

**Wastewater Analysis**  
**San Marcos Highlands**  
**April 2015**

# Table of Contents

<b>1.0</b>	<b>Purpose of this Analysis</b> .....	<b>1</b>
<b>2.0</b>	<b>Project Background and Details</b> .....	<b>1</b>
<b>3.0</b>	<b>Vallecitos Water District</b> .....	<b>4</b>
3.1	Meadowlark Water Reclamation Facility .....	4
3.2	Encina Water Pollution Control Facility.....	4
3.3	Projected VWD System Wastewater Flows.....	5
3.4	VWD Treatment System.....	6
3.5	Regional Recycled Water Efforts.....	8
3.6	Planned System-wide Improvements .....	8
<b>4.0</b>	<b>Analysis Summary</b> .....	<b>10</b>

## Figures

Figure 1.	VWD Existing Sewer Service Area .....	2
Figure 2.	VWD Proposed Sewer Service Area .....	3

## Tables

Table 1.	Average Wastewater Flows within VWD Service Area.....	6
Table 2.	Average Dry and Wet Year Wastewater Flow Projections and Treatment Capacity.....	7
Table 3.	Projected Peak Flow and Capacity of Land Outfall.....	9
Table 4.	Average Dry Weather Wastewater Flow Projections.....	10

## Attachments

Attachment A VWD Ordinance No. 176

# San Marcos Highlands Wastewater Analysis

## 1.0 Purpose of this Analysis

This document describes the existing wastewater system that the project proposes to utilize for service and analyzes the project's contribution to system-wide demands for service. Vallecitos Water District (VWD) has prepared two planning documents, a 2008 Master Plan and 2010 Urban Water Management Plan (UWMP), which were relied upon in the preparation of this analysis.

The Master Plan evaluates the capacity of the wastewater system and identifies necessary improvements. The UWMP quantifies existing and projected wastewater flows and treatment capacity to meet future flow projections. This analysis also relies on the Final Water and Sewer Study for San Marcos Highlands (April 2015) prepared by VWD.

## 2.0 Project Background and Details

In 1990, the City of San Marcos adopted the Specific Plan and Tentative Subdivision Map for the San Marcos Highlands which allowed for the development of 275 residences. In 2002, the City approved an amendment to the San Marcos Highlands Specific Plan to allow for 230 residential units. The project was not developed and the required annexations were never pursued.

The proposed project is an amendment to the San Marcos Highlands Specific Plan to reduce the development footprint, reduce the number of homes to be constructed, and to increase the amount of conserved open space. A total of 189 single-family residential units are proposed under the current proposed project modifications.

The entire project site covers 293.3 acres, with 262.14 of those acres making up the Specific Plan area. Within the Specific Plan area, there are 50.04 acres of residential development and 212.10 acres of open space use. The project is located within both the City of San Marcos and in the County of San Diego within the City's adopted Sphere of Influence. The project would require reorganization to annex 124.69 acres of the project site into the City from the unincorporated County.

The project is proposed to be within the Vallecitos Water District (VWD) for wastewater service. VWD provides for sewer service within their sewer improvement district. Currently 37.5 acres of the project site proposed for development is within VWD's sphere of influence, however no portions of the project site are within the VWD Sewer Improvement District. A reorganization of the VWD service area will be required for the project to bring in an additional 69.43 of the project site into the VWD service area. The reorganization would require LAFCO approval. The specific APNs (all or partial) that will be brought into the VWD sewer service are boundary include: 184-241-05, -06, -07, 08; 184-240-05, -14, 32, -33. **Figure 1** shows VWD's service area and sphere. **Figure 2** shows the proposed service area with expansion of the Sewer Improvement District Boundary. Approval by the VWD Board will be required to bring the 106.93 acres associated with the Tentative Map into the VWD Sewer Improvement District boundary.

