

# Tuckfield & Associates

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## MEMORANDUM

Heritage Ranch Community Services District

June 22, 2018

**Subject: Capacity Charge Study**

To: Mr. Scott Duffield, General Manager, Heritage Ranch Community Services District

From: G. Clayton Tuckfield, PE MBA, Tuckfield & Associates

## INTRODUCTION

The Heritage Ranch Community Services District (HRCSD) engaged Tuckfield & Associates to develop appropriate capacity charges for its water and wastewater systems. This technical memorandum presents the findings and results of the Capacity Charge Study (Study) which develops updated water and sewer capacity charges that are designed to equitably recover the costs of existing and future system infrastructure and assets which benefit new development. Establishing capacity charges requires compliance with the California legal framework and the capacity charges in this Study have been determined following this framework as well as American Water Works Association (AWWA) methodologies for determining capacity charges.

### Background

HRCSD staff has evaluated the on-going needs of the water and wastewater systems and have identified appropriate improvements in a Capital Improvement Program (CIP) for fiscal year (FY) 2017-18 through 2026-27. These improvements consist of repair and replacement expenditures related to the existing system facilities and those related to expanding the capacity of the systems. The improvements are required to maintain safe and reliable facilities that meet the needs of existing customers as well as new customer demand. From this CIP information, HRCSD staff desires to update its capacity charges.

### Purpose and Scope

The purpose of this Study is to calculate new HRCSD Capacity Charges such that they address the following.

- Account for recent additions and proposed capital improvements to the system.
- Determine a method for calculating Capacity Charges that fairly allocates cost to new development for the capacity provided.
- Establish charges that are reasonable, conform to applicable laws, are easy to understand, and simple to implement.

This Study includes the review and analysis of water and wastewater fixed assets, capital improvement plans, existing and future water and wastewater system demands, and existing or planned financing. This Study provides the documentation necessary to implement proposed water and wastewater capacity charges that satisfies the requirements of the California Government Code and HRCSD financial administrative requirements.

## COMPLIANCE WITH STATE LAW

Capacity charges are governed California Government Code (Code) section 66013. This section of the Code defines a “capacity charge” as “a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged.” The Code separately distinguishes “capacity charges” from “connection fees” which are defined as fees for the physical facilities necessary to make a water or sewer connection.

The capacity charges developed in this memorandum follow Section 66013, such that the capacity charges not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed. Section 66013 does not detail any specific methodology for calculating capacity charges.

To implement the capacity charges, section 66016 of the Code identifies the procedural requirements for adopting or increasing water and wastewater capacity charges. The Code requires a 14-day notice of public hearing on the capacity charges. Notices only need to be mailed for anyone who has filed a specific request to be notified. Ten (10) days before the hearing, the report establishing the fees must be made available to the public.

## METHODOLOGY

There are several methodologies that may be used in the development of capacity charges that can be applied to various urban growth situations. Brief descriptions of each methodology are provided below.

**System Buy-In** - Charges are designed to derive from new customers an amount per connection equal to the "equity" in the system attributable to existing customers. This method employs either original costs or replacement costs in measuring equity.

**Incremental Cost** - Charges are designed to derive from new customers the incremental, or added, cost of system expansion associated with new customer growth. This method is based on the principle that new connections to the system should pay for those costs, which they cause to be incurred, resulting from the most recent or next increment of system capacity needed to serve new customers.

**Combination of Buy-In and Incremental Cost** - In some situations, utilities use a combination of system buy-in and incremental cost methods. This method recognizes capacity in the system that is available now and planned for future development and allocates capital improvement program projects between replacement and growth-related value.

The methodology used for HRCSD is a combination of buy-in and incremental cost methodology. This methodology considers the contribution of both the existing facilities and growth-related facilities to accommodate new development. This methodology is used where the service area has existing facilities that will benefit new users of the system and where an expansion is anticipated or projected.

## SYSTEM CAPACITY

System capacities of the water and wastewater facilities are used in the development of the capacity charges. Average daily consumption of water users and average daily wastewater flow, Biochemical Oxygen (BOD), Suspended Solids (SS), and number of customers of existing users was provided from several sources including the HRCSD’s Engineer, master plan, and the 2017 Recycled Water Study. Table 1 below summarizes the capacities used for this Study.

| Table 1<br>System Capacities [1]              |   |             |                |               |                 |       |
|---|---|-------------|----------------|---------------|-----------------|-------|
|   | Water<br>gpd                              | Sewer       |                |               |                 |       |
|   |   | Flow<br>gpd | BOD<br>lbs/day | SS<br>lbs/day | Customer<br>EDU |       |
| <b>Existing and Planned System Capacities</b> |   |             |                |               |                 |       |
| 1   | Existing Customer Use Capacity            | 556,000     | 130,000        | 421           | 448             | 1,182 |
| 2   | System Capacity [2]                       | 1,000,000   | 130,000        | 421           | 448             | 1,182 |
| 3   | Planned System Capacity [3]               | 1,000,000   | 195,000        | 631           | 672             | 1,773 |
| <b>Growth-Related System Capacities</b>       |   |             |                |               |                 |       |
| 4   | Planned Growth-Related Expansion Capacity | -           | 65,000         | 210           | 224             | 591   |
| 5   | Excess Capacity                           | 444,000     | -              | -             | -               | -     |
| 6   | Total Excess and Planned Capacity         | 444,000     | 65,000         | 210           | 224             | 591   |

- [1] Average Day Demands in gpd.
- [2] From MKN Master Plan.
- [3] Capacity at the end of the CIP period.

## FACILITY VALUE

### Buy-in Component

The current facility value for capacity charge purposes for both the water and wastewater systems is based on Replacement Cost Less Depreciation (RCLD), derived from information and records provided

by HRCSD. Replacement cost refers to valuing the existing facilities at the cost to replace those facilities with facilities of similar usefulness, not necessarily with the exact equipment that currently exists.

The replacement cost of the water and wastewater existing facilities was determined by increasing each asset's original cost from its acquisition date to February 2018. This was accomplished by multiplying the asset original cost by the ratio of the Engineering News Record (ENR) Construction Cost Index (CCI) for February 2018 to the ENR CCI of its installation date. The replacement cost of the existing assets was then depreciated recognizing the percent that the asset has been depreciated in proportion to its original cost. Table 2 shows the HRCSD net investment in water and wastewater system facilities stated in terms of Replacement Cost Less Depreciation (RCLD). Detailed calculations of water and wastewater facility values are provided in Tables A-4 and B-3 respectively in the appendix to this memorandum.

Adjustments to the facility values are required to develop the buy-in component of the capacity charges. These adjustments include accounting for capital reserve contributions from existing customers and includes the replacement (system-wide) component of CIP projects, both of which are shown in Table 2. Capital reserve balances are added to facility value because the existing customers have paid into these reserves and future customers should buy-in for a proportionate share of the financial reserves as shown on line 4. Replacement (system-wide) CIP, shown on line 2, is included because these facilities will benefit both existing and new users of the system and the capacity charges are intended to be in effect for at least the next five years.

### **Incremental Cost Component**

HRCSD has developed a CIP plan that identifies facilities to be constructed over the next ten years. The CIP has system value that is related to both existing development and future growth. CIP costs that are related to replacement of current facilities have been included in the buy-in component of the capacity charges, whereas growth-related CIP is included with the incremental cost of facility value in the calculation. The water and wastewater CIP are provided in Tables A-1 and B-1 respectively in the appendix to this memorandum and shows the allocation of each CIP project to existing systemwide facilities (replacement) and growth-related facilities. Wastewater CIP is further allocated to wastewater cost component of flow, BOD, SS and Customer.

