

# **COACHELLA VALLEY WATER DISTRICT**

**ENGINEERING DEPARTMENT**

**COST OF SERVICE STUDY**

**SANITATION CAPACITY CHARGE**

*FINAL - OCTOBER 2021*



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## 1. INTRODUCTION & BACKGROUND

On behalf of the Coachella Valley Water District (CVWD or District), Woodard & Curran has conducted a Cost of Service Study (COSS or Study) analyzing CVWD's current developer fee structure and charges for the Sanitation Capacity Charge (SCC). The purpose of the SCC is to mitigate the impacts of system growth by funding construction of backbone sanitation facilities, which includes collection system and treatment infrastructure. The SCC was last updated in the 2012 *Sanitation Capacity Charge Study*. The primary objectives of this Study are to review and update the 2012 SCC methodology and prepare a financial model that will allow CVWD to assess modifications to the SCC in the future.

In the past (up to 1980), new sanitation facilities were primarily funded by selling bonds. Improvement Districts were formed for the purpose of constructing the regional sewers and treatment plants to serve each Improvement District. A tax was levied on all property within the Improvement District to repay the bonded indebtedness. The bond tax was separate from the charge for operations and maintenance. Currently, existing bonds are being repaid by a bond tax.

Since 1978, with the passing of Proposition 13, capital costs for new sanitation projects have been covered through CVWD's SCC. This charge is billed to developers as a funding mechanism for the development and expansion of backbone sanitation infrastructure, including collection and treatment facilities.

CVWD requires developers to invest in the expansion of the sanitation system to serve new growth. This investment can be made through direct construction of infrastructure or through connection fees. CVWD will provide developers credit in consideration of offsite infrastructure construction costs. The maximum credit is equal to the total applicable connection fees for the project. CVWD may upsize the developer's new offsite infrastructure using reserve funds in order to prepare for future development projects in the area.

CVWD maintains a separate Sanitation Special Revenue Fund dedicated to the receipt and disbursement of funds collected from the SCC. This is a separate reserve fund to avoid the commingling with other funds. The fund is interest-bearing, and all interest and fees are expended solely for the purpose for which the charge was created.

### 1.1 AUTHORITY

CVWD's authority to establish a demand charge is outlined in California Government Code 66000 et. Seq. (the "Mitigation Fee Act") and specifically described in Section 66013. The proposed charge is essentially a "Capacity Charge," which is defined by Government Code Section 66013(b) (3) as "a charge for facilities in existence at the time a charge is imposed or charges for new facilities to be constructed in the future that are of benefit to the person or property being charged." While the Mitigation Fee Act specifically exempts water and sewer capacity charges from the nexus finding required for other types of mitigation fees, it specifically limits capacity charges to "the estimated reasonable cost of providing the service for which the...charge is imposed."

### **2.1.1 Gravity Sewers**

The gravity collection system consists of small local sewers (8-inch pipeline), branch sewers (10-inch pipeline), and large trunk sewers (12+ inch pipeline). Most local and branch sewers construction have traditionally been financed by developers, so only the large trunk sewer costs have been included in development of the SCC.

As reported in the 2020 Sanitation Master Plan, the 8-inch and 10-inch diameter gravity mains account for more than 75-percent of the total gravity sewer lengths. Smaller gravity sewers sizes such as 4-inch and 6-inch account for less than 1 percent of the total sewer pipeline lengths, while larger gravity sewer sizes ranging from 24-inch to 42-inch in diameter account for less than 5 percent of the total gravity sewer lengths.

### **2.1.2 Force Mains / Lift Stations**

There are locations within Coachella Valley that are too far away from or cannot flow by gravity to a regional sewer pipeline or treatment plant. For these locations, CVWD uses lift stations to lift the wastewater up to another area of gravity sewer or to use pressurized pipelines (called a force main) to pump to a treatment facility.

As reported in the 2020 Sanitation Master Plan, more than 70-percent of the total length of force mains are 18-inch in diameter, with the remaining sizes varying between 4-inch and 30-inch in diameter. A vast majority of the 18-inch diameter force mains are a part of the Mid Valley Force Main System, which conveys collected sanitary sewer flows from Lift Station 81-01 to WRP-4. As a part of the sanitary sewer system CVWD operates and maintains 28 lift stations, which convey flow by pressure to the gravity sewer systems or the Mid-Valley Force Main System.