Figure 1. VWD Existing Sewer Service Area

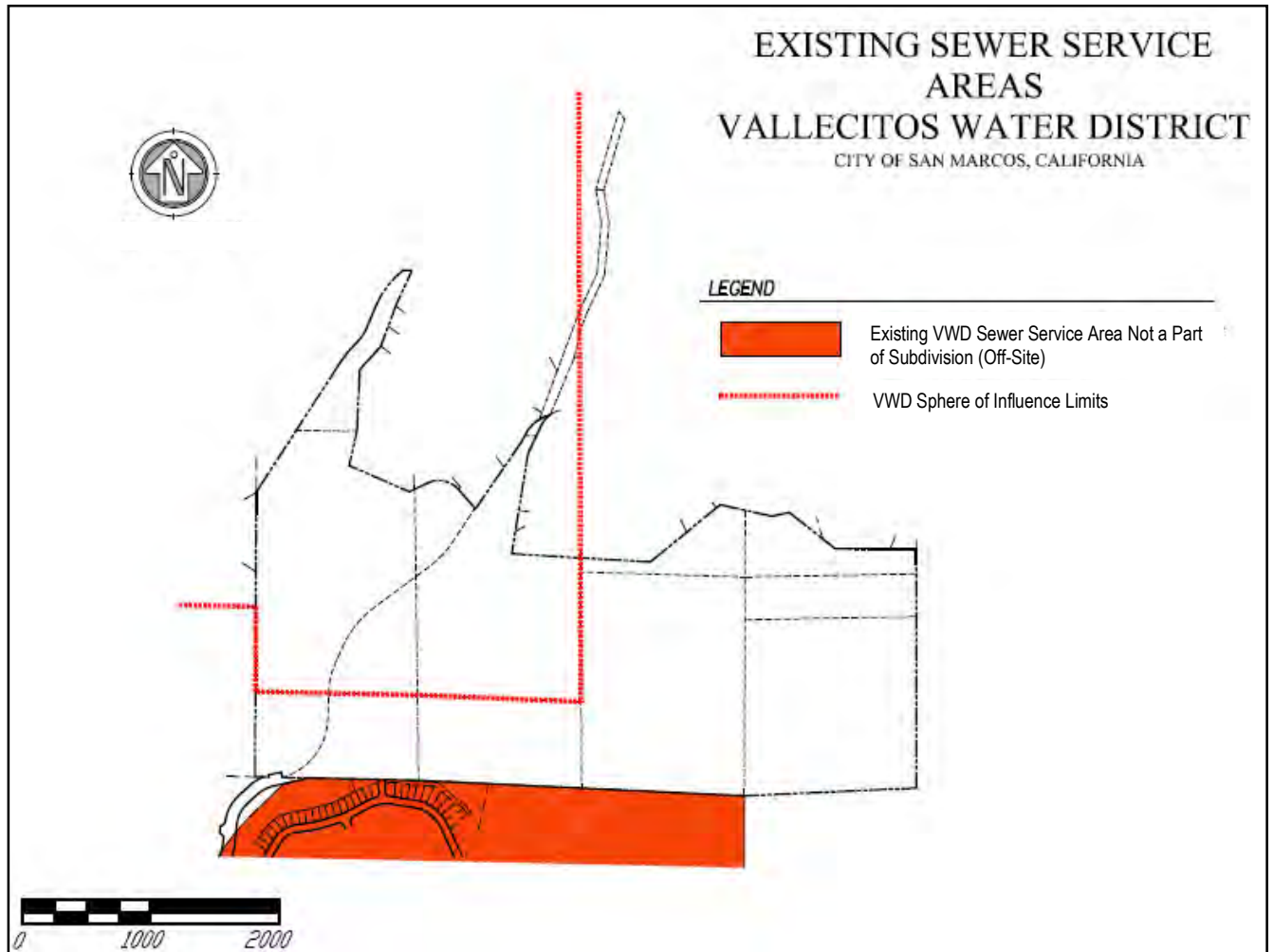
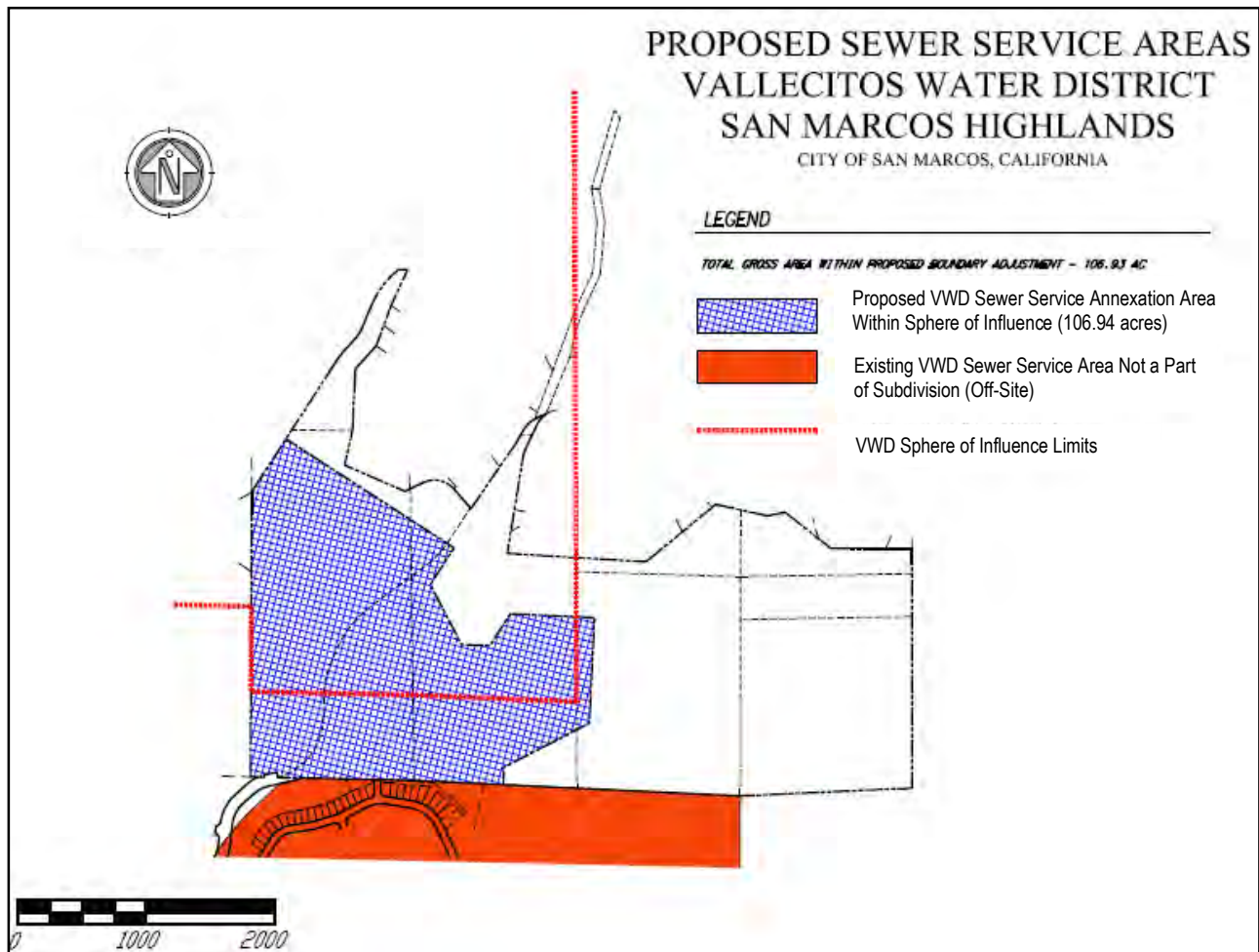


Figure 2. VWD Proposed Sewer Service Area



### **3.0 Vallecitos Water District**

VWD is a public agency that provides wastewater services to approximately 19,678 connections within a 23 square mile area. VWD is authorized to provide sewer services district-wide. The existing wastewater system is composed of a collection system, the Meadowlark Reclamation Facility (MRF), and the Encina Water Pollution Control Facility (EWPCF). The collection system includes major conveyance facilities, 240 miles of gravity mains, trunk sewers, four lift stations, siphons, and force mains. Once collected, the wastewater is conveyed either to the MRF or EWPCF for treatment and use or disposal.