## **PROPOSED CAPACITY CHARGE CALCULATIONS**

Table 2 presents the calculations used to develop the water and wastewater capacity charges. The calculations use the facility values of the existing system facilities and future CIP facilities along with the system capacities from Table 1 to calculate a unit capacity charge in terms of dollars per gallon per day (\$/gpd) for water and dollars per unit for each wastewater parameter of flow, BOD, SS and Customer (\$/gpd, \$/lb, etc).

| Table 2<br>Capacity Charge per Unit   |   |                        |                        |                              |                             |                          |
|---------------------------------------|---|------------------------|------------------------|------------------------------|-----------------------------|--------------------------|
|                                       | Water   | Wastewater             |                        |                              |                             |                          |
|                                       |   | Volume                 | BOD                    | SS                           | Customer                    |                          |
| <b>Existing and Planned CIP Value</b> |   |                        |                        |                              |                             |                          |
| 1                                     | Existing System Facility Assets                             | \$7,427,148            | \$451,606              | \$33,074                     | \$972,778                   | \$976,834                |
| 2                                     | CIP Replacement (System-wide) Improvements                  | 7,129,499              | 4,950,146              | 123,292                      | 133,114                     | 19,644                   |
| 3                                     | PV of Remaining Debt Service Related to Existing Facilities | (1,574,962)            | -                      | -                            | -                           | -                        |
| 4                                     | Capital Reserves Balance                                    | 309,400                | 213,791                | 15,657                       | 460,515                     | 462,436                  |
| 5                                     | Total Existing and Planned System-wide Value                | \$13,291,085           | \$5,615,544            | \$172,024                    | \$1,566,407                 | \$1,458,914              |
| 6                                     | Planned System Capacity [1]                                 | 1,000,000              | 195,000                | 631                          | 672                         | 1,773                    |
| 7                                     | Existing and Planned Value per unit                         | <b>\$13.291</b><br>gpd | <b>\$28.798</b><br>gpd | <b>\$272.443</b><br>lb BOD   | <b>\$2,330.627</b><br>lb SS | <b>\$822.850</b><br>bill |
| <b>Growth-Related Value</b>           |   |                        |                        |                              |                             |                          |
| 8                                     | Existing System Growth-Related Improvements                 | \$416,519              | \$0                    | \$0                          | \$16,682                    | \$0                      |
| 9                                     | CIP Growth-Related Improvements                             | 3,247,801              | 1,864,394              | 455,008                      | 70,186                      | 10,356                   |
| 10                                    | PV of New Debt Service (debt financed CIP)                  | -                      | (500,000)              | -                            | -                           | -                        |
| 11                                    | Total Growth-Related Value                                  | \$3,664,320            | \$1,364,394            | \$455,008                    | \$86,868                    | \$10,356                 |
| 12                                    | Total Excess and Expansion Capacity [2]                     | 444,000                | 65,000                 | 210                          | 224                         | 591                      |
| 13                                    | Growth-Related Value per unit                               | <b>\$8.253</b><br>gpd  | <b>\$20.991</b><br>gpd | <b>\$2,161.855</b><br>lb BOD | <b>\$387.746</b><br>lb SS   | <b>\$17.523</b><br>bill  |
| 14                                    | <b>Capacity Charge per unit [3]</b>                         | <b>\$21.544</b><br>gpd | <b>\$49.788</b><br>gpd | <b>\$2,434.298</b><br>lb BOD | <b>\$2,718.374</b><br>lb SS | <b>\$840.374</b><br>bill |

- [1] Capacity at the end of the CIP period.
- [2] Sum of Planned Growth-Related Expansion Capacity and Excess Capacity.
- [3] Sum of Existing/System-wide and Growth-Related Value per unit.

Facility values in Table 2 are reduced to account for financing of existing and future facilities. The present value of outstanding debt service payments is deducted from existing facility value to reflect the equity in the existing system, and that debt service payments will be made from future water and wastewater rates. The present value of debt service payments from future debt issues, proposed to finance CIP as stated in the last rate study, is deducted from the growth-related value to recognize that a portion of the CIP that will be financed, which will also be paid through utility rates. Table 3 provides the net capacity charge for one EDU, after financial adjustments, by multiplying each unit capacity charge component from line 14 of Table 2 by the demand of one single-family residential customer.

| Table 3<br>Single-family Residential Capacity Charge |                                  |                   |                   |                  |                   |                   |
|--|----------------------------------|-------------------|-------------------|------------------|-------------------|-------------------|
|  | Water                            | Wastewater        |                   |                  |                   | Total             |
|  |                                  | Volume            | BOD               | SS               | Customer          |                   |
| <b>Capacity Charge</b>                               |                                  |                   |                   |                  |                   |                   |
| 1  | Capacity Charge per unit         | \$21.54           | \$49.78           | \$2,434.30       | \$2,718.37        | \$840.37          |
| 2  | Single-family Residential Demand | 311<br>gpd        | 110<br>gpd        | 0.3560<br>lb BOD | 0.3789<br>lb SS   | 1<br>bill         |
| 3  | <b>Capacity Charge</b>           | <b>\$6,698.94</b> | <b>\$5,475.80</b> | <b>\$866.49</b>  | <b>\$1,029.95</b> | <b>\$840.37</b>   |
|  |                                  |                   |                   |                  |                   | <b>\$8,212.61</b> |

Table 4 presents the schedule of proposed water and wastewater capacity charges for HRCSD. Capacity charges for the water system are based on the water meter size. For the wastewater system, capacity charges for residential customers are based on an EDU ratio assigned for residential development. However, non-residential customers are charged based on the flow, BOD, and SS of the new development applied to the individual components from line 1 of Table 3. By doing so, those customers that require a larger use of facilities designed to treat BOD and SS greater than standard strength, or one EDU, may be charged accordingly.

The water meter size and EDU ratios for the various types of development are methods that conform to industry practice and applicable laws, is easy to understand, and is simple to implement and administrate by HRCSD.

| Table 4<br>Schedule of Capacity Charges |                             |                               |           |               |             |            |                    |
|---|-----------------------------|-------------------------------|-----------|---------------|-------------|------------|--------------------|
|   |                             | Capacity Ratio<br>/ EDU Ratio | Water     | Wastewater    |             |            |                    |
| <b>Water Meter Size</b>                 |                             | Capacity Ratio                |           |               |             |            |                    |
| 1                                       | 5/8"                        | 1.00                          | \$6,698   |               |             |            |                    |
| 2                                       | 3/4"                        | 1.00                          | \$6,698   |               |             |            |                    |
| 3                                       | 1"                          | 1.67                          | \$11,185  |               |             |            |                    |
| 4                                       | 1 1/2"                      | 3.33                          | \$22,304  |               |             |            |                    |
| 5                                       | 2"                          | 5.33                          | \$35,700  |               |             |            |                    |
| 6                                       | 3"                          | 10.67                         | \$71,467  |               |             |            |                    |
| 7                                       | 4"                          | 16.67                         | \$111,655 |               |             |            |                    |
| 8                                       | 6"                          | 40.00                         | \$267,920 |               |             |            |                    |
| 9                                       | 8"                          | 66.67                         | \$446,555 |               |             |            |                    |
| <b>Wastewater Residential</b>           |                             | EDU Ratio                     |           |               |             |            |                    |
| 10                                      | Single-family Residential   | 1.00                          |           | \$8,212       |             |            |                    |
| 11                                      | Multifamily Residential [1] | 1.00                          |           | \$8,212       |             |            |                    |
| 12                                      | Condominium [1]             | 1.00                          |           | \$8,212       |             |            |                    |
| 13                                      | RV Space [1]                | 0.80                          |           | \$6,570       |             |            |                    |
| <b>Wastewater Non-Residential [2]</b>   |                             |                               |           | Flow (\$/gpd) | BOD (\$/lb) | SS (\$/lb) | Customer (\$/bill) |
| 14                                      | Charge for Each Component   |                               |           | \$49.78       | \$2,434.30  | \$2,718.37 | \$840.37           |

[1] Per dwelling unit.

[2] Capacity Charge calculated based on Non-residential customer flow and strength.

## FUTURE CAPACITY CHARGES

The proposed water and wastewater capacity charges may be increased annually with the change in the ENR CCI to capture future construction cost inflation. The capacity charge adjustment should be made on the change in the index from the date of adoption of the proposed charges. The capacity charges should be updated at least every five years or when there are substantial changes to the CIP or projected demand.