## **2.2 TREATMENT FACILITIES**

The primary purpose of wastewater treatment is to remove and dispose of organic waste, and to produce effluent that meets all water quality regulations. CVWD uses a variety of treatment processes to remove organic waste from wastewater. This is done at three primary water reclamation plants (WRPs): WRP-4 in Thermal, WRP-7 in Indio, and WRP-10 in Palm Desert. WRP-4 has a secondary treatment capacity of 9 MGD. WRP-7 has a secondary treatment capacity of 5 MGD and a tertiary treatment capacity of 2.5 MGD. WRP-10 has a secondary treatment capacity of 18 MGD and tertiary treatment capacity of 15 MGD.

Disposal, comprised of effluent and biosolids, are considered part of the treatment process. Biosolids are solid waste that is removed and collected during the treatment process. Effluent is the water that remains after biosolids are removed and the water goes through the treatment.

CVWD contracts with an outside hauler to dispose of biosolids. The only costs associated with this process are the hauling and disposal fees. There are currently no capital costs associated with the process. Therefore, the biosolid disposal is not considered in the calculation on the SCC.

Effluent produced at WRP-4 is discharged into the Coachella Valley Stormwater Channel. Effluent produced at WRP-7 and WRP-10 is recycled and used for golf course and landscape irrigation or is sent to percolation ponds. The majority of effluent produced in urbanized areas is reused in ways to benefit the community and the environment. Effluent that is used at golf courses must undergo additional tertiary treatment. Tertiary treatment allows the effluent to be reused on golf courses and greenspaces. This tertiary water is pumped to golf courses through pressurized

The demands placed on the sewer system by commercial and industrial developments are related to the size and type of business. The number of employees and the type of fixtures and equipment are some of the items used in estimating the commercial/industrial demands. In performing commercial/industrial load calculations, the Uniform Plumbing Code (most recent edition) is utilized for sewage load information. These demands are calculated on a case-by-case basis and are expressed in terms relative to the discharge of an equivalent dwelling unit (EDU).

Table 2 presents flow and EDU data for the sanitation system through the end of December 2020. The average 3-day maximum flow at the three treatment plants range from 168 to 207 gallons per day (gpd) per EDU with an average of 192.8 gpd/EDU.

**Table 2: Recap of Sanitation Services and Facilities**

<u>Water Reclamation Plant</u>	<u>Design Capacity (MGD)</u>	<u>Average 3-Day Maximum Flow (MGD)</u>	<u>Date of 3-Day Maximum Flow (Date)</u>	<u>Tributary EDU</u>	<u>Average Calculated Unit Flow (GPD/EDU)</u>
WRP-4	9.9	6.90	March 2020	33,924	203.4
WRP-7	5.0	4.37	November 2018	21,158	206.6
WRP-10	18.0	11.80	April 2013	70,099	168.4
<b>TOTAL</b>	<b>32.9</b>			<b>125,181</b>	
<b>Average Unit Flow (GPD/EDU)</b>					<b>192.8</b>

Along with water demands, wastewater flows are declining across the region as drought conditions persist and water conservation programs are implemented. The average unit flow in CVWD's service area has declined since 2012 due to indoor water use efficiencies, and now the EDU average is below 200 gpd/EDU.

This study used 192.8 gpd/EDU as the demand that each additional EDU will place on the treatment and collection system. Section 3.6 of this Study identifies the reasonable costs to provide 192.8 gpd/EDU treatment and collection capacity.

### 3.4 SANITATION CAPACITY CHARGE

The SCC applies to all land development, redevelopment and connection of existing homes to the sanitation system. The SCC consists of two major components---Collection System Charge and Treatment Facility Charge. To calculate the total SCC, the subcomponents are combined as follows:

<p><b>Total SCC (Cost/EDU) = Collection System Cost + Treatment Facility Cost</b></p> <p>whereas:</p> <p><b>Collection System Cost (Cost/EDU) = Unit Demand (ft/EDU) x Unit Cost (\$/ft)</b></p> <p>and</p> <p><b>Treatment Facility Cost (Cost/EDU) = Unit Flow (gpd/EDU) x Cost per Unit Flow (\$/gpd)</b></p>
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The following describes each major subcomponent.

