWA Active Retail Meters Equivalent to 3/4" or Smaller (as of 12/31/97)

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Attachment 2 to Resolution No. ____

PROCEDURES FOR DETERMINING THE INFRASTRUCTURE ACCESS CHARGE

The Infrastructure Access Charge shall be adjusted each year to maintain an estimated income, when combined with estimate income from taxes and standby charges, sufficient to pay at least twenty-five percent of the Authority's annual fixed costs. The annual fixed costs of the Authority for the purposes of calculating the infrastructure access charge shall include annual payments of principle and interest on debt of the Authority, eighty percent of all operation and maintenance expenses as established by the Board in the annual budget, and payments to member agencies for generation of reclaimed water. The adjustment shall occur as a part of, and in the same manner as, the Authority's regular rate-setting process.

The steps for setting the IAC will be as follows:

1) In January of each year, the Authority will request each member agency to provide a count of retail water meters serviced by that agency and active as of December 31 of the previous year. The meter count shall be based on the number of equivalent household meters, using multiplication factors established by the Authority's Director of Engineering for each meter size to determine the number of household meter equivalents. (Criteria for including a meter in the active retail meter count are given later.)

2) The estimated average annual fixed capital and operating expenditures for the following four fiscal years will be established through the annual budgeting process by the end of March of each year.

3) The estimated average annual fixed capital and operating expenditures for the next four years will be multiplied by 25% to establish the minimum level of fixed revenues required for the next fiscal year. Since actual expenditures can vary from the budget estimates upon which the IAC will be based, the estimate of the minimum level of required fixed revenues will be increased by 10% to provide increased assurance that actual fixed revenues will be at least 25% of actual fixed expenditures.

4) Estimated income from the Authority's other fixed income sources (standby charges and property taxes) will be subtracted from the estimated minimum level of fixed revenues to establish the total revenue required from the IAC.

5) The total revenue required from the IAC will be divided by the sum of the meter counts of all the member agencies to establish the IAC for a household meter equivalent (the per-meter IAC).
6) The amount of the IAC charge to be levied against each member agency will be established by multiplying the member agency's meter count times the per-meter IAC.

7) The Board will adopt the fixed IAC charge for each member agency and the per-meter IAC at the same time the capacity charge and the water rate is set, typically in April.

8) Changes in the IAC will be effective the same date in the fiscal year that changes in the commodity rate are normally effective.

9) Meters will be counted using the following criteria and definitions:

   - All active retail water meters will be included in the meter count.
   - The meter count will be expressed as the number of household meter equivalents based on the same factors used for the capacity charge to compute the household meter equivalent for meters 1-inch and larger.
   - Active meters are defined as those meters which took water at any time during the preceding 12 months. If a meter is officially listed as inactive on a member agency's books on December 31, but has taken any amount of water during the previous 12 months, it must be included in the meter count.
   - Fire service and similar types of emergency meters are not counted, even if they have taken water during the previous 12 months.
   - Reclaimed water meters are not counted unless they are connected to a reclaimed water system that has used water from the Authority's system to meet more than 20% of that reclaimed water system's total demand during the past 12 months.
   - Meters of local distributors other than member agencies which receive water through a master meter from a member agency are not separately counted if the annual amount of water attributable to the Authority is less than or equal to 20% of the total annual amount of water distributed by the local distributor.
   - Mutual support meters between member agencies are not counted.
   - Master meters within a member agency are counted if they are used by a member agency to bill retail customers.
   - Individual meters within a master metered area are not counted unless they are used by the member agency to bill retail customers in lieu of the master meter.
   - Meters in areas outside the Authority's service area are not counted unless they are a net recipient of imported water through one of the member agencies.
   - Meters receiving the Special Agricultural Rate will be counted.
B. ORDINANCE NO. 2002-03
ORDINANCE NO. 2002-03

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY SETTING RATES AND CHARGES FOR THE DELIVERY AND SUPPLY OF WATER, USE OF FACILITIES AND PROVISION OF SERVICES.

WHEREAS, Subdivision (13) of Section 5 of the County Water Authority Act provides that the Authority may: "Fix, revise, and collect rates or other charges for the delivery of water, use of any facilities or property, or provision of services. In fixing rates the board may establish reasonable classifications among different classes and conditions of service, but rates shall be the same for similar classes and conditions of service." and

WHEREAS, Subdivision (11) of Section 5 of the County Water Authority Act provides, in part that, the Authority's Board of Directors, "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs;" and

WHEREAS, the Long-Range Financing Plan adopted by the Board of Directors contemplates the establishment of sufficient rates and charges, when considered along with taxes and other revenues of the Authority, to provide revenues for accomplishment of the Authority's purposes and programs as determined by the Board of Directors; and

WHEREAS, pursuant to the County Water Authority Act, the Board of Directors has adopted ordinances and resolutions levying and fixing property taxes, water availability standby charges and other rates and charges for delivery and supply of water, use of facilities and provision of other services by the Authority, including, without limitation, a capacity charge, an infrastructure access charge, a readiness to serve charge and a water rate; and

WHEREAS, under direction of the Board and its Rate Structure Subcommittee, the Authority's staff and consultants have been working with member agencies over the past several years to develop a new rate structure; and

WHEREAS, the Rate Structure Subcommittee has recommended a new structure of rates and charges is designed to ensure that the Authority has sufficient revenue to fulfill its role as the regional wholesale water provider, support local resources development and provide a new class of service for agencies with connections not using Authority facilities; and

WHEREAS, under the new structure of rates and charges, taxes, the water availability standby charge, the infrastructure access charge, and the capacity charge are not affected and will continue as currently levied; and

WHEREAS, under the new structure revenue formerly collected from a uniform water rate for raw and treated water of $95 per acre foot and a special agricultural water rate of $80 per acre foot will instead be collected from rates and charges fixed according to four categories called: Customer Service, Storage, Transportation, and Supply; and

Customer Service, Storage, Transportation, and Supply; and
WHEREAS, pursuant to Resolution No. 2002-06 adopted May 23, 2002, the Clerk of the Board has caused legal notice of a public hearing to hear objections protests or comments from the public about the proposed new rate structure; and

WHEREAS, the Director of Finance has presented a report dated June 19, 2002 describing the proposed structure of fees and charges, including, without limitation, the revenue requirement, the reasonable allocation of the revenue requirement among the appropriate functional categories, and the reasonable apportionment of revenue requirement allocated to the four functional categories to rates and charges to be collected from the member agencies (the "Report"); and

WHEREAS, the Director of Finance has recommended approval of the new structure of rates and charges as set forth in the Report; and

WHEREAS, on May 21, 2002 the Authority filed a Notice of Exemption pursuant to the California Environmental Quality Act for the project described as "Establishment of water supply and delivery rates and charges including: Customer Service Charge, Emergency Storage Program Charge, Transportation Rate and Supply Service Charge, Capacity Reservation Charge and Readiness-to-Serve Charge, and maintaining the Infrastructure Access Charge and Standby Availability Charge" stating the project is exempt from the requirements of CEQA pursuant to the statutory exemption of Public Resources Code Section 21080(b)(8) and stating as the reason therefore: "Project involves establishment of water rates, tolls, fares, or other charges for the purpose of meeting operating expenses, including employee wages and benefits; purchasing and leasing supplies, equipment, or materials; meeting financial reserve needs and requirements; or obtaining funds for capital projects within existing service areas.", and

WHEREAS, the Board of Directors has considered the information contained in the Report, the testimony and other evidence presented during the public hearing, the recommendations of the Rate Study Subcommittee, the recommendations of the Fiscal Policy Committee, and other information presented to the Board during its consideration of a new rate structure; and

WHEREAS, the Board of Directors hereby makes the following legislative findings and determinations:

1. The foregoing recitals are true and correct;
2. The rates and charges as proposed and recommended in the Report are exempt from the requirements of the California Environmental Quality Act pursuant to Public Resources Code Section 21080(b)(8);
3. Any and all protests to the rates and charges as proposed and recommended in the Report are overruled;
4. The Report is approved;
5. The rates and charges as proposed and recommended in the Report are reasonable, fair, proper and necessary to meet the Authority's revenue requirements and fund its capital, operation, maintenance and other costs.

NOW, THEREFORE, the Board of Directors of the San Diego County Water Authority does ordain as follows:
1. The Authority's revenues from taxes, water rates and charges consists of: ad valorem property taxes, including payments of member agencies in lieu of taxes; a standby availability charge levied pursuant to Section 5.2 of the County Water Authority Act, including payments of such charges pursuant to Section 5.3 if the County Water Authority Act; an infrastructure access charge levied and established pursuant to Resolution No. 98-10; a capacity charge levied pursuant to Section 5.9 of the County Water Authority Act and established by Ordinance No. 97-1 in an amount as amended by Ordinance No. 99-2; and water rates and charges having the following components as described in this ordinance: customer service, storage, transportation and supply.

2. Ad valorem taxes, the standby availability charge and the capacity charge are not affected by this ordinance. All other water rates and charges shall continue to be paid pursuant to existing authority until January 1, 2003.

3. Pursuant to Resolutions Nos. 98-10 and 2001-26, the Infrastructure Access Charge is based on a fixed amount per month per equivalent meter. The current charge of $1 per month per equivalent meter unit is not changed by this ordinance. Commencing January 1, 2003, the amount of the infrastructure access charge to be paid monthly by each member agencies of the Authority, shall be determined according to Table 1 attached hereto and made a part hereof.

4. Effective January 1, 2003, the Customer Service Charge is fixed at $13,753,401. Commencing January 1, 2003 the amount of the monthly Customer Service Charge to be paid by each member agency shall be determined according to Table 2 attached hereto and made a part hereof.

5. Effective January 1, 2003, the Storage Charge is fixed at $13,375,295. Commencing January 1, 2003 the amount of the monthly Storage Charge to be paid by each rate to the Authority for Storage as set forth in Table 3 attached hereto and made a part hereof.

6. Effective January 1, 2003, the Transportation Rate is fixed at $55 per acre-foot of water delivered by the Authority through Authority facilities. Member agencies shall pay the Transportation Rate in accordance with the procedures and processes of the Administrative Code relating to billing and payment of the Municipal and Industrial Water Rate.

7. (a) Effective January 1, 2003, as a Supply Charge, each member agency shall reimburse the Authority on a per-acre foot of water delivered basis, except as otherwise provided in subdivisions (b) and (c), for rates, fees and charges of the Metropolitan Water District of Southern California.

(b) Effective January 1, 2003 as part of the Supply Charge, each member agency shall pay to the Authority a Capacity Reservation Charge determined according to Table 4 attached hereto and made a part hereof.

(c) Effective July 1, 2002 to January 1, 2003 each member agency shall pay a Readiness-to-Serve Charge determined according to Table 5 attached hereto and made a part hereof, and effective January 1, 2003 as part of the Supply Charge, each member agency shall pay a Readiness-to-Serve Charge determined according to Table 5.
(d) The Authority has apportioned the Capacity Reservation Charge and the Readiness-to-Serve charge to member agency based upon historic water delivery information provided by the Metropolitan water district and historic water delivery information of the Authority. Any member agency, by October 1, 2002, may submit information to the Authority challenging the basis upon which the Capacity Reservation Charge and the Readiness-to-Serve Charge have been allocated. If justified by the information submitted by an agency, the board of directors may adjust the amount charged the agency. The information used to make an adjustment shall be used as the basis for future allocations.

(e) This section shall be administered in accordance with the Report approved by this Ordinance.

8. For the purposes of this ordinance, including the tables, the City of National City and the South Bay Irrigation District are collectively referred to as Sweetwater Authority. Any reference in this ordinance to Sweetwater Authority as a member agency shall be construed as a reference to the City of National City and the South Bay Irrigation District.

9. This ordinance shall be effective upon adoption. In lieu of publication of the text of this ordinance, the Clerk of the Board may publish a summary prepared by the General Counsel.

10. The provisions of this ordinance shall prevail over any provisions of the Administrative Code relating to rates and charges to the extent of any conflict. All existing rates and charges shall continue in effect until superseded on January 1, 2003 as provided in this ordinance.