I appreciate the opportunity to serve the District on this matter. If there are any questions regarding the analyses, please contact me at 949-760-9454.

Very Truly Yours,

TUCKFIELD & ASSOCIATES

A handwritten signature in black ink, appearing to read "G. Clayton Tuckfield". The signature is written in a cursive, flowing style.

G. Clayton Tuckfield  
Principal Consultant  
Tuckfield & Associates

Table A-1  
Water Capital Improvement Program

| Description   | Total               | Percent System-wide | Percent Growth Related | System-wide        | Growth-Related     |
|---|---------------------|---------------------|------------------------|--------------------|--------------------|
| <b>Current Capital Improvement Projects (CIP) [1]</b>   |                     |                     |                        |                    |                    |
| <b>Pump Station 5</b>                                   |                     |                     |                        |                    |                    |
| 1,500 gpm fire pump                                     | 390,798             | 100%                | 0%                     | 390,798            | -                  |
| <b>Water Mains</b>                                      |                     |                     |                        |                    |                    |
| Replace 63 Dry Barrel Hydrants w/Wet Barrel Hydrants    | 308,700             | 66%                 | 34%                    | 204,061            | 104,639            |
| Replace 12" ACP Water Main w/12" PVC Water Main         | 367,500             | 66%                 | 34%                    | 242,930            | 124,570            |
| Replace 12" ACP Water Main w/12" PVC Water Main         | 367,500             | 66%                 | 34%                    | 242,930            | 124,570            |
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| Replace 12" ACP Water Main w/12" PVC Water Main         | 367,500             | 66%                 | 34%                    | 242,930            | 124,570            |
| New Water Main - Equestrian Road                        | 293,098             | 100%                | 0%                     | 293,098            | -                  |
| Pressure Reducing Valve at Meadowlark Lane              | 27,387              | 100%                | 0%                     | 27,387             | -                  |
| Equestrian and Waterview PRV                            | 50,000              | 100%                | 0%                     | 50,000             | -                  |
| Pressure Relief Valves and various locations            | 34,507              | 100%                | 0%                     | 34,507             | -                  |
| <b>Water Tanks</b>                                      |                     |                     |                        |                    |                    |
| 2 MG Water Tank Mixing Upgrade                          | 350,000             | 66%                 | 34%                    | 231,362            | 118,638            |
| 2 MG Water Tank Seismic Upgrade                         | 560,000             | 66%                 | 34%                    | 370,179            | 189,821            |
| New 300K Gal Tank at WTP                                | 575,125             | 66%                 | 34%                    | 380,177            | 194,947            |
| New 1.0 MG Tank   | 2,013,523           | 66%                 | 34%                    | 1,331,008          | 682,515            |
| <b>Water Treatment/Supply</b>                           |                     |                     |                        |                    |                    |
| Media replacement in WTP filters                        | 157,748             | 66%                 | 34%                    | 104,277            | 53,471             |
| Upgrade to solids handling process                      | 383,416             | 66%                 | 34%                    | 253,451            | 129,965            |
| Vertical well project to increase water supply          | 383,416             | 66%                 | 34%                    | 253,451            | 129,965            |
| SCADA upgrade to the WTP                                | 250,000             | 66%                 | 34%                    | 165,259            | 84,741             |
| Upgrade controls & add pumps to run two pumps (PS 1&4)  | 468,863             | 66%                 | 34%                    | 309,935            | 158,929            |
| Cover pump stations with building/structure (PS 1,2,&3) | 394,371             | 66%                 | 34%                    | 260,693            | 133,678            |
| Upgrade actuators to pneumatic actuators for filters    | 61,347              | 66%                 | 34%                    | 40,552             | 20,795             |
| <b>Total Water CIP</b>                                  | <b>\$10,377,300</b> |                     |                        | <b>\$7,129,499</b> | <b>\$3,247,801</b> |



**Appendix A-2**  
**Outstanding Debt Obligations**


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 SWRCB - Agreement No. 2013C101 5/25/2016
 

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| Year | Month | Fiscal Year | Beginning Balance | Payment        | Principal    | 1.787500% Interest | Total Debt Service | Ending Balance | PV Remaining Debt Service |
|------|-------|-------------|-------------------|----------------|--------------|--------------------|--------------------|----------------|---------------------------|
| 1    |       | 2017-18     | \$942,732.46      | \$58,740.00    | \$42,075.85  | \$16,664.15        | \$58,740.00        | \$900,656.61   | \$55,677.73               |
| 2    |       | 2018-19     | 900,656.61        | 58,740.00      | 42,831.32    | 15,908.68          | 58,740.00          | 857,825.29     | \$52,775.09               |
| 3    |       | 2019-20     | 857,825.29        | 58,740.00      | 43,600.35    | 15,139.65          | 58,740.00          | 814,224.95     | \$50,023.79               |
| 4    |       | 2020-21     | 814,224.95        | 58,740.00      | 44,383.19    | 14,356.81          | 58,740.00          | 769,841.76     | \$47,415.91               |
| 5    |       | 2021-22     | 769,841.76        | 58,740.00      | 45,180.08    | 13,559.92          | 58,740.00          | 724,661.68     | \$44,943.99               |
| 6    |       | 2022-23     | 724,661.68        | 58,740.00      | 45,991.28    | 12,748.72          | 58,740.00          | 678,670.39     | \$42,600.94               |
| 7    |       | 2023-24     | 678,670.39        | 58,740.00      | 46,817.05    | 11,922.95          | 58,740.00          | 631,853.34     | \$40,380.04               |
| 8    |       | 2024-25     | 631,853.34        | 58,740.00      | 47,657.65    | 11,082.35          | 58,740.00          | 584,195.70     | \$38,274.92               |
| 9    |       | 2025-26     | 584,195.70        | 58,740.00      | 48,513.33    | 10,226.67          | 58,740.00          | 535,682.36     | \$36,279.54               |
| 10   |       | 2026-27     | 535,682.36        | 58,740.00      | 49,384.38    | 9,355.62           | 58,740.00          | 486,297.98     | \$34,388.19               |
| 11   |       | 2027-28     | 486,297.98        | 58,740.00      | 50,271.07    | 8,468.93           | 58,740.00          | 436,026.91     | \$32,595.44               |
| 12   |       | 2028-29     | 436,026.91        | 58,740.00      | 51,173.69    | 7,566.31           | 58,740.00          | 384,853.22     | \$30,896.15               |
| 13   |       | 2029-30     | 384,853.22        | 58,740.00      | 52,092.50    | 6,647.50           | 58,740.00          | 332,760.72     | \$29,285.45               |
| 14   |       | 2030-31     | 332,760.72        | 58,740.00      | 53,027.82    | 5,712.18           | 58,740.00          | 279,732.90     | \$27,758.72               |
| 15   |       | 2031-32     | 279,732.90        | 58,740.00      | 53,979.92    | 4,760.08           | 58,740.00          | 225,752.98     | \$26,311.59               |
| 16   |       | 2032-33     | 225,752.98        | 58,740.00      | 54,949.13    | 3,790.87           | 58,740.00          | 170,803.85     | \$24,939.89               |
| 17   |       | 2033-34     | 170,803.85        | 58,740.00      | 55,935.73    | 2,804.27           | 58,740.00          | 114,868.12     | \$23,639.71               |
| 18   |       | 2034-35     | 114,868.12        | 58,740.00      | 56,940.05    | 1,799.95           | 58,740.00          | 57,928.06      | \$22,407.31               |
| 19   |       | 2035-36     | 57,928.06         | 58,740.00      | 57,962.40    | 777.60             | 58,740.00          | (34.34)        | \$21,239.15               |
|      |       |             |                   | \$1,116,060.00 | \$942,766.80 | \$173,293.20       | \$1,116,060.00     |                | \$681,833.57              |

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**Appendix A-3**  
**Outstanding Debt Obligations**


