

Zone 7 Water Agency 2011 Municipal & Industrial (M&I) Connection Fee Program Update



Prepared by Zone 7 Staff



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Executive Summary

Background

Connection Fee Ordinance

In January 1972, the Alameda County Board of Supervisors adopted Ordinance No. FC 72-1, pursuant to the Alameda County Flood Control and Water Conservation District Act (included as **Appendix A**). This ordinance allowed Zone 7 to impose a connection fee to finance water system improvements within the Zone 7 service area to meet future water supply needs. These water connection fees are subject to the provisions contained in California Government Code Sections 66013 and 66016. The provisions in Government Code Section 66013 define Zone 7 water connection fees as follows:

“(a) Notwithstanding any other provision of law, when a local agency imposes fees for water 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: “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.”

Revenues collected from water connection fees are maintained in a separate account (Fund 73) in Zone 7’s accounting system. While Zone 7 serves both Municipal and Industrial (M&I) customers and agricultural customers, the connection fees discussed in this document only apply to M&I customers. Zone 7 will not have any new direct retail customers through buildout; therefore, new connections will derive from the Retailers’ service areas.

Purpose of the 2011 Municipal and Industrial (M&I) Connection Fee Program Update

The Municipal & Industrial (M&I) Connection Fee Program was established to ensure that Zone 7 is able to fund the necessary projects under Zone 7’s Water System Expansion Program, which serves new growth in Zone 7’s service area. The purpose of this update is to verify that Zone 7’s connection fees represent the reasonable costs of providing service to new customers. To that end, the 2011 M&I Connection Fee Program Update undertook a comprehensive re-evaluation of the projected population growth, demands, and new connections in the Zone 7 service area, and the necessary water system expansion projects to meet the needs of future customers. Any changes to Zone 7’s water resources, facilities, and policies since the last major update in 2006 that had an impact on water system expansion needs were incorporated in the update. Since the last update, Zone 7 has undertaken a number of key planning studies, which are described in Chapter 3. One particularly important planning document that defined the updated Water System Expansion Program is the 2011 Water Supply Evaluation (2011 WSE) completed in July 2011.

The planning horizon for this update is from Fiscal Year 2012/2013 (FY 12/13) through buildout, which is projected to occur between FY 34/35 and FY 39/40. Revisions in the projected number and timing of connections over this time period have a significant impact on the development of the Water System Expansion Program. Such revisions arise from various factors. Most notably, in the last few years, the economic downturn has delayed projected residential, commercial and industrial development, resulting in a slower growth in the number of new connections than was previously anticipated.

Overview of Connection Fee Calculation Methodology

In general, development of the Zone 7 M&I water connection fees begins with an analysis of the projected populations, and the associated new connections and water demands over the planning horizon. In parallel, the Water System Expansion Program is developed with the objective of implementing the capital improvement projects necessary to meet projected demands. The funding requirements of the Water System Expansion Program, along with the projected number of connections, is used to calculate the appropriate connection fee. The timing of project implementation is determined based on a number of factors: 1) meeting the demand needs over time, 2) ability to meet Zone 7's policy of funding expansion projects with pay-as-you-go financing to minimize risk to existing customers, and 3) maintenance of adequate fund balances to cover 50% of the following year's non-discretionary obligations. This methodology ensures that the connection fees charged to customers reflect reasonable costs to Zone 7, as required by the Connection Fee Ordinance No. FC 72-1. For Zone 7's service area, two distinct Connection Fees are calculated: one for connections in Alameda County (administered by the Cities of Pleasanton and Livermore, Cal Water, and DSRSD) and one for Dougherty Valley (administered by DSRSD). In addition, new Dougherty Valley customers pay a Facility Use Payment (or Fee), which is assessed to compensate Zone 7 for use of its existing facilities. The terms for the determination of the Dougherty Valley Connection Fee and the Facility Use Fee are described in the *Amendment No.1 to Contract Between Zone 7 Water Agency And Dublin San Ramon Services District for Municipal Water Supply (Appendix B)*.

Growth in the Areas Served by Zone 7

Population Growth

The latest population projections for the Zone 7 service area were derived from the Retailers' 2010 Urban Water Management Plans. Overall, a 32% population growth is expected in the Zone 7 service area over the next 30 years to a buildout population of 299,000 people.

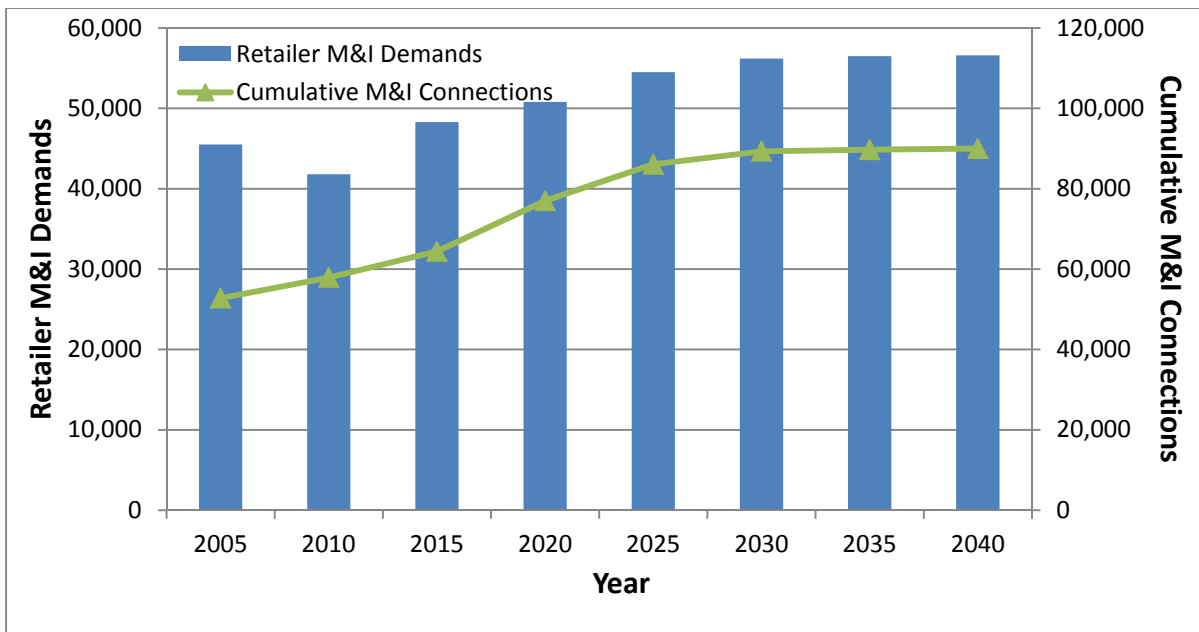
Demand Growth and New Connections

Figure ES-1 shows the projected total water demands¹ by the Retailers between 2015 and 2040 as derived from the Retailers' 2010 UWMPs. The actual demands from 2005 and 2010 are also included for comparison. New connections in the Zone 7 service area will serve a variety of customers and a range of demands utilizing various meter sizes. Connection projections are normalized based on Dwelling Unit Equivalents (DUEs), which represent the 5/8-inch meter typically used in a single-family residential home. The projected cumulative connections in DUEs

¹ These demands are the most recent data provided by the Retailers as of July 2011. They only include deliveries to the Retailers, and do not include deliveries to Zone 7's direct retail customers and untreated water customers.

over time through 2040 are also shown on **Figure ES-1**. From FY 10/11 through buildout (FY 39/40), 32,070 new DUEs are expected.

Figure ES-1. Retailer Demand and Cumulative Connection Projections*



*Reference: Retailers' 2010 UWMPs. These demands only include deliveries to the Retailers, and do not include deliveries to Zone 7's six direct retail customers and untreated water customers.

Connections Used for Connection Fee Calculations

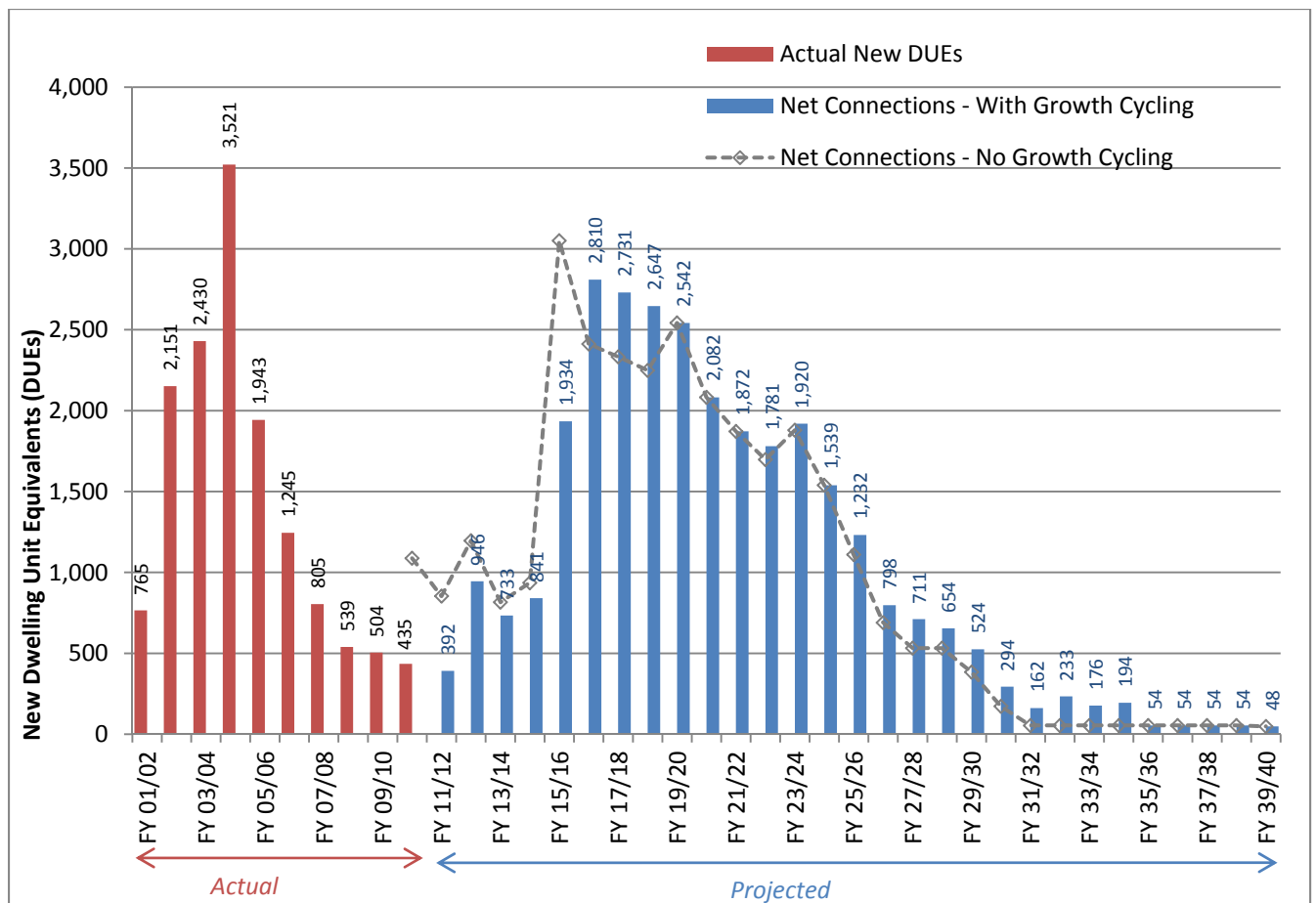
To determine the number of new connections for use in the connection fee calculations, the gross estimate of 32,070 new connections from FY 10/11 through buildout was adjusted to subtract connections that have been prepaid (i.e., connection fees have been paid but the construction may not have occurred yet) and credits (i.e., new connections at Arroyo Vista that replace existing potable water connections previously paid for). With the adjustments, the new connections producing revenue ("net connections") total 30,446 DUEs.

To account for the uncertainty in the rate of development, growth cycling was applied to the net connections. This growth cycling concept assumes only 70% of the first five years' projections occur at that time and the remaining 30% occur over the ten-year period from FY 25/26 through FY 34/35. In other words, a fewer number of connections and lower revenues are planned for in the near-term. This effectively incorporates some conservatism in Zone 7's planning for expenditures related to capital projects, partially addressing the uncertainty in the connection projections and giving better assurance that funds will be available when they are needed.

To further account for the uncertainty in the estimates, two additional adjustments were made. The FY 10/11 value was set to the actual value, and the difference in projected versus actual for FY 10/11 was spread over the following three years. Finally, the high number of new DUEs projected for FY 15/16 in DSRSD's Alameda County service area (1,590 DUEs) was re-distributed over a four-year period (FY 15/16 through FY 18/19).

The yearly totals of net connections as originally estimated are shown on **Figure ES-2**. The yearly totals of net connections with growth cycling and the FY 15/16 adjustment—which were used for the revenue projection analysis—are also shown. For comparison, **Figure ES-2** also presents the actual connections from FY 01/02 through FY 10/11. A similar level of development is projected to occur in a few years (starting around 2016) as compared to the period between 2003 and 2006. Note that if development does not occur as projected (e.g., gets delayed), planned projects and the associated expenditures will be delayed accordingly.

Figure ES-2. Actual and Projected Net Connections with and without Growth Cycling*



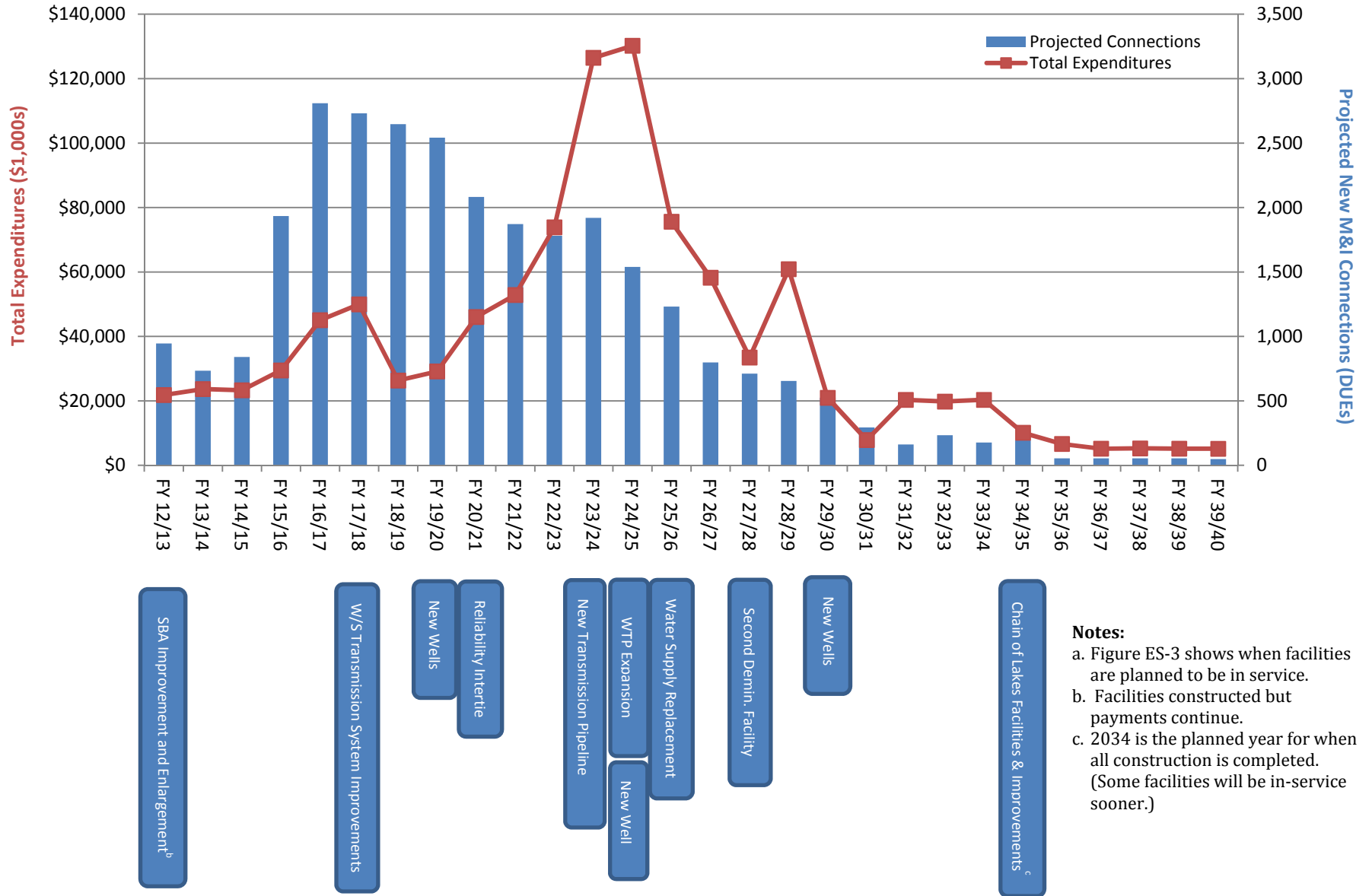
*Net connections are calculated from the gross connections adjusted for prepaid connections and credits. Net connections with growth cycling were used for the revenue projections. This growth cycling concept assumes only 70% of the first five years' projections occur at that time and the remaining 30% occur over FY 25/26 through FY 34/35. The FY 10/11 value was set to the actual value, and the difference in projected versus actual for FY 10/11 was spread over the following three years. The peak in FY 15/16 was also spread over four years.

Fund 73 – Water System Expansion Program

Zone 7's Water System Expansion Program (Program)—which is part of Zone 7's overall Capital Improvement Program (CIP)—is designed to meet future demands on Zone 7's water system and is therefore funded through connection fees (designated as Fund 73). The development of the Program is shaped by policies set by the Board of Directors pertaining to water supply and reliability, groundwater basin management, and water quality. Zone 7 staff performs planning studies to determine what types of facilities and supplies ("projects") are needed over time to meet demand growth in accordance with these policies. Cost estimates are then developed for these facilities and supplies; costs for those facilities and supplies that serve both existing and new customers are allocated to the customers in proportion to the benefits they receive. Furthermore, some projects have both water supply and flood control benefits; costs are allocated to reflect this since flood control has a separate funding source. Based on the Agreement between Zone 7 and DSRSD, customers in Dougherty Valley do not pay for those projects related to water acquisition and non-local groundwater storage because Dougherty Valley customers pre-purchased their water supply and storage.

Forty-two projects funded in whole or in part by Fund 73 with a total funding need of \$1,069,388,000 (including contingency and connection fee administration) through FY 39/40 have been identified. **Figure ES-3** shows the projected new connections and expenditures over time, and the major facilities to be constructed to meet demand growth. Major facilities, particularly the Water Treatment Plant (WTP) Expansion, are planned to be in-service around 2022 to 2025, as reflected by the peak in expenditures during that time period. The results from the 2011 WSE indicate that new treatment capacity will be needed around this time period in order to meet Maximum Day Demands. Zone 7 will continue to update its CIP every two years and changes in demands and available funding will be incorporated into the ultimate scheduling of project construction; projects intended to meet new demands will be shifted according to when those demands are expected.

Figure ES-3. Connections, Total Expenditures, and Major New Facilities



Notes:
 a. Figure ES-3 shows when facilities are planned to be in service.
 b. Facilities constructed but payments continue.
 c. 2034 is the planned year for when all construction is completed. (Some facilities will be in-service sooner.)

Connection Fee Determination

A financial model was developed by Zone 7 staff based on the projected revenue stream and expenditures to develop a connection fee structure suitable to finance the Water System Expansion Program (Program). Connection fees, based on DUEs, have historically been designed to fund all Program costs with the goal of 100% pay-as-you-go financing with connection fees and interest income earned on reserves in order to minimize risk to existing rate payers². Zone 7 also has a goal of maintaining a minimum fund balance based on 50% of non-discretionary obligations for the following year. These requirements need to be met in setting connection fees. The Board-approved connection fees for 2011 are presented in **Table ES-1**. As previously mentioned, Dougherty Valley does not pay for those projects related to water acquisition and non-local groundwater storage; a separate fee is therefore determined for Dougherty Valley. For the 2011 M&I Connection Fee Program Update, Zone 7 staff determined that *Zone 7's connection fees represent the reasonable costs of providing service to new customers*. This update recommended an increase based on the Engineering News Record Construction Cost Index (ENR CCI) to account for the impact of inflation on future projects. For the 2012 fees, staff recommended increasing the current fees by 3.2% based on the change in the ENR CCI from September 2010 to September 2011. The Zone 7 Board adopted the recommended connection fees at the Board Meeting on October 19, 2011. **Table ES-1** shows the adopted connection fees for 2012.

