MT. VIEW SANITARY DISTRICT

FACILITIES REHABILITATION PROGRAM & CAPITAL IMPROVEMENT PROGRAM

FISCAL YEAR 2019-2020 UPDATE

District Board of Directors
Stanley R. Caldwell - President
Gregory T. Pyka - Vice President
Brian A. Danley
David P. Maggi
Elmer “Al” J. Schaal

Prepared by:
Chris Elliott, District Engineer

July 11, 2019
INTRODUCTION

BACKGROUND

District capital projects are administered jointly through the Facilities Rehabilitation Program (FRP) and Capital Improvement Program (CIP). The FRP is managed under Fund 3410 and consists of smaller, recurring capital expenditures, equipment repair and replacement, and maintenance projects. The CIP is managed under Fund 3412 and encompasses larger, long-term projects and studies related to repairs / improvements to, or rehabilitation / replacement of the District’s core capital assets.

The previous overall FRP / CIP plan, adopted by the District’s Board of Directors in 2011, spanned twenty (20) years and was broken into four, 5-year phases. It identified the District’s capital project needs and anticipated expenditures and revenues over that time period, and was based upon a number of planning documents including the 1998 Long Range Plan Update, the 2009 Sanitary Sewer Management Plan and biennial audits, the 2009 Pump Station Reliability Evaluation, the 2011 Wastewater Treatment Plant System Reliability Evaluation, the 2013 Moorhen Marsh Management Plan, and the 2013 Collection System Flow Monitoring and Hydraulic Modeling Study.

DISCUSSION

Nearly eight (8) fiscal years have passed since the 2011 plan was originally adopted, and significant progress has been made on the projects planned therein. Looking ahead to Fiscal Year 2019-2020, now is the proper time to adopt a new plan, for the following reasons:

- Several large-scale projects (Biofilter & Biotower Equipment Replacement, Moorhen Marsh Phases A and B) have just been completed, and there is a natural break to reset course before moving forward again.

- The plan needs to be reviewed and reshaped because some project priorities have changed, other projects are no longer relevant or necessary, and new project needs have arisen over time.

- The District’s financial situation is markedly different now than it was in 2011; reserves have largely been spent and debt has been taken on.
Organizational change is ongoing at the District. The new FRP / CIP plan allows new staff to redefine the plan and take ownership, collaborate with each other, and build the interconnectedness of their functions.

District staff have reviewed a list of outstanding projects from the 2011 plan, added known needs, removed unnecessary projects, and re-prioritized an updated project list. Based on those priorities, a new FRP / CIP plan with an eight-year horizon has been created; beyond eight years, project needs, estimated costs, and projected revenues become difficult to forecast. The new plan attempts to achieve financial balance (cash flow) and also organizational balance (staff’s ability to manage and support the workload) to the maximum extent possible.

The following table summarizes the plant projects, collection system and pump station projects, and marsh-related projects envisioned in the first four fiscal years of the new plan.

<table>
<thead>
<tr>
<th>Plant Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV Disinfection Replacement</td>
<td>19 to 21</td>
<td>$4,126</td>
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<tr>
<td>10-year Plant Masterplan</td>
<td>21</td>
<td>$500 ²</td>
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<tr>
<td>Digester Heat / Mix Room Improvements</td>
<td>21 to 22</td>
<td>$829</td>
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<td>Plant Electrical &amp; SCADA Systems Upgrades</td>
<td>22 to 24</td>
<td>$12,590 1.3</td>
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<td>Plant Pavement Repair / Rehabilitation</td>
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<td>$134</td>
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<td>Centrifuge Replacement <em>(placeholder)</em></td>
<td>TBD</td>
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<tr>
<td>Biosolids Drying &amp; Pyrolysis <em>(placeholder)</em></td>
<td>TBD</td>
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<table>
<thead>
<tr>
<th>Collection System &amp; Pump Station Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000’s)</th>
</tr>
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<tbody>
<tr>
<td>Manhole Repair / Replacement</td>
<td>20</td>
<td>$571</td>
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<tr>
<td>Pump Station Miscellaneous Rehabilitation</td>
<td>21</td>
<td>$269</td>
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<tr>
<td>Collection System Repair / Rehabilitation</td>
<td>22 to 23</td>
<td>$1,044 ²</td>
</tr>
<tr>
<td>Collection System Cleaning &amp; Televising with NASSCO Ratings</td>
<td>All</td>
<td>$1,620</td>
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### Marsh Project Description

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000's)</th>
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</thead>
<tbody>
<tr>
<td>Moorhen Marsh Phases A &amp; B Wrap Up</td>
<td>20</td>
<td>$277</td>
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</tbody>
</table>
| McNabney Marsh Restoration and Railroad Bridge (Placeholder) | To Be Determined                    | $0  

1 Project scope and estimated project costs are subject to change; further study and scope definition are required.
2 Project scope is undefined; estimated project cost is budgetary only.
3 Amount is through Fiscal Year 2023-2024 rather than Fiscal Year 2022-2023, to avoid splitting up the cost between these tables.
4 District costs to be reimbursed from Mt. Diablo Wetlands Fund.

