VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

CAPACITY FEE UPDATE (NEXUS) STUDY

OPTION: B NON-RECESSION MODEL

Victor Valley Wastewater Reclamation Authority
Capacity Fee Update Study

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Introduction

The Victor Valley Wastewater Reclamation Authority ("VVWRA" or the "Authority") is a California Joint Powers Authority (JPA) that owns and operates regional wastewater collection and treatment facilities serving the Victor Valley area. The Authority's service area includes the Town of Apple Valley, the City of Hesperia, the City of Victorville, the Southern California Logistics Airport, and San Bernardino County Services Areas 42 (Oro Grande) and 64 (Spring Valley Lake).

VVWRA owns and maintains 40.5 miles of interceptor sewers, two pump stations and a regional wastewater reclamation plant. A portion of the interceptor system is constructed in the stream bed of the Mojave River. The existing wastewater reclamation plant is rated for 12.5 Million Gallons per Day (MGD), which is further defined under the Authority's operating permit as 8.3 MGD discharge to the Mojave River and 4.2 MGD discharge to percolation ponds. The process at the regional treatment plant consists of screening, grit removal, primary clarification, biological oxidation of wastes with complete nitrification, secondary clarification, coagulation, flocculation, filtration, and disinfection. In April 2005 construction began on a project that will expand the capacity of the regional treatment facility to 14.5 MGD. Completion of this expansion is expected in late 2007, by which time treated effluent is anticipated to equal 14.5 MGD.

In early 2005 design work began on the expansion of the regional treatment facility to a capacity of 18 MGD. Construction on this expansion phase is expected to begin in early 2006.

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Background

The Authority adopted a Sewerage Facilities Plan Update on August 1, 2005[1]. On September 19, 2005 the Board adopted the Capital Improvement Plan (CIP) which incorporates a comprehensive projection of the additional facilities needed to meet the projected sewer capacity demands over a twenty-year period. The Authority's members are experiencing unprecedented growth and it is necessary to expand the existing treatment facility and build sub-regional treatment plants that can accommodate the growth and also meet the demand for non-potable water. In addition, the sub-regional plants will reduce the load on the truck sewers transporting sewage to the existing wastewater treatment plant. The proposed capital plan provides two major benefits; it provides a much-needed supply of non-potable water and mitigates some of the need to construct additional trunk sewer capacity near the Mojave River.

[1] Sewerage Facilities Plan Update Year 2005 Amendment (An amendment and supplement to the Sewerage Plan Prepared in 1997 by McDonald-Stevens Engineers, Inc.)

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Methodology

The purpose of this report is to translate the cost of the updated CIP into an appropriate capacity fee in compliance with the law, as noted in the following sections of Government Code 66013:

> *66013. (a) Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount of the fee or charge imposed in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue.*
>
> *(b) As used in this section:*
>
> *(1) "Sewer connection" means the connection of a structure or project to a public sewer system.*
>
> *(2) "Water connection" means the connection of a structure or project to a public water system, as defined in subdivision (f) of Section 116275 of the Health and Safety Code.*
>
> *(3) "Capacity charge" means 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.*
>
> *(4) "Local agency" means a local agency as defined in Section 66000.*
>
> *(5) "Fee" means a fee for the physical facilities necessary to make a water connection or sewer connection, including, but not limited to, meters, meter boxes, and pipelines from the structure or project to a water distribution line or sewer main, and that does not exceed the estimated reasonable cost of labor and materials for installation of those facilities.*
>
> *(c) A local agency receiving payment of a charge as specified in paragraph (3) of subdivision (b) shall deposit it in a separate capital facilities fund with other charges received, and account for the charges in a manner to avoid any commingling with other moneys of the local agency, except for investments, and shall expend those charges solely for the purposes for which the charges were collected. Any interest income earned from the investment of moneys in the capital facilities fund shall be deposited in that fund.*
>
> *(d) For a fund established pursuant to subdivision (c), a local agency shall make available to the public, within 180 days after the last day of each fiscal year, the following information for that fiscal year:*
>
> *(1) A description of the charges deposited in the fund.*
>
> *(2) The beginning and ending balance of the fund and the interest earned from investment of moneys in the fund.*
>
> *(3) The amount of charges collected in that fiscal year.*
>
> *(4) An identification of all of the following:*

(A) Each public improvement on which charges were expended and the amount of the expenditure for each improvement, including the percentage of the total cost of the public improvement that was funded with those charges if more than one source of funding was used.

(B) Each public improvement on which charges were expended that was completed during that fiscal year.

(C) Each public improvement that is anticipated to be undertaken in the following fiscal year.

(5) A description of each interfund transfer or loan made from the capital facilities fund. The information provided, in the case of an interfund transfer, shall identify the public improvements on which the transferred moneys are, or will be, expended. The information, in the case of an interfund loan, shall include the date on which the loan will be repaid, and the rate of interest that the fund will receive on the loan.

(e) The information required pursuant to subdivision (d) may be included in the local agency's annual financial report.

(f) The provisions of subdivisions (c) and (d) shall not apply to any of the following:

(1) Moneys received to construct public facilities pursuant to a contract between a local agency and a person or entity, including, but not limited to, a reimbursement agreement pursuant to Section 66003.

(2) Charges that are used to pay existing debt service or which are subject to a contract with a trustee for bondholders that requires a different accounting of the charges, or charges that are used to reimburse the local agency or to reimburse a person or entity who advanced funds under a reimbursement agreement or contract for facilities in existence at the time the charges are collected.