#### **3.1 Meadowlark Water Reclamation Facility**

Built in 1958, the MRF is located within the southwestern portion of VWD's service area in Carlsbad. MRF treats wastewater to meet the stringent standards of California Title 22 and Waste Discharge Permit R9-2007-0018 issued by the Regional Water Quality Control Board Region 9. The MRF has a capacity of **5 million gallons per day (MGD)** for liquids treatment, and a peak wet weather capacity of **8 MGD**. No solids treatment is available at this facility.

This recycled water from MRF is sold to the Carlsbad and Olivenhain Municipal Water Districts, traveling through a 24-inch pipeline. The Carlsbad Municipal Water District is contracted to annually purchase a minimum of 2 MGD in December through March, and 3 MGD in April through November. Olivenhain Municipal Water District (OWD) is contracted to annually purchase up to 1.5 million gallons year round, provided adequate supply exists. Recycled water infrastructure is not currently available for the general public within OWD's service area.

Surplus water is stored in the 54 million gallon (MG) Mahr Reservoir.<sup>1</sup> From here, water can be transported to EWPCF for disposal via a **3 MGD** capacity failsafe pipeline. Under dry weather conditions, up to one MGD is conveyed for disposal. Under wet weather conditions, VWD would manage flow via the Mahr Reservoir to ensure flows to EWPCF would not exceed 2.5 MGD.<sup>2</sup> According to the Master Plan, when the pipeline is at capacity, Carlsbad Municipal Water District has agreed to permit VWD to dispose of additional flow into their recycled water distribution system, subject to availability.

#### **3.2 Encina Water Pollution Control Facility**

Built in the mid-1960s, EWPCF is a 43.3 MGD solid and 40.51 MGD liquid regional treatment facility located on the Carlsbad coast. EWPCF provides secondary wastewater treatment to approximately 300,000 residents. The facility is jointly owned by six public agencies including VWD, the cities of Carlsbad, Vista, and Encinitas, Buena Sanitation District, and Leucadia Wastewater District.

VWD owns approximately 24 percent of EWPCF and has the ability to send up to **10.47 MGD** of solids and **7.67 MGD** of liquids to the facility for treatment and disposal. According to the 2010 UWMP, average flows from VWD to the facility are currently approximately **3.54 MGD**. Overall, average flow to the facility from all six owner agencies is approximately **23.3 MGD**.

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<sup>1</sup> Of the total 54 MG within the reservoir, 32 MG is allocated to Carlsbad Municipal Water District, and 16 MG is allocated to Olivenhain Municipal Water District, leaving 6 MGD for VWD to use in wastewater flow management.

<sup>2</sup> Despite a total capacity of 3 MGD in the failsafe pipeline, permitted wastewater flows are determined by acceptable depth-to-diameter ratios to ensure infrastructure longevity and functioning systems. This means that maximum flows to EWPCF will be less than 3 MGD.

In addition to the failsafe pipeline from the Mahr Reservoir, wastewater from VWD is conveyed to EWPCF through an 8-mile long land outfall via gravity flow and siphons.<sup>3</sup> Different sections of the land outfall are differently sized, meaning flow capacity varies along its length. Closer to EWPCF, the land outfall capacity is shared among VWD, the City of Carlsbad, and the Buena Sanitation District. Overall, the total rights shared by these agencies comprise **20.85 MGD**. VWD has a right to approximately 58 percent of this capacity, or **12.10 MGD**. According to system schematics described in the Master Plan, there appears to be a pinch at Gravity Section B, Main Section, where the capacity is 19.8 MGD. The flow rights totaling 20.85 MGD can be met by increasing the allowable depth-to-diameter ratio to permit additional flow.

Once treated, EWPCF produces 6 MGD of recycled water. Up to one MGD of the wastewater is sent to the Leucadia Wastewater District's Gafner Water Reclamation Facility. Up to four MGD is sent to the Carlsbad Water Recycling Facility. One MGD of the treated wastewater is fully recycled and used within EWPCF for equipment cleaning and landscaping. The majority of the treated wastewater, however, outfalls into the ocean. VWD's ocean outfall capacity is **10.47 MGD** out of a total capacity of 75 MGD.

### **3.3 Projected VWD System Wastewater Flows**

As stated above, VWD's liquid flow capacity equals 5.0 MGD at MRF and 7.67 MGD at EWPCF, for a total wastewater flow capacity within VWD's service area of **12.67 MGD** for liquids. Peak wet weather capacity equals 8.0 MGD at MRF and 12.10 MGD at EWPCF, for a total wet weather wastewater collection capacity of 20.10 MGD. According to the April 2015 Final Technical Memorandum prepared by VWD, average daily wastewater flow in 2014 was **7.2 MGD**, which corresponds to a peak wet weather flow of 16.9 MGD. According to the UWMP, VWD has an ultimate build out average daily flow of 13.3 MGD.<sup>4</sup> According to the VWD UWMP, for years 2015 and beyond, MRF and EWPCF will be able to generate an estimated 6.4 MGD of recycled water for VWD, based on a capacity of 5 MGD at MRF and a 1.4 MGD-equivalent at EWPCF.<sup>5</sup> Based on these treatment capacities, capacity for a total of 74 percent of this wastewater can be recycled, according to the UWMP. This percentage decreases into the future, as treatment capacity remains constant while average annual flows increase.

Wastewater generation rates vary by land use. For the purpose of developing its 2008 Master Plan, VWD generated these rates from meter data and information contained within their water and sewer billing database. Wastewater generation rates were developed for 26 separate land use categories within the VWD service area. VWD then applied these wastewater generation rates to the land use acreage projections identified in the San Diego Association of Governments 2030 Planned Land Uses and growth forecasts to determine anticipated wastewater flows. **Table 1** presents average wastewater flows from 2007 through ultimate buildout of VWD's sphere of influence.<sup>6</sup>

Peak flows were estimated by applying VWD's peaking factors to average flow calculations. Average wastewater flows are currently lower than forecasted in the Master Plan. As noted above, the average daily wastewater flows are 7.2 MGD. This is lower than the forecasted wastewater flows expected for 2010 (7.7 MGD) and 23 percent below the level forecasted for 2015 (9.4 MGD).

