

San Bernardino Local Agency Formation Commission

PLAN OF SERVICE REPORT- ANNEXATION OF PARCEL #0634-121-15

October 2024

Prepared on Behalf of Applicant/Property Owner: John D. Rudometkin

By

Twentynine Palms Water District

Matthew Shragge

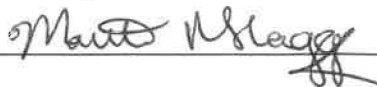
Twentynine Palms Water District

72401 Hatch Rd.

Twentynine Palms, CA

92277

I certify the information
contained in this Plan of Service
Report is accurate to the best of my
knowledge.



SUMMARY:

This Plan for Service was prepared in accordance with Government Code Section 56653 and is included as an attachment to the application for annexation of Assessor Parcel No. 0634-121-15 (40.09- acres located north of Old Chisholm Trail between Monte Vista street and Bullion Mountain Road, Twentynine Palms, CA).

The annexation was requested by the property owner, John D. Rudometkin. Twentynine Palms Water District will serve as the applicant on behalf of the landowner.

Mr. Rudometkin recently purchased this vacant 40-acre parcel with the understanding that the parcel would require annexation from the District's Sphere of Influence into its service territory in order to access water service from the Twentynine Palms Water District.

The annexation is for one single parcel and one water meter which is the basis for this Plan of Service in meeting the minimum requirements for such under the LAFCO guidelines.

- A. Level and Range of Service to be Provided:** The property owner is seeking access to water service from the Twentynine Palms Water District. To the District's knowledge, there would be no other entity that would be providing a "service" for which LAFCO would be required to approve (ie. sewer service).

The level of service would be provided through a 1-inch water service and a 5/8-inch water meter installed at the southern edge of the property connected to an existing 6-inch water main.

- B. Discuss When Service can be Feasibly Extended to the Parcel:** The parcel in question lies adjacent to an existing 6-inch water mainline. The only additional work needed is to install the 1-inch service line and 5/8-inch meter. Once the annexation proceeding are completed to bring the parcel into the District's service territory, the water meter and service line can be installed within three weeks of that request.

- C. Identify and Improvements or Upgrades the District would Impose on the Territory:** There would be no additional infrastructure needed to serve this parcel.

- D. Fiscal Impact Analysis:** The District has the capacity to serve this parcel. The fiscal impact of adding one additional service connection would not be significant and is within the projected annual growth for the District. The District's 2020 Rate Study and 2021 Water Capital Facility Study were designed to adequately fund the District's future operations moving forward. The District's Rate Study includes a 20 year financial plan that forecasts the District's water utility revenues and expenditures, including reserves.

The District's 2020 Rate Study was received and approved October 28, 2020 and the 2021 Water Capital Facility Study was received and approved February 24, 2021. Both studies are submitted as Appendix to this report.

- E. **Annexing Parcel to Existing Improvement District:** This parcel would be part of the Cooper Area pressure zone 2080. The Cooper Area was known as Assessment District 4 and was annexed into the District in 1987. (LAFCO Resolution No. 2105)

- F. **Water Availability to Parcel:** Upon finalization of approvals by San Bernardino LAFCO to annex the territory (a single 40.09-acre parcel) and payment of fees applicable to initiating water service, the District can install the needed improvements within approximately three weeks.

APPENDICES

1. Water Rate Study Finding - Financial Plan and Resulting Rate Study, NBS Government, October 2020 - Received and filed by the Board of Directors on October 28, 2020.
2. Water Capital Facility Fee Study Findings, NBS Government, February 2021, Received and filed by the Board of Directors on February 24, 2021.
3. Ordinance No. 99 Adoption of New or Increased Fees, adopted December 16, 2020.



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DRAFT TECHNICAL MEMORANDUM

TO: RAY KOLISZ, GENERAL MANAGER, TWENTYNINE PALMS WATER DISTRICT
CINDY BYERRUM, MPA, CPA, EIDE BAILLY CONSULTING GROUP

FROM: KIM BOEHLER, NBS DIRECTOR
JORDAN TAYLOR, NBS CONSULTANT

SUBJECT: WATER RATE STUDY FINDINGS

DATE: OCTOBER 2, 2020

SECTION 1. PURPOSE

Twentynine Palms Water District (District, Utility) retained NBS to update the 2015 Water Rate Study that we completed for the District. This memo summarizes the updated rate analyses, including projected revenues and expenditures, net revenue requirements, cost-of-service analyses, and the new water rate alternatives. Findings documented in this memo focus on strategies for meeting the District's revenue requirements in order to fully fund the forecasted operations and planned capital improvement expenditures in a manner that is fiscally sustainable, complies with industry standard cost-of-service principles, and minimizes projected rate increases.

Tables and descriptions of the financial plan, along with the resulting rates, are presented in this technical memo. More detailed results of this rate study are provided in the appendix.

SECTION 2. OVERVIEW OF THE RATE STUDY

Comprehensive rate studies such as this one typically include three components: (1) preparation of a financial plan which identifies the net revenue requirements for the utility; (2) analysis of the cost to serve each customer class, and; (3) the rate structure design. These steps are shown in **Figure 1** and are intended to follow industry standards and reflect the fundamental principles of cost-of-service rate making embodied in the American Water Works Association (AWWA) Principles of Water Rates, Fees,

and Charges¹, also referred to as the Manual M1. They also address requirements under California Constitution article XIII D, section 6 (commonly referred to as Proposition 218) that rates not exceed the cost of providing the service and be proportionate to the cost of service for all customers.

FIGURE 1. PRIMARY COMPONENTS OF A RATE STUDY



In terms of the chronology of the rate study, these three steps represent the order in which they are generally performed. Tables for each of the water rate study components are provided in the Appendix included at the end of this technical memorandum.

SECTION 3. KEY RATE STUDY FINDINGS

3.1 FINANCIAL PLAN

It is important for municipal utilities to follow sound financial management practices. This includes developing and adopting water rates that are fair and equitable, meet annual revenue requirements, maintain reasonable reserves, adequately fund working capital, promote good credit ratings, and comply with industry standards.

The following is a summary of the current financial state of the water utility:

- **Meeting Revenue Requirements:** The Water Utility is in a financial position where there is currently enough revenue to cover operating expenses; however, the District is not able to pay for necessary capital improvement projects over the long-term and maintain reserves at sufficient levels. Under its adopted budget and implicit levels of service, operating expenses are projected to be approximately \$4.6 million and planned capital expenditures are \$3.3 million for Fiscal Year 2020/21. Annual revenues that may be applied toward these expenditures are projected to total just over \$5 million, which is primarily from water rates and the water

¹ *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.*

availability assessment. Without changes to current water rates, the District is faced with a deficit of nearly \$2.9 million in the current fiscal year, because current rates will not be able to fully fund the District's capital improvement program and the annual deficit is projected to continue in future years. It is important for the District to ensure rates will be sufficient to fund capital improvements and investments in the long run. Without an increase to existing rates, this will not be possible. This is not a sustainable position and it should be remedied.

- **Maintaining Reserve Funds:** The District should maintain sufficient operating and capital reserves. Currently, reserves are not adequate to meet the adopted reserve targets. The District should adopt a plan that will provide the revenue necessary to build reserves up to the appropriate levels over time. NBS recommends the following reserve targets:
 - **Operating Reserve** – An Operating Reserve is intended to maintain financial viability by providing a “cash cushion” for normal operations in the event of any short-term or unanticipated fluctuation in revenues and/or expenditures. The District should maintain an Operating Reserve equal to six-months (or 50%) of the annual operating expenses for the utility, or \$2.17 million (in 2020 dollars).
 - **Capital Rehabilitation and Replacement Reserve** – It is a best management practice to annually set aside funds in a Capital Replacement Reserve for ongoing and future system repair, rehabilitation, and replacement. The District should maintain a minimum of six percent of the Utility's net assets plus the annual capital improvement budget in this reserve. If ratepayers can generate revenues to maintain the reserve balance at this level, they will have reserved a cash resource that can be applied toward future replacement and rehabilitation needs. This six percent of net assets plus the annual capital improvement budget equates to approximately \$3.36 million (in 2020 dollars).
- **Capital Improvement Program:** The District must also be able to fund necessary capital improvements for the District to maintain current service levels. District staff has identified roughly \$7 million (current year value) in planned capital improvements for the District's water system for FY 2020/21 through 2024/25. Without the rate adjustments recommended in this study, the District will not be able to sufficiently fund planned capital improvements.

3.2 WATER UTILITY REVENUE REQUIREMENTS

To identify the District's long-term financial needs, NBS developed a 20-year financial plan that forecasts water utility revenues and expenditures, including reserves. The financial plans are based on the District's Fiscal Year 2020/21 operating budget for the Utility, discussions with District staff, and related information such as financial statements and capital improvement plans. The rate alternatives proposed in this study are inclusive of the projected costs of inflation. The cost inflation factors used in this study were developed in conjunction with District Staff and are shown in **Figure 2**.