Table ES-1. Adopted Connection Fees for 2011 and 2012

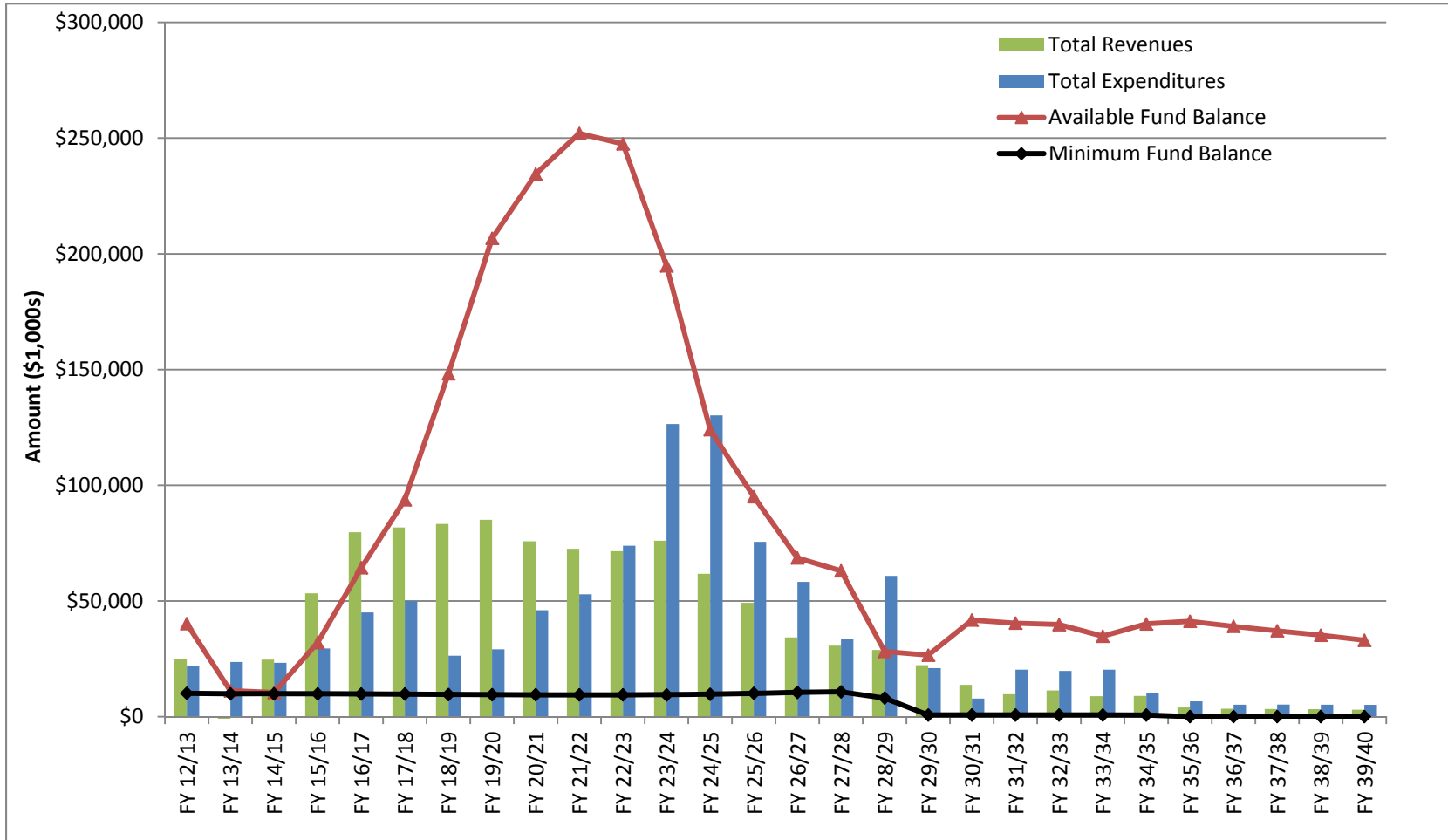
Effective Period	Alameda County (\$/DUE)	Dougherty Valley (\$/DUE)
Effective January 1, 2011	\$22,230	\$20,580
Effective January 1, 2012 (3.2% Increase*)	\$22,930	\$21,230

* Based on the change in the ENR CCI from September 2010 to September 2011.

Figure ES-4 shows the preliminary funding outlook for Fund 73 (Expansion). It includes total expenditures (project expenditures, contingency, and administration fees), total revenues, fund balances, and the minimum fund balances for each year.

² A recent exception is the \$60M Installment Sale Agreement (short-term loan) with Wells Fargo to pay for a portion of the Altamont Water Treatment Plant and Pipeline project. To fund the Altamont Pipeline - Livermore Reach, \$30.5M was used; \$29.5M was returned to Wells Fargo because construction of the Altamont Water Treatment Plant has been deferred.

Figure ES-4. Fund 73 (Expansion) Preliminary Funding Outlook Based on Recommended Connection Fees



Dougherty Valley Facility Use Fee

When Zone 7 agreed to expand its service area to include Dougherty Valley in February 2000, it was agreed that Dougherty Valley developers, in addition to funding the costs of serving the development through connection fees and paying for water use through water rates, would make an additional payment to recognize the contributions made by ratepayers to construct and maintain the system. This additional payment is called the Dougherty Valley Facility Use Fee, applied to each equivalent connection (DUE) to the system. *Amendment No. 1 to the M&I water supply contract between DSRSD and Zone 7 (Appendix B)* provides the details for the application of the Facility Use Fee. The initial rate established was \$1,850 per equivalent new connection effective in 2002. Amendment No. 1 also contained provisions for adjustment of the Facility Use Fee every five years based on ENR-CCI data and a calculated Adjustment Index. The last update to this fee was in 2006, when it was increased by 33% for the five-year period based on the estimated increase in ENR-CCI from December 1997 to December 2006. The fee became effective January 1, 2007.

In accordance with the methodology for calculating the Facility Use Fee as defined in Amendment No.1, staff has determined the new fee to be \$2,890, an increase of 17.5% from the current fee of \$2,460 as shown in **Table ES-2**. The fee was adopted by the Zone 7 Board at the Board Meeting on October 19, 2011. This fee will become effective on January 1, 2012.

Table ES-2. Adopted Dougherty Valley Facility Use Fees for 2007 and 2012

Effective Period	Dougherty Valley Facility Use Fee (\$/DUE)
Effective January 1, 2007	\$2,460
Effective January 1, 2012 (17.5% Increase)	\$2,890

1 INTRODUCTION

1.1 Zone 7 Water Agency

Zone 7 Water Agency (Zone 7) is a water wholesaler providing potable water to Dublin San Ramon Services District (DSRSD), the City of Livermore, California Water Service Company (Cal Water), and the City of Pleasanton (Retailers). In turn, these Retailers distribute water to municipal and industrial (M&I) customers in the cities of Dublin, Livermore, and Pleasanton, and in the Dougherty Valley portion of San Ramon. Zone 7 also serves treated water directly to six customers; however, their demand represents less than one percent of the total demand in the service area. Most of Zone 7's service area is located within Alameda County; an exception is Dougherty Valley, which is in Contra Costa County. Zone 7 is part of Alameda County but is governed by its own Board of Directors.

1.2 Connection Fee Ordinance

In January 1972, the Alameda County Board of Supervisors adopted Ordinance No. FC 72-1, pursuant to the Alameda County Flood Control and Water Conservation District Act (included as **Appendix A**). This ordinance allowed Zone 7 to impose a connection fee to finance water system improvements within the Zone 7 service area to meet future water supply needs. These water connection fees are subject to the provisions contained in California Government Code Sections 66013 and 66016. The provisions in Government Code Section 66013 define Zone 7 water connection fees as follows:

“(a) Notwithstanding any other provision of law, when a local agency imposes fees for water 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: “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.”

Revenues collected from water connection fees are maintained in a separate account (Fund 73 - Expansion) in Zone 7's accounting system. While Zone 7 serves both M&I customers and agricultural customers, the connection fees discussed in this document only apply to M&I customers. Zone 7 will not have any new direct retail customers through buildout; therefore, new connections will derive from the Retailers' service areas.

1.3 Purpose of the 2011 Municipal & Industrial Connection Fee Program Update

The Municipal & Industrial (M&I) Connection Fee Program was established to ensure that Zone 7 is able to fund the necessary projects under Zone 7's Water System Expansion Program, which serves new growth in Zone 7's service area. The purpose of this update is to verify that Zone 7's connection fees represent the reasonable costs of providing service to new customers. To that end, the 2011 M&I Connection Fee Program Update undertook a comprehensive re-evaluation of the

projected population growth, demands, and new connections in the Zone 7 service, and the necessary water system expansion projects to meet the needs of future customers. Any changes to Zone 7's water resources, facilities, and policies since the last major update in 2006 that had an impact on water system expansion needs were incorporated in the update. Since the last update, Zone 7 has undertaken a number of key planning studies, which are described in Chapter 3. One particularly important planning document that defined the updated Water System Expansion Program is the 2011 Water Supply Evaluation completed in July 2011.

The planning horizon for this update is from Fiscal Year 2012/2013 (FY 12/13) through buildout, which is projected to occur between FY 34/35 and FY 39/40. Revisions in the projected number and timing of connections over this time period have a significant impact on the development of the Water System Expansion Program. Such revisions arise from various factors. Most notably, in the last few years, the economic downturn has delayed projected residential, commercial and industrial development, resulting in a slower growth in the number of new connections than was previously anticipated.

1.4 Overview of Connection Fee Calculation Methodology

In general, development of the Zone 7 M&I water connection fees begins with an analysis of the projected populations, and the associated new connections and water demands over the planning horizon. In parallel, the Water System Expansion Program is developed with the objective of implementing the capital improvement projects necessary to meet projected demands. The funding requirements of the Water System Expansion Program, along with the projected number of connections, is used to calculate the appropriate connection fee. The timing of project implementation is determined based on a number of factors: 1) meeting the demand needs over time, 2) ability to meet Zone 7's policy of funding expansion projects with pay-as-you-go financing to minimize risk to existing customers, and 3) maintenance of adequate fund balances to cover 50% of the following year's non-discretionary obligations. This methodology ensures that the connection fees charged to customers reflect reasonable costs to Zone 7, as required by the Connection Fee Ordinance No. FC 72-1.

For Zone 7's service area, two distinct Connection Fees are calculated: one for connections in Alameda County (administered by the Cities of Pleasanton and Livermore, Cal Water, and DSRSD) and one for Dougherty Valley (administered by DSRSD). When Dougherty Valley was added to Zone 7's service area, a separate agreement was required to ensure that Dougherty Valley pays its proportionate share of Zone 7's Water System Expansion Program. Water service to Dougherty Valley is intended to be equivalent to that which Zone 7 provides to its other customers; however, the Dougherty Valley Connection Fee excludes certain costs as will be described in Chapter 5. In addition, new Dougherty Valley customers pay a Facility Use Payment (or Fee), which is assessed to compensate Zone 7 for use of its existing facilities (essentially a "buy-in" fee). The terms for the determination of the Dougherty Valley Connection Fee and the Facility Use Fee are described in the *Amendment No.1 to Contract Between Zone 7 Water Agency And Dublin San Ramon Services District for Municipal Water Supply* (included as **Appendix B**).

1.5 Overview of the Following Chapters

In accordance with the methodology used to develop the M&I connection fees, the following chapters begin with an update of population, water demand, and connection projections (Chapter 2). Subsequent chapters then present an overview of the Water System Expansion Program (Chapter 3); establishment of the 2012 Connection Fees (Chapter 4); and the determination of the Dougherty Valley Facility Use Fee (Chapter 5). Finally, the report concludes with a summary and recommendations (Chapter 6).

2 POPULATION, WATER DEMAND, AND EQUIVALENT CONNECTION PROJECTIONS

The following sections describe population, water demand, and connection projections used in this update of the M&I Connection Fee Program.

The Retailers, along with Zone 7, are required by the State of California to complete and adopt an Urban Water Management Plan (UWMP) every five years; UWMPs contain information on population, water demand, and account projections. Zone 7's and the Retailers' UWMPs completed for 2010 served as a key reference for this analysis. Information from the UWMPs was supplemented with additional data provided by the Retailers.

A variety of methods was used to calculate new connections; these methods are described in more detail below.

2.1 Population Growth

The population projections for the Zone 7 service area presented here were derived from the 2010 UWMPs. Details on how the population projections were estimated by the Retailers for their service areas³ can be found in the individual UWMPs posted on their websites. In general, the Retailers used documents from the US Census, California Department of Finance, and City planning departments (e.g., General Plans, Specific Plans, and Housing Elements) to develop the estimates.

Table 2-1 provides a breakdown of population growth by retailer. Population projections for DSRSD are further broken down into the City of Dublin and the Dougherty Valley area of San Ramon. Overall, a 32% population growth is expected in the Zone 7 service area over the next 30 years to a buildout population of 299,000⁴. Note that this is a 13% increase from the buildout population of 263,610 originally projected in 2004⁵. This may be a reflection of revised population estimation methodologies and/or higher-density housing being built. DSRSD will experience the greatest percent increase, with populations in Alameda County and Dougherty Valley each growing by approximately 50%. Based on actual populations, DSRSD's Alameda County service area and Cal Water will experience the largest increases, at approximately 25,800 and 17,700 people, respectively.

Figure 2-1 plots the trend of total population growth from 2005 to 2040.

³ Populations for unincorporated areas within Zone 7's service area are not included; they represent a minor percentage.

⁴ The 2011 Water Supply Evaluation prepared by Zone 7 used an estimate of 291,000 people at buildout, a difference of 3% from 299,000.

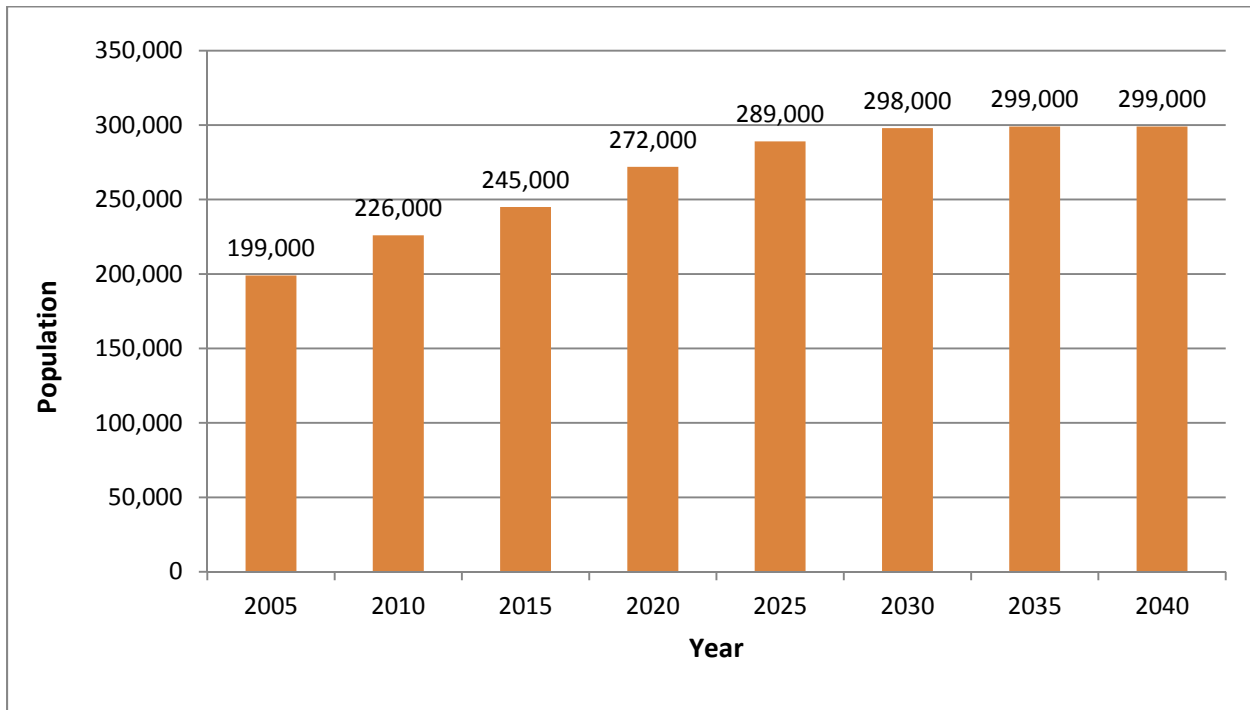
⁵ Zone 7 Water Agency, 2004. Development Impact Fee Report.

Table 2-1. Population Projections by Retailer*

Year	DSRSD - Alameda Co.	DSRSD - Dougherty Valley	Cal Water	Livermore	Pleasanton	TOTAL
2005	39,774	11,565	54,494	25,450	67,500	199,000
2010	48,821	19,146	56,956	31,994	69,300	226,000
2015	53,999	24,638	60,736	33,641	72,200	245,000
2020	64,039	28,525	65,882	37,724	75,600	272,000
2025	69,778	28,525	72,918	39,160	78,800	289,000
2030	74,592	28,525	73,497	39,160	82,300	298,000
2035	74,592	28,525	74,075	39,160	82,300	299,000
2040	74,592	28,525	74,654	39,160	82,300	299,000
Increase (2010 to 2040)	25,771	9,379	17,698	7,166	13,000	73,000
% Increase (2010 to 2040)	53%	49%	31%	22%	19%	32%

* Reference: 2010 UWMPs prepared by Retailers.

Figure 2-1. Population Growth in the Zone 7 Service Area from 2005 to 2040*



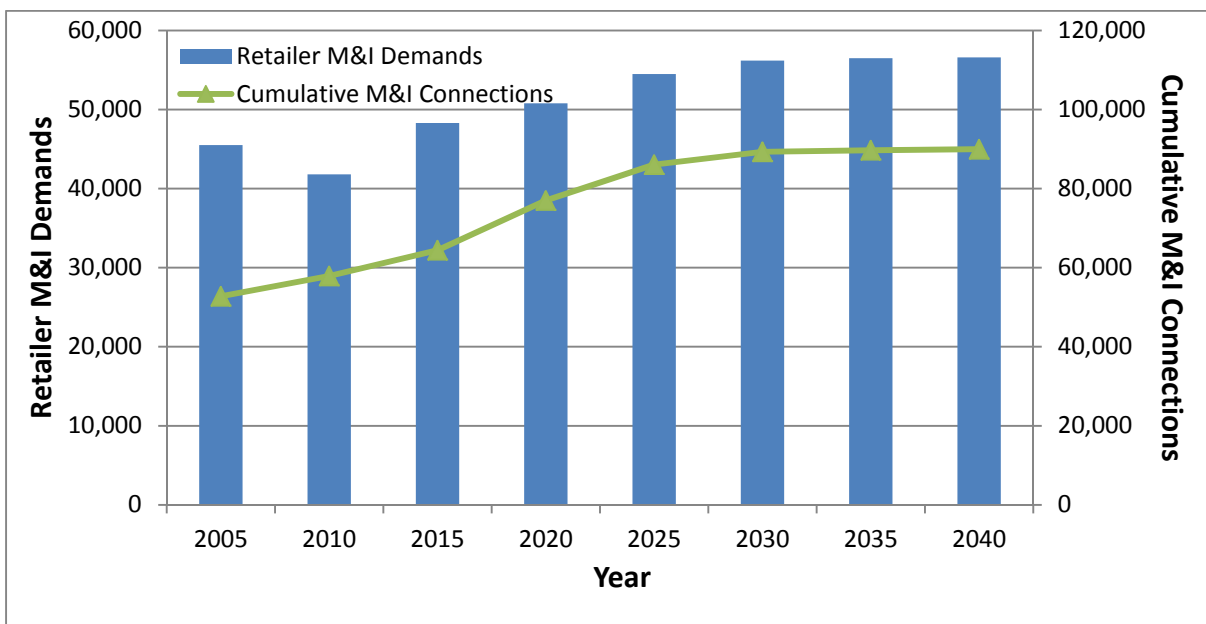
* Reference: 2010 UWMPs prepared by Retailers.