(3) Charges collected on or before December 31, 1998.

(g) Any judicial action or proceeding to attack, review, set aside, void, or annul the ordinance, resolution, or motion imposing a fee or capacity charge subject to this section shall be brought pursuant to Section 66022.

(h) Fees and charges subject to this section are not subject to the provisions of Chapter 5 (commencing with Section 66000), but are subject to the provisions of Sections 66016, 66022, and 66023.

(i) The provisions of subdivisions (c) and (d) shall only apply to capacity charges levied pursuant to this section.

Based on the foregoing code section it is necessary to determine the projected growth in the service area the demand for a given increment of growth and the facilities needed to accommodate that growth.

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Projected Growth and Demand

The first step in the process is to determine the projected growth in the population of the service area and the corresponding increase in sewage discharge.

The population projections developed for this report are based on the 2005 Amendment to the Sewerage Facilities Plan[2]. The population projections are summarized in the Table 1 below.

Table 1
Service Area Population Projections

Member Entity	2005	2010	2015	2020	2025
Victorville inc. SCLA	90,652	115,645	134,065	155,418	180,172
CSA-42	774	774	774	774	774
CSA-64	12,193	14,135	16,386	17,058	17,058
Apple Valley	61,330	68,030	75,462	83,707	92,851
Hesperia	73,026	86,730	99,084	115,419	137,082
Total	237,975	285,314	325,771	372,376	427,937

The population projections were then translated into sewage discharge per equivalent dwelling unit (EDU). Based on industry averages the amount of discharge per EDU has been determined to be 245 gallons per day (GPD). (Appendix I)

The member agencies of the authority have provided estimates for the number of new EDUs per year. Based upon the data underlying Table 1, this estimated annual growth is summarized in Figure 1 below and presented in Appendix I.

[2] Sewage Facility Plan adopted August 1, 2005 update year 2005 amendment

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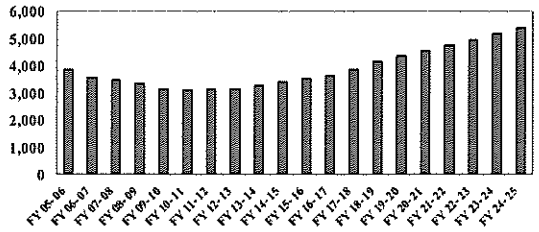
Figure 1

Annual Increase in Sewage (EDUs)

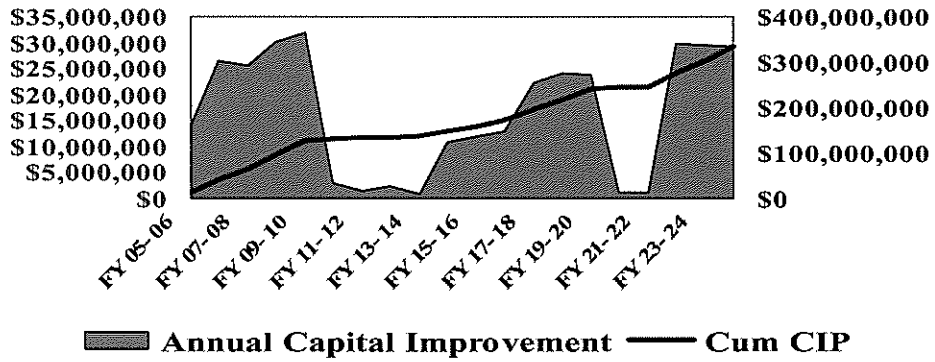


Projected Capital Facilities

Given the projected increase in sewage discharge and its timing as projected by Authority staff and its engineering consultants the CIP was developed as presented in Appendix II. Figure 2 provides a graphic summary of the aggregate CIP. The CIP noted in Figure 2 below includes only that portion of the VVWRA's capital program that addresses growth. The Authority has capital replacement and outlay expenses but those are funded through user charges.

Figure 2

Capital Improvement Program Requirements



The relatively large capital expense through fiscal year 2011-12 is the result of the need to construct the 18 MGD wastewater treatment plant expansion and the two sub-regional treatment facilites. These facilities are constructed in economical units and thus are initially oversized to

accommodate future growth. As a result, VVWRA will incur large up-front capital expenses. It should be pointed out that the 18 MGD expansion will only provide treatment capacity up to 2012 given current growth projections, which represents only four years of capacity after it is finished. The proposed Hesperia and Apple Valley sub-regional treatment facilities are anticipated to provide an additional ten years of treatment capacity for the Authority. It generally takes 4 to 5 years lead-time for any major public works project. Consequently, facilities must be initiated well in advance of anticipated population growth.

Capacity Fee Calculations

The next step is to develop a Capacity Charge to pay for the CIP. The transportation, treatment, and disposal of sewage are considered a regional benefit and thus each EDU shares in the cost as well as the benefit.

Inasmuch as the CIP represents a multi-year program, the Authority must take into consideration construction cost inflation, anticipated timing of improvements, borrowing costs and the time value of money. Appendix III presents a model that takes the foregoing information and calculates a Capacity Charge per EDU. The beginning cash balance shown fiscal year 2005-06 represents funds that have been collected for the construction of Authority facilities. These funds will be spent on the current construction program for the 14 MGD wastewater treatment plant expansion.