Figure 2. Cost Inflation Assumptions

Cost Inflation Factors ¹	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Customer Growth ²	0.00%	0.00%	0.00%	0.00%	0.00%
General Cost Inflation	2.00%	2.00%	2.00%	2.00%	2.00%
Salary Cost Inflation	0.00%	5.00%	5.00%	5.00%	5.00%
Benefit Cost Inflation	5.00%	5.00%	5.00%	5.00%	5.00%
OPEB Liability Cost Inflation	6.00%	6.00%	6.00%	6.00%	6.00%
Past Unfunded OPEB Liability Cost Inflation	6.00%	6.00%	6.00%	6.00%	6.00%
Electricity Cost Inflation - Source of Supply	3.00%	3.00%	3.00%	3.00%	3.00%
Electricity Cost Inflation - Pumping	3.00%	3.00%	3.00%	3.00%	3.00%
Electricity Cost Inflation - Other	3.00%	3.00%	3.00%	3.00%	3.00%
Chemical Cost Inflation - Treatment Wells	3.00%	3.00%	3.00%	3.00%	3.00%
Chemical Cost Inflation - Treatment Facility	3.00%	3.00%	3.00%	3.00%	3.00%
Conservation (Water sales decline)	0.00%	0.00%	0.00%	0.00%	0.00%

1. Inflation factors are per District 2020/21 Adopted Budget (source file: 29 Palms Adopted Budget FY 2020-21.xlsm, Assumptions tab).

2. Customer growth is preliminarily estimated at 0%.

Figure 3 summarizes the five-year financial plan, showing a more traditional “sources and uses” of funds, along with the estimated annual surplus or deficit; **Figure 4** summarizes water revenues for the next seven years under current rates and proposed rate increase alternatives compared to the District’s expenses. There are two Financial Plan alternatives for the District’s consideration that are structured to collect additional revenue as follows:

- Alternative 1 – the goal is to collect 8% more revenue from rates overall each year through FY 2024/25.
- Alternative 2 – the goal is to collect 10% more revenue from rates overall each year through FY 2024/25.

Figure 5 summarizes seven years of projected ending cash balances compared to recommended reserve targets for the two proposed rate increase alternatives. The additional two years past the Prop 218 rate period are shown to demonstrate that cash reserves are projected to meet target levels in FY 2026/27 under the 8% rate increase alternative. Under the 10% rate increase alternative, cash reserves are projected to meet target levels in FY 2025/26.

Figure 3. Summary of Five-Year Financial Plan

Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget	Projected			
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
Sources of Water Funds					
Rate Revenue Under Prevailing Rates ¹	\$ 4,640,400	\$ 4,640,400	\$4,640,400	\$4,640,400	\$ 4,640,400
Water Availability Assessment	578,900	578,900	578,900	578,900	578,900
Miscellaneous Fees	124,100	158,900	177,300	191,800	201,600
Interest Earnings	110,000	110,600	111,200	111,800	112,400
Total Sources of Funds	\$ 5,453,400	\$ 5,488,800	\$5,507,800	\$5,522,900	\$ 5,533,300
Uses of Water Funds					
Operating Expenses	\$ 4,669,100	\$ 4,956,100	\$5,034,200	\$5,378,700	\$ 5,423,600
Debt Service	243,732	243,732	243,733	243,734	243,735
Rate-Funded Capital Expenses	2,995,000	1,400,800	965,419	704,809	979,193
Total Use of Funds	\$ 7,907,832	\$ 6,600,632	\$6,243,352	\$6,327,243	\$ 6,646,527
Surplus (Deficiency) before Rate Increase	\$(2,454,432)	\$(1,111,832)	\$ (735,552)	\$ (804,343)	\$(1,113,227)
Net Revenue Requirement²	\$ 7,526,132	\$ 5,782,832	\$5,408,952	\$5,480,443	\$ 5,792,127

1. Includes projected reductions in water sales due to conservation.

2. Total Use of Funds less non-rate revenues and interest earnings. This is the annual amount needed from water rates.

Figure 4. Summary of Revenue Requirements and Existing vs. Increased Rates

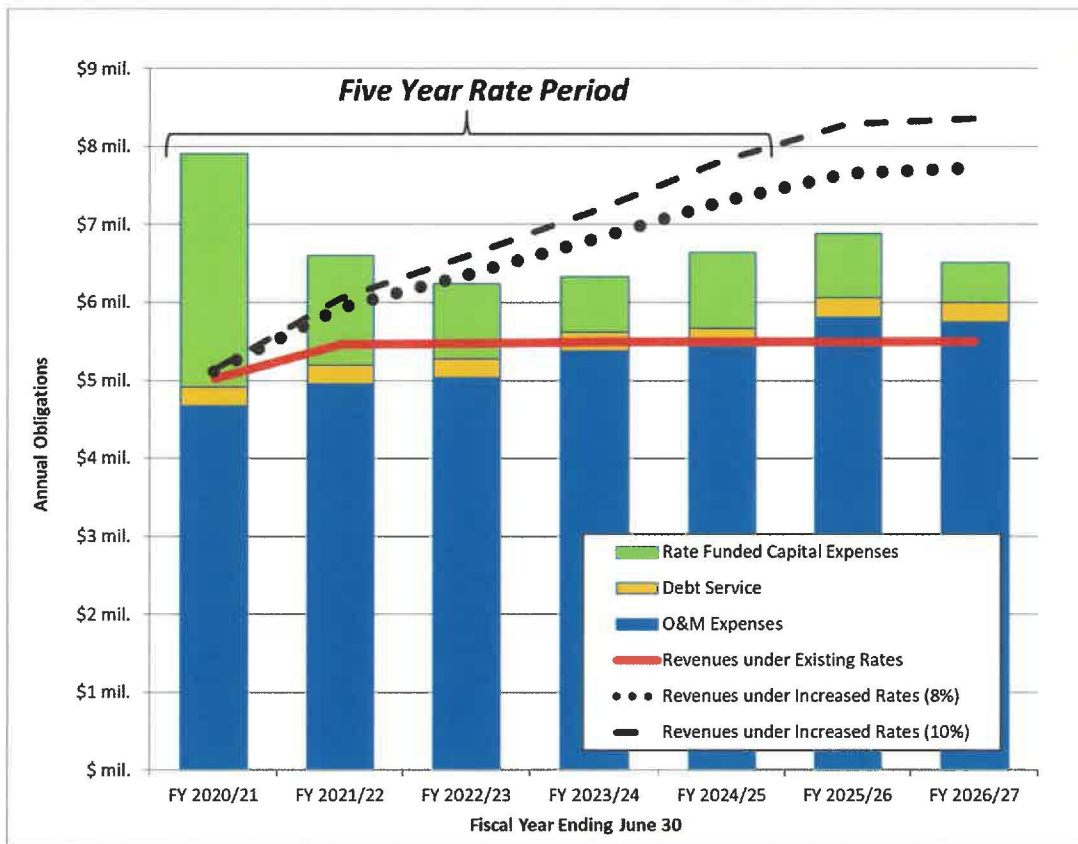
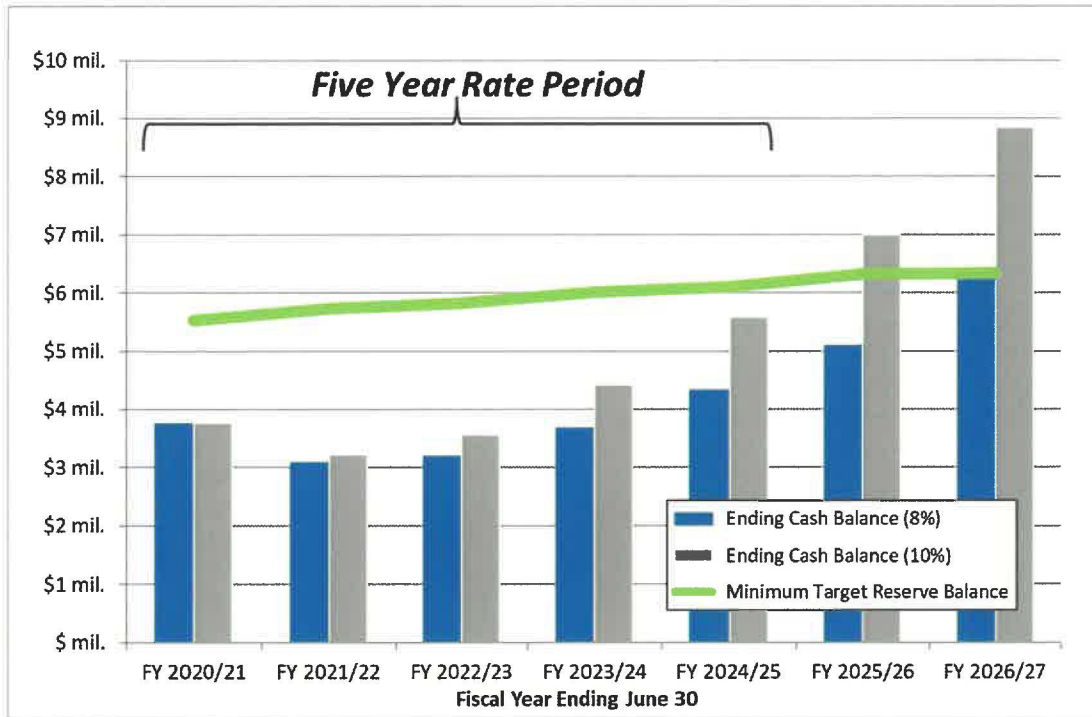


Figure 5. Summary of Ending Cash Balances vs. Recommended Reserve Targets



3.3 CAPITAL IMPROVEMENT PROGRAM

The District has a five-year Capital Improvement Program with approximately \$7 million (current value) in planned capital projects for the District’s water system. **Figure 6** shows the list of capital projects that were factored into the financial plans and the amount planned for Fiscal Year 2020/21 through 2024/25. Project costs are listed in current and future values; future values reflect the estimated cost of each project in the year the project is planned, including projected cost inflation of 3% per year, per the Engineering News Record Construction Cost Inflation Index².

