



**ATKINS**

# **Water and Wastewater Capital Facility Fee Update**

**Final Report**

**Prepared for:  
Vallecitos Water District**

**January 17, 2012**

**Plan Design Enable**

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## Executive Summary

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The Vallecitos Water District (District) is an independent Special District formed in 1955 which provides provides water, wastewater and reclamation services to approximately 94,000 people in a 45-square-mile area that includes the City of San Marcos, the community of Lake San Marcos, portions of the Cities of Carlsbad, Escondido and Vista and other surrounding unincorporated areas of the County of San Diego.

Guided by a comprehensive Water, Wastewater and Recycled Water Master Plan (2008 Master Plan), the District is committed to providing the highest level of water and wastewater services in an efficient, cost effective manner. The District is a member of the Encina Wastewater Authority (Encina), which operates a regional wastewater treatment facility serving North San Diego County.

The purpose of this study is to update the District's Water and Wastewater Capital Facility Fees based on the recently adopted 2008 Master Plan and to address impacts on wastewater treatment as a result of increases in densities greater than those identified in the 2008 Master Plan land use designations. The results of this study are three (3) fees to be incorporated into Ordinances and adopted by the District's governing Board. These fees are the; Water Capital Facility Fee, Wastewater Capital Facility Fee, and Wastewater Density Impact Fee.

Water and Wastewater Capital Facility Fees are one-time fees levied to recover the costs of facilities needed to provide utility service to new connections to the District's water and wastewater systems. These charges are typically collected at the time of development but may also be recovered for expansion of service to existing connections, such as when an existing customer requires a larger water meter or there is an expansion in existing uses. Revenues generated through Capital Facility Fees are used to directly offset system expansion costs and repay debt issued to finance system expansions or improvements.

The District retained Atkins (formerly PBS&J) to assist in updating these growth-related fees. The updated Capital Facility Fees include the following:

- Future capital improvement projects based on the updated 2008 Master Plan
- Revised Equivalent Dwelling Units (EDUs) pursuant to the updated 2008 Master Plan; and
- Financing expansion of capital improvement projects

In addition, this study provides documentation which substantiates the calculation of Wastewater Density Impact Fees which are also one-time fees charged to new developments with increased densities above the land use designations identified in the 2008 Master Plan and which cause increased impacts on wastewater treatment at Encina.

**ES.1 Water and Wastewater Capital Facility Fees**

On August 3, 2011, the District adopted the 2008 Master Plan which includes necessary future Capital Improvement Projects based on the adopted land use designations which existed as of June 2008.

In conformance with California law, new developments are required to mitigate their impacts and construct or pay their fair share of the capital facilities needed to provide service which includes the Capital Improvement Projects identified in the 2008 Master Plan. Capital Facility Fees are based on the estimated present value of construction costs for future capital facilities included in the 2008 Master Plan and the present value of financing costs for these facilities based on reasonable financing assumptions.

In addition to being recalculated in conjunction with updates to the Master Plan, Capital Facility fees are automatically adjusted annually based on the Engineering News Record index (ENR index) and also recalculated in conjunction with the adoption of the annual capital budget. Historically the average annual change in the ENR index has been 3%.

Water and Wastewater Capital Facility Fees are further described in Sections 2 and 3 of this report respectively and in Appendix A which includes a printout of all tables from the financial model showing the steps taken in developing the fees. The recommended Capital Facility Fees are included in tables ES-1 and ES-2 below.

**ES.1.1 Water Capital Facility Fee Recommendations**

Water Capital Facility Fees are used to recover the costs of storage, transmission and distribution pipelines, and the related facilities identified in the 2008 Master Plan Capital Improvement Projects that will be necessary to provide water service to new developments.

Table ES-1 summarizes the components of the Water Capital Facility fee based on the Capital Improvement Projects identified in the 2008 Master Plan and the related financing costs:

**Table ES-1  
Water Capital Facility Fee Determination**

	<b>Expansion CIP</b>
Water CIP	\$ 63,293,950
Existing Debt as of 6/30/10	\$ 31,435,910
Cash /Investment Deficit 6/30/10	\$ 105,077
Financing Costs	\$ 55,853,706
Total Water CIP w/Financing	\$ 150,688,643
Water EDUs Projected Growth to 2030	21,600
Total Water Capital Facility Fee Per EDU	\$ 6,976

**ES.1.2 Wastewater Capital Facility Fee Recommendations**

Wastewater Capital Facility Fees are comprised of three components (treatment, conveyance, and outfall). The treatment and conveyance components provide wastewater capacity for a total of 13,372 EDUs in the year 2030. The land outfall component provides wastewater capacity for a total of 18,172 EDUs in the year 2050. The differences in the total EDUs are based on the nature of the capital facilities. The current land outfall consists of eight (8) miles of pipeline within a narrow construction corridor that conveys the majority of the District's wastewater to Encina. A new parallel land outfall will be required to handle the District's ultimate flows because there are no reasonable alternatives. While other wastewater capital projects identified in the 2008 Master Plan can be built in incremental phases, the parallel land outfall project will need to be constructed for ultimate capacity due to the complexity of building an 8-mile pipeline within an existing corridor.