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DWR Loan - WTP, Wells, Booster - E53313

| Year | Month | Fiscal Year | Beginning Balance | Payment        | Principal      | 3.177500% Interest | Total Debt Service | Ending Balance | PV Remaining Debt Service |
|------|-------|-------------|-------------------|----------------|----------------|--------------------|--------------------|----------------|---------------------------|
| 1    |       | 2017-18     | \$1,027,245.65    | \$103,628.95   | \$71,552.13    | \$32,076.82        | \$103,628.95       | \$955,693.51   | \$98,226.49               |
| 2    |       | 2018-19     | 955,693.51        | 103,628.95     | 73,843.76      | 29,785.19          | 103,628.95         | 881,849.75     | \$93,105.68               |
| 3    |       | 2019-20     | 881,849.75        | 103,628.95     | 76,208.79      | 27,420.16          | 103,628.95         | 805,640.96     | \$88,251.83               |
| 4    |       | 2020-21     | 805,640.96        | 103,628.95     | 78,649.56      | 24,979.39          | 103,628.95         | 726,991.40     | \$83,651.03               |
| 5    |       | 2021-22     | 726,991.40        | 103,628.95     | 81,168.50      | 22,460.45          | 103,628.95         | 645,822.90     | \$79,290.07               |
| 6    |       | 2022-23     | 645,822.90        | 103,628.95     | 83,768.12      | 19,860.83          | 103,628.95         | 562,054.78     | \$75,156.47               |
| 7    |       | 2023-24     | 562,054.78        | 103,628.95     | 86,450.99      | 17,177.96          | 103,628.95         | 475,603.79     | \$71,238.36               |
| 8    |       | 2024-25     | 475,603.79        | 103,628.95     | 89,219.80      | 14,409.16          | 103,628.95         | 386,383.99     | \$67,524.51               |
| 9    |       | 2025-26     | 386,383.99        | 103,628.95     | 92,077.28      | 11,551.68          | 103,628.95         | 294,306.72     | \$64,004.27               |
| 10   |       | 2026-27     | 294,306.72        | 103,628.95     | 95,026.27      | 8,602.68           | 103,628.95         | 199,280.44     | \$60,667.56               |
| 11   |       | 2027-28     | 199,280.44        | 103,628.95     | 98,069.72      | 5,559.23           | 103,628.95         | 101,210.73     | \$57,504.79               |
| 12   |       | 2028-29     | 101,210.73        | 103,628.95     | 101,210.64     | 2,418.32           | 103,628.95         | 0.09           | \$54,506.91               |
|      |       |             |                   | \$1,243,547.43 | \$1,027,245.56 | \$216,301.87       | \$1,243,547.43     |                | \$893,127.97              |

