



Marina Coast Water District

Water, Wastewater and Recycled Water Capacity Fee Study

Final Report
July 28, 2020



BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS



BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS

1889 Alcatraz Avenue
Berkeley, CA 94703
T: 510-653-3399
www.bartlewells.com

July 28, 2020

Mike Wegley
District Engineer
11 Reservation Road
Marina, CA 93933

RE: Revised Draft Water, Wastewater and Recycled Water Capacity Fee Study

Bartle Wells Associates (BWA) is pleased to submit the attached *Water, Wastewater and Recycled Water Capacity Fee Study* to the Marina Coast Water District (District). Our study was developed in conjunction with the 2020 Master Plan provided by Akel Engineering which was adopted by the District Board on May 18, 2020. The report develops updated water, wastewater and recycled water capacity fees that are designed to equitably recover the costs of infrastructure and assets benefiting new development.

The results of our study are a product of extensive review from Staff, consultants, and community stakeholders. Over the past year and a half, BWA made numerous presentations to community stakeholders and the Fort Ord Reuse Authority (FORA) and incorporated feedback received by those groups. Our study also incorporates feedback from independent review provided by the Bay Area Building Industry Association and Lechowicz & Tseng Municipal Consultants.

A summary of proposed fees is shown below. The proposed fee calculation includes total fixed assets divided among all projected users in the intermediate-term (2040) plus expansion-related capital projects divided by future users in the intermediate-term.

| Central Marina | Current | Proposed | Ord Community | Current | Proposed |
|----------------|----------------|----------------|---------------|-----------------|-----------------|
| Water \$/EDU | \$4,526 | \$5,715 | Water \$/EDU | \$8,010 | \$11,699 |
| Sewer \$/EDU | \$2,333 | \$2,214 | Sewer \$/EDU | \$3,322 | \$3,012 |
| Total | \$6,859 | \$7,929 | Total | \$11,332 | \$14,712 |

We have enjoyed working with the District, FORA, and stakeholders on this assignment and appreciate the input and assistance received throughout the project. Please contact us anytime if you have questions about this report or related impact fee issues.

BARTLE WELLS ASSOCIATES

Douglas Dove, PE, CIPFA
Principal/President

Abigail Seaman
Consultant

Table of Contents



| | | |
|----------|--|-----------|
| 1 | Introduction, Background, and Government Code..... | 1 |
| 1.1 | Background..... | 1 |
| 1.2 | Government Code | 2 |
| 2 | Capacity Fee Methodology | 3 |
| 2.1 | Current Capacity Fees..... | 3 |
| 2.1.1 | Current EDU Calculation Methodology..... | 3 |
| 2.2 | Facility Cost Valuation | 4 |
| 2.3 | Capacity Fee Calculation Overview | 4 |
| 2.3.1 | Current Methodology: Average Cost Approach..... | 5 |
| 2.3.2 | Proposed Methodology: Hybrid Buy-In + Marginal Future Cost Approach..... | 5 |
| 3 | Capacity Fee Calculation..... | 6 |
| 3.1 | System Buy-In Component – Existing Assets..... | 6 |
| 3.2 | Future Cost Component – Capital Improvement Projects | 8 |
| 3.3 | Proposed Updates to Water Demand Factors | 10 |
| 3.3.1 | Estimated Water Demand per EDU | 10 |
| 3.3.2 | Estimated Sewer Flow per EDU..... | 10 |
| 3.4 | Current and Projected EDUs..... | 11 |
| 3.5 | Proposed Capacity Fee Calculation..... | 12 |
| 3.6 | Estimated Sewer Plumbing Fixture Units per EDU | 13 |
| 3.7 | Accessory Dwelling Units..... | 13 |
| 3.8 | Multi-Family Residential Sewer Users..... | 14 |
| 3.9 | Summary of Proposed Changes to Capacity Fee Structure | 14 |
| 4 | Conclusion and Recommendations | 14 |
| 4.1 | Summary of Proposed Fees..... | 14 |
| 4.2 | Capacity Fee Survey of Surrounding Agencies | 15 |
| 4.3 | Conclusion | 16 |
| 4.4 | Future Fee Adjustments | 16 |

TABLES

| | | |
|-----------|--|----|
| Table 1: | Current Capacity Fees | 3 |
| Table 2: | Valuation Summary – Existing Assets | 7 |
| Table 3: | Intermediate-Term Capital Improvement Plan Summary | 8 |
| Table 4: | Recycled Water CIP Adjustments..... | 9 |
| Table 5: | Estimated Sewer Flow per EDU..... | 10 |
| Table 6: | Current and Projected EDUs | 11 |
| Table 7: | Proposed Capacity Fee Calculation - Hybrid Buy-In + Marginal Future Cost | 12 |
| Table 8: | Estimated Plumbing Fixture Units per EDU | 13 |
| Table 9: | Estimated ADU Fixture Units..... | 13 |
| Table 10: | Proposed Capacity Fee Summary..... | 14 |

Table of Contents



SUPPORTING DOCUMENTS

Bartle Wells Associates – Capacity Fee Study Supporting Tables

Appendix A. MCWD Asset Listing

1. Water Assets
2. Sewer Assets
3. Asset Exclusions

Appendix B. Capital Improvement Plans

1. CIP Costs
2. Recycled Water CIP Adjustments

Appendix C. MCWD Water Use Factors (2021 Update)

1 Introduction, Background, and Government Code

1.1 Background

The Marina Coast Water District (District) retained AKEL Engineering to update its water, sewer and recycled water master plans. As subconsultants to AKEL, Bartle Wells Associates (BWA) has been retained to update the District's water, wastewater and recycled water capacity fees based on the new master plans. The current set of capacity fees were adopted in 2013 and have not been increased.

The District operates public water and sewer utilities that provide service to approximately 38,000 residents and associated public and commercial activities within the District's service area. The Water utility includes both potable and recycled water services. Customers are located in two service areas, Central Marina (Marina) and the Ord Community (Ord). District operations are further split between water and sewer, resulting in four cost centers, Marina Water, Marina Sewer, Ord Water and Ord Sewer. The cost centers are maintained as separate enterprises and have distinct user rates and capacity fees. This report documents the methodology and assumptions used to develop updated capacity fees for the four enterprises.

1.2 Government Code

Capacity fees are governed by California Government Code Section 66000 et. seq. This section of the Code was initially established by Assembly Bill 1600 (AB 1600) and is commonly referred to as the Mitigation Fee Act. Pursuant to the Code, a capacity fee is not a tax or special assessment but is instead a fee levied to defray the cost of public facilities needed to serve a new development.

Section 66013 of the Code specifically governs water and wastewater capacity fees. This section of the Code defines a “capacity charge” to mean “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 distinguishes “capacity charges” from “connection fees” which are defined as fees for the physical facilities necessary to make a water or wastewater connection, such as costs related to installation of meters and pipelines from a new building to a water or wastewater main.

According to the Section 66013, a water or wastewater capacity fee “shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed” unless approved by a two-thirds vote of the electorate. As such, the capacity fees calculated in this report represent the maximum fees that the District can levy. Section 66013 does not detail any specific methodology for calculating capacity fees.

Section 66016 of the Code identifies the procedural requirements for adopting or increasing water and wastewater capacity fees and Section 66022 summarizes the general process by which the fees can be legally challenged.

2 Capacity Fee Methodology

2.1 Current Capacity Fees

The District's current capacity fees were last evaluated by Carollo Engineers in a September 2013 report which calculated fees using a combined buy-in and future cost approach. Current fees are shown in Table 1.

Table 1: Current Capacity Fees

| Central Marina | \$/EDU | Ord Community | \$/EDU |
|-----------------------|----------------|----------------------|-----------------|
| Water | \$4,526 | Water | \$8,010 |
| Sewer | \$2,333 | Sewer | \$3,322 |
| Total Marina | \$6,859 | Total Ord | \$11,332 |

2.1.1 Current EDU Calculation Methodology

The District's current capacity fees are charged based on an Equivalent Dwelling Unit (EDU) Evaluation of each customer.

Water EDUs are assigned based on water use factors contained in the District's Appendix C document. One EDU is equivalent to 0.33 Acre Foot (AF) of water use per year.

Wastewater EDUs are currently assigned as follows: Each residential connection including single family, multiple dwelling, condominium, trailer spaces and mobile homes is equal to one EDU. Non-residential wastewater EDUs are calculated based on plumbing fixture units at a current conversion rate of 20 fixture units per EDU. For each hotel/motel unit, a minimum of one EDU per room is applied. Each non-residential connection is a minimum of one EDU.

2.2 Facility Cost Valuation

The District does not have a complete historical fixed assets record with purchase date and cost for each existing asset so a standard “Replacement Cost New Less Depreciation” analysis was not possible. For purposes of this study, asset values for Central Marina water and wastewater systems were estimated using detailed asset inventories, replacement costs, and depreciation developed by AKEL engineering. Ord Community assets were estimated using the sum of capital investments made by the District since taking over the systems in 2001. The value of Ord assets donated by the Army were excluded from the analysis. The asset values were further adjusted to exclude assets funded by grants, developer contributions, and depreciation based on the current age and estimated condition of facilities. The detailed replacement cost calculations are shown in the supporting tables attached to this report.

2.3 Capacity Fee Calculation Overview

While the current fee calculation methodology is a widely used and generally appropriate way to recover the future share of the District’s utility system assets and development costs, BWA proposes that the District adopt a more comprehensive cost recovery approach as summarized below.

Current Methodology: Average Cost Approach

$$\frac{\textit{Existing Asset Value} + \textit{Total CIP}}{\textit{Total Units}}$$

Proposed Methodology: Hybrid Buy-In + Marginal Future Cost Approach

$$\frac{\textit{Existing Asset Value}}{\textit{Total Units}} + \frac{\textit{Future User Share of CIP}}{\textit{Future Units}}$$

2.3.1 Current Methodology: Average Cost Approach

The current capacity fees were calculated with an *average cost approach* fees using the District's existing system, future projects and buildout projections. Under this approach, new connections pay an average cost of the total value of the existing system escalated to current dollars and the total Capital Improvement Plan. The fees are calculated based on the total cost of facilities plus total CIP divided by the total capacity the District is projected to serve through build-out. This is a widely used approach for calculating capacity fees but in some cases may not comprehensively recover the future share of growth-related CIP from future users. BWA estimates that by using the average cost methodology that the District will experience a \$24.6 million shortfall in CIP funding from developer fees (see Supplementary Tables). Therefore, BWA recommends that the District use a revised methodology that incorporates both buy-in and marginal cost components for calculating capacity fees in the future, as summarized in Section 2.3.2.

2.3.2 Proposed Methodology: Hybrid Buy-In + Marginal Future Cost Approach

Under the proposed approach, new connections buy in to the District's current system based on an average share of the total existing system, or the replacement value of each enterprise's assets less estimated depreciation. New connections also pay for the future cost of expansion by adding the present value of future CIP to the fee basis. The fees are calculated based on the total cost of facilities divided by the total capacity the District is projected to serve through the intermediate-term (2040) plus future CIP divided by future capacity in the intermediate-term. This fee would comprehensively recover the development share of existing facilities and CIP benefiting future users.

3 Capacity Fee Calculation

3.1 System Buy-In Component – Existing Assets

The updated capacity fees are designed to recover the cost of facilities that benefit new growth including a share of existing water, wastewater and recycled water system facilities and assets as well as the cost of system upgrades and expansions needed to serve growth through the Intermediate Term horizon (approximately 2040). Since a detailed listing of assets and purchase dates was not available at the time of this study, BWA worked closely with District Staff and Akel Engineers to estimate the value of existing assets using the following information:

1. Asset Listings and Replacement Value Estimates –

Central Marina - AKEL Engineering 2020 Master Plans

Water asset categories include pipelines, wells, pressure reducing valves, storage tanks and booster stations. Sewer asset categories include mains and lift stations. BWA only included pipelines and mains with diameters measuring 8" and larger, assuming all smaller pipelines are assets in-tract. Land, office buildings, and other assets were not included in the valuation.

Ord Community – MCWD Financial Statements

The Ord Community's water and wastewater systems were inherited from the Fort Ord military base and officially transferred to the District in 2001. Asset book value was estimated using the last 20 years of District capital spending listed in the Comprehensive Annual Financial Report (CAFR). Asset book values were escalated to current dollars using the 20-city Engineering News Record Construction Cost Index (ENR CCI).

2. Asset Adjustments – District-provided data

BWA adjusted the asset replacement value by subtracting the value of assets contributed by outside sources and assets being replaced in the intermediate-term Master Plan CIPs.

- BWA subtracted a total of \$3.3 million of grant funding adjustments from the water asset valuation in the Ord Community, including a 2003 grant to fund pressure reducing valves and a 2008 grant to fund wells and to mitigate seawater intrusion. There are no known grants received for current assets in Central Marina.
- The District has received \$11.1 million in developer-contributed water assets and \$8.9 million in developer-contributed sewer assets which were subtracted from the asset valuation in the Ord community. There are no known developer contributions to current assets in Central Marina.

- The District’s 2020 Master Plan CIPs include replacement of existing water and wastewater infrastructure. The estimated value of the assets was subtracted from the Marina replacement value.
- Assets donated by the army were removed from the Ord asset book value.

3. Depreciation – Estimation based on current age and condition of facilities.

Since detailed information on asset purchase values and dates were not available, the depreciation factor was conservatively set based on the age and condition of the existing facilities as follows:

- Central Marina’s water and wastewater infrastructure was mostly constructed around 1975. While improvements, replacements, and additional assets have been incorporated since that time, and Akel Engineers and District Staff estimate that the system is between 30% and 50% depreciated, BWA has conservatively estimated the system to be 50% depreciated. Akel Engineering has conducted a detailed survey of existing infrastructure and can confirm that the depreciation factors applied reflect the approximate age and condition of facilities.
- Ord Community assets were depreciated based on an estimated 75-year useful life. Depreciation was escalated to current dollars using the 20-city Engineering News Record Construction Cost Index (ENR CCI).

A summary of the asset valuation is provided in Table 2. Detailed calculations are provided in the supporting tables following this report. Detailed source information is provided in Appendix A.

Table 2: Valuation Summary – Existing Assets

| | Marina Water | Ord Water | Marina Sewer | Ord Sewer |
|---|---------------------|---------------------|---------------------|--------------------|
| Estimated Asset Value ¹ | \$41,782,100 | 31,688,633 | \$44,779,700 | \$16,413,178 |
| Less Asset Adjustments | (4,834,600) | (15,056,647) | (1,794,000) | (10,723,180) |
| Less Estimated Depreciation | (18,473,750) | (2,773,020) | (21,492,850) | (1,091,957) |
| Cost Escalation to 2020 Current Value | | 5,753,155 | | 2,431,657 |
| System Estimated Net Asset Value | \$18,473,750 | \$19,612,121 | \$21,492,850 | \$7,029,698 |

1 - 2020 replacement value of Master Plan asset listings for Marina
20-year book value of capital spending for Ord

3.2 Future Cost Component – Capital Improvement Projects

1. **Capital Improvement Project Costs** - The District’s 2020 Water, Recycled Water, and Sewer Master Plans outline the capital improvements needed for each utility to reach intermediate-term buildout in 2040. These projects include upgrades, expansions, regular maintenance, and new facilities. The Master Plan divides project costs into two benefit groups: current customers and future customers. The present value of capital improvements benefiting future customers is included in the capacity fee calculation. The water capacity fee calculation includes both water and recycled water categories. Master plan projects attributable to a single development were excluded from the capacity fee calculation. Details are provided in Appendix B.

The District’s intermediate-term capital improvement project costs are summarized in Table 3.

Table 3: Intermediate-Term Capital Improvement Plan Summary

| | Marina Current Users | Marina Future Users | Ord Current Users | Ord Future Users |
|------------------|---------------------------------|--------------------------------|------------------------------|-----------------------------|
| Water | \$16,081,900 | \$22,752,400 | \$11,182,300 | \$46,871,000 |
| Recycled Water | \$7,546,000 | \$5,767,559 | \$7,854,000 | \$38,253,907 |
| Sewer | \$5,599,107 | \$3,325,995 | \$14,537,762 | \$21,898,510 |
| Total CIP | \$29,227,007 | \$31,845,954 | \$33,574,062 | \$107,023,417 |

2. **Capital Improvement Plan Adjustments** – Adjustments were made to each cost center to accurately reflect projects funded by all new development.

Water and Sewer – The future user portion of financing costs were added to the CIP value to account for bond financing for the first five years of the water and sewer capital improvement plans. Financing costs were allocated based on each service area’s share of future user water and sewer project costs.

Recycled Water – expected grants and FORA Capital Contributions have been subtracted from the future share of project costs, while the future user portion of financing costs on three proposed loans have been added to the future project cost. Capital contributions are attributable to Ord only. Grants and future financing adjustments were allocated to Marina and Ord according to each service area’s share of future user recycled water project costs.

The adjusted future portion of capital improvement costs is calculated in Table 4 to be used in the capacity fee calculation.

Table 4: Adjusted Capital Improvement Plan Summary

| | Marina Current Users | Marina Future Users | Ord Current Users | Ord Future Users |
|--|---------------------------------|--------------------------------|------------------------------|-----------------------------|
| Total CIP Costs | | | | |
| Water | \$16,081,900 | \$20,489,300 | \$11,182,300 | \$40,752,500 |
| Recycled Water | \$7,546,000 | \$5,418,723 | \$7,854,000 | \$39,980,141 |
| Sewer | \$5,599,107 | \$3,081,295 | \$14,537,762 | \$21,203,210 |
| Total CIP | \$29,227,007 | \$28,989,318 | \$33,574,062 | \$101,935,851 |
| Adjustments | | | | |
| Water (Bond financing) | \$0 | \$2,263,100 | \$0 | \$6,118,500 |
| Recycled Water (SRF loans, grants, capital contributions) | \$0 | \$348,836 | \$0 | (\$1,726,234) |
| Sewer (Bond financing) | \$0 | \$244,700 | \$0 | \$695,300 |
| Adjusted Total CIP | | | | |
| Water | \$16,081,900 | \$22,752,400 | \$11,182,300 | \$46,871,000 |
| Recycled Water | \$7,546,000 | \$5,767,559 | \$7,854,000 | \$38,253,907 |
| Sewer | \$5,599,107 | \$3,325,995 | \$14,537,762 | \$21,898,510 |

3.3 Proposed Updates to Water Demand Factors

3.3.1 Estimated Water Demand per EDU

Marina Coast WD currently defines a water equivalent dwelling unit as the amount a typical residential dwelling would use in a year, or 0.33 AF per year. For non-residential development, the District utilizes “Appendix C, Assigned Water Use Factors for Determining Water Capacity Charges” to estimate the annual water use for various types of customers.

The District recently reviewed and updated its water use factors based on 250 gallons per day, or 0.28 AF/yr/EDU. This value aligns with the system wide average day use determined by Akel Engineering in the 2020 Water Master Plan. Updated water use factors are provided in Appendix C.

3.3.2 Estimated Sewer Flow per EDU

Table 5 summarizes the sewer flow per person in the District between 2010 and 2016. The sewer flow trend is downward during this period and the average daily sewer flow per person is 63 gallons. The District estimates a typical household population of 2.8 persons. Thus, the typical sewer flow from a single-family home is estimated at 174 gallons per day. BWA recommends that the District establish 174 gallons per day as the sewer flow for one EDU.

Table 5: Estimated Sewer Flow per EDU

| Year | Population | Sewer Flow (gpdc) |
|----------------------------------|-------------------|------------------------------|
| 2010 | 30,840 | 68 |
| 2011 | 31,141 | 67 |
| 2012 | 31,445 | 64 |
| 2013 | 31,752 | 64 |
| 2014 | 32,062 | 61 |
| 2015 | 32,375 | 56 |
| 2016 | 33,346 | <u>58</u> |
| Average | | 62 |
| Population per Household (1 EDU) | | 2.8 |
| Sewer Flow per EDU | | 174 |

Source: AKEL Engineers

3.4 Current and Projected EDUs

The District is expecting significant growth to intermediate-term buildout in 2040 per the projections in the latest Sewer Master Plan. BWA evaluated several methodologies for customer growth and concluded that the most reasonable methodology to apply is the projected change in average day demand from 2020 to intermediate-term buildout.

Table 6 shows current and projected customers in EDUs. Water EDUs were calculated using AKEL Engineering and District updated estimates of average day demand at 250 gpd (or 0.28AF/yr/EDU) and average day demand growth from present day to intermediate-term growth in 2040. Wastewater EDUs were calculated using 174 gpd (or 0.195 AFY/EDU) and average day demand growth from present day to intermediate-term growth in 2040.

Table 6: Current and Projected EDUs

| | Marina Water | Ord Water | Marina Sewer | Ord Sewer |
|---|---------------------|------------------|---------------------|------------------|
| Average Day Demand per EDU (gpd) | 250 | 250 | 174 | 174 |
| Current Demand - 2020 (mgd) | 1.98 | 1.26 | 1.10 | 0.90 |
| Current EDUs | 7,920 | 5,040 | 6,322 | 5,172 |
| Intermediate Term Demand -2040 (mgd) | 3.59 | 3.34 | 2.21 | 2.42 |
| Total Future EDUs to Intermediate Term | 14,360 | 13,360 | 12,701 | 13,908 |
| Difference – Future Growth EDUs to Intermediate Term | 6,440 | 8,320 | 6,379 | 8,736 |

3.5 Proposed Capacity Fee Calculation

Table 7 shows the detailed calculation of the District’s updated capacity fees using the Hybrid Buy-In + Marginal Future Cost methodology described in Section 2.3.2 and updated information described above in Section 3. Recycled Water CIP costs are included in the water capacity fee net of adjustments described in Section 3.2.

Table 7: Proposed Capacity Fee Calculation - Hybrid Buy-In + Marginal Future Cost

| | Marina Water | Ord Water | Marina Sewer | Ord Sewer |
|--|---------------------|------------------|---------------------|---------------------|
| Estimated Asset Replacement Value | \$18,473,750 | \$19,612,121 | \$21,492,850 | \$7,029,698 |
| Total System EDUs to Intermediate Term | 14,360 | 13,360 | 12,701 | 13,908 |
| Buy-In Capacity Fee Component \$/EDU | \$1,286 | \$1,468 | \$1,692 | \$505 |
| Water CIP (incl. adjustments) | \$22,752,400 | \$46,871,000 | - | - |
| Recycled Water CIP (incl. adjustments) | \$5,767,559 | \$38,253,907 | - | - |
| <u>Sewer CIP (incl. adjustments)</u> | - | - | <u>\$3,325,995</u> | <u>\$21,898,510</u> |
| Value of Future CIP to Intermediate Term | \$28,519,959 | \$85,124,907 | \$3,325,995 | \$21,898,510 |
| Future Growth EDUs to Intermediate Term | 6,440 | 8,320 | 6,379 | 8,736 |
| Marginal Future Cost Component \$/EDU | \$4,429 | \$10,231 | \$521 | \$2,507 |
| Proposed Capacity Charge \$/EDU | \$5,715 | \$11,699 | \$2,214 | \$3,012 |
| Current Capacity Charge | \$4,526 | \$8,010 | \$2,333 | \$3,322 |
| Difference | \$1,189 | \$3,689 | (\$119) | (\$310) |

3.6 Estimated Sewer Plumbing Fixture Units per EDU

Many agencies, including the District, assign non-residential sewer EDUs based on the count of plumbing fixture units in a new building. Plumbing fixtures are defined in Chapter 7 of the California Plumbing Code (CPC) and various plumbing units are assigned fixture unit counts based on the relative flow associated with that unit. For example, a clothes washer is assigned 3 fixture units and a kitchen sink is assigned 2 fixture units. The District currently equates one EDU with 20 fixture units. As shown in Table 8, a typical single-family home with two bathrooms is currently rated at 19 DFUs based on Table 702.1 of the 2016 CPC. BWA recommends that the District update its fixture unit allocation per EDU to 19 fixture units.