11. To the greatest extent possible the provisions of this ordinance shall be construed to be compatible with the provisions of Section 8.2 (e) of the Agreement Between the San Diego County Water Authority and the City of San Diego for the Emergency Storage Project (Joint Use of Lake Hodges Dam and Reservoir and of Section 8.2 (e) of the Agreement Between the San Diego County Water Authority and the City of San Diego for the Emergency Storage Project: (Expansion of San Vicente Reservoir; however, the contract provisions shall control in the event of a conflict.

12. For the purposes of Section 6 of this ordinance, water delivered by the Authority through the following turnouts is deemed not to be "water delivered by the Authority through Authority facilities" -- DeLuz 1, Fallbrook 3, Fallbrook 6, Rainbow 1, Rainbow 8, Rainbow 9 and Rainbow 10.

[Space intentionally left blank.]
PASSED, APPROVED AND ADOPTED, this 27th day of June 2002.

AYES: Unless noted below all Directors voted aye.

Broomell,
Knutson, Mason, Quist, Williams

NOES:

ABSTAIN: Lewinger

ABSENT: Croucher, Haddad, Irvin, Jacob, Lopez, Tu

James F. Turner, Chairman
Board of Directors

ATTEST:

James Bond, Secretary

I, Vernice R. Hartman, Clerk of the Board of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of Ordinance No. 2002-039f said Board and that the same has not been amended or repealed.

Vernice R. Hartman
Clerk of the Board
<table>
<thead>
<tr>
<th>Agency</th>
<th>Meters</th>
<th>Per Meter</th>
<th>Months</th>
<th>Annual Charge</th>
<th>Monthly Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad</td>
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<td>$1</td>
<td>12</td>
<td>$370,452</td>
<td>$30,871</td>
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<tr>
<td>Del Mar</td>
<td>2,485</td>
<td>$1</td>
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<td>$29,820</td>
<td>$2,485</td>
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<tr>
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<td>$1</td>
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<td>Fallbrook</td>
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<tr>
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<td>$124,500</td>
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<td>Sweetwater</td>
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<td>$163,536</td>
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<td>Vista</td>
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<td>$399,624</td>
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<td>452</td>
<td>$1</td>
<td>12</td>
<td>$5,424</td>
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</table>

Grand Totals 846,566 $10,158,792 $ 846,566
<table>
<thead>
<tr>
<th>Table 2. Customer Service Charge Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fiscal Years 1999</strong></td>
</tr>
<tr>
<td><strong>Total AF</strong></td>
</tr>
<tr>
<td>Carlsbad M.W.D.</td>
</tr>
<tr>
<td>Del Mar, City of</td>
</tr>
<tr>
<td>Escondido, City of</td>
</tr>
<tr>
<td>Fallbrook P.U.D.</td>
</tr>
<tr>
<td>Helix W.D.</td>
</tr>
<tr>
<td>Oceanside, City of</td>
</tr>
<tr>
<td>Olivenhain M.W.D.</td>
</tr>
<tr>
<td>Otay W.D.</td>
</tr>
<tr>
<td>Padre Dam M.W.D.</td>
</tr>
<tr>
<td>Pendleton M.R.</td>
</tr>
<tr>
<td>Poway, City of</td>
</tr>
<tr>
<td>Rainbow M.W.D.</td>
</tr>
<tr>
<td>Ramona M.W.D.</td>
</tr>
<tr>
<td>Rincon M.W.D.</td>
</tr>
<tr>
<td>San Diego, City of</td>
</tr>
<tr>
<td>San Dieguito W.D.</td>
</tr>
<tr>
<td>Santa Fe I.D.</td>
</tr>
<tr>
<td>Sweetwater Authority</td>
</tr>
<tr>
<td>Valllecitos W.D.</td>
</tr>
<tr>
<td>Valley Center M.W.D.</td>
</tr>
<tr>
<td>Vista I.D.</td>
</tr>
<tr>
<td>Yuima M.W.D.</td>
</tr>
</tbody>
</table>

Note: Values in table contain greater precision than displayed.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Fiscal Years 1999-2001 Average Total</th>
<th>Calendar Year Storage Charge</th>
<th>Monthly Charge</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Non-Agr AF</td>
<td>Due</td>
<td></td>
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<td>Carlsbad M.W.D.</td>
<td>17,525</td>
<td>$496,514</td>
<td>$41,543</td>
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<td>Del Mar, City of</td>
<td>1,479</td>
<td>42,077</td>
<td>3,506</td>
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<tr>
<td>Escondido, City of</td>
<td>18,674</td>
<td>531,208</td>
<td>44,267</td>
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<td>Fallbrook P.U.D.</td>
<td>8,132</td>
<td>231,319</td>
<td>19,277</td>
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<td>Helix W.D.</td>
<td>36,040</td>
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<td>85,434</td>
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<td>27,891</td>
<td>793,401</td>
<td>66,117</td>
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<td>Olivenhain M.W.D.</td>
<td>16,969</td>
<td>482,722</td>
<td>40,227</td>
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<td>28,340</td>
<td>806,175</td>
<td>67,181</td>
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<td>Padre Dam M.W.D.</td>
<td>19,498</td>
<td>554,646</td>
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<td>2,863</td>
<td>239</td>
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<td>Rainbow M.W.D.</td>
<td>8,192</td>
<td>233,039</td>
<td>19,420</td>
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<td>7,159</td>
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<td>16,971</td>
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<td>7,440</td>
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<td>17,637</td>
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<td>205,441</td>
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<td>487,008</td>
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<td>San Dieguito W.D.</td>
<td>4,559</td>
<td>129,687</td>
<td>10,807</td>
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<td>Santa Fe I.D.</td>
<td>7,208</td>
<td>205,059</td>
<td>17,088</td>
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<td>6,657</td>
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<td>15,780</td>
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<td>20,550</td>
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<td>379,777</td>
<td>31,648</td>
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<tr>
<td>Yuima M.W.D.</td>
<td>25</td>
<td>727</td>
<td>61</td>
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</tbody>
</table>

**TOTALS**                  | 470,189                             | $13,375,295                  | $1,114,608     

Note: Values in table contain greater precision than displayed.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Coincident Peak Week Flows (cfs)</th>
<th>Annual CY 2003 Capacity Reservation Charge</th>
<th>Monthly CY 2003 Capacity Reservation Charge</th>
</tr>
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<tr>
<td></td>
<td>9/12/97</td>
<td>9/1/98</td>
<td>7/20/99</td>
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<tr>
<td>Carlsbad M.W.D.</td>
<td>26.35</td>
<td>28.06</td>
<td>30.66</td>
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<td>2.31</td>
<td>1.81</td>
<td>2.30</td>
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<tr>
<td>Escondido, City of</td>
<td>63.14</td>
<td>29.32</td>
<td>57.34</td>
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<td>Fallbrook P.U.D.</td>
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<td>5.92</td>
<td>5.97</td>
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<td>72.41</td>
<td>64.33</td>
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<td>33.48</td>
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<td>42.46</td>
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<td>49.63</td>
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<td>Padre Dam M.W.D.</td>
<td>37.82</td>
<td>40.52</td>
<td>39.25</td>
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<td>Pendleton M.R.</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
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<td>Poway, City of</td>
<td>23.80</td>
<td>26.32</td>
<td>24.38</td>
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<tr>
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<td>42.10</td>
<td>43.83</td>
<td>37.47</td>
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<td>7.83</td>
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<td>13.71</td>
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<td>15.66</td>
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<td>357.23</td>
<td>278.80</td>
<td>355.24</td>
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<td>9.04</td>
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<td>18.10</td>
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<td>19.42</td>
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<tr>
<td>Sweetwater Authority</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vallejos W.D.</td>
<td>25.14</td>
<td>32.81</td>
<td>37.08</td>
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<td>93.38</td>
<td>93.25</td>
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<td>3.77</td>
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<td>3.43</td>
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**Totals**: $7,905,600 $658,800

Note: Values in table contain greater precision than displayed.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Current MWD Allocation Method</th>
<th>New MWD Allocation Method</th>
<th>Total Fiscal Year 2002-2003 RTS Charge*</th>
<th>Net Stand-by Charge Credit*</th>
<th>Net Fiscal Year 2002-2003 RTS Charge</th>
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<tbody>
<tr>
<td></td>
<td>Average Total Deliveries</td>
<td>10-yr RTS Due per MWD July 1 - December 31, 1996 (AF)</td>
<td>Average Firm Deliveries</td>
<td>10-yr RTS Due per January 1 - June 30, 2003</td>
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<td>Carlsbad M.W.D.</td>
<td>14,633 390,962</td>
<td>14,598 378,978</td>
<td>$ 769,940 (376,697)</td>
<td>$ 403,243</td>
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<tr>
<td>Del Mar, City of</td>
<td>1,346 35,954</td>
<td>1,416 36,750</td>
<td>$ 72,704 (32,152)</td>
<td>$ 40,552</td>
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<tr>
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<td>12,930 345,469</td>
<td>14,119 366,562</td>
<td>$ 712,031 (214,967)</td>
<td>$ 497,063,99</td>
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<td>Fallbrook P.U.D.</td>
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<td>$ 514,032 (285,375)</td>
<td>$ 228,657</td>
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<tr>
<td>Helix W.D.</td>
<td>25,427 679,375</td>
<td>30,376 788,609</td>
<td>$ 1,467,984 (721,104)</td>
<td>$ 746,820</td>
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<tr>
<td>Oceanside, City of</td>
<td>25,594 683,633</td>
<td>25,284 656,407</td>
<td>$ 1,340,240 (613,003)</td>
<td>$ 727,237</td>
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<tr>
<td>Dilivenhain M.W.D.</td>
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<td>13,519 350,974</td>
<td>$ 681,304 (400,469)</td>
<td>$ 280,835</td>
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<tr>
<td>Otay W.D.</td>
<td>21,078 563,152</td>
<td>23,587 612,364</td>
<td>$ 1,175,516 (889,466)</td>
<td>$ 286,050</td>
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<tr>
<td>Padre Dam M.W.D.</td>
<td>18,086 482,678</td>
<td>17,866 463,836</td>
<td>$ 946,514 (710,041)</td>
<td>$ 236,473</td>
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<tr>
<td>Pendleton M.R.</td>
<td>103 2,752</td>
<td>100 2,608</td>
<td>$ 5,360 (4,048)</td>
<td>$ 1,312</td>
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<tr>
<td>Poway, City of</td>
<td>10,049 292,529</td>
<td>11,827 307,042</td>
<td>$ 595,971 (291,942)</td>
<td>$ 307,629</td>
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<tr>
<td>Rainbow M.W.D.</td>
<td>22,911 612,149</td>
<td>7,317 189,961</td>
<td>$ 802,110 (547,350)</td>
<td>$ 254,760</td>
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<tr>
<td>Ramona M.W.D.</td>
<td>8,241 220,191</td>
<td>6,171 160,208</td>
<td>$ 380,399 (433,882)</td>
<td>(53,483)</td>
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<tr>
<td>Rincon M.W.D.</td>
<td>6,119 163,489</td>
<td>6,366 165,014</td>
<td>$ 328,503 (310,797)</td>
<td>$ 17,706</td>
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<tr>
<td>San Diego, City of</td>
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<td>166,198 4,314,781</td>
<td>$ 8,110,807 (4,065,507)</td>
<td>$ 4,045,300</td>
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<tr>
<td>San Dieguito W.D.</td>
<td>3,870 103,399</td>
<td>4,035 104,766</td>
<td>$ 208,165 (143,927)</td>
<td>$ 64,238</td>
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<td>Santa Fe I.D.</td>
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<td>6,423 166,741</td>
<td>$ 326,484 (149,199)</td>
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<td>5,522 143,367</td>
<td>$ 251,631 (414,194)</td>
<td>(162,563)</td>
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<td>$ 608,782 (393,563)</td>
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<td>34,679 926,556</td>
<td>7,501 197,083</td>
<td>$ 1,123,639 (674,755)</td>
<td>$ 448,884</td>
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<td>Vista I.D.</td>
<td>7,228 194,067</td>
<td>10,303 266,618</td>
<td>$ 464,805 (326,521)</td>
<td>$ 88,284</td>
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<tr>
<td>Yuima M.W.D.</td>
<td>932 24,892</td>
<td>29 759</td>
<td>$ 25,651 (84,409)</td>
<td>(58,758)</td>
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</tr>
</tbody>
</table>

**TOTALS** $10,774,798 $10,141,374 $20,918,172 $(12,153,428) $8,762,744

*Net of MWD Standby Charge Program Administrative Costs of $175,689.
Note: Values in table contain greater precision than displayed.
C. FINANCIAL POLICY AMENDMENT
August 16, 2006

Attention: Board of Directors

Adopt the Rate Model Work Group Financial Policy Proposal. (Action)

Purpose
To amend Water Authority financial policies regarding the Rate Stabilization Fund (RSF) and Debt Service Coverage Ratio (DSCR) as recommended by the Rate Model Work Group Proposal and the Administrative and Finance Committee.