In order for the Capacity Fee program to work properly, program revenues have to equal as closely as possible aggregate CIP expenses with positive annual ending balance in the capital account. Capital expenditures in the CIP are adjusted annually for construction cost inflation utilizing a factor of 3%. This rate is based on the average of the Engineering News Record Index (ENR) since 1990. The method used for this report takes into consideration all the parameters previously discussed and develops a solution with a $55 million ending balance in FY 2024-25. This fund balance can be used for additional capital projects, if needed, or used to pay off the remaining outstanding debt related to the CIP. Given the uncertainties of a twenty-year planning horizon, it is impossible to predict the exact outcome of the CIP as the size and timing if the capital program will be driven by growth.

The resulting charge per EDU of this calculation are noted in Tables 2.

Table 2

Capacity Fees

FY 05- 06	FY 06- 07	FY 07- 08	FY 08- 09	FY 09- 10	FY 10- 11	FY 11- 12	FY 12- 13
$2,974	$3,108	$3,248	$3,394	$3,546	$3,706	$3,873	$4,047
FY 13- 14	**FY 14- 15**	**FY 15- 16**	**FY 16- 17**	**FY 17- 18**	**FY 18- 19**	**FY 19- 20**	**FY 20- 21**
$4,229	$4,420	$4,618	$4,826	$5,043	$5,270	$5,508	$5,755
FY 21- 22	**FY 22- 23**	**FY 23- 24**	**FY 24- 25**				
$6,014	$6,285	$6,568	$6,863				

In order to account for the time value of money the charge per EDU is adjusted by 4.5% per year. This rate represents the approximate current yield on the ten-year treasury and serves as a proxy for the cost of money over time. If the Capacity Fee was not adjusted for the time value of money, it would then be set as a flat rate over time. Under this approach, the aggregate need of the CIP through the 20 year planning period ($376,216,500) would simply be divided by the anticipated number of new EDU's over that interval (77,948). The resulting amount ($4,826) would then become the Capacity Fee over the life of the program. The problem with this approach is that it penalizes earlier EDU's relative to later EDU's. The dollars contributed by the last EDU in 2024/25 in current dollar terms (i.e., 2005/06 dollars) would be significantly lower that the Capacity Fee paid now. Using a 4.5% cost of funds rate, $4,826 paid in 2024/25 would only be worth $2,000 in today's dollars. The adjustment for the time value of money provides for a measure of "generational equity" in the Capacity Fee structure.

Financing the CIP

Figure 3 depicts estimated income from Capacity Fees relative to projected CIP expenses. In the early years of the capital program, Capacity Fee revenue does not meet CIP expenses. As discussed below, this dictates a strategy that includes bonding for a portion of the Authority's capital improvements. Thereafter, the program is designed to function on a pay-as-you-go basis. Figure 3 provides an illustration of the program assuming annual EDU connections in Appendix I.

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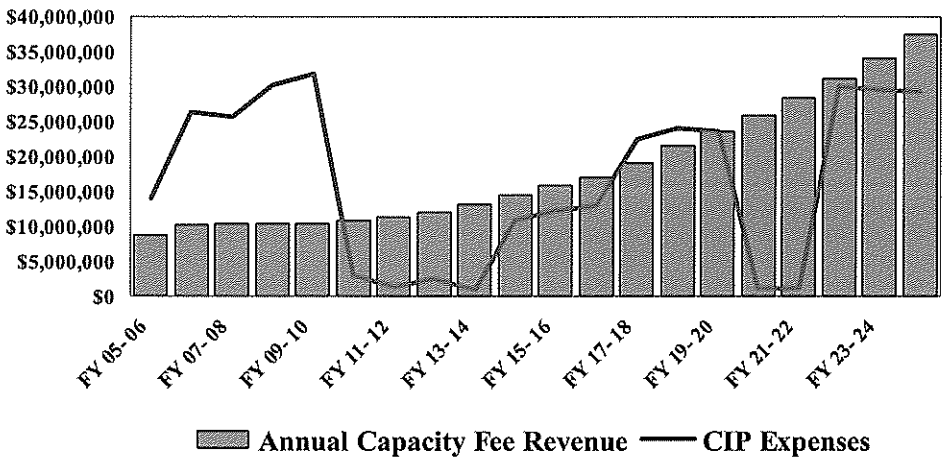
Figure 3

Capacity Fee and CIP Expenses



As discussed above, given the mismatch between Capacity Fee revenue and CIP expenses, borrowing are necessary to cover the projected shortfall. It can be noted that a borrowing of approximately $70 to $75 million in early 2006 will be required to satisfy the needs of the CIP. Note that changes in the CIP, higher construction costs or reduced Capacity Fee revenue could result in additional financings.

It should be noted that the borrowing program provides sufficient funds, along with the Capacity Fee revenues, to fund the Authority's twenty-year CIP. As illustrated below, the Authority's projected cash flow will result in a residual cash balance for additional CIP expenses or moneys that allow for the pay off of VVWRA debt.