**Appendix A-4**  
**Water System Fixed Assets**

|  |  | <b>COST</b>         | <b>ACC DEPR</b>     | <b>OCLD</b>         | <b>OC ENR</b> | <b>Current ENR</b> | <b>Replacement</b>  | <b>2018</b>         | <b>Percent</b>     | <b>% Growth</b> | <b>Value System-</b> | <b>Value Growth-</b> |
|--|--|---------------------|---------------------|---------------------|---------------|--------------------|---------------------|---------------------|--------------------|-----------------|----------------------|----------------------|
|  |  | <b>BASIS</b>        | <b>6/30/2017</b>    | <b>6/30/2017</b>    | <b>Index</b>  | <b>Index</b>       | <b>Cost</b>         | <b>RCLD</b>         | <b>System-wide</b> | <b>Related</b>  | <b>Wide Impr</b>     | <b>Related Impr</b>  |
| <b>01 - WATER</b>  |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| No Grants/No Contributions                                     |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| <b>PLANT &amp; FACILITIES - TRANSMISSION/DISTRIBUTION:1705</b> |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| 01-1705-33   | Tract 1910 Water System                  | 450,783.00          | (200,705.76)        | 250,077.24          | 6,563.00      | 10,958.00          | 752,655.82          | 417,544.78          | 100.0%             | 0.0%            | 417,544.78           | -                    |
| 01-1705-34   | 426K bolted water tank                   | 41,291.25           | (27,068.71)         | 14,222.54           | 5,995.00      | 10,958.00          | 75,474.48           | 25,996.76           | 100.0%             | 0.0%            | 25,996.76            | -                    |
| 01-1705-35   | Main road overlay                        | 20,413.78           | (15,310.34)         | 5,103.44            | 6,695.00      | 10,958.00          | 33,412.13           | 8,353.03            | 100.0%             | 0.0%            | 8,353.03             | -                    |
| 01-1705-36   | 2nd phase road overlay                   | 28,538.00           | (17,836.25)         | 10,701.75           | 7,297.00      | 10,958.00          | 42,855.89           | 16,070.96           | 100.0%             | 0.0%            | 16,070.96            | -                    |
| 01-1705-38   | Gallery well intake exp                  | 220,192.77          | (80,278.62)         | 139,914.15          | 6,782.00      | 10,958.00          | 355,775.93          | 226,065.95          | 100.0%             | 0.0%            | 226,065.95           | -                    |
| 01-1705-40   | Tract 1990 improvements                  | 688,580.00          | (209,852.95)        | 478,727.05          | 7,911.00      | 10,958.00          | 953,793.41          | 663,113.52          | 100.0%             | 0.0%            | 663,113.52           | -                    |
| 01-1705-41   | Recoat clear wall tank                   | 92,744.32           | (49,077.20)         | 43,667.12           | 7,888.00      | 10,958.00          | 128,840.30          | 60,662.31           | 100.0%             | 0.0%            | 60,662.31            | -                    |
| 01-1705-42   | Main road overlay                        | 18,500.00           | (10,097.92)         | 8,402.08            | 7,722.00      | 10,958.00          | 26,252.65           | 11,923.08           | 100.0%             | 0.0%            | 11,923.08            | -                    |
| 01-1705-43   | 12" Main Repair                          | 33,134.73           | (15,462.87)         | 17,671.86           | 8,109.00      | 10,958.00          | 44,776.22           | 23,880.65           | 100.0%             | 0.0%            | 23,880.65            | -                    |
| 01-1705-44   | Tract 1990 Phase II Water Infrastructure | 66,660.00           | (16,109.50)         | 50,550.50           | 8,092.00      | 10,958.00          | 90,269.44           | 68,454.32           | 100.0%             | 0.0%            | 68,454.32            | -                    |
| 01-1705-45   | PLC Upgrade                              | 118,187.99          | (42,843.15)         | 75,344.84           | 8,677.00      | 10,958.00          | 149,257.12          | 95,151.41           | 100.0%             | 0.0%            | 95,151.41            | -                    |
| 01-1705-46   | Main road overlay                        | 22,374.00           | (15,475.05)         | 6,898.65            | 8,858.00      | 10,958.00          | 27,678.29           | 8,534.14            | 100.0%             | 0.0%            | 8,534.14             | -                    |
| 01-1705-49   | Main road overlay                        | 12,920.00           | (3,230.00)          | 9,690.00            | 9,324.00      | 10,958.00          | 15,184.19           | 11,388.14           | 100.0%             | 0.0%            | 11,388.14            | -                    |
| 01-1705-51   | Repair/Paint 300K Raw Water Tank         | 28,124.95           | (7,031.24)          | 21,093.71           | 9,972.00      | 10,958.00          | 30,905.86           | 23,179.39           | 100.0%             | 0.0%            | 23,179.39            | -                    |
| <b>TOTAL TRANSMISSION/DISTRIBUTION:1705</b>                    |  | <b>1,842,444.79</b> | <b>(710,379.86)</b> | <b>1,132,064.93</b> |               |                    | <b>2,727,131.71</b> | <b>1,660,318.44</b> |                    |                 | <b>1,660,318.44</b>  | <b>-</b>             |
| <b>BUILDING &amp; IMPROVEMENTS:1710</b>                        |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| 01-1527  | System Energy Plan-Engineering           | 19,194.64           | -                   | 19,194.64           | 9,542.00      | 10,958.00          | 22,043.06           | 22,043.06           | 100.0%             | 40.0%           | 13,225.84            | 8,817.22             |
| 01-1710-01   | Maint Building                           | 55,763.37           | (48,947.85)         | 6,815.52            | 4,772.00      | 10,958.00          | 128,050.09          | 15,650.56           | 100.0%             | 0.0%            | 15,650.56            | -                    |
| 01-1710-02   | Metal Maint. Building                    | 6,225.42            | (5,395.36)          | 830.06              | 4,992.00      | 10,958.00          | 13,665.50           | 1,822.07            | 100.0%             | 0.0%            | 1,822.07             | -                    |
| 01-1710-12   | Building Improvements                    | 66,999.00           | (61,974.08)         | 5,024.92            | 6,000.00      | 10,958.00          | 122,362.51          | 9,177.18            | 100.0%             | 0.0%            | 9,177.18             | -                    |
| 01-1710-15   | Equipment Shed                           | 30,768.35           | (25,255.69)         | 5,512.66            | 4,229.00      | 10,958.00          | 79,725.60           | 14,284.17           | 100.0%             | 0.0%            | 14,284.17            | -                    |
| 01-1710-16   | Fencing At Water Tanks                   | 9,205.00            | (8,898.17)          | 306.83              | 8,092.00      | 10,958.00          | 12,465.20           | 415.50              | 100.0%             | 0.0%            | 415.50               | -                    |
| 01-1710-18   | Tank Inspection / Repairs                | 12,600.00           | (3,570.00)          | 9,030.00            | 10,181.00     | 10,958.00          | 13,561.61           | 9,719.16            | 100.0%             | 0.0%            | 9,719.16             | -                    |
| <b>TOTAL CIP</b>   |  | <b>19,194.64</b>    | <b>-</b>            |                     |               |                    | <b>22,043.06</b>    | <b>22,043.06</b>    |                    |                 | <b>13,225.84</b>     | <b>8,817.22</b>      |
| <b>TOTAL 1710</b>  |  | <b>181,561.14</b>   | <b>(154,041.15)</b> | <b>27,519.99</b>    |               |                    | <b>369,830.51</b>   | <b>51,068.64</b>    |                    |                 | <b>51,068.64</b>     | <b>-</b>             |
| <b>TOTAL BUILDING &amp; IMPROVEMENTS: 1710</b>                 |  | <b>200,755.78</b>   | <b>(154,041.15)</b> | <b>27,519.99</b>    |               |                    | <b>391,873.56</b>   | <b>73,111.70</b>    |                    |                 | <b>64,294.48</b>     | <b>8,817.22</b>      |
| <b>EQUIPMENT &amp; MACHINERY:1715</b>                          |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| 01-1715-08   | SCADA Updates                            | 22,004.26           | (550.11)            | 21,454.15           | 10,678.00     | 10,958.00          | 22,581.26           | 22,016.73           | 100.0%             | 0.0%            | 22,016.73            | -                    |
| 01-1715-82   | Automatic Read Meters                    | 425,986.43          | (107,180.68)        | 318,805.75          | 8,641.00      | 10,958.00          | 540,210.54          | 404,290.41          | 100.0%             | 0.0%            | 404,290.41           | -                    |
| 01-1715-88   | Pump Station Covers                      | 21,006.00           | (12,953.70)         | 8,052.30            | 9,035.00      | 10,958.00          | 25,476.90           | 9,766.14            | 100.0%             | 0.0%            | 9,766.14             | -                    |
| 01-1715-89   | Caterpillar Forklift                     | 11,261.25           | (4,441.94)          | 6,819.31            | 9,088.00      | 10,958.00          | 13,578.43           | 8,222.49            | 100.0%             | 60.0%           | 3,289.00             | 4,933.50             |
| 01-1715-93   | PRV Rebuild                              | 11,122.05           | (1,875.00)          | 9,247.05            | 10,442.00     | 10,958.00          | 11,671.66           | 9,704.00            | 100.0%             | 0.0%            | 9,704.00             | -                    |
| 01-1715-94   | SCADA Upgrade                            | 112,545.33          | (84,409.00)         | 28,136.33           | 8,660.00      | 10,958.00          | 142,410.13          | 35,602.53           | 100.0%             | 0.0%            | 35,602.53            | -                    |
| 01-1715-95   | P. S. 3 & 4 Rebuild                      | 24,178.46           | (22,768.05)         | 1,410.41            | 8,094.00      | 10,958.00          | 32,733.82           | 1,909.47            | 100.0%             | 0.0%            | 1,909.47             | -                    |
| 01-1715-97   | WTP Radio & PRV                          | 29,936.65           | (4,615.23)          | 25,321.42           | 9,800.00      | 10,958.00          | 33,474.06           | 28,313.48           | 100.0%             | 50.0%           | 14,156.74            | 14,156.74            |
| 01-1715-98   | NWP Connection                           | 337,710.52          | (8,442.76)          | 329,267.76          | 10,039.00     | 10,958.00          | 368,625.55          | 359,409.91          | 100.0%             | 0.0%            | 359,409.91           | -                    |
| 01-1715-99   | PRV @ Research Center                    | 14,773.44           | (2,031.35)          | 12,742.09           | 9,886.00      | 10,958.00          | 16,375.42           | 14,123.80           | 100.0%             | 0.0%            | 14,123.80            | -                    |
| 01-1715-100  | 2017 Dump Trailer                        | 2,990.71            | (49.85)             | 2,940.86            | 10,692.00     | 10,958.00          | 3,065.11            | 3,014.03            | 100.0%             | 0.0%            | 3,014.03             | -                    |
| <b>TOTAL EQUIPMENT &amp; MACHINERY:1715</b>                    |  | <b>1,013,515.10</b> | <b>(249,317.65)</b> | <b>764,197.45</b>   |               |                    | <b>1,210,202.88</b> | <b>896,373.00</b>   |                    |                 | <b>877,282.76</b>    | <b>19,090.24</b>     |
| <b>LAND:1720</b>   |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| 01-1720-01   | Land                                     | 56,747.00           | -                   | 56,747.00           | 2,020.00      | 10,958.00          | 307,838.43          | 307,838.43          | 100.0%             | -               | 307,838.43           | -                    |
| <b>VEHICLES:1740</b>   |  |                     |                     |                     |               |                    |                     |                     |                    |                 |                      |                      |
| 01-1740-09   | 2007 Ford F150                           | 10,432.24           | (10,345.30)         | 86.94               | 8,007.00      | 10,958.00          | 14,277.07           | 118.98              | 100.0%             | 0.0%            | 118.98               | -                    |
| 01-1740-10   | 2007 Ford F150                           | 8,487.23            | (8,416.50)          | 70.73               | 8,007.00      | 10,958.00          | 11,615.22           | 96.80               | 100.0%             | 0.0%            | 96.80                | -                    |
| 01-1740-11   | 2009 Ford Ranger - Reg Cag               | 5,784.56            | (5,109.70)          | 674.86              | 8,557.00      | 10,958.00          | 7,407.64            | 864.22              | 100.0%             | 0.0%            | 864.22               | -                    |
| 01-1740-12   | 2009 Ford Ranger - Reg Cag               | 5,784.56            | (5,109.70)          | 674.86              | 8,557.00      | 10,958.00          | 7,407.64            | 864.22              | 100.0%             | 0.0%            | 864.22               | -                    |
| <b>TOTAL VEHICLES:1740</b>                                     |  | <b>30,488.59</b>    | <b>(28,981.20)</b>  | <b>1,507.39</b>     |               |                    | <b>40,707.58</b>    | <b>1,944.22</b>     |                    |                 | <b>1,944.22</b>      | <b>-</b>             |