Administrative and Finance Committee Recommendation
Adopt the Rate Model Work Group Proposal to amend financial policies regarding the RSF and DSCR.

Fiscal impact
The Rate Model Work Group (RMWG) Proposal will be phased in over a three-year period starting January 1, 2008. The phase-in will require that by June 30, 2011, the RSF have a balance approximately $10 million higher than the projected balance under the current policy. Starting January 1, 2008, water rates will need to include an additional increase of approximately one percent per year on average for the next three years; however, Infrastructure Access Charges (IAC) will decrease by approximately $3 per year per meter. Looking out to 2020-2021, the IAC will be approximately $6 per year per meter lower than projected under current policies, and the average annual increase in the water rate will decrease by approximately 0.40 percent.

Background
In December 2004, the Water Authority created the RMWG to promote financial transparency, to foster member agency relations and to create an open and collaborative process for discussing financial and rate management issues. The RMWG is made up of member agency general managers and finance officers. In 2005, the RMWG’s focus centered on understanding the inputs and outputs of the Financial Rate Modeling Program and how these were used to set rates and charges and prepare the Long Range Financing Plan. A workshop was then conducted with the member agencies to share this information. From this process, a list of parking lot items resulted. The analytical work surrounding these items formed the basis of the Proposal currently before the Board.

The Proposal is the result of six months of intensive, collaborative work among RMWG members, staff and Water Authority financial advisors. RMWG members included: Keith Lewinger (Fallbrook); Joe Beachem (Otay); Augie Caires and Doug Wilson (Padre Dam); Tom Brammell (Ramona); Charles Yackly, Christine Ruess and Cathy Pieroni (San Diego); Dennis Bostad and Debra Farrow (Sweetwater); Eldon Boone and Farrokh Shahamiri (Vista): and Linden Burzell (Yuima). The group met six times between January and June 2006. In these meetings, the group analyzed quantitative data related to Water Authority financial risks, reviewed studies of comparable agency financial ratios, evaluated 35 rate runs, identified common interests and barriers regarding policy development, developed and voted on specific recommendations, and drafted the policy recommendations contained in Attachment A. Staff presented the RMWG Proposal at the member agency general managers’ meeting on July 18, 2006 and at the quarterly meeting of member agency finance officers on August 3, 2006. Staff
also held a workshop on the RMWG Proposal at a special meeting of the Administrative and Finance Committee on August 10, 2006. At this meeting, by a unanimous vote, the Committee recommended adoption of the RMWG Proposal to the Board.

Previous Board Action: On August 10, 2006, the Administrative and Finance Committee recommended adoption of the RMWG Proposal.

Discussion
The key findings that drove the development of the Proposal are the result of a comprehensive risk analysis (including quantitative hydrologic data) and a comparative analysis of the financial ratios of other AA-rated water agencies. The risk analysis showed not only that hydrologic risk was significant, but also that the existing RSF minimum provides only one year of protection against the negative financial impacts of extreme wet weather. The RMWG considered this level of protection to be insufficient and chose to implement a target funding level that provides 2.5 years of protection against wet weather. In addition to the risk analysis, the comparative financial analysis revealed that with respect to the three financial ratios of greatest importance to investors and rating agencies, the Water Authority placed below the average of its AA rating category. After analyzing different scenarios and with extensive input from the Water Authority’s financial advisor, the RMWG recommended a DSCR policy target of 1.50x.

Attachment A contains the RMWG recommendations relating to the RSF and DSCR policies. In addition to policy statements, the attachment provides edited sections of the Water Authority’s Long Range Financing Plan which demonstrate how the policies will be “operationalized.” The primary elements of the RMWG Proposal are to:

- Establish a target funding level for the RSF that protects the Water Authority against the financial impact of 2.5 years of wet weather;
- Decrease the maximum funding level for the RSF to protect the Water Authority against the financial impact of 3.5 years of wet weather;
- Phase in the new target funding level of the RSF over three years and replenish any target level deficits over the same time period;
- Provide for the use of RSF funds to pay for O&M and debt service expenses, to smooth water rates and to meet Operating Fund and DSCR targets;
- Establish a separate fund for known, specific future expenses such as dam fills; and
- Establish a target DSCR of 1.50x, which is above the minimum bond covenant of 1.20x.

Benefits of the RMWG Proposal include reduced rate volatility, increased protection against wet weather, a transparent and flexible RSF framework, increased cash funding of the CIP and less outstanding debt. Moreover, the strengthening of key financial ratios—higher debt service coverage ratio, decreased debt ratio and increased cash days—support the maintenance of the Water Authority’s AA credit ratings.

Prepared by: Eric Sandler, Deputy Director of Finance
Reviewed by: Karen P. Brust, Director of Finance/Treasurer
Approved by: Paul A. Lanspery, Deputy General Manager

Attachment(s):
Attachment A - Rate Model Work Group Recommended Adjustments to Existing Water Authority Financial Policies

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Rate Stabilization Fund Policy Statement
The target funding level for the RSF is equal to the financial loss resulting from 2.5 years of above average rainfall, calculated at a 95% exceedence level. The maximum funding level for the RSF is equal to the financial loss resulting from 3.5 years of above average rainfall.

Transfers from the RSF to the Operating Fund may be made to meet annual O&M expenses, debt service expenses, stabilize water rates or to comply with debt service coverage and operating fund policies. Transfers from the Operating Fund to the RSF will be made as a closing audit adjustment if the Operating Fund maximum balance has been met.

Balances below the RSF target level are to be replenished within three years. The Board may also choose to budget for RSF deposits resulting in balances in excess of the target level but below the maximum level to provide for rate smoothing. The RSF is managed so that any funds above the maximum balance will be transferred to the Operating Fund—Operating Fund balances above the existing 45-day policy are subject to discretionary use by the Board.

Funds committed to specific future non-operating expenditures such as dam fills or QSA water pre-payments will be set-aside in either the Dam Fill Fund or QSA Commitment Fund.

Rate Stabilization Fund
Red-lined text from Water Authority’s Long Range Financing Plan for fiscal year 2004-2005

The Rate Stabilization Fund (RSF) was created in Fiscal Year 1989-1990 for the purpose of collecting amounts of water revenues greater than expenditures in years of strong water sales. Funds can then be used to mitigate “rate shock” in years of weak water sales and/or to manage debt service coverage, or to smooth out water rate increases. The RSF is a critical short-term water rate management tool that provides the necessary funds to maintain a smooth water rate pattern over a long period of time. With the new melded supply rate, and the expansion of the Water Authority’s functional areas with treatment and desalination, the RSF will have an increasingly important role in managing hydrology risk and stabilizing annual revenue needs.

The RSF has served the Water Authority well since it was created, providing a vehicle that collected approximately $60 million in the first three years of its existence. Revenues greater than expenditures were generated in those years from strong water sales during the drought, combined with relatively low debt service requirements because major funding for the CIP was just beginning. In Fiscal Year 1994-1995, approximately $6 million was withdrawn from the RSF to supplement operating revenues and mitigate the need for water rates to rise above $80 per acre-foot. A transfer of $19 million was made from the RSF to the Operating Fund, as directed by the Board in Fiscal Year 1996-1997, to more efficiently balance Rate Stabilization and Operating Funds. The RSF will supply approximately $10 million in water purchases for the Olivenhain reservoir in Fiscal Year 2003-2004. In addition, in Fiscal Year 2003-2004, $10 million of this fund has been placed in restricted investments to fund the IID socioeconomic payment obligation. As a part of the Long Range Financing Plan process, a “QSA Commitment Fund” will be established to recognize that these restricted investments are no longer available for rate stabilization purposes. The RSF is anticipated to have an ending balance of $55.7 million (inclusive of the remaining $8 million in IID-restricted investments), and a permitted maximum balance of $86.1 million at the close of Fiscal Year 2003-2004.
For long-range financial planning purposes, Board policy requires that the RSF be maintained at a minimum balance of at least 25 percent of the Water Authority's net water sales revenue, defined as total Water Authority water sales revenue less Water Authority water purchases from Metropolitan Water District. The RSF also has a maximum balance of 100 percent of the average annual water sales projected over the proceeding four years, equal to the financial loss resulting from 2.5 years of above average rainfall, calculated at a 95% exceedence level. Additionally, it establishes a maximum funding level equal to the financial loss resulting from 3.5 years of above average rainfall. The four-year forward-rolling average allows the RSF to gradually increase or decrease with respect to revenue coverage needs. Defining the target and maximum funding levels of the RSF in terms of the financial impact of above average rainfall matches the size of the fund to the primary risk it is designed to mitigate and provides additional capacity for rate smoothing.

As a general rule, the Water Authority will transfer portions of its net water revenues not required to meet either its debt service coverage ratio requirement or operating fund requirement into the RSF. The Board may choose to budget for RSF deposits resulting in balances in excess of the target level but not in excess of the maximum level for the purposes of rate smoothing. Balances below the target level are to be replenished within three years. As necessary, the Water Authority will transfer amounts from its RSF into net water revenues to meet its debt service coverage requirements, Operating Fund requirements or to smooth rate increases. Interest earnings accrue to the Rate Stabilization Fund—RSF unless the maximum balance is achieved, at which point they will be deposited into the Operating Fund. The RSF is managed so that any funds above the maximum balance will be transferred to the Operating Fund—Operating Fund balances above the existing 45-day policy are subject to discretionary use by the Board. Deposits are not made into the fund if the fund is at its maximum permitted balance.

In Fiscal Year 2003-2004, $10 million of the RSF was placed in restricted investments to fund the IID socioeconomic payment obligation. As a part of the Long-Range Financing Plan process, a "QSA Commitment Fund" was established to recognize that these balances are no longer available for rate stabilization purposes. Similarly, funds committed to specific future non-operating expenditures such as dam fills or QSA water pre-payments are to be set aside in the Dam Fill Fund or the QSA Commitment Fund. Planned non-operating expenditures in the future include San Vicente and Lake Hodges dam fill payments scheduled for 2012-2016 and a QSA Water Prepayment due in 2008.

The RSF was created to provide funds that would mitigate the need for an unanticipated rate increase in the event of an unexpected decline in water sales. As a result, the RSF is a critical short-term water rate management tool that provides the necessary funds to maintain a smooth water rate pattern over a long period of time.

With the new melded supply rate, and the expansion of the Water Authority's functional areas with treatment and desalination, the RSF will have an increasingly important role in stabilizing annual revenue needs.
Debt Service Coverage Policy Statement
The Board will set rates to meet a senior lien debt service coverage target inclusive of RSF transfers of 1.50x as well as a senior lien debt service coverage target (excluding capacity charge revenues) of 1.00x. The 1.50x senior lien debt service coverage target is above the existing 1.20x bond covenant.

Debt Service Coverage
Red-lined text from Water Authority’s Long Range Financing Plan for fiscal year 2004-2005
Debt service coverage is another key constraint in the FRMP, and is mandated by the legal documents that govern the Water Authority’s outstanding debt issues. The Water Authority’s debt service coverage covenants require that the Water Authority’s net operating revenues, defined as operating revenues less operations and maintenance expenditures, equal a minimum of 120 percent of debt service on senior lien debt. The Water Authority has also covenanted to provide gross revenues of at least 100 percent of debt service on all Water Authority obligations. Senior lien refers to debt that has a legal first priority repayment after the Water Authority first pays its operations and maintenance expenditures. At the present time, all of the Water Authority’s outstanding fixed-rate debt is senior lien debt.