### 3.4.1 COLLECTION SYSTEM CHARGE

The Collection System Charge includes the costs associated with incremental demands placed on the sewage collection system by an EDU. The Collection System Charge for each EDU consists of two subcomponents - Trunk Sewers & Regional Lift Stations and Force Mains.

#### 3.4.1.1 Collection System EDU Allocations

The EDU allocations are assigned based on total length of trunk sewer or force main and/or lift station capacity within the constructed sanitation system, divided per the number of contributing EDUs available within the system. The calculation is shown below.

$$\text{Collection System EDU Allocation} = (\text{Trunk Sewer Total Feet} / \text{Contributing EDUs}) + (\text{Force Main Total Feet} / \text{Contributing EDUs}) + (\text{Lift Station GPM Capacity} / \text{Contributing EDUs})$$

#### 3.4.1.2 Trunk Sewers

This subcomponent provides for funds for the construction of trunk sewers to transport the sewage from the branch sewers to the lift stations or treatment plant. Table 3 summarizes data from the Sanitation Collection System Inventory and indicates that each EDU equates to 8.890 feet of trunk sewer.

**Table 3: Trunk Sewer Allocation**

<u>Size (Inch)</u>	<u>Total Feet</u>	<u>Tributary EDU</u>	<u>Unit Demand (Feet per EDU)</u>
12	338,371	125,181	2.703
15	280,860	125,181	2.244
18	141,281	125,181	1.129
21	65,913	125,181	0.527
24	137,757	125,181	1.100
27	40,346	125,181	0.322
30	16,087	125,181	0.129
33	66,650	125,181	0.532
36	2,080	125,181	0.017
42	23,446	125,181	0.187
<b>TOTAL</b>	<b>1,112,791</b>		<b>8.890</b>

#### 3.4.1.3 Lift Stations / Force Mains

This subcomponent provides funds for construction and upgrade of lift stations and force mains to serve areas that are not served directly by gravity sewers. Table 4 and 5 summarize data from the Sanitation Collection System Inventory and indicate that each EDU equates to 2.912 feet of force main and 0.4811 gallons per minute (gpm) of lift station capacity.

**Table 4: Force Main Allocation**

<u>Size</u>	<u>Total Feet</u>	<u>EDU Contribution</u>	<u>Feet per EDU</u>
6-30	364,494	125,181	2.912
<b>TOTAL</b>	<b>364,494</b>	<b>125,181</b>	<b>2.912</b>

**Table 5: Lift Station Allocation**

<u>Lift Station Description</u>	<u>Capacity (GPM)</u>	<u>EDU Contribution</u>	<u>GPM per EDU</u>
LS 50-01	500	125,181	0.0040
LS 50-02	100	125,181	0.0008
LS 51-01	690	125,181	0.0055
LS 55-01	4,000	125,181	0.0320
LS 55-11	2,000	125,181	0.0160
LS 55-12	5,000	125,181	0.0399
LS 55-19	400	125,181	0.0032
LS 55-21	900	125,181	0.0072
LS 55-24	800	125,181	0.0064
LS 55-26	300	125,181	0.0024
LS 55-27	600	125,181	0.0048
LS 80-03	11,150	125,181	0.0891
LS 80-04	2,000	125,181	0.0160
LS 80-05	4,000	125,181	0.0320
LS 80-06	2,200	125,181	0.0176
LS 80-07	200	125,181	0.0016
LS 80-08	50	125,181	0.0004
LS 80-09	300	125,181	0.0024
LS 80-13	700	125,181	0.0056
LS 80-16	400	125,181	0.0032
LS 80-17	700	125,181	0.0056
LS 80-18	1,500	125,181	0.0120
LS 80-19	1,730	125,181	0.0138
LS 80-20	600	125,181	0.0048
LS 81-01	10,180	125,181	0.0813
LS 81-03	4,800	125,181	0.0383
LS 81-04	1,400	125,181	0.0112
LS 81-07	3,000	125,181	0.0240
<b>TOTAL</b>	<b>60,200</b>		<b>0.4809</b>

