



HIDDEN VALLEY LAKE
COMMUNITY SERVICES DISTRICT

**WATER AND SEWER CONNECTION
FEE ANALYSIS**

ADOPTED MAY 19, 2020

October 2018

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October 2018

Mr. Kirk Cloyd
General Manager
Hidden Valley Lake Community Services District
19400 Hartmann Road
Hidden Valley Lake, CA 95467

RE: Water and Sewer Capacity Fee Study

Dear Mr. Cloyd,

Thank you for the opportunity to provide prepare this capacity fee report for the District. This study relied on available data and planning projections from the District, and followed generally accepted industry standards for calculating system capacity fees. While there are various methodologies that can and have been used, NBS' approach is a combined buy-in and incremental cost methodology that we believe most fairly represents the costs that new customers should pay when connecting to the District's water and sewer systems.

Based on this analysis, we are recommending increases to both water and sewer capacity fees, as follows:

- ✓ **Water Capacity Fees** – the District's current water capacity fee is \$3,800 for a typical residential customer. This has increased to \$9,137, and larger meters would be charged proportionally larger fees based on the hydraulic capacity of their meters. More details are provided in both Section 2 of this report and Appendix B.
- ✓ **Sewer Capacity Fees** – the District's current sewer capacity fee is \$7,600 for a typical residential sewer connection. This has increased to \$9,537, and non-residential customers would be charged proportionally larger fees based on the typical sewer effluent generation and the strength of their effluent (measured components of biochemical oxygen demand and total suspended solids). More details are provided in both Section 3 of this report and Appendix C.

The general assumptions and other details of this study are presented in the attached report. Please do not hesitate to call me at 530.297.5856 or via email at gclumpner@nbsgov.com if you have any questions. Thank you again for the opportunity to work with the District.

Sincerely,

A handwritten signature in blue ink, appearing to read "Greg Clumpner", is written over a light blue circular stamp.

Greg Clumpner
Director

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SECTION 1. PURPOSE AND INTRODUCTION TO THE STUDY

A. PURPOSE

Hidden Valley Lake Community Services District (District) retained NBS to conduct a water and sewer capacity charge¹ study to ensure these fees reflect the cost of capital infrastructure needed to serve new connections, or any person requesting additional capacity in the District’s water and/or sewer utility (referred to throughout as “future customers”). NBS also evaluated water, sewer and recycled water rates, which are addressed in a separate report.

“System capacity fees are intended to ensure new customers pay their fair share of capital costs.”

In developing the new capacity charges, NBS worked cooperatively with District staff. The capacity charges presented in this study reflect input provided by District staff about financial matters, available capacity in the water and sewer utilities, existing asset values, and planned capital improvements. The purpose of this report is to summarize the results of the study and present the updated capacity charges that may be imposed on new connections.

B. INTRODUCTION

California Government Code Section 66013 authorizes public agencies to impose “connection fees”, which are more appropriately called system capacity charges, on customers connecting to or upsizing their connection, to ensure that they pay their fair share of water and sewer utility assets, plus the costs of new facilities needed to serve them. In its simplest form, capacity charges are the result of dividing the cost (or value) of the Utility’s current system assets plus planned capital improvements, by the expected number of future customers.

Specifically, Section 66013 defines a capacity charge as a one-time “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, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities.”

As a result, future customers connecting to the District’s water and/or sewer utilities would enter as equal participants, along with current customers, regarding their financial commitment and obligations to the utilities.

The capacity charges were calculated according to industry standard set by the American Water Works Association (AWWA)², using the methodology is referred to as the “Combination Approach”. Further, it should be noted that this study defines the *maximum* amount that could be charged for new connections, and the District’s Board of Directors retains the option to set a lower charge should they desire.

¹ Otherwise known as system development charges or connection fees.

² Method of calculating Capacity Charges (also known as System Development Charges) are set forth in the American Water Works Association’s Principles of Water Rates, Fees and Charges Seventh Edition (2017) pages 311 to 347.

C. SUMMARY OF UPDATED CAPACITY CHARGES

The recommended water and sewer capacity charges developed in this study are shown in Figure 1 and in Figure 2. Figure 1 represents the meter sizes the District currently serves. Larger meters, should they be needed in the future, are shown later in Section 2 – Water Capacity Charge Study. The methodology used to develop these capacity charges is discussed in the next two sections.

Figure 1. Updated Water Capacity Charges

Meter Size	Equivalency Factor		Maximum Unit Cost (\$/5/8-inch meter)	Maximum Potable Capacity Fee Per Meter
	Maximum Continuous Flow (GPM) ¹	Equivalency to 5/8 inch meter		
5/8 Inch	20	1.00	\$9,137	\$9,137
1 Inch	50	2.50	\$9,137	\$22,842
1 1/2 Inch	100	5.00	\$9,137	\$45,684
2 Inch	160	8.00	\$9,137	\$73,095

1. Source: *AWWA M1, Table B-1*. Assumes displacement meters for 1" through 2", Compound Class I for 3" through 8" and Turbine Class II for 10" through 12" meters.

Figure 2. Updated Sewer Capacity Charges

Capacity Fee Development	
Proposed Capacity Charge Per HEU	\$ 9,537

SECTION 2. WATER CAPACITY CHARGE STUDY

A. EXISTING CONNECTIONS AND PROJECTED FUTURE GROWTH

The District currently has approximately 2,550 equivalent 5/8-inch water meter connections; Figure 3 shows the current number of meters by size. The maximum flow rate, in gallons per minute (gpm) for each size meter is used to determine the number of equivalent 5/8-inch meter units currently connected, as shown in Figure 3.

Figure 3. Current Water Customers

Meter Size	Existing Potable Water Meters ¹	Meter Equivalence ²		Potable Water Meter Equivalent Units
		Maximum Flow (GPM)	Equivalency to 5/8 inch meter ³	
5/8 Inch	2,453	20	1.00	2,453
1 Inch	4	50	2.50	10
1 1/2 Inch	2	100	5.00	10
2 Inch	10	160	8.00	80
Total	2,469			2,553

1. Per District utility billing data, as of the Jan-Dec 2017 billing period. Recycled water customer is the only 12 inch meter.

2. Maximum flow rates from AWWA M1, Table B-1 (sixth edition), displacement meters.

3. Also known as hydraulic capacity factors.

Figure 4 shows existing and projected service numbers to the water utility. The anticipated future connections are based on the District's existing growth rate of 0.25%. NBS is not using the District's full buildout number of 3,281 connections according to the Water Master Plan, but instead the projected growth over the next 20 years.

Existing capacity in the District's water utility is allocated to current and future customers, as shown in **Error! Reference source not found.** The percentage assigned to current and future customers is based upon their assigned share of 5/8-inch meter equivalent units.

Figure 4. Existing and Projected Service Numbers

Demographic Statistics	Existing Total	Anticipated Future Connections ¹	No. Connections at Buildout ²	Allocation Factors		Cumulative Change	
				Existing Customers	New Customers	Number of Equivalent Units	% Increase
Equivalent 5/8-inch meters	2,553	124	2,677	95.4%	4.6%	124	4.9%

1. Anticipated future connections (equivalent meters) based on the District's existing growth of 0.25%.

2. While the District's 2014 Water Master Plan shows buildout is 3,281 connections, we have used the District's projected growth for the next 20 years.

B. EXISTING AND PLANNED ASSETS

The capital assets addressed in this study include existing assets and planned capital improvements (i.e. the buy-in and incremental assets). An important aspect of this study is how the value of existing utility assets is determined. For example, purchase price does not account for wear and tear, and current book value (purchase price less accumulated depreciation) typically underestimates the "true value" of

facilities, as it does not account for cost increases over time. Therefore, this study uses the replacement-cost-new-less-depreciation (RCNLD) approach shown in Figure 5 to estimate existing asset values, because it provides an up-to-date asset value that reflects estimated cost inflation and depreciation.³

Figure 5. Summary of Existing Asset Values – Water Utility

Asset Category ¹	Original Values ¹			Asset Cost Less Depreciation	System Buy-In Cost Basis ²
	Beginning Cost	Improvements	Depreciation to Date		
Water Fund					
ADMIN OFFICE BUILDING	\$ 322,533	\$ 68,608	\$ 324,949	\$ 66,192	\$ 135,300
BUILDINGS	19,158	3,719	21,380	1,497	2,325
FIELD ADMINISTRATION	-	546,473	236,643	309,830	545,664
FIELD EQUIPMENT	-	85,159	70,330	14,829	8,463
FLOOD CONTROL POND	153,312	246,835	214,622	185,525	194,348
GENERAL PLANT	20,627	-	20,627	-	-
GROUND WATER MONITORING	37,357	22,945	52,726	7,576	10,654
GROUNDWATER MODEL	-	86,458	86,458	-	-
LAND	22,454	-	-	22,454	22,454
OFFICE EQUIPMENT	286	161,330	161,616	-	-
OTHER PHYSICAL PROPERTY	-	5,575	5,575	-	-
RISK MANAGEMENT PLAN	-	17,412	17,412	-	-
ROAD IMPROVEMENT	-	4,766	2,449	2,317	3,288
STORAGE & MAINTENANCE BUILDING	-	49,156	49,156	-	-
TELEMETRY SYSTEM	30,707	-	30,707	-	-
VEHICLES	68,970	145,592	202,170	12,392	12,907
WASTEWATER SYSTEM PLAN	38,349	-	38,349	-	-
WATER BOOSTER STATIONS	9,800	-	9,800	-	-
WATER INTERTIES	155,310	-	90,616	64,694	137,831
WATER LINES	1,785,959	58,478	1,629,607	214,830	542,356
WATER METERS ³	-	-	-	-	-
WATER PUMPS	-	35,431	35,431	-	-
WATER SYSTEM IMPROVEMENT	-	3,098,065	901,895	2,196,169	3,634,847
WATER TANKS	802,404	39,747	509,874	332,277	671,205
WATER WELLS	26,071	409,097	435,168	-	-
Total Capital Facilities & Equipment	\$ 3,493,297	\$ 5,084,845	\$ 5,147,558	\$ 3,430,582	\$ 5,921,642

1. The source of the original asset cost and depreciation to date is the District's fixed asset list (depreciation is as of January 17, 2018).