Table 8: Estimated Plumbing Fixture Units per EDU

| Fixture Type | Quantity | DFU ¹ | Total DFU |
|---|----------|------------------|-----------|
| Bathtub (with or without shower) | 1 | 2 | 2 |
| Clothes Washer | 1 | 3 | 3 |
| Dishwasher | 1 | 2 | 2 |
| Lavatory Sink | 2 | 1 | 2 |
| Shower (single) | 1 | 2 | 2 |
| Kitchen Sink | 1 | 2 | 2 |
| Toilet (1.28 gal per flush) | 2 | 3 | 6 |
| Fixture Units in a Typical Single-Family Residence | | | 19 |

1. DFU = Drainage Fixture Units as defined in Chapter 7 of California Plumbing Code

3.7 Accessory Dwelling Units

Recently enacted state law, Government Code Section 65852.2 (SB 1069) effective January 1, 2018, requires that the capacity fees charged to ADUs must proportionately account for impact on services based on the ADU's size or number of plumbing fixtures. Table 9 summarizes an example calculation for a hypothetical ADU containing a kitchen sink, bathroom (lavatory) sink, 1.28 gpf toilet and a shower. The ADU in this example would have a rating of 8 fixture units.

Table 9: Estimated ADU Fixture Units

| Fixture Type | Quantity | DFU ¹ | Total DFU |
|-------------------------------------|----------|------------------|-----------|
| Bathtub (with or without shower) | 0 | 2 | 0 |
| Clothes Washer | 0 | 3 | 0 |
| Dishwasher | 0 | 2 | 0 |
| Lavatory Sink | 1 | 1 | 1 |
| Shower (single) | 1 | 2 | 2 |
| Kitchen Sink | 1 | 2 | 2 |
| Toilet (1.28 gal per flush) | 1 | 3 | 3 |
| Fixture Units in Example ADU | | | 8 |

1. DFU = Drainage Fixture Units as defined in Chapter 7 of California Plumbing Code

3.8 Multi-Family Residential Sewer Users

Multi-family units, including apartments, condominiums, trailer spaces and mobile homes are currently assigned one EDU for the purposes of calculating capacity fees. Recent trends in water and sewer demand show that multi-family units typically have lower demand than a single-family residence, typically due to a reduced number of residents per multi-family dwelling or reduced number of plumbing fixtures. In the 2017 Wastewater Rate Study, Carollo Engineers reported reduced flow for multi-family customers and recommended that the District adopt a use factor of 0.8 for multi-family residences. BWA recommends that the District adopt a use factor of 0.8 for all multi-family residences (multiple dwelling, condominium, trailer space, or mobile home) for the purposes of calculating capacity fees. A factor of 0.8 is common among California water and wastewater agencies and reflects recent trends in demand for multi-family residences.

3.9 Summary of Proposed Changes to Capacity Fee Structure

BWA proposes revisions to the sewer EDU calculations as follows:

- Each nineteen (19) fixture units are equivalent to one (1) equivalent dwelling unit (EDU).
- Each Single-Family Residential connection is one (1) EDU
- Each Multi Family Residential Connection (multiple dwelling, condominium, trailer space or mobile home) is 0.8 EDU
- Each nonresidential connection is a minimum of one (1) EDU.
- Hotels are considered non-residential units
- Updated Sewer Flow per EDU = 62gpd * 2.8 persons/household = 174gpd/EDU

Water use factors have also been updated to reflect these changes and can be found attached to this report.

4 Conclusion and Recommendations

4.1 Summary of Proposed Fees

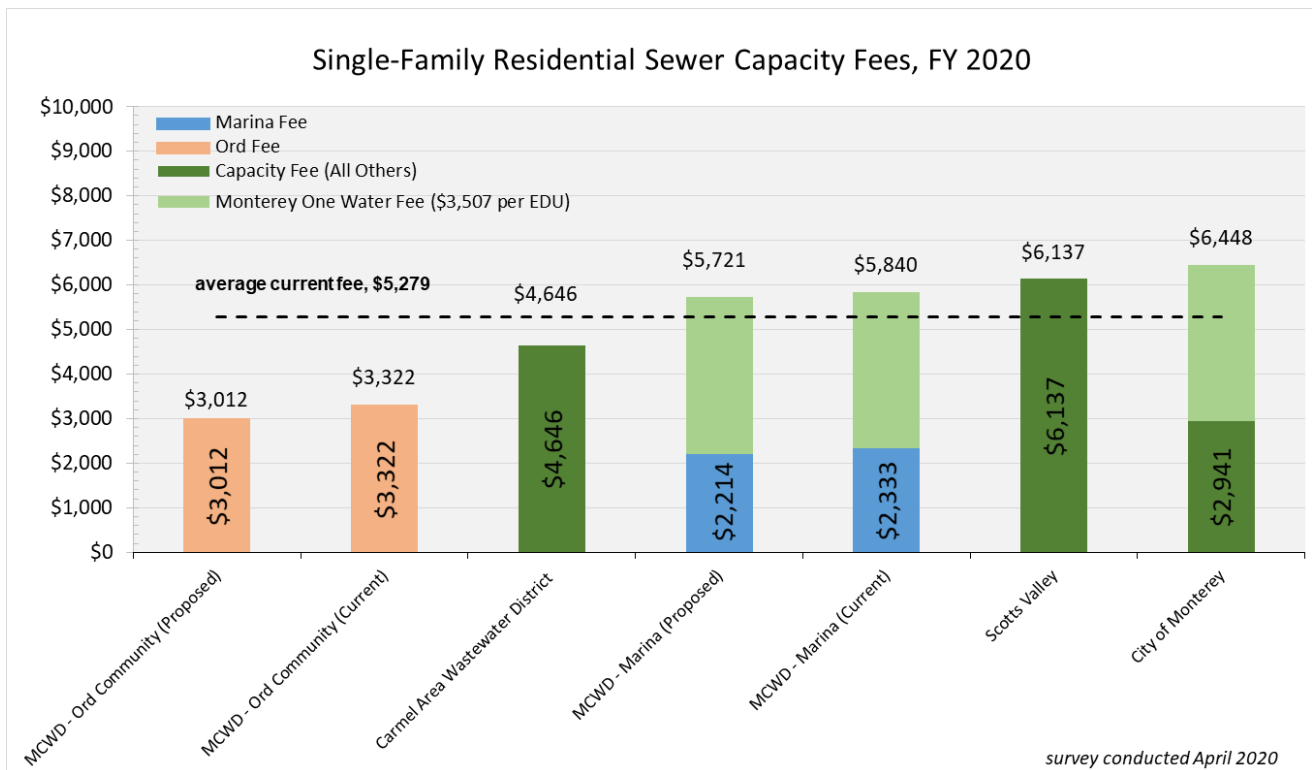
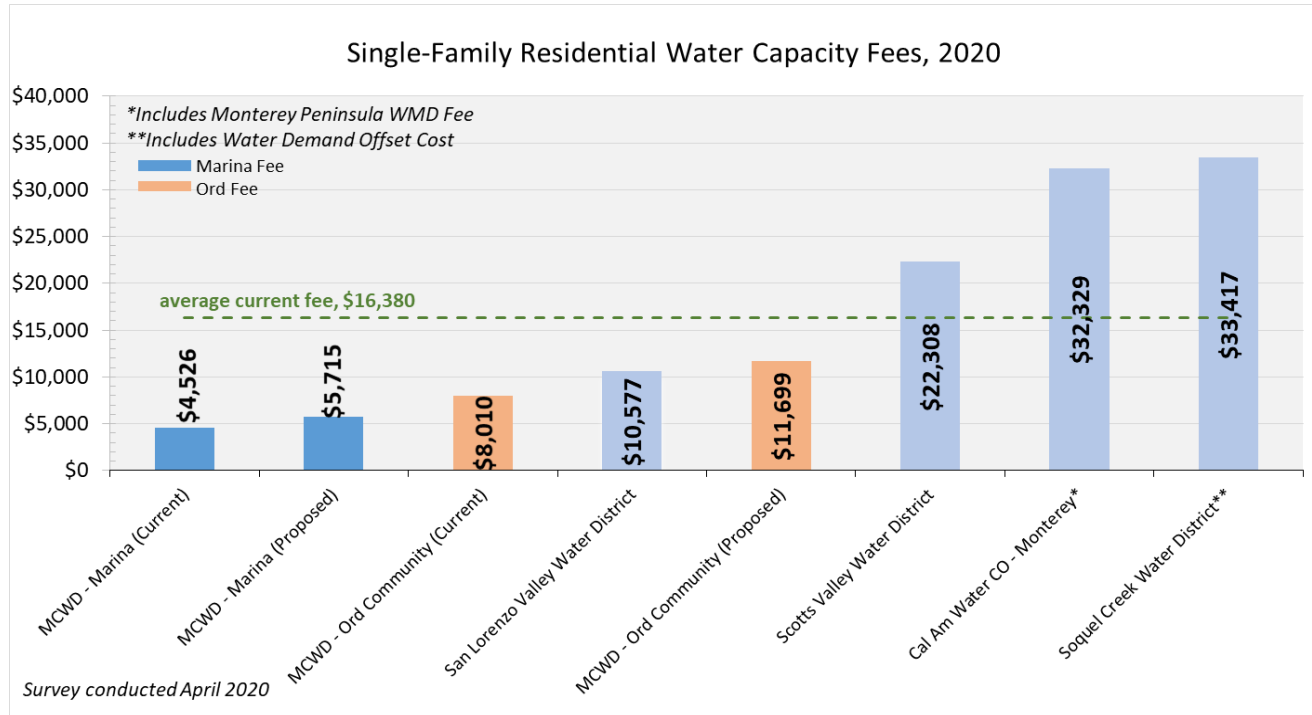
Table 10 provides a summary of findings per the methodology and District information detailed in this report. BWA has calculated fees on a \$/EDU basis using the proposed methodology described in Section 2.3.2 and calculated in Table 7.

Table 10: Proposed Capacity Fee Summary

| Central Marina | \$/EDU | Ord Community | \$/EDU |
|-----------------------|----------------|----------------------|-----------------|
| Water | \$5,715 | Water | \$11,699 |
| Sewer | \$2,214 | Sewer | \$3,012 |
| Total Marina | \$7,929 | Total Ord | \$14,712 |

4.2 Capacity Fee Survey of Surrounding Agencies

BWA conducted a capacity fee survey of surrounding water and wastewater agencies to compare with the District's proposed fees. The results are shown below.



4.3 Conclusion

BWA finds that the proposed fees follow generally accepted fee design criteria and adhere to the substantive requirements of government code. BWA recommends that the District adopt the fees enclosed in this report by following the procedure to increase capacity fees as follows:

1. Create a nexus study to determine equitable capacity fees (Done by BWA)
2. Set notice the date of a public hearing as required in Government Code
3. Send notice of hearing to developers if specifically requested in writing
4. Hold public hearing and adopt new capacity fees via Resolution
5. Fees may become effective not less than 30 days after adoption

4.4 Future Fee Adjustments

In future years, BWA recommends that the District update its capacity fees annually by adjusting the fees by the change in the Engineering News-Record Construction Cost Index (20-Cities Average) to account for future construction cost inflation. Additionally, the District should review and consider updating its capacity fees when substantial revisions are made to anticipated capital improvement costs or to substantial changes in projected demand. In general, BWA recommends that capacity fees be independently reviewed and/or updated approximately once every five years.

Marina Coast WD



Water, Wastewater & Recycled Water Capacity Fee Supporting Tables

7/28/2020



BARTLE WELLS ASSOCIATES

Independent Public Finance Advisors

Table S-1
Marina Coast WD
Current Capacity Fees

| <u>2020 Capacity Fees</u> | <u>Central Marina</u> ¹ | <u>Ord Community</u> ¹ |
|------------------------------|------------------------------------|-----------------------------------|
| Water Capacity Fee (per EDU) | \$4,526 | \$8,010 |
| Sewer Capacity Fee (per EDU) | \$2,333 | \$3,322 |

EDU = Equivalent Dwelling Unit

1 - Last updated 2013, does not include regional wastewater fees

Current Residential Water Capacity Fees

Each residential connection (single-family, multiple dwelling, condominium, trailer space, or mobile home) is one (1) EDU which is equivalent to 0.33 acre foot water use per year

Current Non Residential Water Capacity Fees

Each EDU is equivalent to 0.33 acre foot water use per year.

Refer to MCWD "Appendix C" for assigned water use factors

Current Non Residential Sewer Capacity Fees

Each twenty (20) fixture units are equivalent to one (1) EDU.

Each hotel/motel unit assigned a minimum of one (1) EDU per room.

Each nonresidential connection is a minimum of one (1) EDU.

Table S-2A
Marina Coast WD
Asset Valuation - Existing Central Marina Water and Sewer System Assets

| Water System Estimated Asset Value | |
|--|---------------------|
| | Marina Water |
| Asset Listing - Replacement Value¹ | |
| Water Pipelines (8" and larger) ² | \$25,089,000 |
| Wells | 11,310,000 |
| Pressure Reducing Valves | 91,300 |
| Storage Tanks | 4,660,000 |
| Booster Stations | 631,800 |
| Total Asset Replacement Value | \$41,782,100 |
| Less Developer Contributed Assets | \$0 |
| Less Assets Being Replaced in CIP | (4,834,600) |
| Less Grant Funding | N/A |
| Adjusted Asset Replacement Value | \$36,947,500 |
| <i>Estimated % Depreciation³</i> | <i>50%</i> |
| Less Estimated Depreciation | (18,473,750) |
| Water System Estimated Net Asset Value | \$18,473,750 |

| Sewer System Estimated Asset Value | |
|--|---------------------|
| | Marina Sewer |
| Asset Listing - Replacement Value¹ | |
| Sewer Pipelines (8" and larger) ² | \$41,736,700 |
| Sewer Lift Stations | 3,043,000 |
| Total Asset Replacement Value | \$44,779,700 |
| Less Developer Contributed Assets | \$0 |
| Less Assets Being Replaced in CIP | (1,794,000) |
| Adjusted Asset Replacement Value | \$42,985,700 |
| <i>Estimated % Depreciation³</i> | <i>50%</i> |
| Less Estimated Depreciation | (21,492,850) |
| Sewer System Estimated Net Asset Value | \$21,492,850 |

1 - Source: Akel Engineering. Detail provided in Appendix A

2- Excludes pipes smaller than 8" diameter considered to be in-tract facilities

3 - Estimated based on current age and condition of facilities

Table S-2B

Marina Coast WD

Asset Valuation - Existing Ord Water System Assets (Excludes Value of Assets Inherited from US ARMY)

| FY | ORD Water Assets | FY Change | Asset Exclusions | Net Investment | Estimated Depreciation | Net Book Value | 20 Cities ENRCCI | Current Value ENR 20 Cities 11,439 |
|------|------------------|------------|------------------|----------------|------------------------|----------------|------------------|------------------------------------|
| 2000 | - | - | | | - | - | 6,221 | - |
| 2001 | - | - | | | - | - | 6,343 | - |
| 2002 | 2,347,058 | 2,347,058 | (1,600,000) | 747,058 | 179,294 | 567,764 | 6,538 | 993,370 |
| 2003 | 3,600,215 | 1,253,157 | (959,029) | 294,128 | 66,669 | 227,459 | 6,694 | 388,692 |
| 2004 | 5,307,211 | 1,706,996 | | 1,706,996 | 364,159 | 1,342,837 | 7,115 | 2,158,919 |
| 2005 | 6,039,222 | 732,011 | | 732,011 | 146,402 | 585,609 | 7,446 | 899,648 |
| 2006 | 7,338,495 | 1,299,273 | | 1,299,273 | 242,531 | 1,056,742 | 7,751 | 1,559,550 |
| 2007 | 10,591,407 | 3,252,912 | | 3,252,912 | 563,838 | 2,689,074 | 7,966 | 3,861,451 |
| 2008 | 14,306,495 | 3,715,088 | (2,330,000) | 1,385,088 | 221,614 | 1,163,474 | 8,310 | 1,601,562 |
| 2009 | 20,559,012 | 6,252,517 | | 6,252,517 | 917,036 | 5,335,481 | 8,570 | 7,121,653 |
| 2010 | 21,625,196 | 1,066,184 | | 1,066,184 | 142,158 | 924,026 | 8,799 | 1,201,265 |
| 2011 | 21,625,196 | - | | - | - | - | 9,070 | - |
| 2012 | 21,625,196 | - | | - | - | - | 9,308 | - |
| 2013 | 20,628,323 | (996,873) | | (996,873) | (93,041) | (903,832) | 9,547 | (1,082,951) |
| 2014 | 20,628,323 | - | | - | - | - | 9,806 | - |
| 2015 | 20,628,323 | - | | - | - | - | 10,035 | - |
| 2016 | 20,889,771 | 261,448 | | 261,448 | 13,944 | 247,504 | 10,338 | 273,863 |
| 2017 | 20,889,771 | - | | - | - | - | 10,737 | - |
| 2018 | 20,889,771 | - | | - | - | - | 11,062 | - |
| 2019 | 31,688,633 | 10,798,862 | (10,167,618) | 631,244 | 8,417 | 622,827 | 11,218 | 635,097 |
| | | 31,688,633 | (15,056,647) | 16,631,986 | 2,773,020 | 13,858,966 | | 19,612,121 |

Exclusions:

- (1,600,000) Army Conveyed Assets (2002)
- (2,330,000) Prop 50 Grant - Well 34 & Watkins Gate (2008)
- (959,029) Prop 13 Grant - PRV Replacement (2003)
- (10,167,618) Developer Contributed Assets (booked 2019)
75 year assumed useful life

Table S-2C

Marina Coast WD

Asset Valuation - Existing Ord Sewer Collection System Assets (Excludes Value of Assets Inherited from US ARMY)

| FY | ORD Sewer Assets | FY Change | Exclusions | Net Investment | Estimated Depreciation ¹ | Net Book Value | 20 Cities ENRCCI | Current Value ENR 20 Cities 11,439 |
|--------|------------------|-------------|--------------|----------------|-------------------------------------|----------------|------------------|---------------------------------------|
| 2000 | - | - | | | - | - | 6,221 | - |
| 2001 | - | - | | | - | - | 6,343 | - |
| 2002 | 1,680,178 | 1,680,178 | (1,278,000) | 402,178 | 96,523 | 305,655 | 6,538 | 534,780 |
| 2003 | 1,845,480 | 165,302 | | 165,302 | 37,468 | 127,834 | 6,694 | 218,448 |
| 2004 | 4,569,439 | 2,723,959 | | 2,723,959 | 581,111 | 2,142,848 | 7,115 | 3,445,121 |
| 2005 | 5,009,041 | 439,602 | | 439,602 | 87,920 | 351,682 | 7,446 | 540,275 |
| 2006 | 5,834,811 | 825,770 | | 825,770 | 154,144 | 671,626 | 7,751 | 991,192 |
| 2007 | 8,050,944 | 2,216,133 | | 2,216,133 | 384,130 | 1,832,003 | 7,966 | 2,630,716 |
| 2008 | 6,341,021 | (1,709,923) | | (1,709,923) | (273,588) | (1,436,335) | 8,310 | (1,977,165) |
| 2009 | 6,833,253 | 492,232 | | 492,232 | 72,194 | 420,038 | 8,570 | 560,655 |
| 2010 | 6,842,305 | 9,052 | | 9,052 | 1,207 | 7,845 | 8,799 | 10,199 |
| 2011 | 6,842,305 | - | | - | - | - | 9,070 | - |
| 2012 | 6,842,305 | - | | - | - | - | 9,308 | - |
| 2013 | 6,206,947 | (635,358) | | (635,358) | (59,300) | (576,058) | 9,547 | (690,220) |
| 2014 | 6,206,947 | - | | - | - | - | 9,806 | - |
| 2015 | 6,206,947 | - | | - | - | - | 10,035 | - |
| 2016 | 6,206,947 | - | | - | - | - | 10,338 | - |
| 2017 | 6,206,947 | - | | - | - | - | 10,737 | - |
| 2018 | 6,206,947 | - | | - | - | - | 11,062 | - |
| 2019 | 16,413,178 | 10,206,231 | (9,445,180) | 761,051 | 10,147 | 750,904 | 11,218 | 765,697 |
| Totals | | 16,413,178 | (10,723,180) | 5,689,998 | 1,091,957 | 4,598,041 | | \$7,029,698 |

Exclusions:

- (1,278,000) Army Conveyed Assets (2002)
- (9,445,180) Developer Contributed Assets (booked 2019)
75 year assumed useful life

Table S-3
Marina Coast WD
Intermediate Term Capital Improvement Plan Summary

| Water System Capital Improvement Plan - 2020 Water Master Plan (See Appendix B) | | | |
|---|----------------------------------|----------------------|----------------------|
| Marina Water | Current Users¹ | Future Users | Total |
| Pipeline Improvements | \$1,541,000 | \$3,973,000 | \$5,514,000 |
| Valve Improvements | \$137,000 | \$0 | \$137,000 |
| Total Marina Specific Improvements | \$1,678,000 | \$3,973,000 | \$5,651,000 |
| Marina's Share of Combined Improvements | \$14,403,900 | \$16,516,300 | \$30,920,200 |
| Total Marina Water CIP | \$16,081,900 | \$20,489,300 | \$36,571,200 |
| Adjustment - Future Interest Costs | \$0 | \$2,263,100 | \$2,263,100 |
| Total Marina Water CIP - Adjusted | \$16,081,900 | \$22,752,400 | \$38,834,300 |
| Ord Water | | | |
| Pipeline Improvements | \$2,807,500 | \$26,997,500 | \$29,805,000 |
| Tank Improvements | \$1,419,400 | \$3,469,600 | \$4,889,000 |
| Pump Station Improvements | \$834,600 | \$449,400 | \$1,284,000 |
| Valve Improvements | \$27,400 | \$109,600 | \$137,000 |
| Total Ord Specific Improvements | \$5,088,900 | \$31,026,100 | \$36,115,000 |
| Ord's Share of Combined Improvements | \$5,231,400 | \$9,167,400 | \$14,398,800 |
| Total Ord Water CIP | \$11,182,300 | \$40,752,500 | \$51,934,800 |
| Adjustment - Future Interest Costs | \$0 | \$6,118,500 | \$6,118,500 |
| Total Ord Water CIP - Adjusted | \$11,182,300 | \$46,871,000 | \$58,053,300 |
| Recycled Water System Capital Improvement Plan 2020 Water Master Plan (See Appendix B) | | | |
| Marina Recycled | Current Users¹ | Future Users | Total |
| Distribution Facilities | \$0 | \$1,589,780 | \$1,589,780 |
| Transmission Facilities | \$0 | \$525,661 | \$525,661 |
| Other Treatment Improvements | \$0 | \$1,049,282 | \$1,049,282 |
| Water Augmentation Project | \$7,546,000 | \$2,254,000 | \$9,800,000 |
| Total Marina Recycled Water CIP | \$7,546,000 | \$5,418,723 | \$12,964,723 |
| Adjustment - Grants | \$0 | (\$870,666) | (\$870,666) |
| Adjustment - FORA Capital Contributions | \$0 | \$0 | \$0 |
| Adjustment - Future Interest Costs | \$0 | \$1,219,502 | \$1,219,502 |
| Total Ord Recycled Adjustments | \$0 | \$348,836 | \$348,836 |
| Total Marina Recycled Water CIP - Adjusted | \$7,546,000 | \$5,767,559 | \$13,313,559 |
| Ord Recycled | | | |
| Distribution Facilities | \$0 | \$7,710,220 | \$7,710,220 |
| Transmission Facilities | \$0 | \$9,987,556 | \$9,987,556 |
| Other Treatment Improvements | \$0 | \$19,936,365 | \$19,936,365 |
| Water Augmentation Project | \$7,854,000 | \$2,346,000 | \$10,200,000 |
| Total Ord Recycled Water CIP | \$7,854,000 | \$39,980,141 | \$47,834,141 |
| Adjustment - Grants | \$0 | (\$6,423,903) | (\$6,423,903) |
| Adjustment - FORA Capital Contributions | \$0 | (\$4,300,000) | (\$4,300,000) |
| Adjustment - Future Interest Costs | \$0 | \$8,997,669 | \$8,997,669 |
| Total Ord Recycled Adjustments | \$0 | (\$1,726,234) | (\$1,726,234) |
| Total Ord Recycled Water CIP - Adjusted | \$7,854,000 | \$38,253,907 | \$46,107,907 |
| Sewer System Capital Improvement Plan- 2020 Water Master Plan (See Appendix B) | | | |
| Marina Sewer | Current Users¹ | Future Users | Total |
| Gravity Main Improvements | \$1,621,505 | \$3,081,295 | \$4,702,800 |
| Lift Station Improvements | \$2,494,976 | \$0 | \$2,494,976 |
| Condition Assessment Improvements | \$46,200 | \$0 | \$46,200 |
| Misc Improvements | \$1,436,426 | \$0 | \$1,436,426 |
| Total Marina Sewer CIP | \$5,599,107 | \$3,081,295 | \$8,680,402 |
| Adjustments - Future Interest Costs | \$0 | \$244,700 | \$244,700 |
| Total Marina Sewer CIP - Adjusted | \$5,599,107 | \$3,325,995 | \$8,925,102 |
| Ord Sewer | | | |
| Gravity Main Improvements | \$1,141,372 | \$3,025,868 | \$4,167,240 |
| Force Main Improvements | \$667,033 | \$903,167 | \$1,570,200 |
| Lift Station Improvements | \$3,703,525 | \$1,290,794 | \$4,994,319 |
| Condition Assessment Improvements | \$1,133,100 | \$0 | \$1,133,100 |
| Misc Improvements | \$7,892,732 | \$15,983,381 | \$23,876,113 |
| Total Ord Sewer CIP | \$14,537,762 | \$21,203,210 | \$35,740,972 |
| Adjustments - Future Interest Costs | \$0 | \$695,300 | \$695,300 |
| Total Ord Sewer CIP - Adjusted | \$14,537,762 | \$21,898,510 | \$36,436,272 |