2.2 Demand Growth

The demand projections for the Zone 7 service area presented here were derived from the Retailers' 2010 UWMPs. Details on how the demand projections were estimated by the Retailers for their service areas can be found in the individual UWMPs. **Figure 2-2** shows the projected total Retailer water demands between 2015 and 2040; to illustrate how they track against demand growth, the projected cumulative M&I connections are shown (details on the connection projections are provided in Section 2.3). For comparison, actual data for 2005 and 2010 are also included on **Figure 2-2**.

Demands include retailer customer deliveries, retailer system losses/unaccounted-for water, and groundwater pumping quotas (which may or may not be supplied by Zone 7 directly); they do not include deliveries to Zone 7's direct retail customers and untreated water customers. These projections do incorporate water demand reductions anticipated by the Retailers in their implementation of the Water Conservation Act of 2009. They also reflect growing populations and increased use of recycled water in the Livermore-Amador Valley. Between 2010 and 2040, retailer water demands are expected to increase by 35% to a buildout demand of 56,600 AF⁶.

Figure 2-2. Retailer Water Demands from 2005 to 2040*



*Reference: Retailers' 2010 UWMPs. These demands only include deliveries to the Retailers, and do not include deliveries to Zone 7's six direct retail customers and untreated water customers.

2.3 Connection Projections

This section discusses the normalization unit used for connection projections, how the connection projections were estimated, and the numbers of connections used for revenue projections.

⁶ The Retailer water demands presented here are lower than the demands used in the 2011 Water Supply Evaluation (WSE) because the Retailers are projecting greater levels of conservation than originally estimated in the 2011 WSE.

2.3.1 Dwelling Unit Equivalents

New connections in the Zone 7 service area will serve a variety of customers and a range of demands utilizing various meter sizes. Connection projections are normalized based on the Dwelling Unit Equivalent (DUE), which represents the 5/8-inch meter typically used in a single-family residential home. The conversion factors listed in **Table 2-2** are used in the normalization process. For example, four new 2-inch meters are equal to 32 new DUEs (four times eight DUEs per 2-inch meter). Zone 7 uses cold-water meters, and the applicable factors are defined in AWWA C700, "Standard for Cold-Water Meters - Displacement Type" and AWWA C701, "Standard for Cold-Water Meters - Turbine Type." Note that displacement type meters are more commonly used.

Table 2-2. Dwelling Unit Equivalents (DUEs) Based on Meter Size*

Meter Size (Inches)	Dwelling Unit Equivalents (DUEs)	
	Turbine Meters	Displacement- Type
5/8		1
3/4		1.5
1		2.5
1.5	12	5
2	16	8
3	35	18
4	100	50
6	200	100
8	350	175
10		275

*References: AWWA C700, "Standard for Cold-Water Meters - Displacement Type" and AWWA C701, "Standard for Cold-Water Meters - Turbine Type."

2.3.2 Estimates of New Connections

Zone 7 staff estimated the number of new DUEs for each retailer; however, DSRSD connection projections were calculated differently from the other Retailers.

Estimates for DSRSD

In May 2011, DSRSD provided their updated annual demand and connection projections to Zone 7 through buildout. Demand projections were developed by DSRSD based on land use analysis for each of DSRSD's planning areas. DSRSD converted demand projections to DUE projections by assuming a demand factor of 350 gallons per day per DUE, a value which was also updated in 2011 based on actual consumption patterns. For Zone 7's analysis, Zone 7 staff adjusted DSRSD's Arroyo Vista development projections to reflect actual plans recently submitted by developers.

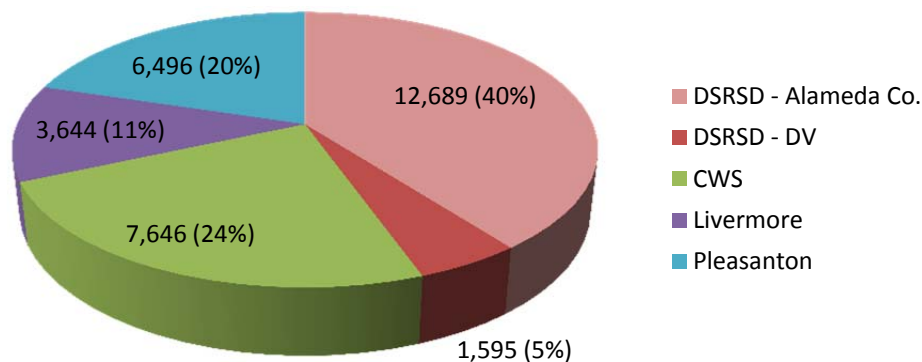
Estimates for Other Retailers

For the areas served by Livermore, Cal Water, and Pleasanton, *account* projections—not connection projections—were provided in their respective 2010 UWMPs in five-year increments. The accounts were broken down into water use sectors: single-family, multi-family, commercial, industrial, institutional/governmental, landscape, agricultural, and other. Zone 7 used 2009 account data for each retailer to calculate an average DUE/account factor for each water use sector; the factors were then multiplied by the corresponding account projections to obtain DUE projections. This assumes that, in the future, meter sizes used by various water use sectors remain similar to 2009 conditions. To develop yearly projections, the five-year projections of DUEs were assumed to increase linearly on an annual basis.

Total New Connections in the Service Area

As of 2010, Zone 7's system was serving approximately 58,000 DUEs (see **Figure 2-2**). From FY 10/11 through buildout (FY 39/40), 32,070 new DUEs are expected. **Figure 2-3** shows the estimated number of new connections broken down by retailer between FY 10/11 and FY 39/40.

Figure 2-3. Projected New Connections (DUEs) between FY 10/11 and FY 39/40



2.3.3 New Connections Used for Connection Fee Calculations

To determine the number of new connections for use in the connection fee calculations, the gross estimate of 32,070 new connections from FY 10/11 through buildout was adjusted to subtract connections that have been prepaid (i.e., connection fees have been paid but the construction may not have occurred yet) and credits (i.e., new connections at Arroyo Vista that replace existing potable water connections previously paid for). With the adjustments, the new connections producing revenue (“net connections”) total 30,446 DUEs.

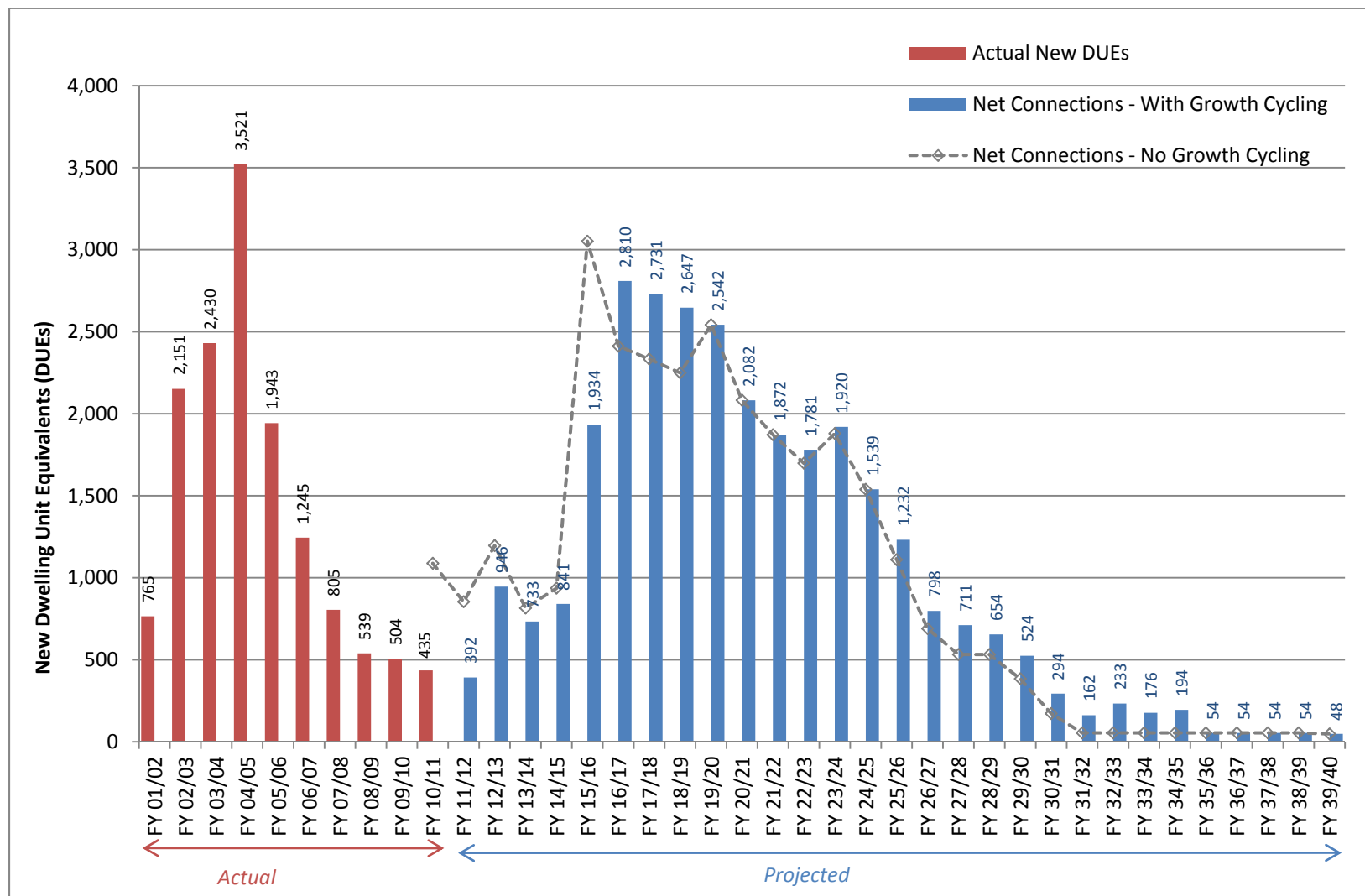
To account for the uncertainty in the rate of development, growth cycling was applied to the net connections. This growth cycling concept assumes only 70% of the first five years' projections occur at that time and the remaining 30% occur over the ten-year period from FY 25/26 through FY 34/35. In other words, a fewer number of connections and lower revenues are planned for in the near-term. This effectively incorporates some conservatism in Zone 7's planning for expenditures

related to capital projects, partially addressing the uncertainty in the connection projections and giving better assurance that funds will be available when they are needed.

To further account for the uncertainty in the estimates, two additional adjustments were made. The FY 10/11 value was set to the actual value, and the difference in projected versus actual for FY 10/11 was spread over the following three years. Finally, the high number of new DUEs projected for FY 15/16 in DSRSD's Alameda County service area (1,590 DUEs) was re-distributed over a four-year period (FY 15/16 through FY 18/19).

The yearly totals of net connections as originally estimated are shown on **Figure 2-4**. The yearly totals of net connections with growth cycling and the FY 15/16 adjustment—which were used for the revenue projection analysis—are also shown on **Figure 2-4**. For comparison, **Figure 2-4** also presents the actual connections from FY 01/02 through FY 10/11. A similar level of development is projected to occur in a few years (starting around 2016) as compared to the period between 2003 and 2006. Note that if development does not occur as projected (e.g., gets delayed), planned projects and the associated expenditures will be delayed accordingly.

Figure 2-4. Actual and Projected Net Connections with and without Growth Cycling*



*Net connections are calculated from the gross connections adjusted for prepaid connections and credits. Net connections with growth cycling were used for the revenue projections. This growth cycling concept assumes only 70% of the first five years' projections occur at that time and the remaining 30% occur over FY 25/26 through FY 34/35. The FY 10/11 value was set to the actual value, and the difference in projected versus actual for FY 10/11 was spread over the following three years. The peak in FY 15/16 was also spread over four years.

3 WATER SYSTEM EXPANSION PROGRAM

This chapter will describe Zone 7's Water System Expansion Program, which is designed to meet future demands on Zone 7's water system and is therefore funded through connection fees (designated as Fund 73). It will begin with an overview of the policies that shape the development of the program then follow with a discussion of the key planning documents used by Zone 7 and elements of the program, including the key projects and associated costs and timing of implementation.

3.1 Zone 7 Water System Policies

Zone 7's water system planning efforts are guided by policies set by its governing Board of Directors. These policies are classified into water supply and reliability, groundwater basin management, and water quality. The current policies are briefly described and presented below.

3.1.1 Water Supply and Reliability

Zone 7 strives to provide a highly reliable supply for its existing and future municipal and industrial (M&I) customers as expressed in the reliability policy below. The following goals were adopted by the Board under the *Reliability Policy for Municipal and Industrial (M&I) Water Supplies (Resolution No. 04-2662)*⁷ to guide the management of Zone 7's M&I water supplies as well as its Capital Improvement Program (CIP):

- Goal 1.** Meet 100% of its treated water customers water supply needs in accordance with Zone 7's most current Contracts for M&I Water Supply, including existing and projected demands for the next twenty (20) years as specified in Zone 7's Urban Water Management Plan (UWMP), which will be coordinated with Zone 7's M&I water contractors. Zone 7 will endeavor to meet this goal during an average water year, a single dry water year, and multiple dry water years.
- Goal 2.** Provide sufficient treated water production capacity and infrastructure to meet at least 75% of the maximum daily M&I contractual demands should any one of Zone 7's major supply, production or transmission facilities experience an extended unplanned outage.

Note that this reliability policy will be considered for revision in late 2011/early 2012. Policy changes, if any, will be incorporated into future updates of the Water System Expansion Program.

3.1.2 Groundwater Basin Management

A key responsibility of Zone 7 is the management of the Livermore-Amador Valley Groundwater Basin, portions of which are used to supply approximately 20% of the Valley's water demands and to provide local storage to meet demands during dry years. In 2005, Zone 7 adopted a Groundwater Management Plan (GMP) that integrated various Zone 7 policies and programs (*Resolution No. 06-2796*). A key element of the GMP is the 2004 Salt Management Plan (SMP), which was prepared for the California Regional Water Quality Control Board as part of the authorization process for the production and distribution of recycled water in the Livermore-Amador Valley. The SMP sets forth a plan to facilitate recycling without degrading local water quality. Furthermore, the SMP strives to

⁷ This policy will be re-considered in late 2011. Any changes to the policy will be integrated into future planning efforts.

maintain or improve groundwater mineral quality and delivered water quality as stated in the following goals:

- Goal 1.** Protect and enhance the quality of groundwater.
- Goal 2.** Offset current and future salt loading, while facilitating reasonable regional recycled water use.
- Goal 3.** Maintain or improve groundwater mineral quality.
- Goal 4.** Provide more comparable delivered water quality to Retailers.

Note that, beginning in 2011, Zone 7 will be updating the GMP and the SMP to incorporate the latest information and to address nutrient loading.

3.1.3 Water Quality

All of Zone 7's water deliveries to the Retailers meet or exceed state and federal health standards; however, surface water and groundwater taste, odor, and/or appearance vary depending on the source, season or customer's location. To maintain Zone 7's compliance with health-related water quality standards and to continue to improve the aesthetic quality of Zone 7's water supply, the Zone 7 Board adopted the *Water Quality Policy for Potable and Non-Potable Water (Resolution No. 03-2494)*. Its goals are presented below.

- Goal 1:** Zone 7 shall continue to meet all state and federal primary Maximum Contaminant Levels (MCLs)⁸ for potable water delivered to the M&I Contractors' turnouts, in accordance with existing water supply agreements.
- Goal 2:** Zone 7 shall meet all state and federal secondary MCLs in the potable water delivered to its M&I Contractors' turnouts. In addition, Zone 7 shall, within technical and fiscal constraints, proactively mitigate earthy-musty taste and odor events from surface water supplies and reduce hardness levels to "moderately hard", defined as 75 to 150 mg/L as CaCO₃. Also, Zone 7 shall optimize its treatment processes to minimize chlorinous odors by maintaining consistent disinfectant dosage and residual.
- Goal 3:** Zone 7 shall endeavor to deliver to its non-potable Contractor turnouts, from a variety of sources, water of a quality that meets the irrigation needs of its Contractors and does not negatively impact vegetation, crops, or soils.
- Goal 4:** In order to achieve Goals 1 through 3, Zone 7 shall continue to work to improve the quality of its source waters. This may be achieved through Zone 7's Salt Management Plan, which will maintain or improve the water quality in the groundwater basin, and through advocacy of improvements in the State Water Project, its facilities and their operations, which may improve the source water of Zone 7's surface water supplies. In addition, Zone 7 will encourage the retailers to take similar steps as those outlined in this policy to improve the quality of the retail customers' water.

⁸ Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) (or Maximum Contaminant Level Goals, MCLGs) as is economically and technically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

3.2 Planning Studies

The Zone 7 Water System Expansion Program is a major component of Zone 7's overall Capital Improvement Program (CIP). The Expansion Program identifies the capital projects needed to meet the needs of new customers as planned for and approved by the local government agencies having such jurisdiction within Zone 7's service area. Zone 7 has completed the planning efforts listed below, which provide the engineering basis for the Expansion Program. These efforts evaluated alternatives for water acquisition, supply reliability, conveyance, treated water facilities, new production wells, water quality, and transmission facilities that provide feasible, flexible and cost-effective projects to meet the needs of future M&I customers without negatively affecting existing customers.

- Treated Facilities Master Plan (Camp Dresser and McKee, February 2000)
- Water Conveyance Study (Camp Dresser and McKee, June 2001)
- Salt Management Plan (Zone 7, June 2002)
- Water Quality Management Program (MWH Americas, April 2003)
- Well Master Plan (CH2M Hill, October 2003)
- Lakes H&I and Cope Lake Management Plan (Stetson Engineers, June 2004)
- Well Master Plan EIR (ESA Associates, September 2005)
- 2010 Urban Water Management Plan (Zone 7, December 2010)
- Zone 7 FY 12/13 Capital Improvement Program – Ten-Year Water System Plan (Zone 7, October 2011)
- 2011 Water Supply Evaluation (Zone 7, July 2011)

3.3 Program Costs and Components

The recommended facilities and supplies resulting from the planning efforts described above are included in the Water System Expansion Program as specific projects. Cost estimates and timing needs are incorporated into the CIP.

Table 3-1 identifies the projects that are included in the Program, the percent allocation of costs to Fund 73 - Expansion, and the responsible group for each of the projects. The projects and their timing form the basis of Zone 7's expenditures—and required revenues—over time.

Note that “sinking funds” are established for the Administrative and Engineering Building, Fourth Contractor's Share of the South Bay Aqueduct (SBA), and the SBA Enlargement Project. The sinking fund for the Administrative and Engineering Building will be used to purchase the building at the end of the fifteen-year lease in FY 18/19. For the other two projects, the sinking funds ensure that there is funding for expenditures that continue beyond substantial buildout of the system—after 2035, new connections drop substantially and do not bring in sufficient revenues to meet financial obligations. To calculate the required contributions towards the sinking funds, Zone 7 staff

assumed substantial buildout by FY 29/30 (only about 5% of the new connections are expected to occur between FY 29/30 through FY 39/40). After FY 29/30, money available in the sinking funds will be used to pay continuing obligations for the Fourth Contractor's Share of the SBA and the SBA Enlargement Project.

Forty-two projects funded in whole or in part by Fund 73 with a total funding need of \$1,069,388,000 (including contingency and connection fee administration) through FY 39/40 have been identified. **Figure 3-1** shows the projected new connections and expenditures over time, and the major facilities to be constructed to meet demand growth. Major facilities, particularly the Water Treatment Plant (WTP) Expansion, are planned to be in-service around 2022 to 2025, as reflected by the peak in expenditures during that time period. The results from the 2011 Water Supply Evaluation (WSE) indicate that new treatment capacity will be needed around this time period in order to meet Maximum Day Demands. Zone 7 will continue to update its CIP every two years and changes in demands and available funding will be incorporated into the ultimate scheduling of project construction; projects intended to meet new demands will be shifted according to when those demands are expected.

Section 3.3.2 describes the general principles used in the cost allocation to Fund 73 – Expansion. Section 3.3.3 describes the Water System Expansion Program and its components; the key projects are described but a more detailed description of each project can be found in **Appendix C**.