The projected senior lien debt service ratio, and overall debt service ratio are presented in Figures 53 and 54 respectively. The obligations that are subject to the 100 percent debt service coverage requirement consist of all Water Authority obligations, including operations and maintenance expenditures, long-term debt service, short-term debt service and any other obligations (e.g., leases, contracts, etc.)

In addition to the 120 percent and 100 percent requirements, the Water Authority has the ability to issue an intermediate lien that would require 110 percent coverage after the payment of senior lien obligations. The Water Authority currently has no intermediate lien obligations outstanding and no plan to issue such debt.

Highly-rated water utilities generally have actual debt service coverage ratios in excess of their legal obligations. The maintenance of the Water Authority’s high credit ratings requires debt service coverage ratios that generally exceed the minimum requirement. Though not a legal commitment, the Board has established that inclusive of RSF transfers, the Water Authority will maintain senior lien debt service coverage of 150% and senior lien debt service coverage of 100% after excluding capacity charge revenues.
D. GENERAL RESOLUTION 89-21 (W/ AMENDMENTS)
SAN DIEGO COUNTY WATER AUTHORITY

RESOLUTION NO. 89-21

A Resolution of the Board of Directors of the San Diego County Water Authority Providing for the Allocation of Water System Revenues and Establishing Covenants to Secure the Payment of Obligations Payable from Net Water Revenues

(General Resolution)

Adopted May 11, 1989
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SAN DIEGO COUNTY WATER AUTHORITY

RESOLUTION NO. 89-21

A Resolution of the Board of Directors of the San Diego County Water Authority Providing for the Allocation of Water System Revenues and Establishing Covenants to Secure the Payment of Obligations Payable from Net Water Revenues

(General Resolution)

WHEREAS, the San Diego County Water Authority owns and operates the Water System;

WHEREAS, the Authority expects to issue Bonds and enter into Contracts, including the 1989 Installment Sale Agreement and the 1989 Contract of Indebtedness, the obligations of the Authority under which will be payable from Net Water Revenues;

WHEREAS, the Authority now desires to provide for the allocation of revenues of the Water System; and

WHEREAS, the Authority also desires to establish covenants to secure the payment of obligations payable from Net Water Revenues;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY AS FOLLOWS:

ARTICLE I

DEFINITIONS

SECTION 1.01. Definitions. Unless the context otherwise requires, the terms defined in this section shall for all purposes hereof and of any amendment hereof or supplement hereto and of any opinion or report or other document mentioned herein or therein have the meanings defined herein, the following definitions to be equally applicable to both the singular and plural forms of any of the terms defined herein:

Accreted Value

"Accreted Value" means, with respect to any Capital Appreciation Bonds or Capital Appreciation Certificates, as of
the date of calculation, the initial amount thereof plus the interest accrued thereon to such date of calculation, compounded from the date of initial delivery at the approximate interest rate thereof on each semiannual date specified with respect thereto, as determined in accordance with the table of accreted values for any Capital Appreciation Bonds or Capital Appreciation Certificates prepared by the Authority at the time of sale thereof, assuming in any year that such Accreted Value increases in equal daily amounts on the basis of a year of three hundred sixty (360) days composed of twelve (12) months of thirty (30) days each.

**Accreted Value Payment Date**

"Accreted Value Payment Date" means any Installment Payment Date on which Accreted Value is payable.

**Authority**

"Authority" means the San Diego County Water Authority, a county water authority duly organized and existing under and by virtue of the laws of the State of California.

**Bond or Contract Reserve Fund**

"Bond or Contract Reserve Fund" means any debt service reserve fund established to secure the payment of Bond Payments or Installment Payments.

**Bond Payments**

"Bond Payments" means the principal and interest payments scheduled to be paid by the Authority on Bonds.

**Bonds**

"Bonds" means all revenue bonds of the Authority authorized, executed, issued and delivered by the Authority under and pursuant to applicable law, the interest and principal and redemption premium, if any, payments under and pursuant to which are payable from Net Water Revenues on a parity with all other Bonds and Contracts.

**Capital Appreciation Bonds**

"Capital Appreciation Bonds" means any Bonds described as such when issued.
Capital Appreciation Certificates

"Capital Appreciation Certificates" means any certificates of participation in Installment Payments described as such when issued.

Certificate of the Authority

"Certificate of the Authority" means an instrument in writing signed on behalf of the Authority by the Chairman of the Board of Directors of the Authority, or by any other officer of the Authority duly authorized by the Board of Directors of the Authority to sign documents on its behalf with respect to the matters referred to therein.

Certificates

"Certificates" means any certificates of participation representing interests in payments to be made by the Authority pursuant to Leases, Installment Sale Agreements or Contracts of Indebtedness.

Contract Payments

"Contract Payments" means the contract payments scheduled to be paid by the Authority under and pursuant to Contracts of Indebtedness.

Contracts

"Contracts" means all Installment Sale Agreements, Leases and Contracts of Indebtedness.

Contracts of Indebtedness; 1989 Contract of Indebtedness

"Contracts of Indebtedness" means contracts of indebtedness or similar obligations of the Authority authorized and executed by the Authority under and pursuant to applicable law, the interest and principal payments under and pursuant to which are payable from Net Water Revenues on a parity with all other Contracts and Bonds. "1989 Contract of Indebtedness" means the contract of indebtedness by and between the Authority and Security Pacific National Bank, dated as of May 1, 1989, as originally executed and as it may from time to time be amended or supplemented and which constitutes a Contract of Indebtedness hereunder.

Current Water Revenues

"Current Water Revenues" means all gross income and revenue received or receivable by the Authority from the
ownership or operation of the Water System, determined in accordance with Generally Accepted Accounting Principles, including all rates, fees and charges (including connection fees and charges and standby charges) received by the Authority for the Water Service and the other services of the Water System and all other income and revenue howsoever derived by the Authority from the ownership or operation of the Water System or arising from the Water System, and also including (1) all income from the deposit or investment of any money in the Water Revenue Fund, the General Reserve Fund and the Rate Stabilization Fund, and (2) all income from the deposit or investment of money held in the Installment Payment Fund, the Subordinate Obligation Fund or any Bond or Contract Reserve Fund or other fund established pursuant to a Trust Agreement to the extent such income will be available to pay Bond Payments or Installment Payments, but excluding any proceeds of taxes and any refundable deposits made to establish credit and advances or contributions in aid of construction.

Debt Service

"Debt Service" means, for any Fiscal Year or other period, the sum of (1) the interest accruing during such Fiscal Year or period on all outstanding Bonds, assuming that all outstanding serial Bonds are retired as scheduled and that all outstanding term Bonds are redeemed or paid from sinking fund payments as scheduled, (2) that portion of the principal amount of all outstanding serial Bonds maturing on the next succeeding principal payment date that would have accrued during such Fiscal Year or period if such principal amount were deemed to accrue daily in equal amounts from the next preceding principal payment date or during the year preceding the first principal payment date, as the case may be, (3) that portion of the principal amount of all outstanding term Bonds required to be redeemed or paid on the next succeeding redemption date (together with the redemption premiums, if any, thereon) that would have accrued during such Fiscal Year or period if such principal amount (and redemption premiums) were deemed to accrue daily in equal amounts from the next preceding redemption date or during the year preceding the first redemption date, as the case may be, and (4) that portion of the Installment Payments required to be made at the times provided in the Contracts that would have accrued during such Fiscal Year or period if such Installment Payments were deemed to accrue daily in equal amounts from, in each case, the next preceding Installment Payment Date of interest or principal or the date of the pertinent Contract, as the case may be; provided, that (a) if any of such Bonds are Capital Appreciation Bonds or if the Installment Payments due under any of such Contracts are evidenced by Capital Appreciation
Certificates, then the Accreted Value payment shall be deemed due on the scheduled redemption or payment date of such Capital Appreciation Bond or Capital Appreciation Certificate; (b) if any of such Bonds or if the Installment Payments due under any such Contracts bear interest payable pursuant to a variable interest rate formula, the interest rate on such Bonds or such Contracts for periods when the actual interest rate cannot yet be determined, shall be assumed to be equal to the greater of (1) the current interest rate calculated pursuant to the provisions of the terms of such Bonds or Contracts (with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02, the initial interest rate on such Bonds or Contracts), or, (2) if available, the average interest rate on such Bonds or Contracts during the thirty-six (36) months preceding the date of calculation or, (3) if such Bonds or Contracts have not been outstanding for such thirty-six month period (or with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02), such average interest rate on comparable debt of a state or political subdivision of a state which debt is then rated by the rating agencies rating such Bonds or Contracts in a rating category equivalent to the rating on such Bonds or Contracts; and (c) if 20% or more of the original principal of such Bonds or the Installment Payments due under such Contracts is not due until the final stated maturity of such Bonds or the Installment Payments due under such Contracts, such principal may, at the option of the Authority, be treated as if it were due based upon a level amortization of such principal over the term of such Bonds or Contracts or twenty (20) years, whichever is greater; provided further, that "Debt Service" shall not include (1) payments due on voter-approved general obligation bonds and other voter-approved general obligation debts for which taxes are then being levied and collected or (2) interest on Bonds or Contracts which are to be paid from amounts constituting capitalized interest held pursuant to a Trust Agreement.

Director of Finance

"Director of Finance" means the Director of Finance of the Authority or its successor designated by the Board of Directors of the Authority.

Fiscal Year

"Fiscal Year" means the period beginning on July 1 of each year and ending on the next succeeding June 30, or any other annual accounting period hereafter selected and designated by the Board of Directors of the Authority as the Fiscal Year of the Authority.
General Reserve Fund

"General Reserve Fund" means the fund by that name established pursuant to Section 2.01.

Generally Accepted Accounting Principles

"Generally Accepted Accounting Principles" means the uniform accounting and reporting procedures set forth in publications of the American Institute of Certified Public Accountants or its successor, or by any other generally accepted authority on such procedures, and includes, as applicable, the standards set forth by the Governmental Accounting Standards Board or its successor.

Installment Payment Date

"Installment Payment Date" means any date on which Bond Payments or Installment Payments are scheduled to be paid by the Authority under and pursuant to any Contract or Bonds.

Installment Payment Fund

"Installment Payment Fund" means the fund by that name established pursuant to Section 2.01.

Installment Payments

"Installment Payments" means Contract Payments, Installment Sale Payments or Lease Payments.

Installment Sale Agreements; 1989 Installment Sale Agreement

"Installment Sale Agreements" means installment sale agreements or similar obligations of the Authority authorized and executed by the Authority under and pursuant to applicable law, the interest and principal payments under and pursuant to which are payable from Net Water Revenues on a parity with all other Contracts and Bonds. "1989 Installment Sale Agreement" means the installment sale agreement by and between the Authority and Security Pacific National Bank, dated as of May 1, 1989, as originally executed and as it may from time to time be amended or supplemented and which constitutes an Installment Sale Agreement hereunder.

Installment Sale Payments

"Installment Sale Payments" means the installment sale or other periodic payments scheduled to be paid by the Authority under and pursuant to Installment Sale Agreements.
Interest Payment Date

"Interest Payment Date" means an Installment Payment Date on which interest is payable.

Law

"Law" means the County Water Authority Act, being California Water Code Appendix, Sections 45-1 et seq., and all laws amendatory thereof or supplemental thereto.

Lease Payments

"Lease Payments" means the rental payments scheduled to be paid by the Authority under and pursuant to Leases.

Leases

"Leases" means capital leases or similar obligations of the Authority authorized and executed by the Authority under and pursuant to applicable law, the interest and principal payments under and pursuant to which are payable from Net Water Revenues on a parity with the payment of all other Contracts and Bonds.