Appendix A-4

Water System Fixed Assets

|  | COST BASIS                     | ACC DEPR 6/30/2017  | OC LD 6/30/2017       | OC ENR Index        | Current ENR Index | Replacement Cost | 2018 RCLD            | Percent System-wide | % Growth Related | Value System-Wide Impr | Value Growth-Related Impr |                   |
|--|--------------------------------|---------------------|-----------------------|---------------------|-------------------|------------------|----------------------|---------------------|------------------|------------------------|---------------------------|-------------------|
| <b>01 - WATER</b>                                      |                                |                     |                       |                     |                   |                  |                      |                     |                  |                        |                           |                   |
| No Grants/No Contributions                             |                                |                     |                       |                     |                   |                  |                      |                     |                  |                        |                           |                   |
| <b>PLANT &amp; FACILITIES - PUMPING/TREATMENT:1755</b> |                                |                     |                       |                     |                   |                  |                      |                     |                  |                        |                           |                   |
| 01-1501  | WTP System Upgrades            | 4,826.16            | -                     | 4,826.16            | 10,817.00         | 10,958.00        | 4,889.07             | 4,889.07            | 100.0%           | 20.0%                  | 3,911.26                  | 977.81            |
| 01-1755-01   | Post construction improvements | 44,146.46           | (24,556.46)           | 19,590.00           | 5,432.00          | 10,958.00        | 89,056.87            | 39,518.99           | 100.0%           | 0.0%                   | 39,518.99                 | -                 |
| 01-1755-02   | Road access to well            | 20,800.00           | -                     | 20,800.00           | 4,884.00          | 10,958.00        | 46,667.98            | 46,667.98           | 100.0%           | 0.0%                   | 46,667.98                 | -                 |
| 01-1755-03   | Well #2                        | 593,492.14          | (342,494.42)          | 250,997.72          | 5,408.00          | 10,958.00        | 1,202,567.84         | 508,585.99          | 100.0%           | 0.0%                   | 508,585.99                | -                 |
| 01-1755-04   | Paving                         | 25,044.97           | (22,123.06)           | 2,921.91            | 8,557.00          | 10,958.00        | 32,072.31            | 3,741.76            | 100.0%           | 0.0%                   | 3,741.76                  | -                 |
| 01-1755-06   | Gallery Well Repairs           | 400,057.57          | (400,057.57)          | 0.01                | 9,176.00          | 10,958.00        | 477,749.66           | 0.01                | 100.0%           | 0.0%                   | 0.01                      | -                 |
| 01-1755-07   | Water Master Plan              | 41,997.65           | -                     | 41,997.65           | 7,959.00          | 10,958.00        | 57,822.62            | 57,822.62           | 100.0%           | 0.0%                   | 57,822.62                 | -                 |
| <b>TOTAL CIP</b>                                       |                                | <b>4,826.16</b>     | <b>-</b>              | <b>4,826.16</b>     |                   |                  | <b>4,889.07</b>      | <b>4,889.07</b>     |                  |                        | <b>3,911.26</b>           | <b>977.81</b>     |
| <b>TOTAL 1755</b>                                      |                                | <b>1,125,538.79</b> | <b>(789,231.51)</b>   | <b>336,307.28</b>   |                   |                  | <b>1,905,937.28</b>  | <b>656,337.35</b>   |                  |                        | <b>656,337.35</b>         | <b>-</b>          |
| <b>TOTAL PUMPING/TREATMENT:1755</b>                    |                                | <b>1,130,364.95</b> | <b>(789,231.51)</b>   | <b>341,133.44</b>   |                   |                  | <b>1,910,826.34</b>  | <b>661,226.42</b>   |                  |                        | <b>660,248.60</b>         | <b>977.81</b>     |
| <b>PLANT &amp; FACILITIES - TREATMENT:1784</b>         |                                |                     |                       |                     |                   |                  |                      |                     |                  |                        |                           |                   |
| 01-1525  | Vertical Well Drilling         | 7,945.25            | -                     | -                   | 9,290.00          | 10,958.00        | -                    | -                   | 100.0%           | 100.0%                 | -                         | -                 |
| 01-1784-01   | Big Mac WTP                    | 3,162,651.16        | (1,844,879.85)        | 1,317,771.31        | 5,381.00          | 10,958.00        | 6,440,500.17         | 2,683,541.73        | 100.0%           | 0.0%                   | 2,683,541.73              | -                 |
| 01-1784-02   | WTP Upgrades                   | 582,620.11          | (236,284.82)          | 346,335.29          | 9,053.00          | 10,958.00        | 705,219.39           | 419,213.75          | 100.0%           | 0.0%                   | 419,213.75                | -                 |
| 01-1784-05   | Phase II WTP Upgrades          | 1,111,926.10        | (86,355.23)           | 1,025,570.87        | 9,972.00          | 10,958.00        | 1,221,869.86         | 1,126,976.10        | 100.0%           | 34.0%                  | 743,804.22                | 383,171.87        |
| 01-1784-06   | WTP Programming                | 15,090.00           | (3,143.75)            | 11,946.25           | 9,975.00          | 10,958.00        | 16,577.06            | 13,123.51           | 100.0%           | 34.0%                  | 8,661.52                  | 4,461.99          |
| <b>TOTAL CIP</b>                                       |                                | <b>7,945.25</b>     | <b>-</b>              | <b>-</b>            |                   |                  | <b>-</b>             | <b>-</b>            |                  |                        | <b>-</b>                  | <b>-</b>          |
| <b>TOTAL 1784</b>                                      |                                | <b>4,872,287.37</b> | <b>(2,170,663.64)</b> | <b>2,701,623.73</b> |                   |                  | <b>8,384,166.48</b>  | <b>4,242,855.09</b> |                  |                        | <b>3,855,221.22</b>       | <b>387,633.87</b> |
| <b>TOTAL TREATMENT: 1784</b>                           |                                | <b>4,880,232.62</b> | <b>(2,170,663.64)</b> | <b>2,701,623.73</b> |                   |                  | <b>8,384,166.48</b>  | <b>4,242,855.09</b> |                  |                        | <b>3,855,221.22</b>       | <b>387,633.87</b> |
| <b>TOTAL WATER</b>                                     |                                | <b>9,154,548.83</b> | <b>(4,102,615.01)</b> | <b>5,024,793.93</b> |                   |                  | <b>14,972,746.98</b> | <b>7,843,667.29</b> |                  |                        | <b>7,427,148.15</b>       | <b>416,519.14</b> |