² See Appendix Tables 13 for the detailed capital project costs that include projected cost inflation and Table 14 for the cost inflation factors applied to project costs.

Figure 6. Five-Year Capital Improvement Program

Project Description	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
District Projects					
GW Mgmt. Plan & Urban Water Mgmt. Plan	\$ 100,000	\$ -	\$ 47,741	\$ -	\$ -
Treatment Feasibility & Exploration Costs	35,000	-	-	-	168,826
Vulnerability Assessment AWIA	45,000	-	-	-	-
Standard Drawings Update	25,000	-	-	-	-
Salt Nutrient Monitoring Wells\Sampling	50,000	-	106,090	-	112,551
Asset Management Plan	50,000	-	-	-	-
USGS Study\Feasibility Study	25,000	-	-	-	-
Centralized Sewer Planning\Groundwater Analysis	-	-	106,090	-	-
Master Plan Updates	85,000	-	-	-	-
Subtotal : District Projects	\$ 415,000	\$ -	\$ 259,921	\$ -	\$ 281,377
Capital Improvement Plan					
Chromium VI and Fluoride for Well 11B	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -
Fluoride Variance (Expiring) - TP-2, W12, W16	1,000,000	-	-	-	-
AMI/AMR* (see footnote)	300,000	-	-	-	-
Emergency Intertie Connection	-	257,500	-	-	-
Pay Meter Station Upgrade	-	-	132,613	-	-
Subtotal : Capital Improvement Plan	\$ 2,300,000	\$ 257,500	\$ 132,613	\$ -	\$ -
Repairs, Rehabilitation, & Maintenance					
Plant 6 Electrical and Well Upgrade	\$ 25,000	\$ -	\$ -	\$ -	\$ -
Emergency Repairs, Unspecified	75,000	61,800	79,568	81,955	90,041
Repiping/Distribution System Upgrades	75,000	77,250	79,568	87,418	90,041
Reservoir Recoating / Cathodic Protection	20,000	-	-	-	196,964
Large Meter Replacement Program	30,000	-	-	-	-
Well Rehabilitation	-	92,700	-	98,345	-
Fluoride Plant Instrumentation\Coating\ SCADA Upgrades	10,000	25,750	106,090	27,318	28,138
Distribution SCADA System	-	-	-	163,909	-
Treated Water Reservoir Coating	50,000	618,000	-	-	-
Campbell Reservoir Road Paving\Seal Coating	100,000	-	-	21,855	-
Hansen Booster Station	-	-	159,135	-	-
Stock well Booster Station	-	36,050	-	-	-
Cactus Booster Station	-	-	42,436	-	-
Lupine Booster Station	-	-	-	43,709	-
2400 Booster Station	-	128,750	-	-	45,020
Subtotal : Total Repairs & Maintenance	\$ 385,000	\$ 1,040,300	\$ 466,796	\$ 524,509	\$ 450,204
Capital Outlay					
Vehicle/Equipment Replacements	\$ 40,000	\$ 46,350	\$ 63,654	\$ 65,564	\$ 45,020
Computer/Technology Replacements	30,000	10,300	10,609	49,173	22,510
GIS	20,000	10,300	21,218	-	-
Administrative Building\Office Remodel	35,000	10,300	10,609	-	11,255
Energy Efficiency Projects	35,000	-	-	27,318	-
One-Time Existing Conditions Sampling Event	20,000	-	-	38,245	-
Parking Lot Seal\Paving	15,000	25,750	-	-	168,826
Subtotal : Total Capital Outlay	\$ 195,000	\$ 103,000	\$ 106,090	\$ 180,300	\$ 247,612
Total: Capital Improvement Program Costs (Future-Year Dollars)	\$ 3,295,000	\$ 1,400,800	\$ 965,419	\$ 704,809	\$ 979,193

The District is planning to fully cash-fund the planned capital expenditures with a combination of existing reserves and rates, thereby avoiding the need for debt financing.

SECTION 4. CURRENT VS. UPDATED WATER RATE

4.1 FIXED AND VARIABLE COSTS

The updated water rates developed in this study are structurally the same as the District’s existing rates, which consist of a fixed service charge by meter size and a uniform commodity charge per one hundred cubic foot (HCF) of consumption that is the same for all customers. However, there is a different commodity charge for customers receiving non-potable water and those using potable water from the

District’s pay station, in addition to a different *fixed charge* for non-potable customers. The non-potable and pay station commodity rates reflect the differences in the cost of service for those customers, which is described in Section 4.3 of this technical memo.

Ideally, utilities should recover all of their fixed costs from fixed charges and all of their variable costs from volumetric charges, because fluctuations in water sales revenues would be directly offset by reductions or increases in variable expenses. Additionally, it also provides greater revenue stability. However, other factors are often considered when designing water rates such as community values, water conservation goals, ease of understanding, and ease of administration.³

Fixed costs generally consist of costs that a utility incurs to serve customers irrespective of the amount of water they use.⁴ These include (1) the infrastructure (capacity-related facilities) required to provide service to customers, (2) costs associated with the peaking requirements, or maximum demand which affects the maximum size of water supply, treatment and delivery system, and (3) administrative and billing costs associated with meter reading, postage and billing.

Variable costs are those that change as the volume of water produced and delivered changes. These commonly include the costs of chemicals used in the treatment process, energy related to pumping for transmission and distribution, and source of supply.

Appendix Tables 15-17 show how the District’s expenses were classified and allocated to the different functions of water service, which translate to fixed and variable charges. Most costs are allocated to multiple functions of water service because costs are rarely 100% allocable to fixed or variable categories. For example, the majority of the source of supply labor costs are allocated equally to commodity and capacity costs and a small portion is allocated to non-potable and pay station water based on the amount of water delivered to these customers, which is shown in Appendix Table 18. The classification (i.e., functionalization) of costs allows us to better allocate the classified costs to the cost causation components, as described in Section 4.2 of this memo. **Figure 7** below shows the types of costs that are fixed vs. variable.

Figure 7. Fixed vs. Variable Costs

Fixed Costs	Variable Costs
Capacity	Commodity
Customer	Non-Potable
Fire Protection	Pay Station

Capacity related costs are those costs associated the maximum demand required at one point in time or the maximum size of facilities required to meet this demand. **Customer** related costs are costs associated with having a customer on the water system, such as meter reading, postage and billing. **Fire protection** costs are those costs associated with providing sufficient capacity in the system for fire

³ *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, American Water Works Association, Seventh Edition, see pp. 5 and 96.*

⁴ *Ibid, pp. 137-138.*

meters and other operations and maintenance costs of providing water to properties for private fire service protection. **Commodity** related costs are those costs associated with the total consumption (i.e., flow) of water over a specified period of time (e.g., annual). **Non-potable** related costs are costs associated with operation and maintenance of the non-potable well, source of supply, billing customers and the eventual replacement of the well. **Pay Station** costs are costs related to operating and maintaining the pay station, delivering water to the pay station that customers purchase from the District.

4.2 FUNCTIONALIZATION AND CLASSIFICATION METHODOLOGY

The methodology used in this study to allocate costs to each function of water service is described below. While many of these costs have joint-purposes, and therefore can be allocated to several functional categories, there are no exact or widely accepted industry standards that can be applied. NBS professional judgment and District staff input were considered in developing these allocations. See Appendix Tables 15-17 for the detailed listing for each budget line item.