The following table summarizes the plant projects, collection system and pump station projects, and marsh-related projects envisioned in the years four through eight of the new plan.

### Plant Project Description

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headworks Automatic Screening Replacement and Improvements</td>
<td>24 to 26</td>
<td>$1,053</td>
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<tr>
<td>Biofilter &amp; Biotower Rehabilitation</td>
<td>24 to 26</td>
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<tr>
<td>10-Year Digesters Cleaning</td>
<td>26 to 27</td>
<td>$614</td>
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<tr>
<td>New Maintenance &amp; Operations Building</td>
<td>26 to 28</td>
<td>$5,378</td>
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<td>Plant Pavement Repair / Rehabilitation</td>
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<td>$114</td>
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### Collection System & Pump Station Project Description

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000's)</th>
</tr>
</thead>
</table>
| 10-Year Collection System & Pump Station Masterplan | 24 to 25                           | $350  
| West Service Zone Sewer Replacement               | 25 to 26                           | $3,376  
| Fig Tree Lane & Almond Street Capacity            | 25 to 26                           | $576  
<p>| Collection System Cleaning &amp; Televising with NASSCO Ratings | All                               | To Be Determined |</p>
<table>
<thead>
<tr>
<th>Marsh Project Description</th>
<th>Anticipated Schedule (Fiscal Year)</th>
<th>Estimated Total Project Cost ($1,000's)</th>
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<tbody>
<tr>
<td>None</td>
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</tbody>
</table>

1 Project scope and estimated project costs are subject to change; further study and scope definition are required.

2 Project scope is undefined; estimated project cost is budgetary only.

3 Amount is through Fiscal Year 2027-2028 rather than Fiscal Year 2026-2027, to reflect the total estimated cost for the project even though it goes beyond the eight-year horizon.

**FINANCIAL IMPACT**

Total estimated project costs across the eight-year plan approach $31 million. Annual expenditures average $3.85 million, with individual year spikes up to $8.23 million. However, the following cost ambiguities should be clearly understood:

- Staff will need to revisit and study in more detail the Plant Electrical & SCADA Systems Upgrades, which could significantly influence cash flow in years 3 through 5.

- Staff will need to conduct the Collection System Masterplan to determine whether certain condition and capacity projects are still needed, and this could significantly influence cash flow in years 6 through 7.

- Staff will need to study in more detail the space needs for a new maintenance & operations building, which could significantly influence cash flow on or about year 9.

The FRP / CIP expenditures are planned to be offset by revenues from a combination of sources including sewer service charges, ad valorem property tax, capacity fees, debt, and possibly grants. Total projected revenues across the eight-year plan exceed $16 million. However, the following revenue issues should be clearly noted:

- Currently, sewer service charge revenues not spent under the Operations & Maintenance budget (Fund 3409) are designated as excess reserves available for FRP / CIP projects. This amount is variable annually and therefore difficult to forecast. It may be beneficial to review this revenue and assess its adequacy to meet the needs of the new FRP / CIP plan. It may also be prudent in the future to earmark a portion of the sewer service charge revenue solely to FRP / CIP projects.
• Capacity fees for new connections are variable annually and therefore difficult to forecast. The Bay’s Edge Subdivision will likely proceed during Fiscal Year 2019-2020 and generate approximately $290,000. Other large subdivisions such as Traditions at the Meadows and Bayview Estates could generate as much as $858,000 and $1.34 million, respectively, but the future of those developments is uncertain at present.

• The District recently acquired a $6 million loan from Municipal Finance Corporation, and approximately one-third of those funds are still available for specific projects such as the upcoming Disinfection Replacement. Additional financing is currently not in view, but could be a possibility for any of the future large-dollar projects slated under the new FRP / CIP plan.

• Grants may be a potential revenue source for certain FRP / CIP projects. Going forward, design consultants will be tasked with exploring available grant funding opportunities on specific projects.

• The District’s last sewer service charges evaluation was conducted in 2016, and a 5-year schedule of rate increases from Fiscal Year 2017-2018 through Fiscal Year 2021-2022 was adopted by the Board in April, 2017. Staff and the Board should again examine and address sewer service charge rates by or before early 2022. The new FRP / CIP plan will certainly influence any evaluation conducted and / or new rate structure adopted at that time.

SUPPLEMENTARY INFORMATION

Immediately following this introduction is a copy of the new FRP / CIP plan, dated June, 2019. Beginning on the first page, projects are listed in the left-hand column, grouped by Plant, Collection System & Pump Station, and Marsh. Next to the project name is its relative priority and estimated total project cost. Across the top rows is the timeline, represented as plan year, calendar year, and fiscal year. In the field area is the schedule, broken out in rough 6-month increments by project phase (see legend at upper left). The estimated project cost for each fiscal year is shown just below the phases. These individual project costs roll down to fiscal year totals on the second page.

