TEHAMA COUNTY SANITATION DISTRICT NO. 1

Mineral Wastewater Collection and Treatment Improvement Project & Wastewater Rate Study

Public Informational Meeting

February 15, 2022

PACE ENGINEERING

Agenda

- Review existing wastewater treatment plant and collection system
- Discuss need for system improvements
- Discuss Updated Wastewater Rate Study results

Project Team

- Tehama County Board of Supervisors
  - Tehama County Sanitation District No. 1 Mineral Board of Directors
- Tehama County Staff
  - James Simon – Director of Public Works
  - Justin Jenson – Mineral WWTP Chief Plant Operator
  - Speero Tannous – Mineral WWTP Grade 1 Operator/Engineering Technician III
- PACE Engineering, Inc.
  - Tom Warnock, P.E., Principal Engineer – Project Manager
  - Laurie McCollum, P.E., Senior Engineer – Project Engineer

Existing Wastewater Treatment Plant

Headworks

- Wastewater enters headworks first.
- Larger debris are screened out.
- Influent flows are measured.

Aeration Basin

- Wastewater is aerated to assist in the biological process.

Evaporation/Percolation Ponds

- Serve as settling basins.
- Serve as effluent disposal through evaporation and percolation.
- End of the treatment process most of the time, unless the ponds become full and discharge is required.

Filter Supply Pump Station

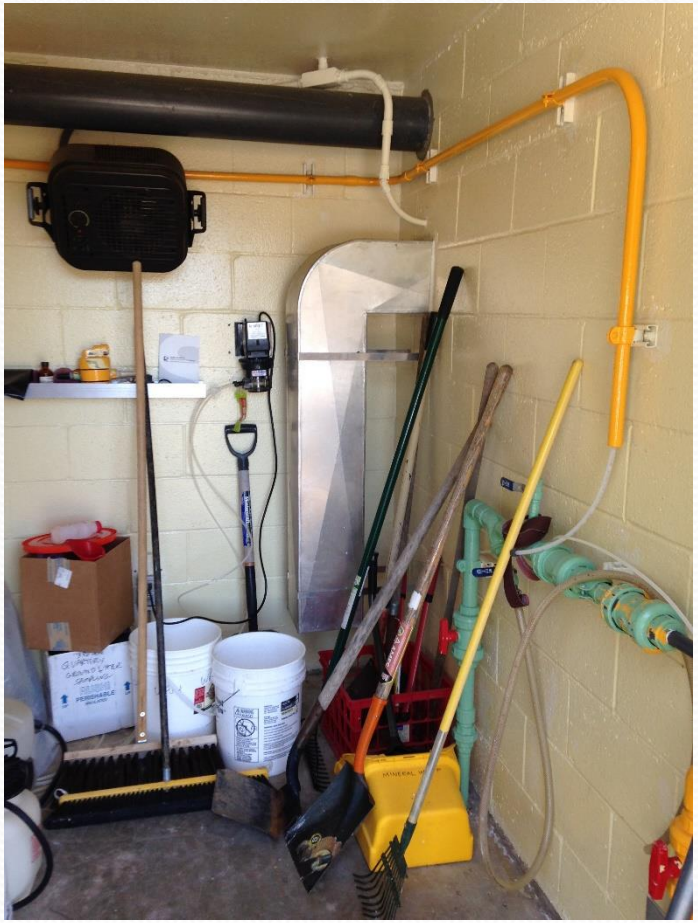
- Two submersible pumps transport effluent from ponds to the filter prior to discharge to South Fork Battle Creek (SFBC).

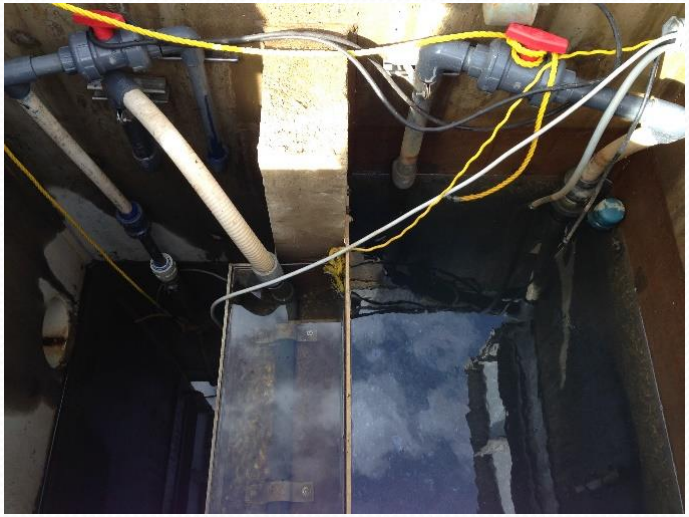
Pressure Filter

- Pond effluent is filtered prior to discharge to SFBC.