1 - Costs allocated to current users are excluded from capacity fee calculation

2 - Recycled Water CIP projects included in water capacity fee

Detail provided in Appendix B

Table S-4
Marina Coast WD
Master Plan - Water Demand and Wastewater Flow Projection

| Average Day Use - Water | | | |
|--------------------------------------|-----------------------|--------------------|----------------|
| Development Horizon | Marina Water (mgd) | Ord Water (mgd) | Total (mgd) |
| Existing (2020) | 1.98 | 1.26 | 3.24 |
| Intermediate Term (2020-2040) | 3.59 | 3.34 | 6.93 |
| Buildout (to 2050) | 3.59 | 5.93 | 9.52 |
| % Growth to Intermediate Term | 81% | 165% | 114% |
| % Growth to Buildout | 81% | 371% | 194% |

System Wide Average Day Use
 Estimated EDUs @ 250 gpd
 0.28 AFY/EDU

| Development Horizon | Marina Water (EDU) | Ord Water (EDU) | Total (EDU) |
|--------------------------------------|-----------------------|--------------------|----------------|
| Existing (2020) | 7,920 | 5,040 | 12,960 |
| Intermediate Term (2020-2040) | 14,360 | 13,360 | 27,720 |
| Buildout (to 2050) | 14,360 | 23,720 | 38,080 |
| % Growth to Intermediate Term | 81% | 165% | 114% |
| % Growth to Buildout | 81% | 371% | 194% |

| Average Day Demands - Sewer | | | |
|--------------------------------------|-----------------------|--------------------|----------------|
| Development Horizon | Marina Sewer (mgd) | Ord Sewer (mgd) | Total (mgd) |
| Existing (2020) | 1.10 | 0.90 | 2.00 |
| Intermediate Term (2020-2040) | 2.21 | 2.42 | 4.63 |
| Buildout (to 2050) | 2.21 | 4.3 | 6.51 |
| % Growth to Intermediate Term | 101% | 169% | 132% |
| % Growth to Buildout | 101% | 378% | 226% |

System Wide Average Day Sewer Demands
 Estimated EDUs @ 174 gpd
 0.195 AFY/EDU

| Development Horizon | Marina Sewer (EDU) | Ord Sewer (EDU) | Total (EDU) |
|--------------------------------------|-----------------------|--------------------|----------------|
| Existing (2020) | 6,322 | 5,172 | 11,494 |
| Intermediate Term (2020-2040) | 12,701 | 13,908 | 26,609 |
| Buildout (to 2050) | 12,701 | 24,713 | 37,414 |
| % Growth to Intermediate Term | 101% | 169% | 132% |
| % Growth to Buildout | 101% | 378% | 226% |

Source: Akel Engineering flow & use estimates, MCWD use factors, updated MCWD Appendix C

**Table S-5
Marina Coast WD
EDU Growth Projection Summary**

| Current FY 2020 EDUs | Units | % Growth to Intermediate Term¹ | EDU Growth to Intermediate Term¹ | Est. Total EDUs at Intermediate Term |
|---------------------------------|------------------------|--|--|---|
| <u>Central Marina</u> | | | | |
| 7,920 | <i>Water EDUs</i> | 81% | 6,440 | 14,360 |
| 6,322 | <i>Wastewater EDUs</i> | 101% | 6,379 | 12,701 |
| <u>Ord Community</u> | | | | |
| 5,040 | <i>Water EDUs</i> | 165% | 8,320 | 13,360 |
| 5,172 | <i>Wastewater EDUs</i> | 169% | 8,736 | 13,908 |
| <u>Total System</u> | | | | |
| 12,960 | <i>Water EDUs</i> | 114% | 14,760 | 27,720 |
| 11,494 | <i>Wastewater EDUs</i> | 132% | 15,115 | 26,609 |

1 - Source: Table S-4

Table S-6
Marina Coast WD
Capacity Fee Methodologies Overview

Current Methodology: Average Cost

$$\frac{\textit{Existing Asset Value} + \textit{Total CIP}}{\textit{Total Units}}$$

Proposed Methodology: Hybrid Buy-In + Marginal Future Cost

$$\frac{\textit{Existing Asset Value}}{\textit{Total Units}} + \frac{\textit{Future User Share of CIP}}{\textit{Future Units}}$$

Table S-7

Marina Coast WD

Capacity Charge Calculations - Hybrid Buy-In + Marginal Future Cost Methodology (to Intermediate Term Horizon)

| | Marina Water | | Ord Water | | Marina Sewer | | Ord Sewer | |
|--|--------------|--------------|-----------|---------------|--------------|--------------|-----------|--------------|
| Buy-In Component | | | | | | | | |
| Estimated Asset Replacement Value (see table S-2A-C) | \$ | 18,473,750 | \$ | 19,612,121 | \$ | 21,492,850 | \$ | 7,029,698 |
| Total System EDUs to Intermediate Term | | 14,360 | | 13,360 | | 12,701 | | 13,908 |
| Buy In Capacity Fee Component \$/EDU | \$ | 1,286 | \$ | 1,468 | \$ | 1,692 | \$ | 505 |
| Marginal Future CIP Cost Component | | | | | | | | |
| Value of Future CIP to Intermediate Term | | | | | | | | |
| Water CIP (incl. adjustments - see table S-3) | \$ | 22,752,400 | \$ | 46,871,000 | | | | |
| Recycled Water CIP (incl. adjustments - see table S-3) | \$ | 5,767,559 | \$ | 38,253,907 | | | | |
| Sewer CIP (incl. adjustments - see table S-3) | \$ | - | \$ | - | \$ | 3,325,995 | \$ | 21,898,510 |
| Total Value of Future CIP to Intermediate Term | \$ | 28,519,959 | \$ | 85,124,907 | \$ | 3,325,995 | \$ | 21,898,510 |
| Number of Future EDUs to Intermediate Term | | 6,440 | | 8,320 | | 6,379 | | 8,736 |
| Water Component \$/EDU | \$ | 3,533 | \$ | 5,634 | \$ | - | \$ | - |
| Recycled Water Component \$/EDU | \$ | 896 | \$ | 4,598 | \$ | - | \$ | - |
| Sewer Component \$/EDU | \$ | - | \$ | - | \$ | 521 | \$ | 2,507 |
| Marginal Future CIP Cost Component \$/EDU | \$ | 4,429 | \$ | 10,231 | \$ | 521 | \$ | 2,507 |
| Proposed Capacity Charge \$/EDU¹ | \$ | 5,715 | \$ | 11,699 | \$ | 2,214 | \$ | 3,012 |
| Current Capacity Charge | \$ | 4,526 | \$ | 8,010 | \$ | 2,333 | \$ | 3,322 |
| Difference | | \$1,189 | | \$3,689 | | (\$119) | | (\$310) |

1 - Water capacity fee includes Water and Recycled Water CIP

Table S-7A
Marina Coast WD
Example Capacity Charge Calculation - Average Cost Methodology (to Intermediate Term Horizon)

| | Marina Water | Ord Water | Marina Sewer | Ord Sewer |
|--|------------------------|-----------------|-----------------|-----------------|
| Buy-In Component | | | | |
| Estimated Asset Replacement Value | \$ 18,473,750 | \$ 19,612,121 | \$ 21,492,850 | \$ 7,029,698 |
| Total System EDUs to Intermediate Term | 14,360 | 13,360 | 12,701 | 13,908 |
| Buy In Capacity Fee Component \$/EDU | \$ 1,286 | \$ 1,468 | \$ 1,692 | \$ 505 |
| CIP Cost Component (Includes Total CIP) | | | | |
| Value of Total CIP to Intermediate Term | | | | |
| Water CIP (incl. adjustments - see table S-3) | \$ 38,834,300 | \$ 58,053,300 | | |
| Recycled Water CIP (incl. adjustments - see table S-3) | \$ 13,313,559 | \$ 46,107,907 | | |
| Sewer CIP (incl. adjustments - see table S-3) | \$ - | \$ - | \$ 8,925,102 | \$ 36,436,272 |
| Total Value of CIP to Intermediate Term | \$ 52,147,859 | \$ 104,161,207 | \$ 8,925,102 | \$ 36,436,272 |
| Total System EDUs to Intermediate Term | 14,360 | 13,360 | 12,701 | 13,908 |
| Water Component \$/EDU | \$ 2,704 | \$ 4,345 | \$ - | \$ - |
| Recycled Water Component \$/EDU | \$ 927 | \$ 3,451 | \$ - | \$ - |
| Sewer Component \$/EDU | \$ - | \$ - | \$ 703 | \$ 2,620 |
| Total CIP Cost Component \$/EDU | \$ 3,631 | \$ 7,796 | \$ 703 | \$ 2,620 |
| Average Cost Capacity Charge \$/EDU¹ | \$ 4,918 | \$ 9,264 | \$ 2,395 | \$ 3,125 |
| Future EDUs | 6,440 | 8,320 | 6,379 | 8,736 |
| Total CIP Cost Component \$/EDU | \$ 3,631 | \$ 7,796 | \$ 703 | \$ 2,620 |
| Calculated Capacity Fee Revenue for Future CIP | \$ 23,386,645 | \$ 64,866,859 | \$ 4,482,744 | \$ 22,885,592 |
| Future CIP - Development Share | \$ 28,519,959 | \$ 85,124,907 | \$ 3,325,995 | \$ 21,898,510 |
| Difference | \$ (5,133,315) | \$ (20,258,047) | \$ 1,156,749 | \$ 987,082 |
| Total Development Shortfall | \$ (23,247,531) | | | |

1 - Water capacity fee includes Water and Recycled Water CIP

Table S-8
Marina Coast WD
Estimated Sewer Flow Per EDU

Estimated population per household: **2.8** people.

| Year | Population | Sewer Flow (gpcd) |
|---------------------------|-------------------|--------------------------|
| 2010 | 30,840 | 68 |
| 2011 | 31,141 | 67 |
| 2012 | 31,445 | 64 |
| 2013 | 31,752 | 64 |
| 2014 | 32,062 | 61 |
| 2015 | 32,375 | 56 |
| 2016 | 33,346 | <u>58</u> |
| Average | | 62 |
| Sewer Flow per EDU | | 174 |

ADWF sewer flow per day per person, the average from 2010 to 2016 is 63 gpcd.

The sewer flow trend is downward from approximately 68 gpcd in 2010 to 58 gpcd in 2016.

Source: AKEL Engineering

Table S-9
Marina Coast WD
Calculation of Typical Single Family Residence (2 bathroom) Fixture Units

| Fixture Type | Quantity | DFU (1) | Total DFU |
|---|-----------------|----------------|------------------|
| Bathtub(with or without shower) | 1 | 2 | 2 |
| Clothes Washer | 1 | 3 | 3 |
| Dishwasher | 1 | 2 | 2 |
| Lavatory Sink | 2 | 1 | 2 |
| Shower (single) | 1 | 2 | 2 |
| Kitchen Sink | 1 | 2 | 2 |
| Toilet (1.28 gal per flush) | 2 | 3 | 6 |
| Fixture Units in a Typical Single Family Residence | | | 19 |

1. DFU=Drainage Fixture Units as defined in Chapter 7 of California Plumbing Code

Table S-10
Marina Coast WD
Example Calculation of ADU (1 bathroom) Fixture Units

| Fixture Type | Quantity | DFU (1) | Total DFU |
|-------------------------------------|-----------------|----------------|------------------|
| Bathtub(with or without shower) | 0 | 2 | 0 |
| Clothes Washer | 0 | 3 | 0 |
| Dishwasher | 0 | 2 | 0 |
| Lavatory Sink | 1 | 1 | 1 |
| Shower (single) | 1 | 2 | 2 |
| Kitchen Sink | 1 | 2 | 2 |
| Toilet (1.28 gal per flush) | 1 | 3 | 3 |
| Fixture Units in Example ADU | | | 8 |

1. DFU=Drainage Fixture Units as defined in Chapter 7 of the California Plumbing Code

Table S-11
Marina Coast WD
Summary of Proposed Capacity Fees

| Central Marina | | | |
|----------------------------------|----------------|-----------------|-------------------------------|
| <u>Residential Capacity Fees</u> | <u>Current</u> | <u>Proposed</u> | <u>\$ Increase (Decrease)</u> |
| Water Capacity Fee - \$/EDU | \$4,526 | \$5,715 | \$1,189 |
| Sewer Capacity Fee - \$/EDU | <u>\$2,333</u> | <u>\$2,214</u> | <u>(\$119)</u> |
| Total Capacity Fee | \$6,859 | \$7,929 | \$1,070 |

| Ord Community | | | |
|----------------------------------|-----------------|-----------------|-------------------------------|
| <u>Residential Capacity Fees</u> | <u>Current</u> | <u>Proposed</u> | <u>\$ Increase (Decrease)</u> |
| Water Capacity Fee - \$/EDU | \$8,010 | \$11,699 | \$3,689 |
| Sewer Capacity Fee - \$/EDU | <u>\$3,322</u> | <u>\$3,012</u> | <u>(\$310)</u> |
| Total Capacity Fee | \$11,332 | \$14,712 | \$3,380 |

EDU = Equivalent Dwelling Unit

Residential and Non-Residential Water Capacity Fees

Each EDU is equivalent to 0.28 Acre foot water use per year.
Refer to MCWD "Appendix C" for assigned water use factors

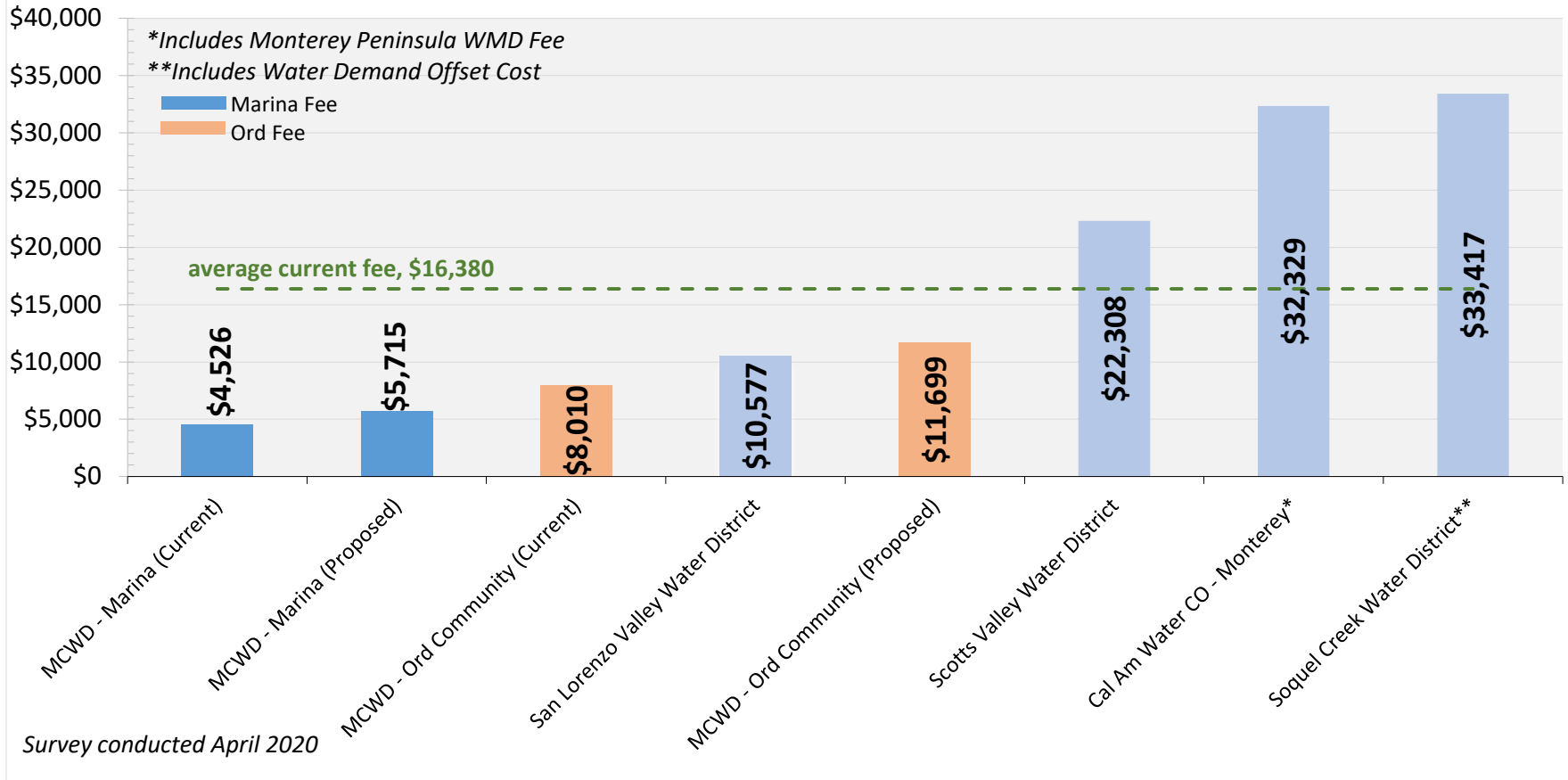
Residential Sewer Capacity Fees

Each Single-Family Residential connection is one (1) EDU
Each Multi-Family Residential connection (multiple dwelling, condominium, trailer space or mobile home) is 0.8 EDU

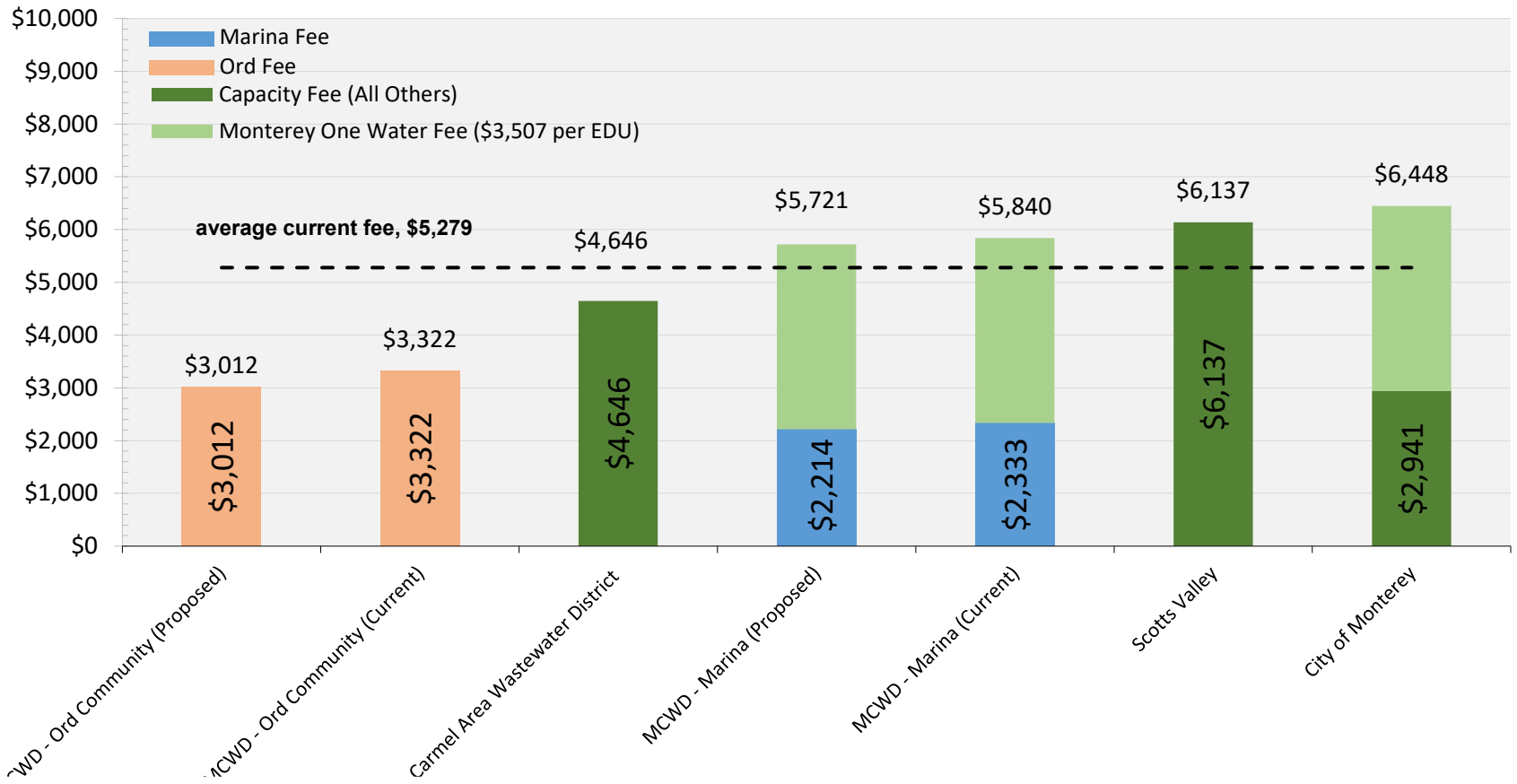
Non Residential Sewer Capacity Fees

Each nineteen (19) fixture units are equivalent to one (1) equivalent dwelling unit (EDU).
Each nonresidential connection is a minimum of one (1) EDU.
Hotels are considered non-residential units

Single-Family Residential Water Capacity Fees, 2020



Single-Family Residential Sewer Capacity Fees, FY 2020



Appendix A: Asset Listing

1. Water Assets
2. Sewer Assets
3. Asset Exclusions

Appendix A1: Asset Listing - Water Asset Detail

Excerpts from MCWD 2020 Water Master Plan, Akel Engineering

Table 1 Unit Costs

Water Master Plan Marina Coast Water District

PRELIMINARY

| Pipelines | |
|---|--|
| Pipe Size (in) | Cost ^{1,2} (\$/lineal foot) |
| 12 | \$213 |
| 16 | \$256 |
| 18 | \$276 |
| 20 | \$316 |
| 24 | \$346 |
| 30 | \$383 |
| 36 | \$451 |
| Pump Stations | |
| Estimated Pumping Station Unit Cost (\$/gpm), where Q is equal to the total station capacity in gpm | |
| Construct New Pump Station | Unit Cost (\$/gpm) = $191.99 \times e^{-0.0001 \times Q}$ |
| Upgrade Existing Pump Station | Unit Cost (\$/gpm) = $160.97 \times e^{-0.00008 \times Q}$ |
| Pressure Reducing Valves | |
| | Cost (\$) |
| PRV | \$73,000 |
| Storage Reservoirs ³ | |
| ≤1.0 MG | \$2.92 |
| 1.1 MG-3.0 MG | \$2.33 |
| 3.1 MG - 5.0 MG | \$1.68 |
| > 5 MG | \$1.25 |
| Groundwater Wells | |
| Replace Pump | \$55,000 |
| 1,500 gpm Capacity | \$3,016,000 |

AKEL
ENGINEERING GROUP, INC.

Notes:

2/7/2019

1. Construction costs estimated using June 2018 ENR CCI of 11,089
2. Construction costs are based on Bid Tabs Results received from District staff on October 18, 2018.
3. Tank costs were adjusted to reflect recent construction for a 1.5 MG tank, as provided by District staff on 2/7/2019.