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<sup>3</sup> Wastewater from the cities of Vista and Encinitas and the Leucadia Wastewater District is transferred via the Buena Vista land outfall pipeline.

<sup>4</sup> This corresponds to a peak wet weather flow of 29.5 MGD, which exceeds VWD's combined peak wet weather collection capacity.

<sup>5</sup> VWD owns 24 percent of EWPCF wastewater capacity, and a total of 6 MGD of recycled water is produced from EWPCF wastewater.

<sup>6</sup> Ultimate buildout refers to full buildout of VWD's sphere of influence according to the San Diego Association of Government's 2030 Planned Land Uses.

It should be noted that the 2008 Master Plan does not include developments that were approved after June 30, 2008 or are anticipated to be constructed beyond 2030. VWD is currently updating their Master Plan. According to VWD staff, the 2014 Master Plan is scheduled for completion and Board approval in February 2016. This update will extend the future flow outlook beyond 2030. The Master Plan update will also consider changes in land use since 2008.

**Table 1. Average Wastewater Flows within VWD Service Area**

Year	Average Annual Flows (MGD)	Peak Dry Weather Flows (MGD) <sup>(1)</sup>	Peak Wet Weather Flows (MGD) <sup>(1)</sup>
2007	6.7	10.7	15.8
2010	7.7	11.9	17.9
2015	9.4	14.1	21.5
2020	10.6	15.6	23.9
2025	11.6	16.8	26.0
2030	12.5	17.9	27.9
2030 w/ NTA <sup>(2)</sup>	12.9	18.4	28.7
Ultimate	13.3	18.9	29.5
Ultimate w/ NTA	13.7	19.4	30.0

**Source:** VWD 2008 Master Plan, page 7-22

- Notes:**
- (1) Peak flows within a wastewater collection system occur under two general conditions: dry weather and wet weather. Dry weather peak flows are defined as peak instantaneous wastewater flows that occur on a daily basis without the influence of a storm event. Peak wet weather flows are defined as peak instantaneous wastewater flows that occur as a result of inflow and/or infiltration occurring during one or multiple storm events during the rainy season.
  - (2) NTA is the Northern Tributary Area, a separate drainage basin located in the northern part of VWD's service area that drains away from the wastewater collection system.

As mentioned above, recycled water infrastructure is not currently available for the general public within VWD's service area, and no plans to supply such water are currently in place. Without sufficient infrastructure, this water is disposed of through the EWPCF ocean outfall. VWD anticipates expanding recycled water use through participation in the regional recycled water efforts described below. According to the UWMP, VWD may add up to 2.2 MGD of potential recycled water demand by 2020 for existing recycled water customers, and 3.9 MGD by 2030.

### 3.4 VWD Treatment System

**Table 2** illustrates average dry and wet year wastewater flow projections for 2007, 2030, and ultimate buildout of VWD's sphere of influence. Using average annual flow projections identified above, Table 2 indicates treatment capacity at each facility and identifies projected surplus or shortages for these years.



**Table 2. Average Dry and Wet Year Wastewater Flow Projections and Treatment Capacity**

	2007 Average Flow (MGD)		2030 Average Flow (MGD)		Ultimate Average Flow (MGD)		Ultimate Average Flow w/NTA (MGD) <sup>(1)</sup>	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Wastewater Flow	6.70	8.24	12.50	15.38	13.30	16.36	13.70	16.85
Less MRF Treatment <sup>(2)</sup>	(5.00)	(8.00)	(5.00)	(8.00)	(5.00)	(8.00)	(5.00)	(8.00)
Required EWPCF Treatment	1.70	0.24	7.50	7.38	8.30	8.36	8.70	8.85
EWPCF Liquids Treatment Capacity <sup>(3)</sup>	7.67	7.67	7.67	7.67	7.67	7.67	7.67	7.67
<b>Liquids Treatment Surplus (Deficit) <sup>(3)</sup></b>	<b>5.97</b>	<b>7.43</b>	<b>0.17</b>	<b>0.29</b>	<b>(0.63)</b>	<b>(0.69)</b>	<b>(1.03)</b>	<b>(1.18)</b>
EWPCF Ocean Outfall Capacity	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47
Failsafe Pipeline or Mahr Reservoir Flow <sup>(4)</sup>	1.00	4.50	1.00	4.50	1.00	4.50	1.00	4.50
Ocean Outfall Flow <sup>(5)</sup>	2.70	4.74	8.50	11.88	9.30	12.86	9.70	13.35
<b>Ocean Outfall Surplus (Deficit)</b>	<b>7.77</b>	<b>5.73</b>	<b>1.97</b>	<b>(1.41)</b>	<b>1.17</b>	<b>(2.39)</b>	<b>0.77</b>	<b>(2.88)</b>
EWPCF Solids Treatment Capacity <sup>(6)</sup>	10.47	-	10.47	-	10.47	-	10.47	-
<b>Solids Handling Surplus (Deficit)</b>	<b>3.8</b>	<b>-</b>	<b>(2.0)</b>	<b>-</b>	<b>(2.8)</b>	<b>-</b>	<b>(3.2)</b>	<b>-</b>

Source: VWD Master Plan, page 7-27

- Notes:**
1. Estimated wastewater flows from the NTA were not included in the collection system analysis, but were included in the EWPCF capacity analysis.
  2. Assumes MRF capacity of 5.0 MGD during dry weather conditions and 8.0 MGD during wet weather conditions.
  3. Figure varies from Master Plan. Updated figures from Ingrid Stichter based on increased capacity as a result of Phase V expansion, pers. comm. 9/23/14.
  4. The failsafe pipeline connects the Mahr Reservoir with EWPCF. These figures assume the Mahr Reservoir is managed to provide sufficient storage of 8 MGD flows during wet weather events. 4.50 MGD is the total VWD can manage within the Mahr Reservoir (2.0 MGD) plus the 2.5 MGD total flow that can be sent to EWPCF during wet weather events.
  5. This total is Required EWPCF Treatment plus Failsafe Pipeline or Mahr Reservoir Flow.
  6. Solids handling based on dry weather flow as additional wet weather flow is assumed to be from inflow and infiltration.