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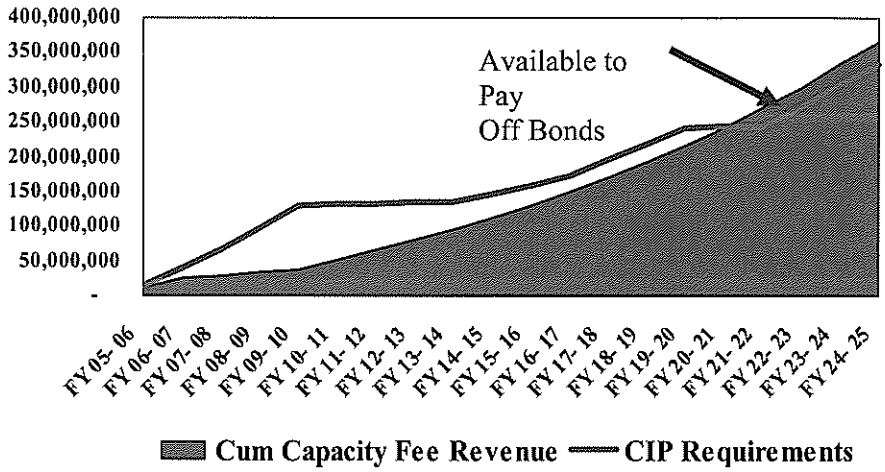
Figure 4 below is a demonstration of the cumulative revenue and expenses.

Figure 4

Cumulative Capacity Fees



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Final Step of Adopting a Capacity Fee

The commissioners would review the draft report and make revisions as required. The next step is governed by Government Code § 66016 as follows:

> *"66016. (a) Prior to levying a new fee or service charge, or prior to approving an increase in an existing fee or service charge, a local agency shall hold at least one open and public meeting, at which oral or written presentations can be made, as part of a regularly scheduled meeting. Notice of the time and place of the meeting, including a general explanation of the matter to be considered, and a statement that the data required by this section is available, shall be mailed at least 14 days prior to the meeting to any interested party who files a written request with the local agency for mailed notice of the meeting on new or increased fees or service charges. Any written request for mailed notices shall be valid for one year from the date on which it is filed unless a renewal request is filed. Renewal requests for mailed notices shall be filed on or before April 1 of each year. The legislative body may establish a reasonable annual charge for sending notices based on the estimated cost of providing the service. At least 10 days prior to the meeting, the local agency shall make available to the public data indicating the amount of cost, or estimated cost, required to provide the service for which the fee or service charge is levied and the revenue sources anticipated to provide the service, including General Fund revenues. Unless there has been voter approval, as prescribed by Section 66013 or 66014, no local agency shall levy a new fee or service charge or increase an existing fee or service charge to an amount which exceeds the estimated amount required to provide the service for which the fee or service charge is levied. If, however, the fees or service charges create revenues in excess of actual cost, those revenues shall be used to reduce the fee or service charge creating the excess.*
>
> *(b) Any action by a local agency to levy a new fee or service charge or to approve an increase in an existing fee or service charge shall be taken only by ordinance or resolution. The legislative body of a local agency shall not delegate the authority to adopt a new fee or service charge, or to increase a fee or service charge.*
>
> *(c) Any costs incurred by a local agency in conducting the meeting or meetings required pursuant to subdivision (a) may be recovered from fees charged for the services which were the subject of the meeting."*

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Summary and Recommendations

This report is based on the CIP prepared by the Authority's engineers and adopted by the Board.

The sewer capacity fees described herein (and calculation explained in Appendix IV) are imposed as a condition of receiving a new sewer service and not as a condition of development approval or as incident of property ownership.

Since this report is a twenty-year plan it is recommended that the VVWRA conduct an annual review and make revisions to the Capacity Fee schedule as necessary.

It is recommended that the Commissioners approve the Capacity Fees and direct staff to proceed with public notice and hearing as previously described.

Projected EDUs

Appendix-I

TABLE 2 - 6
VVWRA
2005 SEWERAGE FACILITIES PLAN UPDATE
VVWRA Service Population, Wastewater Flows, and EDU Projections