Table 3-1. Water System Expansion Program – Projects and Cost Allocations

PROJECT TITLE	% ALLOCATION TO FUND 73	PROJECT COSTS (FY 12/13-39/40) \$1,000s	RESPONSIBLE GROUP ^a
BUILDINGS & GROUNDS			
Administrative & Engineering Building - Sinking Fund (Fund 73) ^g	35	\$4,460	Z7/DV
Administrative & Engineering Building Lease (Water System)	35	\$3,026	Z7/DV
Subtotal		\$7,486	
GROUNDWATER BASIN MANAGEMENT			
Groundwater Management Plan/Salt and Nutrient Management Plan Update	30	\$327	Z7/DV
Second Groundwater Demineralization Facility	100	\$65,380	Z7/DV
Subtotal		\$65,707	
PROGRAM MANAGEMENT			
Capital Improvement Program Management	75	\$2,843	Z7/DV
Expansion Program Management (ISA interest costs)	100	\$1,103	Z7/DV
Subtotal		\$3,946	
TRANSMISSION & DISTRIBUTION			
New Water Treatment Plant Transmission Pipeline	100	\$36,560	Z7/DV
Westside Transmission System Improvements	100	\$7,370	Z7/DV

PROJECT TITLE	% ALLOCATION TO FUND 73	PROJECT COSTS (FY 12/13-39/40) \$1,000s	RESPONSIBLE GROUP ^a
Subtotal		\$43,930	
WATER SUPPLY & CONVEYANCE			
Arroyo Mocho Low Flow Crossings	100	\$810	Z7/DV
Arroyo Mocho Diversion Facility Coordination and Implementation	100	\$470	Z7/DV
Bay Area Regional Desalination Project - Planning	100	\$650	Z7
Cawelo Groundwater Banking Program	100	\$31,247	Z7
Chain of Lakes Facilities and Improvements - Water Supply	70	\$51,989	Z7/DV
Chain of Lakes Master Planning	100	\$5,580	Z7/DV
CUWA Membership	30	\$730	Z7/DV
Bay Delta Conservation Plan (Zone 7)	30	\$310	Z7/DV
Delta Habitat Conservation and Conveyance Program	30	\$190	Z7/DV
Delta Outreach Program	30	\$210	Z7/DV
Fixed Cost of Water Entitlement ^b	sliding scale 0%-57%	\$6,426	Z7
Fourth Contractor's Share of the SBA - Sinking Fund ^{c,d}	100	\$12,734	Z7/DV
Fourth Contractor's Share of the SBA (Capital Costs) ^d	100	\$37,800	Z7/DV
High-Efficiency Toilet Rebate Program	30	\$180	Z7
High-Efficiency Washing Machine Rebate Program	30	\$730	Z7
Lakes H, I and Cope Facility Planning	35	\$109	Z7/DV
Reliability Intertie	70	\$17,472	Z7/DV
Semitropic Stored Water Recovery Unit	100	\$1,152	Z7/DV
South Bay Aqueduct Enlargement Project ^e	100	\$276,475	Z7/DV
South Bay Aqueduct Enlargement Project - Sinking Fund ^{e,f}	100	\$30,295	Z7/DV
SWP Peaking Payment (Lost Hills & Belridge Water Districts) ^b	sliding scale 0%-57%	\$565	Z7
Water Conservation Best Management Practices	30	\$600	Z7
Water Supply Replacement	100	\$78,570	Z7/DV
Water System Master Plan	60	\$492	Z7/DV
Subtotal		\$555,785	
WATER TREATMENT FACILITIES			
Construction of Three Dual Media Filters to Expand PPWTP	100	\$9,190	Z7/DV
DWR Land Acquisition	30	\$156	Z7/DV
PPWTP Maintenance Yard and Building Improvements	30	\$621	Z7/DV
Water Quality Management Program	30	\$414	Z7/DV
Water Treatment Plant Expansion (24 MGD)	100	\$176,340	Z7/DV

PROJECT TITLE	% ALLOCATION TO FUND 73	PROJECT COSTS (FY 12/13-39/40) \$1,000s	RESPONSIBLE GROUP ^a
Subtotal		\$186,721	
WELLS			
Bernal Wells 1 & 2 and Pipeline	100	\$49,070	Z7/DV
Busch-Valley Well 1	100	\$15,940	Z7/DV
Chain of Lakes Well 5	100	\$8,240	Z7/DV
Chain of Lakes Wells 3 & 4	100	\$16,220	Z7/DV
El Charro Pipeline Phase 2	100	\$7,580	Z7/DV
Subtotal		\$97,050	Z7/DV
Total Project Costs		\$960,624	Z7/DV
Program Contingency	100	\$100,090	Z7/DV
Connection Fee Administration (1% of Revenue)	100	\$8,740	Z7/DV
EXPANSION PROGRAM TOTAL		\$1,069,388	

a. Z7 = the Alameda County portion of Zone 7's service area. DV = Dougherty Valley.

b. Costs are allocated on a sliding scale as determined by the percent of new connections remaining out of the total connections projected between 1999 and build-out.

c. Includes an initial sinking fund balance of \$1,075K as of FY 11/12.

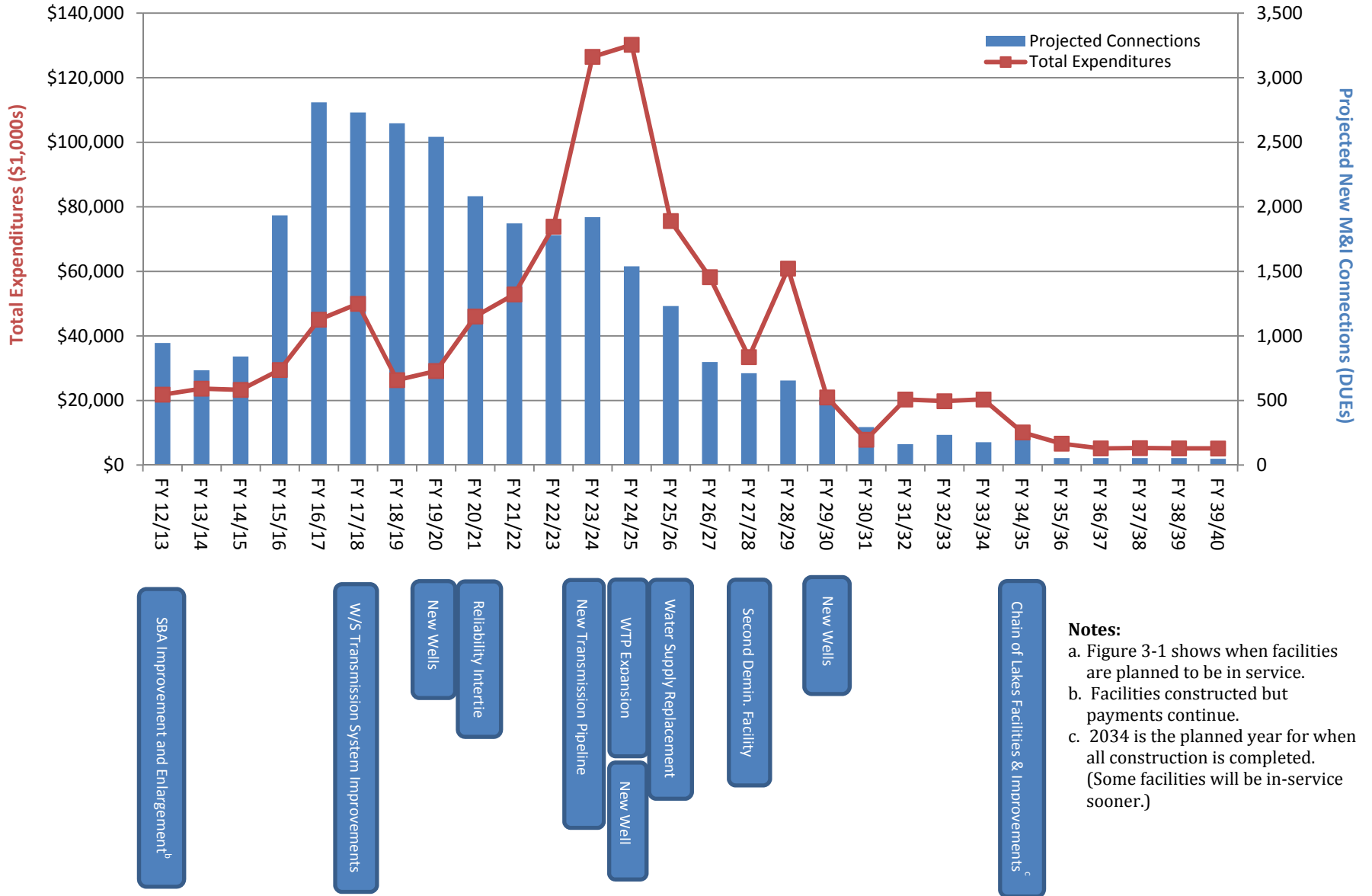
d. Only the Transportation Capital and Water System Revenue Bond Surcharge portions are included in Fund 73.

e. This includes the cumulative revenue bond cover surcharge of \$64M, which will be refunded to Zone 7. The gross payments will be \$307M but the net payments will be \$243M.

f. Includes an initial sinking fund balance of \$6,526K as of FY 11/12.

g. Includes an initial sinking fund balance of \$1,422K as of FY 11/12.

Figure 3-1. Connections, Expenditures, and Major New Facilities^a



3.3.1 General Cost Allocation Principles

To determine the appropriate costs to include in the Water System Expansion Program portion of the CIP, *a key general principle used by Zone 7 is that those who benefit should pay the proportionate cost.*

Costs for those facilities and supplies that serve both existing and new customers are allocated to the customers in proportion to the benefits they receive. Zone 7's current analysis of projected demands indicates that, at buildout, 70% of demands will be from existing customers (as of 2011) and 30% from new customers connecting to the system between 2011 and 2040; this breakdown is used in the cost allocation of projects that ultimately affect all Zone 7 customer benefits equally.

Some projects have both water supply and flood control benefits (e.g., Chain of Lakes efforts); costs are allocated to reflect this since flood control has a separate funding source.

Based on the *Amendment No. 1 to Contract Between Zone 7 Water Agency and Dublin San Ramon Services District for a Municipal and Industrial Water Supply (Appendix B)*, customers in Dougherty Valley do not pay for those projects related to water acquisition and non-local groundwater storage because Dougherty Valley customers pre-purchased their water supply and storage.

3.3.2 Program Components

3.3.2.1 The various components of the Water System Expansion Program are described below. Note that the project costs presented cover the period from FY 12/13 through buildout. More details on each project can be found in **Appendix C**; note, however, that the "Total Project Cost" presented in each project summary includes project costs, if any, incurred prior to FY 12/13.

3.3.2.2 Buildings & Grounds

This program component addresses structures and support facilities not directly involved in the conveyance, supply, treatment, transmission, or storage of water. The Administration & Engineering Building Project is a "Build-to-Suit" option in which Zone 7 leases a building that the developer has built according to Zone 7 specifications. This lease has an option to buy. The total project cost is \$20.2 million, which includes ancillary costs, 15-year lease costs, and estimated cost of purchasing the building at the end of the 15-year lease (FY 18/19). Connection fees fund 35% of the Administration & Engineering Building. To ensure that there are adequate funds to purchase the building at the end of the lease, a sinking fund was established, also at a 35% cost allocation. By the end of the 15-year lease period, the sinking fund contributions, along with the compounded interest earned, will be adequate to purchase the building.

3.3.2.3 Groundwater Basin Management

As described in Section 3.1.2, one of Zone 7's key responsibilities is the management of the Livermore-Amador Valley Groundwater Basin (Basin) and the protection of its water quality. The Basin is a very important resource to the Valley, providing approximately 20% of water supplies Valley-wide during normal years and providing storage necessary to meet demands during drought and other emergency conditions. Over the years, the Basin's water quality has degraded, as evidenced by rising levels of total dissolved solids (TDS) or "salts" and hardness. One of the main sources of salt loading to the Basin is imported water applied for urban irrigation purposes. New

development, which will require additional imported water, will therefore be a contributor to salt loading in the Basin.

Conjunctive use of the Basin and wellhead demineralization are Zone 7's two key strategies for addressing salt loading. Under conjunctive use, the Basin is recharged with lower-TDS surface water, which replaces or dilutes high-TDS groundwater. Wellhead demineralization removes salts from groundwater being pumped out of the Basin; these salts are concentrated and exported to the San Francisco Bay. Wellhead demineralization also provides the added benefit of delivering a water supply with lower TDS and hardness levels in accordance with Zone 7's Water Quality Management Program (see Section 3.1.3).

In accordance with the Salt Management Plan, wellhead demineralization is planned to ultimately remove a total of 6,000 tons of salt per year to address the accumulation of salts due to existing uses and new growth. The first demineralization facility (Mocho Groundwater Demineralization Facility) came online in Spring 2009. This facility is an 8-mgd facility and is anticipated to remove approximately 3,000-4,000 tons of salt per year. The total project cost was approximately \$34 million with costs split equally between connection fees and water rates. The second facility will be funded entirely by connection fees and is anticipated to be completed by 2028. The total project cost for the second facility, when adjusted for inflation, is estimated to be \$65 million.

Zone 7 will be completing an updated Groundwater Management Plan and Salt and Nutrient Management Plan by 2014 as mandated by the State Water Resources Control Board's new Recycled Water Policy (SWRCB Res No. 2009-0011). This update will be critical to understanding the potential impacts of various water supply options (e.g., recycled water) on the Basin's sustainability and the associated salt mitigation requirements. Connection fees will contribute 30% towards the cost of the project, which is \$930,000 for the period FY 12/13 through FY 39/40.

3.3.2.4 Program Management

Staff time and other expenditures related to program management are tracked separately under Capital Improvement Program Management and Expansion Program Management. Connection fees cover 75% of the former and 100% of the latter based on associated program expenditures.

3.3.2.5 Transmission & Distribution

This program component consists of raw water transmission and treated water distribution system projects related to facilities owned and operated by Zone 7. A key project is the construction of a transmission pipeline from either the Altamont or Patterson Pass Water Treatment Plant site to Zone 7's existing transmission system, estimated to cost \$37 million. Project timing is tied to the need for the expansion of surface water treatment capacity to serve new customers, which is likely to occur between 2020 and 2025. This project will be 100% funded by connection fees.

A second key project involves making improvements to the west side of Zone 7's transmission system to accommodate future growth. The current estimate for project cost is \$7 million, although the specific facility requirements, timing, and associated costs will be refined through hydraulic modeling planned as part of the Water System Master Plan update (discussed in the following paragraph).

3.3.2.6 Water Supply & Conveyance

This program component focuses on the planning and purchase of new water supplies; implementation of improvements required to convey raw water to treatment facilities for M&I customers; and other actions necessary to ensure a reliable water supply for all customers. Unlike the Transmission and Distribution Program, this program only includes conveyance (transmission) facilities not owned by Zone 7 (e.g., South Bay Aqueduct) or facilities only partially owned by Zone 7.

Purchase of new supplies and access to storage facilities are necessary to ensure 100% reliability of Zone 7's water supply system as required by policy (see **Section 3.1.1**).

Zone 7 has been increasing its water supplies over the years. Starting in 1999, State Water Project (SWP) Table A⁹ amounts totaling 34,619 acre-feet from Lost Hills Water District, Belridge Water Storage District, Berrenda Mesa Water District, and Tulare Lake Basin Water Storage District were purchased by Zone 7 in order to meet its long-term water supply needs. These purchases raised Zone 7's Table A allocation to 80,619 AFA through 2035¹⁰. The contracts provide for a one-time payment for the permanent transfers along with the obligation to take over the on-going yearly SWP payments. The one-time payments were allocated entirely to connection fees and have been fully paid. The Fixed Cost of Water Entitlement, which represents the ongoing annual fixed cost payments for the SWP related to the transfers, is allocated on a sliding scale basis to connection fees. The yearly allocation to connection fees is determined by the percent of new connections remaining out of the total connections projected between 1999 and buildout.

As indicated above, the SWP transfers were originally thought to be sufficient to meet long-term demands through buildout. However, environmental and legal challenges in the Sacramento-San Joaquin Delta have resulted in the decline of the long-term average yield of Table A water over the years. According to the Department of Water Resources (DWR) 2009 Reliability Report, the reliability of Table A supplies is now only at 60%, a further decrease from the projected 75% reliability level as of 2007 (2007 DWR Reliability Report). This decrease in reliability translates to approximately 12,000 acre-feet (AF) of lost long-term water supply.

New Supplies

To address the decreasing reliability of SWP supply, Zone 7 completed the 2011 Water Supply Evaluation (2011 WSE), which identified near- and long-term risks of water supply shortages, low-cost actions that will minimize near-term risks of those shortages, and additional studies necessary to refine yields and costs of various water supply options. An extensive list of potential replacement water supplies, including costs, was generated as part of the 2011 WSE. While additional analysis and studies recommended in the 2011 WSE will need to be completed in the upcoming years, Zone 7 has concluded that a combination of operational improvements, water conservation, recycled water, desalination, and/or water transfers will likely be necessary. The Water Supply Replacement project, estimated at \$80 million, will pay for the additional supply necessary to replace the lost yield from the SWP and to serve new customers. This project will be refined based on the Water System Master Plan to be completed by 2015. Connection fees will pay 60% of the cost of the Water System Master Plan at a cost of \$492,000.

⁹ Each SWP contractor is limited to a contractual amount specified in Table A of the water supply contracts.

¹⁰ Current expiration year of SWP contracts. The contracts will likely be extended in the next few years.

In pursuit of new water supplies, Zone 7 is currently participating in the planning efforts of the Bay Area Regional Desalination Project; this project is a regional collaboration that can potentially provide a new supply of desalinated water from Suisun Bay to five Bay Area agencies. If implemented, the construction cost could potentially be covered under Water Supply Replacement. The planning efforts are fully paid through connection fees at an estimated cost of \$650,000.

Storage

As noted previously, storage, along with supplies, is critical to meeting water demands through buildout. In 1998 and 1999, Zone 7 acquired storage capacity in the Semitropic Water Storage District (Semitropic) groundwater banking program. Of Zone 7's current total storage capacity of 78,000 AF in Semitropic, 43,000 AF was purchased specifically for Dougherty Valley. Originally, Zone 7 was only allowed to recover 5,850 acre-feet annually (AFA) of stored water from Semitropic; by participating in the Semitropic Stored Water Recovery Unit (SWRU) project, Zone 7 was able to increase its minimum recovery capacity to 9,100 AFA. For the Semitropic groundwater banking program, only costs associated with the SWRU project remain; this project is expected to cost \$1.1 million to be fully funded by connection fees.

Anticipating potential shortfalls in dry-year water supplies, Zone 7 additionally purchased 120,000 AF of storage capacity in Cawelo Water District's Groundwater In-Lieu Banking Program (Cawelo). This purchase can provide up to 10,000 AFA of necessary capacity. The remaining \$31 million in project costs is also funded fully through connection fees.

SWP and Delta Improvements

Approximately 90% of Zone 7's water supply travels through the Sacramento-San Joaquin Delta (Delta), making it a critical part of Zone 7's water supply system. As previously noted, over the years, the reliability of water supply from the Delta has been eroding due to a number of legal and environmental concerns. In the last five years in particular, concerns over threatened and endangered species have limited pumping from the Delta, reducing the water available to Zone 7 and other contractors of the SWP. The Bay Delta Conservation Plan (BDCP) is a 50-year plan currently being developed to restore fish and wildlife species in the Delta in a way that would provide for the protection and restoration of water supplies. In parallel with the BDCP, the Delta Habitat Conservation and Conveyance Program (DHCCP) is designed to develop alternatives for reliably conveying SWP and Central Valley Project water through the Delta in an environmentally sound manner. The information produced by the DHCCP and the associated Environmental Impact Report/Statement will be incorporated into the BDCP. Connection fees pay for 30% of the BDCP and DHCCP costs or \$500,000.

Zone 7 also supports other efforts to improve conditions in the Delta through the Delta Outreach Program. Again, connection fees represent 30% of the funding source or approximately \$250,000.

The South Bay Aqueduct (SBA) brings water into the Livermore-Amador Valley from the Delta and is therefore a critical facility in Zone 7's water supply system. Under the SBA Aqueduct Improvement and Enlargement project, DWR has been making changes to the SBA necessary to convey an additional 130 cubic feet per second (cfs) through Reach 1 and 80 cfs through Reaches 2 through 4 to Zone 7. Improvements include an expanded South Bay Pumping Plant, third (parallel) Brushy Creek Pipeline, raised linings on open channel sections and Patterson Pass Reservoir, replacement of a 54-inch pipeline under I-580 with a 78-inch pipeline (completed in 2002), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline

(completed in 2002), and a new 425 acre-foot raw water reservoir (Dyer Reservoir) (completed in 2011) located near Dyer Road. Only the SBA enlargement portion is being paid for by Fund 73.