Maintenance and Operation Costs

"Maintenance and Operation Costs" means all costs paid or incurred by the Authority for maintaining and operating the Water System, determined in accordance with Generally Accepted Accounting Principles, including all costs of water purchased by the Authority for resale, and including all expenses of management and repair and other expenses necessary to maintain and preserve the Water System in good repair and working order, and including all administrative costs of the Authority, such as salaries and wages of employees, overhead, taxes (if any) and insurance premiums, and including all other costs of the Authority or charges required to be paid by it to comply with the terms hereof or of any resolution authorizing the execution of any Contract or of such Contract or of any resolution authorizing the issuance of any bonds or of such bonds, such as compensation, reimbursement and indemnification of the trustee for any such Contracts or bonds and fees and expenses of Independent Certified Public Accountants; but excluding in all cases (1) depreciation, replacement and obsolescence charges or reserves therefor and amortization of intangibles, premiums and discounts, (2) interest expense and (3) amounts paid from other than Water Revenues (including, but not limited to, amounts paid from the proceeds of ad valorem property taxes).
Maximum Annual Debt Service

"Maximum Annual Debt Service" means the greatest total Debt Service payable in any Fiscal Year during the period commencing with the next ensuing Fiscal Year and terminating with the Fiscal Year in which payments are due under the last outstanding Bonds or the last outstanding Contract, whichever is later.

Monthly Accrued Debt Service

"Monthly Accrued Debt Service" means, with respect to any month, an amount equal to the sum of Debt Service with respect to all Bonds and Contracts accrued and to accrue to the end of such month; provided, in calculating the amount of Monthly Accrued Debt Service (i) Accreted Value with respect to Capital Appreciation Bonds and Capital Appreciation Certificates shall be deemed to accrue over the twelve-month period immediately preceding the scheduled redemption or prepayment date of such Capital Appreciation Bond or Capital Appreciation Certificate, (ii) the adjustment to principal described in provision (c) of the definition of Debt Service shall not be made and (iii) if the interest on any Bonds or Installment Payments due under any Contract bear interest payable pursuant to a variable rate formula, the amount of interest deemed to accrue during any period shall be the actual interest borne by such Bonds or Installment Payments during such period.

Net Water Revenues

"Net Water Revenues" means, for any Fiscal Year or other period, the Water Revenues during such Fiscal Year or period less the Maintenance and Operation Costs during such Fiscal Year or period.

Obligation

"Obligation" means any contract or lease for the purchase of any facilities, properties, structures, or works, or any loan of credit to or guaranty of debts, claims or liabilities of any other person for the purpose of obtaining any facilities, properties, structures or works, the final payments under which are due more than five years following the effective date thereof, so long as in each case the payments thereunder are to constitute Maintenance and Operations Costs.

Opinion of Counsel

"Opinion of Counsel" means a written opinion of counsel of national representation generally recognized to be
well qualified in the field of law relating to municipal bonds, retained by the Authority.

Outstanding

"outstanding" means with respect to any Bonds or Contracts, Bonds or Contracts the payment obligations of the Authority under which are not deemed paid in accordance with the terms of such Bonds or Contracts or applicable Trust Agreement.

Principal Payment Date

"Principal Payment Date" means any Installment Payment Date on which principal is payable.

Rate Stabilization Fund

"Rate Stabilization Fund" means the fund by that name established pursuant to Section 2.01.

Reimbursement Agreement

"Reimbursement Agreement" means an agreement between the Authority and a bank or financial institution providing for the issuance of a letter of credit, reserve fund insurance policy, guaranty or surety bond for the purpose of making Bond Payments or Installment Payments and requiring the Authority to make payments to reimburse or compensate such bank or financial institution for draws under such instruments from Net Water Revenues on a parity with all Contracts and Bonds.

Reimbursement Payments

"Reimbursement Payments" means amounts payable by the Authority as compensation or reimbursement for a draw on a letter of credit, reserve fund insurance policy, guaranty or surety bond for the purpose of making Bond Payments or Installment Payments in accordance with any Reimbursement Agreement.

Subordinate Obligation Payment Fund

"Subordinate Obligation Payment Fund" means the fund by that name established pursuant to Section 2.01.

Subordinate Obligation Payments

"Subordinate Obligation Payments" means the payments scheduled to be paid by the Authority under and pursuant to Subordinate Obligations.
Subordinate Obligations

"Subordinate Obligations" means obligations of the Authority authorized and executed by the Authority under applicable law, the interest and principal payments under and pursuant to which are payable from Net Water Revenues, from the Subordinate Obligation Payment Fund, subject and subordinate to Bond Payments and Installment Payments.

Trust Agreement

"Trust Agreement" means any indenture or trust agreement providing for the issuance of Bonds or Certificates.

Trustee

"Trustee" means the trustee under any Trust Agreement.

Water Revenue Fund

"Water Revenue Fund" means the San Diego County Water Authority Water Revenue Fund established pursuant to Section 2.01.

Water Revenues

"Water Revenues" means Current Water Revenues plus deposits to the Water Revenue Fund from amounts on deposit in the Rate Stabilization Fund, but only as and to the extent specified in Section 2.03, less amounts transferred to the Rate Stabilization Fund.

Water Service

"Water Service" means the water service furnished, made available or provided by the Water System.

Water System

"Water System" means all property rights, contractual rights and facilities of the Authority, including all facilities for the conservation, storage, transmission and distribution of water and the generation and delivery of hydroelectric power in connection therewith now owned by the Authority and all other properties, structures or works for the conservation, storage, transmission and distribution of water and the generation and delivery of hydroelectric power in connection therewith hereafter acquired and constructed by or for the Authority and determined by the Authority to be a part of the Water System; together with all additions,
betterments, extensions or improvements to such facilities, properties structures or works or any part thereof hereafter acquired and constructed.

ARTICLE II
WATER REVENUES

SECTION 2.01. Establishment of Funds. The Authority hereby establishes and agrees to maintain, so long as any Bonds, Certificates or Subordinate Obligations remain outstanding, the following funds, each such fund to be held by the Director of Finance:

(1) Rate Stabilization Fund;
(2) Water Revenue Fund;
(3) Installment Payment Fund;
(4) Subordinate Obligation Payment Fund; and
(5) General Reserve Fund.

Amounts in such funds shall be disbursed, allocated and applied solely to the uses and purposes hereinafter in this article set forth, and shall be accounted for separately and apart from all other accounts, funds, money or other resources of the Authority. The Authority will only have such beneficial right or interest in such money as is provided herein.

SECTION 2.02. Allocation of Water Revenues. In order to carry out and effectuate the obligations of the Authority to make Bond Payments, Installment Payments, Reimbursement Payments and Subordinate Obligation Payments, the Authority agrees and covenants that all Current Water Revenues received by it shall be deposited when and as received in the Water Revenue Fund. The Authority may, to the extent provided in Section 2.03, transfer amounts in the Water Revenue Fund to the Rate Stabilization Fund or from the Rate Stabilization Fund to the Water Revenue Fund.

The Authority shall pay all Maintenance and Operation Costs (including amounts reasonably required to be set aside in contingency reserves for Maintenance and Operation Costs the payment of which is not then immediately required) from the Water Revenue Fund as they become due and payable, and all remaining money on deposit in the Water Revenue Fund shall be set aside and deposited or transferred
by the Authority, as the case may be, at the following times in the following order of priority:

(a) **Installment Payment Fund.** On or before the last business day of each month, beginning in May, 1989, the Authority shall deposit in the Installment Payment Fund, a sum equal to the Monthly Accrued Debt Service for such month, plus a sum equal to all Reimbursement Payments then due and payable; provided that no such deposit need be made if amounts on deposit in the Installment Payment Fund equal the amount of Bond Payments or Installment Payments due with respect to all Bonds and Contracts on the next succeeding Interest Payment Date (with respect to interest), Principal Payment Date (with respect to principal) and Accreted Value Payment Date (with respect to Accreted Value) for such Bonds or Contract, and the Reimbursement Payments then due and payable.

(b) **Bond or Contract Reserve Funds.** On or before the last business day of each month, the Authority shall transfer to each Trustee for deposit in the applicable Bond or Contract Reserve Fund an amount equal to the amount, if any, required to be deposited therein to build up or replenish such Bond or Contract Reserve Fund as and to the extent required by the applicable Contract or Trust Agreement.

(c) **Subordinate Obligation Payment Fund.** On or before the last business day of each month, the Authority shall deposit in the Subordinate Obligation Payment Fund the sum or sums required to be deposited under or pursuant to the indenture, trust agreement or other instrument securing each Subordinate Obligation.

(d) **Subordinate Obligation Reserve Funds.** On or before the last business day of each month, the Authority shall transfer to each trustee with respect to Subordinate Obligations for deposit in the debt service reserve fund with respect to such Subordinate Obligations an amount equal to the amount, if any, required to be deposited therein to build up or replenish such debt service reserve fund as and to the extent required by the applicable Subordinate Obligation or the indenture, trust agreement or other instrument securing such Subordinate Obligation.

(e) **General Reserve Fund.** On the last business day of each month, the Authority shall, after making each of the foregoing deposits and transfer, transfer all money remaining in the Water Revenue Fund to the General Reserve Fund.

SECTION 2.03. **Rate Stabilization Fund.** From time to time the Authority may deposit in the Rate Stabilization Fund from Current Water Revenues such amounts as the Authority
shall determine. All amounts transferred by the Authority from the Rate Stabilization Fund to the Water Revenue Fund shall be used by the Authority solely to pay Maintenance and Operation Costs. All interest or other earnings upon deposits in the Rate Stabilization Fund shall be withdrawn therefrom and accounted for as Current Water Revenues.

SECTION 2.04. Installment Payment Fund. The Authority may withdraw amounts from the Installment Payment Fund solely for the purpose of paying Bond Payments, Installment Payments and Reimbursement Payments at the times and in the amounts required by applicable Bonds, Contracts, Trust Agreements and Reimbursement Agreements.

SECTION 2.05. Subordinate Obligation Payment Fund. The Authority may withdraw amounts from the Subordinate Obligation Fund solely for the purpose of paying or providing for the payment of Subordinate Obligation Payments at the times and in the amounts required by applicable Subordinate Obligations or trust agreement or indenture securing such Subordinate Obligations.

SECTION 2.06. General Reserve Fund. The Authority may withdraw money in the General Reserve Fund for any lawful purpose of the Authority except to make transfers to the Rate Stabilization Fund.

ARTICLE III

BONDS AND CONTRACTS; OBLIGATIONS

SECTION 3.01. 1989 Installment Sale Agreement; 1989 Contract of Indebtedness. (a) The Authority may execute the 1989 Installment Sale Agreement and the 1989 Contract of Indebtedness without the necessity of complying with Section 3.02.

(b) The Authority may not execute any amendment to the 1989 Installment Sale Agreement or the 1989 Contract of Indebtedness if such amendment would increase the amount of Installment Payments thereunder; provided, the Authority may execute such an amendment if the requirements of Section 3.02 will be satisfied in connection therewith.

SECTION 3.02. Additional Bonds and Contracts. The Authority may at any time issue any Bonds the payments under and pursuant to which or execute any Contract the Installment Payments under and pursuant to which, as the case may be, are payable from the Net Water Revenues on a parity with the 1989 Installment Sale Agreement, the 1989 Contract of Indebtedness and all other Contracts and Bonds; provided:
(a) For any period of twelve (12) consecutive calendar months within the twenty-four (24) calendar month period ending on the last day of the month preceding the date of issuance of such Bonds or execution of such Contract, as evidenced by a Certificate of the Authority (together with supporting calculations prepared by the Authority) to the effect that (1) the Net Water Revenues shall have been equal to at least one hundred twenty per cent (120%) of the Maximum Annual Debt Service on all Bonds and Contracts outstanding after the issuance of such Bonds or the execution of such Contract, as the case may be, and (2) the Net Water Revenues shall have been sufficient for the payment of all amounts payable from Net Water Revenues during such twelve-month period and at least equal to one hundred twenty percent (120%) of Debt Service on all Bonds and Contracts outstanding during such twelve-month period, or

(b) (i) For any period of twelve (12) consecutive calendar months within the twenty-four (24) calendar month period ending on the last day of the month preceding the date of issuance of such Bonds or the execution of such Contract, as evidenced by a Certificate of the Authority (together with supporting calculations prepared by the Authority) to the effect that the Net Water Revenues shall have been sufficient for the payment of all amounts payable from Net Water Revenues during such twelve-month period and at least equal to one hundred twenty percent (120%) of Debt Service on all Bonds and Contracts outstanding during such twelve-month period, and

(ii) As evidenced by a Certificate of the Authority (together with supporting calculations and assumptions prepared by the Authority) to the effect that, in each of the five succeeding Fiscal Years, projected Net Water Revenues shall be sufficient for the payment of all amounts to be payable from Net Water Revenues in each such Fiscal Year and at least equal to one hundred twenty percent (120%) of Debt Service on all Bonds and Contracts to be outstanding in each such Fiscal Year, and

(c) The Authority shall file a Certificate of the Authority to the effect that the Authority is not then in default under any Trust Agreement or with respect to any Bonds or Contracts, and

(d) Such Bond or Contract shall not allow the declaration of Bond Payments or Installment Payments
thereunder to be immediately due and payable in the event of a default by the Authority thereunder or under the applicable Trust Agreement unless such remedy is then allowed with respect to all Bonds and Contracts then outstanding.