Fixed asset data was provided in the following source files: #6 - FIXED ASSET Accounting Report.PREP 06.22.18.xlsx

2. Cost basis for consideration is calculated as replication value less accumulated depreciation.

3. As meters and services distributed on a per account basis as new customers connect, NBS assumes there is no additional capacity which they provide for new customers. Thus, asset values associated with meters and services are fully allocated to existing customers.

The Engineering News Record (ENR) Construction Cost Index and Handy-Whitman Index of Public Utility Construction Costs are cost inflation indices that track construction costs; these were used to estimate the replacement value of the existing assets. The RCNLD is calculated by escalating the book value of existing assets to current-day values using the ENR Construction Cost or Handy-Whitman Index. Figure summarizes the System Buy-In Cost Basis by Asset Category for the water utility. For this analysis, assets that have exceeded their useful life (as defined in the District's asset records) were considered to have no remaining value. This approach was used for all assets, except Land, which does not depreciate.

³ The RCNLD approach was used to estimate all existing asset values, except for land.

Most of the RCNLD costs were allocated to current customers based on the 95.4 percent allocation factor previously shown in **Error! Reference source not found.** (and the 4.6 percent allocation factor for future customers). Meters are allocated 100 percent to current customers, as meters do not benefit future customers and are for current connections. Figure shows the allocation of the \$5,641,842 in existing assets to current and future customers. Future customers are allocated \$274,509 of the existing water utility assets.

Figure 6. Existing Asset Values Allocated to Current and Future Customers – Water Utility

Asset Category ¹	System Buy-In Cost Basis ²	Allocation Basis (%) ^{3,4,5}			Distribution of Cost Basis (\$)		
		Exclude from Analysis	Existing Customers	New Customers	Exclude from Analysis	Existing Customers	New Customers
Water Fund							
ADMIN OFFICE BUILDING	\$ 135,300	0.0%	95.4%	4.6%	\$ -	\$ 129,032	\$ 6,269
BUILDINGS	2,325	0.0%	95.4%	4.6%	-	2,217	108
FIELD ADMINISTRATION	545,664	0.0%	95.4%	4.6%	-	520,382	25,282
FIELD EQUIPMENT	8,463	67.3%	31.2%	1.5%	5,696	2,639	128
FLOOD CONTROL POND	194,348	0.0%	95.4%	4.6%	-	185,343	9,005
GENERAL PLANT	-	0.0%	0.0%	0.0%	-	-	-
GROUND WATER MONITORING	10,654	0.0%	95.4%	4.6%	-	10,161	494
GROUNDWATER MODEL	-	0.0%	0.0%	0.0%	-	-	-
LAND	22,454	0.0%	95.4%	4.6%	-	21,414	1,040
OFFICE EQUIPMENT	-	0.0%	0.0%	0.0%	-	-	-
OTHER PHYSICAL PROPERTY	-	0.0%	0.0%	0.0%	-	-	-
RISK MANAGEMENT PLAN	-	0.0%	0.0%	0.0%	-	-	-
ROAD IMPROVEMENT	3,288	0.0%	95.4%	4.6%	-	3,135	152
STORAGE & MAINTENANCE BUILDING	-	0.0%	0.0%	0.0%	-	-	-
TELEMETRY SYSTEM	-	0.0%	0.0%	0.0%	-	-	-
VEHICLES	12,907	0.0%	95.4%	4.6%	-	12,309	598
WASTEWATER SYSTEM PLAN	-	0.0%	0.0%	0.0%	-	-	-
WATER BOOSTER STATIONS	-	0.0%	0.0%	0.0%	-	-	-
WATER INTERTIES	137,831	0.0%	95.4%	4.6%	-	131,445	6,386
WATER LINES	542,356	0.0%	95.4%	4.6%	-	517,227	25,129
WATER METERS ⁵	-	0.0%	0.0%	0.0%	8,355	-	406
WATER PUMPS	-	0.0%	0.0%	0.0%	-	-	-
WATER SYSTEM IMPROVEMENT	3,634,847	0.0%	95.4%	4.6%	-	3,466,433	168,413
WATER TANKS	671,205	0.0%	95.4%	4.6%	-	640,106	31,099
WATER WELLS	-	0.0%	0.0%	0.0%	-	-	-
Total Capital Facilities & Equipment	\$ 5,921,642	0.2%	95.3%	4.6%	\$ 14,051	\$ 5,641,842	\$ 274,509

1. The source of the original asset cost and depreciation to date is the District's fixed asset list (depreciation is as of June 30, 2017). Fixed asset data was provided in the following source files: #6 - FIXED ASSET Accounting Report.PREP 06.22.18.xlsx
2. Cost basis for consideration is calculated as replication value less accumulated depreciation.
3. Assets that have no remaining value have an allocation of 0% to existing and future users.
4. Refer to Exhibit 1. Demographics: proportionate allocation between existing and future users.
5. As meters and services distributed on a per account basis as new customers connect, NBS assumes there is no additional capacity which they provide for new customers. Thus, asset values associated with meters and services are fully allocated to existing customers.

The District's capital improvement plans for the water utility extend to 2022. Some of the cost estimates for planned future improvements used to calculate the system development component of the capacity charge are allocated using the same allocations found in **Error! Reference source not found.**, as these projects benefit both current and future customers. Figure includes a list of future projects; future customers are allocated \$834,990 of planned asset costs.

Figure 7. Planned Assets Allocated to Current and Future Customers – Water Utility

Facility / Equipment	Cost Estimate (2018-22) ¹	% Allocation			Distribution of Costs	
		Exclude from Analysis	Existing Customers	New Customers	Existing Customers	New Customers
General Plant						
Generators	\$ 2,172,000	0.0%	95.4%	4.6%	\$ 2,071,365	\$ 100,635
Office Equipment						
CCTV	\$ 135,000	0.0%	95.4%	4.6%	\$ 128,745	\$ 6,255
IT Upgrades	\$ 60,000	0.0%	95.4%	4.6%	\$ 57,220	\$ 2,780
SCADA Replacement	\$ 150,000	0.0%	95.4%	4.6%	\$ 143,050	\$ 6,950
Vehicles						
Vacc Truck	\$ 335,000	0.0%	95.4%	4.6%	\$ 319,478	\$ 15,522
Construction Truck	\$ 42,500	0.0%	95.4%	4.6%	\$ 40,531	\$ 1,969
Dump Truck	\$ 75,000	0.0%	95.4%	4.6%	\$ 71,525	\$ 3,475
Water Interties						
Water Plant VFDs	\$ 60,000	0.0%	95.4%	4.6%	\$ 57,220	\$ 2,780
Water Lines						
DS Line Replacement	\$ 2,709,000	0.0%	95.4%	4.6%	\$ 2,583,484	\$ 125,516
Water Pumps						
Hydrants	\$ 3,742,000	0.0%	95.4%	4.6%	\$ 3,568,622	\$ 173,378
Water Tanks						
Tanks	\$ 4,899,000	0.0%	95.4%	4.6%	\$ 4,672,015	\$ 226,985
Water Wells						
Well	\$ 3,642,000	0.0%	95.4%	4.6%	\$ 3,473,255	\$ 168,745
Total	\$ 18,021,500	0.0%	95.4%	4.6%	\$ 17,186,510	\$ 834,990

1. CIP from Source File: *Five Year Capital Improvement Plan.xlsx*. NBS assumes CIP will begin in FY 18/19.

2. Project costs are allocated to existing and future services based on projected growth in the system. See Demographics tab for detail.

The District may have additional capital projects that are needed to serve future developments, and the costs of such projects may be recovered through a development agreement. This will be evaluated on a case by case basis as part of the development review process.

C. ADJUSTMENTS TO THE COST BASIS

Before the capacity charges are developed, an adjustment is applied to the cost basis to account for existing cash reserves.

Existing cash reserves are treated as an asset because they were funded by current customers and are available to pay for capital and/or operating costs of the water utility that future customers will benefit from, once connected. The cash reserves are, in a sense, no different than any other water utility asset. The existing cash reserves allocated to current and future customers are summarized in Figure . This calculation also uses the same 4.6 percent allocation factor from **Error! Reference source not found.** Future Customers are allocated \$23,789 of cash reserves as shown in Figure .

Figure 8. Cash Reserves Allocated to Future Customers – Water Utility

Cash Reserves	Beginning Cash ¹	% Allocation		\$ - Allocation			Total
		Existing Customers	New Customers	Exclude from Analysis	Existing Customers	New Customers	
Cash in Existing Reserves ²	\$ 287,620	95.4%	4.6%	\$ -	\$ 274,294	\$ 13,326	\$ 287,620
Cash with Fiscal Agent (Restricted Bond Funds) ³	\$ 225,805	95.4%	4.6%	\$ -	\$ 215,343	\$ 10,462	\$ 225,805
Total Beginning Cash	\$ 513,425	95.4%	4.6%	\$ -	\$ 489,636	\$ 23,789	\$ 513,425

1. Water Operations Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 49.

2. Existing District reserve funds are for: Operating and Capital Improvements.

3. Includes Redemption Fund in Debt Reserve. Client needs to confirm this cash allocation.

The water utility is not including the current outstanding debt service towards the capacity charges; therefore, there is no adjustment to the cost basis in the capacity charge calculation to account for it.