### 3.4.1.4 Collection System Costs

The costs associated with the Collection System Charges are determined by historical costs incurred by CVWD and inflated to current costs. These costs are broken down into unit costs. For example, the costs of constructing lift stations are expressed in cost per gpm. The costs are adjusted for inflation using the Engineering News Record Construction Cost Index (ENR Index) which was 12,237 for July 2021 and the following formula:

$$\text{Adjusted Cost} = (\text{Current ENR Index} \times \text{Original Construction Cost}) / (\text{ENR Index} - \text{Bid Date})$$

The data used in the respective cost determinations are shown in Tables 6, 7, and 8. The tables also includes a depreciation and adjusted value for each facility, based on standard GASB 34 standards.

**Table 6: Trunk Sewer Costs**

<u>Size (inches)</u>	<u>Cost Per Foot w/ Inspection &amp; Engineering (\$/foot)</u>	<u>Bid Date</u>	<u>ENR Index on Bid Date</u>	<u>ENR Change (%)</u>	<u>Adjusted Cost per Foot (\$ per Foot)</u>	<u>Unit Cost per Pipeline Size (\$ per Foot)</u>	<u>Depreciation Period*</u>	<u>Depreciation %</u>	<u>Adjusted Depreciated Cost (\$ per Foot)*</u>
12	\$76.62	November-01	6,409	90.9%	\$146.29	\$143.37	16.5	33.0%	\$96.06
12	\$98.72	October-08	8,602	42.3%	\$140.44				
15	\$91.25	December-01	6,390	91.5%	\$174.75	\$370.19	11.8	23.6%	\$282.82
15	\$122.95	August-02	6,592	85.6%	\$228.24				
15	\$467.48	June-17	10,703	14.3%	\$534.48				
15	\$475.17	June-17	10,703	14.3%	\$543.27				
18	\$142.41	December-06	7,888	55.1%	\$220.93	\$263.75	17.4	34.8%	\$171.97
18	\$132.36	November-01	6,409	90.9%	\$252.72				
18	\$186.63	July-99	6,076	101.4%	\$375.87				
18	\$144.45	October-08	8,602	42.3%	\$205.49				
21	\$184.04	December-06	7,888	55.1%	\$285.51	\$346.10	12.1	24.2%	\$262.35
21	\$165.79	October-08	6,409	90.9%	\$316.55				
21	\$337.00	February-13	9,453	29.5%	\$436.25				
24	\$372.22	September-05	7,540	62.3%	\$604.09	\$415.89	17.5	35.0%	\$270.33
24	\$122.65	August-02	6,592	85.6%	\$227.68				
27	\$193.67	November-01	6,409	90.9%	\$369.78	\$460.62	14.1	28.2%	\$330.72
27	\$430.00	June-13	9,542	28.2%	\$551.45				
30	\$228.50	December-01	6,390	91.5%	\$437.58	\$437.58	19.6	39.2%	\$266.05
33	\$252.19	November-01	6,409	90.9%	\$481.52	\$682.23	14	28.0%	\$491.21
33	\$572.66	November-05	7,647	60.0%	\$916.39				
33	\$532.25	June-15	10,039	21.9%	\$649.78				
36	\$660.76	November-05	7,647	60.0%	\$1,057.37	\$1,057.37	15.8	31.6%	\$723.24
42	\$531.65	June-15	10,039	21.9%	\$648.05	\$648.05	6.3	12.6%	\$566.40