Year	Victorville Including SCLA			CSA's 42 and 64			Town of Apple Valley			Hesperia			Totals				Fiscal Year EDUs
	Sewered Population	Flow MGD	EDU's Current	Sewered Population	Flow MGD	EDU's Current	Sewered Population	Flow MGD	EDU's Current	Sewered Population	Flow MGD	EDU's Current	Sewered Population	Flow MGD	EDU's Current	EDU's Increase	
2004	81,514	7.41	30,249	12,612	0.85	3,450	20,610	1.81	7,383	15,720	1.47	5,990	130,456	11.53	47,073		
2005	87,859	7.99	32,594	12,967	0.88	3,579	22,863	2.04	8,314	17,382	1.65	6,739	141,071	12.55	51,226	4,153	
2006	94,205	8.56	34,959	13,333	0.91	3,712	23,698	2.13	8,703	19,171	1.83	7,450	150,407	13.43	54,824	3,598	3,875
2007	100,024	9.11	37,174	13,710	0.94	3,851	24,551	2.23	9,099	21,155	2.02	8,226	159,439	14.30	58,351	3,527	3,562
2008	105,165	9.60	39,191	14,098	0.98	3,997	25,488	2.33	9,525	23,344	2.22	9,073	168,096	15.14	61,785	3,434	3,481
2009	109,484	10.04	40,965	14,497	1.02	4,149	26,446	2.44	9,959	25,667	2.44	9,965	176,095	15.93	65,037	3,252	3,343
2010	112,853	10.40	42,456	14,909	1.06	4,308	27,493	2.55	10,424	28,131	2.67	10,906	183,385	16.68	68,093	3,056	3,154
2011	116,322	10.78	44,009	15,333	1.10	4,474	28,562	2.67	10,898	30,742	2.91	11,897	190,959	17.46	71,280	3,186	3,121
2012	119,895	11.18	45,628	15,770	1.14	4,650	29,726	2.79	11,406	32,717	3.11	12,684	198,108	18.22	74,368	3,089	3,137
2013	123,576	11.59	47,316	16,220	1.18	4,834	30,915	2.92	11,924	34,787	3.31	13,505	205,497	19.01	77,579	3,211	3,150
2014	127,367	12.02	49,076	16,683	1.23	5,028	32,204	3.06	12,477	36,933	3.52	14,354	213,187	19.83	80,936	3,357	3,284
2015	131,272	12.47	50,913	17,160	1.28	5,234	33,521	3.20	13,042	39,131	3.73	15,223	221,084	20.68	84,412	3,476	3,416
2016	135,294	12.94	52,830	17,652	1.34	5,451	34,944	3.34	13,644	41,411	3.95	16,122	229,300	21.57	88,048	3,636	3,556
2017	139,436	13.43	54,831	17,832	1.37	5,576	36,396	3.49	14,259	43,747	4.18	17,044	237,412	22.47	91,710	3,662	3,649
2018	143,703	13.95	56,922	17,832	1.38	5,651	37,962	3.65	14,913	47,135	4.49	18,313	246,632	23.47	95,799	4,089	3,876
2019	148,098	14.48	59,107	17,832	1.41	5,738	39,561	3.82	15,582	50,643	4.81	19,624	256,134	24.51	100,051	4,252	4,171
2020	152,625	15.04	61,391	17,832	1.43	5,837	41,279	3.99	16,292	54,312	5.14	20,993	266,047	25.61	104,514	4,463	4,357
2021	157,287	15.63	63,780	17,832	1.46	5,952	43,033	4.17	17,018	58,109	5.49	22,408	276,261	26.74	109,158	4,644	4,554
2022	162,090	16.24	66,280	17,832	1.49	6,084	44,823	4.35	17,759	62,081	5.85	23,885	286,826	27.93	114,008	4,850	4,747
2023	167,036	16.88	68,897	17,832	1.53	6,235	46,651	4.54	18,516	66,193	6.23	25,413	297,712	29.17	119,060	5,053	4,951
2024	172,131	17.55	71,637	17,832	1.57	6,409	48,518	4.73	19,290	70,493	6.62	27,007	308,973	30.46	124,343	5,282	5,167
2025	177,379	18.25	74,508	17,832	1.62	6,610	50,423	4.92	20,080	74,942	7.02	28,655	320,576	31.81	129,853	5,510	5,396

NOTE: Dates shown are as of July 1, the beginning of the annual fiscal year. The EDU's shown are based only on gallons of domestic wastewater (245 gpd) and do not reflect the greater number of EDU's typical of high strength commercial and industrial wastewater.