D. CALCULATED CAPACITY CHARGES

The sum of the existing and planned asset values (that is, the system buy-in and system development costs), along with the adjustment for cash reserves, defines the total cost basis allocated to future customers. Figure summarizes this calculation.

Figure 9. Summary of Cost Basis Allocated to Future Customers – Water Utility

System Asset Values Allocated to New Customers	
<i>System Asset Values Allocated to New Customers</i>	
Existing System Buy-In ¹	\$ 274,509
Future System Expansion ²	834,990
Total: Existing & Future System Costs	\$ 1,109,499
<i>Adjustments to Cost Basis Allocated to New Customers:</i>	
Cash Reserves	\$ 23,789
Outstanding Long-Term Debt (Principal)	-
Total: Adjustments to Cost Basis	\$ 23,789
Total Adjusted Cost Basis for New Customers	\$ 1,133,288

The total adjusted cost basis is then divided by the number of future customers, measured in 5/8-inch meter equivalents, expected to connect to the water utility (that is, the 124-meter equivalents shown in **Error! Reference source not found.**) in order to determine the base capacity charge, for a 5/8-inch water meter. This calculation is shown in Figure 5.

Figure 5. Summary of New Base Capacity Charges – Water Utility

Summary of Costs Allocated to Water Capacity Fees	Adjusted System Cost Basis	Increase in 5/8-inch meter equivalents ³	Maximum Base Capacity Fee
Maximum Water Capacity Fee Per 5/8-inch meter	\$ 1,133,288	124	\$ 9,137
<i>Existing Capacity Fee Per 5/8-inch meter ⁴</i>			<i>\$ 3,800</i>

1. Refer to Table 4: Using System Buy In Costs and calculated Allocation factors for new customers.

2. Refer to Table 8: Distribution of Cost Basis

3. Refer to Exhibit 1. Demographics: for growth projections.

4. Source File: Fees and Charges.pdf

Based on the combined system buy-in and incremental capacity charge methodology, and the assumptions used in this analysis, NBS has calculated the new capacity charges for various water meter sizes, as shown in Figure 6. Although the District currently only serves meters up to two inches, meter sizes larger than 2-inches are provided for future references, should the District have customers wanting to connect with larger meters than the District currently serves. These updated capacity charges represent the maximum that the District can charge new connections.

Figure 6. Updated Water Capacity Charges

Meter Size	Equivalency Factor		Maximum Unit Cost (\$/5/8-inch meter)	Maximum Potable Capacity Fee Per Meter
	Maximum Continuous Flow (GPM) ¹	Equivalency to 5/8 inch meter		
<i>Displacement Meters</i>				
5/8 Inch	20	1.00	\$9,137	\$9,137
1 Inch	50	2.50	\$9,137	\$22,842
1 1/2 Inch	100	5.00	\$9,137	\$45,684
2 inch	160	8.00	\$9,137	\$73,095
<i>Compound Class I Meters</i>				
3 inch	320	16.00	\$9,137	\$146,189
4 inch	500	25.00	\$9,137	\$228,421
6 inch	1,000	50.00	\$9,137	\$456,842
<i>Turbine Class II Meters</i>				
8 inch	2,800	140.00	\$9,137	\$1,279,157
10 inch	4,200	210.00	\$9,137	\$1,918,735
12 inch	5,300	265.00	\$9,137	\$2,421,261

1. Source: AWWA M22, Table 6-1, page 62. Assumes displacement meters for 1" through 2", Compound Class I for 3" through 8" and Turbine Class II for 10" through 12" meters.

SECTION 3. SEWER CAPACITY CHARGE STUDY

A. EXISTING CONNECTIONS AND PROJECTED FUTURE GROWTH

There are currently 1,532 Housing Equivalent Units (HEUs) connected to the sewer utility. Figure 7 shows the number of current residential and commercial customers, and the estimated sewer flow produced by each. Individual customer impact on the sewer utility is measured in Housing Equivalent Units (HEU). Currently, the District utilizes HEU factors based on tenant types to calculate sewer capacity charges. One HEU is based on a single-family home generating 156 gallons per day of domestic wastewater.

Figure 7. Estimated Existing HEU's – Sewer Utility

Estimated Existing HEU's	
Number of Existing Accounts/HEU's ¹	1,534
Estimated Daily Flow per Account/HEU (gal)	156

1. Number of HEU's from Sewer Rate Model.

Note: SFR is 1 HEU per account, and non-SFR is per District assignment of HEUs (assumed to be 187 gallons per day average per *SEWER ORDINANCE 57.pdf*). For future HEU calculations, we recommend using average SFR winter consumption of 5.08 hcf/account/mo.

The District's sewer utility currently averages an annual effluent flow of 87.4 million gallons (MG). Figure 8 below shows the monthly effluent in the wastewater treatment plant for 2016 and 2017, which is used to determine the daily flow used to calculate number of HEU's that will connect to the sewer utility.

Figure 8. Historical Wastewater Treatment Plant Data

Month	Wastewater Treatment Plant Flow Data	
	Monthly Flow (MG)	
	2016	2017
January	10.01	19.96
February	6.37	14.94
March	11.09	7.29
April	6.18	6.92
May	5.67	5.72
June	5.39	5.22
July	5.39	5.59
August	5.34	5.31
September	5.19	5.21
October	5.97	5.35
November	6.57	5.49
December	8.97	5.69
Total	82.1	92.7
2016-2017 Average	87.4	

Source File: NBS Plant Data.xlsx. The average of 2016 and 2017 "Monthly Effluent" is used as a reasonable representation of customer effluent (flows).

Capacity in the District's sewer utility is allocated to current and future customers, as shown in Figure 9. The average daily flow calculated from the 2016-2017 annual effluent average equaled 0.239 MG, when multiplied by the percent increase in future customers equals the adjusted total capacity of the treatment

plant. The percentage of capacity assigned to current and future customers is based upon their assigned share of HEU's.

Figure 9. Allocation of Capacity to Current and Future Customers

Wastewater Treatment Plant Capacity	Used by Existing Customers	Projected Use by Future Customers ²	Adjusted Total Capacity ³
Existing vs. Potential Future Connections (MGD) ^{1,2}	0.239	0.012	0.251
Existing vs. Potential Future Connections (HEUs)	1,532	75	1,607
Capacity Allocation to Existing & Future Customers (%)	95.3%	4.7%	100%

1. Capacity used by existing customers, per average daily flow.
2. Capacity used by new customers is assumed to be based on 75 new connections over the next 20 years (reflects the 15 new connection from 2014 to 2018). The calculated from Peak Flow of 0.894 MGD is from File: *SSMP Final Draft April 2018, Page 5*.
3. This assumes the District will never reach full use of the system capacity and, therefore, the actual WWTP capacity is limited to total HEUs over the next 20 years (a reasonable planning period).

B. EXISTING AND PLANNED ASSETS

The same approach was used to estimate asset value for the sewer utility as was described previously in Section 2B for the water utility, as follows:

- The replacement-cost-new-less-depreciation (RCNLD) value of existing capital assets was used to determine the system buy-in component of the sewer capacity charge, except for land.
- The ENR Construction Cost Index and Handy-Whitman Index of Public Utility Construction Costs were used to estimate the RCNLD value of the existing sewer utility assets.

The resulting System Buy-In Cost Basis of existing sewer utility assets are summarized in Figure 10.

Figure 10. System Buy-in Cost Basis by Asset Category – Sewer Utility

Asset Category ¹	Original Values			Asset Cost Less Depreciation	Replacement Values		System Buy-In Cost Basis ²
	Asset Cost	Improvements	Depreciation to Date		Asset Cost	Depreciation to Date	
Sewer Fund							
ADMIN OFFICE BUILDING	\$ 120,691	\$ 55,262	\$ 144,486	\$ 31,467	\$ 297,915	\$ 240,007	\$ 57,909
DECERTIFICATION SWR PDS	-	247,741	117,227	130,514	377,577	172,670	204,907
FIELD ADMINISTRATION/SHOP BUILDING	-	2,551,732	722,711	1,829,021	3,310,395	926,045	2,384,350
FIELD EQUIPMENT	43,475	590,355	467,589	166,240	466,289	275,714	190,575
LAND	580,596	4,868	4,868	580,596	580,596	-	580,596
OFFICE EQUIPMENT	23,016	151,960	174,976	-	-	-	-
ONSITE HOUSING	-	213,684	213,684	-	-	-	-
OTHER PHYSICAL PROPERTY	2,653	-	2,653	-	-	-	-
PROPERTY RIGHTS	47,600	-	47,600	-	47,600	47,600	-
RECLAIMED WATER DISPOSAL	878,504	125,247	713,602	290,149	1,665,028	1,180,803	484,225
RISK MANAGEMENT PLAN	-	26,993	24,519	2,474	13,103	9,818	3,285
ROAD IMPROVEMENT	-	58,340	42,772	15,568	63,659	46,550	17,109
SEWER LIFT STATIONS	40,100	321,280	135,736	225,645	336,965	100,304	236,661
SEWER LINES-OLD SYSTEM	182,200	25,682	201,791	6,092	22,208	15,282	6,926
SEWER II EXPANSION	34,423	-	22,153	12,270	90,615	58,315	32,300
SHOP BUILDING AT SEWER PLANT	-	48,872	48,872	-	-	-	-
VEHICLES	65,199	162,632	203,454	24,378	43,470	18,079	25,391
WASTEWATER COLLECTION FAC	5,942,089	321,210	4,306,055	1,957,244	10,373,151	7,144,121	3,229,030
WASTEWATER TREATMENT FAC	10,216,536	38,074	7,460,343	2,794,267	15,694,060	10,977,564	4,716,497
Total Capital Facilities & Equipment	\$ 18,177,082	\$ 4,943,934	\$ 15,055,091	\$ 8,065,925	\$ 33,382,632	\$ 21,212,871	\$ 12,169,760

All the RCNLD costs were allocated to current customers based on the 95.3 percent allocation factor shown in Figure 9 (and the 4.7 percent allocation factor for new future customers). Figure 11 shows the allocation of the \$11.6 million in existing sewer utility assets to current and future customers. Future customers are allocated \$567,267 of the existing sewer utility assets as shown in Figure 11.