Table ES-2 summarizes the components of the Wastewater Capital Facility fee based on the Capital Improvement Projects identified in the 2008 Master Plan and the related financing costs.

**Table ES-2  
Wastewater Capital Facility Fee Determination**

<b>General Wastewater Capital Facility Fee Determination</b>			
	<u>Treatment</u>	<u>Conveyance</u>	<u>Land Outfall</u>
Wastewater CIP		\$ 19,092,000	
Land Outfall CIP			\$ 28,200,000
Existing Debt as of 6/30/10	\$ 30,015,063		
Cash/Investment Deficit 6/30/10	\$ 4,272,048	\$ 4,272,048	
Financing Costs	\$ 20,193,636	\$ 13,760,421	\$ 16,608,589
<b>Total Wastewater CIP w/Financing</b>	<b>\$ 54,480,747</b>	<b>\$ 37,124,469</b>	<b>\$ 44,808,589</b>
Wastewater EDUs*	13,372	13,372	18,172
Wastewater Capital Facility Fee Components Per EDU	\$ 4,074	\$ 2,776	\$ 2,466
<b>Total Wastewater Capital Facility Fee</b>			<b>\$ 9,316</b>

\* Wastewater EDUs are projected through 2030 for Treatment/Conveyance and 2050 for the Land Outfall

**ES.2 Wastewater Density Impact Fee Recommendations**

Developments which increase densities above the land use designations referenced in the 2008 Master Plan place greater impacts on wastewater treatment capacity at Encina. The District's capacity at Encina includes liquids and solids treatment as well as ocean disposal.

Through analyzing the impacts of developments which increase densities above those identified in the 2008 Master Plan, it will be necessary to expand Encina, thus increasing wastewater treatment costs. These increased impacts and costs are further detailed in Section 4 of this report and in Appendix B.

Table ES-3 identifies the Wastewater Density Impact Fee which is based on the Encina Phase IV and Phase V expansion costs for liquids, solids, and ocean disposal. The Wastewater Density Impact Fee will only be collected from the density increase portion of a development. However, the Wastewater Capital Facility Fee also has a treatment component within it. This treatment component shall be subtracted from the Wastewater Density Impact Fee to preclude duplicate collection of the treatment component costs. A resulting Net Density Impact Cost, as shown in Table ES-3, will be charged to developments on the increased density portion only.

**Table ES-3  
Calculation of Wastewater Density Impact Fee per EDU**

Wastewater Density Impact Fee	\$ 8,583
Less Wastewater Treatment Capital Facility Fee	\$ (4,074)
Wastewater Density Impact Fee	\$ 4,509

The calculation of Wastewater Density Impact Fee is as follows:

- The entire development will pay a Wastewater Capital Facility fee shown in Table ES-2 per EDU.
- Developments which increase densities beyond those identified in the 2008 Master Plan and increase impacts on Encina wastewater treatment costs will pay a Wastewater Density Impact Fee per EDU, shown in Table ES-3, on the density increase portion only. Density increases will be clearly identified in the Water and Wastewater Studies which are required for all new developments.

Table ES-4 illustrates an example of the calculation of Wastewater Capital Facility Fees and Net Density Impact Cost. In this example, the Water and Wastewater Study concludes that of the 10 EDUs required to serve the project only 5 EDUs were included in the 2008 Master Plan land use designation. Consequently, the proposed development will be charged the Wastewater Capital Facility Fee for 10 EDU's and the Wastewater Density Impact Fee for 5 EDU's which represent the increase in density beyond the land use designation in the 2008 Master Plan.

**Table ES-4  
Sample Fee Calculation**

EDUs	Number	Fee	Total
Entire Development	10	\$ 9,316	\$ 93,160
Increased Density	5	\$ 4,509	\$ 22,546
			\$ 115,706

# Section 1

## Capital Facility Fee Background

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As noted in the Executive Summary, the Vallecitos Water District provides water and wastewater collection services to the residents and customers within the boundaries of the District. The infrastructure necessary to supply water and collect, treat, and dispose of wastewater is identified in the District's 2008 Master Plan. The Capital Improvement Program (CIP) for water and wastewater outlined in the 2008 Master Plan forms the basis for the Capital Facility Fees identified in this report. The CIP in the 2008 Master Plan provides a roadmap for the District on how to accommodate planned growth over time. The 2008 Master Plan utilizes adopted land uses from the individual land use agencies including the Cities of San Marcos, Escondido, Vista, Carlsbad, and the County of San Diego to evaluate when and where to implement the CIP.