VVWRA Capital Improvement Plan

Appendix-II

Project No.	Project Description	3.00%	0 FY 05- 06	1 FY 06- 07	2 FY 07- 08	3 FY 08- 09	4 FY 09- 10	5 FY 10- 11	6 FY 11- 12	7 FY 12- 13	8 FY 13- 14	9 FY 14- 15	10 FY 15- 16
1	Regional Plant 14.5 MGD Expansion Construction Project		$12,500,000	$12,875,000									
2	Regional Plant 18 MGD Expansion Design/CEQA			$1,054,494									
3	SCLA Reclaimed Water Pumping System Construction		$239,000										
4	SCLA Reclaimed Water Pipeline Construction		$286,479										
5	Subregional Public Relations Program, FY 2005-2006		$214,713										
6	Interceptor Capacity Modeling Study		$112,852										
7	Interconnection with SCE for Peak Shaving		$45,000										
8	Interceptor System Relief Sewer Phase I Design/CEQA/Permitting		$437,661										
9	Upper Narrows Pump Station Design/CEQA/Permitting		$312,500										
10	Interceptor System Relief Sewer Phase I Construction Project			$1,803,163									
11	Interceptor System Relief Sewer Phase II Design/CEQA/Permitting			$46,235									
12	Purchase Dump Truck			$46,350									
13	Apple Valley Brewster Park 4 MGD Subregional Design/CEQA/Permitting			$1,287,500									
14	Apple Valley Brewster Park 4 MGD Subregional Property Acquisition			$257,500									
15	Hesperia Freeway Corridor 4 MGD Subregional Design/CEQA/Permitting			$1,287,500									
16	Hesperia Freeway Corridor 4 MGD Subregional Property Acquisition			$257,500									
17	Upper Narrows Subregional CEQA/Property Acquisition			$875,500									
18	Upper Narrows Pump Station Construction Project			$1,287,500									
19	Interceptor System Relief Sewer Phase II Construction Project			$184,937									
20	Regional Plant 18 MGD Expansion Construction Project			$5,150,000	$5,304,500	$5,463,635	$5,627,544						
21	Interceptor System Relief Sewer Phase III Design/CEQA/Permitting				$120,490								
22	Apple Valley Desert Knolls Sewage Pumping System CEQA/Property Acquisition				$530,450								
23	Hesperia I Avenue Sewage Pumping System CEQA/Property Acquisition				$530,450								
24	Interceptor System Relief Sewer Phase III Construction Project				$240,980	$248,209							
25	Apple Valley Brewster Park 4 MGD Subregional Construction Project				$8,840,833	$9,106,058	$9,379,240						
26	Hesperia Freeway Corridor 4 MGD Subregional Construction Project				$8,840,833	$9,106,058	$9,379,240						
27	Interceptor System Relief Sewer Phase IV Design/CEQA/Permitting					$95,053							
28	Apple Valley Desert Knolls Sewage Pumping System Design				$397,838	$409,773							
29	Hesperia I Avenue Sewage Pumping System Design				$795,675								
30	Interceptor System Relief Sewer Phase IV Construction Project				$184,570	$190,107							
31	Interceptor System Relief Sewer Phase V Design/CEQA/Permitting					$85,450							
32	Apple Valley Desert Knolls Sewage Pumping System Construction					$2,731,818	$2,813,772						
33	Hesperia I Avenue Sewage Pumping System Construction					$2,731,818	$2,813,772						
34	New Administration Building Design						$140,689	$144,909					
35	Interceptor System Relief Sewer Phase V Construction Project						$176,027	$181,308					
36	Interceptor System Relief Sewer Phase VI Design/CEQA/Permitting						$41,481						
37	New Administration Building Construction Project						$1,406,886	$1,449,093					
38	Interceptor System Relief Sewer Phase VI Construction Project						$82,961	$85,450					
39	Emergency Preparedness Facilities, Pipe & Storage Bldg						$42,207	$43,473					
40	New Administration Building Furniture & Equipment							$869,456					
41	Interceptor System Relief Sewer Phase VII Design/CEQA/Permitting							$278,955					
42	Regional Plant Expansion CEQA/Property Acquisition								$895,539	$922,405			
43	Interceptor System Relief Sewer Phase VII Construction Project								$574,646	$591,885			
44	Hesperia Freeway Corridor 8 MGD Subregional Expansion Design/CEQA									$922,405	$950,078		
45	Hesperia Freeway Corridor 8 MGD Subregional Expansion Construction											$10,873,110	$11,199,303
46	Apple Valley Brewster Park 8 MGD Subregional Expansion Design/CEQA												$1,007,937
47	Apple Valley Brewster Park 8 MGD Subregional Expansion Construction												
48	Interceptor System Relief Sewer Phase VIII Design/CEQA/Permitting												
49	Interceptor System Relief Sewer Phase VIII Construction Project												
50	Regional Plant 22 MGD Expansion Design/CEQA												
51	Regional Plant 22 MGD Expansion Construction Project												
52	Interceptor Capacity Modeling Study, 2020 Update												
53	Regional Plant 30 MGD Expansion Design/CEQA												
54	Hesperia Freeway Corridor 12 MGD Subregional Expansion Design/CEQA												
55	Regional Plant 30 MGD Expansion Construction												
56	Hesperia Freeway Corridor 12 MGD Subregional Construction Project												
57	**Grand Total Inflated**		$14,148,205	$26,413,179	$25,786,618	$30,167,978	$31,903,818	$3,052,643	$1,470,185	$2,436,696	$950,078	$10,873,110	$12,207,240
58													
59	**Cum Inflated CIP**		$14,148,205	$40,561,384	$66,348,002	$96,515,980	$128,419,798	$131,472,441	$132,942,626	$135,379,323	$136,329,400	$147,202,510	$159,409,750