Table 2 Existing Pipe Replacement Cost
 Water Master Plan
 Marina Coast Water District

PRELIMINARY

| Pipe Diameter | Total Length by Diameter | | Unit Cost ^{1,2} (\$/LF) | Infrastructure Costs (\$) | Baseline | Estimated | Capital Improvement |
|-----------------------|---------------------------|---------|-------------------------------------|------------------------------|----------------------------|----------------------------|---------------------------|
| | (ft) | (miles) | | | Construction Costs (\$) | Construction Costs (\$) | Cost ³ (\$) |
| Ord Community | | | | | | | |
| 3 | 65 | 0.01 | 142 | 9,230 | 9,300 | 9,300 | 11,700 |
| 4 | 6,679 | 1.26 | 142 | 948,418 | 948,500 | 948,500 | 1,185,700 |
| 6 | 134,805 | 25.53 | 142 | 19,142,310 | 19,142,400 | 19,142,400 | 23,928,000 |
| 8 | 244,671 | 46.34 | 142 | 34,743,282 | 34,743,300 | 34,743,300 | 43,429,200 |
| 10 | 26,294 | 4.98 | 178 | 4,667,185 | 4,667,200 | 4,667,200 | 5,834,000 |
| 12 | 112,313 | 21.27 | 213 | 23,922,669 | 23,922,700 | 23,922,700 | 29,903,400 |
| 14 | 4,483 | 0.85 | 235 | 1,051,264 | 1,051,300 | 1,051,300 | 1,314,200 |
| 16 | 30,400 | 5.76 | 256 | 7,782,400 | 7,782,400 | 7,782,400 | 9,728,000 |
| 18 | 21,931 | 4.15 | 276 | 6,052,956 | 6,053,000 | 6,053,000 | 7,566,300 |
| 20 | 5,556 | 1.05 | 316 | 1,755,696 | 1,755,700 | 1,755,700 | 2,194,700 |
| 24 | 39,999 | 7.58 | 346 | 13,839,654 | 13,839,700 | 13,839,700 | 17,299,700 |
| 30 | 11,180 | 2.12 | 383 | 4,281,940 | 4,282,000 | 4,282,000 | 5,352,500 |
| Central Marina | | | | | | | |
| 4 | 1,920 | 0.4 | 142 | 272,640 | 272,700 | 272,700 | 340,900 |
| 6 | 92,363 | 17.5 | 142 | 13,115,546 | 13,115,600 | 13,115,600 | 16,394,500 |
| 8 | 91,442 | 17.3 | 142 | 12,984,764 | 12,984,800 | 12,984,800 | 16,231,000 |
| 10 | 4,264 | 0.8 | 178 | 756,860 | 756,900 | 756,900 | 946,200 |
| 12 | 20,536 | 3.9 | 213 | 4,374,168 | 4,374,200 | 4,374,200 | 5,467,800 |
| 16 | 249 | 0.05 | 256 | 63,744 | 63,800 | 63,800 | 79,800 |
| 18 | 1,609 | 0.3 | 276 | 444,084 | 444,100 | 444,100 | 555,200 |
| 20 | 4,581 | 0.9 | 316 | 1,447,596 | 1,447,600 | 1,447,600 | 1,809,500 |
| Total Cost | | | | | | | |
| | Subtotal - Ord Community | | | 118,197,004 | 118,197,100 | 118,197,100 | 147,746,400 |
| | Subtotal - Central Marina | | | 33,459,402 | 33,459,500 | 33,459,500 | 41,824,400 |
| | Total Cost | | | 151,656,406 | 151,656,500 | 151,656,500 | 189,570,700 |

Notes:

1. Unit costs for pipelines less than 12" based on cost per inch-diameter of 12" pipeline
2. Pipelines smaller than 8" assumed to be replaced with 8".
3. 25% contingency assumed for replacement costs in estimated asset value calculation

4/14/2020

Table 3 Existing Wells Replacement Cost
 Water Master Plan
 Marina Coast Water District

PRELIMINARY

| Supply Well | Location | Design Capacity | | Infrastructure Costs ^{1,2} | Baseline Construction Costs | Estimated Construction Costs | Capital Improvement Cost ³ |
|-----------------------|-------------------------------|---------------------------|-------|-------------------------------------|-----------------------------|------------------------------|---------------------------------------|
| | | Rated | | | | | |
| | | (gpm) | (mgd) | | | | |
| Central Marina | | | | | | | |
| Well 10 | Bayer Avenue and Ridgeview | 1,350 | 1.94 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 11 | Reservation Rd & Salinas Ave | 2,000 | 2.88 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 12 (Inactive) | Top of Beach Rd | 1,900 | 2.74 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Ord Community | | | | | | | |
| Well 29 | Old County Rd | 1,500 | 2.16 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 30 | Reservation Rd | 1,500 | 2.16 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 31 | Reservation Rd | 2,400 | 3.46 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 34 | Reservation Rd | 2,000 | 2.88 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Well 35 | Watkins Gate & Reservation Rd | 2,000 | 2.88 | 3,016,000 | 3,016,000 | 3,016,000 | 3,770,000 |
| Total Cost | | | | | | | |
| | | Subtotal - Central Marina | | 9,048,000 | 9,048,000 | 9,048,000 | 11,310,000 |
| | | Subtotal - Ord Community | | 15,080,000 | 15,080,000 | 15,080,000 | 18,850,000 |
| | | Total Cost | | 24,128,000 | 24,128,000 | 24,128,000 | 30,160,000 |

Notes:

4/14/2020

1. Unless noted otherwise well improvement consists of pump replacement only.
2. Well 12 currently inactive due to quality issues and is not currently planned for reinstatement. Unit cost shown assumes new well construction
3. 25% contingency assumed for replacement costs in estimated asset value calculation

Table 4 Existing Pressure Reducing Valves Replacement Cost
 Water Master Plan
 Marina Coast Water District

PRELIMINARY

| Location | PRV ID | Unit Cost (\$) | Infrastructure Costs (\$) | Baseline Construction Costs (\$) | Estimated Construction Costs (\$) | Capital Improvement Cost ¹ (\$) |
|--|---------------------------|-------------------|---------------------------------|--|---|--|
| Central Marina | | | | | | |
| Carmel Ave at Crumpton Ln | PRV-2 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Ord Community | | | | | | |
| Sand Tank | Bermad Valve | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| 12th St near DX Dr | PRV-24 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| 8th St at 2nd Ave | PRV-28 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Monterey Rd at Normandy Rd | PRV-20 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| 8-inch pipeline s/o Sand Tank | PRV-50 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Old County Rd near Well 29 | PRV-25 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Gigling Rd at 6th Division Cir | PRV-26 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Abrams Dr at Bunker Hill Dr | PRV-10 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Inter-Garrison Rd near Spotsylvania Ct | PRV-11 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Inter-Garrison Rd at Abrams Dr | PRV-12 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Inter-Garrison Rd at Schoonover Dr | PRV-13 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Inter-Garrison Rd. to East Garrison | PRV-EG | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Kiska Rd at Buna Rd | PRV-17 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Peninsula Point Dr at Bay Crest Cir | PRV-18 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Coe Ave to Upper Seaside Highlands | PRV-19 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| General Jim Moore Blvd at Normandy Dr | PRV-27 | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Coe Ave to Sunbay Apartments | PRV-SUNBAY | 73,000 | 73,000 | 73,000 | 73,000 | 91,300 |
| Total Cost | | | | | | |
| | Subtotal - Central Marina | | 73,000 | 73,000 | 73,000 | 91,300 |
| | Subtotal - Ord Community | | 1,241,000 | 1,241,000 | 1,241,000 | 1,552,100 |
| | Total Cost | | 1,314,000 | 1,314,000 | 1,314,000 | 1,643,400 |

4/14/2020

1. 25% contingency assumed for replacement costs in estimated asset value calculation

Table 5 Existing Storage Reservoirs Replacement Cost

Water Master Plan
Marina Coast Water District

PRELIMINARY

| Pressure Zone | Tank Name | Location | Volume (MG) | Infrastructure Costs (\$) | Baseline Construction Costs (\$) | Estimated Construction Costs (\$) | Capital Improvement Cost ² (\$) |
|-----------------------|----------------|---------------------------|-------------|---------------------------|----------------------------------|-----------------------------------|--|
| Central Marina | | | | | | | |
| A | Reservoir 2 | Crescent Ave, Marina | 2.00 | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| Ord Community | | | | | | | |
| A | Intermediate | Above Schoonover Park | 0.17 | 493,480 | 493,500 | 493,500 | 493,500 |
| A ¹ | Sand Tank | California Ave | 1.00 | 2,920,000 | 2,920,000 | 2,920,000 | 2,920,000 |
| B | B1 | 6th & Durham | 2.00 | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| C | C1 | 7th and Giggling | 2.00 | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| C | C2 (old F) | Off Watkins Gate Rd. | 2.00 | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| D | D1 | Above Fitch Park | 2.00 | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| D | Huffman | BLM- Huffman Ranch | 0.06 | 175,200 | 175,200 | 175,200 | 175,200 |
| E | Hydropneumatic | Above Fitch Park | 0.01 | 29,200 | 29,200 | 29,200 | 29,200 |
| Total Cost | | | | | | | |
| | | Subtotal - Central Marina | | 4,660,000 | 4,660,000 | 4,660,000 | 4,660,000 |
| | | Subtotal - Ord Community | | 22,257,880 | 22,257,900 | 22,257,900 | 22,257,900 |
| | | Total Cost | | 26,917,880 | 26,917,900 | 26,917,900 | 26,917,900 |

4/14/2020

Notes:

1. Tank planned for imminent demolition
2. 25% contingency assumed for replacement costs in estimated asset value calculation

Table 6 Existing Booster Stations Replacement Cost

Water Master Plan
Marina Coast Water District

| Name | Location | System | Design Capacity ¹ | | Unit Cost (\$/gpm) | Infrastructure Costs (\$) | Baseline Construction Costs (\$) | Estimated Construction Costs (\$) | Capital Improvement Cost ² (\$) |
|-----------------------------------|--|--------|--------------------------------|-------|-----------------------|---------------------------------|--|---|--|
| | | | Rated | | | | | | |
| | | | (gpm) | gpm | | | | | |
| Central Marina | | | | | | | | | |
| A-Booster | Reservoir 2 | Marina | 3 x 1,500 gpm | 4,500 | 112 | 505,372 | 505,400 | 505,400 | 631,800 |
| Ord Community | | | | | | | | | |
| B-Booster | Sand Tank | Ord | 3 x 2,800 gpm | 8,400 | 82 | 690,523 | 690,600 | 690,600 | 863,300 |
| C-Booster | Sand Tank | Ord | 1 x 2,000 gpm 4 x 1,800 gpm | 9,200 | 77 | 709,401 | 709,500 | 709,500 | 886,900 |
| D-Booster | Intersection of Giggling Road and Parker Flats | Ord | 1 x 4,800 gpm 1 x 2,000 gpm | 6,800 | 93 | 635,328 | 635,400 | 635,400 | 794,300 |
| E-Booster | D1 Tank | Ord | 3 x 120 gpm 2 x 2,150 gpm | 4,660 | 111 | 516,685 | 516,700 | 516,700 | 645,900 |
| F-Booster (Inactive) ¹ | Intermediate Tank | Ord | 2 x 1,500 gpm | 3,000 | 127 | 379,870 | 379,900 | 379,900 | 474,900 |
| Total Cost | | | | | | | | | |
| Subtotal - Central Marina | | | | | | 505,372 | 505,400 | 505,400 | 631,800 |
| Subtotal - Ord Community | | | | | | 2,931,808 | 2,932,100 | 2,932,100 | 3,665,300 |
| Total Cost | | | | | | 3,437,180 | 3,437,500 | 3,437,500 | 4,297,100 |

Notes:

1. Booster station currently inactive and not currently planned for reinstatement.
2. 25% contingency assumed for replacement costs in estimated asset value calculation

Appendix A2: Asset Listing - Sewer Asset Detail

Excerpts from MCWD 2020 Sewer Master Plan, Akel Engineering

Table 1 Unit Costs

Sewer Master Plan Marina Coast Water District

PRELIMINARY

| Pipelines ^{1,2} | |
|--------------------------|------------------|
| Pipe Size | Cost |
| (in) | (\$/lineal foot) |
| 8 | 218 |
| 10 | 243 |
| 12 | 279 |
| 15 | 303 |
| 18 | 327 |
| 21 | 352 |
| 24 | 400 |
| 27 | 450 |
| 30 | 500 |
| 36 | 600 |

| Lift Station ^{2,3} |
|--|
| Estimated Lift Station Project Cost = $9,045*Q^2 + 293951*Q + 342,261$, where Q is in mgd |

AKEL
ENGINEERING GROUP, INC.

2/7/2019

Notes :

1. Construction costs are based on Bid Tabs Results received from District staff on October 18, 2018.
2. Construction costs estimated using June 2018 ENR CCI of 11,089.
3. Lift Station costs based on Akel Engineering Group experience on similar projects.

Table 2 Existing Pipe Replacement Cost
 Sewer Master Plan
 Marina Coast Water District

| Pipe Diameter | Total Length by Diameter | | System | Unit Cost (\$/LF) | Infrastructure Costs (\$) | Baseline Construction Costs (\$) | Estimated Construction Costs (\$) | Capital Improvement Cost ³ (\$) |
|---------------------------|--------------------------|---------|--------|----------------------|------------------------------|--|---|--|
| | (ft) | (miles) | | | | | | |
| Central Marina | | | | | | | | |
| Gravity Mains | | | | | | | | |
| 6 | 17,961 | 3.4 | Marina | 135 | 2,416,322 | 2,416,400 | 2,416,400 | 3,020,500 |
| 8 | 116,156 | 22.0 | Marina | 218 | 25,354,159 | 25,354,200 | 25,354,200 | 31,692,800 |
| 10 | 10,614 | 2.0 | Marina | 243 | 2,574,211 | 2,574,300 | 2,574,300 | 3,217,900 |
| 12 | 7,499 | 1.42 | Marina | 279 | 2,091,540 | 2,091,600 | 2,091,600 | 2,614,500 |
| 15 | 3,487 | 0.7 | Marina | 303 | 1,057,127 | 1,057,200 | 1,057,200 | 1,321,500 |
| 18 | 2,052 | 0.4 | Marina | 327 | 671,856 | 671,900 | 671,900 | 839,900 |
| 21 | 1,420 | 0.3 | Marina | 352 | 499,369 | 499,400 | 499,400 | 624,300 |
| 24 | 234 | 0.04 | Marina | 400 | 93,641 | 93,700 | 93,700 | 117,200 |
| 30 | 205 | 0.04 | Marina | 500 | 102,545 | 102,600 | 102,600 | 128,300 |
| 72 | 440 | 0.1 | Marina | 1,200 | 528,000 | 528,000 | 528,000 | 660,000 |
| Force Mains | | | | | | | | |
| 6 | 1,201 | 0.2 | Marina | 165 | 198,327 | 198,400 | 198,400 | 248,000 |
| 8 | 2,240 | 0.4 | Marina | 186 | 416,140 | 416,200 | 416,200 | 520,300 |
| Ord Community | | | | | | | | |
| Gravity Mains | | | | | | | | |
| 3 | 200 | 0.04 | Ord | 218 | 43,600 | 43,600 | 43,600 | 54,500 |
| 4 | 1,127 | 0.21 | Ord | 218 | 245,686 | 245,700 | 245,700 | 307,200 |
| 5 | 402 | 0.08 | Ord | 218 | 87,636 | 87,700 | 87,700 | 109,700 |
| 6 | 97,344 | 18.44 | Ord | 218 | 21,220,992 | 21,221,000 | 21,221,000 | 26,526,300 |
| 8 | 150,587 | 28.52 | Ord | 218 | 32,869,647 | 32,869,700 | 32,869,700 | 41,087,200 |
| 10 | 32,401 | 6.14 | Ord | 243 | 7,858,207 | 7,858,300 | 7,858,300 | 9,822,900 |
| 12 | 23,796 | 4.51 | Ord | 279 | 6,636,924 | 6,637,000 | 6,637,000 | 8,296,300 |
| 15 | 21,371 | 4.05 | Ord | 303 | 6,478,880 | 6,478,900 | 6,478,900 | 8,098,700 |
| 18 | 13,022 | 2.47 | Ord | 327 | 4,263,601 | 4,263,700 | 4,263,700 | 5,329,700 |
| 24 | 5,422 | 1.03 | Ord | 400 | 2,169,744 | 2,169,800 | 2,169,800 | 2,712,300 |
| 27 | 2,237 | 0.42 | Ord | 450 | 1,007,088 | 1,007,100 | 1,007,100 | 1,258,900 |
| 30 | 3,358 | 0.64 | Ord | 500 | 1,679,731 | 1,679,800 | 1,679,800 | 2,099,800 |
| Force Mains | | | | | | | | |
| 4 | 967 | 0.18 | Ord | 165 | 159,555 | 159,600 | 159,600 | 199,500 |
| 6 | 7,526 | 1.43 | Ord | 165 | 1,242,805 | 1,242,900 | 1,242,900 | 1,553,700 |
| 8 | 4,400 | 0.83 | Ord | 186 | 817,417 | 817,500 | 817,500 | 1,021,900 |
| 10 | 18,887 | 3.58 | Ord | 214 | 4,043,999 | 4,044,000 | 4,044,000 | 5,055,000 |
| Total Cost | | | | | | | | |
| Subtotal - Central Marina | | | | | 36,003,236 | 36,003,900 | 36,003,900 | 45,005,200 |
| Subtotal - Ord Community | | | | | 90,825,512 | 90,826,300 | 90,826,300 | 113,533,600 |
| Total Cost | | | | | 126,828,748 | 126,830,200 | 126,830,200 | 158,538,800 |

Notes:

4/14/2020

1. Unit costs for gravity pipelines less than 8" based on cost per inch-diameter of 8" pipeline
2. Pipelines smaller than 8" assumed to be replaced with 8".
3. 25% contingency assumed for replacement costs in estimated asset value calculation

Table 3 Existing Lift Station Replacement Cost
 Sewer Master Plan
 Marina Coast Water District

| Lift Station Name | Location | System | Quantity | Capacity | | Infrastructure Costs (\$) | Baseline Construction Costs | Estimated Construction Costs | Capital Improvement Cost | |
|-----------------------|---|--------|----------|-------------------------|----------------------|------------------------------|-----------------------------|------------------------------|--------------------------|-------------------|
| | | | | (mgd) | (gpm) | | (\$) | (\$) | (\$) | |
| Central Marina | | | | | | | | | | |
| Dunes | Dunes Drive | Marina | 2 | 2 @ 1.00 | 2 @ 700 | 965,623 | 965,700 | 965,700 | 1,207,200 | |
| San Pablo | San Pablo Ct | Marina | 2 | 2 @ 0.29 | 2 @ 200 | 515,587 | 515,600 | 515,600 | 644,500 | |
| Cosky | Cosky Drive | Marina | 2 | 2 @ 0.31 | 2 @ 216 | 527,764 | 527,800 | 527,800 | 659,800 | |
| Crescent | Crescent Street | Marina | 2 | 2 @ 0.14 | 2 @ 100 | 425,176 | 425,200 | 425,200 | 531,500 | |
| Ord Community | | | | | | | | | | |
| Fritzche Field | Fritzche Field North | Ord | 2 | 2 @ 0.23 | 2 @ 160 | 479,227 | 479,300 | 479,300 | 599,200 | |
| Promontory | 8th Street | Ord | 2 | 2 @ 0.13 | 2 @ 93 | 419,206 | 419,300 | 419,300 | 524,200 | |
| Carmel | Carmel Avenue | Ord | 2 | 2 @ 0.37 | 2 @ 254 | 564,471 | 564,500 | 564,500 | 705,700 | |
| East Garrison | Reservation Rd | Ord | 2 | 2 @ 0.53 | 2 @ 370 | 663,630 | 663,700 | 663,700 | 829,700 | |
| Ord Village | End of Beach Range Road | Ord | 4 | 3 @ 1.38 Sump @ 0.07 | 3 @ 960 Sump @ 50 | 1,738,594 | 1,738,600 | 1,738,600 | 2,173,300 | |
| Wittemeyer | North of Wittemeyer Court | Ord | 2 | 2 @ 0.2 | 2 @ 140 | 461,145 | 461,200 | 461,200 | 576,500 | |
| Booker | End of Booker Street | Ord | 3 | 2 @ 1.09 Sump @ 0.07 | 2 @ 760 Sump @ 50 | 1,048,631 | 1,048,700 | 1,048,700 | 1,310,900 | |
| Clark | Brostrum Drive at Clark Court | Ord | 2 | 2 @ 0.37 | 2 @ 260 | 564,471 | 564,500 | 564,500 | 705,700 | |
| San Pablo | San Pablo Court | Ord | | | | 342,261 | 342,300 | 342,300 | 427,900 | |
| Neeson | Neeson Road/ Marina Airport | Ord | 1 | 0.29 | 200 | 428,163 | 428,200 | 428,200 | 535,300 | |
| Landrum | Landrum Court | Ord | 2 | 2 @ 0.50 | 2 @ 350 | 644,897 | 644,900 | 644,900 | 806,200 | |
| Imjin | Imjin at Abrams | Ord | 2 | 2 @ 1.00 | 2 @ 700 | 965,623 | 965,700 | 965,700 | 1,207,200 | |
| Schoonover | Schoonover at Warrelman | Ord | 2 | 2 @ 0.68 | 2 @ 470 | 758,274 | 758,300 | 758,300 | 947,900 | |
| Hatten | Hatten Road | Ord | 2 | 2 @ 0.06 | 2 @ 40 | 377,622 | 377,700 | 377,700 | 472,200 | |
| Gigling | Okinawa and Noumea Road | Ord | 4 | 3 @ 1.26 Sump @ 0.07 | 3 @ 874 Sump @ 50 | 1,606,656 | 1,606,700 | 1,606,700 | 2,008,400 | |
| Reservation | Reservation Road 1,125 ft nw/o Imjin | Ord | 2 | 2 @ 1.02 | 2 @ 710 | 978,828 | 978,900 | 978,900 | 1,223,700 | |
| Hodges | Hodges Court | Ord | 2 | 2 @ 0.14 | 2 @ 95 | 425,176 | 425,200 | 425,200 | 531,500 | |
| Total Cost | | | | | | | | | | |
| | | | | | | Subtotal - Central Marina | 2,776,410 | 2,434,300 | 2,434,300 | 3,043,000 |
| | | | | | | Subtotal - Ord Community | 12,809,137 | 12,467,700 | 12,467,700 | 15,585,500 |
| | | | | | | Total Cost | 15,585,547 | 14,902,000 | 14,902,000 | 18,628,500 |