Revenues generated through Capital Facility Fees are used to directly offset CIP costs and to repay debt issued to finance system expansion and improvements. In addition to being recalculated in conjunction with updates to the Master Plan, Capital Facility fees are automatically adjusted annually based on the Engineering News Record index (ENR index) and also recalculated in conjunction with the adoption of the annual capital budget.

### 1.1.1 Master Plan and PEIR

On August 3, 2011 the District adopted the 2008 Master Plan and Program Environmental Impact Report (PEIR). The 2008 Master Plan analyzes adopted land uses to determine future water and wastewater demands, and identifies the water and wastewater CIP facilities which will be required to meet projected demands within the District's service area and sphere of influence through 2030. CIP facilities include pump and lift stations, storage reservoirs, water and sewer mains, and a parallel land outfall. The PEIR evaluated, at a programmatic level, the environmental impacts the CIP facilities.

### 1.2 Legal Requirements

Developmental fees are governed by California Government Code Section 66000 et. seq. commonly known as AB 1600. Section 66013 pertains specifically to water and sewer capital facility charges and provides that the fee "*shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed*" unless approved by a two-thirds vote. The statute further provides that capacity charges can recover cost for facilities in existence at the time a charge is imposed or charges for new facilities to be constructed in the future that will provide benefit to the property being charged. The code also specifies a number of accounting and reporting regulations relating to capacity fees.

### 1.3 The District's Capital Facility Fee Methodology

The District bases its capital facility fees on the growth or incremental methodology. The growth methodology is a fairly common approach for establishing capital facility fees, particularly for

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communities experiencing significant new growth. The approach is based on the cost of future capital facilities required to reasonably accommodate planned growth. This cost is allocated to the new growth that is to be served by the facilities. No allowance is made for existing system capacity that may also serve new connections. Under this approach, new customers and existing customers with increased demands pay for the incremental investment necessary for system expansion. The incremental approach is most commonly applied when new facilities and/or upgrades to existing facilities are required to provide capacity for new growth. This methodology must also meet the following criteria to be considered viable.

*Financially Stable* – Capital Facility Fees should be effective in recovering the costs of providing capacity for growth.

*Equitable* – Capital Facility Fees should reflect the estimated reasonable cost of providing capacity for growth.

*Administratively Feasible* – Capital Facility Fees should be administratively straightforward and easily explained.

*Legally Justifiable* – Capital Facility Fees must be developed in accordance with current California statutes and court decisions.

### 1.3.1 Calculation of the District's Capital Facility Fees

The basic equation for the growth methodology is:

$$\frac{\text{Growth CIP Asset Values}}{\text{Projected Growth in Equivalent Dwelling Units}}$$

The 2008 District's Master Plan further breaks down the CIP into 5 year phases for implementation. This implementation plan is utilized in the rate model to calculate the Capital Facility Fees. The full rate model is shown in Appendix A of this report. The District assumes that capital facilities are to be 100% debt financed. The calculation of future debt service is based on the following assumptions:

- Interest on all debt issues will be 6%.
- The cost of issuance for each bond issue is 2% of the total principal amount.
- The term of each one of the debt issues will be 25 years.
- Inflation over the time period for calculating the present value of each year's payment of principal and interest will be 2% annually.

The adjusted equation for the District's Capital Facility Fees is:

$$\frac{\text{Present Value of Growth Asset} + \text{Present Value of Financing Costs}}{\text{Projected Growth in Equivalent Dwelling Units}}$$

The District has determined that Capital Facility Fees should be developed to be uniform throughout the water and wastewater service areas. The determination of the present value of each of the water and wastewater bond issues is also included in Appendix A to this report.

**1.4 2008 Water, Wastewater and Recycled Water Master Plan**

Chapter 8 of the 2008 Master Plan presents the proposed CIP for the District. The Master Plan focuses on both near term and future capacity needs for the water distribution and wastewater conveyance systems. The land outfall project is detailed separately from wastewater conveyance. Detailed CIP projects developed for the District are prioritized into five phases. Phase 1 projects represent projects that are underway or expected to be completed in 2010. Phase 2 (2011-2015) projects represent high priority projects that should be planned or constructed over the next five years. Lower priority projects are identified as Phase 3 through 5 projects that would be phased over the following fifteen years (2016-2030).

A summary of the 2008 Master Plan identified CIP costs are included in Table 1-1.