On the third page is the revenue table. Similar to the table above it, revenue types are listed on the left, projected revenues are provided in the field area, and these roll down to fiscal year totals across the bottom.

Immediately following the new FRP / CIP plan are project summary sheets, provided in the same order that projects are shown on the FRP / CIP plan.
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>CATEGORY</th>
<th>PRIORITIES</th>
<th>STUDY</th>
<th>PRE-DESIGN</th>
<th>DESIGN</th>
<th>CONSTRUCTION</th>
<th>FISCAL YEAR</th>
<th>CURRENT YEAR</th>
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<td>UV DISINFECTION REPLACEMENT</td>
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<td>D</td>
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<td>D/C</td>
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<td>D</td>
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<td>FISCAL YEAR 2020</td>
<td>FISCAL YEAR 2021</td>
<td>FISCAL YEAR 2022</td>
<td>FISCAL YEAR 2023</td>
<td>FISCAL YEAR 2024</td>
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<td><strong>COLLECTION SYSTEM &amp; PUMP STATION</strong></td>
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<td>10-Year Collection System &amp; Pump Station Masterplan</td>
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<td>West Service Zone Sewer Replacement</td>
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<td>Fig Tree Lane &amp; Almond Street Capacity</td>
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<td><strong>MARSH</strong></td>
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<td>Moorhen Marsh Phases A &amp; B Wrap Up</td>
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<td>McVarney Marsh Restoration and Railroad Bridge (Placeholder)</td>
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**FISCAL YEAR TOTAL ESTIMATED PROJECT COSTS (BUDGET):**

- **$3,690,255.00**
- **$4,486,899.00**
- **$2,155,800.00**
- **$2,148,860.00**
- **$2,150,760.00**
- **$1,050,600.00**
- **$3,790,590.00**
- **$1,156,350.00**
- **$1,745,300.00**
- **$3,975,950.00**
- **$3,866,800.00**
- **$2,255,400.00**
- **$8,230,960.00**
- **$5,092,740.00**

**Notes:**
- **S** = STUDY
- **P** = PRE-DESIGN
- **X** = ONGOING
- **D** = DESIGN
- **C** = CONSTRUCTION
- **FISCAL YEAR**
  - **CURRENT YEAR:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
  - **FISCAL YEARS:** 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030
### CURRENT YEAR

<table>
<thead>
<tr>
<th>S = STUDY</th>
<th>P = PRE-DESIGN</th>
<th>X = ONGOING</th>
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<table>
<thead>
<tr>
<th>FISCAL YEAR CASH FLOW</th>
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<tbody>
<tr>
<td>FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3409 (SEWER SERVICE CHARGES)</td>
</tr>
<tr>
<td>FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3410 (AD VALOREM PROPERTY TAX)</td>
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### DEBT / LOANS

<table>
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<tr>
<th>FISCAL YEAR</th>
<th>TRANSFER TO FUND 3412</th>
<th>PROJECTED REIMBURSEMENT FOR PROJECTS FUND 3415</th>
<th>GRANTS</th>
<th>CUMULATIVE CASH FLOW</th>
<th>PROJECTED REVENUE</th>
<th>FISCAL YEAR TOTAL PROJECTED REVENUE</th>
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### CAPACITY FEES

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>TRANSFER TO FUND 3412</th>
<th>PROJECTED REIMBURSEMENT FOR PROJECTS FUND 3415</th>
<th>GRANTS</th>
<th>CUMULATIVE CASH FLOW</th>
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### SUPPLEMENTARY AMOUNT FROM PROPOSED SEWER SERVICE CHARGE INCREASES

| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3409 (SEWER SERVICE CHARGES) |
| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3410 (AD VALOREM PROPERTY TAX) |

### PROPOSED ANNUAL SEWER SERVICE CHARGE INCREASES

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>TRANSFER TO FUND 3412</th>
<th>PROJECTED REIMBURSEMENT FOR PROJECTS FUND 3415</th>
<th>GRANTS</th>
<th>CUMULATIVE CASH FLOW</th>
<th>PROJECTED REVENUE</th>
<th>FISCAL YEAR TOTAL PROJECTED REVENUE</th>
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### FISCAL YEAR CASH FLOW

| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3409 (SEWER SERVICE CHARGES) |
| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3410 (AD VALOREM PROPERTY TAX) |

### CUMULATIVE CASH FLOW

| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3409 (SEWER SERVICE CHARGES) |
| FY 18-19 ESTIMATED AMOUNT AVAILABLE FROM FUND 3410 (AD VALOREM PROPERTY TAX) |
MT. VIEW SANITARY DISTRICT

FACILITIES REHABILITATION PROGRAM & CAPITAL IMPROVEMENT PROGRAM
FISCAL YEAR 2019-2020 UPDATE

PLANT PROJECTS
**PROJECT NAME:** UV Disinfection Replacement

**DESCRIPTION:** This project will primarily replace the existing UV disinfection equipment and controls with new equipment and controls. Other assets in the UV process area may also be addressed at the same time, including the monorail crane and its structure, the reclaimed water pumping system, flowmeters, effluent gates, motor control center, and various other automation, electrical, and SCADA upgrades. The project will look at constructing a canopy structure over the entire filtration and disinfection process area, with the potential to put solar panels on top.