Table 7: Force Main Costs

<u>Force Main Description</u>	<u>Length (feet)</u>	<u>Original Cost</u>	<u>Bid Date</u>	<u>ENR Index on Bid Date</u>	<u>ENR Change (%)</u>	<u>Adjusted Cost</u>	<u>Adjusted Cost per Foot</u>	<u>Depreciation Period</u>	<u>Depreciation %</u>	<u>Adjusted Depreciated Cost (\$/ft)</u>	<u>Depreciated Adjusted Cost per Foot</u>
Wash St. Force Main	11,504	\$919,876	September-96	5,683	115.3%	\$1,980,736	\$172.18	25.0	50.0%	\$990,368	\$86.09
WRP4 Force Main 2	68,739	\$3,302,380	April-97	5,799	111.0%	\$6,968,652	\$101.38	24.5	49.0%	\$3,554,013	\$51.70
Jefferson Force Main	9,152	\$695,511	December-99	6,059	102.0%	\$1,404,682	\$153.48	21.8	43.6%	\$792,241	\$86.56
Transfer Pipeline 10 to 9	12,656	\$1,595,623	August-99	6,091	100.9%	\$3,205,654	\$253.29	21.0	42.0%	\$1,859,279	\$146.91
Mecca Force Main	21,350	\$3,024,377	September-11	8,564	42.9%	\$4,321,496	\$202.41	10.0	20.0%	\$3,457,197	\$161.93
Avenue 63 Force Main	1,200	\$322,957	August-13	9,545	28.2%	\$414,041	\$345.03	8.1	16.2%	\$346,966	\$289.14
Lincoln Street Force Main	5,332	\$421,102	January-20	11,392	7.4%	\$452,337	\$84.83	1.7	3.4%	\$436,958	\$81.95
<b>Total</b>	<b>129,933</b>					<b>\$18,747,601</b>	<b>\$144.29</b>			<b>\$11,437,022</b>	
<b>*Total Depreciated Cost per Foot:</b>											
<b>\$88.02</b>											

\*Total Depreciated Cost per Foot = Adjusted Depreciated Cost (\$/ft)/Length (ft)



Table 8: Lift Station Costs

Lift Station	Flow (GPM)	Original Cost	Entered Service	Original ENR Index	ENR Change (%)	Adjusted Cost	Adjusted Cost per Unit Flow (\$/GPM)	Depreciation Period	Depreciation %	Adjusted Depreciated Cost (\$/GPM)	Depreciated Cost per Unit Flow
LS55-01 Upgrade	2,000	\$282,700	January-91	4,770	157%	\$725,241	\$362.62	30.6	100.0%	\$0.00	\$0.00
LS55-12 Jefferson St.	2,500	\$410,349	April-94	5,405	126%	\$929,036	\$371.61	27.3	91.0%	\$83,613	\$33.45
LS81-01 Upgrade	2,500	\$520,300	January-91	4,770	157%	\$1,334,782	\$533.91	29.7	99.0%	\$13,348	\$5.34
LS80-17 WRP10	700	\$1,495,410	August-99	6,091	101%	\$3,004,323	\$4,291.89	22.0	73.3%	\$801,154	\$1,145.93
LS80-19 Indian Wells	300	\$941,078	June-04	7,109	72%	\$1,619,914	\$5,399.71	18.2	60.7%	\$636,626	\$2,122.09
LS55-19 Jackson St.	400	\$517,025	April-02	6,480	89%	\$976,363	\$2,440.91	19.5	65.0%	\$341,727	\$854.32
LS81-03 Upgrades	2,400	\$7,078,130	August-20	11,455	7%	\$7,561,334	\$3,150.56	1.2	4.0%	\$7,258,881	\$3,024.53
LS81-03 Land Improvs.	2,400	\$800,751	August-20	11,455	7%	\$855,416	\$356.42	1.2	4.0%	\$821,199	\$342.17
LF81-01 Upgrade	3,340	\$4,849,562	August-20	11,455	7%	\$5,180,628	\$1,551.09	1.2	4.0%	\$4,973,403	\$1,489.04
LS81-01 Land Improvs.	3340	\$168,140	August-20	11,455	7%	\$179,618	\$53.78	1.2	4.0%	\$172,433	\$51.63
LS55-26	150	\$1,251,457	August-13	9,545	28%	\$1,604,409	\$10,696.06	4.1	13.7%	\$1,384,605	\$9,230.70
LS55-27	300	\$2,378,835	January-20	11,392	7%	\$2,555,285	\$8,517.62	1.7	5.7%	\$2,409,634	\$8,032.11
<b>TOTAL</b>	<b>20,330</b>					<b>\$26,526,349</b>	<b>\$1,304.79</b>			<b>\$18,897,623</b>	
<b>*Total Depreciated Cost per Unit Flow (\$/GPM):</b>										<b>\$929.54</b>	

\*Total Depreciated Cost per Unit Flow = Adjusted Depreciated Cost (\$/GPM)/Flow (GPM)

Table 9 summarizes the total Collection System Component cost.