Figure 11. Existing Asset Values Allocated to Current and Future Customers – Sewer Utility

Asset Category	System Buy-In Cost Basis ²	Allocation Basis (%) ³			Distribution of Cost Basis (\$)	
		Exclude from Analysis	Existing Customers	New Customers	Existing Customers	New Customers
Sewer Fund						
ADMIN OFFICE BUILDING	\$ 57,909	0%	95.3%	4.7%	\$ 55,209	\$ 2,699
DECERTIFICATION SWR PDS	204,907	0%	95.3%	4.7%	195,355	9,551
FIELD ADMINISTRATION/SHOP BUILDING	2,384,350	0%	95.3%	4.7%	2,273,209	111,141
FIELD EQUIPMENT	190,575	0%	95.3%	4.7%	181,692	8,883
LAND	580,596	0%	95.3%	4.7%	553,533	27,063
OFFICE EQUIPMENT	-	0%	0.0%	0.0%	-	-
ONSITE HOUSING	-	0%	0.0%	0.0%	-	-
OTHER PHYSICAL PROPERTY	-	0%	0.0%	0.0%	-	-
PROPERTY RIGHTS	-	0%	0.0%	0.0%	-	-
RECLAIMED WATER DISPOSAL	484,225	0%	95.3%	4.7%	461,654	22,571
RISK MANAGEMENT PLAN	3,285	0%	95.3%	4.7%	3,132	153
ROAD IMPROVEMENT	17,109	0%	95.3%	4.7%	16,312	798
SEWER LIFT STATIONS	236,661	0%	95.3%	4.7%	225,629	11,031
SEWER LINES-OLD SYSTEM	6,926	0%	95.3%	4.7%	6,603	323
SEWER II EXPANSION	32,300	0%	95.3%	4.7%	30,794	1,506
SHOP BUILDING AT SEWER PLANT	-	0%	0.0%	0.0%	-	-
VEHICLES	25,391	0%	95.3%	4.7%	24,207	1,184
WASTEWATER COLLECTION FAC	3,229,030	0%	95.3%	4.7%	3,078,516	150,514
WASTEWATER TREATMENT FAC	4,716,497	0%	95.3%	4.7%	4,496,647	219,849
Total Capital Facilities & Equipment	\$ 12,169,760	0%	95.3%	4.7%	\$ 11,602,494	\$ 567,267

1. Asset Data provided by the staff in source file: #6 - FIXED ASSET Accounting Report.PREP 06.22.18.xlsx, and these assets are included in the analysis.

2. Estimated Replacement Cost is calculated by escalating the remaining values (net of depreciation) from service date to January 2018 values using historical cost inflation factors from the Handy-Whitman Index of Public Utility Construction Costs, for Water Utility Construction in the Pacific Region. Estimated Replacement Cost is used in the capacity fee calculation is known as the "System Buy-in Cost Basis."

3. Allocation to existing and new customers developed in collaboration with City staff. Refer to Table 5: Existing and Future Customers for the detailed calculations.

The District’s capital improvement plans extend to 2022. Some of the estimated cost of planned future improvements used to calculate the system development component of the capacity charge are allocated using the allocations found in Figure 9, as these projects benefit current and future customers. However, there is one project, Tideflex for Stormwater, which will only proceed if Prop 1 Grant and SRF Loans are secured for 50 percent of the funding. Figure 12 shows a list of future capital projects the District is planning for, that will either expand capacity, or extend the useful life assets so that they will be available to serve current and future customers. Future customers are allocated \$71,574 of planned project costs.

Figure 12. Planned Asset Values Allocated to Current and Future Customers – Sewer Utility

Facility / Equipment	Cost Estimate (2018-22) ¹	External Funding	System Development Cost Basis ¹	% Allocation ²		Distrib. of Cost Basis (\$)	
				Existing Customers	New Customers	Existing Customers	New Customers
General Plant							
IT Upgrades	\$ 60,000	\$ -	\$ 60,000	95%	5%	\$ 57,203	\$ 2,797
SCADA Replacement	\$ 150,000	\$ -	\$ 150,000	95%	5%	\$ 143,008	\$ 6,992
Primary Treatment							
Chlorine Tank Auto Shut Off	\$ 32,000	\$ -	\$ 32,000	95%	5%	\$ 30,508	\$ 1,492
Install Security Fencing at Lift Station 1 & 4	\$ 10,000	\$ -	\$ 10,000	95%	5%	\$ 9,534	\$ 466
Prelim. Design - Chlorine Disinfection Facility	\$ 45,000	\$ -	\$ 45,000	95%	5%	\$ 42,902	\$ 2,098
Sample Stations	\$ 10,000	\$ -	\$ 10,000	95%	5%	\$ 9,534	\$ 466
Risk Management Plan							
Manhole Rehab	\$ 250,000	\$ -	\$ 250,000	95%	5%	\$ 238,347	\$ 11,653
Sewer collection lines							
CS Line Replacement	\$ 350,000	\$ -	\$ 350,000	95%	5%	\$ 333,686	\$ 16,314
Pump Replacement/Overhaul	\$ 112,500	\$ -	\$ 112,500	95%	5%	\$ 107,256	\$ 5,244
Repair Sewer Lateral Leaks	\$ 40,000	\$ -	\$ 40,000	95%	5%	\$ 38,135	\$ 1,865
Tideflex - Stormwater (50% grant funded) ³	\$ 658,000	\$ 329,000	\$ 329,000	95%	5%	\$ 313,664	\$ 15,336
Vehicles							
Backhoe	\$ -	\$ -	\$ -	95%	5%	\$ -	\$ -
Construction Truck	\$ 72,000	\$ -	\$ 72,000	95%	5%	\$ 68,644	\$ 3,356
Dump Truck	\$ 75,000	\$ -	\$ 75,000	95%	5%	\$ 71,504	\$ 3,496
Total	\$ 1,864,500	\$ 329,000	\$ 1,535,500	95%	5%	\$1,463,926	\$ 71,574

1. Capital project costs for next 5 years were provided by City Staff in source files: #1 - Approved 2017-2018 budget.pdf and Five Year Capital Improvement Plan.xlsx

2. Project costs are allocated to existing and future services based on projected growth in the system. See Demographics tab for detail.

3. Currently funded with Sewer Revenue and is used to protect Sewer Infrastructure. Although the project will not proceed unless Prop 1 Grant and SRF Loan are approved it is planned at this time. However, only need to finance 50% (for SRF Loan repayment).

As noted previously, the District may have additional capital projects that are needed to serve future development, and the cost of such projects may be recovered through a development agreement. This will be evaluated on a case by case basis as part of the development review process.

C. ADJUSTMENTS TO THE COST BASIS

Before the capacity charges are developed, an adjustment is applied to the cost basis to account for existing cash reserves. Existing cash is treated as an asset, since it was contributed by current customers and is available to pay for capital and/or operating costs of the sewer utility, which future customers will benefit from. The cash is, in a sense, no different from any other asset and therefore, are allocated to current and future customers as summarized in Figure . Cash is allocated according to the percentages in Figure 9. The allocation of cash reserves to future customers is \$76,411.

Figure 18. Cash Allocated to Existing and Future Customers

Cash Reserves	Beginning Cash Balance	% Allocation		\$ - Allocation	
		Existing Customers	New Customers	Existing Customers	New Customers
Sewer Operating Reserve & CIP Reserve ^{1,2}	\$ 930,139	95.3%	4.7%	\$ 886,783	\$ 43,356
Debt Reserve Fund ³	\$ 709,123	95.3%	4.7%	\$ 676,069	\$ 33,054
Total	\$ 1,639,262	95.3%	4.7%	\$ 1,562,851	\$ 76,411

1. Sewer Operations Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 44.

2. Sewer Capital R&R Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 44. Includes Capital Facility Reserve :

3. Sewer debt service cash balances include debt and bond funds; found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, p 44.

Balance includes: 1995-2 Bond Redemption, USDA Solar Loan, USDA Reserve, All Bond Admin, Assessments and FA Investments.

The sewer utility is not including the current outstanding debt service towards the capacity charges; therefore, there is no adjustment to the cost basis in the capacity charge calculation to account for it.

D. CALCULATED CAPACITY CHARGES

The sum of the existing asset values (that is, the system buy-in and system development components), along with the adjustments for existing cash reserves, defines the total cost basis allocated to future customers as shown in Figure .

Figure 19. Summary of Costs Allocated to Future Customers – Sewer Utility

System Asset Values Allocated to New Customers	
<i>System Asset Values Allocated to New Customers</i>	
Existing System Buy-In ¹	\$ 567,267
Future System Expansion ²	71,574
Total: Existing & Future System Costs	\$ 638,841
<i>Adjustments to Cost Basis Allocated to New Customers:</i>	
Cash Reserves ³	\$ 76,411
Outstanding Long-Term Debt (Principal) Allocated to Future Users	-
Total: Adjustments to Cost Basis	\$ 76,411
Total: Cost Basis for New Customers	\$ 715,251

The Total Adjusted Cost Basis for future customers is divided by the planned customer growth (measured in HEU's) over the next 20 years. This represents the maximum that the District could charge per HEU for future customers as shown in Figure 13.