As shown, VWD currently has excess liquids capacity but will require additional capacity when total dry weather wastewater flows exceed the liquids treatment capacity at MRF and EWPCF (totaling 12.67 MGD), which is predicted in the ultimate buildout scenario. After 2030, VWD will have to expand both solids and liquids treatment capacity at EWPCF to handle the additional flow. Specifically, for dry years, in 2030, VWD is projected to have 0.17 MGD of excess liquids capacity and a surplus of 1.97 MGD of ocean outfall capacity. Ultimately, VWD will need to acquire an additional 0.69 MGD of liquids treatment capacity at EWPCF and 2.39 MGD of ocean outfall capacity in wet years. With NTA, a total of 1.18 MGD of liquids treatment capacity and 2.88 MGD of ocean outfall capacity will be needed in wet years. VWD also has excess solids handling capacity currently. In 2030, VWD is projected to need 2.0 MGD of additional solids handling capacity. Ultimately, 2.8 MGD of solids handling capacity is needed. With NTA, a total of 3.2 MGD of solids handling capacity is needed.

### **3.5 Regional Recycled Water Efforts**

While MRF and EWPCF have the capacity to produce 6.4 MGD of recycled water in 2015 and beyond, lack of infrastructure prevents extensive use of this product. To expand the use of recycled water, VWD participates in two key regional recycled water efforts. VWD is a member of the North San Diego County Regional Recycled Water Project, a group of 11 water and wastewater agencies. This group explores opportunities for expanded use of recycled water within North San Diego County and funding opportunities for such use. A Facility Plan Report was finalized in 2011, and funding has been secured for a number of projects. VWD is also a member agency of the California WaterReuse Association, San Diego Chapter. This group was founded to increase recycled water use, thereby diversifying the region's water supplies.

### **3.6 Planned System-wide Improvements**

VWD's Master Plan analyzed the existing wastewater system to determine size of pipeline replacements and extensions utilizing a hydraulic model developed by collecting the system's physical data, estimating existing wastewater flows, and calibrating the model using actual meter data.<sup>7</sup>

The 2008 Master Plan describes planned improvements to VWD's existing wastewater facilities. Aging sewer pipelines including the San Marcos Interceptor and the Discovery Street sewers are scheduled to be replaced. Recommended capital improvement projects are outlined in the Master Plan. Additional improvements required to serve specific development projects will be the responsibility of future developers. Projects are divided into phases of five-year increments through 2030. None of these scheduled improvements are located within the immediate vicinity of the proposed project but will benefit the project through system-wide improvements.

**Lift stations.** The VWD Master Plan lists existing and future lift station capacities, demonstrating that sufficient capacity exists for all but anticipated 2030 dry weather flows at one station. To accommodate ultimate peak wet weather flows, the pumps at the Montiel Lift Station will be upgraded.

An additional 141 gallons per minute (gpm) of capacity is needed to accommodate 2030 peak wet weather flows, or an additional 147 gpm to accommodate ultimate peak wet weather flows.

**Pipeline improvements.** The VWD Master Plan describes gravity main capacity deficiencies over approximately 12 miles of existing pipelines. Addressing these deficiencies will include replacement projects for over-taxed pipeline segments, emergency service improvements, developer-driven improvements, or deferred maintenance.

**Regional conveyance and treatment system.** According to VWD's Master Plan, VWD conveyed approximately 4.9 MGD of wastewater to EWPCF and 2.0 MGD to MRF in 2007. VWD currently has excess capacity at EWPCF and no improvements are anticipated to be necessary until 2030.

Assuming buildout of the VWD service area, as anticipated in the 2008 Master Plan, 2.0 MGD of additional solids handling capacity and 1.41 MGD of ocean outfall capacity will be required to handle wet weather scenarios.

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<sup>7</sup> Estimated wastewater flows from the NTA were not included in the collection system analysis, but were included in the EWPCF capacity analysis.

Ultimately, VWD will need to acquire an additional 0.69 MGD of liquids treatment capacity, an additional 2.8 MGD of solids handling capacity, and 2.39 MGD of ocean outfall capacity in wet weather years, assuming buildout of the VWD services area as anticipated in the 2008 Master Plan.

With NTA, a total of 1.18 MGD of liquids treatment capacity, an additional 3.2 MGD of solids handling capacity, and 2.88 MGD of ocean outfall capacity will be required.

As previously discussed, the average daily wastewater flows have not increased at the rate anticipated by the 2008 Master Plan, thus the deficiencies anticipated for liquid treatment, solids handling and ocean outfall capacity may not be realized by 2030. Additionally, VWD is updating their Master Plan. The Master Plan update will reflect the current land use assumptions within their service area.

**Land outfall.** The land outfall is projected to have capacity deficiencies in nearly each section. Peak wet weather flows in 2007 of 8.61 MGD translates to a surplus; however, by 2015 deficits are expected and improvements in each section of the existing pipeline are warranted. **Table 3**, below, illustrates projected peak flow figures and associated surplus or deficit capacity within the land outfall.