**Table 9: Collection System Component Charge Summary**

<u>Collection System</u>	<u>Unit Demand (Ft/EDU)</u>	<u>Depreciated Unit Cost (\$/ft)</u>	<u>Depreciated Component Cost</u>
12-inch	2.703	\$96.06	\$259.65
15-inch	2.244	\$282.82	\$634.65
18-inch	1.129	\$171.97	\$194.15
21-inch	0.527	\$262.35	\$138.26
24-inch	1.100	\$270.33	\$297.36
27-inch	0.322	\$330.72	\$106.49
30-inch	0.129	\$266.05	\$34.32
33-inch	0.532	\$491.21	\$261.32
36-inch	0.017	\$723.24	\$12.30
42-inch	0.187	\$566.40	\$105.92
Force Mains	2.912	\$88.02	\$256.31
Lift Station	0.4809	\$929.54	\$447.02
<b>Total Collection System Component Cost:</b>		<b>\$2,747.75</b>	

### 3.4.2 TREATMENT FACILITY CHARGE

The Treatment Facility Component provides for the associated incremental demands placed on the treatment and disposal system by an EDU.

#### 3.4.2.1 Treatment Facility Costs

The costs for the treatment facilities are established from historical construction records for the three wastewater treatment facilities. The construction costs were adjusted for inflation using the ENR index methodology as described in Section 3.1. The detailed treatment facility costs are located in Appendix A. Table 10 summarizes these costs and presents the unit treatment facility costs. The cost per unit flow (\$/gpd) for each treatment plant is calculated by dividing the total adjusted cost by the capacity of the treatment facility.

**Table 10: Treatment Plant Costs**

<u>Plant</u>	<u>Adjusted Cost</u>	<u>Depreciated Adjusted Cost</u>	<u>Design Capacity (MGD)</u>	<u>Adjusted Cost per unit flow (\$/gpd)</u>	<u>Depreciated Unit Cost (\$/gpd)*</u>
<b>WRP-4</b>					
Pre-2012 Costs	\$78,753,064	\$43,332,233	9.9	\$7.95	\$4.38
Post-2012 Costs	\$31,375,075	\$33,096,847		\$3.17	\$3.34
<b>WRP-7</b>					
Pre-2012 Costs	\$108,240,341	\$36,837,880	5.0	\$21.65	\$7.37
Post-2012 Costs	\$45,279,212	\$47,404,450		\$9.06	\$9.48
<b>WRP-10</b>					
Pre-2012 Costs	\$514,480,570	\$121,208,073	18.0	\$28.58	\$6.73
Post-2012 Costs	\$21,640,484	\$22,654,272		\$1.20	\$1.26
<b>Grand Total<sup>1</sup></b>	<b>\$799,768,746</b>	<b>\$304,533,755</b>	<b>32.9</b>	<b>\$24.31</b>	<b>\$9.26*</b>
<b>Treatment Component Cost (\$/EDU):</b>				<b>\$1,785.33**</b>	

\*Depreciated Unit Cost = Depreciated Adjusted Cost (\$)/Design Capacity (MGD)

\*\*Treatment Component Cost = Depreciated Unit Cost (\$) x Unit Demand (gpd/EDU); where Unit Demand = 192.8.

### 3.5 TOTAL SCC CALCULATION

To calculate the total SCC, the Collection System and Treatment Facility subcomponents are combined. The derivation of the SCC is shown on Table 11 (on following page).

### 3.6 RECOMMENDATION

The SCC was last updated in January 2012, at a rate of \$4,851 per EDU. The current analysis indicates the SCC has decreased by \$318 per EDU (7%) to \$4,533.00 per EDU. This decrease is due to declining wastewater flows as a result of water conservation efforts, and therefore more available capacity on a per EDU basis within the existing sanitary sewer system.