**Table 1-1  
2008 Master Plan Capital Projects**

	<b>Expansion CIP</b>
Water CIP	\$ 63,293,950
Wastewater CIP	\$ 19,092,000
Land Outfall CIP	\$ 28,200,000
<b>Total</b>	<b>\$ 110,585,950</b>

## Section 2

# Water Capital Facility Fee

### 2.1 Master Plan System Demand and Growth

Development of the 2008 Master Plan water demands were calculated using population projections from SANDAG and adopted land use information from the land use agencies served by the District. These agencies are the City of San Marcos, portions of the Cities of Carlsbad, Vista, and Escondido as well as unincorporated portions of the County of San Diego. The District utilized 5 years' worth of water meter records, historical trends, and comparisons with neighboring water agencies to calculate water use, or duty factors, for individual land use types. This allowed the 2008 Master Plan to evaluate existing water demands, which considered conservation and reduced demands as well as project additional water demand due to growth over time.

The District Water Capital Facility Fee is based on an Equivalent Dwelling Unit (EDU) value. This report utilized EDU value based on information within the District's 2008 Master Plan and industry standards to allocate 500 gallons of water consumption equivalent to one EDU. One EDU is the average usage of a single family dwelling unit. Table 2-1 summarizes the projected EDU growth for each phase in the planning period identified in the 2008 Master Plan. It should be noted that the water CIP was only developed through 2030, and thus the EDUs used in the fee calculation are 21,600.

**Table 2-1**  
**Equivalent Dwelling Units by Phase**

Year	Average Annual Flows (MGD)	Additional Demand Per Period	Equivalent Dwelling Units (EDU)	Required Capacity Per Period (EDUs)
Existing 2007	18.3		36,600	
2010	20.4	2.1	40,800	4,200
2015	24.2	3.8	48,400	7,600
2020	26.9	2.7	53,800	5,400
2025	29.1	2.2	58,200	4,400
2030	31.2	2.1	62,400	4,200
Ultimate	34.1	2.9	68,200	5,800
<b>Total Increase in EDUs 2010 to 2030</b>				21,600
<b>Total Additional EDUS to Ultimate (2050)</b>				27,400

\*Based Upon 500 GPD Per EDU

**2.2 Master Plan Project Costs**

The 2008 Master Plan analyzed the water infrastructure needs to accommodate future approved land use growth. The process created a CIP for water with costs allocated based on current values. The CIP costs are then updated annually, during the District’s budgeting process, based on the appropriate ENR index. The 2008 Master Plan also divided the water CIP into five phases or planning periods based on the water system’s needs to accommodate planned growth as shown in Table 2-1. A summary of the five phases of water expansion capital project costs is shown in Table 2-2.

**Table 2-2  
Water Capital Expansion Projects by Phase**

Master Plan Cost Per Phase						
	2010	2011-2015	2016-2020	2021-2025	2026-2030	Total
Water CIP	\$2,562,950	\$10,039,000	\$14,905,000	\$20,170,000	\$15,617,000	\$63,293,950

**2.3 Project Financing/Existing Debt**

The District assumes capital projects are 100% debt financed and includes the cost of financing in the cost of the capital facilities.

Financing contains three components as shown on Table 2-3.

**Table 2-3  
Summary of Water CIP Financing**

	Expansion CIP
Existing Debt as of 6/30/10	\$ 31,435,910
Cash /Investment Deficit 6/30/10	\$ 105,077
Financing Costs	\$ 55,853,706

The existing debt is the balance of debt issued, on water expansion CIP, as of June 30, 2010. This existing debt is comprised mainly from the bond issuance for the construction of the Twin Oaks Reservoirs 1 and 2. The source of the cash/investment deficit as of June 30, 2010, is derived from the District’s “Appropriated Fund Balance Activity for the Twelve Months Ended June 30, 2010” report and is the ending fund balance of revenues less distributions in the water capital facility fund. As of June 30, the fund balance showed a deficit in expansion CIP of \$105,077. The final portion of the CIP financing is the estimated financing costs from the future bond issuances during each CIP phase. The financing costs discussed in this section are estimated by adding the present value of all principle and interest payments and then subtracting the present value of the capital facilities financed by each bond issue.

## 2.4 Water Capital Facility Fee Determination

The District's Water Capital Facility Fee is based on the growth or incremental methodology. Table 2-4 illustrates the calculation of the fee.