Appendix A3: Asset Listing - Exclusions

Data provided by Marina Coast Water District

Appendix A: Asset Listing - Exclusions
 Developer Contributed Assets - Ord Community
 As of June 30, 2019

| Asset | Estimated Date Of Service | Amount | Resolution No. | Resolution Date | Bill Of Sale Execution Date | LIFE (YEARS) | Description |
|--|---------------------------|---------------------|----------------|-----------------|-----------------------------|--------------|--|
| Ord Community - Water System Facilities | | | | | | | |
| WATER SYSTEM FACILITIES - 20,505 LF 8" & 12" MAIN/591 16" & 20" MAINS/28 LF 6" & 8" FIRE LINES/36 HYDRANTS/298 LF LATERALS/APPURTANCES | 08/31/12 | \$1,801,870 | 2012-59 | 09/11/12 | 10/02/12 | 80 | EAST GARRISON |
| WATER SYSTEM FACILITIES - 3,334 LF 8" MAIN/773 12" MAIN/9 HYDRANTS/95 LATERALS/1 2" IRRIGATION LINE | 07/21/17 | \$565,620 | 2017-54 | 08/21/17 | TO BE EXECUTED | 80 | DUNES RESIDENTIAL PHASE 1C2 - SHEA HOMES |
| WATER SYSTEM FACILITIES - 470 LF 16" MAIN/14350 LF 8" MAIN/6 HYDRANTS/APPURTANCES | 07/22/15 | \$418,434 | 2015-42 | 08/03/15 | 01/21/16 | 80 | PROMONTORY |
| WATER SYSTEM FACILITIES - 660 LF 12" MAIN/1,500 LF 8" MAIN/245 LF 6" MAIN/6 HYDRANTS | 06/10/14 | \$284,975 | 2014-28 | 07/07/14 | 12/01/14 | 80 | UNIVERSITY VILLAGE APARTMENTS |
| WATER SYSTEM FACILITIES - 800 LF 8" PVC MAIN/LATERALS/VALVLES/HYDRANTS/PRV | 03/23/11 | \$103,000 | 2011-66 | 09/13/11 | 09/14/11 | 80 | CHOMP MARINA CAMPUS |
| WATER SYSTEM FACILITIES - EAST GARRISON PHASE 2 | 01/20/16 | \$1,808,090 | 2016-05 | 02/01/16 | 02/17/16 | 80 | EAST GARRISON PHASE 2 |
| WATER SYSTEM FACILITIES - EAST GARRISON PHASE 3 | 09/07/18 | \$962,680 | 2018-53 | 09/17/18 | TO BE EXECUTED | 80 | EAST GARRISON PHASE 3 |
| WATER SYSTEM FACILITIES - PIPES/HYDRANTS/BLOW OFFS/MAINS/VALVES/APPURTANCES | 06/21/05 | \$994,037 | 2006-30 | 04/26/06 | 07/11/06 | 80 | SEASIDE HIGHLANDS |
| WATER SYSTEM FACILITIES -1,649 LF 8" MAIN/730 LF 12" MAIN/9 HYDRANTS/1 4" VAULT SERVICE LINE/1 4" SERVICE LINE/2 2" IRRIGATION LINES/APPURTANCES | 08/01/07 | \$233,226 | 2016-17 | 03/21/16 | 04/13/16 | 80 | DUNES RESIDENTIAL PHASE 1C1 - MCP |
| WATER SYSTEM FACILITIES -2,800 LF 8" PVC MAIN/12 8" VALVES/3 BLOW OFF VALVES/1 PRV/1 ARV/8 FIRE HYDRANTS WITH VALVES | 08/01/07 | \$893,813 | 2016-04 | 01/11/16 | 02/17/16 | 80 | DUNES ON MONTEREY BAY PHASE 1A |
| WATER SYSTEM FACILITIES -2,800 LF 8" PVC MAIN/12 8" VALVES/3 BLOW OFF VALVES/1 PRV/1 ARV/8 FIRE HYDRANTS WITH VALVES | 08/01/07 | \$105,478 | 2017-24 | 04/17/17 | 04/28/17 | 80 | DUNES ON MONTEREY BAY PHASE 1A - TARGET |
| WATER SYSTEM FACILITIES -2,800 LF 8" PVC MAIN/12 8" VALVES/3 BLOW OFF VALVES/1 PRV/1 ARV/8 FIRE HYDRANTS WITH VALVES | 10/10/08 | \$367,770 | 2008-45 | 10/14/08 | 01/21/16 | 80 | SEASIDE RESORT ESTATES PHASE 1A |
| WATER SYSTEM FACILITIES -3,776 LF 8" MAIN/12 HYDRANTS/LATERALS/APPURTANCES | 01/31/16 | \$629,516 | 2016-17 | 03/21/16 | 04/13/16 | 80 | DUNES RESIDENTIAL PHASE 1C1 - SHEA HOMES |
| WATER SYSTEM FACILITIES -PIPELINES/VALVES/FIRE HYDRANTS/APPURTANCES | 08/21/07 | \$696,425 | 2007-73 | 10/10/07 | 12/18/07 | 80 | MARINA HEIGHTS PHASE 2 |
| RECYCLED WATER FACILITIES - 1,252 8" MAIN/3 2" SERVICE LINES/APPURTANCES | 07/21/17 | \$97,560 | 2017-54 | 08/21/17 | TO BE EXECUTED | 80 | DUNES RESIDENTIAL PHASE 1C2 - SHEA HOMES |
| RECYCLED WATER FACILITIES - 400 LF 4" RECLAIMED WATER MAIN/APPURTANCES | 07/22/15 | \$21,500 | 2015-42 | 08/03/15 | 01/21/16 | 80 | PROMONTORY |
| RECYCLED WATER FACILITIES - 560 LF 4" RECLAIMED WATER MAIN | 06/10/14 | \$13,320 | 2014-28 | 07/07/14 | 12/01/14 | 100 | UNIVERSITY VILLAGE APARTMENTS |
| RECYCLED WATER FACILITIES - 6,580 LF PIPE/2 8" BACKFLOW DEVICES/20 IRRIGATION LATERALS | 08/31/12 | \$386,380 | 2012-59 | 09/11/12 | 10/02/12 | 80 | EAST GARRISON |
| RECYCLED WATER FACILITIES - EAST GARRISON PHASE 2 | 01/20/16 | \$113,821 | 2016-05 | 02/01/16 | 02/17/16 | 80 | EAST GARRISON PHASE 2 |
| RECYCLED WATER FACILITIES - EAST GARRISON PHASE 3 | 09/07/18 | \$39,232 | 2018-53 | 09/17/18 | TO BE EXECUTED | 80 | EAST GARRISON PHASE 3 |
| RECYCLED WATER FACILITIES - IRRIGATION WATER PIPES/MAINS/VALVES/APPURTANCES | 06/21/05 | \$145,070 | 2006-30 | 04/26/06 | 07/11/06 | 80 | SEASIDE HIGHLANDS |
| RECYCLED WATER FACILITIES - 171 LF 4" LATERALS/VALVES | 03/23/11 | \$22,000 | 2011-66 | 09/13/11 | 09/14/11 | 80 | CHOMP MARINA CAMPUS |
| RECYCLED WATER FACILITIES - 2,508 LF 4" LATERAL/5 4" VALVES/1 ARV/1 RP BFP | 08/01/07 | \$236,187 | 2016-04 | 01/11/16 | 02/17/16 | 80 | DUNES ON MONTEREY BAY PHASE 1A |
| RECYCLED WATER FACILITIES - 2,508 LF 4" LATERAL/5 4" VALVES/1 ARV/1 RP BFP | 10/10/08 | \$136,302 | 2008-45 | 10/14/08 | 01/21/16 | 80 | SEASIDE RESORT ESTATES PHASE 1A |
| RECYCLED WATER FACILITIES - 558 LF 4" MAIN/2 2" IRRIGATION LINES/APPURTANCES | 08/01/07 | \$20,624 | 2016-17 | 03/21/16 | 04/13/16 | 80 | DUNES RESIDENTIAL PHASE 1C1 - MCP |
| RECYCLED WATER FACILITIES - LATERAL/ VALVES/APPURTANCES | 08/21/07 | \$24,000 | 2007-73 | 10/10/07 | 12/18/07 | 80 | MARINA HEIGHTS PHASE 2 |
| Water System Facility Total | | \$11,120,930 | | | | | |
| Ord Community - Sewer System Facilities | | | | | | | |
| SEWER SYSTEM FACILITIES - 1,164 LF 8" MAIN/279 15" MAIN/11 MANHOLES/APPURTANCES | 08/01/07 | \$140,187 | 2016-17 | 03/21/16 | 04/13/16 | 80 | DUNES RESIDENTIAL PHASE 1C1 - MCP |
| SEWER SYSTEM FACILITIES - 1,164 LF 8" MAIN/279 15" MAIN/11 MANHOLES/APPURTANCES | 01/31/16 | \$546,393 | 2016-17 | 03/21/16 | 04/13/16 | 60 | DUNES RESIDENTIAL PHASE 1C1 - SHEA HOMES |
| SEWER SYSTEM FACILITIES - 18,705 LF SEWER MAINS/102 MANHOLES/415 LF LATERALS | 08/31/12 | \$1,631,830 | 2012-59 | 09/11/12 | 10/02/12 | 60 | EAST GARRISON |
| SEWER SYSTEM FACILITIES - 2,448 LF 8" PVC MAIN/19 MANHOLES/1 CLEAN OUT | 08/01/07 | \$1,991,000 | 2016-04 | 01/11/16 | 02/17/16 | 60 | DUNES ON MONTEREY BAY PHASE 1A |
| SEWER SYSTEM FACILITIES - 2,448 LF 8" PVC MAIN/19 MANHOLES/1 CLEAN OUT | 08/01/07 | \$151,344 | 2017-24 | 04/17/17 | 04/28/17 | 60 | DUNES ON MONTEREY BAY PHASE 1A - TARGET |
| SEWER SYSTEM FACILITIES - 2,448 LF 8" PVC MAIN/19 MANHOLES/1 CLEAN OUT | 10/10/08 | \$699,738 | 2008-45 | 10/14/08 | 01/21/16 | 60 | SEASIDE RESORT ESTATES PHASE 1A |
| SEWER SYSTEM FACILITIES - 2,655 LF 8" MAIN/437 15" MAIN/20 MANHOLES/71 LATERALS/APPURTANCES | 07/21/17 | \$356,740 | 2017-54 | 08/21/17 | TO BE EXECUTED | 60 | DUNES RESIDENTIAL PHASE 1C2 - SHEA HOMES |
| SEWER SYSTEM FACILITIES - 340 LF 8" PVC MAIN/210 LF 6" PVC MAIN/MANHOLES/LATERALS | 03/23/11 | \$52,000 | 2011-66 | 09/13/11 | 09/14/11 | 60 | CHOMP MARINA CAMPUS |
| SEWER SYSTEM FACILITIES - 425 LF 8" MAIN/500 LF LATERALS/4 MANHOLES | 06/10/14 | \$82,040 | 2014-28 | 07/07/14 | 12/01/14 | 60 | UNIVERSITY VILLAGE APARTMENTS |
| SEWER SYSTEM FACILITIES - 680 LF 8" MAIN/800 LF SMALLER FORCE MAIN/SEWER PUMP STATION/5 MANHOLES | 07/22/15 | \$591,441 | 2015-42 | 08/03/15 | 01/21/16 | 50 | PROMONTORY |
| SEWER SYSTEM FACILITIES - EAST GARRISON PHASE 2 | 01/20/16 | \$724,727 | 2016-05 | 02/01/16 | 02/17/16 | 60 | EAST GARRISON PHASE 2 |
| SEWER SYSTEM FACILITIES - EAST GARRISON PHASE 3 | 09/07/18 | \$427,964 | 2018-53 | 09/17/18 | TO BE EXECUTED | 60 | EAST GARRISON PHASE 3 |
| SEWER SYSTEM FACILITIES - MAINS/MANHOLES/LATERALS/APPURTANCES | 08/21/07 | \$813,650 | 2007-73 | 10/10/07 | 12/18/07 | 60 | MARINA HEIGHTS PHASE 2 |
| SEWER SYSTEM FACILITIES - PIPES/MAINS/MANHOLES/APPURTANCES | 06/21/05 | \$761,431 | 2006-30 | 04/26/06 | 07/11/06 | 60 | SEASIDE HIGHLANDS |
| Sewer System Facility Total | | \$8,970,485 | | | | | |
| Developer Contributed Asset Total | | \$20,091,415 | | | | | |

Appendix A: Asset Listing - Central Marina Water and Sewer Exclusions

| Description | Reason for Exclusion | Length (LF) | Cost (\$/LF) ¹ | Replacement Value |
|-----------------------------|----------------------|-------------|---------------------------|--------------------|
| Central Marina Water | | | | |
| Well 12 | Inactive | | | \$3,770,000 |
| Pipelines (by length) | | | | |
| 8" | Replaced in CIP | 1,725 | \$178 | \$306,200 |
| 12" | Replaced in CIP | 613 | \$266 | \$163,200 |
| 16" | Replaced in CIP | 1,860 | \$320 | \$595,200 |
| Marina Water Total | | | | \$4,834,600 |
| Central Marina Sewer | | | | |
| Dunes Lift Station | Replaced in CIP | | | \$1,207,200 |
| Crescent Lift Station | Replaced in CIP | | | \$531,500 |
| Pipelines (by length) | | | | |
| 8" | Replaced in CIP | 203 | \$272 | \$55,300 |
| Marina Sewer Total | | | | \$1,794,000 |

1 - Includes 25% contingency

Appendix A: Asset Listing Exclusions
Grant Funding for Existing Assets

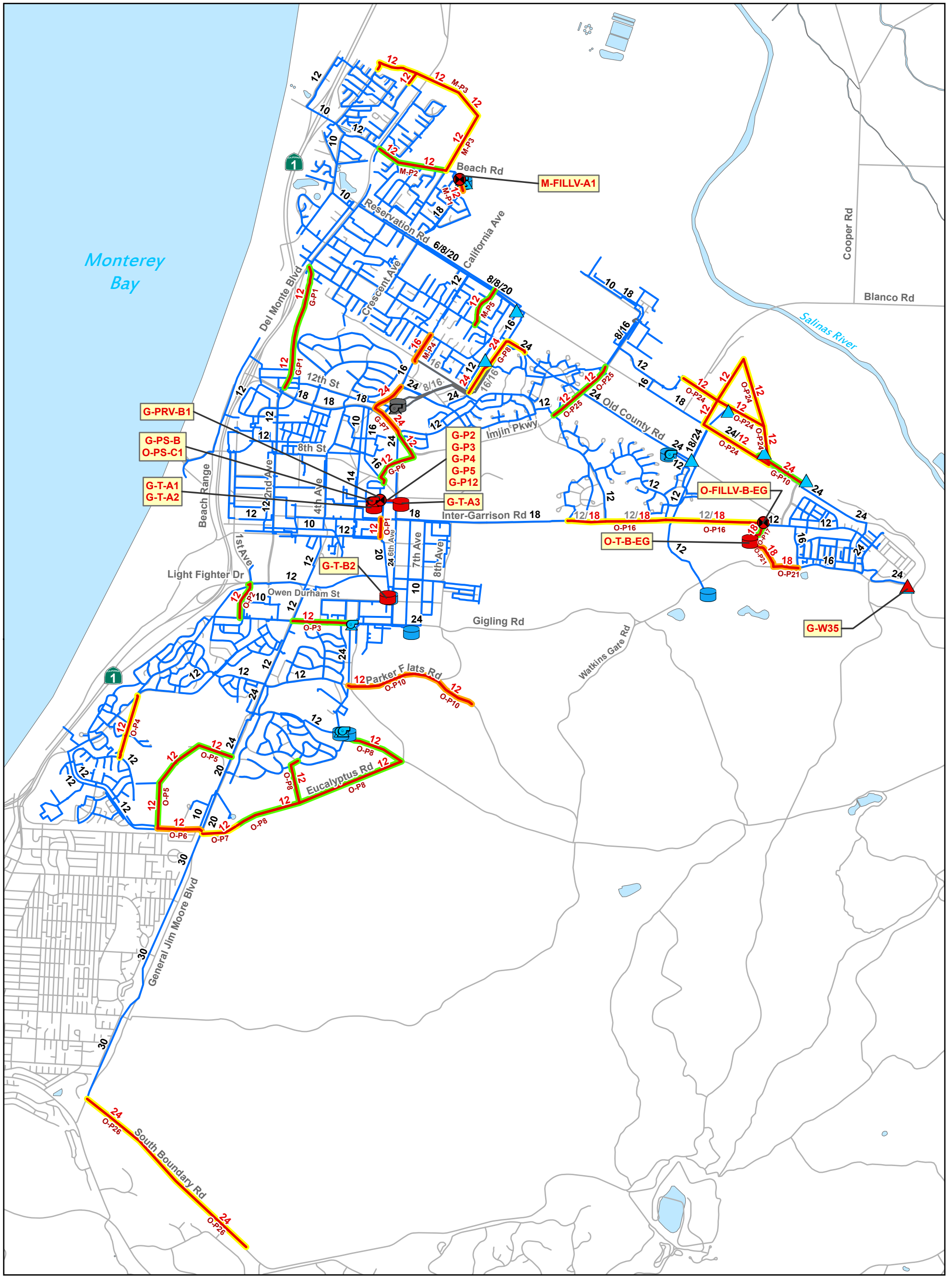
| Asset Category | Grant Amount | Description | Year Issued |
|-----------------------------------|---------------------|--------------------|--------------------|
| Ord Community | | | |
| Gate and Pressure Reducing Valves | \$959,029 | Prop 13 | 2003 |
| Well 34 / Seawater Intrusion | \$2,330,000 | Prop 50 | 2008 |
| Total Grant Funding | \$3,289,029 | | |

Appendix B: Capital Improvement Plan

1. Costs
2. Exclusions

Appendix B1: Capital Improvement Plan - Costs

Excerpts from MCWD 2020 Master Plans, Akel Engineering



Legend

Future Improvements

- Tanks
- Wells
- Boosters
- Valves
- Pipes

Future to be Abandoned

- Tank
- Booster
- Pipes

Existing Modeled System

- Tanks
- Wells
- Boosters
- Pipes

PRELIMINARY

- Streets
- Rivers/Streams
- Waterbodies

Note: Existing PRVs not shown.

Figure 8.2
Intermediate-Term
Improvements
 Water Master Plan
 Marina Coast Water District



Table 8.3 Intermediate-Term Capital Improvement Program

Water Master Plan
Marina Coast Water District

PRELIMINARY

| Improv. No. | Improv. Type | Pressure Zone | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Cost (\$) | Estimated Construction Cost ¹ (\$) | Capital Improvement Cost ^{2,3,4} (\$) | Construction Trigger | Suggested Cost Allocation | | Cost Sharing | |
|--|--------------|---------------|--|--|------------------------|----------------------|---------------|-------------|----------------------|------------------|---------------------------------|---|--|-------------------------------|---------------------------|------------------|---------------------|-------------------|
| | | | | | | | | | Unit Cost (\$/unit) | Infr. Cost (\$) | | | | | Existing Users | Future Users | Existing Users (\$) | Future Users (\$) |
| Central Marina Water System | | | | | | | | | | | | | | | | | | |
| Pipeline Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | Existing Diameter (in) | New/Parallel/Replace | Diameter (in) | Length (ft) | | | | | | | | | | |
| M-P1 | Reliability | Zone A | ROW | From existing Reservoir 2 Site to Crescent Ave | - | New | 12 | 425 | 213 | 90,525 | 91,000 | 136,000 | 170,000 | Operational Improvement | 100% | 0% | 170,000 | 0 |
| M-P2 | Reliability | Zone A | Beach Rd | From De Forest Rd to Del Monte Blvd | 8 | Parallel | 12 | 2,725 | 213 | 580,425 | 581,000 | 863,000 | 1,079,000 | Operational Improvement | 100% | 0% | 1,079,000 | 0 |
| M-P3 | Development | Zone A | Armstrong Ranch | Future Armstrong Ranch Development | - | New | 12 | 7,575 | 213 | 1,613,475 | 1,614,000 | 2,397,000 | 2,997,000 | With Development | 0% | 100% | 0 | 2,997,000 |
| M-P4 | Capacity | Zone A | California Ave | From approximately 500' n/o 3rd Ave to Reindollar Ave | 12 | Replace | 16 | 1,225 | 256 | 313,600 | 314,000 | 467,000 | 584,000 | Prior to Sank Tank Demolition | 50% | 50% | 292,000 | 292,000 |
| M-P5 | Development | Zone B | Lynscott Dr | From Carmel Ave to Reservation Rd | 8 | Replace | 12 | 1,725 | 213 | 367,425 | 368,000 | 547,000 | 684,000 | With Development | 0% | 100% | 0 | 684,000 |
| Subtotal - City of Marina Pipeline Improvements | | | | | | | | | 2,965,450 | 2,968,000 | 4,410,000 | 5,514,000 | | | | 1,541,000 | 3,973,000 | |
| Valve Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | New/Replace | Size (in) | | | | | | | | | | | | |
| M-FILLV-A1 | Operational | Zone A | Existing Reservoir 2 Site | | New | 8 | | | | 73,000 | 73,000 | 109,000 | 137,000 | With M-P1 | 100% | 0% | 137,000 | 0 |
| Subtotal - City of Marina Valve Improvements | | | | | | | | | 73,000 | 73,000 | 109,000 | 137,000 | | | | 137,000 | 0 | |
| Total Central Marina Improvement Costs | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | 1,541,000 | 3,973,000 |
| | | | | | | | | | | | | | | | | | 137,000 | 0 |
| Total - Central Marina Improvements | | | | | | | | | 3,038,450 | 3,041,000 | 4,519,000 | 5,651,000 | | | | 1,678,000 | 3,973,000 | |
| Ord Community Water System | | | | | | | | | | | | | | | | | | |
| Pipeline Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | Existing Diameter (in) | New/Parallel/Replace | Diameter (in) | Length (ft) | | | | | | | | | | |
| O-P1 | Fire Flow | Zone C | 5th St | From 3rd Rd to 1st St | 8 | Replace | 12 | 750 | 213 | 159,750 | 160,000 | 238,000 | 298,000 | Existing Deficiency | 100% | 0% | 298,000 | 0 |
| O-P2 | Reliability | Zone B | First Ave | From Lightfighter Dr to Gigling Ave | - | New | 12 | 1,500 | 213 | 319,500 | 320,000 | 476,000 | 595,000 | Operational Improvement | 50% | 50% | 297,500 | 297,500 |
| O-P3 | Condition | Zone C | Gigling Rd | From General Jim Moore Blvd to Zone D Pump Station | 12 | Replace | 12 | 2,300 | 213 | 489,900 | 490,000 | 728,000 | 910,000 | Existing Deficiency | 100% | 0% | 910,000 | 0 |
| O-P4 | Fire Flow | Zone B | Existing ROW | From Monterey Rd to Leinbach Ave | 8 | Replace | 12 | 2,425 | 213 | 516,525 | 517,000 | 768,000 | 960,000 | Existing Deficiency | 100% | 0% | 960,000 | 0 |
| O-P5 | Development | Zone D | McClure Rd and ROW | From the intersection of General Jim Moore Blvd and McClure Rd to Coe Ave | - | New | 12 | 5,325 | 213 | 1,134,225 | 1,135,000 | 1,686,000 | 2,108,000 | With Development | 0% | 100% | 0 | 2,108,000 |
| O-P6 | Capacity | Zone D | Coe Ave | From General Jim Moore Blvd to approx. 1,700' w/o General Jim Moore Blvd | 8 | Replace | 12 | 1,725 | 213 | 367,425 | 368,000 | 547,000 | 684,000 | With Development | 50% | 50% | 342,000 | 342,000 |
| O-P7 | Development | Zone D | Eucalyptus Rd | From General Jim Moore Blvd to approx. 1,500' e/o General Jim Moore Blvd | - | New | 12 | 1,350 | 213 | 287,550 | 288,000 | 428,000 | 535,000 | With Development | 0% | 100% | 0 | 535,000 |
| O-P8 | Development | Zone E | Eucalyptus Rd and Future ROW | Future Commercial Development, along and n/o Eucalyptus Rd | - | New | 12 | 10,900 | 213 | 2,321,700 | 2,322,000 | 3,449,000 | 4,312,000 | With Development | 0% | 100% | 0 | 4,312,000 |
| O-P10 | Development | Zone D | Parker Flats Cutoff Rd and Eucalyptus Rd | From Normandy Rd to Future ROW | - | New | 12 | 5,130 | 213 | 1,092,690 | 1,093,000 | 1,624,000 | 2,030,000 | With Development | 0% | 100% | 0 | 2,030,000 |
| O-P16 | Development | Zone C | Inter-Garrison Rd, Future ROW | From approx. 1,400' w/o Abrams Dr to future Reservoir B-EG Fill Valve (O-FILLV-B-EG) | 12 | Replace | 18 | 7,500 | 276 | 2,070,000 | 2,070,000 | 3,074,000 | 3,843,000 | With Development | 0% | 100% | 0 | 3,843,000 |
| O-P17 | Development | Zone C | Future ROW | From Inter-Garrison Rd to future Reservoir B-EG (O-T-G-EG) | - | New | 18 | 1,100 | 276 | 303,600 | 304,000 | 452,000 | 565,000 | With Development | 0% | 100% | 0 | 565,000 |
| O-P21 | Development | Zone B-EG | Watkins Gate Rd | From future B-EG reservoir (O-T-B-EG) to Watkins Gate Rd | - | New | 18 | 2,375 | 276 | 655,500 | 656,000 | 975,000 | 1,219,000 | With Development | 0% | 100% | 0 | 1,219,000 |