**Table 11: Calculation of the Sanitation Capacity Charge**

<u>Sanitation Facilities</u>	<u>Unit Demand (ft/EDU)</u>	<u>Unit Cost (\$/ft)</u>	<u>Component Cost/EDU</u>	<u>Depreciated Unit Cost (\$)</u>	<u>Depr. Comp. Cost per EDU*</u>
<b>Collection System</b>					
<b>Trunk Sewers</b>					
12	2.703	\$143.37	\$387.53	\$96.06	\$259.65
15	2.244	\$370.19	\$830.71	\$282.82	\$634.65
18	1.129	\$263.75	\$297.77	\$171.97	\$194.15
21	0.527	\$346.10	\$182.39	\$262.35	\$138.26
24	1.100	\$415.89	\$457.48	\$270.33	\$297.36
27	0.322	\$460.62	\$148.32	\$330.72	\$106.49
30	0.129	\$437.58	\$56.45	\$266.05	\$34.32
33	0.532	\$682.23	\$362.95	\$491.21	\$261.32
36	0.017	\$1,057.37	\$17.98	\$723.24	\$12.30
42	0.187	\$648.05	\$121.19	\$566.40	\$105.92
<b>Force Mains</b>	2.912	\$144.29	\$420.17	\$88.02	\$256.31
<b>Lift Stations</b>	0.4809	\$1,304.79	\$627.73	\$929.54	\$447.02
<b>Total Collection System Component</b>			<b>\$3,910.68</b>		<b>\$2,747.75</b>
<u>Sanitation Facilities</u>	<u>Unit Demand (gpd/EDU)</u>	<u>Unit Cost (\$/ft)</u>	<u>Component Cost/EDU</u>	<u>Depreciated Unit Cost (\$)</u>	<u>Depr. Comp. Cost per EDU**</u>
<b>Treatment Facility</b>					
Treatment Plants	192.8	\$24.31	\$4,686.97	\$9.26	\$1,785.33
<b>Total Treatment System Component</b>			<b>\$4,686.97</b>		<b>\$1,785.33</b>
<b>Sanitation Capacity Charge TOTAL:</b>			<b>\$8,597.65</b>		<b>\$4,533.26</b>
<b>Rounded to:</b>			<b>\$8,598</b>		<b>\$4,533</b>

\*Depreciated Cost = Adjusted Depreciated Cost/Capacity (EDU/ft.)

\*\*Depreciated Unit Costs = Adjusted Depreciated Cost/Capacity (GPD)

### 3.7 CONCLUSIONS

The updated SCC maintains the charge at similar to historical rates and achieve the goal of “growth paying for growth”. The “buy-in” methodology accounts for various components of the sanitation system, including trunk sewers, force mains, lift stations, treatment plants, and disposal facilities. This structure allows CVWD to continue crediting developers for offsite facilities that they build. This update also provides for facility depreciation and reflects changes in wastewater flows due to conservation.

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#### 4. SUMMARY OF CHARGES

The new recommended components of the Sanitation Capacity Charge (SCC) are as follows:

- Collection System Component: \$2,748
- Treatment System Component: \$1,785
- Total SCC: \$4,533.00