- **Source of Supply Costs** (excluding electricity) are allocated to pay station and non-potable customers based on the percentage of water these customers consume compared to potable users, which totals 6.88% of source of supply costs. The remaining costs are split evenly between the commodity and capacity component of the rate, because the costs are related to the amount of water sold (commodity) and the size of the supply required to meet customer demand (capacity). Electricity costs are the exception, where they are allocated entirely to the commodity component of the rate, with direct allocations made to non-potable that is based on the actual amount of electricity required to operate the well, and to the pay station based on the amount of water consumed.
- **Pumping Costs** related to labor and supplies are allocated to the pay station customers based on the percentage of water these customers consume compared to potable users, which totals 2.31%. The remaining costs are allocated 67.69% to commodity and 30% to capacity components of the rate, because the costs are closely tied to the size of the system (capacity), and amount of water sold (commodity). Pumping electricity costs are allocated to the pay station based on the amount of water consumed, which is 2.31%, and the other 97.69% is allocated to the commodity component of the rate because they are entirely related to the amount of water consumed.
- **Transmission and Distribution Costs** are allocated 5% to the pay station due to their actual impact on the distribution system, and the remaining is allocated 30% to commodity, 52% to capacity, 5% to customer and 8% to fire protection, based on estimated impacts to the water system. Non-potable customers don't share in these costs because they have a totally separate system that is not connected to the potable water system.
- **Treatment Wells Costs** are allocated overall 30% to commodity, 54.69% to capacity, 5% to customer, 8% to fire protection and 2.31% to the pay station. The allocation percentages are based on the estimated impact to each function of water service.

- **Treatment Facilities Costs** are split equally between commodity and capacity since it is a shared cost for both functions of water service, with the other 2.31% allocated to the pay station, based on the amount of water consumed by these customers.
- **Customer Account Costs** are allocated entirely to the customer component with a small portion allocated to the pay station and non-potable system based on the number of customers each has compared to all other users.
- **General Administration Costs** are allocated 17.65% to commodity, 50% to capacity and 30% to customer since most costs are related to the number of customers and size of the system, and partially related to the amount of water consumed, since they won't change drastically if customers increase or decrease consumption in line with normal consumption patterns. A small portion of these costs are allocated to the pay station and non-potable components based on the number of customers each has compared to all other users.
- **Payouts and Retiree Medical Costs** are allocated 37.65% to commodity, 50% to capacity and 10% to customer based on the approximate amount of impact each function of water service has on operations staff time. A portion of these costs are also allocated to the pay station and non-potable components based on the number of customers each has compared to all other users.
- **Board of Director Costs** are allocated entirely to the customer component, since the Board's purpose is to serve the customers of the water system. A small portion of these costs are allocated to pay station and non-potable components based on the number of customers each has compared to all other users.
- **Non-Operating Expenditures** consist of Unfunded PERS and OPEB liabilities. These costs are allocated 30% to commodity, 54.65% to capacity, 5% to customer, 8% to fire protection, 0.04% to the non-potable system, and 2.31% to the pay station. These allocations are based on the estimated impact to each function of water service.

4.3 ALLOCATION OF COSTS TO CUSTOMER CLASSES

Customer classes are typically determined by grouping customers with similar demand characteristics into categories that reflect the cost differentials to serve each type of customer. The District currently uses meter sizes as customer classes, but also differentiates fixed charges for standard water service, fire service and non-potable water customers.

Variable Charges

There are three separate variable charges for potable, non-potable and pay station customers based on the costs to provide water service to each of these types of customers. The differences in how costs are allocated to each volumetric charge are based on the amount of each type of water consumed, the number of customers, and specific cost differences, such as the amount of electricity required to deliver water to non-potable water customers, as described below.

Once the total amount of revenue to collect from potable water rates is determined (based on the functionalization and classification process described in Section 4.2 of this memo), costs are allocated to each customer class. For **potable water** customers (e.g. single-family, multi-family, commercial, irrigation and fire), the total costs allocated to the commodity component of the rate are then allocated to these customer classes based on the amount of water they consume, which is shown in Appendix Table 22.

For **non-potable** water customers, a direct allocation is made in the functionalization and classification process that reflects this system's fair share of system-wide costs that is primarily based on the number of customers that receive non-potable water, and the amount of water they consume in relation to other customers. The non-potable system operates independently of the District's main potable water system, which is the reason a separate cost of service is determined for this customer class.

As with non-potable customers, a direct allocation is made in the functionalization and classification process to the **pay station rate** that reflects this group of customers share of system-wide costs. Most expenses are allocated to these customers based on the portion of water purchased from the pay station in relation to all other customers, and their share of transmission and distribution costs, as determined by District Staff. A detailed breakdown of how costs are allocated to each of these components is shown in Appendix Tables 14-18, and a summary of this information is shown in Appendix Table 25.

Fixed Charges

Meter sizes have different fixed charges based on the capacity requirements of each size meter connected to the system. This is because larger meters have the potential to use more of the system's capacity, or said differently, they have higher peaking factors compared to smaller meters. The potential capacity demanded (peaking) is proportional to the maximum hydraulic flow through each meter size as established by the AWWA hydraulic capacity ratios shown in **Figure 8**⁵. This figure shows the ratio of potential flow through each meter size compared to the flow of a 3/4-inch meter, which is the base meter size in the District. For the purpose of maintaining continuity in the rate structure, District staff recommends keeping 5/8-3/4-inch meters both equivalent to one meter; which is a common practice in rate setting for meters serving small water users.

As an example, a 2-inch meter has a greater capacity, or potential peak demand than a 3/4-inch meter; therefore the fixed charge for a 2-inch meter is larger than a 3/4-inch meter based on their proportionate capacity requirements⁶. A "hydraulic capacity factor" is calculated by dividing the maximum capacity or flow of large meters by the capacity of the base meter size, which is typically the most common residential meter size (in this case a 3/4-inch meter).

⁵ See American Water Works Association, *Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1*, page 386, Appendix B (7th ed. 2017).

⁶ This is reflected in the fixed charge calculations by using the AWWA hydraulic capacity factors to represent the maximum volume each meter size is capable of delivering.

The actual number of meters by size is multiplied by the corresponding capacity ratios to calculate equivalent meters. The number of equivalent meters is used as a proxy for the potential demand that each customer can place on the water system. A significant portion of a water system’s peak capacity and in turn, the utility’s fixed operating and capital costs are related to meeting system capacity requirements⁷. The fixed charges developed in this study reflect current hydraulic capacity factors based on AWWA standards, as shown in Figure 8⁷.

Figure 8. Hydraulic Capacity Factors Used in Fixed Charge Calculations

Meter Size	Standard Meters		Fire Service	
	Meter Capacity (gpm)	Hydraulic Capacity Factor	Meter Capacity (gpm)	Hydraulic Capacity Factor
	<u>Displacement Meters</u>		<u>Displacement Meters</u>	
5/8 inch	20	1.00	20	1.00
3/4 inch	30	1.00	N/A	N/A
1 inch	50	1.67	N/A	N/A
1.5 inch	100	3.33	N/A	N/A
2 inch	160	5.33	160	8.00
	<u>Turbine Class 1</u>		<u>Fire Service Type I</u>	
3 inch	350	11.67	350	11.67
			<u>Compound Class I</u>	
4 inch	630	21.00	500	16.67
6 inch	1,300	43.33	1,000	33.33
	<u>Turbine Class 2</u>			
8 inch	2,800	93.33	1,600	53.33
			<u>Fire Service Type I</u>	
10 inch	4,200	140.00	4,400	146.67
12 inch	5,300	176.67	N/A	N/A

1. Source: AWWA Manual M1, "Principles of Water Rates, Fees and Charges", Table VI 2-5.

2. Source: AWWA Manual M6, "Water Meters - Selection, Installation, Testing, and Maintenance" Table 5-3 for 10 inch fire service meter capacity only.

The District’s existing rates reflect different fixed charges for commercial fire meters than for standard water service customers. Fire service customers differ from other water service customers because their service is more of a standby nature, where a readiness-to-serve charge is appropriate. Except in the event of a fire, these users are not intended to use water on a regular basis. However, the District still needs to provide sufficient capacity for fire meters and recover other operations and maintenance costs of providing water to such properties for private fire service protection.

Based on the cost of service analysis and the standby nature of fire meters, the overall cost to serve these users is less than that of a standard service; therefore, the fixed charges are less. Please note that no capacity factors are shown in Figure 8 for 3/4 through 1 ½ inch meters because the District does not have any, nor does it plan to add any fire service meters of those sizes.

⁷ See American Water Works Association, Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1, page 386, Appendix B (7th ed. 2017).

As described in Section 4.2 of this memo, the District has separate variable charges for non-potable water users. The non-potable system is separate from the District’s potable water system and therefore, has distinct costs such as electricity, staff time and the eventual replacement of the non-potable well, which is used only to serve these customers. In this study, separate fixed charges were also developed for non-potable water customers that are based on the estimated costs⁸ of serving these customers, which is approximately \$40,500 for Fiscal Year 2020/21, as shown in **Figure 9**.

Figure 9. Non-Potable Costs

Costs Allocated to Non-Potable Charges	2020/21 Cost
Allocated System-Wide Costs	11,195
Operations Staff Time	5,040
Billing Staff Time	840
Well Replacement Cost	23,449
Total Annual Non-Potable Cost	\$40,524

4.4 PROPOSED RATES

In this study, NBS developed several rate structures for the District to consider that reflect various allocations of fixed and variable charges. The rates that are presented in this memo collect approximately 70% of revenue from variable charges and 30% of revenue from fixed charges, which is the same allocation as the existing water rates. The five-year rate schedules for the Financial Plan alternatives (e.g. the 8% and 10% increases in total rate revenue) are shown in **Figure 10** and **Figure 11**.