Table 8.3 Intermediate-Term Capital Improvement Program

Water Master Plan
Marina Coast Water District

PRELIMINARY

| Improv. No. | Improv. Type | Pressure Zone | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Cost (\$) | Estimated Construction Cost ¹ (\$) | Capital Improvement Cost ^{2,3,4} (\$) | Construction Trigger | Suggested Cost Allocation | | Cost Sharing | |
|--|-----------------|---------------|--|--|----------------------------|-----------------------------|----|--------|----------------------|-------------------|---------------------------------|---|--|---------------------------|---------------------------|------------------|---------------------|-------------------|
| | | | | | | | | | Unit Cost (\$/unit) | Infr. Cost (\$) | | | | | Existing Users | Future Users | Existing Users (\$) | Future Users (\$) |
| O-P24 | Capacity | Zone B | Planned Mixed Use Development | N/o Reservation Rd and e/o Blanco Rd | - | New | 12 | 13,525 | 213 | 2,880,825 | 2,881,000 | 4,279,000 | 5,349,000 | With Development | 0% | 100% | 0 | 5,349,000 |
| O-P25 | Reliability | Zone B | Imjin Rd, Neeson Rd | From Reservation Rd to approx. 700' ne/o Abrams Dr | - | New | 12 | 2,725 | 213 | 580,425 | 581,000 | 863,000 | 1,079,000 | With Development | 0% | 100% | 0 | 1,079,000 |
| O-P26 | Development | Zone D | South Boundary Rd | From General Jim Blvd to approx. 8,300' se/o South Boundary Rd | - | New | 24 | 8,275 | 346 | 2,863,150 | 2,864,000 | 4,254,000 | 5,318,000 | With Development | 0% | 100% | 0 | 5,318,000 |
| Subtotal - Fort Ord Pipeline Improvements | | | | | | | | | 16,042,765 | 16,049,000 | 23,841,000 | 29,805,000 | | | | 2,807,500 | 26,997,500 | |
| Tank Improvements | | | | | New/Replace | Capacity (MG) | | | | | | | | | | | | |
| O-T-B-EG | New Capacity | Zone B-EG | Existing Travel Camp tank site, s/o Inter-Garrison Rd approximately 1,700' w/o Camp St | | New | 0.80 | | | 2.92 | 2,336,000 | 2,336,000 | 3,469,000 | 4,337,000 | Operational Improvement | 20% | 80% | 867,400 | 3,469,600 |
| O-T-SAND | Condition | Zone A | Existing Sand Tank Facility | | | | | | - | - | - | - | 552,000 | After G-T-A1 Construction | 100% | 0% | 552,000 | 0 |
| Subtotal - Fort Ord Tank Improvements | | | | | | | | | 2,336,000 | 2,336,000 | 3,469,000 | 4,889,000 | | | | 1,419,400 | 3,469,600 | |
| Pump Station Improvements | | | | | New/Upgrade/Replace | Total Capacity (gpm) | | | | | | | | | | | | |
| O-PS-C1 | New Capacity | Zone C | Planned A1/A2 tank site, nw/o the intersection of Inter-Garrison Rd and 6th Avenue | | New | 8,000 | | | 86 | 690,117 | 691,000 | 1,027,000 | 1,284,000 | With G-T-A1 | 65% | 35% | 834,600 | 449,400 |
| Subtotal - Fort Ord Pump Station Improvements | | | | | | | | | 690,117 | 691,000 | 1,027,000 | 1,284,000 | | | | 834,600 | 449,400 | |
| Valve Improvements | | | | | New/Replace | Size (in) | | | | | | | | | | | | |
| O-FILLV-B-EG | Supply Capacity | Zone B-EG | Inter-Garrison Road | | New | 8 | | | | 73,000 | 73,000 | 109,000 | 137,000 | With O-T-B-EG | 20% | 80% | 27,400 | 109,600 |
| Subtotal - Fort Ord Valve Improvements | | | | | | | | | 73,000 | 73,000 | 109,000 | 137,000 | | | | 27,400 | 109,600 | |
| Total Ord Community Improvement Costs | | | | | | | | | | | | | | | | | | |
| Pipeline Improvements | | | | | | | | | 16,042,765 | 16,049,000 | 23,841,000 | 29,805,000 | | | | 2,807,500 | 26,997,500 | |
| Tank Improvements | | | | | | | | | 2,336,000 | 2,336,000 | 3,469,000 | 4,889,000 | | | | 1,419,400 | 3,469,600 | |
| Pump Station Improvements | | | | | | | | | 690,117 | 691,000 | 1,027,000 | 1,284,000 | | | | 834,600 | 449,400 | |
| Valve Improvements | | | | | | | | | 73,000 | 73,000 | 109,000 | 137,000 | | | | 27,400 | 109,600 | |
| Total - Fort Ord Improvements | | | | | | | | | 19,141,882 | 19,149,000 | 28,446,000 | 36,115,000 | | | | 5,088,900 | 31,026,100 | |

Table 8.3 Intermediate-Term Capital Improvement Program

Water Master Plan
Marina Coast Water District

PRELIMINARY

| Improv. No. | Improv. Type | Pressure Zone | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Cost (\$) | Estimated Construction Cost ¹ (\$) | Capital Improvement Cost ^{2,3,4} (\$) | Construction Trigger | Suggested Cost Allocation | | Cost Sharing | |
|--|--------------|---------------|--|--|------------------------|----------------------|---------------|-------------|----------------------|-------------------|---------------------------------|---|--|-------------------------------|---------------------------|-------------------|---------------------|-------------------|
| | | | | | | | | | Unit Cost (\$/unit) | Infr. Cost (\$) | | | | | Existing Users | Future Users | Existing Users (\$) | Future Users (\$) |
| Combined Water System (General) | | | | | | | | | | | | | | | | | | |
| Pipeline Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | Existing Diameter (in) | New/Parallel/Replace | Diameter (in) | Length (ft) | | | | | | | | | | |
| G-P1 | Reliability | Zone A | Future 2nd Ave Extension | From Imjin Rd to Reindollar Ave | - | New | 12 | 4,775 | 213 | 1,017,075 | 1,018,000 | 1,512,000 | 1,890,000 | With Development | 100% | 0% | 1,890,000 | 0 |
| G-P2 | Capacity | Zone B | Planned Zone A Tank Site | From future PS-B to existing Zone B transmission main. | - | New | 16 | 425 | 256 | 108,800 | 109,000 | 162,000 | 203,000 | With G-PS-B | 46% | 54% | 93,380 | 109,620 |
| G-P3 | Capacity | Zone C | Planned Zone A Tank Site | From future PS-C to existing Zone C transmission main. | - | New | 18 | 925 | 276 | 255,300 | 256,000 | 381,000 | 477,000 | With O-PS-C | 65% | 35% | 310,050 | 166,950 |
| G-P4 | Capacity | Zone A | Planned Zone A Tank Site | From future Zone A tanks to future Zone A (existing Zone C) transmission main. | - | New | 24 | 850 | 346 | 294,100 | 295,000 | 439,000 | 549,000 | With G-T-A1 | 100% | 0% | 549,000 | 0 |
| G-P5 | Capacity | Zone A | Planned Zone A Tank Site | From future Zone A tanks to future Zone B and C Pump Station Building | - | New | 20, 30 | 275 | 316, 383 | 89,850 | 90,000 | 134,000 | 168,000 | With G-T-A2 | 39% | 61% | 65,520 | 102,480 |
| G-P6 | Reliability | Zone B | Imjin Road and Imjim Parkway | From the 8th St Cut-off to Abrams Dr | - | New | 12 | 2,950 | 213 | 628,350 | 629,000 | 935,000 | 1,169,000 | With G-T-A2 | 100% | 0% | 1,169,000 | 0 |
| G-P7 | Capacity | Zone A | Imjin Parkway | From Abrams Dr to Marina Heights Dr | - | New | 24 | 2,550 | 346 | 882,300 | 883,000 | 1,312,000 | 1,640,000 | With G-T-A1 | 0% | 100% | 0 | 1,640,000 |
| G-P8 | Capacity | Zone A | Marina Heights Development | From California Dr to approximately 600' n/o MacArthur Dr | - | New | 24 | 3,300 | 346 | 1,141,800 | 1,142,000 | 1,696,000 | 2,120,000 | With G-T-A1 | 0% | 100% | 0 | 2,120,000 |
| G-P10 | Capacity | Zone A | Reservation Rd | From existing Well 34 discharge to existing Well 31 discharge | 16 | Replace | 24 | 2,000 | 346 | 692,000 | 692,000 | 1,028,000 | 1,285,000 | With G-W35 | 0% | 100% | 0 | 1,285,000 |
| G-P12 | Capacity | Zone A | ROW, 3rd Ave | From future T-A3 to 6th Ave | - | New | 20 | 300 | 316 | 94,800 | 95,000 | 142,000 | 178,000 | With G-T-A3 | 0% | 100% | 0 | 178,000 |
| Subtotal - Combined Pipeline Improvements | | | | | | | | | | 5,204,375 | 5,209,000 | 7,741,000 | 9,679,000 | | | 4,076,950 | 5,602,050 | |
| Tank Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | New/Replace | Capacity (MG) | | | | | | | | | | | | |
| G-T-A1 | Capacity | Zone A | Nw/o the intersection of Inter-Garrison Rd and 6th Avenue | | Replace | 1.60 | | | 2.33 | 3,728,000 | 3,728,000 | 5,537,000 | 7,475,000 | Existing Deficiency | 100% | 0% | 7,475,000 | 0 |
| G-T-A2 | Capacity | Zone A | Nw/o the intersection of Inter-Garrison Rd and 6th Avenue | | Replace | 1.60 | | | 2.33 | 3,728,000 | 3,728,000 | 5,537,000 | 7,475,000 | Existing + Future Improvement | 39% | 61% | 2,915,250 | 4,559,750 |
| G-T-A3 | Capacity | Zone A | Approx. 500' ne/o the intersection of 6th Ave and Intergarrison Rd | | New | 1.50 | | | 2.33 | 3,495,000 | 3,495,000 | 5,191,000 | 7,008,000 | Approx. 2,600 EDUs | 0% | 100% | 0 | 7,008,000 |
| G-T-B2 | Capacity | Zone B | Existing B1 Tank site | | New | 2.20 | | | 2.33 | 5,126,000 | 5,126,000 | 7,613,000 | 9,517,000 | Existing + Future Improvement | 18% | 82% | 1,713,060 | 7,803,940 |
| Subtotal - Combined Tank Improvements | | | | | | | | | | 16,077,000 | 16,077,000 | 23,878,000 | 31,475,000 | | | 12,103,310 | 19,371,690 | |
| Pump Station Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | New/Upgrade/Replace | Total Capacity (gpm) | | | | | | | | | | | | |
| G-PS-B | Capacity | Zone B | Planned A1/A2 tank site, nw/o the intersection of Inter-Garrison Rd and 6th Avenue | | New | 5,400 | | | 112 | 604,148 | 605,000 | 899,000 | 1,124,000 | Prior to PS-B Demolition | 46% | 54% | 517,040 | 606,960 |
| Subtotal - Combined Pump Station Improvements | | | | | | | | | | 604,148 | 605,000 | 899,000 | 1,124,000 | | | 517,040 | 606,960 | |
| Supply Improvements | | | | | | | | | | | | | | | | | | |
| | | | | | New/Replace | Total Capacity (gpm) | | | | | | | | | | | | |
| G-W35 | Capacity | Zone A | Existing Well 35 site | | Replace Pump | | | | 55,000 | 55,000 | 55,000 | 82,000 | 103,000 | With G-W1 | 0% | 100% | 0 | 103,000 |
| G-W1 | Quality | Zone A | Existing Well 30, 31, 34, 35 | | Wellhead Treatment | | | | - | - | - | - | 2,801,000 | Operational Improvement | 100% | 0% | 2,801,000 | 0 |
| Subtotal - Combined Supply Improvements | | | | | | | | | | 55,000 | 55,000 | 82,000 | 2,904,000 | | | 2,801,000 | 103,000 | |

Table 8.4 Intermediate-Term General System Improvement Cost Responsibility
Water Master Plan
Marina Coast Water District

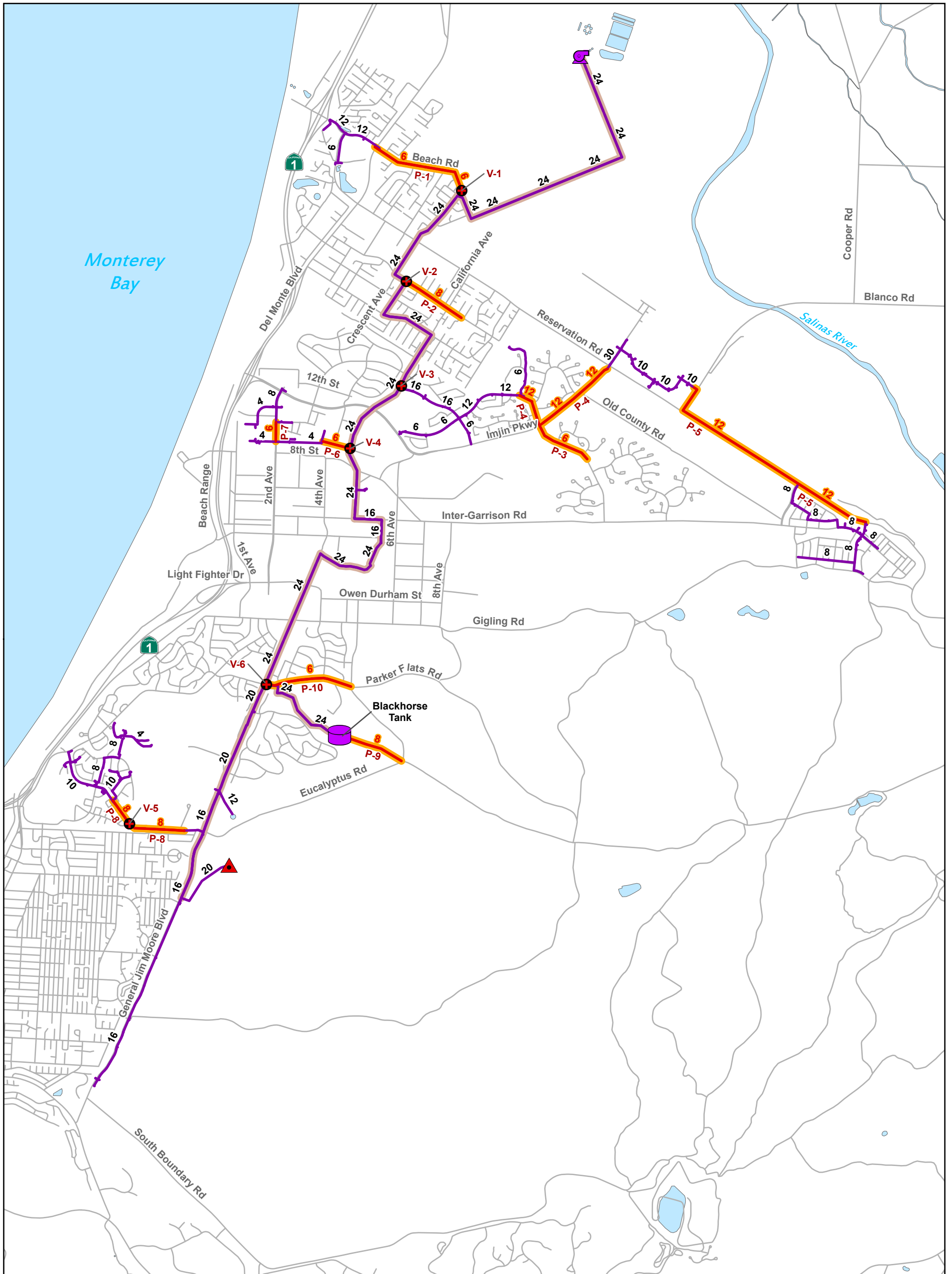
PRELIMINARY

| Improv. No. | CIP Cost ¹ | Suggested Cost Allocation | | Cost Responsibility ² | | | | |
|---|-----------------------|---------------------------|--------|----------------------------------|--------|---------------|--------|-------|
| | | | | Central Marina | | Ord Community | | Total |
| | | Existing | Future | Existing | Future | Existing | Future | |
| Pipeline Improvements | | | | | | | | |
| G-P1 | \$1,890,000 | 100% | 0% | 97% | 0% | 3% | 0% | 100% |
| G-P2 | \$203,000 | 46% | 54% | 9% | 5% | 37% | 49% | 100% |
| G-P3 | \$477,000 | 65% | 35% | 13% | 3% | 52% | 32% | 100% |
| G-P4 | \$549,000 | 100% | 0% | 97% | 0% | 3% | 0% | 100% |
| G-P5 | \$168,000 | 39% | 61% | 38% | 57% | 1% | 4% | 100% |
| G-P6 | \$1,169,000 | 100% | 0% | 20% | 0% | 80% | 0% | 100% |
| G-P7 | \$1,640,000 | 0% | 100% | 0% | 93% | 0% | 7% | 100% |
| G-P8 | \$2,120,000 | 0% | 100% | 0% | 93% | 0% | 7% | 100% |
| G-P10 | \$1,285,000 | 0% | 100% | 0% | 93% | 0% | 7% | 100% |
| G-P12 | \$178,000 | 0% | 100% | 0% | 93% | 0% | 7% | 100% |
| Tank Improvements | | | | | | | | |
| G-T-A1 | \$7,475,000 | 100% | 0% | 97% | 0% | 3% | 0% | 100% |
| G-T-A2 | \$7,475,000 | 39% | 61% | 38% | 57% | 1% | 4% | 100% |
| G-T-A3 | \$7,008,000 | 0% | 100% | 0% | 93% | 0% | 7% | 100% |
| G-T-B2 | \$9,517,000 | 18% | 82% | 4% | 7% | 14% | 75% | 100% |
| Pump Station Improvements | | | | | | | | |
| G-PS-B | \$1,124,000 | 46% | 54% | 9% | 5% | 37% | 49% | 100% |
| Valve Improvements | | | | | | | | |
| G-PRV-B1 | \$137,000 | 75% | 25% | 73% | 23% | 2% | 2% | 100% |
| Miscellaneous Improvements³ | | | | | | | | |
| G-WD1 | \$465,000 | 100% | 0% | 37% | 0% | 63% | 0% | 100% |
| Supply Improvements³ | | | | | | | | |
| G-W35 | \$103,000 | 0% | 100% | 0% | 37% | 0% | 63% | 100% |
| G-W1 | \$2,801,000 | 100% | 0% | 37% | 0% | 63% | 0% | 100% |

AKEL ENGINEERING GROUP, INC. 3/16/2020

Notes:
 1. CIP Cost includes master planning contingencies of 48.5% (Construction) and 25% (Capital Improvement)
 2. Unless noted otherwise, cost responsibility for Central Marina and Ord Community cost centers based on existing and future demands within the pressure zone served by each improvement.
 3. Cost responsibility for Central Marina and Ord Community cost centers based on 5-year Improvement data received from District staff December 18, 2017.

| Project | Cost Total | Intermediate Term Water CIP - Combined | | | | % Total |
|----------------------------------|---------------------|--|---------------------|--------------------|--------------------|---------|
| | | Marina Existing | Marina Future | Ord Existing | Ord Future | |
| G-P1 | \$1,890,000 | 97% | 0% | 3% | 0% | 100% |
| G-P2 | \$203,000 | 9% | 5% | 37% | 49% | 100% |
| G-P3 | \$477,000 | 13% | 3% | 52% | 32% | 100% |
| G-P4 | \$549,000 | 97% | 0% | 3% | 0% | 100% |
| G-P5 | \$168,000 | 38% | 57% | 1% | 4% | 100% |
| G-P6 | \$1,169,000 | 20% | 0% | 80% | 0% | 100% |
| G-P7 | \$1,640,000 | 0% | 93% | 0% | 7% | 100% |
| G-P8 | \$2,120,000 | 0% | 93% | 0% | 7% | 100% |
| G-P10 | \$1,285,000 | 0% | 93% | 0% | 7% | 100% |
| G-P12 | \$178,000 | 0% | 93% | 0% | 7% | 100% |
| Pipeline Improvements | | \$2,743,750 | \$4,977,610 | \$1,333,200 | \$624,440 | |
| G-T-A1 | \$7,475,000 | 97% | 0% | 3% | 0% | 100% |
| G-T-A2 | \$7,475,000 | 38% | 57% | 1% | 4% | 100% |
| G-T-A3 | \$7,008,000 | 0% | 93% | 0% | 7% | 100% |
| G-T-A4 | \$9,517,000 | 4% | 7% | 14% | 75% | 100% |
| Tank Improvements | | \$10,471,930 | \$11,444,380 | \$1,631,380 | \$7,927,310 | |
| G-PS-B | \$1,124,000 | 9% | 5% | 37% | 49% | 100% |
| Pump Station Improvements | | \$101,160 | \$56,200 | \$415,880 | \$550,760 | |
| G-PRV-B1 | \$137,000 | 37% | 0% | 63% | 0% | 100% |
| Valve Impr | \$137,000 | \$50,690 | \$0 | \$86,310 | \$0 | |
| G-WD1 | \$465,000 | 37% | 0% | 63% | 0% | 100% |
| Misc Improvements | | | | | | |
| G-W35 | \$103,000 | 0% | 37% | 0% | 63% | 100% |
| G-W1 | \$2,801,000 | 37% | 0% | 63% | 0% | 100% |
| Supply Improvements | | \$1,036,370 | \$38,110 | \$1,764,630 | \$64,890 | |
| Total | \$45,319,000 | \$14,403,900 | \$16,516,300 | \$5,231,400 | \$9,167,400 | |



Legend

- | | | | |
|---------------------------------------|----------------------------|--------------------------------|----------------|
| Planned Groundwater Recharge Location | Future Improvements | Existing Modeled System | Streets |
| Valves | Distribution Pipelines | Tank | Rivers/Streams |
| | | AWWP Pump Station | Waterbodies |
| | | Pipes | |
| | | PWM Transmission Main | |

PRELIMINARY

Figure 8.1
Capital Improvement Program
 Recycled Water Master Plan
 Marina Coast Water District



Table 8.2 Capital Improvement Program
 Recycled Water Master Plan
 Marina Coast Water District