The SBA Enlargement Project is needed to convey additional raw water into the Livermore-Amador Valley and to Zone 7's treatment facilities to meet demands through buildout. These facilities are sized to meet peak seasonal demands. Without increasing raw water conveyance capacity, there would not be sufficient surface water available for planned new water treatment plant capacity and Zone 7 would have to rely more on groundwater to meet peak demands. Also, Zone 7's ability to import surface water and recharge the groundwater basin would be diminished, putting long-term water supply storage and reliability at risk.

Amendment No. 24 to Zone 7's water supply contract with DWR allows for debt financing of the SBA Enlargement Project by DWR. Annual payments by Zone 7 began in 2006 and will end in 2036. To ensure that there is adequate funding available to make the payments through 2035, a sinking fund was established as discussed earlier. Total payments towards the SBA Enlargement Project between FY 12/13 and FY 39/40 will be \$307 million; accounting for the cumulative revenue bond cover surcharge of \$64 million, which will ultimately be refunded to Zone 7, the net expenditures will total \$243 million.

Chain of Lakes

The Chain of Lakes (COL)—a series of ten mined out or currently active gravel quarry pits that have been or will be dedicated to Zone 7—will be a significant water management resource for the Livermore-Amador Valley. Zone 7 currently only owns Cope Lake and Lake I, but is expected to take ownership of Lake H sometime within the next five years, and the remaining lakes over the next twenty years. The Chain of Lakes Master Planning effort will primarily consist of the near-term and long-term management and planning necessary to integrate the Chain of Lakes into Zone 7's water supply system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley. Connection fees will pay for \$5.6 million or 100% of the cost of the Chain of Lakes Master Planning effort, which is expected to continue over the next twenty years.

Other projects in the COL have begun, or will begin in FY 12/13, to implement the necessary facility improvements for the use of Cope Lake, Lake I, and Lake H. The COL Facilities and Improvements - Water Supply project is the "parent project" for the development, design, and construction of future improvements and facilities at the COL for water supply purposes (e.g., conveyance, storage and groundwater recharge) and flood control uses such as fences, access roads, slope re-grading and landscaping. As specific projects become better defined, they will be listed as separate CIP projects with funding transferred from this project. Connection fees will pay for \$52 million of this project, at a cost allocation of 70%. Other efforts underway are the Lakes H, I, and Cope Facility Planning; Arroyo Mocho Low Flow Crossings; Arroyo Mocho Diversion Facility Coordination and Implementation; and Cope Lake Facilities and Improvements. Project cost information for these projects is listed in **Table 3-1**.

Reliability Intertie

As stated earlier, approximately 90% of Zone 7's long-term average water supplies are conveyed via the SBA; moreover, access to Zone 7's non-local storage in Semitropic and Cawelo during droughts is also dependent on the SBA. Consequently, an outage of the SBA or major disruptions in the Delta could potentially have catastrophic results to Zone 7's service area. In such an event, Zone

7 would only have access to groundwater and a portion of supplies in Lake Del Valle; these supplies may not be able to meet indoor use depending on hydrologic conditions when such an event occurs. The Reliability Intertie project will help mitigate some of these risks by constructing a new intertie with another major water agency (e.g., East Bay Municipal Utility District [EBMUD], San Francisco Public Utilities Commission [SFPUC]) that would provide additional means of acquiring water supplies during such an event. Currently, the intertie has an estimated cost of \$25M to Zone 7, assuming a grant would cover 25% of the potential total project cost. Seventy percent (\$17.5 million) of Zone 7's cost is allocated to connection fees. The reliability intertie also has the potential to convey new water supply to Zone 7's service area.

Water Conservation

Zone 7 sees water conservation as a key element of sustainable water management in the Livermore-Amador Valley. As such, Zone 7 is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California and a member of the California Urban Water Conservation Council. To promote water conservation, Zone 7 is implementing several programs: High-Efficiency Toilet Rebate Program, High-Efficiency Washing Machine Rebate Program, and Water Conservation Best Management Practices. Connection fees pay for 30% of the program costs or approximately \$1.5 million.

3.3.2.7 Water Treatment Facilities

This program component addresses the existing and proposed facilities used in the treatment of raw water from the SBA system for distribution to Zone 7's customers.

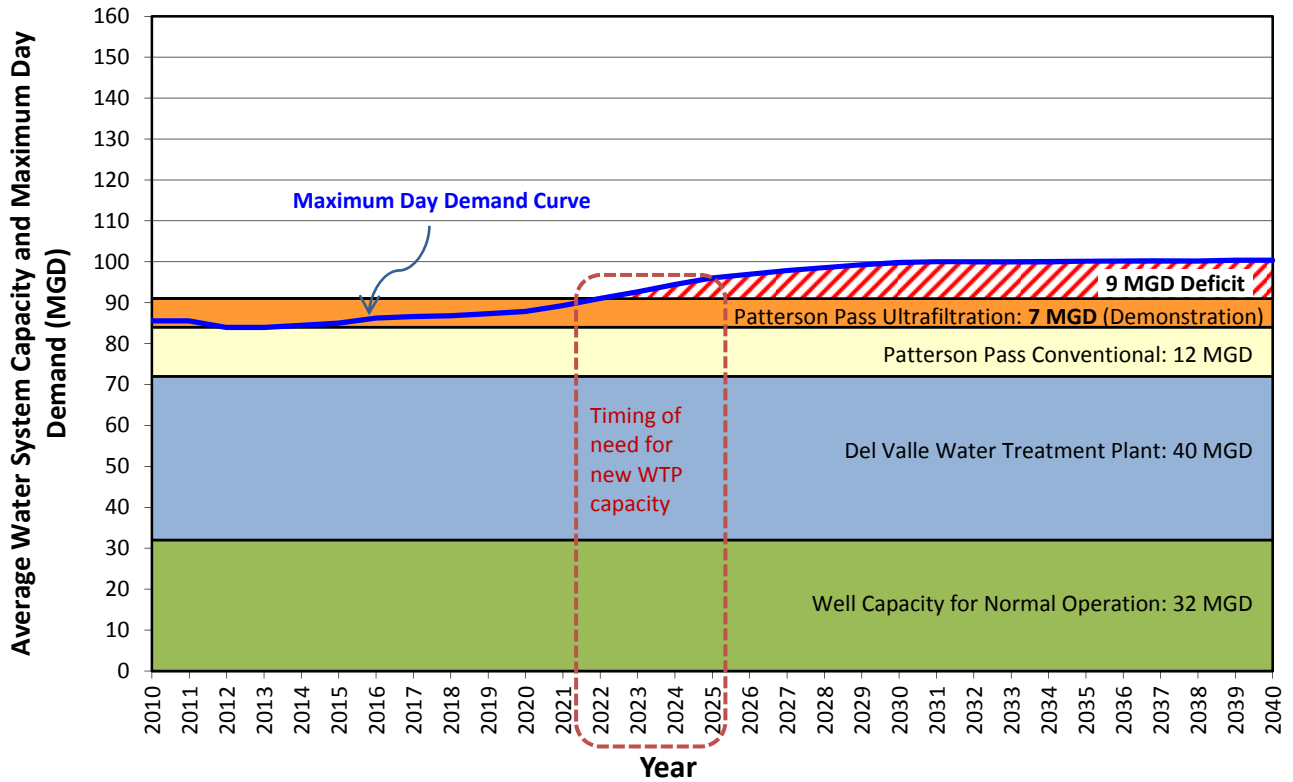
Analysis completed as part of the 2011 WSE indicates that additional water treatment plant capacity is required to meet projected maximum day demands through buildout, starting around 2023. In addition, the Ultrafiltration (UF) Plant at Patterson Pass WTP is a temporary plant that was originally constructed to meet near-term capacity shortages and will therefore need to be replaced. The potential shortage in treatment plant capacity, which includes replacement of the UF plant, is anticipated to be between 20 to 24 million gallons per day (MGD). The treatment plant expansion will be constructed at either the Altamont site near Dyer Reservoir or at the Patterson Pass WTP site¹¹. The project timing of the expansion is tied to the nearer-term replacement of the 7-MGD UF plant with conventional filters¹², which will be designed to provide an additional 5 MGD of capacity (total of 12 MGD) addressing a portion of the projected capacity needs for new customers. **Figure 3-2** illustrates Zone 7's current water system capacity to meet maximum day demand and the need for expansion to meet the demands of new customers.

The cost of the Water Treatment Plant Expansion is estimated at \$176 million. The construction of conventional dual media filters to replace the UF plant is expected to cost approximately \$9M. Both will serve the demands of new customers and are therefore funded entirely by connection fees.

¹¹ Previous analysis based on growth trends at that time had suggested the need for a 24-MGD treatment plant by 2012. As such, from 2004 through 2007, Zone 7 completed the design of the Altamont Water Treatment Plant (AWTP) and Altamont Pipeline (APL). The first portion of the APL, Altamont Pipeline Livermore Reach, was constructed in 2009 to provide an interconnection within Zone 7's existing transmission system. Construction of the AWTP was delayed in response to the slowdown in demand growth. A recent peer review (WQTS, 2009) of the proposed AWTP site and process determined the Patterson Pass WTP site to be a viable alternative to Altamont.

¹² As intended, the UF plant has enabled Zone 7 to assess membranes for a future larger plant expansion. Zone 7 has found UF technology to be more costly than anticipated due to power, chemical, membrane replacement, and other maintenance costs. Furthermore, as the UF plant uses proprietary membrane modules, Zone 7 is potentially vulnerable to excessive cost increases and/or obsolescence of the membrane module.

Figure 3-2. Current Water System Capacity to Meet Maximum Day Demand^a



Notes:

a. Reference: 2011 Water Supply Evaluation [WSE] (Zone 7, 2011). Analysis includes existing facilities for normal operations (non-emergency/drought operations). Maximum Day Demand is estimated using peaking factor of 2.0 times the annual average demand for all M&I demands. 2011 WSE assumes water conservation and reduced Zone 7 unaccounted-for water.

b. Patterson Pass Ultrafiltration Plant will be replaced with conventional filters sometime before 2022 with a resulting expansion from 7 to 12 MGD. Additional treatment capacity can therefore be delayed to 2025.

3.3.2.8 Wells

As described in Section 3.1.1, Zone 7 has a policy goal of meeting at least 75% of the maximum daily M&I contractual demands should any one of Zone 7’s major facilities experience an extended unplanned outage. As such, Zone 7’s Well Master Plan sets out the plan for the construction of seven to nine new municipal water supply wells to meet Zone 7’s reliability goal through buildout. New wells are constructed under a schedule that mirrors the demand growth, since they are designed to provide reliability for new customers. Two of these wells, Chain of Lakes Wells 1 and 2, were constructed in 2009, providing a total emergency peak capacity of 8.6 MGD. Five to seven additional wells will be constructed through buildout. The wells will be funded entirely from connection fees.

3.3.2.9 Program Contingency

The Program Contingency is intended to assure that adequate revenues are collected to fund total Expansion Program needs. Experience has demonstrated that environmental mitigation, regulatory standards, and other new requirements can substantially increase the cost of new facilities. In addition, as time passes, additional detailed and site-specific information can result in higher cost estimates for existing projects, and can also lead to new, currently unanticipated projects. Overall,

the program contingency is approximately 10% of the total project expenditures, which is considered reasonable and prudent to account for the uncertainties in future Expansion Program needs. Future updates of the Connection Fee Program will continue to refine the costs of future projects and adjust the connection fee to ensure future customers pay for only their share of the benefits.

3.3.2.10 Connection Fee Administration

Connection fee administration costs are calculated at 1% of connection fee revenues. These amounts are paid to the Retailers to cover their costs for administering connection fees on behalf of Zone 7. Between FY 12/13 through buildout, the total cost is estimated at \$8.7M.

4 ESTABLISHMENT OF THE 2011 M&I CONNECTION FEE

A financial model was developed by Zone 7 staff based on the projected revenue stream and expenditures to develop a connection fee structure suitable to finance the Water System Expansion Program (Program). Municipal and Industrial (M&I) Connection Fees have historically been designed to fund all Program costs with the goal of 100% pay-as-you-go financing with connection fees and interest income earned on reserves in order to minimize risk to existing rate payers¹³. Zone 7 also has a goal of maintaining a minimum fund balance based on 50% of non-discretionary obligations for the following year. The connection fees are set to meet these goals.

The following sections present the recommended 2012 M&I Connection Fees and the associated preliminary funding outlook for Fund 73.

4.1 Determination of the 2012 Connection Fee

As described in **Chapter 3**, the Water System Expansion Program's future funding needs were updated based on Zone 7's latest planning efforts, and projections of new connections and demand growth. Based on the 2011 M&I Connection Fee Program Update, Zone 7 staff determined that *Zone 7's connection fees represent the reasonable costs of providing service to new customers*. This was done by applying projected inflationary adjustments to the existing connection fees over the years, and verifying that the goals described above are being met. Based on current projected program expenditures and revenue projections, inflationary adjustments will be necessary in the future; however, this will be verified in future re-evaluations of the Water System Expansion Program. **Section 4.2** presents more information on the financial model results based on the inflation-adjusted connection fee projections.

The inflationary adjustments are in accordance with Zone 7 Board Resolution No. 02-2450, which requires, at a minimum, an annual update based on the Engineering News Record Construction Cost Index (ENR CCI), or as warranted to keep pace with inflation. For the 2012 fees, staff therefore recommends adjusting the current fees based on the change in the ENR CCI from September 2010 to September 2011.

As previously mentioned in Section 3.3, the Dougherty Valley Connection Fee was designed to exclude those projects related to water acquisition and non-local storage; a separate fee is therefore calculated for Dougherty Valley. **Table 3-1** identifies those projects that benefit Dougherty Valley.

Table 4-1 shows the recommended connection fees per Dwelling Unit Equivalent (DUE) to be effective January 1, 2012, as well as the Board-approved connection fees for 2011. As noted in Section 2.3.1, a DUE represents the 5/8-inch meter typically used in a single-family residential home. Connection fees for larger meter sizes are calculated by multiplying the fee for a 5/8-inch meter by the conversion factors listed in **Table 2-2** for the appropriate type of meter.

¹³ A recent exception is the \$60M Installment Sale Agreement (short-term loan) with Wells Fargo to pay for a portion of Altamont Water Treatment Plant and Pipeline project. To fund the Altamont Pipeline - Livermore Reach, \$30.5M was used; \$29.5M was returned to Wells Fargo because construction of the Altamont Water Treatment Plant has been deferred.

Table 4-1. Adopted Connection Fees for 2011 and Recommended Connection Fees for 2012

Effective Period	Alameda County (\$/DUE)	Dougherty Valley (\$/DUE)
Effective January 1, 2011	\$22,230	\$20,580
Recommended to be effective January 1, 2012 (3.2% Increase*)	\$22,930	\$21,230

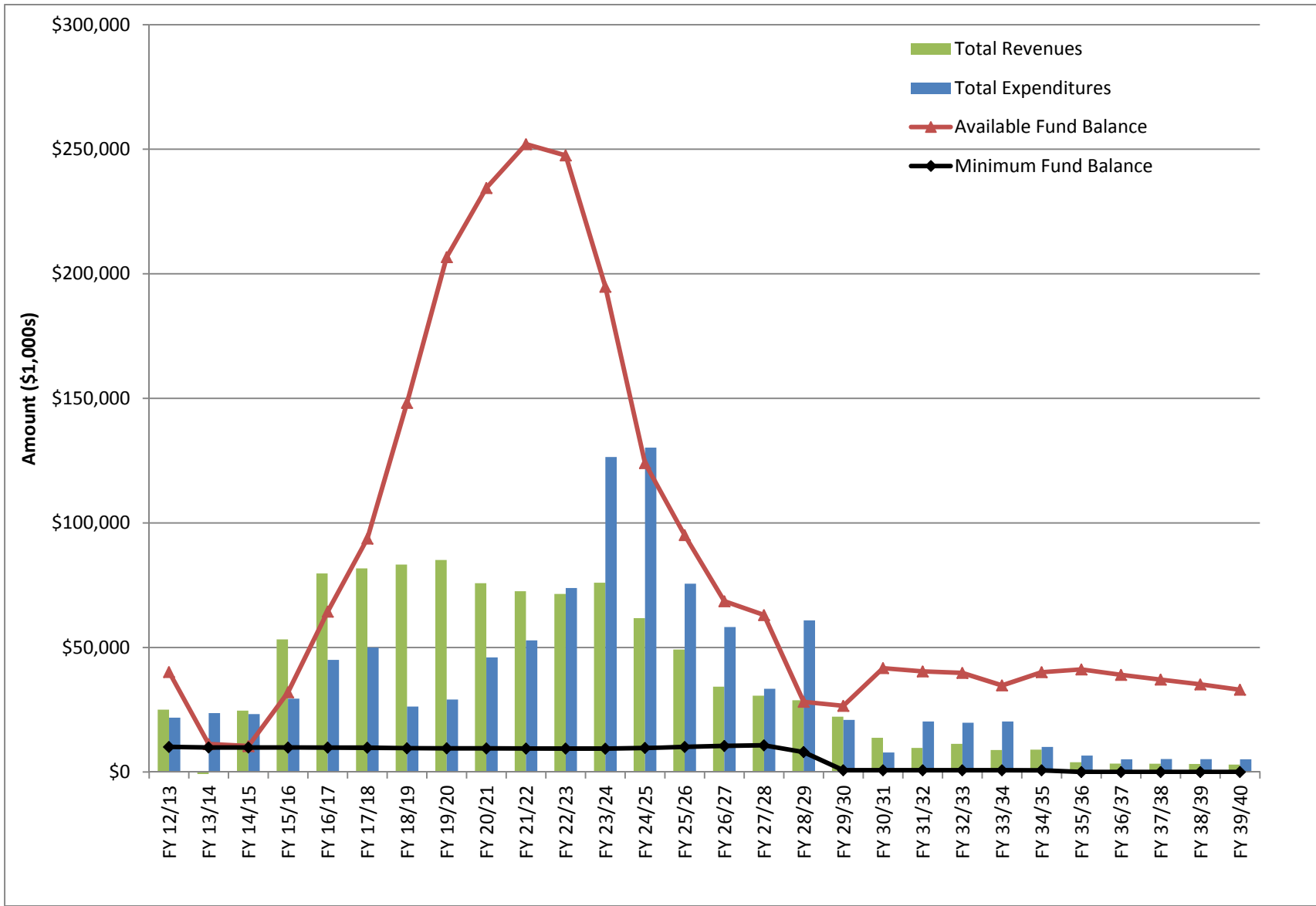
* Based on the change in the ENR CCI from September 2010 to September 2011.

4.2 Preliminary Funding Outlook

Based on the recommended connection fees for 2012, and assuming routine inflation-based adjustments, **Figure 4-1** shows the preliminary funding outlook for Fund 73 – Expansion through buildout using Zone 7’s financial model. It includes total expenditures (project expenditures, contingency, and administration fees), total revenues, fund balances, and the minimum fund balance for each year. As shown, the fund balances are maintained above the minimum fund balance. The minimum fund balance drops significantly after FY 29/30 because the sinking funds are expected to have built up sufficient reserves at this time to pay the remainder of non-discretionary obligations. The available fund balances increase to a peak in FY 21/22, when major expansion projects are expected to occur (see **Figure 3-1**). In FY 39/40, the available fund balance is estimated at \$33 million, or approximately three percent of the total Program expenditures (see **Table 3-1**); this essentially increases the contingency amount available for the Program.

Appendix D includes details on the inputs and results of the financial model, from FY 10/11 through FY 39/40.

Figure 4-1. Fund 73 (Expansion) Preliminary Funding Outlook Based on Recommended Connection Fees



5 DOUGHERTY VALLEY FACILITY USE FEE

5.1 Dougherty Valley Facility Use Fee Calculation

In January 1998, DSRSD requested Zone 7's approval for expansion of its service area to include Dougherty Valley. Zone 7 agreed, and subsequently entered into two contracts that included provisions for securing the necessary water entitlements; water reliability protection; payment of annual costs; and escrow funds to prepay some of the identified costs to serve Dougherty Valley.

The *Water Service Escrow Agreement between Zone 7, DSRSD and Berrenda Mesa Water District and Amendment No. 1 to Contract between Zone 7 and DSRSD for M&I Water Supply (Amendment No. 1) (Appendix B)* were approved by the Zone 7 Board in April 1998 and February 2000, respectively. A significant component of the second contract was that new Dougherty Valley customers—in addition to funding Water System Expansion Program costs through Connection Fees and paying for operational costs through water rates—would pay a Facility Use Payment (Fee) to recognize the contributions made by Alameda County ratepayers to construct and maintain the water system. The Facility Use Fee would apply to each new Dougherty Valley connection to the existing system based on the Dwelling Unit Equivalents (DUEs).