**JUSTIFICATION:** The UV disinfection system was installed in 1994 and is now 25 years old. The equipment uses a substantial amount of electrical energy, is not operated automatically, cannot be monitored remotely, has no automatic sleeve wiping system, lacks instrumentation to measure transmittance, and in general requires frequent maintenance with high costs associated. The 2011 Wastewater Treatment Plant Systems Reliability Evaluation recommended that the equipment and controls be replaced.

**ESTIMATED TOTAL PROJECT COST:** $4,126,000

**ANTICIPATED SCHEDULE:**
- Design – FY20
- Construction – FY21
**PROJECT NAME:** 10-Year Plant Masterplan

**DESCRIPTION:** This masterplan will include condition, capacity, safety, and redundancy assessments of each Plant process area and its major pieces of equipment or assets to identify those in need of repair, replacement, rehabilitation, upsizing, or redundancy.

**JUSTIFICATION:** A comprehensive Plant masterplan should be conducted at least once every ten years (roughly) to maintain an ongoing understanding of the state of the District’s aging infrastructure, to account for increasingly stringent regulatory requirements, and to become a reference point for capital planning, project prioritizing, annual budgeting, and rate setting.

**ESTIMATED TOTAL PROJECT COST:** $500,000

**ANTICIPATED SCHEDULE:** FY21
PROJECT NAME: Digester Heat / Mix Room Improvements

DESCRIPTION: This project will make permanent repairs to the primary digester feed pipe, add piping and valves for secondary digester redundancy, and replace the heat exchanger and its recirculation pump. The project will also include removal of the microturbine system due to its proximity and pipe connections to the digester heat / mix room.

JUSTIFICATION: The critical primary digester feed pipe failed on January 3, 2019, due to internal corrosion; a temporary repair was made at that time. The likelihood of another failure is unknown, while the consequence of another failure could be significant. While the secondary digester provides the primary digester with limited redundancy for planned shutdowns, the primary has no redundancy for emergency situations (such as the broken feed pipe). This is because the secondary is currently unmixed and unheated, and the heat / mix room lacks the necessary piping and valves to easily switch between the two digesters. The heat exchanger was installed in 1969 and has reached the end of its useful service life, while its recirculation pump needs to be upgraded to a chopper-style pump to eliminate the potential for clogging issues. The microturbine no longer needed; it is not used as there is insufficient digester gas available to run it. Most of the improvements described above were recommended by the 2011 Wastewater Treatment Plant Systems Reliability Evaluation.

ESTIMATED TOTAL PROJECT COST: $828,400

ANTICIPATED SCHEDULE:
- Design – FY21
- Construction – FY22
PROJECT NAME: Plant Electrical & SCADA System Upgrades

DESCRIPTION: This project will make widespread improvements and upgrades to the District’s electrical and control system infrastructure. A sample list of projects from the 2017 Wastewater Treatment Plant Electrical Systems Study is provided in the table below:

<table>
<thead>
<tr>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rearrange feeders to Dewatering Building</td>
</tr>
<tr>
<td>Replace MCC P1  (relocate?)</td>
</tr>
<tr>
<td>Replace MCC P2  (Digester Control Building - possibly relocate?)</td>
</tr>
<tr>
<td>Install physical protection in Tractor Building</td>
</tr>
<tr>
<td>Replace PLC in MCC P1</td>
</tr>
<tr>
<td>Install telemetry at Pump Stations 1-4</td>
</tr>
<tr>
<td>Rearrange feeder to Panel 20P1</td>
</tr>
<tr>
<td>Replace SWB-P5 and standby generator</td>
</tr>
<tr>
<td>Install power monitor at SWB-P5</td>
</tr>
<tr>
<td>Replace Maintenance Building electrical panels</td>
</tr>
<tr>
<td>Replace LIQ 5 in MCC P6 with new PLC</td>
</tr>
<tr>
<td>Connect Centrifuge panel to SCADA via ethernet network</td>
</tr>
<tr>
<td>Install PLC at MCC P2</td>
</tr>
<tr>
<td>Install PLC at MCC P4</td>
</tr>
</tbody>
</table>

The project will begin with a pre-design to update the 2017 study with new information, revise its cost estimates, confirm and coordinate projects with the FRP / CIP plan, prepare an implementation masterplan, examine solar electrical power and potential projects, and possibly look at cogeneration.