PRELIMINARY

| Improv. No. | Improv. Type | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Cost (\$) | Estimated Construction Cost ¹ (\$) | Capital Improvement Cost ² (\$) | Suggested Cost Allocation | | | | Cost Sharing | |
|--|--------------|--|--|------------------------|----------------------|---------------|-------------|----------------------|------------------|---------------------------------|---|--|---------------------------|--------------|----------------|--------------------|------------------|--------------------|
| | | | | | | | | Unit Cost (\$/unit) | Infr. Cost (\$) | | | | Existing Users | Future Users | Central Marina | Fort Ord Community | Central Marina | Fort Ord Community |
| Distribution Facilities³ | | | | | | | | | | | | | | | | | | |
| Distribution Pipeline Improvements⁴ | | | | Existing Diameter (in) | New/Parallel/Replace | Diameter (in) | Length (ft) | | | | | | | | | | | |
| P-1 | Pipeline | Beach Rd | From Del Monte to Crescent Ave | - | New | 6 | 4,000 | 107 | 428,000 | 428,000 | 635,580 | 732,428 | 0% | 100% | 100% | 0% | 732,428 | 0 |
| P-2 | Pipeline | Carmel Ave | From Vaughn Ave to Crumpton Ln | - | New | 8 | 2,500 | 142 | 355,000 | 355,000 | 527,175 | 607,505 | 0% | 100% | 100% | 0% | 607,505 | 0 |
| P-3 | Pipeline | Abrams Dr | From Imjin Rd to Bunker Hill Dr | - | New | 6 | 2,300 | 107 | 246,100 | 246,100 | 365,459 | 421,146 | 0% | 100% | 0% | 100% | 0 | 421,146 |
| P-4 | Pipeline | Abrams Rd, Imjin Rd | From MacArthur Dr to Reservation Rd | - | New | 12 | 4,875 | 213 | 1,038,375 | 1,038,375 | 1,541,987 | 1,776,952 | 0% | 100% | 0% | 100% | 0 | 1,776,952 |
| P-5 | Pipeline | Reservation Road | From Blanco Rd to East Garrison | - | New | 12 | 9,100 | 213 | 1,938,300 | 1,938,300 | 2,878,376 | 3,316,976 | 0% | 100% | 0% | 100% | 0 | 3,316,976 |
| P-6 | Pipeline | 9th St | From Sea Glass Ave to 5th Ave | - | New | 6 | 1,050 | 107 | 112,350 | 112,350 | 166,840 | 192,262 | 0% | 100% | 0% | 100% | 0 | 192,262 |
| P-7 | Pipeline | 2nd Ave | From 10th St to 9th St | - | New | 6 | 750 | 107 | 80,250 | 80,250 | 119,171 | 137,330 | 0% | 100% | 0% | 100% | 0 | 137,330 |
| P-8 | Pipeline | Coe Ave | From Pacific Crest Dr to Paralta Ave | - | New | 8 | 1,500 | 142 | 213,000 | 213,000 | 316,305 | 364,503 | 0% | 100% | 0% | 100% | 0 | 364,503 |
| P-9 | Pipeline | Normandy Rd | From Blackhorse Reservoir to Eucalyptus Rd | - | New | 8 | 2,350 | 142 | 333,700 | 333,700 | 495,545 | 571,055 | 0% | 100% | 0% | 100% | 0 | 571,055 |
| P-10 | Pipeline | Normandy Rd | From General Jim Moore Blvd to Parker Flats Rd | - | New | 6 | 2,350 | 107 | 251,450 | 251,450 | 373,403 | 430,302 | 0% | 100% | 0% | 100% | 0 | 430,302 |
| Subtotal - Distribution System Improvements | | | | | | | | | 4,996,525 | 4,996,525 | 7,419,840 | 8,550,459 | | | | | 1,339,933 | 7,210,526 |
| Pressure Reducing Valve Improvements | | | | New/Replace | Size (in) | | | | | | | | | | | | | |
| PRV-1 | PRV | Intersection of Beach Rd and Crescent Ave | | New | 4 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 100% | 0% | 124,924 | 0 |
| PRV-2 | PRV | Intersection of Carmel Ave and Vaughn Ave | | New | 4 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 100% | 0% | 124,924 | 0 |
| PRV-3 | PRV | California Ave s/o 3rd Ave | | New | 6 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 0% | 100% | 0 | 124,924 |
| PRV-4 | PRV | Intersection of 9th St and 5th Ave | | New | 4 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 0% | 100% | 0 | 124,924 |
| PRV-5 | PRV | Intersection of Coe Ave and Buttercup Blvd | | New | 4 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 0% | 100% | 0 | 124,924 |
| PRV-6 | PRV | Intersection of General Jim Moore Blvd and Normandy Rd | | New | 4 | | | | 73,000 | 73,000 | 108,405 | 124,924 | 0% | 100% | 0% | 100% | 0 | 124,924 |
| Subtotal - Pressure Reducing Valve Improvements | | | | | | | | | 438,000 | 438,000 | 650,430 | 749,541 | | | | | 249,847 | 499,694 |
| Subtotal - Distribution Facilities | | | | | | | | | 5,434,525 | 5,434,525 | 8,070,270 | 9,300,000 | | | | | 1,589,780 | 7,710,220 |

Table 8.2 Capital Improvement Program
 Recycled Water Master Plan
 Marina Coast Water District

PRELIMINARY

| Improv. No. | Improv. Type | Alignment | Limits | Improvement Details | | Infrastructure Costs | | Baseline Construction Cost (\$) | Estimated Construction Cost ¹ (\$) | Capital Improvement Cost ² (\$) | Suggested Cost Allocation | | | | Cost Sharing | | |
|---|--------------|-------------------------------------|--|-------------------------|-------------------------|----------------------|------------------|---------------------------------|---|--|---------------------------|--------------|----------------|--------------------|-------------------|--------------------|--|
| | | | | | | Unit Cost (\$/unit) | Infr. Cost (\$) | | | | Existing Users | Future Users | Central Marina | Fort Ord Community | Central Marina | Fort Ord Community | |
| Transmission Facilities^{5,6} | | | | New/Replace | Pipe Length (ft) | | | | | | | | | | | | |
| TM-1 | Pipeline | Various | From AWTF Pump Station to Blackhorse Reservoir | New 24" Pipeline | | - | - | - | - | - | | | | | | | |
| Blackhorse Tank | Tank | Existing Water System Tank D-1 Site | | New 2.0 MG Storage Tank | - | - | - | - | - | - | | | | | | | |
| Subtotal - Transmission Facilities | | | | | | - | - | - | - | 10,513,217 | 0% | 100% | 5% | 95% | 525,661 | 9,987,556 | |
| Other Treatment Improvements^{5,7} | | | | | | | | | | | | | | | | | |
| TRT-1 | Various | Advanced Water Treatment | | | | - | - | - | - | 20,235,647 | 0% | 100% | 5% | 95% | 1,011,782 | 19,223,865 | |
| TRT-2 | Various | On Site Conversions | | | | | | | | 750,000 | 0% | 100% | 5% | 95% | 37,500 | 712,500 | |
| Subtotal - Other Treatment Improvements | | | | | | - | - | - | - | 20,985,647 | | | | | 1,049,282 | 19,936,365 | |
| Water Augmentation Project^{5,7} | | | | | | | | | | | | | | | | | |
| WAP-1 | Various | Advanced Water Treatment | | | | - | - | - | - | 12,973,333 | 77% | 23% | 49% | 51% | 6,356,933 | 6,616,400 | |
| WAP-2 | Various | Distribution Facilities | | | | | | | | 1,000,000 | 77% | 23% | 49% | 51% | 490,000 | 510,000 | |
| WAP-3 | Wells | Monitoring Wells | | | | | | | | 500,000 | 77% | 23% | 49% | 51% | 245,000 | 255,000 | |
| WAP-4 | Wells | Injection Well Facilities | | | | - | - | - | - | 5,526,667 | 77% | 23% | 49% | 51% | 2,708,067 | 2,818,600 | |
| Subtotal - Water Augmentation Project | | | | | | - | - | - | - | 20,000,000 | | | | | 9,800,000 | 10,200,000 | |
| Total Costs | | | | | | | | | | | | | | | | | |
| Distribution Facilities | | | | | | 5,434,525 | 5,434,525 | 8,070,270 | 9,300,000 | | | | | | 1,589,780 | 7,710,220 | |
| Transmission Facilities | | | | | | - | - | - | 10,513,217 | | | | | 525,661 | 9,987,556 | | |
| Other Treatment Improvements | | | | | | - | - | - | 20,985,647 | | | | | 1,049,282 | 19,936,365 | | |
| Water Augmentation Project | | | | | | - | - | - | 20,000,000 | | | | | 9,800,000 | 10,200,000 | | |
| Total - Recycled Water System Improvements | | | | | | 5,434,525 | 5,434,525 | 8,070,270 | 60,798,864 | | | | | 12,964,724 | 47,834,141 | | |



Notes:

1. Estimated Construction costs include 48.5 percent of baseline construction costs to account for unforeseen events and unknown field conditions, and for Contractor's overhead and profit, general conditions, and sales tax, consistent with 2007 Water Master Plan.
2. Capital Improvement Costs also include an additional 25 percent of the estimated construction costs to account for administration, construction management, and legal costs.
3. MCWD staff provided updated capital improvement costs for the distribution facilities, which were \$787,837 lower than predicted using the unit costs and associated contingencies. Thus, the \$787,837 reduction in cost was evenly distributed amongst the distribution facility improvements.
4. Distribution pipeline improvements consist of improvements necessary to connect existing distribution infrastructure to planned transmission pipeline. This does not include cost for improvements necessary to connect potential users directly to the planned transmission pipeline.
5. Improvement cost based on information received from District staff June 19, 2019.
6. Suggested cost center cost allocation based on estimated recycled water demands within each cost center.
7. Suggested cost center cost allocation based on intermediate-term water demands documented in the in-progress Water Master Plan, which includes the buildout of Central Marina and intermediate-term development limits of the Fort Ord Community.

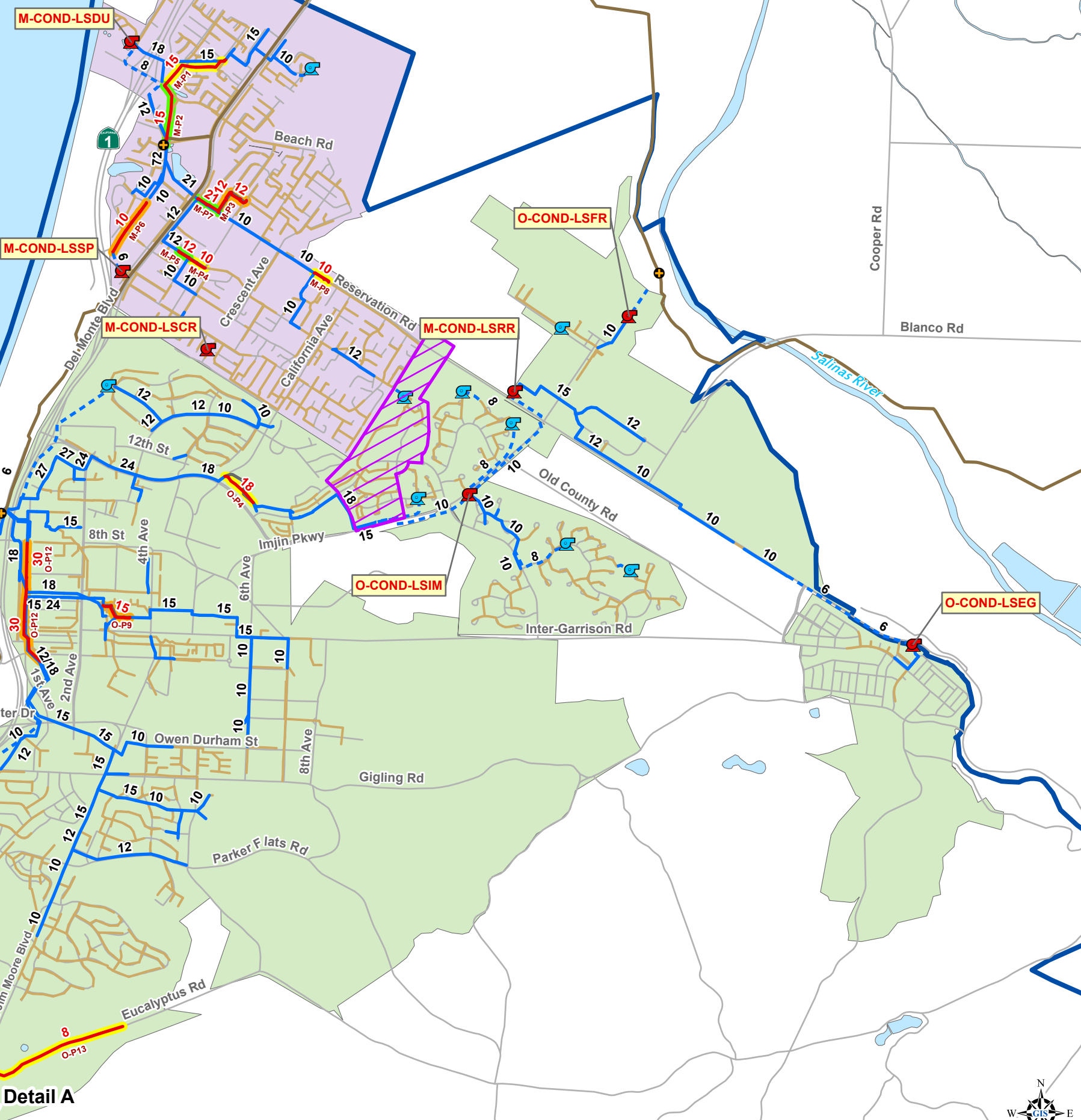
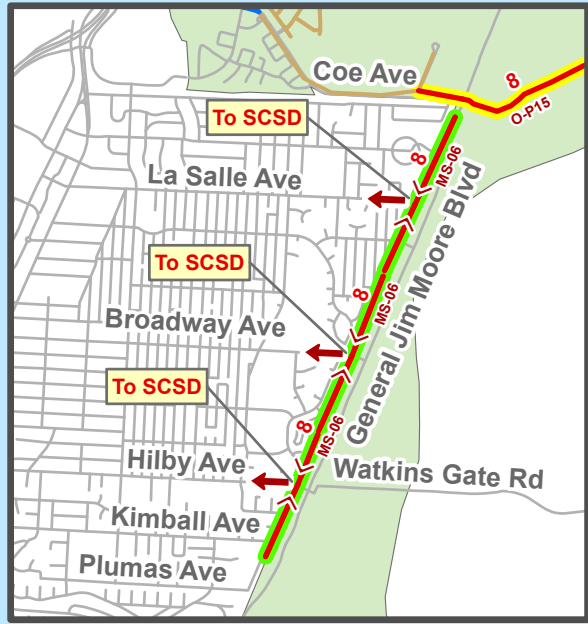
3/16/2020

Appendix B - Recycled Water Capital Improvement Plan Detail

Analysis using Table 8.2 - Recycled Water Master Plan, AKEL Engineering

| | Cost Total | % Allocation | | | | Cost Allocation | | | | |
|---|---------------------|-----------------|----------------|----------------|----------|--------------------|--------------------|--------------------|---------------------|--|
| | | % Current Users | % Future Users | Central Marina | Fort Ord | Current Marina | Future Marina | Current Ord | Future Ord | |
| Distribution Improvements | | | | | | | | | | |
| Distribution Pipeline Improvements | | | | | | | | | | |
| P-1 | \$732,428 | 0% | 100% | 100% | 0% | \$0 | \$732,428 | \$0 | \$0 | |
| P-2 | 607,505 | 0% | 100% | 100% | 0% | 0 | 607,505 | 0 | 0 | |
| P-3 | 421,146 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 421,146 | |
| P-4 | 1,776,952 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 1,776,952 | |
| P-5 | 3,316,976 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 3,316,976 | |
| P-6 | 192,262 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 192,262 | |
| P-7 | 137,330 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 137,330 | |
| P-8 | 364,503 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 364,503 | |
| P-9 | 571,055 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 571,055 | |
| P-10 | <u>430,302</u> | 0% | 100% | 0% | 100% | <u>0</u> | <u>0</u> | <u>0</u> | <u>430,302</u> | |
| Total Distribution Pipeline | \$8,550,459 | | | | | \$0 | \$1,339,933 | \$0 | \$7,210,526 | |
| Pressure Reducing Valve Improvements | | | | | | | | | | |
| PRV-1 | \$124,924 | 0% | 100% | 100% | 0% | \$0 | \$124,924 | \$0 | \$0 | |
| PRV-2 | 124,924 | 0% | 100% | 100% | 0% | 0 | 124,924 | 0 | 0 | |
| PRV-3 | 124,924 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 124,924 | |
| PRV-4 | 124,924 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 124,924 | |
| PRV-5 | 124,924 | 0% | 100% | 0% | 100% | 0 | 0 | 0 | 124,924 | |
| PRV-6 | <u>124,924</u> | 0% | 100% | 0% | 100% | <u>0</u> | <u>0</u> | <u>0</u> | <u>124,924</u> | |
| Total Pressure Reducing Valves | \$749,541 | | | | | \$0 | \$249,847 | \$0 | \$499,694 | |
| Total Distribution Facilities | | | | | | \$0 | \$1,589,780 | \$0 | \$7,710,220 | |
| Transmission Facilities | | | | | | | | | | |
| TM-1 | - | | | | | | - | | - | |
| Blackhorse Tank | - | | | | | | - | | - | |
| Total Transmission Facilities | \$10,513,217 | 0% | 100% | 5% | 95% | \$0 | \$525,661 | \$0 | \$9,987,556 | |
| Other Treatment Improvements | | | | | | | | | | |
| TRT-1 | \$20,235,647 | 0% | 100% | 5% | 95% | 0 | 1,011,782 | 0 | 19,223,865 | |
| TRT-2 | <u>750,000</u> | 0% | 100% | 5% | 95% | <u>0</u> | <u>37,500</u> | <u>0</u> | <u>712,500</u> | |
| Total Other Treatment Improvements | \$20,985,647 | 0 | 0 | 0 | 0 | \$0 | \$1,049,282 | \$0 | \$19,936,365 | |
| Water Augmentation Project | | | | | | | | | | |
| WAP-1 | \$12,973,333 | 77% | 23% | 49% | 51% | 4,894,839 | 1,462,095 | 5,094,628 | 1,521,772 | |
| WAP-2 | 1,000,000 | 77% | 23% | 49% | 51% | 377,300 | 112,700 | 392,700 | 117,300 | |
| WAP-3 | 500,000 | 77% | 23% | 49% | 51% | 188,650 | 56,350 | 196,350 | 58,650 | |
| WAP-4 | <u>5,526,667</u> | 77% | 23% | 49% | 51% | 2,085,211 | 622,855 | 2,170,322 | 648,278 | |
| Total Water Augmentation Project | \$20,000,000 | | | | | | \$2,254,000 | \$7,854,000 | \$2,346,000 | |
| Total Recycled Water CIP | \$60,798,864 | | | | | \$7,546,000 | \$5,418,723 | \$7,854,000 | \$39,980,141 | |

Detail A



Legend

Future Improvements

- Lift Stations
- Gravity Mains
- Force Mains
- Abandoned Lift Stations
- Abandoned Pipes

Existing Modeled System

- Lift Stations
- Outfalls

Gravity Mains by Size

- 8" and Smaller
- 10" and Larger
- Force Mains

- Monterey One Water Interceptor
- Planning Boundary

Cost Centers

- Central Marina
- Ord Community
- Ord Community Service Area
- Tributary to Central Marina Outfall
- Streets
- Waterbodies
- Rivers/Streams

PRELIMINARY

Figure 8.2
Intermediate-Term
Improvements
 Sewer Master Plan
 Marina Coast Water District



Table 8.4 Intermediate-Term Capital Improvement Program
Sewer Master Plan
Marina Coast Water District

PRELIMINARY

| Improv. No. | Type of Improvement | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Costs | Estimated Construction Cost ¹ | Capital Improvement Cost ^{2,3} | Construction Trigger | Suggested Cost Allocation | | Cost Allocation | |
|--|--------------------------|---|---|------------------------|----------------------|----------------------|--------|--|------------------|-----------------------------|--|---|---------------------------------|---------------------------|------------------|------------------|--------------|
| | | | | | | | | Unit Cost | Infr. Cost | | | | | Existing Users | Future Users | Existing Users | Future Users |
| | | | | | | | | (\$) | (\$) | (\$) | (\$) | (\$) | (%) | (%) | (\$) | (\$) | |
| Central Marina Sewer System | | | | | | | | | | | | | | | | | |
| Gravity Main Improvements | | | | | | | | | | | | | | | | | |
| | | | | Existing Diameter | New/Parallel/Replace | Diameter | Length | | | | | | | | | | |
| | | | | (in) | | (in) | (ft) | | | | | | | | | | |
| M-P1 | Gravity Main | ROW, Cove Way, Cardoza Ave | From Abdy Way to Reservation Rd | - | New | 15 | 1,975 | 303 | 598,745 | 598,800 | 889,300 | 1,111,700 | With Marina Station Development | 1% | 99% | 7,108 | 1,104,592 |
| M-P2 | Gravity Main | Reservation Rd | From Cardoza Ave to 150' s/o Seaside Cir | - | New | 15 | 1,725 | 303 | 522,955 | 523,000 | 776,700 | 970,900 | With Marina Station Development | 1% | 99% | 6,207 | 964,693 |
| M-P3 | Gravity Main | Eucalyptus St, Peninsula Dr, Vista del Camino | From Viking Ln to Reservation Rd | 8 | Replace | 12 | 1,350 | 279 | 376,527 | 376,600 | 559,300 | 699,200 | Existing & Future Improvement | 85% | 15% | 592,371 | 106,829 |
| M-P4 | Gravity Main | Carmel Ave | From Seacrest Ave to Sunset Ave | 8 | Replace | 10 | 575 | 243 | 139,455 | 139,500 | 207,200 | 259,000 | Existing Deficiency | 100% | 0% | 259,000 | 0 |
| M-P5 | Gravity Main | Carmel Ave | From Sunset Ave to Casa de Bolea | 8 | Replace | 12 | 350 | 279 | 97,618 | 97,700 | 145,100 | 181,400 | Existing Deficiency | 100% | 0% | 181,400 | 0 |
| M-P6 | Gravity Main | Lake Dr | From HWY 1 to Messinger Dr | 6, 8 | Replace | 10 | 1,675 | 243 | 406,237 | 406,300 | 603,400 | 754,300 | Approx. 600 EDUs | 46% | 54% | 348,198 | 406,102 |
| M-P7 | Gravity Main | Reservation Rd | From Vista Del Camino to Del Monte Blvd | 12, 18 | Replace | 21 | 750 | 352 | 263,751 | 263,800 | 391,800 | 489,800 | Approx. 2,950 EDUs | 41% | 59% | 202,766 | 287,034 |
| M-P8 | Gravity Main | Reservation Rd | From 200' w/o Crestview Ct to 800' w/o Crestview Ct | 8 | Replace | 10 | 525 | 243 | 127,328 | 127,400 | 189,200 | 236,500 | Approx. 200 EDUs | 10% | 90% | 24,456 | 212,044 |
| Subtotal - City of Marina Pipeline Improvements | | | | | | | | 2,532,617 | 2,533,100 | 3,762,000 | 4,702,800 | | | 1,621,505 | 3,081,295 | | |
| Lift Station Improvements | | | | | | | | | | | | | | | | | |
| | | | | Existing Capacity | Improvement Type | Recommended Capacity | | | | | | | | | | | |
| | | | | (gpm) | | (gpm) | | | | | | | | | | | |
| M-LSD | Lift Station Replacement | Dunes Lift Station | | 2 x 700 | Capacity Upgrade | 3 x 450 | | 1,127,627 | 1,127,700 | 1,674,700 | 2,093,400 | Existing Deficiency | 100% | 0% | 2,093,400 | 0 | |
| M-LSCR | Lift Station Replacement | Crescent Lift Station | | 2 x 100 | Station Replacement | 2 x 100 | | - | - | - | 401,576 | Condition Improvement | 100% | 0% | 401,576 | 0 | |
| Subtotal - City of Marina Lift Station Improvements | | | | | | | | 1,127,627 | 1,127,700 | 1,674,700 | 2,494,976 | | | 2,494,976 | 0 | | |
| Condition Assessment Improvements⁴ | | | | | | | | | | | | | | | | | |
| | | | | Improvement Type | | | | | | | | | | | | | |
| M-COND-LSSP | Condition | San Pablo Lift Station | | Condition Improvements | | | | 24,600 | 24,600 | 36,800 | 46,200 | Condition Improvement | 100% | 0% | 46,200 | 0 | |
| Subtotal - Central Marina Condition Assessment Improvements | | | | | | | | 24,600 | 24,600 | 36,800 | 46,200 | | | 46,200 | 0 | | |
| Miscellaneous Improvements | | | | | | | | | | | | | | | | | |
| | | | | Improvement Type | | | | | | | | | | | | | |
| MS-M1 | WWTP | Located at the Marina WWTP | | Demolition | | | | - | - | - | 883,265 | Planned System Improvement | 100% | 0% | 883,265 | 0 | |
| MS-M2 | Gravity Main | Del Monte Boulevard | Del Monte Blvd/ Reservation Rd | Replace | | | | - | - | - | 553,161 | As Funding is Available | 100% | 0% | 553,161 | 0 | |
| Subtotal - Central Marina Miscellaneous Improvements | | | | | | | | | | | 1,436,426 | | | 1,436,426 | 0 | | |
| Total Central Marina Improvement Costs | | | | | | | | | | | | | | | | | |
| | | | | | | | | Gravity Main Improvements | 2,532,617 | 2,533,100 | 3,762,000 | 4,702,800 | | | 1,621,505 | 3,081,295 | |
| | | | | | | | | Lift Station Improvements | 1,127,627 | 1,127,700 | 1,674,700 | 2,494,976 | | | 2,494,976 | 0 | |
| | | | | | | | | Condition Assessment Improvements | 24,600 | 24,600 | 36,800 | 46,200 | | | 46,200 | 0 | |
| | | | | | | | | Miscellaneous Improvements | 0 | 0 | 0 | 1,436,426 | | | 1,436,426 | 0 | |
| Total - Central Marina Improvements | | | | | | | | 3,684,844 | 3,685,400 | 5,473,500 | 8,680,402 | | | 5,599,107 | 3,081,295 | | |

Table 8.4 Intermediate-Term Capital Improvement Program
Sewer Master Plan
Marina Coast Water District