**Table 2-4  
Water Capital Facility Fee Calculation**

	<b>Expansion CIP</b>
Water CIP	\$ 63,293,950
Existing Debt as of 6/30/10	\$ 31,435,910
Cash /Investment Deficit 6/30/10	\$ 105,077
Financing Costs	\$ 55,853,706
Total Water CIP w/Financing	\$ 150,688,643
Water EDUs Projected Growth to 2030	21,600
Total Water Capital Facility Fee Per EDU	\$ 6,976

The water CIP costs identified in Section 2.2 are added together with their financing costs through 2030 identified in Section 2.3 and then divided by the projected water EDUs through 2030 as discussed in Section 2.1. This produces a Water Capital Facility fee, in today's dollars, shown in Table 2-4 utilizing the adopted Master Plan costs at ENR-CCI-LA for July 2010 of 9968.69. The District will adjust individual CIP cost based on actual expended and/or yearly budgeted verses the planning cost in the 2008 Master Plan. This will be reflected in the annual update to the Water Capital Facility Fee.

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## Section 3

# Wastewater Capital Facility Fee

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### 3.1 Master Plan System Demand and Growth

Development of the 2008 Master Plan wastewater demands were calculated using population projections from SANDAG and adopted land use information from the land use agencies served by the District. These agencies are the City of San Marcos, portions of the Cities of Carlsbad, Vista, and Escondido as well as portions of the unincorporated part of the County of San Diego. The District utilized existing sewer meter records and cross checked them against 5 years' worth of water meter records, as well as historical trends, and comparisons with neighboring water agencies to calculate wastewater generation, or duty factors, for individual land use types. This allowed the Master Plan to evaluate existing sewer generation, which considered conservation and reduced generation as well as project the additional wastewater generation due to growth over time.

The District Wastewater Capital Facility Fee is based on an equivalent dwelling unit (EDU) value. This report utilized EDU values based on information within the District's Master Plan and industry standards to allocate 250 gallons of wastewater generation equivalent to one EDU. One EDU is the average generation of a single family dwelling unit. Table 3-1 summarizes the projected EDU growth for each phase in the planning period identified in the 2008 Master Plan. It should be noted that the wastewater CIP was only developed to serve new connections through 2030 without the North Tributary Area (NTA), identified in the Master Plan, and thus the EDUs used in the Wastewater Capital Facility Fee calculation is 13,372.

In addition Table 3-1 shows the EDUs specific to the land outfall project. The difference between the general wastewater EDUs of 13,372 and the land outfall wastewater EDUs of 18,172 is due to the fact that the new land outfall must be able to handle all of the District's ultimate flows because there is no opportunity to upsize it or build additional outfalls in the future. While the other wastewater capital projects identified in the 2008 Master Plan can be built in incremental phases the parallel outfall project needs to be constructed for ultimate capacity due to the complexity of building an 8-mile pipeline within the small existing corridor.

**Table 3-1  
Equivalent Dwelling Units by Phase**

Year	Average Annual Flows (MGD)	Additional Demand Per Period	Equivalent Dwelling Units (EDU)	Required Capacity per Period (EDUs)
Purchased EDUs	6.7		36,628	
2010	7.7	1.0	30,800	(5,828)
2015	9.4	1.7	37,600	6,800
2020	10.6	1.2	42,400	4,800
2025	11.6	1.0	46,400	4,000
2030	12.5	0.9	50,000	3,600
2030 w/NTA	12.9	0.4	51,600	1,600
Ultimate	13.3	0.4	53,200	1,600
Ultimate w/NTA	13.7	0.4	54,800	1,600
<b>EDUS for Wastewater CIP (2010 to 2030)</b>				13,372
<b>EDUs for Land Outfall Projects (2010 to Ultimate)</b>				18,172

### 3.2 Master Planned Project Costs

The 2008 Master Plan analyzed the wastewater infrastructure needs to accommodate future approved land use growth. The process created a CIP for wastewater with costs allocated based on current values. The CIP costs are then updated annually, during the District’s budgeting process, based on the appropriate ENR index. The 2008 Master Plan also divided the wastewater CIP into five phases or planning periods based on the wastewater system’s needs to accommodate planned growth as shown in Table 3-1. A summary of the five phases of water expansion capital project costs is shown in Table 3-2.

**Table 3-2  
Wastewater Capital Expansion Projects by Phase**

Master Plan Cost Per Phase						
	2010	2011-2015	2016-2020	2021-2025	2026-2030	Total
Wastewater CIP	\$4,396,000	\$6,147,000	\$1,527,000	\$2,284,000	\$4,738,000	\$19,092,000

In addition to the general wastewater CIP, the 2008 Master Plan developed costs for a new land outfall. This project is needed because the current land outfall that transports the wastewater from the Vallecitos service area to Encina will not have sufficient capacity in the future. Table 3-3 summarizes the projected land outfall costs between the five phases of the Master Plan.