After that pre-design is complete, the project will likely be broken down into smaller, more manageable pieces with a more specific description, justification, cost estimate, and schedule for each individual scope of work. Certain improvements will be incorporated into projects already identified in the FRP / CIP plan; for example, recommended electrical and instrumentation improvements in the UV process area will be included in the UV Disinfection Replacement project. Other improvements will be stand-alone projects and will be incorporated as such into the FRP / CIP plan.
Plant Electrical & SCADA System Upgrades, continued…

JUSTIFICATION: Much of the electrical infrastructure at the Plant has reached or will soon reach the end of its useful service life. Various electrical code violations have accumulated over time and appropriate corrections should be made. Overload conditions due to existing and potential future electrical loads on several major electrical equipment components must be addressed. In other cases, the physical condition of the equipment is of concern. The control system infrastructure is a mix of older and newer equipment; older equipment needs to be replaced. Some process areas have full monitoring and control, others have monitoring only, while still others have no monitoring or control, and should be connected up. Currently, the four pump stations have no monitoring or control and should be connected to the network.

ESTIMATED TOTAL PROJECT COST: $12,589,600

ANTICIPATED SCHEDULE:
- Study Pre-design – FY20
- Design – FY22 to FY23
- Construction – FY23 to FY24
PROJECT NAME: Headworks Automatic Screening Replacement & Improvements

DESCRIPTION: This project will replace the existing automatic screening equipment in the primary influent channel with new equipment. It will also replace the existing manual bar screen in the bypass channel with a second automatic screening system for redundancy; the bypass channel would be widened to accommodate this improvement. Access improvements for worker safety would also be incorporated into the project scope.

JUSTIFICATION: The improvements described above were recommended by the 2011 Wastewater Treatment Plant Systems Reliability Evaluation. Depending on the timing and scope / cost, this project might be combined with the Biofilter & Biotower Rehabilitation project.

ESTIMATED TOTAL PROJECT COST: $1,052,400

ANTICIPATED SCHEDULE:
- Study / Pre-design – FY24
- Design – FY24 to FY25
- Construction – FY25 to FY26
**PROJECT NAME:** Biofilter & Biotower Rehabilitation

**DESCRIPTION:** This project includes a complete seismic retrofit of the Biofilter structure, rehabilitation of the Biofilter redwood timber grillage, replacement of the Biotower media, removal and replacement of the Biotower wall interior coating, and installation of redundant float controls for both the Biofilter and Biotower.

**JUSTIFICATION:** The Biofilter was originally constructed in 1968, long before current building codes took effect, and there are a number of significant seismic concerns with the structure. The condition of the Biofilter redwood timber grillage must be investigated further as it is showing signs of decay around the perimeter. The Biotower media is deteriorating across the top surface and is reaching the end of its useful service life. The Biotower wall has a seepage problem which creates aesthetic issues and could lead to localized structural problems over time. Redundant float controls are necessary to ensure that the Biofilter and Biotower remain in service in the event of an instrumentation failure. All of the improvements described above were recommended by the 2011 Wastewater Treatment Plant Systems Reliability Evaluation. Depending on the timing and scope / cost, this project might be combined with the Headworks Automatic Screening Replacement & Improvements project.

**ESTIMATED TOTAL PROJECT COST:** $2,333,200

**ANTICIPATED SCHEDULE:**
- Study / Pre-design – FY24
- Design – FY24 to FY25
- Construction – FY25 to FY26
**PROJECT NAME:** 10-Year Digesters Cleaning

**DESCRIPTION:** This project will clean, inspect, and make any necessary repairs to both the primary and secondary digesters.

**JUSTIFICATION:** The primary digester was last cleaned and inspected in 2015, while the secondary digester was last cleaned and inspected in 2014. Both digesters should be cleaned, inspected, and repaired roughly once every ten years.

**ESTIMATED COST:** $613,700

**ANTICIPATED SCHEDULE:**
- Design – FY26
- Construction – FY27
PROJECT NAME: New Maintenance & Operations Building

DESCRIPTION: This project would build a new building to accommodate all of the operations, environmental, and laboratory staff’s office, workspace, and storage needs. The building is estimated at 6,500 square feet. Its most likely location would be in the area roughly bounded by Moorhen Marsh Pond A2, the biosolids processing area and Centrifuge Building, and the Thickener. If that is the case, two existing, aging operations and maintenance buildings would be demolished to make way. The project would also abandon or demolish the former administration building, and rehabilitate and upgrade the existing Control Building to satisfy space needs for the Plant Electrical & SCADA Systems Upgrades project.

JUSTIFICATION: The existing Control Building is almost 70 years old (1951), while the former Administration Building is approaching 40 years old (1983) and near the end of its useful service life. These buildings also have safety concerns (i.e. MMC / SCADA room), existing spaces are undersized or inadequate to accommodate staff needs (i.e. men’s locker room, laboratory), they lack certain spaces entirely (women’s locker room), and they are not up to building codes (i.e. unisex bathroom ADA access, seismic requirements). The operations, environmental, and laboratory staff offices, workspaces, and storage areas are spread across multiple, separate buildings in the lower Plant area, leading to a certain amount of inefficiency. The 2011 Wastewater Treatment Plant Systems Reliability Evaluation performed a preliminary space needs assessment, evaluated the existing spaces available, and recommended that a new building be built.