**APPENDIX A  
TREATMENT FACILITY COSTS**

Sanitation Facility	In Service Date	Installed Cost	ENR Index on In-Service Date	Adjusted Cost	Depreciation Period	Depreciation %	Adjusted Depreciated Cost (\$)
WRP-4	January-09	\$43,039,624	Varied	\$78,753,064	Varied	Varied	\$43,332,233
WRP-7	January-09	\$39,023,574	Varied	\$108,240,341	Varied	Varied	\$36,837,880
WRP-10	March-99	\$149,597,894	Varied	\$514,480,570	Varied	Varied	\$121,208,073
<b>WRP SUBTOTAL</b>		<b>\$231,661,092</b>		<b>\$701,473,975</b>			<b>\$201,378,186</b>
WRP 4 IMPROVEMENTS	April-20	\$632,109	11,412	\$677,806	1.3	2.6%	\$660,183
PROCESS AIR CONTROL SYSTM	June-17	\$12,837,922	10,703	\$14,677,908	4.2	8.4%	\$13,444,964
WRP 4 HEADWORKS	June-16	\$17,905,044	10,337	\$21,196,094	5.2	10.4%	\$18,991,700
<b>WRP4 Post-2012 Total</b>		<b>\$31,375,075</b>		<b>\$36,551,808</b>			<b>\$33,096,847</b>
WRP10 TERTIARY1&2AUTOGATEVALVE	June-13	\$199,294	9,542	\$255,582	8.2	16.4%	\$213,667
WRP 10 RPLC CHLOR. FDR CAB.	June-18	\$2,795,220	11,069	\$3,090,171	3.2	6.4%	\$2,892,400
WRP 10 HEADWORKS SCREENING CON	June-12	\$413,244	9,291	\$544,276	9.2	18.4%	\$444,129
SEPTAGE RCVING IMPRVMENTS	June-17	\$4,405,009	10,703	\$5,036,354	4.2	8.4%	\$4,613,300
WRP 10 BLOWER SWITCHGEAR	June-16	\$1,795,276	10,337	\$2,125,258	5.2	10.4%	\$1,904,231
WRP 10 PLANT B IMPROVEMENT	April-20	\$2,561,318	11,412	\$2,746,482	1.3	2.6%	\$2,675,073
WRP 10 PLANT C IMPROVEMENT	April-20	\$3,767,710	11,412	\$4,040,087	1.3	2.6%	\$3,935,045
WRP 10 T2 FILTER IMPROVEMENT	April-20	\$57,572	11,412	\$61,734	1.3	2.6%	\$60,129
WRP 10 T1 TERTIARY FILTER IMPR	June-19	\$2,127,865	11,268	\$2,310,852	2.2	4.4%	\$2,209,175
WRP 10 LIGHTING & OPTIMIZATION	May-20	\$1,067,813	11,418	\$1,144,406	1.3	2.6%	\$1,114,651
WRP 10 EQ BASIN COVER/LINER	July-19	\$801,034	11,293	\$867,994	2.1	4.2%	\$831,538
WRP10 PLNT C CLARFR IMPRV	June-15	\$1,101,951	10,039	\$1,343,219	6.2	12.4%	\$1,176,660
WRP10 DISTRIBUTION PIPING	June-15	\$547,178	10,039	\$666,980	6.2	12.4%	\$584,274
<b>WRP10 Post-2012 Total</b>		<b>\$21,640,484</b>		<b>\$24,233,395</b>			<b>\$22,654,272</b>



<u>Sanitation Facility</u>	<u>In Service Date</u>	<u>Installed Cost</u>	<u>ENR Index on In Service Date</u>	<u>Adjusted Cost</u>	<u>Depreciation Period</u>	<u>Depreciation %</u>	<u>Adjusted Depreciated Cost (\$)</u>
WRP 7 HEADWORKS	June-16	\$17,130,706	10,337	\$20,279,428	5.2	10.4%	\$18,170,367
WRP7 PONDS(4)EFFLUENT PIPELINE	June-13	\$2,740,510	9,542	\$3,514,527	8.2	16.4%	\$2,938,145
WRP7 REPLACEMENT CHLORINTR CBNT	June-18	\$1,894,009	11,069	\$2,093,865	3.2	6.4%	\$1,959,858
WRP 7 BIOSOLIDS EQUIPMENT	July-19	\$8,720,590	11,293	\$9,449,558	2.1	4.2%	\$9,052,677
WRP 7 BIOSOLIDS BUILDING	July-19	\$6,903,197	11,293	\$7,480,246	2.1	4.2%	\$7,166,076
WRP 7 CLARIFIER & FILTER IMPRV	June-19	\$2,942,823	11,268	\$3,195,893	2.2	4.4%	\$3,055,274
WRP7 MOTOR CONTRL CENTR1A	June-17	\$275,874	10,703	\$315,413	4.2	8.4%	\$288,918
WRP 7 PLC UPGRADE	December-20	\$4,047,877	11,626	\$4,260,612	1.8	3.6%	\$4,107,230
WRP7 AWT EQUALZTN & N-P	June-15	\$623,626	10,039	\$760,166	6.2	12.4%	\$665,905
<b>WRP7 Post-2012 Total</b>		<b>\$45,279,212</b>		<b>\$51,349,710</b>			<b>\$47,404,450</b>
<b>Total</b>		<b>\$329,995,863</b>		<b>\$813,608,886</b>			<b>\$304,533,755</b>