Figure 13. Summary of New Base Capacity Charges – Sewer Utility

Capacity Fee Development	
Cost Basis for New Customers	\$ 715,251
Projected Customer Growth (in HEU's) ⁴	75
Proposed Capacity Charge Per HEU	\$ 9,537
<i>Existing Capacity Charge Per HEU</i>	<i>\$ 7,600</i>

A connecting single-family residential customer represents one HEU. The HEUs assigned to a given customer is a measure of expected impact on the sewer utility relative to the customer's expected flow and the strength of effluent (BOD and TSS). For example, each single-family home is assigned one HEU, and a customer who puts twice the demand on the sewer system (in terms of collection and treatment) would be assigned two HEUs. The number of HEUs for new connections with non-typical strength factors need to factor in the additional effluent loadings – an example of this calculation is provided in the Appendix B.

SECTION 4. RECOMMENDATIONS AND NEXT STEPS

A. CONSULTANT RECOMMENDATIONS

NBS recommends the District take the following actions:

- **Approve and Accept this Study Report:** NBS recommends the Board of Directors formally approve and adopt this Study and its recommendations and proceed with the steps outlined below to implement the new capacity charges. This will provide documentation of the study and the basis for adopting the new capacity charges.
- **Implement New Water and Sewer Capacity Charges:** Based on the analysis presented in this report, the District's Board of Directors should implement the new capacity charge of ***\$9,137 per 5/8-inch water meter equivalent*** unit and ***\$9,537 per sewer HEU*** recommended in this report.
- **Periodically Review Capacity Fees:** Any time an Agency adopts capacity fees, they should be periodically reviewed to incorporate new capital facility plans and/or significant repair and replacement projects. This will help ensure the fees generate sufficient revenue to cover the cost of capital projects, support the fiscal health of the District, and future customers bear their fair share of infrastructure costs.

B. PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this report and the recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, number of customer accounts, asset records, planned capital improvements, and other conditions and events that may occur in the future. This information and assumptions were provided by sources we believe to be reliable, although NBS has not independently verified this data.

While we believe NBS' use of such information and assumptions is reasonable for the purpose of this Study and its recommendations, some assumptions will invariably not materialize as stated herein or may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others.

APPENDIX A: ABBREVIATIONS AND ACRONYMS

Abbreviations and Acronyms

AAF	Average Annual Flow
AF	Acre Foot, equal to 435.6 HCF/CCF or 325,851 gallons
Alt.	Alternative
Avg.	Average
AWWA	American Water Works Association
BOD	Biochemical Oxygen Demand
CA	Customer
CAP	Capacity
CCI	Construction Cost Index
COM	Commodity
Comm.	Commercial
COS	Cost of Service
COSA	Cost of Service Analysis
CPI	Consumer Price Index
CIP	Capital Improvement Program
DU	Dwelling Unit
ENR	Engineering News Record
EDU	Equivalent Dwelling Unit
FP	Fire Protection
FY	Fiscal Year (e.g., July 1 st to June 30 th)
GPD	Gallons per Day
GPM	Gallons per Minute
HCF	Hundred Cubic Feet; equal to 748 gallons or 1 CCF
HEU	Housing Equivalent Unit
Ind.	Industrial
Irr.	Irrigation
MFR	Multi-Family Residential
MGD	Million Gallons per Day
MG/L	Milligrams per Liter
Mo.	Month
Muni.	Municipal
NPV	Net Present Value
O&M	Operational & Maintenance Expenses
Prop 218	Proposition 218 – State Constitutional amendment restricting local government revenue collections.
Rev.	Revenue
RTS	Readiness-to-Serve
R&R	Rehabilitation & Replacement
SFR	Single Family Residential
SRF Loan	State Revolving Fund Loan
SWRCB	State Water Resources Control Board
TSS / SS	Total Suspended Solids
WWTP	Waste Water Treatment Plant

APPENDIX B: TABLES FROM THE WATER CAPACITY CHARGE STUDY

METER EQUIVALENT UNITS

Meter Size	Existing Potable Water Meters ¹	Meter Equivalence ²		Potable Water Meter Equivalent Units
		Maximum Flow (GPM)	Equivalency to 5/8 inch meter ³	
5/8 Inch	2,453	20	1.00	2,453
1 Inch	4	50	2.50	10
1 1/2 Inch	2	100	5.00	10
2 Inch	10	160	8.00	80
Total	2,469			2,553

1. Per District utility billing data, as of the Jan-Dec 2017 billing period. Recycled water customer is the only 12 inch meter.
2. Maximum flow rates from *AWWAM1, Table B-1 (sixth edition)*, displacement meters.
3. Also known as hydraulic capacity factors.

EXISTING AND PROJECTED SERVICE NUMBERS

Demographic Statistics	Existing Total	Anticipated Future Connections ¹	No. Connections at Buildout ²	Allocation Factors		Cumulative Change	
				Existing Customers	New Customers	Number of Equivalent Units	% Increase
Equivalent 5/8-inch meters	2,553	124	2,677	95.4%	4.6%	124	4.9%

1. Anticipated future connections (equivalent meters) based on the District's existing growth of 0.25%.
2. While the District's 2014 Water Master Plan shows buildout is 3,281 connections, we have used the District's projected growth for the next 20 years.

EXISTING ASSETS, ORIGINAL AND REPLACEMENT COST

Asset Category ¹	Original Values ¹			Asset Cost Less Depreciation	Replacement Values ⁴		System Buy-In Cost Basis ²
	Beginning Cost	Improvements	Depreciation to Date		Beginning Cost	Depreciation to Date	
Water Fund							
ADMIN OFFICE BUILDING	\$ 322,533	\$ 68,608	\$ 324,949	\$ 66,192	\$ 731,367	\$ 596,066	\$ 135,300
BUILDINGS	19,158	3,719	21,380	1,497	6,230	3,905	2,325
FIELD ADMINISTRATION	-	546,473	236,643	309,830	913,046	367,382	545,664
FIELD EQUIPMENT	-	85,159	70,330	14,829	38,667	17,248	8,463
FLOOD CONTROL POND	153,312	246,835	214,622	185,525	258,978	64,630	194,348
GENERAL PLANT	20,627	-	20,627	-	-	-	-
GROUND WATER MONITORING	37,357	22,945	52,726	7,576	35,369	24,715	10,654
GROUNDWATER MODEL	-	86,458	86,458	-	-	-	-
LAND	22,454	-	-	22,454	22,454	-	22,454
OFFICE EQUIPMENT	286	161,330	161,616	-	-	-	-
OTHER PHYSICAL PROPERTY	-	5,575	5,575	-	-	-	-
RISK MANAGEMENT PLAN	-	17,412	17,412	-	-	-	-
ROAD IMPROVEMENT	-	4,766	2,449	2,317	6,762	3,475	3,288
STORAGE & MAINTENANCE BUILDING	-	49,156	49,156	-	-	-	-
TELEMETRY SYSTEM	30,707	-	30,707	-	-	-	-
VEHICLES	68,970	145,592	202,170	12,392	22,089	9,182	12,907
WASTEWATER SYSTEM PLAN	38,349	-	38,349	-	-	-	-
WATER BOOSTER STATIONS	9,800	-	9,800	-	-	-	-
WATER INTERTIES	155,310	-	90,616	64,694	336,348	198,517	137,831
WATER LINES	1,785,959	58,478	1,629,607	214,830	1,172,576	630,220	542,356
WATER METERS ³	-	-	-	-	-	-	-
WATER PUMPS	-	35,431	35,431	-	-	-	-
WATER SYSTEM IMPROVEMENT	-	3,098,065	901,895	2,196,169	5,049,394	1,414,547	3,634,847
WATER TANKS	802,404	39,747	509,874	332,277	1,450,211	779,007	671,205
WATER WELLS	26,071	409,097	435,168	-	-	-	-
Total Capital Facilities & Equipment	\$ 3,493,297	\$ 5,084,845	\$ 5,147,558	\$ 3,430,582	\$ 10,043,491	\$ 4,108,893	\$ 5,921,642

1. The source of the original asset cost and depreciation to date is the District's fixed asset list (depreciation is as of January 17, 2018). Fixed asset data was provided in the following source files: #6 - FIXED ASSET Accounting Report.PREP 06.22.18.xlsx
2. Cost basis for consideration is calculated as replication value less accumulated depreciation.
3. As meters and services distributed on a per account basis as new customers connect, NBS assumes there is no additional capacity which they provide for new customers. Thus, asset values associated with meters and services are fully allocated to existing customers.
4. Replacement values are calculated by escalating the original values (from District's fixed asset report) from service date to 2018 using historical inflation factors from the Handy-Whitman Index of Public Utility Construction Costs, for Water Utility Construction - Pacific Region.

ALLOCATION OF DEBT TO EXISTING AND FUTURE USERS

Bond Issue	Outstanding Principal	% Allocation		\$ - Allocation			Total
		Existing Customers	New Customers	Exclude from Analysis	Existing Customers	New Customers	
CIEDB 2002 Agreement - \$3,000,000 ¹	\$1,814,480	95.4%	4.6%	\$ -	\$ 1,730,410	\$ 84,070	\$ 1,814,480
Grand Total	\$1,814,480	95.4%	4.6%	\$ -	\$ 1,730,410	\$ 84,070	\$ 1,814,480

1. Outstanding bond principal is allocated to existing and future services based on projected growth in the system. See Demographics tab for detail.