ESTIMATED TOTAL PROJECT COST: $5,378,000

ANTICIPATED SCHEDULE:
- Study / Pre-design – FY26
- Design – FY27
- Construction – FY28
PROJECT NAME: Plant Pavement Repair / Rehabilitation

DESCRIPTION: This project is the ongoing effort to maintain the District’s pavement assets, which include the Plant Road, Administration Building parking lot and connecting roads, lower Plant roads, and pavements around the four pump stations. An initial condition assessment study will establish the condition of each asset, recommend immediate repairs, and help determine scopes and schedules for future repair and rehabilitation projects. These projects may include crack sealing, base repairs and patch paving, slurry seals, overlays, and striping work.

JUSTIFICATION: Pavement assets should be maintained regularly to extend their useful service life and minimize capital costs. Left unmaintained, pavement will eventually deteriorate and fail, leading to costly replacement projects which far exceed the cost of regular maintenance projects. Deteriorating pavement also presents safety concerns (i.e. tripping hazards) for employees and visitors, and fails to adequately support District maintenance vehicles such as the Vactor truck.

ESTIMATED TOTAL PROJECT COST: Annual Costs <$50,000 Per Year

ANTICIPATED SCHEDULE:

- Study / Pre-design – FY20
- Design – Annually as necessary
- Construction – Annually as necessary
**PROJECT NAME:** Plant Process Rehabilitation (2-Year Recurrence)

**DESCRIPTION:** These are generic projects with scopes to be defined at a later date. They will most likely be projects identified by the 10-year Plant Masterplan as having the highest priority.

**JUSTIFICATION:** To be determined, pending recommendations of the 10-year Plant Masterplan.

**ESTIMATED TOTAL PROJECT COST:** ~$2,242,000 every 2 years

**ANTICIPATED SCHEDULE:** for first project
- Design – FY29 to FY30
- Construction – FY30
**PROJECT NAME:** Centrifuge Replacement (Placeholder)

**DESCRIPTION:** This project will replace the existing centrifuge equipment and controls with new sludge dewatering equipment and controls.

**JUSTIFICATION:** The existing centrifuge is close to 20 years old. Its frame and casing are cracked and broken, it leaks slightly, and it is not working as efficiently as it used to. The control technology is no longer supported. The cost to fix the centrifuge and update the control system equals or surpasses the cost to furnish and install completely new equipment. The schedule for this project could largely depend on what happens with biosolids disposal regulations in the future.

**ESTIMATED TOTAL PROJECT COST:** To Be Determined (TBD)

**ANTICIPATED SCHEDULE:**
- Design – TBD
- Construction – TBD
PROJECT NAME: Biosolids Drying & Pyrolysis (Placeholder)

DESCRIPTION: This project would construct a pyrolysis process area, likely in a small building. Odor control equipment would also be included.

JUSTIFICATION: The California wastewater industry faces imminent changes in how biosolids disposal is treated at landfills; namely, that Class B biosolids might no longer be accepted as alternative daily cover. Such a change would have an adverse effect on the District’s biosolids disposal. Unless new biosolids uses are found in the future, the District’s transportation and disposal costs could increase substantially. Pyrolysis is the thermochemical decomposition of organic (carbon-based) material at elevated temperatures in the absence of oxygen, producing biochar, coke, condensable liquids, and non-condensable gases. Pyrolysis could be an alternative method for biosolids disposal that would also reduce or eliminate transportation costs altogether.

ESTIMATED TOTAL PROJECT COST: To Be Determined (TBD)

ANTICIPATED SCHEDULE:
- Design – TBD
- Construction – TBD
**PROJECT NAME:** Cogeneration (Placeholder)

**DESCRIPTION:** The project would construct a cogeneration facility at the Plant.

**JUSTIFICATION:** Cogeneration would reduce dependence on PG&E power and could potentially decrease District energy costs. A cogeneration project would require a natural gas supply to the Plant which currently does not exist.

**ESTIMATED TOTAL PROJECT COST:** To Be Determined (TBD)

**ANTICIPATED SCHEDULE:**
- Design – TBD
- Construction – TBD
MT. VIEW SANITARY DISTRICT

FACILITIES REHABILITATION PROGRAM & CAPITAL IMPROVEMENT PROGRAM
FISCAL YEAR 2019-2020 UPDATE

COLLECTION SYSTEM PROJECTS
PROJECT NAME: Manhole Repair / Replacement

DESCRIPTION: This project will primarily focus on repairs to or replacement of two deteriorated manholes. A secondary focus will be the abandonment of manholes that are no longer in service. Finally, a number of manhole covers that have been either overlaid by street paving projects or cannot be located altogether will be located and exposed, and also raised if necessary.