**Table 3. Projected Peak Flow and Capacity of Land Outfall**

<b>Total Contractual Capacity</b>	12.10
<b>2007 Peak Flow (MGD)</b>	8.61
<b>2007 Surplus (Deficit)</b>	3.49
<b>2015 Peak Flow (MGD)</b>	14.28
<b>2015 Surplus (Deficit)</b>	(2.18)
<b>2030 Peak Flow (MGD)</b>	20.69
<b>2030 Surplus (Deficit)</b>	(8.59)
<b>Ultimate Peak Flow (MGD)</b>	22.32
<b>Ultimate Surplus (Deficit)</b>	(10.22)

**Source:** VWD Master Plan, page 7-28

As described above, VWD is projected to reach capacity by 2030. The 2008 Master Plan Capital Improvement Program planning horizon ends in 2030. Accordingly, none of the capital improvement projects identified in the Master Plan increase capacity because additional capacity is not warranted until after 2030, which is beyond the scope of the Master Plan's planning horizon. According to VWD staff, the 2014 Master Plan (currently scheduled for completion in February 2016) will extend the Capital Improvement Program outlook beyond 2030. Expansion of the existing wastewater treatment facilities to remedy these deficiencies may be considered during this process.<sup>8</sup>

To correct these deficiencies, a Proposed Land Outfall Alignment Study was completed in 1993 to identify an alignment for a parallel land outfall. This parallel outfall would convey the difference between the projected full development peak wet weather flow of 30 MGD (with NTA) and the available existing capacity. Due to the overall length of the parallel land outfall, construction has been divided into six distinct projects. The current VWD budget targets construction of the parallel outfall in July 2016, with completion projected for June 2020.

<sup>8</sup> Koonce, Eileen. 2014. Personal communication via email. May 22.

## 4.0 Analysis Summary

As described above, the Master Plan does not include projects approved after June 30, 2008. Accordingly, because the 2002 San Marcos Highlands Specific Plan was not developed nor annexed into the VWD service area, the proposed San Marcos Highland project was not included in the Master Plan projections.

The Master Plan projections for the project area include only 37.5 acres of the proposed development located within VWD's sphere of influence. The land use assumptions for the project site were Rural Residential. An April 2015 Final Technical Memorandum prepared by VWD estimated average dry weather wastewater flow projections using the 2008 approved land use and assuming development of the proposed project. This information is presented in **Table 4**, below.

**Table 4. Average Dry Weather Wastewater Flow Projections**

Land Use Type	Area (acres)	Duty Factor (gpd/acre)	Wastewater Flow (gpd)
<b>2008 Master Plan Land Use Flows</b>			
Rural Residential (0.125-1.0 du/ac)	37.5	150	5,625
<b>Total</b>	<b>37.5</b>		<b>5,625</b>
<b>Proposed San Marcos Highlands Flows</b>			
Residential (4-8 du/ac)	29.28	1,300	38,064
Right of Way	15.02	0	0
Open Space	61.08	40	2,443
Parks	1.56	250	390
<b>Total</b>	<b>106.94</b>		<b>40,897</b>

**Source:** VWD Final Technical Memorandum, April 2015.

Development of the project will increase the intensity of development on the project site from what was anticipated in 2008 when the VWD Master Plan was prepared and, as shown in Table 4, above, result in a greater demand of wastewater treatments and infrastructure than was previously identified in VWD's 2010 UWMP. Average dry weather wastewater flow projections for the 2008 approved land use would be 5,625 gpd. Under the proposed project, projected average wastewater flow would increase to 40,897 gpd. The project's contribution represents an increase of 35,272 gpd (or 0.035 MGD) above flow projected in the 2008 Master Plan for the project site.

Based on the surplus capacity information above, VWD is expected to have enough solids and liquids treatment capacity in the near term to handle the additional 0.035 MGD of solids and liquids projected for the proposed project. As noted on page 21 of the April 2015 Memorandum from VWD: "adequate wastewater treatment and disposal capacity exists for the proposed project at this time."

As discussed previously, VWD has 10.47 MGD of solid waste and 7.67 MGD of liquids treatment at EWPCF, plus 5 MGD of liquids treatment at MRF, for a total of 12.67 MGD of liquids treatment capacity. While capacity exists to handle the project's wastewater generation in the near term, if the VWD service area builds out per the 2008 Master Plan, solid waste and liquids treatment capacities are insufficient to handle the ultimate projection of 13.3 MGD of flow within the 2008 Master Plan. VWD is projected to experience an ultimate solids treatment capacity deficiency of 2.8 MGD, and ultimate liquids treatment capacity deficiency of 0.63 MGD in dry years. Additionally, ultimate buildout with NTA would result in an ultimate ocean disposal deficiency of 2.88 MGD in wet years. With the additional wastewater flow from the project, the ultimate solids treatment capacity

deficiency is projected to increase by 0.035 MGD to 2.83 MGD (a 1.25% increase), and the ultimate liquids treatment capacity deficiency is projected to increase by 0.035 MGD to 0.67 MGD (a 5.5% increase). However, as previously noted, the VWD service area wastewater generation is occurring at a slower rate than anticipated in the Master Plan. Further, some properties have developed at less intense densities than assumed in the Master Plan. The project will pay fees per VWD Ordinance which will offset the increase in demand in for wastewater treatment and conveyance generated by the project. These fees will go towards improvements to increase capacity. Ordinance 176 is included as **Attachment A** of this document.

### **Proposed Project Infrastructure**

The project will connect with VWD's wastewater collection system via the existing 15-inch gravity main in Las Posas Road and the existing 8-inch gravity main in Avenida Abeja via Ardilla Way. In the Final Technical Memorandum, VWD modeled six wastewater flow scenarios, ranging from average to peak flows, both with and without the proposed project. This modeling took into account both proximate needs as well as potential downstream impacts from the project. The results of this modeling demonstrated there would be no deficiencies resulting from increased wastewater flow. Additionally, no lift station upgrades are required, since no lift stations serve the sewer shed in which the project is located. Therefore, no additional projects beyond those contemplated in the Capital Improvement Program list are recommended due to implementation of the proposed project.<sup>9</sup>

As a condition of project approval, the project developer will be required to pay Water Capital Facility Fees and Density Impact Fees per VWD Ordinance 176 prior to being eligible for sewer service. Ordinance 176 provides the Wastewater Capital Facility Fee schedule applicable to new development. As of January 1, 2014, Wastewater Capital Facility Fees are based on the amount of the demand or increased demand as measured by equivalent dwelling units of 250 gallons per day of wastewater using 2008 Master Plan land use information. The current cost is \$8,795 per equivalent development unit. The purpose of the fee is to provide adequate wastewater conveyance and treatment to serve new development within VWD's service area and to provide adequate funding for future financing and construction of facilities described in VWD's 2008 Master Plan. Six projects listed in the 2008 CIP (LOA 1 through LOA 6) reference parallel outfall improvements that would ensure sufficient peak wet weather collection capacity. However, the Wastewater Capital Facility Fees are not allocated to specific projects identified in the 2008 CIP. Rather, collected fees will be used for any increase in Master Plan land outfall pipeline size necessitated by the project's additional wastewater generation. According to the April Final Technical Memorandum, payment of these fees satisfies the project's increases in capacity to water storage, wastewater treatment and disposal, and land outfall. No additional mitigation is required.