ALLOCATION OF CASH RESERVES TO EXISTING AND FUTURE USERS

Cash Reserves	Beginning Cash ¹	% Allocation		\$ - Allocation			Total
		Existing Customers	New Customers	Exclude from Analysis	Existing Customers	New Customers	
Cash in Existing Reserves ²	\$ 287,620	95.4%	4.6%	\$ -	\$ 274,294	\$ 13,326	\$ 287,620
Cash with Fiscal Agent (Restricted Bond Funds) ³	\$ 225,805	95.4%	4.6%	\$ -	\$ 215,343	\$ 10,462	\$ 225,805
Total Beginning Cash	\$ 513,425	95.4%	4.6%	\$ -	\$ 489,636	\$ 23,789	\$ 513,425

1. Water Operations Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 49.

2. Existing District reserve funds are for: Operating and Capital Improvements.

3. Includes Redemption Fund in Debt Reserve. **Client needs to confirm this cash allocation.**

OUTSTANDING DEBT SERVICE FOR WATER SYSTEM INFRASTRUCTURE & ASSETS:

CIEDB 2002 Agreement - \$3,000,000 ¹

Fiscal Year	Principal	Interest	Annual Fee	NPV of Interest Payments ²
2013/14	\$ 86,627	79,304	6,836	\$ 81,683
2014/15	\$ 89,642	76,288	6,577	\$ 76,288
2015/16	\$ 92,761	73,170	6,308	\$ 73,170
2016/17	\$ 95,989	69,942	6,029	\$ 69,942
2017/18	\$ 99,330	66,601	5,741	\$ 64,661
2018/19	\$ 102,787	63,144	5,443	\$ 59,519
2019/20	\$ 106,363	59,567	5,135	\$ 54,512
2020/21	\$ 110,065	55,865	4,816	\$ 49,635
2021/22	\$ 113,895	52,035	4,486	\$ 44,886
2022/23	\$ 117,859	48,072	4,144	\$ 40,260
2023/24	\$ 121,960	43,970	3,791	\$ 35,752
2024/25	\$ 126,204	39,726	3,425	\$ 31,360
2025/26	\$ 130,596	35,334	3,046	\$ 27,081
2026/27	\$ 135,141	30,790	2,654	\$ 22,911
2027/28	\$ 139,844	26,086	2,249	\$ 18,845
2028/29	\$ 144,711	21,220	1,829	\$ 14,883
2029/30	\$ 149,747	16,184	1,395	\$ 11,021
2030/31	\$ 154,958	10,972	946	\$ 7,254
2031/32	\$ 160,350	5,580	481	\$ 3,582
2032/33				\$ -
Total	\$ 2,009,799	\$ 645,088	\$ 55,610	\$ 705,561

1. CIEDB-02 - Official Statement describes the loan was used primarily to fund the HVL Water System Improvements.

Source file: #9 - Loan Docs Fund 218 - CIEDB 2002.pdf.

2. **The Net Present Value of interest payments discounted at 3% per year.**

PLANNED CAPITAL PROJECTS

Facility / Equipment	Cost Estimate (2018-22) ¹	% Allocation			Distribution of Costs	
		Exclude from Analysis	Existing Customers	New Customers	Existing Customers	New Customers
General Plant						
Generators	\$ 2,172,000	0.0%	95.4%	4.6%	\$ 2,071,365	\$ 100,635
Office Equipment						
CCTV	\$ 135,000	0.0%	95.4%	4.6%	\$ 128,745	\$ 6,255
IT Upgrades	\$ 60,000	0.0%	95.4%	4.6%	\$ 57,220	\$ 2,780
SCADA Replacement	\$ 150,000	0.0%	95.4%	4.6%	\$ 143,050	\$ 6,950
Vehicles						
Vacc Truck	\$ 335,000	0.0%	95.4%	4.6%	\$ 319,478	\$ 15,522
Construction Truck	\$ 42,500	0.0%	95.4%	4.6%	\$ 40,531	\$ 1,969
Dump Truck	\$ 75,000	0.0%	95.4%	4.6%	\$ 71,525	\$ 3,475
Water Interties						
Water Plant VFDs	\$ 60,000	0.0%	95.4%	4.6%	\$ 57,220	\$ 2,780
Water Lines						
DS Line Replacement	\$ 2,709,000	0.0%	95.4%	4.6%	\$ 2,583,484	\$ 125,516
Water Pumps						
Hydrants	\$ 3,742,000	0.0%	95.4%	4.6%	\$ 3,568,622	\$ 173,378
Water Tanks						
Tanks	\$ 4,899,000	0.0%	95.4%	4.6%	\$ 4,672,015	\$ 226,985
Water Wells						
Well	\$ 3,642,000	0.0%	95.4%	4.6%	\$ 3,473,255	\$ 168,745
Total	\$ 18,021,500	0.0%	95.4%	4.6%	\$ 17,186,510	\$ 834,990

1. CIP from Source File: *Five Year Capital Improvement Plan.xlsx*. NBS assumes CIP will begin in FY 18/19.

2. Project costs are allocated to existing and future services based on projected growth in the system. See Demographics tab for detail.

DEVELOPMENT OF THE MAXIMUM CAPACITY FEE FOR A 5/8-INCH METER EQUIVALENT

System Asset Values Allocated to New Customers	
<i>System Asset Values Allocated to New Customers</i>	
Existing System Buy-In ¹	\$ 274,509
Future System Expansion ²	834,990
Total: Existing & Future System Costs	\$ 1,109,499
<i>Adjustments to Cost Basis Allocated to New Customers:</i>	
Cash Reserves	\$ 23,789
Outstanding Long-Term Debt (Principal)	-
Total: Adjustments to Cost Basis	\$ 23,789
Total Adjusted Cost Basis for New Customers	\$ 1,133,288

Summary of Costs Allocated to Water Capacity Fees	Adjusted System Cost Basis	Increase in 5/8-inch meter equivalents ³	Maximum Base Capacity Fee
Maximum Water Capacity Fee Per 5/8-inch meter	\$ 1,133,288	124	\$ 9,137
<i>Existing Capacity Fee Per 5/8-inch meter ⁴</i>			\$ 3,800

1. Refer to Table 4: Using System Buy In Costs and calculated Allocation factors for new customers.

2. Refer to Table 8: Distribution of Cost Basis

3. Refer to Exhibit 1. Demographics: for growth projections.

4. Source File: Fees and Charges.pdf

WATER CAPACITY FEES BASED ON METER SIZE

Meter Size	Equivalency Factor		Maximum Unit Cost (\$/5/8-inch meter)	Maximum Potable Capacity Fee Per Meter
	Maximum Continuous Flow (GPM) ¹	Equivalency to 5/8 inch meter		
<i>Displacement Meters</i>				
5/8 Inch	20	1.00	\$9,137	\$9,137
1 Inch	50	2.50	\$9,137	\$22,842
1 1/2 Inch	100	5.00	\$9,137	\$45,684
2 inch	160	8.00	\$9,137	\$73,095
<i>Compound Class I Meters</i>				
3 inch	320	16.00	\$9,137	\$146,189
4 inch	500	25.00	\$9,137	\$228,421
6 inch	1,000	50.00	\$9,137	\$456,842
<i>Turbine Class II Meters</i>				
8 inch	2,800	140.00	\$9,137	\$1,279,157
10 inch	4,200	210.00	\$9,137	\$1,918,735
12 inch	5,300	265.00	\$9,137	\$2,421,261

1. Source: AWWA M22, Table 6-1, page 62. Assumes displacement meters for 1" through 2", Compound Class I for 3" through 8" and Turbine Class II for 10" through 12" meters.

APPENDIX C: TABLES FROM THE SEWER CAPACITY CHARGE STUDY

HISTORICAL WASTEWATER TREATMENT PLANT DATA

Month	Wastewater Treatment Plant Flow Data	
	Monthly Flow (MG)	
	2016	2017
January	10.01	19.96
February	6.37	14.94
March	11.09	7.29
April	6.18	6.92
May	5.67	5.72
June	5.39	5.22
July	5.39	5.59
August	5.34	5.31
September	5.19	5.21
October	5.97	5.35
November	6.57	5.49
December	8.97	5.69
Total	82.1	92.7
2016-2017 Average	87.4	

Effluent⁴ is used as a reasonable representation of customer effluent (flows).

SUMMARY OF WASTEWATER TREATMENT PLANT FLOW DATA

2016-2017 Average Total Annual Flow (MG)	87.4
2016-2017 Average Daily Flow (MGD)	0.239
2016-2017 Average Total Annual Flow (mil. gal.)	87,403,500

ESTIMATED EXISTING HEU'S IN THE SEWER UTILITY

Estimated Existing HEU's	
Number of Existing Accounts/HEU's ¹	1,534
Estimated Daily Flow per Account/HEU (gal)	156

1. Number of HEU's from Sewer Rate Model.

Note: SFR is 1 HEU per account, and non-SFR is per District assignment of HEUs (assumed to be 187 gallons per day average per *SEWER ORDINANCE 57.pdf*). For future HEU calculations, we recommend using average SFR winter consumption of 5.08 hcf/account/mo.

ESTIMATED WASTEWATER TREATMENT PLANT CAPACITY

Wastewater Treatment Plant Capacity	Used by Existing Customers	Projected Use by New Customers ²	Adjusted Total Capacity ³
Existing vs. Potential Future Connections (MGD) ^{1,2}	0.239	0.011	0.251
Existing vs. Potential Future Connections (HEUs)	1,534	75	1,609
Capacity Allocation to Existing & New Customers (%)	96%	4%	100%

1. Capacity used by existing customers, per Table 2.

2. Capacity used by new customers is assumed to be based on 75 new connections over the next 20 years (reflects the 15 new connection from 2014 to 2018). The calculated from Peak Flow of 0.894 MGD is from File: *SSMP Final Draft April 2018, Page 5*.