Chlorination/Dechlorination

- Sodium hypochlorite (chlorine) is injected for effluent disinfection.
- Sodium bisulfite is injected for inactivation of chlorine prior to discharge to SFBC.





Support Systems

- Potable water system.
- Control system.

Planning Grant Major Tasks Completed

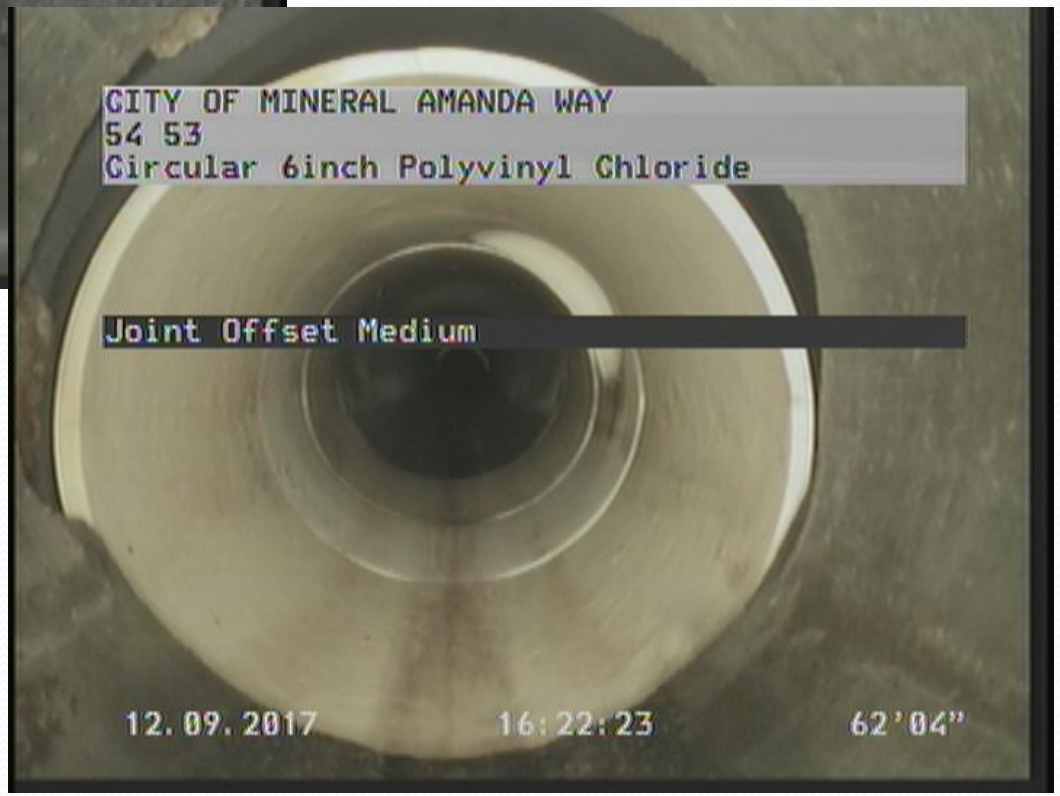
- Closed-circuit television (CCTV) inspection of all wastewater collection system mains 6 inches and larger.
- CCTV inspection of 89 private laterals (45% of the system) – not originally part of the project scope but later added with remaining available grant funds.
- Wastewater Master Plan.
- Project Report.
- Wastewater Rate Study.