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<sup>9</sup> The 2008 Master Plan Capital Improvement Program has not identified the expansion of the existing wastewater treatment facilities through 2030 to remedy these deficiencies.

**Attachment A**

**VWD Ordinance No. 176**

ORDINANCE NO. 176

AN ORDINANCE OF THE BOARD OF DIRECTORS  
OF THE VALLECITOS WATER DISTRICT  
MODIFYING WASTEWATER CAPITAL FACILITY FEES  
FOR FISCAL YEAR 2012-2013

BE IT ORDAINED by the Board of Directors of the Vallecitos Water District ("District") as follows:

Section 1. Declaration of Policy and Background. On August 3, 2011, the District's Board of Directors adopted the 2008 Water, Wastewater, and Water Reclamation Master Plan ("2008 Master Plan"). Concurrent with the adoption and in compliance with the California Environmental Quality Act ("CEQA"), the Board of Directors also certified the Final Program Environmental Impact Report for the 2008 Master Plan ("2008 Master Plan PEIR"). The District used information and data from the 2008 Master Plan and PEIR to prepare the Water, Wastewater Capital Facility Fees and Wastewater Density Impact Fee Study ("Study") and calculate a reasonable Wastewater Capital Facility Fees structure and methodology that reflects the costs of financing and construction of the proposed facilities in the 2008 Master Plan. The Study analyzes the capital facilities needed by the District to serve the growing demands of new development, and the proposed fees do not exceed the reasonable costs of financing and constructing the needed improvements

The Study was approved by the Board of Directors a public meeting on March 21, 2012 and an Updated Study is approved as part of this ordinance. The Updated Study substantiating the proposed fees in accordance with this ordinance were made available for public inspection and review ten (10) days prior to a public meeting, and notice was given in compliance with Government Code section 66016.

During the period from January 2010 through February 2012, the District held over 20 workshops and meetings with interested parties including representatives from the development community, the Building Industry Association of San Diego, and consulting engineers to review, discuss, and receive input on the 2008 Master Plan, the Master Plan PEIR, a draft of the Study, and the District's basis and methodology in substantiating the proposed Wastewater Capital Facility Fees.

The District, by this ordinance, desires to adopt the Wastewater Capital Facility Fee Schedule which is attached hereto as Exhibit "A" and incorporated herein by reference for fiscal year 2012-2013 and reflects the information and data taken from the 2008 Master Plan and Study.

The Board of Directors of the District considered modifying its Wastewater Capital Facility Fee Schedule after conducting a public hearing at a public meeting on April 18, 2012, in accordance with Government Code section 66018.

Section 2. Findings. The Board of Directors of the District finds and determines as follows:

(a) Purpose of the Fee. The purpose of the Wastewater Capital Facility Fee is to provide adequate wastewater conveyance and treatment to serve new development within the District's service area and to provide adequate funding for future financing and construction of facilities described in the 2008 Master Plan.

(b) Use of Fees. All Wastewater Capital Facility Fees as listed on the Wastewater Capital Facility Fee Schedule, shall be used to finance and construct the applicable wastewater facilities described in the 2008 Master Plan including debt service. Wastewater Capital Facility Fees shall not be used for repair, maintenance or operational expenses.

(c) Relationship Between Use of Fee and Type of Development. Wastewater Capital Facility Fees will be charged to new development and existing users with increased demands as measured by Equivalent Dwelling Units ("EDU's), which takes into consideration land use designations, type of use, and amount of flows as identified in the 2008 Master Plan and Updated Study.

(d) Relationship Between Need for Capital Facilities and Type of Project. In order to provide adequate wastewater service, all new development within the District's service area will require the capital facilities specified in the 2008 Master Plan and Study.

(e) Relationship Between Amount of Fee and Cost to Particular Projects. The Wastewater Capital Facility Fees for each new development shall be based upon the demand of a particular project on the District's wastewater system through the analysis of type of use and flows. The District finds and determines that the Wastewater Capital Facility Fee Schedule insures that each user will pay a fair share of new facility construction based upon actual demand upon the wastewater system.

(f) Reasonable Relationship. Wastewater Capital Facility Fees do not exceed the estimated reasonable costs of providing the service for which the charge is imposed and the Wastewater Capital Facility Fee Schedule insures that each user will pay a fair share of new facility construction based upon actual demands.

(g) Environmental Review. In accordance with the California Environmental Quality Act Guidelines Section 15061, the Board of Directors ordains that the Wastewater Capital Facility Fees established by this ordinance are exempt from CEQA for the following reasons:

1. The Wastewater Capital Facility Fees are not a "project" as defined by Guidelines Section 15378;
2. The project is exempt in accordance with Guidelines Sections 15273(1), 15273(3), and 15274(4); and
3. The activity will not have any significant impact upon the environment pursuant to Guidelines Section 15061(b)(3).

The Board of Directors of the District orders and directs that the foregoing exemptions and reasons be made a part of the Notice of Exemption and that the Notice of Exemption be filed with the County Clerk of the County of San Diego.



(h) Cost Estimates. The cost estimates set forth in the 2008 Master Plan and Study are reasonable estimates for the financing and construction of capital facilities shown and the development fees expected to be generated by new demand will not exceed a total of these estimated costs.

Section 3. Segregated Accounts and Their Accounting. The District has established separate accounts in its accounting records segregating wastewater capital facility fee revenue and related interest accrued thereon from other revenue and funds of the District. For each separate account, the District's finance officer shall, within one hundred eighty (180) days after the last day of each fiscal year, make available to the public and present to the District's Board of Directors a written report containing all of the information required by Government Code section 66013(d).