**Table 3-3  
Wastewater Land Outfall Expansion Projects by Phase**

Master Plan Cost Per Phase						
	2010	2011-2015	2016-2020	2021-2025	2026-2030	Total
Land Outfall CIP	\$0	\$10,300,000	\$2,700,000	\$13,700,000	\$1,500,000	\$28,200,000

### 3.3 Project Financing

The District assumes capital projects are 100% debt financed and includes the cost of financing in the cost of the capital facilities.

Financing contains three components. Table 3-4 separates the financing costs between the treatment, conveyance, and land outfall CIPs.

**Table 3-4  
Summary of Wastewater CIP Financing**

Wastewater Capital Facility Fee Financing Costs		
	Treatment	Conveyance
Existing Debt as of 6/30/10	\$ 30,015,063	\$ -
Cash /Investment Deficit 6/30/10	\$ 4,272,048	\$ 4,272,048
Financing Costs	\$ 20,193,636	\$ 13,760,421
Total Wastewater CIP w/Financing	\$ 54,480,747	\$ 37,124,469
Outfall Capital Facility Fee Financing Costs		
	Treatment	Conveyance
Financing Costs		\$ 16,608,589

The existing debt is the balance of debt issued, on wastewater expansion CIP, as of June 30, 2010. This existing debt is primarily made up from a bond issuance for the Meadowlark Reclamation Facility expansion and a loan for the Encina Phase V Expansion. The source of the cash/investment deficit as of June 30, 2010 is derived from the District's "Appropriated Fund Balance Activity for the Twelve Months Ended June 30, 2010, report" and is the ending fund balance of revenues less distributions in the wastewater capital facility fund. As of June 30, the fund balance showed a deficit in expansion CIP. The final portion of the CIP financing is the estimated financing costs from the future bond issuances during each CIP phase. The financing terms were previously discussed in Section 1.2.2. Financing costs are estimated by adding the present value of all principle and interest payments and then subtracting the present value of the capital facilities financed by each bond issue. The outfall has only one finance component which is the finance cost.

### 3.4 Wastewater Capital Facility Fee Determination

The District's Wastewater Capacity Fee is based on the growth or incremental methodology. Table 3-5 illustrates the calculation of both the wastewater (treatment and conveyance) and the land outfall components of the fee.

**Table 3-5  
Wastewater Capital Facility Fees Calculation**

<b>General Wastewater Capital Facility Fee Determination</b>			
	<u>Treatment</u>	<u>Conveyance</u>	<u>Land Outfall</u>
Wastewater CIP		\$ 19,092,000	
Land Outfall CIP			\$ 28,200,000
Existing Debt as of 6/30/10	\$ 30,015,063		
Cash/Investment Deficit 6/30/10	\$ 4,272,048	\$ 4,272,048	
Financing Costs	\$ 20,193,636	\$ 13,760,421	\$ 16,608,589
<b>Total Wastewater CIP w/Financing</b>	<b>\$ 54,480,747</b>	<b>\$ 37,124,469</b>	<b>\$ 44,808,589</b>
Wastewater EDUs*	13,372	13,372	18,172
Wastewater Capital Facility Fee Components Per EDU	\$ 4,074	\$ 2,776	\$ 2,466
<b>Total Wastewater Capital Facility Fee</b>			<b>\$ 9,316</b>

\* Wastewater EDUs are projected through 2030 for Treatment/Conveyance and 2050 for the Land Outfall

The CIP costs for treatment and conveyance, as discussed in Section 3.2 are added together with their financing costs through 2030 as contained in Section 3.3 and then divided by the projected wastewater EDUs through 2030, as discussed in Section 3.1. This produces a treatment and conveyance component shown in Table 3-5, per EDU. The same process is followed to determine the land outfall component also shown in Table 3-5, per EDU. The combined Wastewater Capital Facility Fee is, shown in Table 3-5, based on the CIP and future approved land use EDUs to be served utilizing the adopted 2008 Master Plan costs at ENR-CCI-LA for July 2010 of 9968.69. Similar to water, the District will adjust individual CIP cost based on actual expended and/or yearly budgeted versus the planning costs referenced in the 2008 Master Plan. This will be reflected in the annual update to the Wastewater Capital Facility Fee.

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## Section 4 – Wastewater Density Impact Fee Calculation

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### 4.1 Background

The 2008 Master Plan utilizes adopted General Plan land use designations of the governing agencies as of June 30, 2008. Future developments which increase densities above the land use designations referenced in the 2008 Master Plan will cause greater impacts on wastewater treatment capacity at Encina. Consequently, a Wastewater Density Impact Fee on the increased density portion only is needed to properly cover the associated costs of the necessary treatment expansion, at Encina. The bases for the Wastewater Density Impact Fee are the Encina Phase IV and V expansion capital costs plus financing, as discussed in this Section and in Appendix B.