⁸ Costs for staff time were the District’s estimate for both the staff time required to serve these customers and a fully burdened hourly rate of \$70/hr. The estimated \$290,000 cost (in 2020 dollars) for eventual replacement of the well is also included in the total cost basis for the non-potable rates.

Figure 10. Current and Proposed Water Rates – Financial Plan Alternative 1 (8% increases)

Water Rate Schedule	Current Rates	Proposed Water Rates				
		Effective 1/1/2021	Effective 1/1/2022	Effective 1/1/2023	Effective 1/1/2024	Effective 1/1/2025
Fixed Service Charge						
5/8-inch	\$27.70	\$27.13	\$29.30	\$31.64	\$34.17	\$36.90
3/4-inch	\$27.70	\$27.13	\$29.30	\$31.64	\$34.17	\$36.90
1-inch Dual Service-Residential	\$27.70	\$27.13	\$29.30	\$31.64	\$34.17	\$36.90
1-inch	\$38.69	\$38.29	\$41.35	\$44.66	\$48.23	\$52.09
1.5-inch	\$66.18	\$66.21	\$71.51	\$77.23	\$83.41	\$90.08
2-inch	\$99.17	\$99.72	\$107.70	\$116.32	\$125.63	\$135.68
3-inch	\$203.63	\$205.82	\$222.29	\$240.07	\$259.28	\$280.02
4-inch	\$357.57	\$362.17	\$391.14	\$422.43	\$456.22	\$492.72
6-inch	\$725.93	\$736.30	\$795.20	\$858.82	\$927.53	\$1,001.73
Commercial Fire Meters - Fixed Service Charge						
2-inch meter	\$64.61	\$88.02	\$95.06	\$102.66	\$110.87	\$119.74
3-inch meter	\$128.11	\$123.62	\$133.51	\$144.19	\$155.73	\$168.19
4-inch meter	\$178.24	\$172.17	\$185.94	\$200.82	\$216.89	\$234.24
6-inch meter	\$345.33	\$333.98	\$360.70	\$389.56	\$420.72	\$454.38
8-inch meter	\$545.84	\$528.16	\$570.41	\$616.04	\$665.32	\$718.55
10-inch meter	\$1,481.57	\$1,434.34	\$1,549.09	\$1,673.02	\$1,806.86	\$1,951.41
Non-Potable Meters - Fixed Service Charge						
2-inch meter	\$1,027.33	\$675.39	\$729.42	\$787.77	\$850.79	\$918.85
Commodity Charges for All Water Consumed						
Commodity Charge Per HCF - Potable	\$3.33	\$3.55	\$3.83	\$4.14	\$4.47	\$4.83
Commodity Charge Per HCF - Non-Potable	\$0.61	\$0.63	\$0.68	\$0.73	\$0.79	\$0.85
Pay Station, Utah Trail Charge Per Gallon	\$0.0122	\$0.0082	\$0.0089	\$0.0096	\$0.0104	\$0.0112

Figure 11. Current and Proposed Water Rates – Financial Plan Alternative 2 (10% increases)

Water Rate Schedule	Current Rates	Proposed Water Rates				
		Effective 1/1/2021	Effective 1/1/2022	Effective 1/1/2023	Effective 1/1/2024	Effective 1/1/2025
Fixed Service Charge						
5/8-inch	\$27.70	\$27.39	\$30.13	\$33.14	\$36.45	\$40.10
3/4-inch	\$27.70	\$27.39	\$30.13	\$33.14	\$36.45	\$40.10
1-inch Dual Service-Residential	\$27.70	\$27.39	\$30.13	\$33.14	\$36.45	\$40.10
1-inch	\$38.69	\$38.66	\$42.53	\$46.78	\$51.46	\$56.61
1.5-inch	\$66.18	\$66.85	\$73.54	\$80.89	\$88.98	\$97.88
2-inch	\$99.17	\$100.68	\$110.75	\$121.83	\$134.01	\$147.41
3-inch	\$203.63	\$207.79	\$228.57	\$251.43	\$276.57	\$304.23
4-inch	\$357.57	\$365.65	\$402.22	\$442.44	\$486.68	\$535.35
6-inch	\$725.93	\$743.38	\$817.72	\$899.49	\$989.44	\$1,088.38
Commercial Fire Meters - Fixed Service Charge						
2-inch meter	\$64.61	\$88.87	\$97.76	\$107.54	\$118.29	\$130.12
3-inch meter	\$128.11	\$124.81	\$137.29	\$151.02	\$166.12	\$182.73
4-inch meter	\$178.24	\$173.82	\$191.20	\$210.32	\$231.35	\$254.49
6-inch meter	\$345.33	\$337.19	\$370.91	\$408.00	\$448.80	\$493.68
8-inch meter	\$545.84	\$533.24	\$586.56	\$645.22	\$709.74	\$780.71
10-inch meter	\$1,481.57	\$1,448.13	\$1,592.94	\$1,752.23	\$1,927.45	\$2,120.20
Non-Potable Meters - Fixed Service Charge						
2-inch meter	\$1,027.33	\$677.19	\$744.91	\$819.40	\$901.34	\$991.47
Commodity Charges for All Water Consumed						
Commodity Charge Per HCF - Potable	\$3.33	\$3.58	\$3.94	\$4.33	\$4.76	\$5.24
Commodity Charge Per HCF - Non-Potable	\$0.61	\$0.63	\$0.69	\$0.76	\$0.84	\$0.92
Pay Station, Utah Trail Charge Per Gallon	\$0.0122	\$0.0083	\$0.0091	\$0.0100	\$0.0110	\$0.0121

Figures 12 and 13 show bill comparison charts for residential and commercial customers under current and proposed rates. Figure 14 shows a comparison of single family residential bi-monthly bills compared to other regional water districts.