Table B-1  
Sewer Capital Improvement Program

| Description  | Total              | Percent System-wide | Percent Growth Related | System-wide        |                    | System-wide Improvements |                  |                  |                 | Growth-Related Improvements |                  |                 |                 |        |  |  |  |  |  |  |
|--|--------------------|---------------------|------------------------|--------------------|--------------------|--------------------------|------------------|------------------|-----------------|-----------------------------|------------------|-----------------|-----------------|--------|--|--|--|--|--|--|
|  |                    |                     |                        | System-wide        | Growth-Related     | Volume                   | BOD              | SS               | Customer        | Volume                      | BOD              | SS              | Customer        |        |  |  |  |  |  |  |
| <b>Current Capital Improvement Projects (CIP) [1]</b>                    |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Collection System</b>   |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wastewater Collection System Model (survey required)                     | 30,000             | 65%                 | 35%                    | 19,644             | 10,356             |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Stations General</b>   |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Structural Evaluation - Lift Stations and Effluent Wetwell               | 30,000             | 100%                | 0%                     | 30,000             | -                  | 30,000                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Station 1 (Priority 1)</b>                                       |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Mechanical Evaluation/Electrical Pump Test                               | 3,489              | 100%                | 0%                     | 3,489              | -                  | 3,489                    |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating/Bypass Manhole  | 80,000             | 100%                | 0%                     | 80,000             | -                  | 80,000                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Install guide rail system for pumps                                      | 13,146             | 100%                | 0%                     | 13,146             | -                  | 13,146                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Control panel upgrade/replacement, Replace Cabinet                       | 30,000             | 100%                | 0%                     | 30,000             | -                  | 30,000                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Install shut off valve on gravity feed line for confined space entry     | 18,404             | 100%                | 0%                     | 18,404             | -                  | 18,404                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Station 2 (Priority 2)</b>                                       |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Replace surge tank   | 27,387             | 100%                | 0%                     | 27,387             | -                  | 27,387                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating   | 69,785             | 100%                | 0%                     | 69,785             | -                  | 69,785                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Mechanical Evaluation/Electrical Pump Test                               | 2,739              | 100%                | 0%                     | 2,739              | -                  | 2,739                    |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Install guide rail system for pumps                                      | 13,146             | 100%                | 0%                     | 13,146             | -                  | 13,146                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Station 3 (Priority 3)</b>                                       |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Full Rehabilitation  | 593,175            | 100%                | 0%                     | 593,175            | -                  | 593,175                  |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating (2017 5-Year CIP)                                       | 115,025            | 100%                | 0%                     | 115,025            | -                  | 115,025                  |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Bypass Manhole (2017 5-Year CIP)   | 46,010             | 65%                 | 35%                    | 30,127             | 15,883             | 30,127                   |                  |                  |                 |                             |                  | 15,883          |                 |        |  |  |  |  |  |  |
| Replace ductile iron discharge piping in well/Valving                    | 30,673             | 100%                | 0%                     | 30,673             | -                  | 30,673                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Station 4</b>  |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating   | 54,774             | 100%                | 0%                     | 54,774             | -                  | 54,774                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Full Rehabilitation  | 237,270            | 100%                | 0%                     | 237,270            | -                  | 237,270                  |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Lift Station 5</b>  |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating   | 54,774             | 100%                | 0%                     | 54,774             | -                  | 54,774                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Control Upgrades   | 30,000             | 100%                | 0%                     | 30,000             | -                  | 30,000                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Reroute force main to pump into lift station 10 (Eng. Study)             | 10,000             | 100%                | 0%                     | 10,000             | -                  | 10,000                   |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| <b>Effluent Lift Station</b>   |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Wet Well Coating (if no structural damage is noted)                      | 69,785             | 65%                 | 35%                    | 45,695             | 24,091             | 45,695                   |                  |                  |                 |                             |                  | 24,091          |                 |        |  |  |  |  |  |  |
| SCADA upgrade  | 50,000             | 65%                 | 35%                    | 32,739             | 17,261             | 32,739                   |                  |                  |                 |                             |                  | 17,261          |                 |        |  |  |  |  |  |  |
| <b>Effluent Force Main to Disposal Site</b>                              |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Replace with 8-in or 10-in PVC to handle new capacity                    | 3,210,126          | 65%                 | 35%                    | 2,101,953          | 1,108,173          | 2,101,953                |                  |                  |                 |                             |                  | 1,108,173       |                 |        |  |  |  |  |  |  |
| Provide de-chlorination facility/vault prior to discharge                | 16,432             | 65%                 | 35%                    | 10,760             | 5,673              | 10,760                   |                  |                  |                 |                             |                  | 5,673           |                 |        |  |  |  |  |  |  |
| Construct one new sand filter, rehab existing three                      | 125,000            | 65%                 | 35%                    | 81,849             | 43,151             | 81,849                   |                  |                  |                 |                             |                  | 43,151          |                 |        |  |  |  |  |  |  |
| <b>Headworks</b>   |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| New Headworks (expected to be SRF or equivalent loan)                    | 1,760,000          | 65%                 | 35%                    | 1,152,428          | 607,572            | 1,152,428                |                  |                  |                 |                             |                  | 607,572         |                 |        |  |  |  |  |  |  |
| <b>WWTP Upgrade</b>  |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Upgrade electrical building/SCADA  | 100,000            | 65%                 | 35%                    | 65,479             | 34,521             | 21,879                   | 21,800           | 21,800           |                 |                             |                  | 11,521          | 11,500          | 11,500 |  |  |  |  |  |  |
| Add Brush Aerators   | 60,000             | 0%                  | 100%                   | -                  | 60,000             | -                        | -                | -                |                 |                             |                  | 60,000          |                 |        |  |  |  |  |  |  |
| Aeration System Improvements   | 330,000            | 0%                  | 100%                   | -                  | 330,000            | -                        | -                | -                |                 |                             |                  | 330,000         |                 |        |  |  |  |  |  |  |
| <b>Pond 3</b>  |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Install aeration/mixing equipment, Included in ECIP-4                    | -                  | 100%                | 0%                     | -                  | -                  | -                        | -                | -                |                 |                             |                  | -               |                 |        |  |  |  |  |  |  |
| Install pump and piping to run P3 water thru sand filters and chlorinate | 15,000             | 65%                 | 35%                    | 9,822              | 5,178              | -                        | -                | 9,822            |                 |                             |                  | -               |                 |        |  |  |  |  |  |  |
| Pond 3 Access Road Improvements  | 310,000            | 65%                 | 35%                    | 202,984            | 107,016            | -                        | -                | 101,492          | 101,492         |                             |                  | 53,508          | 53,508          |        |  |  |  |  |  |  |
| <b>Energy Efficiency</b>   |                    |                     |                        |                    |                    |                          |                  |                  |                 |                             |                  |                 |                 |        |  |  |  |  |  |  |
| Photovoltaic (Solar Panels) Project                                      | 90,000             | 65%                 | 35%                    | 58,931             | 31,069             | 58,931                   |                  |                  |                 |                             |                  | 31,069          |                 |        |  |  |  |  |  |  |
| <b>Total Wastewater CIP</b>  | <b>\$7,626,140</b> |                     |                        | <b>\$5,226,196</b> | <b>\$2,399,944</b> | <b>\$4,950,146</b>       | <b>\$123,292</b> | <b>\$133,114</b> | <b>\$19,644</b> | <b>\$1,864,394</b>          | <b>\$455,008</b> | <b>\$70,186</b> | <b>\$10,356</b> |        |  |  |  |  |  |  |