Amendment No. 1 provides the details for the determination of the Facility Use Fee as follows: “Zone 7 shall adjust the Facility Use Payments at the times specified in this section by the Adjustment Index. The first adjustment to the Facility Use Payments shall go into effect no earlier than five years following the issuance of the first building permit for development in the Dougherty Valley Service Area. Subsequent adjustments shall occur at five (5) year intervals thereafter. Payments to Zone 7 under this section shall be collected in the same manner and be due at the same time as payments due under Section D.2.”

Amendment No. 1 further defines the “Adjustment Index” as: “The Adjustment Index” for the year in which the adjustment is being made shall mean a fraction, the numerator of which is the Construction Costs Index, 20-City Average published by the Engineering News Record (the ‘Construction Costs Index’) of the calendar year immediately preceding calendar year when the adjustment is being made, and the denominator of which shall be 5.858.3 (20-City Average as of December 1997).”

5.2 Recommendation for the 2012 Dougherty Valley Facility Use Fee

The initial fee established in 1997 was \$1,850 per DUE (effective January 1, 2002). The last update to this fee was in 2006, when it was increased by 33% for the five-year period based on the estimated increase in Engineering News Record Construction Cost Index (ENR CCI) from December 1997 to December 2006. The fee (\$2,460 per DUE) became effective January 1, 2007.

In accordance with the methodology for calculating the Facility Use Fee as defined in *Amendment No.1*, staff determined the new fee to be \$2,890. The applicable Adjustment Index is 1.5614, based on the change in the ENR CCI between December 1997 to October 2011¹⁴. This is effectively an increase of 17.5% from the current fee of \$2,460. This new fee was adopted by the Zone 7 Board at the October 19, 2011 Board Meeting. It will become effective on January 1, 2012. **Table 5-1** presents the determination of the Dougherty Valley Facility Use Fee.

¹⁴ Latest ENR CCI available for 2011.

Table 5-1. Determination of the Dougherty Valley Facility Use Fee for 2012

VARIABLE	VALUE
20-City ENR CCI Average as of December 1997	5858
ENR CCI of the year immediately preceding - October 2011	9147
Percentage Increase	0.5614
Base Fee	\$1,850
Current Fee as of January 1, 2007	\$2,460
New Fee Effective January 1, 2012 (\$1,850 x [1+0.5614])	\$2,890
Increase from Current Fee (\$2,890 - \$2,460)/\$2,460 x 100%	17.5%

6 SUMMARY AND RECOMMENDATIONS

6.1 Summary

Overall, a 32% population growth is expected in the Zone 7 service area over the next 30 years to a buildout population of 299,000. Between 2010 and 2040, Retailer water demands are expected to increase by 35% to a buildout demand of 56,600 acre-feet.

For calculating the projected revenues from new connections, the gross estimate of 32,070 new connections from FY 10/11 through buildout was adjusted to subtract connections that have been prepaid (i.e., connection fees have been paid but the construction may not have occurred yet) and credits (i.e., new connections at Arroyo Vista that replace existing potable water connections). With the adjustments, the new connections producing revenue (“net connections”) total 30,446 Dwelling Unit Equivalents (DUEs). In addition, to account for the uncertainty in the rate of development, growth cycling was applied to the net connections. This effectively incorporates some conservatism in Zone 7’s planning for expenditures related to capital projects, partially addressing the uncertainty in the connection projections and giving better assurance that funds will be available when they are needed. Furthermore, the FY 10/11 value was set to the actual value, and the difference in projected versus actual for FY 10/11 was spread over the following three years. The high number of new DUEs projected for FY 15/16 in DSRSD’s Alameda County service area (1,590 DUEs) was re-distributed over a four-year period (FY 15/16 through FY 18/19).

Forty-two projects funded in whole or part by Fund 73 with a total funding need of \$1,069,388,000 through FY 39/40 have been identified. Zone 7 will continue to update its Capital Improvement Program – Ten-Year Plan every two years and changes in demands, new connections, and available funding will be incorporated into the ultimate scheduling of project construction; projects intended to meet new demands will be shifted according to when those demands are expected.

6.2 Recommendations and Adopted Fees

Under the 2011 M&I Connection Fee Program Update, Zone 7 staff determined that *Zone 7’s connection fees represent the reasonable costs of providing service to new customers*. The update recommended annual increases based on the Engineering News Record Construction Cost Index (ENR CCI) to account for the impact of inflation on future projects. For the 2012 fees, staff recommended adjusting the current fees to keep pace with inflation, based on the change in the ENR CCI from September 2010 to September 2011 (3.2%). For Alameda County, this translated to an increase in the Connection Fee from \$22,230 to \$22,930 per DUE. For Dougherty Valley, the Connection Fee increased from \$20,580 to \$21,230 per DUE. These recommended fees were adopted by the Zone 7 Board at the October 19, 2011 Board Meeting.

In accordance with the methodology set forth in *Amendment No. 1 to Contract Between Zone 7 Water Agency and Dublin San Ramon Services District for a Municipal and Industrial Water Supply*, the Dougherty Valley Facility Use Fee was adjusted for inflation based on the change in the ENR CCI between December 1997 and October 2011. Zone 7 staff recommended increasing the fee to \$2,890 per DUE, which equates to a 17.5% increase from the previous fee of \$2,460. The recommended fee was adopted by the Zone 7 Board at the October 19, 2011 Board Meeting.

The newly adopted fees become effective January 1, 2012.

Appendix A

Connection Fee Ordinance No. FC 72-1

ORDINANCE NO. FC 72-1, AS AMENDED BY
ORDINANCES FC 77-2; FC 86-136; AND FC O-91-68

AN ORDINANCE ADOPTED PURSUANT TO SECTION 12.1 OF THE
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT ACT
IMPOSING A WATER CONNECTION CHARGE IN ZONE NO. 7

The Board of Supervisors of the Alameda County Flood Control and Water Conservation District do ordain as follows:

SECTION I

Declaration of Findings. The Board of Supervisors of Alameda County Flood Control and Water Conservation District has determined the necessity to make improvements to the Zone No. 7 water supply system. The District is empowered, pursuant to Section 12.1 of the Alameda County Flood Control and Water Conservation District Act, to prescribe and collect charges for water delivery and treatment facilities furnished or to be furnished within a zone of the District.

This Board does hereby find that continual improvement to the Zone No. 7 water supply system would be for the benefit of Zone No. 7 residents and property owners to meet increasing demands on the water supply system, to enhance the quality of water, to minimize harm from water shortages, to improve operational flexibility of the system, and to improve the reliability of water service, and that the public interest, necessity, convenience and general welfare of the residents and property owners of Zone No. 7 require the institution, construction and maintenance of said improvements. Revenues now available to the Zone will not be fully adequate to construct and maintain additional required facilities without substantial water or tax rate increases. In order to apportion more fairly the costs of new facilities on the basis of benefits conferred upon the property within the area, the charges hereinbelow indicated are hereby established on all new connections to any water system which is directly connected to the Zone No. 7 water supply system, to be utilized to accomplish proposed improvement in the water treatment and delivery system.

(Amended by Ord. FC 77-2)

SECTION II

Definitions. The definitions contained in this article shall govern the construction of this Ordinance unless required otherwise by context.

1. "District" means the Alameda County Flood Control and Water Conservation District.
2. "Board" means the Board of Supervisors of Alameda County Flood Control and Water Conservation District.
3. "Zone" means the Zone No. 7 of the Alameda County Flood Control and Water Conservation District.
4. "Zone Board" means the Board of Directors of Zone No. 7 of Alameda County Flood Control and Water Conservation District.
5. "Water supply system" means any combination of facilities that is capable of furnishing treated water service.
6. "New connection" means any new metered water service that will furnish water from a water supply system that is directly connected to the Zone No. 7 water supply system, including but not limited to water services that are part of any new development to be constructed.
7. "New development" means any improvement, building or buildings constructed subsequent to the effective date of this Ordinance.

(Amended by Ord. FC O-91-68)

SECTION III

Water Service Connection Charge Schedule. A basic charge of \$830.00 shall be multiplied by the fee factor indicated in the following schedule for each new connection to the water supply system subject to this Ordinance.

<u>Fee Factor</u>	<u>Meter Size</u>
5/8"	1.0
3/4"	1.5
1" (See Section VI. 1 below)	2.5
1-1/2"	5.0
2"	8.0

The determination of fee factors is based upon the recommended maximum rate for continuous operations in accordance with the American Water Works Association Standard C700-90

for Cold Water Meters-Displacement Type, Bronze Main Case. Fee factors for meters of special capacities and sizes other than those indicated in the above schedule shall be determined by the Zone. The administrative method for setting fee factors for meters of special capacities and sizes in effect on July 17, 1991, shall remain in effect through June 30, 1992. On July 1, 1992, new fee factors for meters of special capacities and sizes using a method that utilizes the recommended maximum rate for continuous operations shall go into effect.

For increasing the meter size or capacity on any existing connection, a charge shall be imposed equal to the product of the basic charge in effect at the time the meter exchange is requested and the difference in the fee factor between the new meter and the existing meter.

There shall be no refund of charges paid for decreasing the meter size or capacity.

(Amended by Ord. FC 0-91-68)

SECTION IV

Disposition of Charges. All charges collected under the provision of this Ordinance, and a portion of water sales revenues as deemed appropriate by the Zone Board, shall be deposited with the Treasurer of the District, said funds to be designated "Zone 7 Water Facilities Fund." Said funds shall be utilized for the accomplishment of proposed improvements to the Zone No. 7 water supply system, and shall be expended for administration, land acquisition, construction, engineering, repair, maintenance and operation, or reimbursement or retirement of bonded indebtedness incurred for same, in whole or in part, of the water supply facilities within Zone No. 7. Provided, however, that said funds shall not be utilized for the retirement of bonded indebtedness on Zone No. 7 projects incurred prior to January 18, 1972.

(Amended by Ord. FC 77-2)

SECTION V

Collection of Charges. Charges provided for herein shall be collected by the Zone, or the appropriate City Building Official if the improvement is located within an incorporated city, prior to the issuance of a building permit or a use permit for such improvement. In cases where permits are not required, payment of charges shall be made to the Zone or appropriate City Building Official prior to installation of a new connection. Collection by the appropriate City Building Official shall be

authorized by agreement between the affected city and District, said agreement to be approved by Zone Board and forwarded to Board for execution, following execution of said agreement by city.
(Amended by Ord. FC 77-2)

SECTION VI

Exemptions.

1. No charge shall be collected for separate private fire service connections. Combined domestic and fire service connections shall be subject to the connection charge based on the meter size for the combined system, except the basic charge shall be collected for combined systems, up to a maximum one-inch (1") meter size, for single family and duplex housing units with fire sprinkler systems approved by the appropriate fire department and installed in accordance with applicable building requirements.

2. No charge shall be collected for future connections of any existing building or buildings to a water supply system that is directly connected to the Zone No. 7 water supply system if the building or buildings are occupied and supplied by an independent water supply system on or before January 18, 1972. This exemption shall become null and void effective July 1, 1992.
(Amended by Ord. FC O-91-68)

SECTION VII

Review of Water Connection Charge. The water connection charge provided for hereinabove, its manner of collection and disposition shall be subject to periodic review and modification at the discretion of the Zone Board.

SECTION VIII

Severability. If any section, sub-section, paragraph, sub-paragraph, sentence, clause or phrase of this Ordinance is for any reason held to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the validity or constitutionality of the remaining portions of this Ordinance; and the Board declares that this Ordinance and each section, sub-section, paragraph,

sub-paragraph, sentence, clause and phrase thereof would have been adopted irrespective of the fact that one or more of such section, sub-section, paragraph, sub-paragraph, sentence clause or phrase be declared invalid or unconstitutional.

SECTION IX

Opinions and Determinations. Where this Ordinance provides for action to be based upon the opinion, judgment, approval, review or determination of the Zone Board, it is not intended to be and shall never be construed as permitting such opinion, judgment, approval, review or determination to be arbitrary, capricious or unreasonable.

SECTION X

Payment Before Effective Date. Nothing in this Ordinance shall prohibit payment of charges provided for herein prior to the effective date of this Ordinance. The funds so collected shall be applied in the same manner and for the same purposes as those required for collections after the effective date of this Ordinance.

SECTION XI

Contest of Charges. For purposes of this Ordinance, the Zone Board shall act as hearing Board in any contest of charges imposed under this Ordinance, and said Zone Board shall notice and conduct full and fair hearings consistent with due process and base its decision upon competent evidence. Said Zone Board shall adopt reasonable rules and regulations for the conduct of its affairs under this Ordinance. Appeals from the decision of the Zone Board shall be to the Board of Supervisors of Alameda County Flood Control and Water Conservation District, and shall be a hearing de novo upon the issues of the appeal. Notice of appeal from the decision of the Zone Board shall be made within 30 days of any final determination by Zone Board.

SECTION XII

Effective Date. This Ordinance is an urgency ordinance necessary for the preservation of the public peace, health, safety and welfare and shall go into effect immediately upon the date of adoption thereof, to wit January 18, 1972. The facts constituting such necessity are that failure of a recent bond election and resultant shortage of funds for improvement or expansion of necessary water treatment and delivery facilities has resulted in a projected need for water rationing in the Livermore-Amador Valley Area due to an increasingly heavy burden on existing facilities following a steady increase in population and residential construction in that Area. The proposed charges to be imposed pursuant to this Ordinance will be applied toward the construction of the needed facilities. Before the expiration of fifteen (15) days after the passage of this Ordinance it shall be published once with the names of members voting for and against the same in The Inter-City Express, a newspaper published in the said County of Alameda.

Adopted by the Board of Supervisors of the Alameda County Flood Control and Water Conservation District on this 18th day of January, 1972, by the following called vote:

AYES: Supervisors Bort, Cooper, Murphy, Razeto and Chairman Hannon - 5

NOES: Supervisors None

EXCUSED: Supervisors None

Chairman of the Board of Supervisors of the
Alameda County Flood Control and Water
Conservation District

ATTEST:

Clerk of the Board of Supervisors of
the Alameda County Flood Control and
Water Conservation District

Appendix B

Amendment No.1 to Contract Between Zone 7 Water Agency And Dublin San Ramon Services
District for Municipal Water Supply

**AMENDMENT NO. 1 TO CONTRACT BETWEEN ZONE 7 WATER AGENCY AND
DUBLIN SAN RAMON SERVICES DISTRICT FOR A MUNICIPAL &
INDUSTRIAL WATER SUPPLY**

This Amendment No. 1 to Contract Between Zone 7 Water Agency and Dublin San Ramon Services District for a Municipal & Industrial Water Supply (the "**Amendment**") is entered into as of 2/7/2000, 1998, (the "**Effective Date**") by and between ZONE 7 OF ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, commonly known as the Zone 7 Water Agency ("**Zone 7**"), and DUBLIN SAN RAMON SERVICES DISTRICT ("**Contractor**").

RECITALS

A. Zone 7 and Contractor have entered into that certain Contract between Zone 7 of Alameda Flood Control and Water Conservation District and Dublin San Ramon Services District for a Municipal & Industrial Water Supply, dated as of August 23, 1994 (the "**Water Supply Contract**"). Pursuant to and as more fully set forth in the Water Supply Contract, Zone 7 has agreed to furnish and provide to Contractor, and Contractor agreed to purchase and accept, a water supply for municipal and industrial uses.

B. Pursuant to Section 6 of the Water Supply Contract, Contractor has requested Zone 7's approval of an expansion of Contractor's "Service Area" under the Water Supply Contract to include approximately 4,400 acres of real property located outside of the boundaries of Zone 7 as shown on **Figure 1** attached hereto (the "**Dougherty Valley Service Area**"). The County of Contra Costa has adopted plans and permits authorizing the development, within the Dougherty Valley Service Area, of a mixed-use community including up to 9784 residential dwelling units and associated commercial, civic and other uses. Contra Costa County's plans designate Contractor as the primary provider of treated water to the Dougherty Valley Service Area and the owners of property of said Area, Windemere Ranch Partners ("**Windemere**") and Shapell Industries, Inc. ("**Shapell**"), have requested Contractor to provide such service.

C. The property in the Dougherty Valley Service Area owned by Windemere has been annexed to Contractor and is within Contractor's sphere of influence; the property in the Dougherty Valley Service Area owned by Shapell is within Contractor's sphere of influence.

D. On September 13, 1994, Contractor and the Berrenda Mesa Water District ("**BMWD**") entered into an agreement for Contractor to purchase BMWD rights for 7,000 acre-feet of firm water entitlement from State Water Project for use in the Dougherty Valley Service Area with an option to purchase an additional 5,000 acre-feet.

E. Instead of using the aforementioned agreement between Contractor and BMWD for the water supply for Dougherty Valley Service Area, Zone 7 is concurrently herewith entering into an agreement with BMWD ("the Water Purchase Agreement") to purchase 7,000 acre feet annually of firm water entitlement from the State Water Project (the "**Water Entitlement**") to

provide water for the Dougherty Valley Service Area. Concurrently with this agreement, Contractor and BMWD are terminating their Water Purchase Agreement, dated September 13, 1994, with the exception of the provision of that agreement providing Contractor with an option to purchase 5,000 acre-feet of water from BMWD.

F. Zone 7 concurrently herewith is entering into an agreement with the Semitropic Water Storage District ("**Semitropic**") pursuant to which Semitropic will agree to store water for Zone 7 so that Zone 7 may supplement the water available from the Water Entitlement to maintain the reliability of the service to the Dougherty Valley Service Area and enhance Zone 7's ability to serve its existing customers and future customers within Zone 7.

G. Zone 7 and Contractor desire to amend the Water Supply Contract to expand Contractor's service area and to establish certain terms and conditions pursuant to which Zone 7 will furnish and provide water to Contractor for delivery to the Dougherty Valley Service Area.

AMENDMENT NO. 1 TO THE WATER SUPPLY CONTRACT

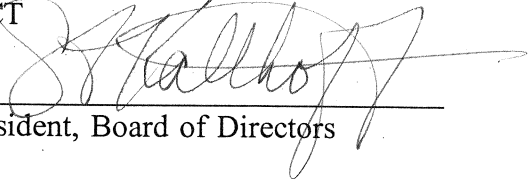
NOW, THEREFORE, Zone 7 and Contractor hereby mutually agree to amend the Water Supply Contract as follows:

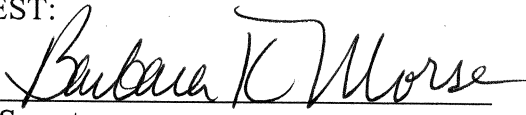
1. Contractor's Service Area. The Dougherty Valley Service Area, as delineated in Figure 1, is hereby added to the Contractor's Service Area as defined in and pursuant to Section 6 of the Water Supply Contract.
2. Special Provisions for Water Supplied to Contractor for Use in the Dougherty Valley Service Area. Those certain terms and conditions described more fully in **Appendix 1**, attached hereto, are hereby appended to and incorporated into the Water Supply Contract and shall govern the provision of services to the Dougherty Valley Service Area.
3. Ratification of Water Supply Contract. Except as modified by this Amendment, the Water Supply Contract and all provisions contained therein shall remain unchanged.
4. Counterparts. This Amendment may be executed in one or more counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same document.
5. Effective Date. This amendment shall not become effective until the close of escrow pursuant to the Water Service Escrow Agreement entered into concurrently herewith.
6. Interpretation. To the extent any provisions of this Amendment and/or **Appendix 1** are inconsistent with any provisions of the Water Supply Contract, the provisions of this Amendment and/or **Appendix 1** shall control with respect to the Dougherty Valley Service Area. Otherwise, the terms of the Water Supply Contract, as amended by this Amendment, shall remain in full force and effect.

IN WITNESS WHEREOF, this Amendment has been executed as of the day and year first above written.