Section 4. Water and Wastewater Study. All development projects at the sole expense of the developer shall be required to complete a Water and Wastewater Study which analyzes and calculates the impacts of the development project on the wastewater conveyance and treatment. The Water and Wastewater Study shall also provide the basis for local impacts and improvements.

Section 5. Commitment of Wastewater Capital Facility Fees. All Wastewater Capital Facility Fees collected and remaining unexpended on the effective date of this ordinance and all future development fees collected pursuant to this ordinance and related interest thereon are committed by appropriation to the District's capital improvement program and the facilities described in the 2008 Master Plan and Study.

Section 6. Wastewater Capital Facility Fee Schedule and Inflationary Increases. On January 1 of each calendar year, the District will adjust the Wastewater Capital Facility Fee Schedule based on the annual percentage change in the Engineering News Record Construction Cost Index.

Section 7. Effective Date. This ordinance shall be effective immediately upon passage by the Board of Directors. The secretary of the District shall publish this ordinance two (2) times on successive weeks in an adjudicated newspaper of general circulation within the District. The new District wastewater capital facility fees established by this ordinance shall be effective at 12:00 a.m. on July 1, 2012, more than sixty (60) days after adoption of this ordinance in accordance with Government Code section 66017.

Section 8. Time of Payment of Wastewater Capital Facility Fees. Wastewater Capital Facility Fees shall become due, and payable pursuant to Resolution No. 1343 o and prior to commitment by the District for service.

Section 9. Non-Refundable. To assure availability for proper planning and to meet obligations incurred by the District to develop capacity in the District's wastewater system in a timely manner, all wastewater capital facility fees collected shall be non-refundable an non-transferable.

Section 10. Interpretation and Severability. Each and every section, subsection, sentence, clause, phrase, part, or portion of this ordinance shall be construed at all times so as to be in compliance with all federal, state, and local laws, roles, and regulations governing development fees. If any section, subsection, sentence, clause, phrase, pan, or portion of this ordinance as so interpreted


is held to be invalid or unconstitutional by a final judgment of a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance. The Board of Directors of the District hereby declares that this measure, and each section, subsection, sentence, clause, phrase, part, or portion of this ordinance would have been adopted or passed irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases, parts, or portions of this ordinance are declared invalid or unconstitutional. In the event a court of competent jurisdiction determines that any sentence, clause, subsection, section, phrase, or any part or portion of this ordinance is invalid or unconstitutional, the Board of Directors of the District hereby expressly requests that the court sever the invalid portion of this ordinance and declare the balance of the ordinance to be valid.

Section 11. Limitation on Judicial Review. Any judicial action or proceeding to attack, review, set aside, void, or annul this ordinance or any wastewater capital facility fee increase adopted as a result of this ordinance shall be brought no later than one hundred twenty (120) days following the date this ordinance has been adopted by the Board of Directors of the Vallecitos Water District. Any action not filed within the 120-day period shall be forever barred.

ALL OTHER ORDINANCES, ARTICLES, OR SECTIONS OF ORDINANCES, OR AMENDMENTS IN CONFLICT HEREWITH ARE HEREBY REPEALED.

PASSED, APPROVED, AND ADOPTED by the Board of Directors of the Vallecitos Water District at a regular meeting this 18th day of April, 2012, by the following roll call vote:

AYES:                   FERGUSON, POLTL, SHELL  
NOES:  
ABSENT:                GENTRY, HERNANDEZ  
ABSTAIN:

  
\_\_\_\_\_  
Timothy M. Shell, Vice President  
Board of Directors  
Vallecitos Water District

ATTEST:

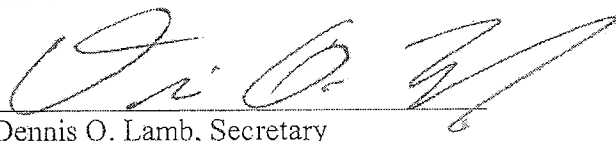
  
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Dennis O. Lamb, Secretary  
Board of Directors  
Vallecitos Water District

EXHIBIT A

Vallecitos Water District  
Wastewater Capital Facility Fee Schedule  
Adopted: April 18, 2012  
Effective: January 1, 2015

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1. Wastewater Capital Facility Fees are based upon the amount of the demand or increased demand as measured by Equivalent Dwelling Units (EDUs) of 250 gallons per day (GPD) of wastewater.
2. The amount of capacity to be purchased is determined by the District using 2008 Master Plan criteria, land use, information submitted by the applicant, and the project's Water and Wastewater Study, if applicable. The minimum capacity shall be based on the Master Plan land use, with minimum capacity of one EDU. Purchase of additional capacity may be required. The fee for residential use is determined using the schedule below. The fee calculation for non-residential use may be based on the project specific study or analysis using 2008 Master Plan criteria. The applicant may submit information to be considered in the capacity determination.
3. Following commencement of service, other than service for residential use, the account will be monitored for flow volume. If the flow exceeds the purchased capacity based on the most recent twelve-month average, the payment or lease<sup>a</sup> (if qualified) of additional capital facility fees may be required. Unless determined otherwise, all water entering the property through the water meter or from an on-site water source is assumed to reach the wastewater system.
4. The Residential Wastewater Capital Facility Fee Schedule is as follows:

Residential Category	GPD	Treatment	Conveyance	Land outfall	Total
Single Family Residence	250	\$ 3,666	\$ 2,701	\$ 2,672	\$ 9,039
Mobile Home (each unit in park)	200	2,933	2,160	2,138	7,231
Mixed Use	180	2,641	1,944	1,924	6,509

\*Multi-Family residential fees are calculated using the Water and Wastewater Study and land use categories in the 2008 Master Plan  
(Non residential fees are based on land use and/or actual flow capacity as determined by District review.)

<sup>a</sup> Lease of capacity is subject to terms and conditions of Ordinance No. 110.

-Capital Facility Fees are increased based on the annual change in the Engineering News Record's (ENR's) Construction Cost Index. The index was 9,936 in December 2014 compared to 9,668 in December 2013.