VVWRA Capital Improvement Plan

Appendix-II

Project No.	Project Description	3.00%	11 FY 16-17	12 FY 17-18	13 FY 18-19	14 FY 19-20	15 FY 20-21	16 FY 21-22	17 FY 22-23	18 FY 23-24	19 FY 24-25	Total
1	Regional Plant 14.5 MGD Expansion Construction Project											$25,375,000
2	Regional Plant 18 MGD Expansion Design/CEQA											$1,054,494
3	SCLA Reclaimed Water Pumping System Construction											$239,000
4	SCLA Reclaimed Water Pipeline Construction											$286,479
5	Subregional Public Relations Program, FY 2005-2006											$214,713
6	Interceptor Capacity Modeling Study											$112,852
7	Interconnection with SCE for Peak Shaving											$45,000
8	Interceptor System Relief Sewer Phase I Design/CEQA/Permitting											$437,661
9	Upper Narrows Pump Station Design/CEQA/Permitting											$312,500
10	Interceptor System Relief Sewer Phase I Construction Project											$1,803,163
11	Interceptor System Relief Sewer Phase II Design/CEQA/Permitting											$46,235
12	Purchase Dump Truck											$46,350
13	Apple Valley Brewster Park 4 MGD Subregional Design/CEQA/Permitting											$1,287,500
14	Apple Valley Brewster Park 4 MGD Subregional Property Acquisition											$257,500
15	Hesperia Freeway Corridor 4 MGD Subregional Design/CEQA/Permitting											$1,287,500
16	Hesperia Freeway Corridor 4 MGD Subregional Property Acquisition											$257,500
17	Upper Narrows Subregional CEQA/Property Acquisition											$875,500
18	Upper Narrows Pump Station Construction Project											$1,287,500
19	Interceptor System Relief Sewer Phase II Construction Project											$184,937
20	Regional Plant 18 MGD Expansion Construction Project											$21,545,679
21	Interceptor System Relief Sewer Phase III Design/CEQA/Permitting											$120,490
22	Apple Valley Desert Knolls Sewage Pumping System CEQA/Property Acquisition											$530,450
23	Hesperia I Avenue Sewage Pumping System CEQA/Property Acquisition											$530,450
24	Interceptor System Relief Sewer Phase III Construction Project											$489,189
25	Apple Valley Brewster Park 4 MGD Subregional Construction Project											$27,326,132
26	Hesperia Freeway Corridor 4 MGD Subregional Construction Project											$27,326,132
27	Interceptor System Relief Sewer Phase IV Design/CEQA/Permitting											$95,053
28	Apple Valley Desert Knolls Sewage Pumping System Design											$807,610
29	Hesperia I Avenue Sewage Pumping System Design											$795,675
30	Interceptor System Relief Sewer Phase IV Construction Project											$374,676
31	Interceptor System Relief Sewer Phase V Design/CEQA/Permitting											$85,450
32	Apple Valley Desert Knolls Sewage Pumping System Construction											$5,545,590
33	Hesperia I Avenue Sewage Pumping System Construction											$5,545,590
34	New Administration Building Design											$285,598
35	Interceptor System Relief Sewer Phase V Construction Project											$357,334
36	Interceptor System Relief Sewer Phase VI Design/CEQA/Permitting											$41,481
37	New Administration Building Construction Project											$2,855,979
38	Interceptor System Relief Sewer Phase VI Construction Project											$168,411
39	Emergency Preparedness Facilities, Pipe & Storage Bldg											$85,679
40	New Administration Building Furniture & Equipment											$869,456
41	Interceptor System Relief Sewer Phase VII Design/CEQA/Permitting											$278,955
42	Regional Plant Expansion CEQA/Property Acquisition											$1,817,945
43	Interceptor System Relief Sewer Phase VII Construction Project											$1,166,531
44	Hesperia Freeway Corridor 8 MGD Subregional Expansion Design/CEQA											$1,872,483
45	Hesperia Freeway Corridor 8 MGD Subregional Expansion Construction		$11,535,282									$33,607,695
46	Apple Valley Brewster Park 8 MGD Subregional Expansion Design/CEQA		$1,038,175									$2,046,113
47	Apple Valley Brewster Park 8 MGD Subregional Expansion Construction			$11,881,341	$12,237,781	$12,604,914						$36,724,036
48	Interceptor System Relief Sewer Phase VIII Design/CEQA/Permitting		$423,083									$423,083
49	Interceptor System Relief Sewer Phase VIII Construction Project				$897,699	$924,629						$1,822,328
50	Regional Plant 22 MGD Expansion Design/CEQA			$1,069,321	$1,101,400							$2,170,721
51	Regional Plant 22 MGD Expansion Construction Project			$9,505,073	$9,790,225	$10,083,931						$29,379,229
52	Interceptor Capacity Modeling Study, 2020 Update					$113,444	$116,848					$230,292
53	Regional Plant 30 MGD Expansion Design/CEQA						$1,038,645	$1,069,804	$1,101,898			$3,210,348
54	Hesperia Freeway Corridor 12 MGD Subregional Expansion Design/CEQA								$1,239,636	$1,276,825		$2,516,461
55	Regional Plant 30 MGD Expansion Construction								$16,528,476	$17,024,331	$17,535,061	$51,087,867
56	Hesperia Freeway Corridor 12 MGD Subregional Construction Project								$11,018,984	$11,349,554	$11,690,040	$34,058,578
57	**Grand Total Inflated**		$12,996,540	$22,455,734	$24,027,104	$23,726,920	$1,155,493	$1,069,804	$29,888,995	$29,650,709	$29,225,101	$333,606,150
58												$0
59	**Cum Inflated CIP**		$172,406,291	$194,862,025	$218,889,129	$242,616,049	$243,771,541	$244,841,346	$274,730,340	$304,381,049	$333,606,150	

Capacity Fee Calculation

Appendix - III

EDU Adjustment 100.00%

	4.50%	FY 05- 06	FY 06- 07	FY 07- 08	FY 08- 09	FY 09- 10	FY 10- 11	FY 11- 12	FY 12- 13
3	**Beginning Balance**	$22,681,836	$82,358,289	$64,742,151	$48,615,734	$27,644,458	$3,034,135	$6,972,287	$12,766,130
4	**Source of Funds**								
5	Number of New Connections	3,875	3,562	3,481	3,343	3,154	3,121	3,137	3,150
6	Charge Per EDU	$2,974	$3,108	$3,248	$3,394	$3,546	$3,706	$3,873	$4,047
7	Capacity Fee Revenue	**$9,444,203**	**$11,071,439**	**$11,303,695**	**$11,346,334**	**$11,186,252**	**$11,567,276**	**$12,150,592**	**$12,747,483**
8	Interest Earnings	680,455	1,575,602	2,206,507	1,700,368	1,143,903	460,179	150,096	296,076
9	First Borrowing	70,000,000							
10	Second Borrowing					(0)			
11	Third Borrowing								
12	**Total Source**	80,124,658	12,647,041	13,510,201	13,046,702	12,330,154	12,027,455	12,300,688	13,043,559
13	**Use of Funds**								
14	Cost of Issuance	1,190,000	-	-	-	-	-	-	-
15	Reserve Fund	5,110,000	-	-	-	-	-	-	-
16	Capitalized Interest		-	-	-		-	-	-
17	First Borrowing Debt		3,850,000	3,850,000	3,850,000	5,036,660	5,036,660	5,036,660	5,036,660
18	Second Borrowing Debt						(0)	(0)	(0)
19									
20									
21									
22	Capital Improvement Program	14,148,205	26,413,179	25,786,618	30,167,978	31,903,818	3,052,643	1,470,185	2,436,696
23	**Total Use**	20,448,205	30,263,179	29,636,618	34,017,978	36,940,478	8,089,303	6,506,845	7,473,356
24	Annual Balance	59,676,453	(17,616,138)	(16,126,417)	(20,971,276)	(24,610,323)	3,938,152	5,793,843	5,570,203
25	Ending Balance	82,358,289	64,742,151	48,615,734	27,644,458	3,034,135	6,972,287	12,766,130	18,336,334