PRELIMINARY

| Improv. No. | Type of Improvement | Alignment | Limits | Improvement Details | | | | Infrastructure Costs | | Baseline Construction Costs | Estimated Construction Cost ¹ | Capital Improvement Cost ^{2,3} | Construction Trigger | Suggested Cost Allocation | | Cost Allocation | |
|---|---|-------------------------------|---|---------------------|------------------------|----------------------|--------|----------------------|------------------|-----------------------------|--|---|-------------------------------|---------------------------|------------------|-----------------|--------------|
| | | | | | | | | Unit Cost | Infr. Cost | | | | | Existing Users | Future Users | Existing Users | Future Users |
| | | | | | | | | (\$) | (\$) | (\$) | (\$) | (\$) | (%) | (%) | (\$) | (\$) | |
| Ord Community Sewer System | | | | | | | | | | | | | | | | | |
| Gravity Main Improvements | | | | | | | | | | | | | | | | | |
| | | | | Existing Diameter | New/Parallel/Replace | Diameter | Length | | | | | | | | | | |
| | | | | (in) | | (in) | (ft) | | | | | | | | | | |
| O-P4 | Gravity Main | ROW e/o Imjin Pkwy | From California Ave to 475' n/o Abrams Dr | 18 | Replace | 18 | 1,100 | 327 | 360,157 | 360,200 | 534,900 | 668,700 | With Sea Haven Development | 53% | 47% | 356,905 | 311,795 |
| O-P9 | Gravity Main | ROW n/o Inter-Garrison Rd | Jogging from 4th Ave to 1,300' w/o 4th Ave | 10 | Replace | 15 | 1,675 | 303 | 507,797 | 507,800 | 754,100 | 942,700 | Existing Deficiency | 40% | 60% | 376,128 | 566,572 |
| O-P12 | Gravity Main | 1st Ave | From 1st St to 8th St | 12,18,30 | Replace | 30 | 3,100 | - | - | - | - | 408,340 | Condition Improvement | 100% | 0% | 408,340 | 0 |
| O-P13 | Gravity Main | Eucalyptus Rd | From approximately 4,000' e/o General Jim Moore Blvd to approximately 800' w/o General Jim Moore Blvd | - | New | 8 | 5,300 | 218 | 1,156,867 | 1,156,900 | 1,718,000 | 2,147,500 | With Seaside East Development | 0% | 100% | 0 | 2,147,500 |
| Subtotal - Ord Community Pipeline Improvements | | | | | | | | 2,024,820 | 2,024,900 | 3,007,000 | 4,167,240 | | | 1,141,372 | 3,025,868 | | |
| Force Main Improvements | | | | | | | | | | | | | | | | | |
| | | | | Existing Diameter | New/Parallel/Replace | Diameter | Length | | | | | | | | | | |
| | | | | (in) | | (in) | (ft) | | | | | | | | | | |
| O-FM2 | Force Main | Monterey Rd, existing ROW | From relocated Ord Village LS to existing gravity main n/o Corregidor Rd | 10 | Replace | 10 | 3,950 | 214 | 845,756 | 845,800 | 1,256,100 | 1,570,200 | With O-LSO | 42% | 58% | 667,033 | 903,167 |
| Subtotal - Ord Community Force Main Improvements | | | | | | | | 845,756 | 845,800 | 1,256,100 | 1,570,200 | | | 667,033 | 903,167 | | |
| Lift Station Improvements | | | | | | | | | | | | | | | | | |
| | | | | Existing Capacity | Improvement Type | Recommended Capacity | | | | | | | | | | | |
| | | | | (gpm) | | (gpm) | | | | | | | | | | | |
| O-LSG | Lift Station/ Force Main | Gigling Lift Station | Gigling LS and FM Improvements | - | | - | - | - | - | - | - | 2,021,079 | With O-COND-LSGG | 100% | 0% | 2,021,079 | 0 |
| O-LSO | Lift Station Rehabilitation | | | - | | - | - | - | - | - | - | 2,247,000 | Planned System Improvement | 43% | 57% | 956,206 | 1,290,794 |
| O-LSB | Lift Station Demolition and Replacement | | Booker, Hatten, Neeson LS improvements | - | | - | - | - | - | - | - | 726,240 | Planned System Improvement | 100% | 0% | 726,240 | 0 |
| Subtotal - Ord Community Lift Station Improvements | | | | | | | | 0 | 0 | 0 | 4,994,319 | | | 3,703,525 | 1,290,794 | | |
| Condition Assessment Improvements⁴ | | | | | | | | | | | | | | | | | |
| | | | | Improvement Type | | | | | | | | | | | | | |
| O-COND-LSGG | Condition | Gigling Lift Station | | | Condition Improvements | | | 444,300 | 444,300 | 660,200 | 825,600 | | With O-LSG | 100% | 0% | 825,600 | 0 |
| O-COND-LSIM | Condition | Imjin Lift Station | | | Condition Improvements | | | 29,000 | 29,000 | 43,400 | 54,400 | | Condition Improvement | 100% | 0% | 54,400 | 0 |
| O-COND-LSFR | Condition | Fritzche Lift Station | | | Condition Improvements | | | 63,200 | 63,200 | 94,100 | 117,700 | | Condition Improvement | 100% | 0% | 117,700 | 0 |
| O-COND-LSEG | Condition | East Garrison Lift Station | | | Condition Improvements | | | 32,300 | 32,300 | 48,300 | 60,700 | | Condition Improvement | 100% | 0% | 60,700 | 0 |
| O-COND-LSRR | Condition | Reservation Road Lift Station | | | Condition Improvements | | | 39,900 | 39,900 | 59,600 | 74,700 | | Condition Improvement | 100% | 0% | 74,700 | 0 |
| Subtotal - Ord Community Condition Assessment Improvements | | | | | | | | 608,700 | 608,700 | 905,600 | 1,133,100 | | | 1,133,100 | 0 | | |
| Miscellaneous Improvements | | | | | | | | | | | | | | | | | |
| MS-O1 | Service | | Del Rey Oaks Collection System Planning | | | | | | | | 61,200 | | With Development | 0% | 100% | 0 | 61,200 |
| MS-O2 | Gravity Main | | SCSD Sewer Improvements - Del Rey Oaks | | | | | | | | 2,039,964 | | With Development | 0% | 100% | 0 | 2,039,964 |
| MS-O3 | Service | | Monterey One Water Buy-In | | | | | | | | 11,040,808 | | - | 50% | 50% | 5,520,404 | 5,520,404 |
| MS-O4 | Gravity Main | | Inter-Garrison/ 8th Avenue Sewer Connection | | | | | | | | 1,035,000 | | With Development | 0% | 100% | 0 | 1,035,000 |
| MS-O5 | WWTP | | Demolish Ord Main Garrison WWTP | | | | | | | | 1,623,648 | | Planned System Improvement | 100% | 0% | 1,623,648 | 0 |
| MS-O6 | Gravity Main | | Seaside East Side Developments Parcels (future growth) | | | | | | | | 6,480,709 | | With Development | 0% | 100% | 0 | 6,480,709 |
| MS-O7 | Lift Station | | Miscellaneous Lift Station Improvements | | | | | | | | 1,497,360 | | Planned System Improvement | 50% | 50% | 748,680 | 748,680 |

Table 8.4 Intermediate-Term Capital Improvement Program
 Sewer Master Plan
 Marina Coast Water District

PRELIMINARY

| Improv. No. | Type of Improvement | Alignment | Limits | Improvement Details | Infrastructure Costs | | Baseline Construction Costs | Estimated Construction Cost ¹ | Capital Improvement Cost ^{2,3} | Construction Trigger | Suggested Cost Allocation | | Cost Allocation | |
|--|----------------------------|---------------------------------------|--------|--|---|------------------|-----------------------------|--|---|----------------------------|---------------------------|--------------|-------------------|-------------------|
| | | | | | Unit Cost | Infr. Cost | | | | | Existing Users | Future Users | Existing Users | Future Users |
| | | | | | (\$) | (\$) | | | | | (%) | (%) | (\$) | (\$) |
| MS-08 | Lift Station/ Gravity Main | | | Cypress Knolls Sewer Pipeline and Lift Station Improvement Project | | | | | 97,424 | Planned System Improvement | 0% | 100% | 0 | 97,424 |
| Subtotal - Ord Community Miscellaneous Improvements | | | | | 0 | 0 | 0 | 0 | 23,876,113 | | | | 7,892,732 | 15,983,381 |
| Total Ord Community Improvement Costs | | | | | | | | | | | | | | |
| | | | | | Gravity Main Improvements | 2,024,820 | 2,024,900 | 3,007,000 | 4,167,240 | | | | 1,141,372 | 3,025,868 |
| | | | | | Force Main Improvements | 845,756 | 845,800 | 1,256,100 | 1,570,200 | | | | 667,033 | 903,167 |
| | | | | | Lift Station Improvements | 0 | 0 | 0 | 4,994,319 | | | | 3,703,525 | 1,290,794 |
| | | | | | Condition Assessment Improvements | 608,700 | 608,700 | 905,600 | 1,133,100 | | | | 1,133,100 | 0 |
| | | | | | Miscellaneous Improvements | 0 | 0 | 0 | 23,876,113 | | | | 7,892,732 | 15,983,381 |
| | | | | | Total Ord Community Community Improvements | 3,479,277 | 3,479,400 | 5,168,700 | 35,740,972 | | | | 14,537,762 | 21,203,210 |
| General Miscellaneous Sewer System Improvements | | | | | | | | | | | | | | |
| G-1 | Odor Control Project | Various Locations | | Odor Control Project | | | | | 100,000 | Planned System Improvement | 100% | 0% | 100,000 | 0 |
| G-2 | Other | Corporation Yard Demolition and Rehab | | | | | | | 116,300 | As Funding is Available | 100% | 0% | 116,300 | 0 |
| Subtotal - General Sewer System Improvements | | | | | | | | | 216,300 | | | | 216,300 | 0 |
| Total Sewer System Improvement Costs | | | | | | | | | | | | | | |
| | | | | | Gravity Main Improvements | 4,557,438 | 4,558,000 | 6,769,000 | 8,870,040 | | | | 2,762,877 | 6,107,163 |
| | | | | | Force Main Improvements | 845,756 | 845,800 | 1,256,100 | 1,570,200 | | | | 667,033 | 903,167 |
| | | | | | Lift Station Improvements | 1,127,627 | 1,127,700 | 1,674,700 | 7,489,295 | | | | 6,198,501 | 1,290,794 |
| | | | | | Condition Assessment Improvements | 633,300 | 633,300 | 942,400 | 1,179,300 | | | | 1,179,300 | 0 |
| | | | | | Miscellaneous Improvements | 0 | 0 | 0 | 25,528,839 | | | | 9,545,458 | 15,983,381 |
| | | | | | Total Improvement Cost | 7,164,120 | 7,164,800 | 10,642,200 | 44,637,674 | | | | 20,353,170 | 24,284,504 |



3/16/2020

- Notes :
1. Estimated Construction costs include 48.5 percent of baseline construction costs to account for unforeseen events and unknown field conditions, and for Contractor's overhead and profit, general conditions, and sales tax, consistent with 2007 Water Master plan.
 2. Capital Improvement Costs also include an additional 25 percent of the estimated construction costs to account for administration, construction management, and legal costs.
 3. Costs for improvements shown with only Capital Improvement Cost are based on information provided by District staff.
 4. Costs associated with condition assessment improvements are included for planning purposes and are to be implemented at the discretion of District staff or may be superceded by other planned lift station improvements.

Appendix B2: Capital Improvement Plan - Adjustments

Data provided by Marina Coast Water District

Appendix B: Recycled Water CIP Adjustments

| | Total | Marina Future | Ord Future |
|---|---------------------|----------------------|---------------------|
| Total CIP Cost - Developer Share | \$45,398,864 | \$5,418,723 | \$39,980,141 |
| % Share | | 12% | 88% |
| Grants | (\$7,294,569) | (\$870,666) | (\$6,423,903) |
| FORA Capital Contribution | (\$4,300,000) | | (\$4,300,000) |
| Future Interest Costs ¹ | \$10,217,171 | \$1,219,502 | \$8,997,669 |
| Total Recycled Water Adjustments | -\$1,377,398 | \$348,836 | -\$1,726,234 |

1 - 3 loans to fund RW projects net of Capital Contributions and Grants, 30 year terms:

\$17.6m @ 1.8% interest Year 1, \$11.5m @ 1.8% interest Year 6, \$4.5m @ 1.8% interest Year 12

Appendix B: Adjustments - Estimated Future Water and Sewer CIP Financing Costs
Includes All Multi-Developer Future Capital Improvement Projects (Source MCWD 2020-21 5-yr CIP dated 6/8/2020)

| | | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 | Out Years | Total |
|--|-------------------------------------|------------------|-------------------|------------------|------------------|----------------|------------------|-------------------|-------------------|
| Marina Water | | | | | | | | | |
| MW-W4 | CA Ave Pipeline | 0 | 0 | 0 | 0 | 0 | 584,000 | 0 | 584,000 |
| | Subtotal | 0 | 0 | 0 | 0 | 0 | 584,000 | 0 | 584,000 |
| Marina Sewer | | | | | | | | | |
| MS-0205 (S6) | Reservation Rd 200' W VCCourt | 0 | 0 | 0 | 0 | 375,000 | 0 | 0 | 375,000 |
| MS-0137 (S5) | Reservation Rd Via Del Camino | 0 | 0 | 0 | 0 | 0 | 489,800 | 0 | 489,800 |
| MS-2 | Peninsula Dr & Vista Del Camino | 0 | 0 | 0 | 0 | 0 | 0 | 699,200 | 699,200 |
| MS-4 | Lake dr Pipeline Improvements | 0 | 0 | 0 | 0 | 0 | 0 | 754,300 | 754,300 |
| | Subtotal | 0 | 0 | 0 | 0 | 375,000 | 489,800 | 1,453,500 | 2,318,300 |
| Ord Water | | | | | | | | | |
| OW-0206 | Inter-Garrison Rd Up-Sizing | 772,400 | 0 | 0 | 0 | 0 | 0 | 0 | 772,400 |
| OW-0202 (W18) | South Boundary Rd Pipeline | 40,000 | 2,660,000 | 0 | 0 | 0 | 0 | 0 | 2,700,000 |
| OW-11 | Seaside Resort Pipeline - Coe Ave | 0 | 0 | 0 | 0 | 0 | 0 | 684,000 | 684,000 |
| OW-12 | Seaside East Pipeline - Zone D | 0 | 0 | 0 | 0 | 0 | 0 | 535,000 | 535,000 |
| OW-14 | Parker Flats Cutoff Rd Pipeline | 0 | 0 | 0 | 0 | 0 | 0 | 2,030,000 | 2,030,000 |
| OW-0171 (W13) | Eucalyptus Rd Pipeline | 0 | 0 | 0 | 0 | 0 | 0 | 4,312,000 | 4,312,000 |
| | Subtotal | 812,400 | 2,660,000 | 0 | 0 | 0 | 0 | 7,561,000 | 11,033,400 |
| Ord Sewer | | | | | | | | | |
| OS-0205 (S19) | Imjin LS & Force Main Phase 1 | 125,000 | 1,161,370 | 0 | 0 | 0 | 0 | 0 | 1,286,370 |
| OS-0148 (S7) | Sea Haven Sewer Pipeline | 0 | 0 | 0 | 0 | 0 | 668,700 | 0 | 668,700 |
| OS-0202 (MS-02) | Sewer Improvements-DRO | 0 | 0 | 0 | 0 | 0 | 502,454 | 1,537,510 | 2,039,964 |
| OS-0210 (S9) | 1st Ave Sewer Pipeline Replacement | 0 | 0 | 0 | 0 | 0 | 0 | 408,340 | 408,340 |
| OS-0214 (MS-04) | InterGarrison/8th Ave SS | 0 | 0 | 0 | 0 | 0 | 0 | 1,035,000 | 1,035,000 |
| OS-0216 (MS-03) | MOW Capacity Buy-In Beyond 2.2 MGD | 0 | 0 | 0 | 0 | 0 | 0 | 11,040,808 | 11,040,808 |
| | Subtotal | 125,000 | 1,161,370 | 0 | 0 | 0 | 1,171,154 | 14,021,658 | 16,479,182 |
| General Water (29% Marina, 71% Ord) | | | | | | | | | |
| GW-0112 (W21) | A1 & A2 Tanks & B/C Booster Station | 364,720 | 6,695,000 | 6,590,000 | 0 | 0 | 0 | 0 | 13,649,720 |
| GW-0305 (W23) | CA Ave & Imjin Pkwy Pipeline | 0 | 2,400,000 | 0 | 0 | 0 | 0 | 0 | 2,400,000 |
| GW-0123 (W27) | B2" Zone Tank @ CSUMB | 0 | 140,000 | 1,275,000 | 8,102,000 | 0 | 0 | 0 | 9,517,000 |
| GW-0210 (W26) | Reservoir A3 (1.6 MG) | 0 | 0 | 0 | 0 | 0 | 0 | 7,186,000 | 7,186,000 |
| GW-28 | Well 35 Pump Replacement | 0 | 0 | 0 | 0 | 0 | 0 | 103,000 | 103,000 |
| GW-29 | Wellhead Treatment | 0 | 0 | 0 | 0 | 0 | 0 | 2,081,000 | 2,081,000 |
| | Subtotal | 364,720 | 9,235,000 | 7,865,000 | 8,102,000 | 0 | 0 | 9,370,000 | 34,936,720 |
| | Marina Water Share | 105,800 | 2,678,200 | 2,280,900 | 2,349,600 | 0 | 0 | 2,717,300 | 10,131,600 |
| | Ord Water Share | 258,920 | 6,556,800 | 5,584,100 | 5,752,400 | 0 | 0 | 6,652,700 | 24,805,120 |
| Total | | | | | | | | | |
| | Total Marina Water | 105,800 | 2,678,200 | 2,280,900 | 2,349,600 | 0 | 584,000 | 2,717,300 | 10,715,600 |
| | Total Marina Sewer | 0 | 0 | 0 | 0 | 375,000 | 489,800 | 1,453,500 | 2,318,300 |
| | Total Ord Water | 1,071,320 | 9,216,800 | 5,584,100 | 5,752,400 | 0 | 0 | 14,213,700 | 35,838,520 |
| | Total Ord Sewer | 125,000 | 1,161,370 | 0 | 0 | 0 | 1,171,154 | 14,021,658 | 16,479,182 |
| | Total All | 1,302,120 | 13,056,370 | 7,865,000 | 8,102,000 | 375,000 | 2,244,954 | 32,406,158 | 65,351,602 |
| Total Through 24/25: 32,945,444 | | | | | | | | | |

CIP Financing Cost (Based on Financing CIP Projects Through 2024/25)

| | | | |
|---------------------------------|-----------------|----------|-------|
| Financing \$32.945M 20yrs @2.5% | \$2,113,355.64 | per year | 2.50% |
| Total Payments | \$42,267,112.75 | 20yrs | 20 |
| Total Interest Cost | \$9,321,668.75 | | |

CIP Interest Cost Allocation (Based on Value of CIP Projects Through 2024/25)

| | |
|--------------------------|----------------|
| 24.3% Total Marina Water | \$2,263,116.18 |
| 2.6% Total Marina Sewer | \$244,688.74 |
| 65.6% Total Ord Water | \$6,118,525.66 |
| 7.5% Total Ord Sewer | \$695,338.17 |

Appendix C: FY 2021 Proposed Water Use Factors

Proposed Marina Coast Water District Water Use Factors for
Determining Capacity Charges

| Type of Use | Basis | Existing Assigned Water Use Rate By Acre-Ft | Proposed Assigned Water Use Rate By Acre-Ft |
|--|----------|--|---|
| <u>Residential</u> | | | |
| Multi Family - Apartment | DU | x 0.33 | 0.21 |
| Apartment (senior complex) | DU | x | 0.12 |
| Group Housing (boarding, dormitory, convalescent) | Occupant | x | 0.062 |
| Condominium/Townhouse | DU | x 0.33 | 0.24 |
| Mobile Home | DU | x 0.33 | 0.21 |
| Multi-Family - Duplex to Fourplex | DU | x 0.33 | 0.24 |
| Single Family 0<lot<0.08 acres (13 or more units per acre) | DU | x 0.33 | 0.25 |
| Single Family 0.08<=lot<0.22 acres (5-12 Units/Acre) | DU | x 0.33 | 0.28 |
| Single Family 0.22<=lot<0.67 (2- 4 Units/acre) | DU | x 0.33 | 0.52 |
| Single Family (lot>= 0.67 acres) | acres | x | 0.89 |
| Accessory Dwelling Unit < 640 sq. ft. | DU | x | 0.17 |
| Accessory Dwelling Unit 641 to 800 sq. ft. | DU | x | 0.21 |
| Accessory Dwelling Unit 841-1200 sq. ft. | DU | x | 0.25 |
| <u>Non-Residential</u> | | | |
| Auto Sales/Repair Shops (Gross Floor Area) | sq. ft. | x 0.00007 | 0.00006 |
| Bank | sq. ft. | x | 0.00030 |
| Bakery | sq. ft. | x | 0.00027 |
| Bar (w/o restaurant) | sq. ft. | x 0.024/seat | 0.00023 |
| Beauty shop/barber shop | stations | x 0.059 | 0.050 |
| Car Wash w/ recycle | sq. ft. | x * | * |
| Child Care | sq. ft. | x 0.0072 | 0.0061 |
| Dry Cleaners (onsite cleaning) | sq. ft. | x 0.00040 | 0.00040 |
| Gas Station (w/o minimart or restaurant) | pumps | x 0.1051 | 0.1051 |
| Gym, Health Club (w/o aquatics) | sq. ft. | x | 0.000117 |
| Hotel/Motel/Bed & Breakfast (Guest room portion only) | units | x 0.170 | 0.110 |
| Laundromat (self-serve) | washers | x 0.202 | 0.202 |
| Laundry - Commercial | sq. ft. | x 0.1735 | * |
| Office - General (nonmedical, includes chiropractor) | sq. ft. | x 0.00012 | 0.000102 |
| Office - Government, Education | sq. ft. | x | 0.000092 |
| Office - Dental | sq. ft. | x 0.00029 | |
| Office - Medical, Dental | sq. ft. | x 0.00018 | 0.000162 |
| Manufacturing (other than food, beverage, chemical) | sq. ft. | x | 0.056 |
| Manufacturing (food, beverage, chemical) | sq. ft. | x | * |
| Meeting Halls, Churches, School Room | sq. ft. | x 0.0001 | 0.000092 |
| Nursing Home (care portion only) | bed | x 0.142/room | 0.12 |
| Laboratory | sq. ft. | x | 0.000082 |
| Laboratory - Photographic | sq. ft. | x 0.003 | 0.003 |
| Landscape (non-turf) | acres | x 2.1 | 2.1 |
| Landscape (turf) | acres | x 2.5 | 2.5 |
| Plant Nursery | sq. ft. | x 0.00009 | 0.00009 |

Proposed Marina Coast Water District Water Use Factors for
Determining Capacity Charges

| Type of Use | Basis | Existing Assigned Water Use Rate By Acre-Ft | Proposed Assigned Water Use Rate By Acre-Ft |
|---|---------|--|---|
| Public Restroom | toilets | x 0.0676 | 0.058 |
| Restaurant (incl. fast food, deli, sandwich shop) | seats | x 0.029 | |
| Restaurant (full service - 3 meals, dish washing) | sq. ft. | x | 0.00125 |
| Restaurant (Fast-food/casual with onsite prep) | sq. ft. | x | 0.00051 |
| Restaurant (take out w/ minimal onsite prep) | sq. ft. | x 0.0027 | 0.00027 |
| Store - General Retail (Department Store) | sq. ft. | x 0.00005 | 0.00005 |
| Store - Grocery and Markets | sq. ft. | x 0.00039 | 0.00033 |
| Swimming Pool (per 100 sq. ft. pool area) | | x 0.020 | 0.02 |
| Theater | seats | x 0.0014 | 0.0012 |
| Veterinary | sq. ft. | x 0.00026 | 0.00022 |
| Warehouse, Distribution, Self Storage | sq. ft. | x 0.00001 | 0.00001 |

Water use factors were updated based on a survey of similar coastal California water agencies and a 2011 study by A&N Technical Services for Monterey Peninsula Water Management District (MPWMD) The other coastal water agencies included Soquel Creek Water District (near Santa Cruz), the City of Santa Barbara, and Cal-American Water District – Monterey. Landscape factors continue to be calculated based on evapotranspiration (ET) factors.