ZONE 7:

ZONE 7 OF ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

By: 
Its: President, Board of Directors

ATTEST:
By: 
Its: Secretary

APPROVED AS TO FORM:

DOUGLAS HICKLING
COUNTY COUNSEL

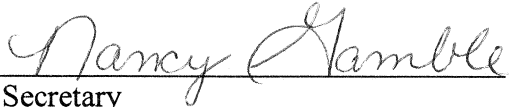
By: 
Deputy County Counsel

Contractor:

DUBLIN SAN RAMON SERVICES DISTRICT

By: 
Its: President, Board of Directors

ATTEST:

By: 
Its: Secretary

APPROVED AS TO FORM:

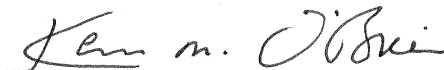
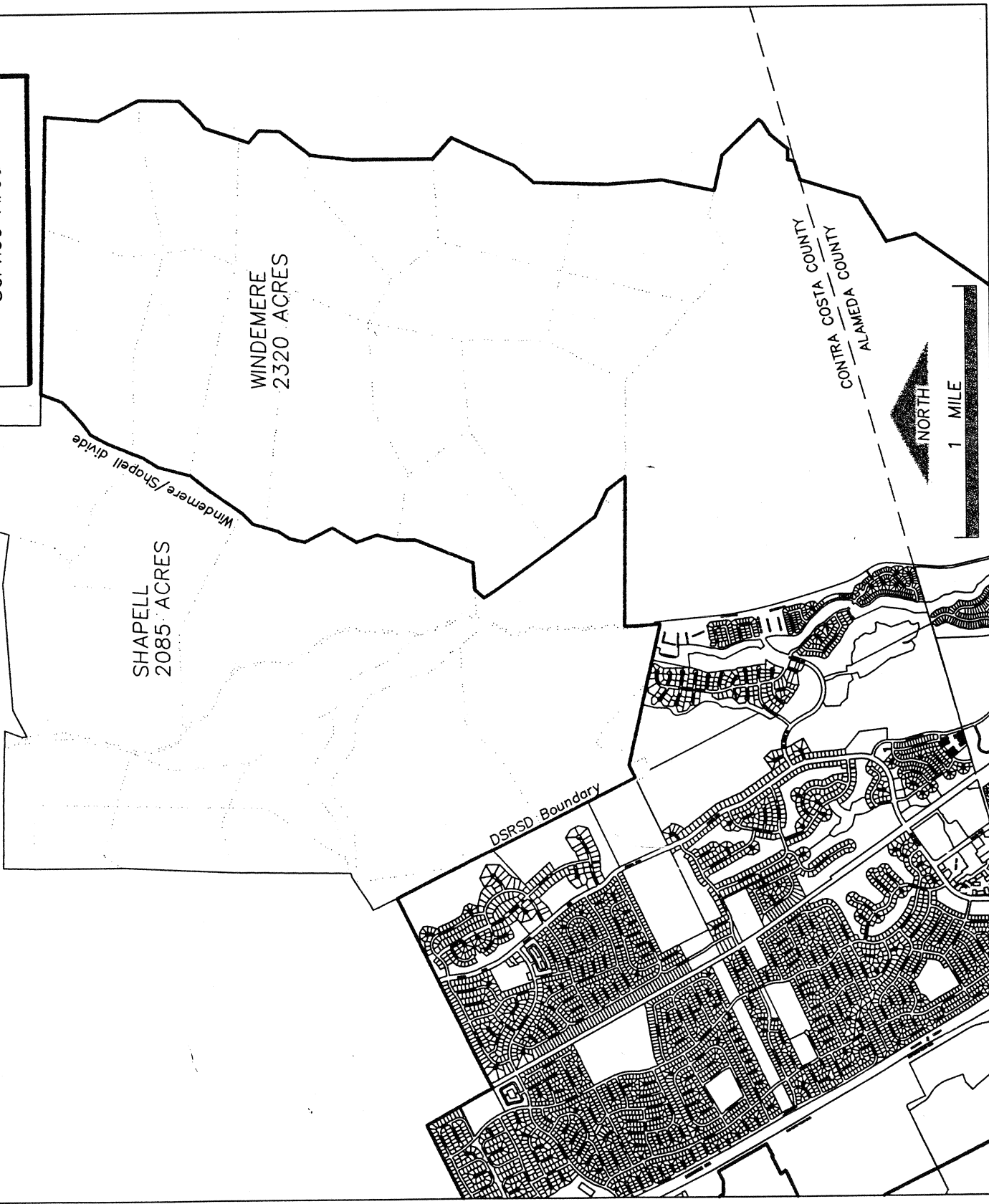
By: 
DSRSD Special Counsel

Figure 1
Map of Dougherty Valley
Service Area



APPENDIX I

SPECIAL PROVISIONS FOR WATER SUPPLIED TO CONTRACTOR FOR USE IN THE DOUGHERTY VALLEY SERVICE AREA

A. DEFINITIONS

"Adjustment Index" for the year in which the adjustment is being made shall mean a fraction, the numerator of which is the Construction Costs Index, 20-City Average, published by the Engineering News Record (the "Construction Costs Index") of the calendar year immediately preceding the calendar year when the adjustment is being made, and the denominator of which shall be 5,858.3 (20-City Average as of December 1997). If publication of the Construction Cost Index ceases or if the basis for the index is substantially modified, Zone 7 and Contractor shall mutually agree on an alternative index.

"Amendment" shall mean this Amendment No. 1 to the Water Supply Contract.

"Annual Water Supply Report" shall mean that certain annual report required to be delivered by Contractor to Zone 7 pursuant to Section C of this Appendix.

"Dougherty Valley Service Area" shall mean, as delineated in Figure 1 of the Amendment, that geographic area added to Contractor's Service Area under the Water Supply Contract pursuant to this Amendment

"Dougherty Valley Service Area Allotment" equals the Water Entitlement multiplied by a factor based on the Department of Water Resources' latest estimate of long-term State Water Project annual yield, as determined and used by Zone 7 for water supply planning purposes. This factor is currently 75%. The factor will be the same for water conveyed to DSRSD for delivery to the Dougherty Valley Service Area as it will be for State Water Project water being delivered within Zone 7's boundaries. Zone 7 and Contractor recognize that the long-term State Water Project yield is based on hydrological records and applicable regulatory requirements that are subject to change over time. Zone 7 will meet and confer with Contractor prior to changing the yield estimate. The current Dougherty Valley Service Area Allotment is: 7,000 acre feet (the Water Entitlement, defined below) x .75 (the current factor for the long-term State Water Project yield) = 5,250 acre feet per year.

"DWR" shall mean State of California Department of Water Resources.

"DWR/Zone 7 Agreement" shall mean the Contract between the State of California Department of Water Resources and Alameda County Flood Control and Water

Conservation District for a Water Supply for Zone No. 7, dated November 21, 1961, as amended.

"DWR/Zone 7 Amendment No. 19" shall mean the amendment to the DWR/Zone 7 Agreement whereby DWR agrees to convey the Water Entitlement to Zone 7.

"New Connection" shall mean any new metered water service within the Dougherty Valley Service Area that will furnish water from a water supply system that is connected to the Zone 7 water supply system or to the Livermore-Amador Valley Main Groundwater Basin (as defined in the Water Supply Contract), including but not limited to water services that are part of any new development to be constructed.

"Semitropic" shall mean the following public entities: Semitropic Water Storage District, Semitropic Improvement District, Buttonwillow Improvement District and the Pond-Poso Improvement District of the Semitropic Water Storage District, collectively.

"Semitropic Agreement" shall mean the agreement between Zone 7 and Semitropic, entered concurrently herewith, whereby Semitropic agrees to provide groundwater storage space for Zone 7's use.

"Tax Override Charges" shall mean those certain State Water Project expenses that Zone 7 pays for through an ad valorem tax levied on property owners within Zone 7 (denoted as "Flood Zone 7 State Water" on the property tax bill) as authorized under Section 36 of the California Water Code, Appendix 55 ("the District Act") and other applicable state laws. Zone 7 currently determines the Tax Override Charges based on the following State Water Project charges as invoiced by DWR: 1) Water System Revenue Bond Surcharge; 2) Capital Cost Component -- Transportation Charge; 3) Minimum Operating Maintenance, Power and Replacement Component -- Transportation Charge; and 4) Off-Aqueduct Power Facilities. Zone 7 may include other DWR charges as Tax Override Charges in accordance with applicable law, as long as such other charges are prospective in nature and charged as Tax Override Charges on property owners within Zone 7.

"Water Connection Charge Program" shall mean Zone 7's Water Connection Charge Program, as updated from time to time.

"Water Entitlement" shall mean that certain 7,000 acre feet of firm water entitlements that Zone 7 has agreed to purchase concurrently herewith from the Berrenda Mesa Water District ("BMWD") as set forth in the Water Purchase Agreement.

"Water Purchase Agreement" shall mean that certain agreement between Zone 7 and BMWD pursuant to which Zone 7 has agreed concurrently herewith to purchase, and BMWD agreed to sell, the Water Entitlement.

B. DELIVERY

1. Water Supply. Subject to, and as set forth in, the terms and conditions of this Amendment, Zone 7 shall provide Contractor with a supply of treated water for the Dougherty Valley Service Area.
2. Preliminary Water Delivery Schedule. Section 10 of the Water Supply Contract requires Contractor, on an annual basis, to submit to Zone 7 a preliminary water delivery schedule indicating the quantity of water anticipated by Contractor to be required for Contractor's service area during each month of the succeeding five (5) calendar years. Each such preliminary water delivery schedule shall hereafter include a separate itemization of water anticipated by Contractor to be required for the Dougherty Valley Service Area during such five-year period and be accompanied by the "**Annual Water Supply Report**" described in Section C below.
3. Review and Approval by Zone 7. Zone 7 shall review the Preliminary Water Delivery Schedule in accordance with Section 10 of the Water Supply Contract. Zone 7 may only revise or disapprove contractor's delivery request for the Dougherty Valley Service Area for the reasons set forth in Sections 12 (Peak Demands), 13 (Curtailed Delivery During Maintenance Periods), 14 (Availability of Water), or 15 (Suspension of Service) of the Water Supply Contract, or as described in Section B4, B5 and D1 below.
4. Limitations on Deliveries. Notwithstanding any other provision of this Amendment, Zone 7 shall have no obligation under this Amendment, in any year, to deliver water to the Dougherty Valley Service Area in excess of the Dougherty Valley Service Area Allotment.
5. Shortfalls. If a delivery schedule submitted to Zone 7 for the Dougherty Valley Service Area pursuant to paragraph B.2 above exceeds the Dougherty Valley Service Area Allotment for any year covered by the preliminary water delivery schedule, Zone 7 shall immediately deliver notice to Contractor of the shortfall, and Contractor, shall either (i) use its best efforts to secure additional water supplies adequate to eliminate such projected shortfall prior to its occurrence, or (ii) submit a revised delivery schedule that does not result in a shortfall. Zone 7 is under no obligation pursuant to this Amendment to seek additional water supplies for the Dougherty Valley Service Area if Contractor's request exceeds the Dougherty Valley Service Area Allotment in any year. Zone 7 shall use its best efforts to facilitate the transfer and use of any additional water supplies obtained through the efforts of the Contractor.

C. REPORTS

1. Annual Water Supply Report. Contractor shall measure and report to Zone 7 annually on treated water usage within the Dougherty Valley Service Area. Contractor's annual report to Zone 7 (the "Annual Water Supply Report") shall include a description of, among other things, (i) water deliveries by month for the past year; (ii) number and size of current service connections; and (iii) number and size of New Connections established over the preceding

year. The measurement and recordation of such water deliveries shall be subject to the same provisions for inspection and testing of meters and instrumentation by Zone 7 as is provided to Contractor in Section 8 of the Water Supply Contract. The Annual Water Supply Report shall be prepared and submitted by Contractor in a form acceptable to Zone 7 and due by March 1 of the following year.

2. Monthly Water Delivery Report. Section 11 of the Water Supply Contract requires Contractor to report to Zone 7 on or before the tenth day of each month the total volume, in acre-feet, of groundwater extracted from the Main Basin and any water obtained from "Other Sources" (as defined in the Water Supply Contract) for the preceding month. This report shall be expanded to include water supplied by Contractor to the Dougherty Valley Service Area from all sources during such preceding month, based on all metered flows to the Dougherty Valley Service Area (the "**Monthly Water Delivery Report**").

D. PAYMENTS

1. Treated Water Rate. Contractor shall pay Zone 7 for water delivered by Zone 7 to Contractor for the Dougherty Valley Service Area in accordance with the provisions of Section D of the Water Supply Contract. If any payments required under the provisions of Section D of this Appendix are not received by the due date, Contractor shall be subject to suspension of service and the accrual of interest as provided in the Water Supply Contract under Sections 15 and 28 respectively. Zone 7 shall not be obligated to provide water for any demands resulting from New Connections for which Contractor has not made Water Connection Payments or Facility Use Payments pursuant to Sections D.2 and D.3, below.

2. Water Connection Payments. Contractor shall make payments to Zone 7 to compensate Zone 7 for the Dougherty Valley Service Area's share of Zone 7's Capital Expansion Program. For each New Connection in the Dougherty Valley Service Area, Contractor shall pay Zone 7 an amount, established by the Zone 7 Board by resolution, to Zone 7's Capital Expansion Program. The amount due for each New Connection will equal the connection charges within the Zone 7 boundaries less the sums included in the Zone 7 connection charge for obtaining additional water entitlements and additional storage, as Contractor has already provided the Water Entitlement and storage for the Dougherty Valley Service Area. Payments to Zone 7 shall be due within 30 days from the date upon which the building permit for the property receiving the New Connection was issued or 30 days from the date that the New Connection is made, whichever is earlier.

3. Facility Use Payments. Contractor agrees to compensate Zone 7 for use of Zone 7's existing facilities in providing water to the Dougherty Valley Service Area. Contractor shall make payments to Zone 7, hereinafter referred to as Facility Use Payments, as Contractor permits New Connections in the Dougherty Valley Service Area. The Facility Use Payments shall be \$1,850 per New Connection of the basic connection size, 5/8" meter. The amount of said Facility Use Payments are based on the pro rata share of the current value of Zone

7's capital assets. The Facility Use Payments for New Connections of other sizes shall be adjusted by the "fee factor" contained in the Zone 7 Water Connection Charge Ordinance, Section III.

Zone 7 shall adjust the Facility Use Payments at the times specified in this section by multiplying \$1,850 by the Adjustment Index. The first adjustment to the Facility Use Payments shall go into effect no earlier than five years following issuance of the first building permit for development in the Dougherty Valley Service Area. Subsequent adjustments shall occur at five (5) year intervals thereafter. Payments to Zone 7 under this section shall be collected in the same manner and be due at the same time as payments due under Section D.2 (above).

4. Capital Expansion Water Facilities. Zone 7 shall keep Contractor apprised of Zone 7's progress in developing and constructing any capital water facilities that are necessary to provide service to Contractor for ultimate use in the Dougherty Valley Service Area. If Contractor determines, and Zone 7 concurs, that capital facilities required by Zone 7 to provide water to Contractor pursuant to this Amendment will not be available in time for Zone 7 to make requested deliveries under this Amendment, Contractor may elect to design and construct such capital facilities, and Zone 7 will reduce future connection payments pursuant to Paragraph D.2 (above) by the costs incurred by Contractor.

5. Surcharge for Water Service for Dougherty Valley Service Area. Contractor shall pay Zone 7 a surcharge for water service for the Dougherty Valley Service Area to compensate Zone 7 for additional State Water Project charges incurred by Zone 7 as a result of providing water to the Dougherty Valley Service Area. The surcharge shall equal the Dougherty Valley Service Area's proportionate share of the total Tax Override Charges, calculated as follows: (6,080 (the estimated amount of water entitlement necessary to supply the Dougherty Valley Service Area with 4,560 acre-feet of water per year given a State Water Project long-term yield of 75%)/Zone 7's total State Water Project entitlement) multiplied by the total Tax Override Charges.

$$\frac{\left(\frac{4,560}{\left(\frac{1}{\text{factor used to determine SWP long-term yield}} \right)} \right)}{\text{Zone 7's Total State Water Project entitlement (in acre-feet)}} \times \left(\frac{\text{Total Tax Override Charges}}{\text{Override Charges}} \right) = \text{Annual surcharge per this paragraph}$$

Zone 7 receives a statement of charges from DWR on or about July 1st of the preceding calendar year for which the charges are payable. Zone 7 shall invoice the Contractor on or

about September 1st preceding the November 1st for which the surcharge shall be due. DWR may make subsequent adjustments to its statement of charges. Accordingly, Zone 7 will make revisions to said invoice by issuing an additional invoice or refund as appropriate.

If, at some future date, the Dougherty Valley Service Area is annexed to Zone 7 and Zone 7 levies the Tax Override Charges directly on Contractor's customers in the Dougherty Valley Service Area, the aforementioned surcharge shall automatically terminate and be of no further force and effect.

6. Other Charges. Zone 7 and Contractor acknowledge and agree that from time to time there may arise a need for the imposition of additional payments to ensure that the Dougherty Valley Service Area bears all costs associated with the provision of treated water thereto under this Amendment. However, Zone 7 shall not impose upon Contractor any payments or charges not imposed upon Zone 7's Other Contractors for any purposes other than to recover costs associated with delivering water to the Dougherty Valley Service Area pursuant to this Amendment.

E. ALTERNATIVE DELIVERY METHODS

If a court of competent jurisdiction determines, in a judgment that cannot be appealed, that Zone 7 cannot participate in water delivery to the Dougherty Valley Service Area pursuant to the terms of this Amendment, Zone 7 and Contractor agree to use their best efforts to negotiate a contract, pursuant to which Zone 7 can convey water to Contractor for service to the Dougherty Valley Service Area. To limit the possibility of any interruption of service to the Dougherty Valley Service Area, either Zone 7 or Contractor may request such negotiations to commence prior to the conclusion of any such litigation. Zone 7 and Contractor agree to negotiate the contract in accordance with the principles listed below:

1. Insofar as possible, the contract shall contain all of the same terms and condition as this Amendment, except that Zone 7 would transfer to Contractor (i) ownership the 6,080 acre-feet of water entitlement, (ii) the Zone 7's rights and obligations pursuant to the Semitropic Water Storage District contract, (iii) water in storage in Semitropic, (iv) Zone 7's interest in any security instrument relating to the provision of water to the Dougherty Valley Service Area and (v) any remaining funds paid to Zone 7 by Contractor for the purpose of Zone 7 making payments to Semitropic.
2. Upon such transfer, Contractor would become solely responsible for all costs and other obligations associated with the entitlements, storage rights and service to the Dougherty Valley Service Area.
3. The parties agree to cooperate in good faith to obtain all administrative and regulatory approvals necessary for the transfer, and Contractor would pay all costs incurred by both parties in executing such a transfer.
4. Contractor would contract with Zone 7 to provide the services of water wheeling, treatment, seasonal storage and distribution through the Zone 7 system at a mutually agreeable price.
5. Contractor would not increase its use of the Main Groundwater Basin in excess of 1,400 AF of seasonal storage without the prior approval of Zone 7.
6. Contractor, upon consulting with Zone 7, would have the authority to determine the size of Semitropic Storage required for service to the Dougherty Valley Service Area.
7. Zone 7 would administer the DWR State Water Project contracts on behalf of DSRSD, as well as operations and conveyance of Semitropic Storage and the Water Entitlements.
8. Contractor will neither seek to materially alter its contractual relationship with Zone 7 nor terminate its Water Supply Contract with Zone 7 for the purposes of becoming an independent water purveyor for 30 years or until the specific termination date

contained in the existing Water Supply Contract between Zone 7 and DSRSD, whichever is longer.