Notwithstanding the foregoing provisions, there shall be no limitations on the ability of the Authority to execute any Contract or to issue any Bonds at any time to refund any outstanding Bonds or any outstanding Contract or to execute Reimbursement Agreements.

SECTION 3.03. Obligations. Amounts to be paid by the Authority with respect to any Obligation shall constitute Maintenance and Operation Costs only if at the time such Obligation is entered into the Authority shall deliver a Certificate of the Authority to the effect that (i) the making of payments on such Obligation as Maintenance and Operation Costs will not impair the Authority's ability to comply with the covenant set forth in Section 4.09 hereof during the next five Fiscal Years or five years beyond the commercial operation date of the project being financed with such Obligation, whichever is later and (ii) the properties, services or commodities to be furnished pursuant to such Obligation can be economically and beneficially utilized by the Authority. If the amounts to be paid by the Authority for an Obligation do not constitute Maintenance and Operation Costs, then such amounts shall be paid out of the Subordinate Obligation Payment Fund or the General Reserve Fund.

ARTICLE IV

COVENANTS OF THE AUTHORITY

SECTION 4.01. Against Encumbrances. The Authority will pay or cause to be paid when due all sums of money that may become due or purporting to be due for any labor, services, materials, supplies or equipment furnished, or alleged to have been furnished, to or for the Authority in, upon, about or relating to the Water System and will keep the Water System free of any and all liens against any portion of the Water System. In the event any such lien attaches to or is filed against any portion of the Water System, the Authority will cause each such lien to be fully discharged and released at the time the performance of any obligation secured by any such lien matures or becomes due, except that if the Authority desires to contest any such lien it may do so. If any such lien shall be reduced to final judgment and such judgment or any process as may be issued for the enforcement thereof is not promptly stayed, or if so stayed and such stay
thereafter expires, the Authority will forthwith pay or cause to be paid and discharged such judgment.

SECTION 4.02. Against Sale or Other Disposition of Property. The Authority will not sell, lease or otherwise dispose of the Water System or any part thereof essential to the proper operation of the Water System or to the maintenance of the Net Water Revenues, and will not enter into any agreement or lease which would impair the operation of the Water System or any part thereof necessary to secure adequate Net Water Revenues for the payment of Bond Payments, Installment Payments or Subordinate Obligation Payments, or which would otherwise impair the rights of the holders of Bonds or Certificates with respect to the Net Water Revenues or the operation of the Water System; provided, that any real or personal property which has become nonoperative or which is not needed for the efficient and proper operation of the Water System, or any material or equipment which has become worn out, may be sold if such sale will not reduce the Net Water Revenues below the requirements to be maintained under Section 4.09.

SECTION 4.03. Maintenance and Operation of the Water System; Budgets. The Authority will maintain and preserve the Water System in good repair and working order at all times and will operate the Water System in an efficient and economical manner and will pay all Maintenance and Operation Costs as they become due and payable.

Not later than September 1 of each year, the Authority will adopt and, if requested, make available to each Trustee, a budget approved by the Board of Directors of the Authority setting forth the estimated Maintenance and Operation Costs, the estimated payments for Debt Service and the estimated debt service payments on all Subordinate Obligations for the then current Fiscal Year; provided, that any such budget may be amended at any time during any Fiscal Year and, if requested, such amended budget shall be made available to each Trustee.

SECTION 4.04. Compliance with Contracts. The Authority will comply with, keep, observe and perform all agreements, conditions, covenants and terms, express or implied, required to be performed by it contained in all contracts for the use of the Water System and all other contracts affecting or involving the Water System to the extent that the Authority is a party thereto.

SECTION 4.05. No Superior Liens. The Authority will not create or allow any lien on or payment from the Net Water Revenues or any part thereof prior or superior to the
obligation to make the Bond Payments or Installment Payments as provided herein or which might impair the security of the Bond Payments or Installment Payments other than Subordinate Obligations.

SECTION 4.06. Insurance. The Authority will procure and maintain such insurance relating to the Water System which it shall deem advisable or necessary to protect its interests, which insurance shall afford protection in such amounts and against such risks as are usually covered in connection with facilities, properties, structures and works similar to the Water System; provided, the Authority shall not be required to procure or maintain any such insurance unless such insurance is commercially available at reasonable cost; provided, further, that any such insurance may be maintained under a self-insurance program so long as such self-insurance is maintained in the amounts and manner usually maintained in connection with facilities, properties, structures and works similar to the Water System. All policies of insurance required to be maintained herein shall provide that each Trustee shall be given thirty (30) days' written notice of any intended cancellation thereof or reduction of coverage provided thereby.


(a) The Authority will keep appropriate accounting records in which complete and correct entries shall be made of all transactions relating to the Water System, which records shall be available for inspection by each Trustee at reasonable hours and under reasonable conditions.

(b) The Authority will prepare and file with each Trustee annually within one hundred and twenty (120) days after the close of each Fiscal Year (commencing with the Fiscal Year ending June 30, 1989):

(1) financial statements of the Authority for the preceding Fiscal Year prepared in accordance with Generally Accepted Accounting Principles, certified by the Independent Certified Public Accountant who examined such financial statements stating that nothing came to his attention in connection with such examination that caused him to believe that the Authority was not in compliance with any of the agreements or covenants contained herein; and

(2) a detailed report as to all insurance policies maintained and self-insurance programs maintained by the Authority with respect to the Water
System as of the close of such Fiscal Year, including the names of the insurers which have issued the policies and the amounts thereof and the property or risks covered thereby.

(c) The Authority will prepare annually not more than one hundred twenty (120) days after the close of each Fiscal Year (commencing with the Fiscal Year ending June 30, 1989) a summary report showing in reasonable detail the results of the operations of the Authority for such Fiscal Year and containing a general statement of the physical condition of the facilities, properties, structures or works of the Authority. The Authority will furnish a copy of such summary report to each Trustee.

SECTION 4.08. Payment of Taxes and Compliance with Governmental Regulations. The Authority will pay and discharge all taxes, assessments and other governmental charges which may hereafter be lawfully imposed upon the Water System or any part thereof when the same shall become due. The Authority will duly observe and conform with all valid regulations and requirements of any governmental authority relative to the operation of the Water System or any part thereof, but the Authority shall not be required to comply with any regulations or requirements so long as the validity or application thereof shall be contested in good faith.

SECTION 4.09. Amount of Rates, Fees and Charges. The Authority will at all times fix, prescribe and collect or cause to be collected rates, fees and charges for the Water Service which are reasonably fair and nondiscriminatory and which will be at least sufficient to yield during the next succeeding Fiscal Year of the Authority Net Water Revenues sufficient for the payment of all amounts payable from Net Water Revenues during such Fiscal Year and at least equal to one hundred twenty per cent (120%) of the Debt Service on all Bonds and Contracts for such Fiscal Year. The Authority may make adjustments from time to time in such rates, fees and charges and may make such classification thereof as it deems necessary, but shall not reduce the rates, fees and charges then in effect unless the Net Water Revenues from such reduced rates, fees and charges will at all times be sufficient to meet the requirements of this section.

SECTION 4.10. Collection of Rates, Fees and Charges. The Authority will charge and collect or cause to be collected the rates, fees and charges applicable to the Water Service and will not permit any part of the Water System or any facility thereof to be used or taken advantage of free of charge by any corporation, firm or person, or by any public agency (including the United States of America, the State of
California and any city, county, district, political subdivision, public corporation or agency of any thereof); provided, that the Authority may without charge use the Water Service.

SECTION 4.11. Eminent Domain and Insurance Proceeds. If all or any part of the Water System shall be taken by eminent domain proceedings, or if the Authority receives any insurance proceeds resulting from a casualty loss to the Water System, the proceeds thereof shall be used to substitute other components for the condemned or destroyed components of the Water System.

ARTICLE V

MISCELLANEOUS

SECTION 5.01. Benefits of 1989 Resolution Limited to Parties. Nothing contained herein, expressed or implied, is intended to give to any person other than the Authority, the Trustees, the other parties to any Trust Agreement, Contract or Reimbursement Agreement or the holder of any Bonds, Certificates or Subordinate Obligations any right, remedy or claim under or pursuant hereto, and any agreement or covenant required herein to be performed by or on behalf of the Authority shall be for the sole and exclusive benefit of such other party.

SECTION 5.02. Successor Is Deemed Included in all References to Predecessor. Whenever the Authority is named or referred to herein, such reference shall be deemed to include the successor to the powers, duties and functions that are presently vested in the Authority, and all agreements and covenants required hereby to be performed by or on behalf of the Authority shall bind and inure to the benefit of the successors thereof whether so expressed or not.

SECTION 5.03. Article and Section Headings, Gender and References. The headings or titles of the several articles and sections hereof and the table of contents appended hereto shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof, and words of any gender shall be deemed and construed to include all genders. All references herein to "Articles," "Sections," "Exhibits" and other subdivisions or clauses are to the corresponding articles, sections, exhibits, subdivisions or clauses hereof; and the words "hereby," "herein," "hereof," "hereto," "herewith" and other words of similar import refer to this Resolution as a whole and not to any particular article, section, exhibit, subdivision or clause hereof.
SECTION 5.04. Partial Invalidity. If any one or more of the agreements or covenants or portions thereof required hereby to be performed by or on the part of the Authority shall be contrary to law, then such agreement or agreements, such covenant or covenants or such portions thereof shall be null and void and shall be deemed separable from the remaining agreements and covenants or portions thereof and shall in no way affect the validity hereof. The Authority hereby declares that it would have adopted this Resolution, and each and every other article, section, paragraph, subdivision, sentence, clause and phrase hereof irrespective of the fact that any one or more articles, sections, paragraphs, subdivisions, sentences, clauses or phrases hereof or the application thereof to any person or circumstance may be held to be unconstitutional, unenforceable or invalid.

SECTION 5.05. Funds. Any fund required to be established and maintained herein by the Director of Finance may be established and maintained in the accounting records of the Director of Finance either as an account or a fund, and may, for the purpose of such accounting records, any audits thereof and any reports or statements with respect thereto, be treated either as an account or a fund; but all such records with respect to any such fund shall at all times be maintained in accordance with sound accounting practice and with due regard for the protection of the security of the rights of the holders of Bonds, Certificates and Subordinate Obligations.

SECTION 5.06. Investments. Any money held by the Authority in any of the funds provided herein shall be invested in lawful investments of Authority funds, provided that money held in the Installment Payment Fund and the Subordinate Obligation Payment Fund shall be invested in lawful investments which will, as nearly as practicable, mature on or before the dates on which such money is anticipated to be needed to pay Bond Payments, Installment Payments, Reimbursement Payments or Subordinate Obligation Payments.

SECTION 5.07. Repeal of Inconsistent Resolutions. Any resolution of the Authority and any part of any resolution inconsistent herewith is hereby repealed to the extent of such inconsistency.