**Appendix B-2**  
**Future Debt Obligations**

| FY 2021-22 Debt |             |                   |             |           |               |                    |                |                           |
|-----------------|-------------|-------------------|-------------|-----------|---------------|--------------------|----------------|---------------------------|
| Year            | Fiscal Year | Beginning Balance | Payment     | Principal | 5.5% Interest | Total Debt Service | Ending Balance | PV Remaining Debt Service |
|                 | 2017-18     |                   |             |           |               |                    |                |                           |
|                 | 2018-19     |                   |             |           |               |                    |                |                           |
|                 | 2019-20     |                   |             |           |               |                    |                |                           |
|                 | 2020-21     |                   |             |           |               |                    |                |                           |
| 1               | 2021-22     | \$500,000         | \$34,403    | \$6,903   | \$27,500      | \$34,403           | \$493,097      | \$32,609.19               |
| 2               | 2022-23     | \$493,097         | \$34,403    | \$7,282   | \$27,120      | \$34,403           | \$485,815      | \$30,909.18               |
| 3               | 2023-24     | \$485,815         | \$34,403    | \$7,683   | \$26,720      | \$34,403           | \$478,132      | \$29,297.81               |
| 4               | 2024-25     | \$478,132         | \$34,403    | \$8,105   | \$26,297      | \$34,403           | \$470,027      | \$27,770.43               |
| 5               | 2025-26     | \$470,027         | \$34,403    | \$8,551   | \$25,851      | \$34,403           | \$461,475      | \$26,322.68               |
| 6               | 2026-27     | \$461,475         | \$34,403    | \$9,022   | \$25,381      | \$34,403           | \$452,454      | \$24,950.41               |
| 7               | 2027-28     | \$452,454         | \$34,403    | \$9,518   | \$24,885      | \$34,403           | \$442,936      | \$23,649.68               |
| 8               | 2028-29     | \$442,936         | \$34,403    | \$10,041  | \$24,361      | \$34,403           | \$432,895      | \$22,416.76               |
| 9               | 2029-30     | \$432,895         | \$34,403    | \$10,593  | \$23,809      | \$34,403           | \$422,301      | \$21,248.11               |
| 10              | 2030-31     | \$422,301         | \$34,403    | \$11,176  | \$23,227      | \$34,403           | \$411,125      | \$20,140.39               |
| 11              | 2031-32     | \$411,125         | \$34,403    | \$11,791  | \$22,612      | \$34,403           | \$399,335      | \$19,090.42               |
| 12              | 2032-33     | \$399,335         | \$34,403    | \$12,439  | \$21,963      | \$34,403           | \$386,895      | \$18,095.18               |
| 13              | 2033-34     | \$386,895         | \$34,403    | \$13,123  | \$21,279      | \$34,403           | \$373,772      | \$17,151.83               |
| 14              | 2034-35     | \$373,772         | \$34,403    | \$13,845  | \$20,557      | \$34,403           | \$359,927      | \$16,257.66               |
| 15              | 2035-36     | \$359,927         | \$34,403    | \$14,607  | \$19,796      | \$34,403           | \$345,320      | \$15,410.10               |
| 16              | 2036-37     | \$345,320         | \$34,403    | \$15,410  | \$18,993      | \$34,403           | \$329,910      | \$14,606.73               |
| 17              | 2037-38     | \$329,910         | \$34,403    | \$16,258  | \$18,145      | \$34,403           | \$313,652      | \$13,845.25               |
| 18              | 2038-39     | \$313,652         | \$34,403    | \$17,152  | \$17,251      | \$34,403           | \$296,500      | \$13,123.46               |
| 19              | 2039-40     | \$296,500         | \$34,403    | \$18,095  | \$16,308      | \$34,403           | \$278,405      | \$12,439.29               |
| 20              | 2040-41     | \$278,405         | \$34,403    | \$19,090  | \$15,312      | \$34,403           | \$259,315      | \$11,790.80               |
| 21              | 2041-42     | \$259,315         | \$34,403    | \$20,140  | \$14,262      | \$34,403           | \$239,174      | \$11,176.11               |
| 22              | 2042-43     | \$239,174         | \$34,403    | \$21,248  | \$13,155      | \$34,403           | \$217,926      | \$10,593.47               |
| 23              | 2043-44     | \$217,926         | \$34,403    | \$22,417  | \$11,986      | \$34,403           | \$195,509      | \$10,041.21               |
| 24              | 2044-45     | \$195,509         | \$34,403    | \$23,650  | \$10,753      | \$34,403           | \$171,860      | \$9,517.73                |
| 25              | 2045-46     | \$171,860         | \$34,403    | \$24,950  | \$9,452       | \$34,403           | \$146,909      | \$9,021.55                |
| 26              | 2046-47     | \$146,909         | \$34,403    | \$26,323  | \$8,080       | \$34,403           | \$120,587      | \$8,551.23                |
| 27              | 2047-48     | \$120,587         | \$34,403    | \$27,770  | \$6,632       | \$34,403           | \$92,816       | \$8,105.43                |
| 28              | 2048-49     | \$92,816          | \$34,403    | \$29,298  | \$5,105       | \$34,403           | \$63,518       | \$7,682.87                |
| 29              | 2049-50     | \$63,518          | \$34,403    | \$30,909  | \$3,494       | \$34,403           | \$32,609       | \$7,282.34                |
| 30              | 2050-51     | \$32,609          | \$34,403    | \$32,609  | \$1,794       | \$34,403           | (\$0)          | \$6,902.69                |
|                 | Total       |                   | \$1,032,081 | \$500,000 | \$532,081     | \$1,032,081        |                | \$500,000.00              |



Appendix B-3  
Wastewater System Fixed Assets

|  | COST BASIS          | ACC DEPR 6/30/2017    | OCLD 6/30/2017      | OC ENR Index | Current ENR Index | Replacement Cost    | 2018 RCLD           | Percent System-wide | % Growth Related | Value System-Wide Impr | Value Growth-Related Impr | System-wide Improvements |                  |                   |                   |                   | Growth-Related Improvements |                  |          |          |          |          |
|--|---------------------|-----------------------|---------------------|--------------|-------------------|---------------------|---------------------|---------------------|------------------|------------------------|---------------------------|--------------------------|------------------|-------------------|-------------------|-------------------|-----------------------------|------------------|----------|----------|----------|----------|
|  |                     |                       |                     |              |                   |                     |                     |                     |                  |                        |                           | Volume                   | BOD              | SS                | Customer          | G&A               | Volume                      | BOD              | SS       | Customer | G&A      |          |
| O2 - SEWER                                   |                     |                       |                     |              |                   |                     |                     |                     |                  |                        |                           |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| PLANT & FACILITIES - TREATMENT/DISPOSAL:1784 |                     |                       |                     |              |                   |                     |                     |                     |                  |                        |                           |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1501 STP Systems Upgrades                 | 2,145.05            | -                     | -                   | 10,530.00    | 10,958.00         | -                   | -                   | 100.0%              | 100.0%           | -                      | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1506 Sand Filter - Perc Ponds Rehab       | 38,199.17           | -                     | 38,199.17           | 10,037.00    | 10,958.00         | 41,704.34           | 41,704.34           | 100.0%              | 40.0%            | 25,022.61              | 16,681.74                 |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1530 WWTP Master Plan                     | 68,463.77           | -                     | 68,463.77           | 10,039.00    | 10,958.00         | 74,731.15           | 74,731.15           | 100.0%              | 0.0%             | 74,731.15              | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1530 WWTP Master Plan                     | 50,711.11           | -                     | 50,711.11           | 10,703.00    | 10,958.00         | 51,919.31           | 51,919.31           | 100.0%              | 0.0%             | 51,919.31              | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1784-03 Treatment ponds 1&2               | 488,123.82          | (463,717.63)          | 24,406.19           | 3,003.00     | 10,958.00         | 1,781,172.43        | 89,058.61           | 100.0%              | 0.0%             | 89,058.61              | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1784-04 Disposal field                    | 20,606.09           | (13,909.10)           | 6,696.99            | 4,734.00     | 10,958.00         | 47,697.83           | 15,501.81           | 100.0%              | 0.0%             | 15,501.81              | -                         | 15,501.81                |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1784-05 Brown gate road                   | 10,319.89           | (7,961.85)            | 2,358.04            | 5,230.00     | 10,958.00         | 21,622.44           | 4,940.61            | 100.0%              | 0.0%             | 4,940.61               | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| 02-1784-21 Road access (ponds)               | 73,640.00           | -                     | 73,640.00           | 2,020.00     | 10,958.00         | 399,478.77          | 399,478.77          | 100.0%              | 0.0%             | 399,478.77             | -                         |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| <b>TOTAL CIP</b>                             | <b>159,519.10</b>   | <b>-</b>              | <b>157,374.05</b>   |              |                   | <b>168,354.80</b>   | <b>168,354.80</b>   |                     |                  | <b>151,673.06</b>      | <b>16,681.74</b>          |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| <b>TOTAL 1784</b>                            | <b>592,689.80</b>   | <b>(485,588.58)</b>   | <b>107,101.22</b>   |              |                   | <b>2,249,971.48</b> | <b>508,979.81</b>   |                     |                  | <b>508,979.81</b>      | <b>-</b>                  | <b>15,501.81</b>         | <b>-</b>         | <b>25,022.61</b>  | <b>-</b>          | <b>126,650.45</b> | <b>-</b>                    | <b>-</b>         | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> |
| <b>TOTAL TREATMENT: 1784</b>                 | <b>752,208.90</b>   | <b>(485,588.58)</b>   | <b>264,475.27</b>   |              |                   | <b>2,418,326.28</b> | <b>677,334.61</b>   |                     |                  | <b>660,652.87</b>      | <b>16,681.74</b>          | <b>15,501.81</b>         | <b>-</b>         | <b>114,081.22</b> | <b>-</b>          | <b>531,069.84</b> | <b>-</b>                    | <b>-</b>         | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> |
| SUBTOTAL SEWER                               |                     |                       |                     |              |                   |                     |                     |                     |                  |                        |                           |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| Allocation of General and Administrative     |                     |                       |                     |              |                   |                     |                     |                     |                  |                        |                           |                          |                  |                   |                   |                   |                             |                  |          |          |          |          |
| <b>TOTAL SEWER</b>                           | <b>3,723,515.86</b> | <b>(2,087,425.04)</b> | <b>1,614,751.17</b> |              |                   | <b>7,948,098.95</b> | <b>2,450,974.67</b> |                     |                  | <b>2,434,292.94</b>    | <b>16,681.74</b>          | <b>451,606.31</b>        | <b>33,074.35</b> | <b>972,777.85</b> | <b>976,834.43</b> | <b>-</b>          | <b>-</b>                    | <b>16,681.74</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>0</b> |