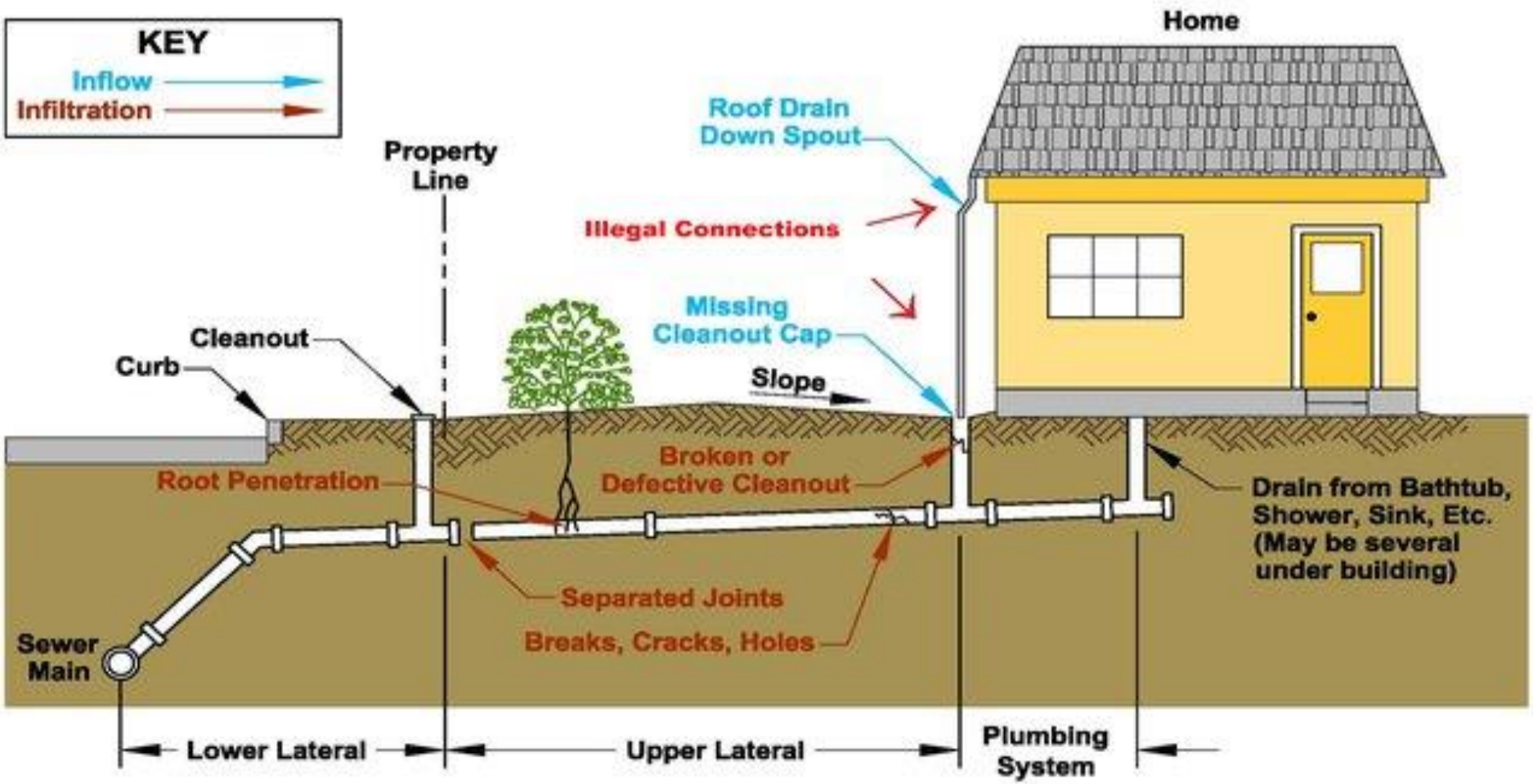
Major Findings of Planning Grant Work

Collection System

- Most wastewater collection system mains are in good shape.
- 71% of the private laterals inspected (45% of the system) have some sort of deficiency.
- Need to reduce collection system infiltration and inflow (I&I); otherwise, future frequent discharges to SFBC may be required.


CITY OF MINERAL EASEMENT
75 76
Circular 8inch Reinforced Concrete Pipe
19.09.2017
10:08:41


CITY OF MINERAL AMANDA WAY
54 53
Circular 6inch Polyvinyl Chloride
Joint Offset Medium
12.09.2017
16:22:23
62'04"



District responsible for maintaining. Homeowner responsible for maintaining.

Photo courtesy of Sonoma Valley County Sanitation District

Major Findings of Planning Grant Work Cont.

Wastewater Treatment Plant

- Recommended improvements needed primarily to:
  - Replace aging infrastructure with useful lives of less than 20 years.
  - Provide improved remote monitoring capabilities.
  - Increase operator safety.

Recommendations

2019 Wastewater Master Plan

- ~$1.8M (2019 costs) of collection and treatment improvements recommended over the next 20 years.

Project Report (for construction funding)

- ~$1M (2019 costs) of collection and treatment improvements:
  - Most of the recommended immediate (0-5 years) and near-term (5-10 years) collection and treatment improvements.