Capacity Fee Calculation

Appendix - III

EDU Adjustment

	4.50%	FY 13- 14	FY 14- 15	FY 15- 16	FY 16- 17	FY 17- 18	FY 18- 19	FY 19- 20	FY 20- 21
3	**Beginning Balance**	$18,336,334	$26,704,408	$26,569,029	$26,547,156	$26,921,404	$19,777,750	$13,395,265	$9,128,302
4	**Source of Funds**								
5	Number of New Connections	3,284	3,416	3,556	3,649	3,876	4,171	4,357	4,554
6	Charge Per EDU	$4,229	$4,420	$4,618	$4,826	$5,043	$5,270	$5,508	$5,755
7	Capacity Fee Revenue	**$13,888,275**	**$15,098,779**	**$16,422,925**	**$17,610,706**	**$19,546,712**	**$21,980,792**	**$23,999,020**	**$26,208,997**
8	Interest Earnings	466,537	675,611	799,102	796,743	802,028	700,487	497,595	337,854
9	First Borrowing								
10	Second Borrowing								
11	Third Borrowing								
12	**Total Source**	14,354,812	15,774,391	17,222,026	18,407,449	20,348,740	22,681,279	24,496,615	26,546,850
13	**Use of Funds**								
14	Cost of Issuance	-	-	-	-	-	-	-	-
15	Reserve Fund	-	-	-	-	-	-	-	-
16	Capitalized Interest	-	-	-	-	-	-	-	-
17	First Borrowing Debt	5,036,660	5,036,660	5,036,660	5,036,660	5,036,660	5,036,660	5,036,660	5,036,660
18	Second Borrowing Debt	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
19									
20									
21									
22	Capital Improvement Program	950,078	10,873,110	12,207,240	12,996,540	22,455,734	24,027,104	23,726,920	1,155,493
23	**Total Use**	5,986,737	15,909,770	17,243,900	18,033,200	27,492,394	29,063,764	28,763,579	6,192,152
24	Annual Balance	8,368,074	(135,379)	(21,874)	374,249	(7,143,654)	(6,382,485)	(4,266,964)	20,354,698
25	Ending Balance	26,704,408	26,569,029	26,547,156	26,921,404	19,777,750	13,395,265	9,128,302	29,483,000

Capacity Fee Calculation

Appendix - III

EDU Adjustment

		4.50%	FY 21- 22	FY 22- 23	FY 23- 24	FY 24- 25
3	**Beginning Balance**		$29,483,000	$52,506,191	$49,928,459	$50,716,454
4	**Source of Funds**					
5	Number of New Connections		4,747	4,951	5,167	5,396
6	Charge Per EDU		$6,014	$6,285	$6,568	$6,863
7	Capacity Fee Revenue		**$28,550,486**	**$31,118,085**	**$33,938,844**	**$37,035,633**
8	Interest Earnings		579,170	1,229,838	1,536,520	1,509,674
9	First Borrowing					
10	Second Borrowing					
11	Third Borrowing					
12	**Total Source**		29,129,655	32,347,923	35,475,364	38,545,307
13	**Use of Funds**					
14	Cost of Issuance		-	-	-	-
15	Reserve Fund		-	-	-	-
16	Capitalized Interest		-	-	-	-
17	First Borrowing Debt		5,036,660	5,036,660	5,036,660	5,036,660
18	Second Borrowing Debt		(0)	(0)	(0)	(0)
19						
20						
21						
22	Capital Improvement Program		1,069,804	29,888,995	29,650,709	29,225,101
23	**Total Use**		6,106,464	34,925,654	34,687,369	34,261,761
24	Annual Balance		23,023,191	(2,577,732)	787,995	4,283,546
25	Ending Balance		52,506,191	49,928,459	50,716,454	55,000,000

Victor Valley Wastewater Reclamation Authority
Capacity Fee Update Study

Appendix IV – Capacity Fee Calculation Description

Capacity Fee Calculation Description

The following provides a detailed explanation of the components included in the Capacity Fee analysis. The line numbers refer to the Capacity Fee calculation model presented in Appendix III.

Line 3 is the beginning balance in the Capital Fund.
Line 5 is the projected number of EDUs per year
Line 6 is the calculated charge per EDU using a nonlinear analysis
Line 7 is the result of multiplying line 5 times line 6
Line 8 is the interest on the annual cash balance at an assumed earnings rate of 3%
Line 9 is the amount borrowed in 2006
Line 10 is a second borrowing if needed
Line 12 is the total source of funds-lines 7-11
Line 14 is the soft cost of borrowing or Cost of Issuance, including legal fees, bond insurance rating fees, underwriting, etc.
Line 15 is the debt reserve for the first borrowing anticipated to equal the maximum annual debt service on the bonds.
Line 16 is the capitalized interest. This covers interest on the Bonds for a period of up to [two] years. (If needed)
Line 17 is the annual debt service for the first borrowing
Line 18 is the annual debt service for the second borrowing
Line 22 is the anticipated annual cost of the capital improvement program, adjusted for inflation.
Line 23 is the total use of funds-lines 14-22
Line 24 is the annual balance-Line12 minus line 23
Line 25 is the ending balance-Line 3 plus line 24