JUSTIFICATION: Manholes at the Pacheco / Arthur and Palm / Vista intersections are significantly deteriorated and of serious concern; these will be repaired or replaced altogether. As many as thirteen manholes beginning in the vicinity of Pump Station No. 2 and running northwards towards Vine Hill Marsh and then westwards across Interstate 680 are no longer in service and need to be abandoned. This reach contributes significant quantities of groundwater – through inflow and infiltration, particularly during wet weather – that must be treated unnecessarily at the Plant. This reach is also of concern since it transects a number of large private properties via easements; has several inaccessible manhole locations; and crosses under a railroad mainline, through a marsh, and under a major interstate. Manholes that are paved over or hidden cannot be accessed for regular maintenance activities, thereby decreasing staff’s oversight of the collection system and increasing the risk of a preventable problem.

ESTIMATED TOTAL PROJECT COST: $570,700

ANTICIPATED SCHEDULE:
- Design – FY20
- Construction – FY20
**PROJECT NAME:** Pump Station Miscellaneous Rehabilitation

**DESCRIPTION:** This project will replace the wet well coating at Pump Station No. 2 and replace the pumps at Pump Station No. 4. All four pump stations will be carefully canvassed for other assets in need repair or replacement along with routine maintenance work that may be easily rolled into the project scope.

**JUSTIFICATION:** The wet well coating at Pump Station No. 2 is failing and needs to be replaced. The pumps at Pump Station No. 4 are a constant maintenance problem due to ragging and will have reached the end of their useful service life.

**ESTIMATED TOTAL PROJECT COST:** $269,000

**ANTICIPATED SCHEDULE:**
- Design - FY21
- Construction - FY21
**PROJECT NAME:** Collection System Cleaning & Televising with NASSCO Ratings

**DESCRIPTION:** This project consists of hydro-cleaning and then televising each and every pipeline in the District’s collection system. Televising will record pipeline condition data pursuant to the National Association of Sewer Service Companies (NASSCO) standard rating system. It is anticipated that at least four years will be required for a contractor to clean and televise the District’s entire collection system.

**JUSTIFICATION:** In order to conduct the collection system condition assessment described in the 10-Year Collection System & Pump Station Masterplan project, the District must first obtain pipeline condition data for each and every pipeline in the District. This is accomplished through the process described above.

**ESTIMATED TOTAL PROJECT COST:** $1,620,000

**ANTICIPATED SCHEDULE:**
- Design – FY20
- Cleaning & Televising – FY20 to FY23
PROJECT NAME: Collection System Repair / Rehabilitation (Placeholder)

DESCRIPTION: This is a generic project with scope to be defined at a later date. The scope will most likely be comprised of the highest priority pipeline repairs or rehabilitations identified and compiled from the first year or two of pipeline condition data generated from the Collection System Cleaning & Televising with NASSCO Ratings project.

JUSTIFICATION: To be determined, pending the pipeline condition data generated by the Collection System Cleaning & Televising with NASSCO Ratings project.

ESTIMATED TOTAL PROJECT COST: $1,044,000

ANTICIPATED SCHEDULE:
- Design - FY22
- Construction - FY22 to FY23
**PROJECT NAME:** 10-Year Collection System & Pump Station Masterplan

**DESCRIPTION:** This masterplan will include condition and capacity assessments of the entire collection system to identify the pipelines with the highest priority for repair, replacement, rehabilitation, or upsizing. It will also include condition and capacity assessments of each of the four pump stations to identify equipment or other assets in need of repair, replacement, rehabilitation, or upsizing. Pipeline condition assessments will be based on data gathered from televising, and capacity assessments will be based on design storms and the latest development projections for the District’s service area.

**JUSTIFICATION:** A comprehensive collection system and pump stations masterplan should be conducted at least once every ten years (roughly) to maintain an ongoing understanding of the state of the District’s aging infrastructure, and to become a reference point for capital planning, project prioritizing, annual budgeting, and rate setting.

**ESTIMATED TOTAL PROJECT COST:** $350,000

**ANTICIPATED SCHEDULE:** FY24 to FY25
PROJECT NAME: West Service Zone Sewer Replacement

DESCRIPTION: The scope of this project would include approximately 4,400 linear feet of pipe bursting, approximately 360 linear feet of open cut sewer replacement, 26 new manholes, and property owner-paid pipe bursting of up to 118 lower laterals. Work areas in the West Service Zone would include the Glen Street to Wyoming Street creek easement (including 740 Glen Street), Kelly Avenue from Yale Street to Monterey Avenue, Monterey Avenue itself, Merle Avenue, Bella Vista Avenue, Palm Avenue, Leslie Avenue, Vine Avenue, and Sycamore Street.

JUSTIFICATION: This project was conceived to address both condition and capacity issues in the collection system areas noted above. Project design was begun and progressed substantially during 2009, but was put on hold indefinitely due to concerns about the necessity for the capacity portion of this project. The 10-Year Collection System & Pump Station Masterplan planned for 2023 to 2024 will conduct an updated capacity assessment which should provide the data necessary to confirm or refute the need for the capacity portion. A pre-design will revisit both the condition and capacity portions to determine the final project scope.