Figure 12. Residential Bi-Monthly Bill Comparison

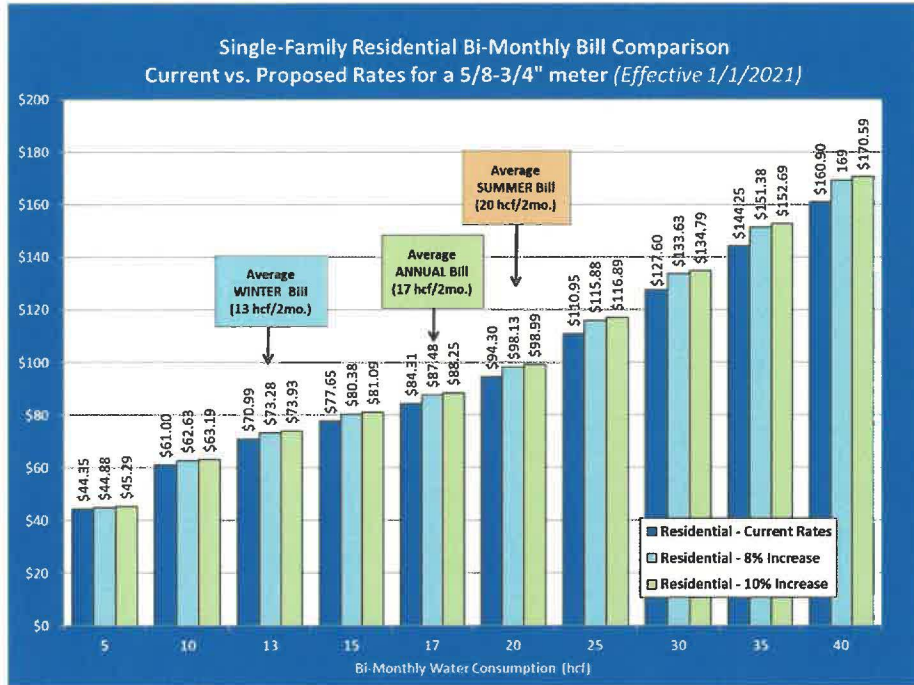


Figure 13. Commercial Bi-Monthly Bill Comparison

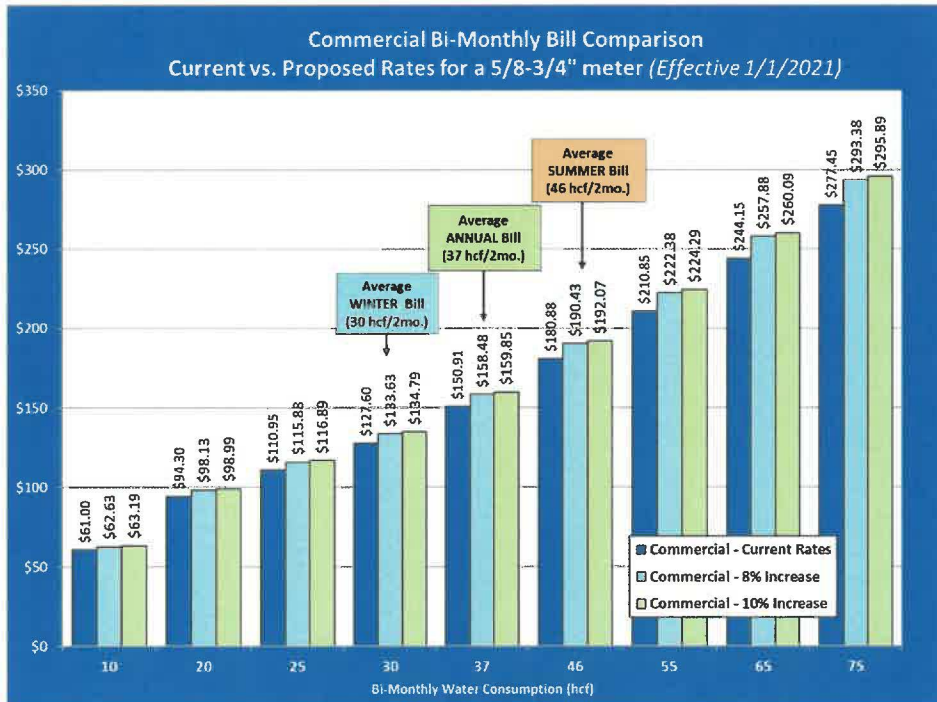
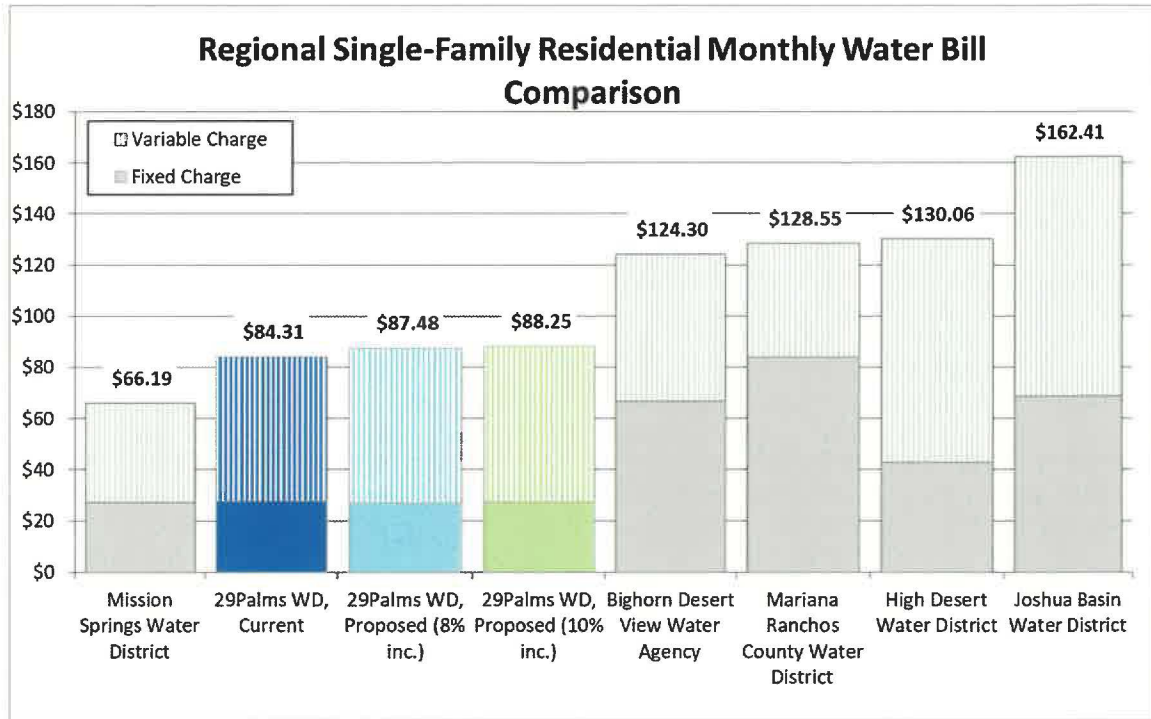


Figure 14. Regional Bi-Monthly Water Bill Comparison for Single Family Residential



SECTION 5. RECOMMENDATIONS AND NEXT STEPS

5.1 CONSULTANT RECOMMENDATIONS

NBS recommends the District's Board of Directors accept this report and its recommendations, and select a rate alternative (shown in Figures 10 and 11) and proceed with next steps outlined below in order to adopt and implement new rates.

5.2 NEXT STEPS

If the Board of Directors chooses to move forward with implementing the proposed financial plan and water rates, the following steps will be required:

1. Schedule a Public Hearing, which requires adequate public noticing, to consider moving forward with the Proposition 218 process to adopt new water rates.
2. Direct Staff to mail a notice describing the proposed changes to the rates to all customers and/or property owners receiving water service from the District.
3. Allow for a 45-day period during which the District receives written protests from customers and/or property owners (protests can be received until the end of the Public Hearing).
4. Conduct a Public Hearing after at least 45-days after the notices have been mailed.
5. Assuming there is not a majority protest, the Board of Directors will need to formally adopt the new rates at the end of the Public Hearing.

5.3 PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this technical memo and the opinions and recommendations included herein, NBS has relied on various assumptions and data with regard to financial matters, conditions, and events that may occur in the future. We believe the information and assumptions, including the budgets, projected capital improvement costs, and customer data received from District staff, were provided by reliable sources.

While we believe the use of such information and assumptions is reasonable for the purpose of this rate study, NBS has not independently verified this information and data. Additionally, some assumptions will invariably not materialize as stated herein and may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others. Given that, the District should closely monitor future revenues, costs and capital plans to determine any significant variances from the results shown in this report and take appropriate action to reconcile differences as needed.

Note: The attached Technical Appendices provide more detailed information on the analysis of the water revenue requirements, cost-of-service analysis and the rate design analyses that have been summarized above in this Technical Memorandum.



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FINAL TECHNICAL MEMORANDUM

TO: RAY KOLISZ, GENERAL MANAGER, TWENTYNINE PALMS WATER DISTRICT
CINDY BYERRUM, MPA, CPA, EIDE BAILLY CONSULTING GROUP

FROM: KIM BOEHLER, NBS DIRECTOR
JORDAN TAYLOR, NBS CONSULTANT

SUBJECT: WATER CAPITAL FACILITY FEE STUDY FINDINGS

DATE: FEBRUARY 19, 2021

SECTION 1. INTRODUCTION

A. BACKGROUND

Twentynine Palms Water District (District) retained NBS to conduct a water capital impact fee study in conjunction with the water rate study update for two primary reasons: (1) to ensure that the fees are updated to comply with legal requirements and industry standards, and (2) that these fees reflect the cost of capital infrastructure needed to serve new connections, or any person requesting additional capacity in the District's water system (referred to throughout as "future customers").

Please note, the types of fees reviewed in this study are referred to in the California Government Code as "capacity charges" and the terms are often used interchangeably with other terms such as "capacity fees" or in the District's case, they are referred to as "capital impact fees." To be consistent with the District's terminology, we refer to these fees as "capital impact fees" throughout this memo; however, they are considered "capacity charges" per the California Government Code.

California Government Code Section 66013 defines a capacity charge as a one-time "charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities." It authorizes public agencies to impose "capital impact fees" which are more appropriately called system capacity charges, on customers connecting to or upsizing their connection to the water system, to ensure that they pay their fair share of water utility assets, plus the costs of new facilities

needed to serve them. In its simplest form, capital impact fees are the result of dividing the cost (or value) of the Utility’s current system assets plus planned capital improvements, by the expected number of future customers. As a result, future customers connecting to the District’s water utility would enter as equal participants, along with current customers, regarding their financial commitment and obligations to the District.

SECTION 2. WATER CAPITAL IMPACT FEE STUDY

A. STUDY METHODOLOGY

Capital impact fees are one-time fees intended to reflect the cost of existing infrastructure and planned improvements available to new services, and place new utility customers on equal basis from a financial perspective with existing customers. Once new customers are added to the system, they then incur the obligation to pay the same water rates that existing customers pay.

Various methodologies have been and are currently used to calculate capital impact fees. The most common methodologies are based on the following:

- The value of existing (historical) system assets, often called a “system buy-in” methodology.
- The value of planned future improvements, also called the “incremental” or “system development” methodology.
- A combination of these two approaches.

This analysis uses the “Combination Approach”¹ which requires new customers to pay their fair share of existing system assets and any planned capital improvements that have capacity to serve new customers. In their simplest form, capital impact fees are calculated by dividing the costs of infrastructure allocated to future development by the number of units of new development anticipated, further defined as follows:

- The cost of existing assets that have capacity to serve new development are those that can reasonably be allocated to future development.
- The number of new units (i.e., growth) are those units projected to occur within the timeframe covered by the capital impact fee analysis.

B. EXISTING CONNECTIONS AND PROJECTED FUTURE GROWTH

NBS calculated that there are currently about 8,500 equivalent 5/8-3/4-inch meter units connected to the water utility. **Figure 1** shows the number of current water meter connections and the equivalent meter units.