Updated Recommendations

2021 Update to the 2019 Wastewater Rate Study

- Focused on the next five years.
- Fund ~$1.2M of collection and treatment improvements via United States Department of Agriculture (USDA) Rural Development low-interest loan.
- Fund other expenses, including but not limited to O&M, debt service, administration, depreciation, etc.

TABLE 5

Tehama County Sanitation District No. 1 Mineral

2021 Update to the 2019 Wastewater Rate Study

Summary of Wastewater Enterprise Financial Plan

No.		Budgeted (FY 21-22)	Projected (FY 22-23)	Projected (FY 23-24)	Projected (FY 24-25)	Projected (FY 25-26)	Projected (FY 26-27)
1	**WASTEWATER RATES**						
2	Single-Family Annual Service Charge:	**$516.00**	**$774.00**	**$866.88**	**$936.23**	**$973.68**	**$993.15**
3	Single-Family Annual Increase:		$258.00	$92.88	$69.35	$37.45	$19.47
4	Single-Family Monthly Increase:		$21.50	$7.74	$5.78	$3.12	$1.62
5							
6	**ESTIMATED NUMBER OF SINGLE-FAMILY CONNECTION EQUIVALENTS**						
7	Beginning of Year HEs		251	251	251	252	253
8	Estimated Additional HEs due to Growth[1]		0	0	1	1	1
9	Estimated Year-End HEs	251	251	251	252	253	254
10							
11	**BEGINNING FUNDS AVAILABLE BALANCE:**	-$13,507	-$38,232	-$22,506	$11,475	$58,656	$55,809
12							
13	**REVENUES**						
14	Fixed Service Charges	$129,260	$193,890	$217,150	$235,460	$245,850	$251,760
15	1995 Assessment	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
16	**Total Revenue:**	**$169,260**	**$233,890**	**$257,150**	**$275,460**	**$285,850**	**$291,760**
17							
18	**EXPENDITURES**						
19	County Budget	$161,267	$165,759	$170,732	$175,853	$181,129	$186,563
20	Improvement Projects Paid by Rates	$0	$0	$0	$0	$0	$0
21	Existing Debt Service	$32,718	$32,795	$32,828	$32,815	$32,758	$32,655
22	New Debt Service on USDA RD Loan	$0	$0	$0	$0	$55,200	$55,200
23	**Total Expenditures[2]:**	**$193,985**	**$198,554**	**$203,560**	**$208,668**	**$269,087**	**$274,418**
24							
25	**DEPRECIATION**						
26	Depreciation[3]	$0	$19,610	$19,610	$19,610	$19,610	$19,610
27							
28	**YEAR-END BALANCE/OPERATING RESERVE:**	**-$38,232**	**-$22,506**	**$11,475**	**$58,656**	**$55,809**	**$53,541**
29							
30	**YEAR-END OPERATING RESERVE[5]:**	**-20%**	**-11%**	**6%**	**28%**	**21%**	**20%**
31							
32	**YEAR-END CAPITAL IMPROVEMENT FEES[4]:**	**$0**	**$0**	**$0**	**$11,200**	**$22,400**	**$33,600**
33							
34	**YEAR-END DEPRECIATION/EXTRAORDINARY O&M RESERVE[6]:**	**$0**	**$19,610**	**$39,220**	**$58,830**	**$78,440**	**$98,050**
35							
36	**ANNUAL INCREASE IN USER CHARGE:**		**50.0%**	**12.0%**	**8.0%**	**4.0%**	**2.0%**

1. Based on annual growth rate of 0.3%.
2. Excluding depreciation expense.
3. 50% depreciation to be funded.
4. Capital Improvement Fees are for growth-related improvements and are not used for operating expenses.
5. Percentage operating reserve is based on the year-end Operating Reserve Fund balance divided by Total Expenditures less Capital Projects.
6. Depreciation/Extraordinary O&M Reserve fees are for aging infrastructure replacement and are not used for operating expenses. 50% of depreciation will be funded as part of this rate increase.

Updated Recommendations Cont.