3. This assumes the District will never reach full use of the system capacity and, therefore, the actual WWTP capacity is limited to total HEUs over the next 20 years (a reasonable planning period).

EXISTING AND FUTURE CUSTOMERS

Demographic Statistics	Existing vs. Future Connections			Existing vs. Future Connections (%)		
	Existing Customers ¹	Potential Future Customers ²	Total	Existing Customers ¹	Future Customers ²	Total
Connections in Housing Equivalent Units (HEU's)	1,534	75	1,609	95%	5%	100%

1. Number of HEU's from source file: NBS 2018 - #17_Manipulated Sewer Billing Data.xlsx

2. Based on calculation in Table 4 for new customers and estimated daily flow per account in Table 3. This assumes 75 new connections over the next 20 years, based on 15 new connection from 2014 to 2018.

EXISTING ASSETS, ORIGINAL AND REPLACEMENT COST ¹

Asset Category ¹	Original Values			Asset Cost Less Depreciation	Replacement Value	System Buy-In Cost Basis ²
	Asset Cost	Improvements	Depreciation to Date		Depreciation to Date	
Sewer Fund						
ADMIN OFFICE BUILDING	\$ 120,691	\$ 55,262	\$ 144,486	\$ 31,467	\$ 240,007	\$ 57,909
DECERTIFICATION SWR PDS	-	247,741	117,227	130,514	172,670	204,907
FIELD ADMINISTRATION/SHOP BUILDING	-	2,551,732	722,711	1,829,021	926,045	2,384,350
FIELD EQUIPMENT	43,475	590,355	467,589	166,240	275,714	190,575
LAND	580,596	4,868	4,868	580,596	-	580,596
OFFICE EQUIPMENT	23,016	151,960	174,976	-	-	-
ONSITE HOUSING	-	213,684	213,684	-	-	-
OTHER PHYSICAL PROPERTY	2,653	-	2,653	-	-	-
PROPERTY RIGHTS	47,600	-	47,600	-	47,600	-
RECLAIMED WATER DISPOSAL	878,504	125,247	713,602	290,149	1,180,803	484,225
RISK MANAGEMENT PLAN	-	26,993	24,519	2,474	9,818	3,285
ROAD IMPROVEMENT	-	58,340	42,772	15,568	46,550	17,109
SEWER LIFT STATIONS	40,100	321,280	135,736	225,645	100,304	236,661
SEWER LINES-OLD SYSTEM	182,200	25,682	201,791	6,092	15,282	6,926
SEWER II EXPANSION	34,423	-	22,153	12,270	58,315	32,300
SHOP BUILDING AT SEWER PLANT	-	48,872	48,872	-	-	-
VEHICLES	65,199	162,632	203,454	24,378	18,079	25,391
WASTEWATER COLLECTION FAC	5,942,089	321,210	4,306,055	1,957,244	7,144,121	3,229,030
WASTEWATER TREATMENT FAC	10,216,536	38,074	7,460,343	2,794,267	10,977,564	4,716,497
Total Capital Facilities & Equipment	\$ 18,177,082	\$ 4,943,934	\$ 15,055,091	\$ 8,065,925	\$ 21,212,871	\$ 12,169,760

Asset Category	System Buy-In Cost Basis ²	Allocation Basis (%) ³			Distribution of Cost Basis (\$)	
		Exclude from Analysis	Existing Customers	New Customers	Existing Customers	New Customers
Sewer Fund						
ADMIN OFFICE BUILDING	\$ 57,909	0%	95.3%	4.7%	\$ 55,209	\$ 2,699
DECERTIFICATION SWR PDS	204,907	0%	95.3%	4.7%	195,355	9,551
FIELD ADMINISTRATION/SHOP BUILDING	2,384,350	0%	95.3%	4.7%	2,273,209	111,141
FIELD EQUIPMENT	190,575	0%	95.3%	4.7%	181,692	8,883
LAND	580,596	0%	95.3%	4.7%	553,533	27,063
OFFICE EQUIPMENT	-	0%	0.0%	0.0%	-	-
ONSITE HOUSING	-	0%	0.0%	0.0%	-	-
OTHER PHYSICAL PROPERTY	-	0%	0.0%	0.0%	-	-
PROPERTY RIGHTS	-	0%	0.0%	0.0%	-	-
RECLAIMED WATER DISPOSAL	484,225	0%	95.3%	4.7%	461,654	22,571
RISK MANAGEMENT PLAN	3,285	0%	95.3%	4.7%	3,132	153
ROAD IMPROVEMENT	17,109	0%	95.3%	4.7%	16,312	798
SEWER LIFT STATIONS	236,661	0%	95.3%	4.7%	225,629	11,031
SEWER LINES-OLD SYSTEM	6,926	0%	95.3%	4.7%	6,603	323
SEWER II EXPANSION	32,300	0%	95.3%	4.7%	30,794	1,506
SHOP BUILDING AT SEWER PLANT	-	0%	0.0%	0.0%	-	-
VEHICLES	25,391	0%	95.3%	4.7%	24,207	1,184
WASTEWATER COLLECTION FAC	3,229,030	0%	95.3%	4.7%	3,078,516	150,514
WASTEWATER TREATMENT FAC	4,716,497	0%	95.3%	4.7%	4,496,647	219,849
Total Capital Facilities & Equipment	\$ 12,169,760	0%	95.3%	4.7%	\$ 11,602,494	\$ 567,267

1. Asset Data provided by the staff in source file: #6 - FIXED ASSET Accounting Report.PREP 06.22.18.xlsx, and these assets are included in the analysis.

2. Estimated Replacement Cost is calculated by escalating the remaining values (net of depreciation) from service date to January 2018 values using historical cost inflation factors from the Handy-Whitman Index of Public Utility Construction Costs, for Water Utility Construction in the Pacific Region. Estimated Replacement Cost is used in the capacity fee calculation is known as the "System Buy-in Cost Basis."

3. Allocation to existing and new customers developed in collaboration with City staff. Refer to Table 5: Existing and Future Customers for the detailed calculations.

Cash Reserves	Beginning Cash Balance	% Allocation		\$ - Allocation	
		Existing Customers	New Customers	Existing Customers	New Customers
Sewer Operating Reserve & CIP Reserve ^{1,2}	\$ 930,139	95.3%	4.7%	\$ 886,783	\$ 43,356
Debt Reserve Fund ³	\$ 709,123	95.3%	4.7%	\$ 676,069	\$ 33,054
Total	\$ 1,639,262	95.3%	4.7%	\$ 1,562,851	\$ 76,411

1. Sewer Operations Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 44.
2. Sewer Capital R&R Cash balance found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, Page 44. Includes Capital Facility Reserve
3. Sewer debt service cash balances include debt and bond funds; found in Source File: #3 - FY End 2017 Hidden Valley Lake Audit.pdf, p 44. Balance includes: 1995-2 Bond Redemption, USDA Solar Loan, USDA Reserve, All Bond Admin, Assessments and FA Investments.

ALLOCATION OF DEBT TO EXISTING AND FUTURE USERS

Bond Issue	Outstanding Principal	% Allocation		\$ - Allocation			Total
		Existing Customers	New Customers	Exclude from Analysis	Existing Customers	New Customers	
1995-2 Bond Redemption: Fund 215 ⁴	\$ 3,334,000	100.0%	0.0%	\$ -	\$ 3,334,000	\$ -	\$ 3,334,000
USDA Solar Loan - Fund 219 ⁵	\$ 549,500	100.0%	0.0%	\$ -	\$ 549,500	\$ -	\$ 549,500
Grand Total	\$ 3,883,500	100.0%	0.0%	\$ -	\$ 3,883,500	\$ -	\$ 3,883,500

4. Info for Fund 215 Loan in source file: #8 - Repayment Fund 215 - Bond Debt Schedule.pdf
5. Info for Fund 219 Loan in source file: #9 - Loan Docs Fund 219 - Solar 2011.pdf