ESTIMATED TOTAL PROJECT COST: $3,376,000

ANTICIPATED SCHEDULE:
- Study / Pre-design – FY25
- Design – FY25
- Construction – FY25 to FY26
**PROJECT NAME:** Fig Tree Lane & Almond Street Capacity

**DESCRIPTION:** The scope of this project would include sewer main upsizing on two streets: 1) increase 300 linear feet of an existing 8-inch main to 10-inch on Fig Tree Lane from Eastwoodbury Lane to Hatchwood Court, and 2) increase 870 linear feet of an existing 10-inch main to 12-inch on Almond St. from Delacy Avenue to Howe Road.

**JUSTIFICATION:** This project was originally identified in the 2013 Collection System Flow Monitoring and Hydraulic Modeling Study. The 10-Year Collection System & Pump Station Masterplan planned for 2023 to 2024 will conduct an updated capacity assessment which should provide the data necessary to confirm or refute the need for this project. If needed, and depending on the timing and scope / cost, this project might be combined with the West Service Zone Sewer Replacement project.

**ESTIMATED TOTAL PROJECT COST:** $575,700

**ANTICIPATED SCHEDULE:**
- Design – FY25
- Construction – FY25 to FY26
**PROJECT NAME:** Collection System Replacement / Rehabilitation (2-Year Recurrence)

**DESCRIPTION:** These are generic projects with scopes to be defined at a later date. They will most likely be projects identified by the 10-year Collection System & Pump Station Masterplan as having the highest priority.

**JUSTIFICATION:** To be determined, pending recommendations of the 10-year Collection System & Pump Station Masterplan.

**ESTIMATED TOTAL PROJECT COST:** ~$1,554,000

**ANTICIPATED SCHEDULE:** for first project
- Design - FY28 to FY29
- Construction - FY29
PROJECT NAME: Pump Station Rehabilitation (5-Year Recurrence)

DESCRIPTION: These are generic projects with scopes to be defined at a later date. They will most likely be projects identified by the 10-year Collection System & Pump Station Masterplan as having the highest priority.

JUSTIFICATION: To be determined, pending recommendations of the 10-year Collection System & Pump Station Masterplan.

ESTIMATED TOTAL PROJECT COST: ~$734,000

ANTICIPATED SCHEDULE: for first project

- Design – FY28
- Construction – FY28
MT. VIEW SANITARY DISTRICT

FACILITIES REHABILITATION PROGRAM &
CAPITAL IMPROVEMENT PROGRAM
FISCAL YEAR 2019-2020 UPDATE

MARSH PROJECTS
PROJECT NAME: Moorhen Marsh Phases A & B Wrap Up

DESCRIPTION: Nearly half of the budgeted amount for this project is remaining payments to the Phase B contractor, including Phase B plant establishment activities. The remainder allocates money for the Pond B / Peyton Slough levee repairs and access improvements to the five water control slide gates in the Phase A ponds.

JUSTIFICATION: This project essentially wraps up remaining contract work activities, necessary change order work, and loose ends from the Moorhen Marsh Phase A and Phase B construction projects.

ESTIMATED TOTAL PROJECT COST: $326,000

ANTICIPATED SCHEDULE:

- Miscellaneous Design – FY20
- Construction – FY20
**PROJECT NAME:** McNabney Marsh Restoration & Railroad Bridge (Placeholder)

**DESCRIPTION:** This project would replace the existing railroad box culvert with a conventional trapezoidal culvert and bridge structure. The restoration work would primarily address the subsidence that has occurred across McNabney Marsh.

**JUSTIFICATION:** The new railroad culvert and bridge structure is necessary to increase tidal action into and out of McNabney Marsh. The restoration work is necessary to return McNabney to be a marshland rather than a lake. This project is not viable unless funding sources outside the District are found. Also, it is anticipated to be a Ducks Unlimited-managed project rather than a District-managed project.

**ESTIMATED TOTAL PROJECT COST:** To Be Determined (TBD)

**ANTICIPATED SCHEDULE:**
- Design - TBD
- Construction - TBD
PROJECT NAME: Moorhen Marsh Maintenance (10-Year Recurrence)

DESCRIPTION: This project will include all necessary maintenance work, repairs, rehabilitations, replacements, and improvements to the Moorhen Marsh pond treatment system that may have accumulated since the enhancement projects (Phases A and B) were completed in 2019. Work activity examples include levee repairs or stabilization, erosion control, pond and slough dredging, ADA pathway construction or rehabilitation, vegetation removal, landscaping and irrigation, biological upgrades, Interpretive Center upkeep, bridge maintenance, outlet and water control structure maintenance, etc.

JUSTIFICATION: A comprehensive maintenance project should be conducted at least once every ten years (roughly) to maintain the marsh ponds treatment system and its assets. Due to the anticipated biological constraints on work activities in the marsh, it is recommended that all required maintenance work be compiled into a single project to be completed at the same time.

ESTIMATED TOTAL PROJECT COST: $1,644,000

ANTICIPATED SCHEDULE: for first project
- Study / Pre-design – FY28
- Design – FY28
- Construction – FY28 to FY29