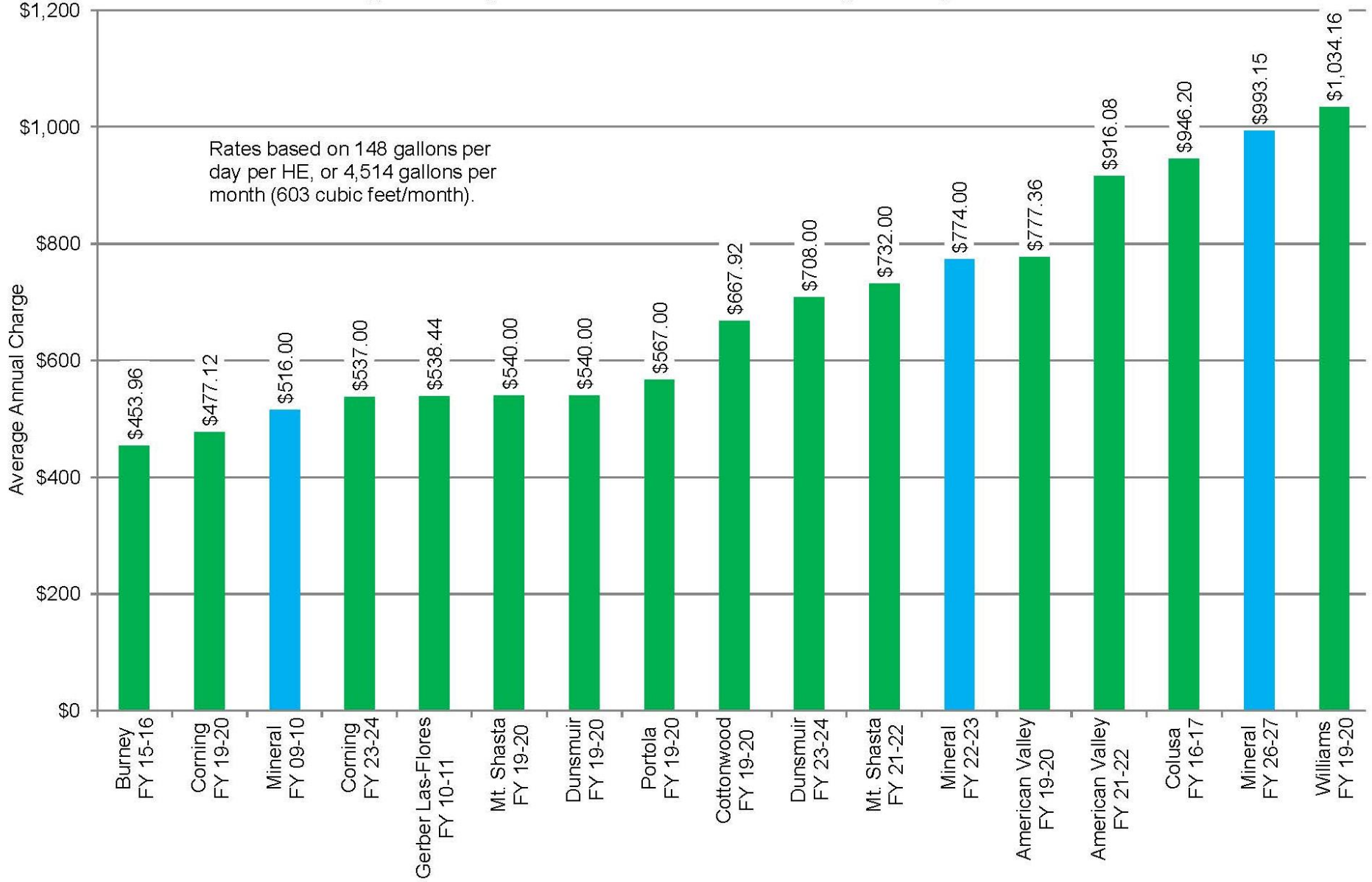
2021 Update to the 2019 Wastewater Rate Study Cont.

- Existing Rate = $43.00/month
  - Since 2009 (>10 years)
  - 1% of MHI
- Updated Proposed Rate = $82.76/month
  - 2% of MHI
  - 5-Year Staged Rate Increase:
    - 50% FY 22-23, 12% FY 23-24, 8% FY 24-25, 4% FY 25-26, 2% FY 26-27
  - 50% of annual depreciation saved
  - 20% Year-End Operating Reserve at the end of the 5-year period

FIGURE 5

Tehama County Sanitation District No. 1 Mineral
2021 Update to the 2019 Wastewater Rate Study

Single-Family Annual Wastewater Charge Comparison



Questions?

Laurie McCollum, P.E.
Senior Engineer
PACE Engineering, Inc.
530-244-0202
lmccollum@paceengineering.us