### 4.2 Wastewater Treatment Expansion Cost

The capital costs for Phase IV and V expansions at Encina, include the Muni Financial Report, dated July 2004 which determined the District's total costs for each component of Phase IV. The construction costs were determined for Phase V from recent audited financial reports and construction-in-progress reports through June 2011. These costs were utilized to estimate the future expansion cost at Encina on a per gallon and EDU basis.

#### 4.2.1 Encina Phase IV Costs

Table 4-1 summarizes the calculation of Phase IV costs and the resulting cost per gallon for solids, liquids and disposal. The Phase IV costs were all at the Engineering News Record 2003, Construction Cost Index for Los Angeles (ENR-CCI-LA) of 7543. From the end of 2003 to June 2011, the ENR-CCI-LA increased 33% to 10051.3. The original costs of the Phase IV expansion were brought to present value using this increase for the purpose of calculating the wastewater impact fee. Then the present value of each treatment component was divided by the total flow gained with the expansion to determine the cost per gallon of Phase IV.

**Table 4-1  
Phase IV Cost per Gallon Determination, June 2011 Dollars<sup>1</sup>**

	Vallecitos Costs for Phase IV and V		
	Unit I		Unit J
	Solids	Liquids	Disposal
<b>Phase IV Costs*</b>	\$ 16,105,000	\$ 18,521,000	\$ 5,939,000
ENR-CCI-LA Per Table	7543	7543	7543
Current ENR-CCI-LA (6/11)	10051.3	10051.3	10051.3
Cost Increase Factor	133%	133%	133%
Present Value of Facilities	\$ 21,460,452	\$ 24,679,852	\$ 7,913,916
<b>Phase V Provisions**</b>			
Phase IV Buyback Unit I	\$ 3,492,000		
Phase IV Buyback Unit J			\$ 1,297,000
ENR-CCI-LA (May 2010)	9,945	9,945	9,945
Current ENR-CCI-LA (6/11)	10,051	10,051	10,051
Cost Increase Factor	101%	101%	101%
Present Value of Facilities	\$ 3,529,169		\$ 1,310,805
<b>Total Phase IV Facilities</b>	\$ 24,989,621	\$ 24,679,852	\$ 9,224,722
Total Flow Gained (gpd)	2,350,000	2,540,000	2,350,000
Cost Per Gallon	\$ 10.63	\$ 9.72	\$ 3.93

\*From Table 26A Muni Financial Report for Encina dated July 2004.

\*\*Phase V costs are further discussed in Section 4.2.2 of this report.

#### 4.2.2 Encina Phase V Costs

Similar steps were taken for the Phase V solids expansion costs as shown in Table 4-2. Phase V primarily expanded the solids handling facilities at Encina. The District's original cost for Phase V was \$19.4 million. However, adjustments are made to this original cost to back-out Phase IV buyback costs and a small portion of liquids costs so that the correct value of the solids costs from Phase V can be included in this fee calculation. The costs shown in Table 4-2 were used to determine the per gallon costs of solids handling in Table 4-3.

<sup>1</sup> The Phase IV buy-back costs for Unit's I and J are based on a "true-up" at the end of Phase V of the reallocation of flows between the Encina member agencies at the end of Phase IV. Thus the true-up costs were removed from Phase V and incorporated into Phase IV to avoid double counting.

**Table 4-2  
Determination of Phase V Solids Costs, November 2010 Dollars**

<b>VWD Phase V Cost Determination</b>	
\$ 19,368,492	Total Phase V Costs
\$ (3,492,000)	Phase IV Buyback Unit I
\$ (1,297,000)	Phase IV Buyback Unit J
\$ (773,000)	Phase V Liquids Cost
<u>\$ 13,806,492</u>	
1.011	ENR Increase Since May 2010
<u>\$ 13,953,449</u>	

**Table 4-3:  
Phase V Solids Cost per Gallon, June 2011 Dollars**

	<b>Total Cost</b>	<b>VWD Costs</b>
Phase V Costs (June 2011 ENR)	\$ 57,628,522	\$ 13,953,449
VWD Capacity Increase (gpd)		2,960,000
Cost Per Gallon		\$ 4.71
Note: Based on Costs at 9945.44 (May 2010) increased to 10051.3 (June 2011) VWD Costs backs out buy back costs from Encina Phase IV Unit I & J from Table 26A VWD Costs backs out \$.773 million estimated liquids cost		

**4.3 Wastewater Density Impact Fee Determination**

The final step in the Wastewater Density Impact Fee determination combined Phase IV and Phase V costs divided by the additional capacities gained in each one of the operational units. Table 4-4 also includes the financing costs associated with the treatment expansion due to density increases on a per gallon and EDU basis. The same financing terms as discussed in Section 2 and 3 are applied to the portion of future expansion assumed to be debt financed. A review of wastewater flow and EDU projections identifies that 84.5% of the future project costs will be debt financed. The remaining 15.5% is direct revenue generated by the Wastewater Density Impact Fees prior to the initiation of the project. The revenue from the Wastewater Density Impact Fee will be set aside in a restricted reserve account and will only be used to fund this or an associated project that provides treatment capacity for the District’s wastewater customers.