SECTION 5.08. Effective Date. This Resolution shall take effect from and after its passage and approval.
PASSED AND ADOPTED this 11th day of May, 1989, by the following vote:

AYES: 29

NOES: 0

ABSENT: 6

Approved:

[Signature]
Chairman of the Board of Directors
of the San Diego County Water Authority

[SEAL]
Attest:

[Signature]
Secretary of the Board of Directors
of the San Diego County Water Authority
RESOLUTION NO. 97-52

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY PLEDGING NET WATER REVENUES TO SECURE THE PAYMENT OF OBLIGATIONS PAYABLE FROM NET WATER REVENUES

WHEREAS, the San Diego County Water Authority, a county water authority duly organized and existing under and pursuant to the Constitution and laws of the State of California (the "Authority"), is authorized under provisions of the Constitution and laws of the State of California, and in accordance therewith, to incur indebtedness and to purchase real and personal property as the Authority may determine is necessary or proper; and

WHEREAS, the Board of Directors of the Authority adopted, on May 11, 1989, Resolution No. 89-21 of the Authority providing for the allocation of water system revenues and establishing covenants to secure the payment of obligations payable from the net water revenues of the Authority (the "General Resolution"); and

WHEREAS, it is now desirable to amend the General Resolution to pledge net water revenues to secure the payment of Bonds, Contracts, Reimbursement Payments and Subordinate Obligations (as defined in the General Resolution);

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the San Diego County Water Authority, as follows:

Section 1. The Authority hereby specifically finds and declares that the statements, findings, and determinations of the Authority set forth above are true and correct.

Section 2. Section 2.07 is hereby added to the General Resolution to read in full as follows:

Section 2.07 Pledge of Net Water Revenues. Net Water Revenues are hereby pledged to secure the payment of all Bond Payments, Installment Payments and Reimbursement Payments and, subordinate thereto, the payment of all Subordinate Obligations."

Section 3. This resolution shall take effect upon receipt of the consent of all parties from whom consent is required for amendments to the General Resolution.
PASSED, APPROVED and ADOPTED this 11th day of December, 1997.

AYES:

NOES: Manning

ABSTAIN:

ABSENT: Broomell, Chenelle, Davis, Newton, Olst, Slater, R. Williams

Chris Frahm, Chair

ATTEST:

Harold W. Ball, Secretary

I, Janet R. Maltman, Board Secretary of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of said resolution No. 97-5 of said Board and that the same has not been amended or repealed.

Janet R. Maltman, Board Secretary

njs
RESOLUTION NO. 09-23

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY ADDRESSING THE TREATMENT OF INTEREST SUBSIDY PAYMENTS UNDER RESOLUTION 89-21

WHEREAS, the San Diego County Water Authority, a county water authority duly organized and existing under and pursuant to the Constitution and the laws of the State of California (the “Water Authority”), is authorized under provisions of the Constitution and the laws of the State of California, and in accordance therewith, to incur indebtedness and to purchase real and personal property as the Water Authority may determine is necessary or proper; and

WHEREAS, the Board of Directors of the Authority adopted, on May 11, 1989, Resolution No. 89-21 of the Water Authority, amended by Resolution No. 97-52 of the Board of Directors of the Water Authority adopted on December 11, 1997, providing for the pledge and allocation of water system revenues and establishing covenants to secure the payment of obligations payable from the net water revenues of the Water Authority (the “General Resolution”); and

WHEREAS, the Water Authority may, from time to time, issue Bonds (as defined in the General Resolution) or execute Contracts (as defined in the General Resolution) with respect to which the Water Authority will be entitled to receive cash subsidy payments from the United States Treasury, such as “Build America Bonds” issued under the provisions of the American Recovery and Reinvestment Act of 2009 (“Interest Subsidy Payments”); and

WHEREAS, it is now desirable to amend the General Resolution to provide that Interest Subsidy Payments not constitute Current Water Revenues (as defined in the General Resolution) but instead constitute reductions in Debt Service (as defined in the General Resolution).

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the San Diego County Water Authority, as follows:

Section 1. The Water Authority hereby specifically finds and declares that the statements, findings and determinations of the Water Authority set forth above are true and correct.

Section 2. Section 1.01 of the General Resolution is hereby amended to add the following definition:

Interest Subsidy Payments

“Interest Subsidy Payments” means cash subsidy payments entitled to be received by the Authority from the United States Treasury with respect to Bonds issued and Contracts executed by the Authority, including, but not limited to, “Build America Bonds” issued as contemplated by the American Recovery and Reinvestment Act of 2009.
PASSED, APPROVED and ADOPTED this 17th day of December, 2009.

AYES: Unless noted below, all Directors present voted aye.

NOES:

ABSTAIN: Wornham

ABSENT: Bowersox (p)
         Johnson
         Martin
         Watton (p)

ATTEST:

Thomas V. Wornham, Secretary

I, Doria F. Lore, Board Secretary of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of said resolution No. 09-23 of said Board and that the same has not been amended or repealed.

Doria F. Lore, Board Secretary
Section 3. The definition of “Current Water Revenues” in Section 1.01 of the General Resolution is hereby amended to read in full as follows:

Current Water Revenues

“Current Water Revenues” means all gross income and revenue received or receivable by the Authority from the ownership or operation of the Water System, determined in accordance with Generally Accepted Accounting Principles, including all rates, fees and charges (including connection fees and charges and standby charges) received by the Authority for the Water Service and the other services of the Water System and all other income and revenue howsoever derived by the Authority from the ownership or operation of the Water System or arising from the Water System, and also including (1) all income from the deposit or investment of any money in the Water Revenue Fund, the General Reserve Fund and the Rate Stabilization Fund, and (2) all income from the deposit or investment of money held in the Installment Payment Fund, the Subordinate Obligation Fund or any Bond or Contract Reserve Fund or other fund established pursuant to a Trust Agreement to the extent such income will be available to pay Bond Payments or Installment Payments, but excluding any Interest Subsidy Payments, any proceeds of taxes and any refundable deposits made to establish credit and advances or contributions in aid of construction.

Section 4. The definition of “Debt Service” in Section 1.01 of the General Resolution is hereby amended to read in full as follows:

Debt Service

“Debt Service” means, for any Fiscal Year or other period, the sum of (1) the interest accruing during such Fiscal Year or period on all outstanding Bonds, assuming that all outstanding serial Bonds are retired as scheduled and that all outstanding term Bonds are redeemed or paid from sinking fund payments as scheduled, (2) that portion of the principal amount of all outstanding serial Bonds maturing on the next succeeding principal payment date that would have accrued during such Fiscal Year or period if such principal amount were deemed to accrue daily in equal amounts from the next preceding principal payment date or during the year preceding the first principal payment date, as the case may be, (3) that portion of the principal amount of all outstanding term Bonds required to be redeemed or paid on the next succeeding redemption date (together with the redemption premiums, if any, thereon) that would have accrued during such Fiscal Year or period if such principal amount (and redemption premiums) were deemed to accrue daily in equal amounts from the next preceding redemption date or during the year preceding the first redemption date, as the case may be, and (4) that portion of the Installment Payments required to be made at the times provided in the Contracts that would have accrued during such Fiscal Year or period if such Installment Payments were deemed to accrue daily in equal amounts from, in each case, the next preceding Installment Payment Date of interest or principal or the date of the pertinent Contract, as the case may be, provided, that (a) if any of such Bonds are Capital Appreciation Bonds or if the Installment Payments due under any of such Contracts are evidenced by Capital Appreciation Certificates, then the Accreted Value payment shall be deemed due on the
scheduled redemption or payment date of such Capital Appreciation Bond or Capital Appreciation Certificate; (b) if any of such Bonds or if the Installment Payments due under such Contracts bear interest payable pursuant to a variable interest rate formula, the interest rate on such Bonds or such Contracts for periods when the actual interest rate cannot yet be determined, shall be assumed to be equal to the greater of (1) the current interest rate calculated pursuant to the provisions of the terms of such Bonds or Contracts (with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02, the initial interest rate on such Bonds or Contracts), or, (2) if available, the average interest rate on such Bonds or Contracts during the thirty-six (36) months preceding the date of calculation or, (3) if such Bonds or Contracts have not been outstanding for such thirty-six month period (or with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02), such average interest rate on comparable debt of a state or political subdivision of a state which debt is then rated by the rating agencies rating such Bonds or Contracts in a rating category equivalent to the rating on such Bonds or Contracts; and (c) if 20% or more of the original principal of such Bonds or the Installment Payments due under such Contracts is not due until the final stated maturity of such Bonds or the Installment Payments due under such Contracts, such principal may, at the option of the Authority, be treated as if it were due based upon a level amortization of such principal over the term of such Bonds or Contracts or twenty (20) years, whichever is greater; provided further, that “Debt Service” shall not include (1) payments due on voter-approved general obligation bonds and other voter-approved general obligation debts for which taxes are then being levied and collected, (2) interest on Bonds or Contracts which is to be paid from amounts constituting capitalized interest held pursuant to a Trust Agreement or (3) interest on Bonds or Contracts which is to be paid from Interest Subsidy Payments.

Section 5. This resolution shall take effect upon receipt of the consent of all parties from whom consent is required for amendments to the General Resolution.
PASSED, APPROVED and ADOPTED this 17th day of December, 2009.

AYES: Unless noted below, all Directors present voted aye.

NOES:

ABSTAIN: Wornham

ABSENT: Bowersox (p)
        Johnson
        Martin
        Watton (p)

ATTEST:

Thomas V. Wornham, Secretary

I, Doria F. Lore, Board Secretary of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of said resolution No. 09-23 of said Board and that the same has not been amended or repealed.

Doria F. Lore, Board Secretary
RESOLUTION NO. 09-23

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN DIEGO COUNTY WATER AUTHORITY ADDRESSING THE TREATMENT OF INTEREST SUBSIDY PAYMENTS UNDER RESOLUTION 89-21

WHEREAS, the San Diego County Water Authority, a county water authority duly organized and existing under and pursuant to the Constitution and the laws of the State of California (the “Water Authority”), is authorized under provisions of the Constitution and the laws of the State of California, and in accordance therewith, to incur indebtedness and to purchase real and personal property as the Water Authority may determine is necessary or proper; and

WHEREAS, the Board of Directors of the Authority adopted, on May 11, 1989, Resolution No. 89-21 of the Water Authority, amended by Resolution No. 97-52 of the Board of Directors of the Water Authority adopted on December 11, 1997, providing for the pledge and allocation of water system revenues and establishing covenants to secure the payment of obligations payable from the net water revenues of the Water Authority (the “General Resolution”); and

WHEREAS, the Water Authority may, from time to time, issue Bonds (as defined in the General Resolution) or execute Contracts (as defined in the General Resolution) with respect to which the Water Authority will be entitled to receive cash subsidy payments from the United States Treasury, such as “Build America Bonds” issued under the provisions of the American Recovery and Reinvestment Act of 2009 (“Interest Subsidy Payments”); and

WHEREAS, it is now desirable to amend the General Resolution to provide that Interest Subsidy Payments not constitute Current Water Revenues (as defined in the General Resolution) but instead constitute reductions in Debt Service (as defined in the General Resolution).

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the San Diego County Water Authority, as follows:

Section 1. The Water Authority hereby specifically finds and declares that the statements, findings and determinations of the Water Authority set forth above are true and correct.

Section 2. Section 1.01 of the General Resolution is hereby amended to add the following definition:

Interest Subsidy Payments

“Interest Subsidy Payments” means cash subsidy payments entitled to be received by the Authority from the United States Treasury with respect to Bonds issued and Contracts executed by the Authority, including, but not limited to, “Build America Bonds” issued as contemplated by the American Recovery and Reinvestment Act of 2009.
Section 3. The definition of “Current Water Revenues” in Section 1.01 of the General Resolution is hereby amended to read in full as follows:

Current Water Revenues

“Current Water Revenues” means all gross income and revenue received or receivable by the Authority from the ownership or operation of the Water System, determined in accordance with Generally Accepted Accounting Principles, including all rates, fees and charges (including connection fees and charges and standby charges) received by the Authority for the Water Service and the other services of the Water System and all other income and revenue howsoever derived by the Authority from the ownership or operation of the Water System or arising from the Water System, and also including (1) all income from the deposit or investment of any money in the Water Revenue Fund, the General Reserve Fund and the Rate Stabilization Fund, and (2) all income from the deposit or investment of money held in the Installment Payment Fund, the Subordinate Obligation Fund or any Bond or Contract Reserve Fund or other fund established pursuant to a Trust Agreement to the extent such income will be available to pay Bond Payments or Installment Payments, but excluding any Interest Subsidy Payments, any proceeds of taxes and any refundable deposits made to establish credit and advances or contributions in aid of construction.