1995-2 BOND REDEMPTION: FUND 215 ⁴

USDA SOLAR LOAN: FUND 219 ⁵

Fiscal Year	Principal	Total Annual Debt Service	NPV of Interest Payments ¹	Fiscal Year	Principal	Interest	Total Annual Debt Service	NPV of Interest Payments ¹
2013/14	\$ -	\$ -	\$ -	2013/14	\$ 14,000	18,465	\$ 32,465	\$ 18,465
2014/15	\$ -	\$ -	\$ -	2014/15	\$ 14,000	18,045	\$ 32,045	\$ 18,045
2015/16	\$ -	\$ -	\$ -	2015/16	\$ 14,500	17,618	\$ 32,118	\$ 17,618
2016/17	\$ 150,000	\$ 264,398	\$ 114,398	2016/17	\$ 15,000	17,175	\$ 32,175	\$ 17,175
2017/18	\$ 166,000	\$ 282,501	\$ 113,108	2017/18	\$ 15,500	16,718	\$ 32,218	\$ 16,718
2018/19	\$ 173,000	\$ 283,992	\$ 104,621	2018/19	\$ 16,000	16,245	\$ 32,245	\$ 16,245
2019/20	\$ 179,000	\$ 284,272	\$ 96,339	2019/20	\$ 16,500	15,758	\$ 32,258	\$ 15,758
2020/21	\$ 185,000	\$ 284,357	\$ 88,278	2020/21	\$ 17,000	15,255	\$ 32,255	\$ 15,255
2021/22	\$ 192,000	\$ 285,231	\$ 80,422	2021/22	\$ 17,500	14,738	\$ 32,238	\$ 14,738
2022/23	\$ 199,000	\$ 285,728	\$ 72,633	2022/23	\$ 18,000	14,205	\$ 32,205	\$ 14,205
2023/24	\$ 206,000	\$ 285,843	\$ 64,920	2023/24	\$ 18,500	13,658	\$ 32,158	\$ 13,658
2024/25	\$ 213,000	\$ 285,720	\$ 57,406	2024/25	\$ 19,000	13,095	\$ 32,095	\$ 13,095
2025/26	\$ 219,000	\$ 284,376	\$ 50,105	2025/26	\$ 19,500	12,518	\$ 32,018	\$ 12,518
2026/27	\$ 227,000	\$ 284,794	\$ 43,004	2026/27	\$ 20,000	11,925	\$ 31,925	\$ 11,925
2027/28	\$ 235,000	\$ 284,823	\$ 35,993	2027/28	\$ 21,000	11,310	\$ 32,310	\$ 11,310
2028/29	\$ 243,000	\$ 284,458	\$ 29,077	2028/29	\$ 21,500	10,673	\$ 32,173	\$ 10,673
2029/30	\$ 252,000	\$ 284,795	\$ 22,332	2029/30	\$ 22,000	10,020	\$ 32,020	\$ 10,020
2030/31	\$ 261,000	\$ 284,818	\$ 15,746	2030/31	\$ 23,000	9,345	\$ 32,345	\$ 9,345
2031/32	\$ 270,000	\$ 284,525	\$ 9,323	2031/32	\$ 23,500	8,648	\$ 32,148	\$ 8,648
2032/33	\$ 280,000	\$ 284,900	\$ 3,054	2032/33	\$ 24,000	7,935	\$ 31,935	\$ 7,935
2033/34	\$ -	\$ -	\$ -	2033/34	\$ 25,000	7,200	\$ 32,200	\$ 7,200
2034/35	\$ -	\$ -	\$ -	2034/35	\$ 25,500	6,743	\$ 32,243	\$ 6,743
2035/36	\$ -	\$ -	\$ -	2035/36	\$ 26,500	5,663	\$ 32,163	\$ 5,663
2036/37	\$ -	\$ -	\$ -	2036/37	\$ 27,000	4,860	\$ 31,860	\$ 4,860
2037/38	\$ -	\$ -	\$ -	2037/38	\$ 28,000	4,035	\$ 32,035	\$ 4,035
2038/39	\$ -	\$ -	\$ -	2038/39	\$ 29,000	3,180	\$ 32,180	\$ 3,180
2039/40	\$ -	\$ -	\$ -	2039/40	\$ 29,500	2,303	\$ 31,803	\$ 2,303
2040/41	\$ -	\$ -	\$ -	2040/41	\$ 30,500	1,403	\$ 31,903	\$ 1,403
2041/42	\$ -	\$ -	\$ -	2041/42	\$ 31,500	473	\$ 31,973	\$ 473
2042/43	\$ -	\$ -	\$ -	2042/43	\$ -	-	\$ -	\$ -
Total	\$ 3,650,000	\$ 4,819,531	\$ 1,000,759	Total	\$ 622,500	\$ 309,203	\$ 931,703	\$ 309,203

4. Info for Fund 215 Loan in source file: #8 - Repayment Fund 215 - Bond
 5. Info for Fund 219 Loan in source file: #9 - Loan Docs Fund 219 - Solar 2011.pdf
- The Net Present Value of interest payments discounted at 3% per ye The Net Present Value of interest payments discounted at 3% per year.

Facility / Equipment	Cost Estimate (2018-22) ¹	External Funding	System Development Cost Basis ¹	% Allocation ²		Distrib. of Cost Basis (\$)	
				Existing Customers	New Customers	Existing Customers	New Customers
General Plant							
IT Upgrades	\$ 60,000	\$ -	\$ 60,000	95%	5%	\$ 57,203	\$ 2,797
SCADA Replacement	\$ 150,000	\$ -	\$ 150,000	95%	5%	\$ 143,008	\$ 6,992
Primary Treatment							
Chlorine Tank Auto Shut Off	\$ 32,000	\$ -	\$ 32,000	95%	5%	\$ 30,508	\$ 1,492
Install Security Fencing at Lift Station 1 & 4	\$ 10,000	\$ -	\$ 10,000	95%	5%	\$ 9,534	\$ 466
Prelim. Design - Chlorine Disinfection Facility	\$ 45,000	\$ -	\$ 45,000	95%	5%	\$ 42,902	\$ 2,098
Sample Stations	\$ 10,000	\$ -	\$ 10,000	95%	5%	\$ 9,534	\$ 466
Risk Management Plan							
Manhole Rehab	\$ 250,000	\$ -	\$ 250,000	95%	5%	\$ 238,347	\$ 11,653
Sewer collection lines							
CS Line Replacement	\$ 350,000	\$ -	\$ 350,000	95%	5%	\$ 333,686	\$ 16,314
Pump Replacement/Overhaul	\$ 112,500	\$ -	\$ 112,500	95%	5%	\$ 107,256	\$ 5,244
Repair Sewer Lateral Leaks	\$ 40,000	\$ -	\$ 40,000	95%	5%	\$ 38,135	\$ 1,865
Tideflex - Stormwater (50% grant funded) ³	\$ 658,000	\$ 329,000	\$ 329,000	95%	5%	\$ 313,664	\$ 15,336
Vehicles							
Backhoe	\$ -	\$ -	\$ -	95%	5%	\$ -	\$ -
Construction Truck	\$ 72,000	\$ -	\$ 72,000	95%	5%	\$ 68,644	\$ 3,356
Dump Truck	\$ 75,000	\$ -	\$ 75,000	95%	5%	\$ 71,504	\$ 3,496
Total	\$ 1,864,500	\$ 329,000	\$ 1,535,500	95%	5%	\$1,463,926	\$ 71,574

1. Capital project costs for next 5 years were provided by City Staff in source files: #1 - Approved 2017-2018 budget.pdf and Five Year Capital Improvement Plan.xlsx
2. Project costs are allocated to existing and future services based on projected growth in the system. See Demographics tab for detail.
3. Currently funded with Sewer Revenue and is used to protect Sewer Infrastructure. Although the project will not proceed unless Prop 1 Grant and SRF Loan are approved it is planned at this time. However, only need to finance 50% (for SRF Loan repayment).

DEVELOPMENT OF COST BASIS FOR NEW CUSTOMERS

System Asset Values Allocated to New Customers	
<i>System Asset Values Allocated to New Customers</i>	
Existing System Buy-In ¹	\$ 567,267
Future System Expansion ²	71,574
Total: Existing & Future System Costs	\$ 638,841
<i>Adjustments to Cost Basis Allocated to New Customers:</i>	
Cash Reserves ³	\$ 76,411
Outstanding Long-Term Debt (Principal) Allocated to Future Users	-
Total: Adjustments to Cost Basis	\$ 76,411
Total: Cost Basis for New Customers	\$ 715,251

DEVELOPMENT OF SEWER CAPACITY FEE PER HEU

Capacity Fee Development	
Cost Basis for New Customers	\$ 715,251
Projected Customer Growth (in HEU's) ⁴	75
Proposed Capacity Charge Per HEU	\$ 9,537
<i>Existing Capacity Charge Per HEU</i>	<i>\$ 7,600</i>

1. Refer to Table 7: Using System Buy In Costs and calculated Allocation factors for new customers.
2. Refer to Table 10: Distribution of Cost Basis for New Users
3. Refer to Table 8: Allocation of Cash Reserves to New Users
4. Refer to Exhibit 1, Table 5 for customer growth projections.

Calculating HEUs for Non-SFR Connections:

Classification of Expenses Continued ¹						
Budget Categories	Total Revenue Requirements	Flow	Strength		Customer	Recycled Water
	FY 2018/19	(VOL) hcf	(BOD) mg/L	(TSS) mg/L	(CA) Accts.	(RW)
NET REVENUE REQUIREMENTS	\$ 1,341,254	\$ 530,849	\$ 272,584	\$ 272,584	\$ 141,518	\$ 123,720
<i>Allocation of Revenue Requirements</i>	100.0%	39.6%	20.3%	20.3%	10.6%	9.2%
(1) Alloc. % Adjusted to exclude RW:		43.6%	22.4%	22.4%	11.6%	

1. From sewer rate model.

Example of Restaurant:	HEU Based on Meter Size ¹	(VOL) hcf	(BOD) mg/L ²	(TSS) mg/L ²	(CA) Accts.	Total HEUs, Non-SFR
<i>New Connection's Characteristics</i>	1.00	8.7	1000	600	1	
SFR (Typical)		8.67	200	200	1	
(2) Strength Factor (BOD or TSS)			5.0	3.0		
(3) HEU Factor (VOL and CA)		1.0			1.0	
Estimated HEUs (by component) =		0.44	1.12	0.67	0.12	2.34

2. From SWRCB Appendix G. (Restaurant in this case).

(1) Alloc. % (Adjusted)
x (3) "HEU Factor" (CA/Accts.)

(1) Alloc. % (Adjusted)
x (3) "HEU Factor" (Vol./hcf)

(1) Alloc. % (Adjusted)
x (2) "Factor" (BOD or TSS)
x (3) "HEU Factor" (Vol./hcf)

Example of Market w/ Garbage Grinder	HEU Based on Meter Size ¹	(VOL) hcf	(BOD) mg/L ²	(TSS) mg/L ²	(CA) Accts.	Total HEUs, Non-SFR
<i>New Connection's Characteristics</i>	8.00	69.4	800	800	1	
SFR (Typical)		8.67	200	200	1	
(2) Strength Factor (BOD or TSS)			4.0	4.0		
(3) HEU Factor (VOL and CA)		8.0			1.0	
Estimated HEUs (by component) =		3.49	7.16	7.16	0.12	17.93

1. Determined by hydraulic capacity factor (see accompanying table)

2. From SWRCB Appendix G. (Market w/ grinders in this case).