¹ Method of calculating capital impact fees (also known as System Development Fees, Connection Fees, Capacity Fees) are set forth in the American Water Works Association’s *Principles of Water Rates, Fees and Charges* Seventh Edition (2017) pages 311 to 347.

Figure 1. Estimated Existing Equivalent Meter Units

Meter Size	Existing Potable Water Meters ¹	Meter Equivalence		Potable Water Meter Equivalent Units
		Maximum Flow (gpm) ²	Equivalency to 3/4 inch meter	
Standard Meters:				
5/8-3/4 inch	7,269	30	1.00	7,269
1 inch	281	50	1.67	468
1.5 inch	48	100	3.33	160
2 inch	47	160	5.33	251
3 inch	3	350	11.67	35
4 inch	16	630	21.00	336
6 inch	0	1,300	43.33	0
8 inch	0	2,800	93.33	0
10 inch	0	4,200	140.00	0
Total	7,664			8,519

1. Number of meters from source file: 29PalmsWD_Billing data_Manipulated_08.20.20.xlsx, Account # Pivot tab.
2. Source: AWWA M1, Table B-2. Assumes displacement meters for 5/8" through 2", Turbine Class I for 8" through 10".

Capacity in the District’s water utility is allocated to current and future customers, as shown in **Figure 2**. Using the average 5-year customer growth rate of 2% annually, the estimated number of new connections is calculated for a ten-year period. The percentage of capacity assigned to current and future customers is based upon the number of equivalent meter units that are estimated to connect in the next ten years.

Figure 2. Allocation of Capacity to Current and Future Customers

Demographic Statistics Potable System	Existing Total	Projected Service Total ¹ (thru FY2029/30)	% Allocation Factors		Cumulative Change	
			Existing Customers	New Customers	Number of Units	% Increase
Equivalent 5/8-3/4-inch meters	8,519	10,385	82.0%	18.0%	1,866	21.9%

1. Customer growth estimated at historical growth from 2015 to 2020.

C. EXISTING AND PLANNED ASSETS

The capital assets addressed in this study include existing assets and planned capital improvements (i.e., the system buy-in). An important aspect of this study is how the value of existing utility assets is determined. This study uses the replacement cost new – less depreciation (RCNLD) approach summarized in **Figure 3** to estimate existing asset values and depreciation, because it provides an up-to-date asset value that reflects estimated cost inflation.²

² The RCNLD approach was used to estimate all existing asset values, except for land, which does not depreciate.

Figure 3. Summary of Existing Asset Values

Asset Category ¹	Original Asset Cost	Replacement Cost ²	System Buy-In Cost Basis ³
Water Fund			
Infrastructure	1,194,722	2,287,255	1,419,971
Land	165,044	165,044	165,044
Equipment	495,894	651,109	296,536
Water Mains and Pipelines	23,839,643	62,111,079	51,793,436
Meters and Hydrants	182,368	354,205	207,323
Office Equipment	488,015	624,709	283,610
Pumping	312,359	413,919	368,769
Wells	1,810,913	3,829,143	2,620,336
Reservoirs	4,771,127	13,170,661	9,932,029
Treatment Plant	11,567,918	18,869,823	11,279,989
Vehicle	1,106,518	1,183,383	807,675
Water Supply/Engineering Studies	518,443	594,849	175,243
AMI Meter System	1,983,897	1,983,897	1,983,897
Total Capital Facilities & Equipment	\$ 48,436,861	\$ 106,239,074	\$ 81,333,857

1. Source file for current assets as of June 30, 2019: 29PWD_Asset Listing 6.30.19_manipulated.xlsx, Manipulated tab.

Additional assets added 08.25.20 per source file: FY19-20 Additional - For Rate Study NOT FINAL.xlsx

2. Takes into account estimated cost inflation, noted in Footnote 3.

3. System Buy-In Cost Basis values are calculated by escalating the District's book values from service date to current year values using historical cost inflation factors from the Handy-Whitman Index of Public Utility Construction Costs for Water Utility Construction in the Pacific Region.

The Engineering News Record (ENR) Construction Cost Index and Handy-Whitman Index of Public Utility Construction Costs are cost inflation indices that track construction costs and were used to estimate the replacement value of the District's existing assets. The replacement cost is calculated by escalating the book value of existing assets (including depreciation) to current-day values using the ENR Construction Cost or Handy-Whitman Index values. Figure 3 also summarizes the system buy-in cost basis by Asset Category for the District. For this analysis, assets that are no longer in service were excluded from the analysis. This approach was used for all assets, except land, which does not depreciate.

Most of the asset costs were allocated to current customers based on the 82 percent allocation factor previously shown in Figure 2 (and the 18 percent allocation factor for future customers). **Figure 4** shows the allocation of the \$81.3 million in total existing assets to current and future customers. Future customers are allocated about \$12.2 million of the existing water utility assets, or about 15% of the total. Some assets are excluded from the cost basis because they were contributed to the District and not funded by current ratepayers.

Figure 4. Existing Asset Values Allocated to Current and Future Customers

Asset Category ¹	System Buy-In Cost Basis	Allocation Basis (%) ²			Distribution of Cost Basis (\$)		
		Exclude from Analysis ³	Existing Customers	Future Customers	Exclude from Analysis ³	Existing Customers	Future Customers
Water Fund							
Infrastructure	\$ 1,419,971	0.0%	84.7%	15.3%	\$ -	\$ 1,202,473	\$ 217,498
Land	\$ 165,044	0.0%	84.7%	15.3%	\$ -	\$ 139,764	\$ 25,280
Equipment	\$ 296,536	0.0%	84.7%	15.3%	\$ -	\$ 251,115	\$ 45,421
Water Mains and Pipelines	\$ 51,793,436	1.6%	83.4%	15.1%	\$ 814,296	\$ 43,170,628	\$ 7,808,511
Meters and Hydrants	\$ 207,323	0.0%	94.3%	5.7%	\$ -	\$ 195,586	\$ 11,737
Office Equipment	\$ 283,610	0.0%	84.7%	15.3%	\$ -	\$ 240,169	\$ 43,441
Pumping	\$ 368,769	0.0%	84.7%	15.3%	\$ -	\$ 312,284	\$ 56,485
Wells	\$ 2,620,336	0.0%	84.7%	15.3%	\$ -	\$ 2,218,977	\$ 401,359
Reservoirs	\$ 9,932,029	0.0%	84.7%	15.3%	\$ -	\$ 8,410,733	\$ 1,521,296
Treatment Plant	\$ 11,279,989	0.0%	84.7%	15.3%	\$ -	\$ 9,552,225	\$ 1,727,764
Vehicle	\$ 807,675	0.0%	84.7%	15.3%	\$ -	\$ 683,962	\$ 123,712
Water Supply/Engineering Studies	\$ 175,243	0.0%	100.0%	0.0%	\$ -	\$ 175,243	\$ -
AMI Meter System	\$ 1,983,897	0.0%	88.2%	11.8%	\$ -	\$ 1,750,575	\$ 233,322
Total Capital Facilities & Equipment	\$ 81,333,857	1.0%	84.0%	15.0%	\$ 814,296	\$ 68,303,736	\$ 12,215,825

1. Source file for current assets as of June 30, 2019: 29PWD_Asset Listing 6.30.19_manipulated.xlsx, Manipulated tab.
Additional assets added 08.25.20 per source file: FY19-20 Additional - For Rate Study NOT FINAL.xlsx
2. Based on proportionate allocation between existing and future users for most assets (see Table 2 in Exhibit 1 for demographic expectations).
Contributed assets are excluded and meters/services are allocated 100% to existing customers. See Existing Assets Detail tab for information for each asset.

The District’s capital improvement plans extend to FY 2029/30. **Figure 5** shows a summary of the District’s future capital projects, all of which are needed to rehabilitate existing assets. Because of this, planned project costs were excluded from the capital impact fee calculation. Future customers will pay for these project in rates once connected to the water system. For a complete list of the District’s planned capital projects, refer to the *Appendix*.

Figure 5. Planned Assets Allocated to Current and Future Customers

Capital Project Description ¹	Future Cost Estimate (2019-2034) ¹	External Funding ²	System Development Cost Basis ³	% Allocation		Distribution of Cost Basis (\$)	
				Existing Customers	Future Customers	Existing Customers	Future Customers
District Projects	\$ 1,085,000	\$ -	\$ 1,085,000	100.0%	0.0%	\$ 1,085,000	\$ -
Capital Improvement Plan	\$ 4,917,500	\$ 1,700,000	\$ 3,217,500	87.5%	0.0%	\$ 3,217,500	\$ -
Repairs, Rehabilitation, & Maintenance	\$ 6,235,000	\$ -	\$ 6,235,000	100.0%	0.0%	\$ 6,235,000	\$ -
Capital Outlay	\$ 1,623,000	\$ -	\$ 1,623,000	100.0%	0.0%	\$ 1,623,000	\$ -
Total	\$ 13,860,500	\$ 1,700,000	\$ 12,160,500	96.9%	0.0%	\$ 12,160,500	\$ -

1. Capital project cost data was provided by District Staff in the following file: 29PWD_CIP Schedule 2020-21,V3.xlsx
2. The AMI / AMR project is funded by debt proceeds received by the District in May 2019.
3. Project cost allocated to existing customers since it is for meter replacement.