Section 4. The definition of “Debt Service” in Section 1.01 of the General Resolution is hereby amended to read in full as follows:

Debt Service

“Debt Service” means, for any Fiscal Year or other period, the sum of (1) the interest accruing during such Fiscal Year or period on all outstanding Bonds, assuming that all outstanding serial Bonds are retired as scheduled and that all outstanding term Bonds are redeemed or paid from sinking fund payments as scheduled, (2) that portion of the principal amount of all outstanding serial Bonds maturing on the next succeeding principal payment date that would have accrued during such Fiscal Year or period if such principal amount were deemed to accrue daily in equal amounts from the next preceding principal payment date or during the year preceding the first principal payment date, as the case may be, (3) that portion of the principal amount of all outstanding term Bonds required to be redeemed or paid on the next succeeding redemption date (together with the redemption premiums, if any, thereon) that would have accrued during such Fiscal Year or period if such principal amount (and redemption premiums) were deemed to accrue daily in equal amounts from the next preceding redemption date or during the year preceding the first redemption date, as the case may be, and (4) that portion of the Installment Payments required to be made at the times provided in the Contracts that would have accrued during such Fiscal Year or period if such Installment Payments were deemed to accrue daily in equal amounts from, in each case, the next preceding Installment Payment Date of interest or principal or the date of the pertinent Contract, as the case may be; provided, that (a) if any of such Bonds are Capital Appreciation Bonds or if the Installment Payments due under any of such Contracts are evidenced by Capital Appreciation Certificates, then the Accreted Value payment shall be deemed due on the
scheduled redemption or payment date of such Capital Appreciation Bond or Capital Appreciation Certificate; (b) if any of such Bonds or if the Installment Payments due under such Contracts bear interest payable pursuant to a variable interest rate formula, the interest rate on such Bonds or such Contracts for periods when the actual interest rate cannot yet be determined, shall be assumed to be equal to the greater of (1) the current interest rate calculated pursuant to the provisions of the terms of such Bonds or Contracts (with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02, the initial interest rate on such Bonds or Contracts), or, (2) if available, the average interest rate on such Bonds or Contracts during the thirty-six (36) months preceding the date of calculation or, (3) if such Bonds or Contracts have not been outstanding for such thirty-six month period (or with respect to the issuance of Bonds or the execution of Contracts pursuant to Section 3.02), such average interest rate on comparable debt of a state or political subdivision of a state which debt is then rated by the rating agencies rating such Bonds or Contracts in a rating category equivalent to the rating on such Bonds or Contracts; and (c) if 20% or more of the original principal of such Bonds or the Installment Payments due under such Contracts is not due until the final stated maturity of such Bonds or the Installment Payments due under such Contracts, such principal may, at the option of the Authority, be treated as if it were due based upon a level amortization of such principal over the term of such Bonds or Contracts or twenty (20) years, whichever is greater; provided further, that “Debt Service” shall not include (1) payments due on voter-approved general obligation bonds and other voter-approved general obligation debts for which taxes are then being levied and collected, (2) interest on Bonds or Contracts which is to be paid from amounts constituting capitalized interest held pursuant to a Trust Agreement or (3) interest on Bonds or Contracts which is to be paid from Interest Subsidy Payments.

**Section 5.** This resolution shall take effect upon receipt of the consent of all parties from whom consent is required for amendments to the General Resolution.
PASSED, APPROVED and ADOPTED this 17th day of December, 2009.

AYES: Unless noted below, all Directors present voted aye.

NOES:

ABSTAIN: Wornham

ABSENT: Bowersox (p)
         Johnson
         Martin
         Watton (p)

ATTEND:

Claude A. "Bud" Lewis

Thomas V. Wornham, Secretary

I, Doria F. Lore, Board Secretary of the San Diego County Water Authority, do hereby certify that the above and foregoing is a full, true and correct copy of said resolution No. 09-23 of said Board and that the same has not been amended or repealed.

Doria F. Lore, Board Secretary
E. A&N TECHNICAL SERVICES, INC — SUPPLY RELIABILITY CHARGE MEMO
Memorandum

To: Lisa Marie Harris, Director of Finance
    Dan Hentschke, General Counsel

From: Thomas W. Chesnutt, Ph.D., CAP®

Date: March 2, 2015

Re: Review of Proposed SDCWA - Supply Reliability Charge

Purpose

A & N Technical Services, Inc. has been retained by the San Diego County Water Authority to independently review and provide a professional opinion of whether the proposed Supply Reliability Charge as described later in this memorandum is consistent with recognized cost-of-service based rate setting principles, that the amount expected to be generated by the charge is no more than necessary to cover the reasonably anticipated revenue requirement ("costs") for governmental services or products for which the charge is imposed, and that the manner in which the costs are generally allocated by the charge bears a fair or reasonable relationship to the payor’s burdens on or benefits received from the governmental services or products.1

Findings

The proposed Supply Reliability Charge comports with water industry cost-of-service-based rate-setting principles. By design, it cannot recover more than the costs allocated to the supply functional costs, since it is computed as a portion of those functional supply costs. Further, it constitutes a reasonable allocation of functional supply costs in that it better aligns the fixed incremental supply costs taken on by the Water Authority to make highly reliable potable water supplies available to its member agencies within the County of San Diego with the benefits available to all water customers connected to the SDCWA integrated water system.

The proposal addresses fairness by allowing for predictability of charge incidence (based on a rolling five year average of historical deliveries) and adjustments to future charge incidence if demand requirements of member agencies change in the future due to local supply

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1 This analysis is limited to a review of the proposed charge in the context of the Water Authority rates structure. It does not include allocation of individual costs to functional rate categories. That aspect of the cost-of-service study for the determination and setting of the amount of the charge will be performed by others.
development or demand management. This reviewer approves of the stated intention to re-examine the Supply Reliability Charge in five years and to embed it as a fixed charge in fiscal procedures and policies intended to assure the SDCWA’s fiscal sustainability objectives².

**Description of the Supply Reliability Charge**

The proposed Supply Reliability Charge will create a new fixed charge for the functional incremental supply costs³ allocated to enhanced supply reliability. Under the proposed methodology the charge would be set annually. First the difference between the combined Desalination and IID Water Transfer Costs and a like amount of water purchased at the MWD Tier 1 Full Service Untreated Rate is determined. The calculated difference is then multiplied by 25% to determine the calendar year Supply Reliability Charge. A detailed calculation methodology is shown below:

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³ Functional incremental supply costs for this purpose are understood to be associated with the two highly reliable supplies available to the San Diego County Water Authority that constitute the new and forward-looking supplies—i.e., the supply costs incidental to IID Transfer water supply and the Carlsbad Desalination plant; these are a subset of SDCWA’s overall functional supply costs. The overall supply costs for the Water Authority, include the Tier 1 full service water rate payments made to MWD for purchase of MWD water (currently the total of MWD’s Tier 1 supply rate, system access rate, system power rate, and water stewardship charge), the cost of payments made to IID for transferred water under the IID/SDCWA Agreement for Transfer of Conserved Water plus the payments made to MWD for transportation of that water to the Water Authority service territory under the Exchange Agreement, the payments made for desalinated water under the Water Authority/Poseidon Water Purchase Agreement, and certain other costs of water. Because the Water Authority provides both treated and untreated water, its functional supply costs, by definition, exclude other functional costs such as the functional cost of treatment. The Water Authority’s functional cost categories are currently described in Water Authority Administrative Code section 5.00.050 and Water Authority Ordinance No. 2014-01.
**Supply Reliability Charge** = \([\text{(Desalination Water Cost} + \text{IID Water Transfer Cost}) - \text{MWD Tier 1 Equivalent Cost}] \times 25\%\)

\[\text{Desalination Water Cost} = (\text{Water Purchase Agreement Contract Price}^4 - \text{Melded Treatment Rate}) \times \text{Desalination Deliveries}\]

\[\text{IID Water Transfer Cost} = (\text{IID Water Contract Price} + \text{MWD Transportation Rate}) \times \text{IID Water Deliveries}\]

\[\text{MWD Tier 1 Equivalent Cost} = (\text{MWD Tier 1 Full Service Untreated Rate} \times \text{Total Reliability Deliveries})\]

\[\text{Total Reliability Deliveries} = \text{Desalination Deliveries} + \text{IID Water Transfer Deliveries}.\]

As used in this formula, **Desalination Deliveries** are 42,000 AF/Y and **IID Water Transfer Deliveries** are 100,000 AF/Y in 2016 and ramp up to 200,000 AF/Y according to the transfer schedule in the Transfer Agreement.

The revenue generated from this charge will only be applied to the supply revenue requirement prior to determining the volumetric Melded Supply Rate. This charge will be allocated to member agencies based on a five year rolling average of applicable historical water deliveries\(^5\). This charge will be zero when MWD’s Tier 1 costs are equal or greater than the combined Desalination and IID Water Transfer Costs.

**Criteria for Evaluation of the Supply Reliability Charge**

This independent review will use the CUWA Public Investment Principles in its analysis of the **Supply Reliability Charge**. These principles were the product of a multiple agency working group at the California Urban Water Agencies and includes the following principles for publicly financed water projects:\(^6\)

\(^4\) The desalinated water contract price includes the following components:
WPA Article 17.4 Capital Charges
   (Debt Service Charge + Equity Return Charge)
WPA Article 17.5 Operating Charge
   (Fixed Operating Charge + Variable Operating Charge)
WPA Article 17.6 Electricity Charge
   (Fixed Electricity Charge + Variable Electricity Charge)
WPA Article 8.14 Poseidon Management Fee
   (Annual Management Fee)

\(^5\) A & N Technical Services has been informed by Water Authority staff that discussions regarding the future of the Transitional Special Agricultural Water Rate (TSAWR) are ongoing and may impact the allocation of the charge to member agencies.

\(^6\) See the CUWA Public Investment White Papers found at http://www.cuwa.org.
1. Inclusive of all beneficiaries
2. A clear nexus between charges and benefits received
3. Specificity, based on defined projects and costs
4. Transparency of benefit and cost allocation decisions, understandable to beneficiaries funding the efforts
5. Strict dedication of funds
6. Reasonable assurances that benefits will be delivered

AWWA Manual M1. On Rate Making Objectives: Accurate attribution of costs of service is not the only objective of water utility ratemaking. Derived from Bonbright et al. (1961, 1988) the Principles of Water Rates, Fees, and Charges, AWWA Manual M1, Sixth Edition (2012, p. 4) provides a more complete list of typical ratemaking objectives:

- Effectiveness in yielding total revenue requirements (full cost recovery)
- Revenue stability and predictability
- Stability and predictability of the rates themselves from unexpected or adverse changes
- Promotion of efficient resource use (conservation and efficient use)
- Fairness in the appointment of total costs of service among the different ratepayers
- Avoidance of undue discrimination (subsidies) within the rates
- Dynamic efficiency in responding to changing supply and demand patterns
- Freedom from controversies as to proper interpretation of the rates
- Simple and easy to understand
- Simple to administer
- Legal and defendable

Analysis

The Supply Reliability Charge reasonably comports with the CUWA principles cited above. The charge is inclusive of all customers that have recently taken SDCWA deliveries and could reasonably be expected to benefit from highly reliable incremental water supplies. There is a clear nexus between this fixed charge and the benefits of highly reliable incremental supplies received by SDCWA customers. The charge is quite specific, being based on two incremental water supplies (Carlsbad Desalination and IID Transfer) defined by contract and imported supplies from MWD (though currently non-contractual, these supply costs are specific.) The multiple year public process (Board hearings, Board Fiscal Sustainability Task Force, Member Agency Managers Workgroup, and public outreach) have provided transparency of benefit and cost allocation deliberation with ample opportunity to improve understanding to SDCWA member agencies and their customers (beneficiaries) about the funding of these highly reliable incremental water supplies. Funds collected from the charge are dedicated to recovering a
subset of functional supply costs and cannot be used for other purposes. The contracts for incremental supplies provide reasonable assurances that the benefits of highly reliable incremental supplies will be delivered.

The Supply Reliability Charge makes reasonable tradeoffs among cost-of-service-based ratemaking objectives cited above.

Precedence for Fixed Charges. The concept of levying fixed charges to recover the costs required for the capacity to deliver public service has a long history (Dupuit, 1844 and more recently Kahn, 1991) and is familiar to anyone who has paid access, standby, or “demand” capacity charges.
Bibliography