Table 4-4 shows the cost per gallon and the cost per EDU for each one of the treatment unit processes for purpose of the Wastewater Density Impact Fee based on the ENR-CCI-LA of 10051.3, June 2011.

**Table 4-4:  
Wastewater Treatment Impact Fee, June 2011 Dollars**

	<b>Solids</b>	<b>Liquids</b>	<b>Disposal</b>	<b>Total</b>
Phase IV Costs	\$ 24,989,621	\$ 24,679,852	\$ 9,224,722	\$ 58,894,195
Phase V Costs	\$ 13,953,449	\$ 781,228	\$ -	\$ 14,734,677
Financing Costs	\$ 19,547,577	\$ 13,283,743	\$ 9,726,806	\$ 42,558,126
<b>Total</b>	<b>\$ 58,490,647</b>	<b>\$ 38,744,824</b>	<b>\$ 18,951,527</b>	<b>\$ 116,186,998</b>
Capacity (gpd)	5,310,000	2,540,000	2,350,000	
Cost Per Gallon	\$ 11.02	\$ 15.25	\$ 8.06	\$ 34.33
Gallons Per EDU	250	250	250	250
<b>Impact Fee Per EDU</b>	<b>\$ 2,754</b>	<b>\$ 3,813</b>	<b>\$ 2,016</b>	<b>\$ 8,583</b>

#### 4.4 Application of Impact Fees

The District requires that a Water and Wastewater Study be performed for all new developments in order to determine if the current water and sewer infrastructure is sufficient to accommodate the development's water demands and sewage generation. The Water and Wastewater Study also determine the additional EDUs, if any, due to increased densities of a development. This study serves to identify the specific impacts of an individual development to fulfill the legal requirements for identifying impacts and costs. The Water and Wastewater Study, along with this report, creates the appropriate nexus in identifying a development's impact(s) and costs of those impact(s) on the District. The Water and Wastewater Study should:

- Project water demand and sewage generation based on the District's current adopted Master Plan duty factors for land use and/or adopted Ordinance(s) as deemed reasonable by the District for the proposed development/land use
- Identify the current and projected capacity for each existing system facility effected by the development
- Identify additional facilities or improvements that are required to accommodate growth or the proposed development's land use

The Water and Wastewater Study serves as a basis to determine if the EDUs identified in a new development are included in the District's 2008 Master Plan. If the new development's EDUs are contained in the Master Plan, each wastewater EDU will pay the Wastewater Capital Facility Fee as shown in Table 3-5. However, if the new development's EDUs are greater than the land use

designation identified in the 2008 Master Plan, only the increase in EDUs will pay an additional Wastewater Density Impact Fee as shown in Table 4-4

The Wastewater Density Impact Fee will only be applied to the density increase portion of a development. However, the Wastewater Capital Facility Fee also has a treatment component within it. This treatment component shall be subtracted from the Wastewater Treatment Impact Fee to preclude duplicate collection of the treatment component. A resulting Wastewater Density Impact Fee will be charged to developments for the density increase portion only, as shown in Table 4-5

**Table 4-5  
Calculation of Density Impact Cost per EDU**

Wastewater Density Impact Fee	\$ 8,583
Less Wastewater Treatment Capital Facility Fee	\$ (4,074)
<b>Wastewater Density Impact Fee</b>	<b>\$ 4,509</b>

Table 4-6 illustrates an example of the calculation of Wastewater Capital Facility Fees and Wastewater Density Impact Fees. In this example, the Water and Wastewater Study concludes that of the 10 EDUs required to serve the project only 5 EDUs were included in the 2008 Master Plan land use designation. Consequently, the proposed development will be charged the Wastewater Capital Facility Fee for 10 EDU's and a Wastewater Density Impact Fee for 5 EDU's , which represent the increase in density beyond the land use designation in the 2008 Master Plan.

**Table 4-6  
Sample Fee Calculation**

EDUs	Number	Fee	Total
Entire Development	10	\$ 9,316	\$ 93,160
Increased Density	5	\$ 4,509	\$ 22,546
			<b>\$ 115,706</b>