The District may have additional capital projects that are needed to serve future developments, and the costs of such projects may be recovered through a development agreement. This will be evaluated on a case by case basis as part of the development review process.

D. ADJUSTMENTS TO THE COST BASIS

Before the capital impact fees are developed, a credit is applied to the cost basis to account for outstanding principal on the current bond issue that funded capital projects that serve future customers. **Figure 6** shows the percent allocation between current and future customers in the AMI project costs for the outstanding bond. Approximately 10% of the project costs are deemed to serve future customers.

Figure 6. AMI Project Costs Allocated to Future Customers

AMI System Component	Project Cost Allocation ¹		
	Existing	Future	Total
AMI Meter System - Meters	\$ 685,151	\$ -	\$ 685,151
AMI Meter System - Poles/Repeaters	826,326	149,462	975,788
AMI Meter System - Other Equipment	273,490	49,468	322,958
Total	\$ 1,784,967	\$ 198,930	\$ 1,983,897
Percentage of Project Costs	90%	10%	100%

1. Project cost allocation is based on the *AMI Disbursements Detail.xlsx*. Meter costs are allocated 100% to existing customers, the poles/repeaters and other Equipment is shared by existing and future customers based on the allocations in Table 2.

Using the allocations calculated in Figure 6, 10% of the \$2 million bond issue is credited to future customers, as they will be paying for debt service through bi-monthly water rates. A summary of the calculation of the credit for debt service payments is shown in **Figure 7**, and future customers are credited about \$200,000 of the outstanding principal debt.

Figure 7. Debt Service Allocated to Future Customers

Bond Issue	Outstanding Principal	% Allocation		\$ - Allocation ²	
		Existing Customers	Future Customers	Existing Customers	Future Customers
2019 AMR & AMI Project Bond ¹	\$ 2,000,000	90.0%	10.0%	\$ 1,799,455	\$ 200,545
Grand Total	\$ 2,000,000	90.0%	10.0%	\$ 1,799,455	\$ 200,545

1. 2019 Bond Issuance detail and payment schedule found in source files: *29PWD_3.25.19 AMI debt.pdf*, *29PWD_Revised Rental Payment Schedule- final.pdf*.

2. Debt issue is allocated to existing and future customers proportionately based on the AMI System Component allocations for the project as shown in Table 6.

E. CALCULATED CAPITAL IMPACT FEES

The sum of the existing and planned asset values (that is, the system buy-in and system development costs), along with the adjustment for cash reserves and debt service, defines the total cost basis allocated to future customers as shown in **Figure 8**.

Figure 8. Summary of Cost Basis Allocated to Future Customers

System Asset Values Allocated to Future Development	Total Costs
<i>Costs Included in Existing System Buy-In:</i>	
Existing Assets	\$ 12,215,825
Planned, Future Capital Projects	-
Credit for Outstanding Debt (Principal)	(200,545)
Total Adjusted Cost Basis for New Development	\$ 12,015,281

The Total Adjusted Cost Basis for future customers is divided by the planned customer growth (measured in equivalent meter units) over the next 10 years. This represents the maximum capital impact fee that the District can charge per 5/8 or 3/4-inch meter for future customers. The calculation is shown in **Figure 9**.

Figure 9. Summary of New Base Capacity Charges

Summary of Fee Calculation	Adjusted System Cost Basis	Planned New Meter Equivalents (thru FY2029/30)	Base Capital Impact Fee (per Meter Equivalent)
Water Capital Impact Fee per Meter Equivalent	\$ 12,015,281	1,866	\$6,440

The capital impact fees for meters greater than 5/8 or 3/4-inch connecting to the District’s water system will be calculated by the equivalency to 3/4-inch meters. NBS has provided the District with a fee schedule for meter sizes up to 10-inch, which is shown in **Figure 10**.

Figure 10. Capital Impact Fee for All Meter Sizes

Meter Size	Equivalency Factor		Unit Cost (\$/3/4-inch meter)	Updated Capital Impact Fee Per Meter
	Maximum Continuous Flow (gpm) ¹	Equivalency to 3/4 inch meter		
5/8-3/4 inch	30	1.00	\$6,440	\$6,440
1 inch	50	1.67	\$6,440	\$10,734
1.5 inch	100	3.33	\$6,440	\$21,468
2 inch	160	5.33	\$6,440	\$34,349
3 inch	350	11.67	\$6,440	\$75,138
4 inch	630	21.00	\$6,440	\$135,248
6 inch	1,300	43.33	\$6,440	\$279,084
8 inch	2,800	93.33	\$6,440	\$601,103
10 inch	4,200	140.00	\$6,440	\$901,655

1. Source: AWWA M1, Table B-2. Assumes displacement meters for 5/8" through 2", Turbine Class I for 3" through 6", and Turbine Class II for 8" through 10".

SECTION 3. RECOMMENDATIONS AND NEXT STEPS

Consultant Recommendations

The following are NBS’ recommendations for the District’s consideration:

- **Approve and Accept This Study Report:** NBS recommends the District Board formally approve and adopt this report, its recommendations, and accompanying appendix as documentation of the capital impact fee analyses and the basis for adopting the capital impact fees.

- **Implement Recommended Capital Impact Fee Charges:** Based on the analyses presented in this report, the District Board should implement the proposed water capital impact fees shown in Figure 10. These adjustments are structured based on industry standards and are necessary to ensure that the capital impact fees that reflect the cost of capacity needed to serve future customers connecting to the District’s water system.

Next Steps

Periodically Review Water Capital Impact Fees – Any time an Agency adopts new utility rates or capacity charges, those new rates and fees should be closely monitored over the next several years to ensure the revenue generated is sufficient to meet the annual revenue requirements and reviewed to incorporate new capital facility plans and/or significant repair and replacement projects. Changing economic factors, water consumption patterns, new regulatory mandates, and unplanned capital improvements all underscore the need for this annual review.

Note: The attached Technical Appendix provides more detailed information on the analysis of the water capital impact fee studies summarized in this report.

Principal Assumptions and Considerations

In preparing this report and the recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, number of customer accounts, billing and asset records, planned capital improvements, and other conditions and events that may occur in the future. This information and assumptions were provided by sources we believe to be reliable, although NBS has not independently verified this data.

While we believe NBS’ use of such information and assumptions is reasonable for the purpose of this report and its recommendations, some assumptions will invariably not materialize as stated herein or may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by NBS or provided to NBS by others.

APPENDIX – WATER CAPITAL IMPACT FEE ANALYSIS

ORDINANCE NO. 99

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE TWENTYNINE PALMS WATER DISTRICT AUTHORIZING ADOPTION OF NEW OR INCREASED FEES OR CHARGES BY RESOLUTION OR ORDINANCE AND TAKING CERTAIN OTHER ACTIONS RELATING THERETO

WHEREAS, the Twentynine Palms Water District (the "District") operates and is organized under Water Code section 30000 et seq.; and

WHEREAS, the District is authorized to fix and collect charges for the provision of services provided by the District; and

WHEREAS, the District continually strives to operate more efficiently and with greater flexibility on behalf of its ratepayers; and

WHEREAS, the District previously adopted fees and charges for certain services or governmental activity provided by the District, and now wishes to authorize future new or increased fees and charges by resolution, in the interests of flexibility and efficiency;

NOW THEREFORE, BE IT ORDAINED, by the Board of Directors of the Twentynine Palms Water District as follows:

1. The Board of Directors of the District finds and determines that the foregoing Recitals are true and correct and incorporates the Recitals herein.

2. Unless otherwise prohibited under any relevant statute, the District hereby authorizes any future new or increased fees or charges for services or regulatory activity provided by the District, to be adopted by resolution or ordinance. Any new or increased fee or charge adopted by resolution pursuant to the authority granted by this Ordinance shall have the same force and effect as if such new or increased fee or charge had been adopted by ordinance, and to the extent authorized in such resolution, shall repeal or replace any conflicting fee or charge previously adopted by the Board of Directors, whether such conflicting fee or charge had been adopted by resolution or ordinance.


3. The provisions of this Ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance, or the application thereof to any person or circumstance shall be held invalid, such invalidity shall not affect the other provisions of this Ordinance or the application of those provisions.

4. This Ordinance shall become effective immediately upon adoption.

5. The Board Secretary shall certify to the adoption of this Ordinance and cause the same to be published as required by law.

PASSED, APPROVED AND ADOPTED this 16h day of December, 2020 by the following vote.

AYES: Directors Arthur, Coghill, Horn, Leazer, and Giannini
NOES: None
ABSTAIN: None
ABSENT: None



Carol Giannini, President
Board of Directors

Attest:


Ray Kolisz, Board Secretary
Twentynine Palms Water District