Appendix C

Water System Expansion Program – Project Summaries

Expansion Project Summary Report

Project	Administrative & Engineering Building - Sinking Fund (Fund 73)
Project ID:	SP11
Strategic Plan Priority	1.3
Project Description	In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to this sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.
Justification	<p>This sinking fund will cover the cost to purchase the new Administrative & Engineering Building after Zone 7's 15-year lease is completed.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	ASD Administrative Services Division
Operating Impact	None.
In Service Date	Month: June Year: 2019
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$4,428,000

Expansion Project Summary Report

Project	Administrative & Engineering Building Lease (Water System)
Project ID:	SP1
Strategic Plan Priority	1.3
Project Description	<p>A new office building has been constructed for administrative and engineering staff. The new building has a larger Board Room for public meetings. It is located closer to operations (treatment plants), and is more centrally located for employees and Valley residents. The cost is based on "Build to Suit" option and includes lease payments. In addition to the scheduled lease payment for the new building, \$696,000 plus interest per year will be contributed to a sinking fund in order to cover the purchase cost of the building after the lease payments have been completed in FY 2018/19.</p>
Justification	<p>Engineering, administrative and operations staff were at different locations. This project has brought administrative and engineering at one site and brings both closer to operations. This project also accommodates future expansion. It reduces overall agency travel times, improves communications and staff productivity.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	ASD Administrative Services Division
Operating Impact	<p>Provides for more efficient and effective operations of administrative and engineering functions. Provides for secure Emergency Operations Center (EOC), as the new building meets strictest building and safety codes.</p>
In Service Date	Month: June Year: 2019
Source of Funds	Fund 72 Water Rates 56% Fund 73 Connection Fees 44%
Total Project Cost	\$11,538,000

Expansion Project Summary Report

Project	Arroyo Mocho Diversion Facility Coordination & Implementation
Project ID:	COL9
Strategic Plan Priority	1.1,1.4,
Project Description	<p>This project is located along Arroyo Mocho near Cope Lake and Lake H. The diversion structure would consist of a concrete foundation within Arroyo Mocho equipped with a diversion facility (e.g., Obermeyer gates or an inflatable rubber dam), along with other appurtenances necessary to accomplish water management in an environmentally sensitive way. The project would also include pipelines and other equipment necessary to control the diversion facility and move water into the chain of lakes. Hansen Aggregates is responsible for designing, permitting, and constructing the diversion facility at no cost to Zone 7; therefore, the costs below only reflect Zone 7 staff time to assist Hanson, as necessary, and costs for other necessary facilities (e.g., such as SCADA).</p>
Justification	<p>Completion of this project is necessary to allow Zone 7 to manage water as described in the Specific Plan for Livermore-Amador Valley Quarry Area Reclamation.</p> <p>Origin: Livermore-Amador Valley Quarry Area Reclamation Specific Plan, 2006 Stream Management Master Plan</p>
Responsible Section	IP Integrated Planning
Operating Impact	Adds new O&M and repair & replacement expenses for Zone 7.
In Service Date	Month: October Year: 2014
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$871,000

Expansion Project Summary Report

Project	Arroyo Mocho Low Flow Crossings
Project ID:	COL8
Strategic Plan Priority	1.4,1.1
Project Description	This project provides stream channel improvements at two existing driveway crossings on the Arroyo Mocho off Mines Road to facilitate future artificial flow increases associated with the filling of the Chain of Lakes.
Justification	<p>Zone 7 plans to use Lakes H and I for artificial groundwater recharge. This initial Chain of Lakes operation requires Zone 7 to increase its typical releases from 20 cubic feet per second (cfs) to up to 50 cfs; however the higher flows will preclude access of two residences located across the stream from their Mines Road driveway entrances. These improvements are necessary to route a substantial portion of the artificial flows below the crossing surface to facilitate vehicular access to the residences. The project is an identified mitigation in the Mitigation Monitoring and Reporting Program (MMRP) for the Arroyo Mocho Diversion Project.</p> <p>Origin: Arroyo Mocho Diversion Project Mitigation Monitoring and Reporting Program, 2006 Stream Management Master Plan</p>
Responsible Section	GP Groundwater Protection
Operating Impact	Increases water supply reliability. Increases channel maintenance costs.
In Service Date	Month: October Year: 2014
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$1,185,000

Expansion Project Summary Report

Project	Bay Area Regional Desalination Project - Planning
Project ID:	WP21
Strategic Plan Priority	1.1,1.5
Project Description	<p>The Bay Area Regional Desalination Project (BARDP) is a joint effort with the San Francisco Public Utilities Commission (SFPUC), Santa Clara Valley Water District (SCVWD), East Bay Municipal Utility District (EBMUD), and Contra Costa Water District (CCWD) to develop a regional desalination facility. The facility would likely be located in eastern Contra Costa County with water wheeled to Zone 7 through a new intertie with EBMUD. The total project cost presented below includes Zone 7's share of estimated costs for the preliminary design and environmental permitting process; it assumes that the five-agency partnership moves forward with the BARDP after completion of the ongoing site-specific analysis.</p>
Justification	<p>For Zone 7, the BARDP is a potential source of future water supply being evaluated along with other water supply options. The BARDP offers the benefit of a drought-resistant and high-quality water supply that reduces reliance on the SWP and diversifies Zone 7's existing water supply mix. Zone 7 can potentially receive up to 5,600 acre-foot of water every year, or only during normal/wet years, from the BARDP starting sometime between 2020 and 2025</p> <p>Origin: 2010 Urban Water Management Plan, 2011 Water Supply Evaluation Report</p>
Responsible Section	IP Integrated Planning
Operating Impact	Increased water reliability.
In Service Date	Month: December Year: 2015
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$931,000

Expansion Project Summary Report

Project	Bay Delta Conservation Plan (Zone 7)
Project ID:	WP17
Strategic Plan Priority	1.7
Project Description	This project covers Zone 7's internal staff time and legal costs associated with participating in the development of the Bay Delta Conservation Plan (BDCP). The BDCP is a Habitat Conservation Plan/Natural Community Conservation Plan that provides a more flexible basis for endangered species protection. This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only..
Justification	Develops a long-term plan for the Delta that ensures water supply reliability in the future through continued use of the Delta as a conveyance system for water imported from the Sierra Nevada. The Delta as a conveyance is threatened by fragile levees, seismic risk, climate change and uncertain environmental regulations. Origin: Capital Improvement Program
Responsible Section	OGM Office of the General Manager
Operating Impact	Improved reliability.
In Service Date	Month: June Year: 2017
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$858,000

Expansion Project Summary Report

Project	Bernal Wells 1 & 2 and Pipeline
Project ID:	W39
Strategic Plan Priority	1.4,1.8
Project Description	<p>This project is Phase 4 of the Well Master Plan, and consists of two new municipal water supply wells and additional pipelines. The estimated project cost includes planning, site testing, test well/monitoring well, land acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work. The costs also include construction of a new pipeline, which is required Phase 4 to connect the new wells to Zone 7's existing distribution system.</p>
Justification	<p>Additional municipal water supply wells are required to maximize existing local storage in the Livermore Valley Groundwater Basin during droughts and facility outages. Maximizing local storage during drought and facility outages allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, dissolved salt build-up/removal.</p> <p>Origin: 2003 Well Master Plan and 2011 WSE</p>
Responsible Section	FE Facilities Engineering
Operating Impact	System reliability.
In Service Date	Month: April Year: 2030
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$49,070,000

Expansion Project Summary Report

Project	Busch-Valley Well 1
Project ID:	W38
Strategic Plan Priority	1.4,1.8
Project Description	<p>This project is Phase 3 of the Well Master Plan, and consists of one new municipal water supply well and additional pipelines. The estimated project cost includes planning, land acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work. The costs also include construction of a new pipeline, which is required for Phase 3 to connect the new well to Zone 7's existing distribution system.</p>
Justification	<p>Additional municipal water supply wells are required to maximize existing local storage in the Livermore Valley Groundwater Basin during droughts and facility outages. Maximizing local storage during drought and facility outages allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, and dissolved salt build-up/removal.</p> <p>Origin: 2003 Well Master Plan and 2011 WSE</p>
Responsible Section	FE Facilities Engineering
Operating Impact	System reliability.
In Service Date	Month: April Year: 2025
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$15,940,000

Expansion Project Summary Report

Project	Capital Improvement Program Management
Project ID:	SP13
Strategic Plan Priority	1.3
Project Description	Ongoing program management of the Capital Improvement Program (CIP) including annual report preparation, Zone 7 labor and other CIP related efforts.
Justification	Provides for better tracking of program management costs. Origin: Capital Improvement Program
Responsible Section	ASD Administrative Services Division FE Facilities Engineering
Operating Impact	None
In Service Date	Ongoing
Source of Funds	Fund 50 Flood Control/General Fund 3% Fund 72 Water Rates 20% Fund 73 Connection Fees 75% Fund 76 Flood Protection and Special Drainage Area 2%
Total Project Cost	\$5,103,000

Expansion Project Summary Report

Project	Cawelo Groundwater Banking Program
Project ID:	WP11
Strategic Plan Priority	1.1,1.8
Project Description	<p>On June 21, 2006, the Zone 7 Board of Directors approved an agreement with the Cawelo Water District (a member unit of Kern County Water Agency) for a water banking and exchange program. The banking program will increase Zone 7's dry-year water supply by up to 10,000 acre-feet per year. Zone 7 will be able to store up to 120,000 acre-feet of water within the Cawelo Water District area. Cawelo financed this program by a \$21.55 million sale of Certificates of Participation (COP) on August 15, 2006. The COPs run through 2035 with an interest rate of 4% that increases to 4.67% by 2035. By agreement, Zone 7 will reimburse Cawelo for the COP annual debt service of about \$1.3 million per year.</p>
Justification	<p>Increases reliability by providing additional water supplies during drought years.</p> <p>Origin: 1999 Water Supply Plan</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increased operational reliability.
In Service Date	Month: June Year: 2035
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$38,515,000

Expansion Project Summary Report

Project	Chain of Lakes Facilities and Improvements - Water Supply
Project ID:	COL10
Strategic Plan Priority	1.2,1.4,1.1,2.7
Project Description	<p>This project consists of the design and construction of elements of the Chain of Lakes identified and recommended for water supply needs by near-term and long-term planning efforts completed as part of the Chain of Lakes Program Management and Planning project, or projects required to operate and maintain the Chain of Lakes for water supply purposes. Examples of projects that could be completed under this project include, but are not limited to, diversion structure-related improvements, pump stations, pipelines, flow meters, water level meters, recharge monitoring piezometers, fencing, access roads, and slope re-grading and landscaping. Projects related to Flood Control are included in the CIP as separate projects (not part of this project).</p>
Justification	<p>The Chain of Lakes are a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 to 30 years for water management purposes. More specifically, these series of lakes will allow Zone 7 to reduce evaporative losses and implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, and enhance artificial recharge and flood protection activities. All of these activities are necessary to providing a reliable supply of high quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the Chain of Lakes for water supply after dedication.</p> <p>Origin: 2006 Stream Management Master Plan, 2011 Water Supply Evaluation Report</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increase of water supply reliability. Increased O&M costs.
In Service Date	Month: December Year: 2035
Source of Funds	Fund 72 Water Rates 30% Fund 73 Connection Fees 70%
Total Project Cost	\$77,947,000

Expansion Project Summary Report

Project	Chain of Lakes Master Planning
Project ID:	COL6
Strategic Plan Priority	1.1
Project Description	<p>This project consists of the near-term and long-term management and planning necessary to integrate the Chain of Lakes into Zone 7's water supply system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley. Program elements may include coordinating with the California High Speed Rail Authority. Master planning will incorporate the recommendations from other Zone 7 planning efforts, including the Stream Management Master Plan and the Water System Master Plan update.</p>
Justification	<p>The Chain of Lakes are a series of gravel mining pits that will be dedicated to Zone 7 over the next 20 to 30 years for water management purposes. More specifically, these series of lakes will allow Zone 7 to reduce evaporative losses and implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, and enhance artificial recharge and flood protection activities. All of these activities are necessary to providing a reliable supply of high quality water and an effective flood control system to the Livermore-Amador Valley. This project will allow Zone 7 to design and implement the projects necessary for Zone 7 to use the Chain of Lakes for water supply after dedication.</p> <p>Origin: 2006 Stream Management Master Plan, 2011 Water Supply Evaluation Report</p>
Responsible Section	IP Integrated Planning
Operating Impact	Enhances Zone 7's ability to manage water.
In Service Date	Month: June Year: 2013
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$6,175,000

Expansion Project Summary Report

Project	Chain of Lakes Well 5
Project ID:	W37
Strategic Plan Priority	1.4,1.8
Project Description	This project is Phase 2A of the Well Master Plan, and consists of one new municipal water supply well and additional pipelines. The estimated project cost includes planning, easement acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work.
Justification	<p>Additional municipal water supply wells are required to maximize existing local storage in the Livermore Valley Groundwater Basin for use during droughts and facility outages. This allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, dissolved salt build-up/removal.</p> <p>Origin: 2003 Well Master Plan and 2011 WSE</p>
Responsible Section	FE Facilities Engineering
Operating Impact	System reliability.
In Service Date	Month: April Year: 2020
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$8,240,000

Expansion Project Summary Report

Project	Chain of Lakes Wells 3 & 4
Project ID:	W36
Strategic Plan Priority	1.4,1.8
Project Description	This project is Phase 2 of the Well Master Plan, and consists of two new municipal water supply wells and additional connecting pipelines. The estimated project cost includes planning, land acquisition, well design and drilling, facility design and construction, pipeline additions, and miscellaneous site work.
Justification	<p>Additional municipal water supply wells are required to maximize existing local storage in the Livermore Valley Groundwater Basin for use during droughts and facility outages. This allows Zone 7 to meet projected water demands, even during worse-case drought conditions, as established in Zone 7 Resolutions 04-2662 and 06-2786. These wells will also provide Zone 7 more control over groundwater levels, groundwater flow, and dissolved salt build-up/removal.</p> <p>Origin: 2003 Well Master Plan and 2011 WSE</p>
Responsible Section	FE Facilities Engineering
Operating Impact	System reliability.
In Service Date	Month: April Year: 2020
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$16,220,000

Expansion Project Summary Report

Project	Construction of Three Dual Media Filters to Expand PPWTP
Project ID:	PP62
Strategic Plan Priority	1.11
Project Description	<p>The 8 mgd Patterson Pass Ultrafiltration Plant (UF Plant) was constructed as a temporary plant to enable Zone 7 to assess membranes for a future larger plant expansion. This project includes construction of three new dual media filters similar to the filtration system at the existing Patterson Pass conventional plant (PPWTP). The capacity provided by two of these filters will make the temporary 8 mgd capacity of the UF filtration permanent and the third filter will provide an additional mgd of filtration capacity to allow the UF clarifier to be fully utilized for its design capacity of 12 mgd. The project will also include filter backwash/washwater system expansion.</p>
Justification	<p>Under normal operations, there is extra capacity available for the next few years before demand growth catches up. It would be advantageous to use this near-term window to make the temporary UF capacity permanent by adding new conventional filters. In addition to power, chemical and maintenance costs, the UF plant is costing Zone 7 approximately \$350,000 annually to replace membrane modules. As the UF plant uses proprietary membrane modules, Zone 7 is potentially vulnerable to excessive cost increases and/or obsolescence of the membrane module. The additional filtration capacity provided by the filters will also provide an additional 4 mgd of surface water treatment capacity for anticipated future demands.</p> <p>Origin: 2000 Treated Water Facilities Master Plan, 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2011 PPWTP Expansion Feasibility Evaluation (in progress)</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increased operational reliability and production capacity, extension of filter systems service life.
In Service Date	Month: May Year: 2017
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$9,190,000

Expansion Project Summary Report

Project	CUWA Membership
Project ID:	WP15
Strategic Plan Priority	1.7
Project Description	<p>This expenditure is for the California Urban Water Agencies (CUWA) annual membership dues (\$60,000/year) and various Zone 7 staff members' participation in four standing CUWA committees: 1. Technical Advisory & Oversight, 2. Water Quality, 3. Water Conservation, and 4. Planning.</p> <p>This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>CUWA membership dues will complement on-going Delta studies, which are intended to maintain and improve Delta water quality and reliability, even as Delta exports increase.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increased reliability and water quality.
In Service Date	Ongoing
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$1,283,000

Expansion Project Summary Report

Project	Delta Habitat Conservation and Conveyance Program
Project ID:	WP19
Strategic Plan Priority	1.7
Project Description	<p>The purpose of the Delta Habitat Conservation and Conveyance Program (DHCCP) is to develop alternatives for reliably conveying State Water Project (SWP) and Central Valley Project (CVP) water across or around the Delta in an environmentally sound manner. The information produced by the DHCCP will be incorporated into the Bay Delta Conservation Plan.</p> <p>This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>The Delta Conveyance Facility is needed to restore SWP Reliability to previously anticipated levels (about 75% long-term average yield) of SWP Contract Table A amounts. Currently, Endangered Species Act (State and Federal) concerns have limited SWP diversion exports. The Delta Conveyance Facilities will reduce the conflict between Delta exports and Delta habitat values. Additionally, the Delta Conveyance Facility will improve SWP water quality to Zone 7. There will be water quality improvements in salinity (TDS), toxics, disinfection by-products, etc.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	OGM Office of the General Manager
Operating Impact	Increased SWP reliability and improved water quality.
In Service Date	Ongoing
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$872,000

Expansion Project Summary Report

Project	Delta Outreach Program
Project ID:	WP18
Strategic Plan Priority	1.7
Project Description	<p>Public outreach campaign to educate San Francisco Bay Area residents and leaders of the region's reliance on the Delta for water supply reliability and quality.</p> <p>This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>Develops San Francisco Bay Area support for Delta improvements to meet the challenges of the Delta as a conveyance system to import water from the Sierra Nevada. The system is threatened by fragile levees, seismic risk, climate change and uncertain environmental regulations.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	OGM Office of the General Manager
Operating Impact	Improved reliability.
In Service Date	Month: June Year: 2018
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$378,000

Expansion Project Summary Report

Project	DWR Land Acquisition adjacent to PPWTP		
Project ID:	PP72		
Strategic Plan Priority	1.3,1.11		
Project Description	The Department of Water Resources (DWR) has available land adjacent to the PPWTP site. This project is to acquire the DWR land for locating treatment facilities.		
Justification	The Department of Water Resources (DWR) has available land adjacent to the PPWTP site. This project is to acquire the DWR land for locating treatment facilities. Origin: 2011 Facilities Engineering Staff Evaluation		
Responsible Section	FE Facilities Engineering		
Operating Impact	Increased operational and maintenance flexibility for plant improvements and expansion.		
In Service Date	Month: June Year: 2013		
Source of Funds	Fund 72	Water Rates	70%
	Fund 73	Connection Fees	30%
Total Project Cost	\$570,000		

Expansion Project Summary Report

Project	El Charro Pipeline Phase 2
Project ID:	W42
Strategic Plan Priority	1.1,1.4,1.8
Project Description	This project includes planning, land/easement acquisition, design, and construction of a pipeline that loops the transmission system in the vicinity of the Chain of Lakes wells.
Justification	<p>Phase 2 of the El Charro Pipeline is part of the Well Master Plan (WMP). This project has a different timeline than the associated wells planned as part of the WMP because it adds additional looping to Zone 7's transmission system and improves system operation by helping to mitigate potential stagnant water issues, while reducing the frequency of flushing activities.</p> <p>Origin: 2003 Well Master Plan</p>
Responsible Section	FE Facilities Engineering
Operating Impact	System reliability.
In Service Date	Month: April Year: 2018
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$7,580,000

Expansion Project Summary Report

Project	Expansion Program Management (ISA interest costs)
Project ID:	SP14
Strategic Plan Priority	1.11
Project Description	Ongoing program management of the Water System Expansion Program, including interest paid on the Installment Sale Agreement (ISA).
Justification	Provides for better tracking of program management costs. Origin: Capital Improvement Program
Responsible Section	ASD Administrative Services Division
Operating Impact	None
In Service Date	Month: January Year: 2014
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$1,566,000

Expansion Project Summary Report

Project	Fixed Cost of Water Entitlement
Project ID:	WP2
Strategic Plan Priority	1.1,1.8,
Project Description	Payment of a portion of the Water System Revenue Bond, Delta Water Charge and Transportation Capital Cost Component for 27,619 acre-feet of additional State Water Project (SWP) entitlements, purchased via Amendments 20, 21, 23, and 25 to Zone 7's SWP contract. These costs are paid by Fund 51 and Fund 73 on a sliding scale. The sliding scale is determined by the percent of new connections remaining out of the total connections projected between 1999 and build-out. Cost shown here are Fund 73's cost only.
Justification	<p>These purchases were required to meet Zone 7's long-term water supply needs, and thus allow Zone 7 to continue to meet its treated and untreated water customer demands. Expansion will pay declining amount of the fixed SWP costs associated with water acquisitions that have not been used.</p> <p>Origin: Amendments 19, 20, 21, 23, and 25 to Zone 7's water supply contract with DWR</p>
Responsible Section	ASD Administrative Services Division
Operating Impact	Increased operation and maintenance.
In Service Date	Month: June Year: 2035
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$11,486,540

Expansion Project Summary Report

Project	Fourth Contractor's Share of the SBA - Sinking Fund
Project ID:	WP14
Strategic Plan Priority	1.1,1.8
Project Description	Zone 7 contracted to purchase 22,000 AFA of previously-unallocated capacity in the South Bay Aqueduct under Amendments 19 and 20 to its contract with the Department of Water Resources. In addition to the schedule payment for the 22,000 AFA, Zone 7 contributes annually into this sinking fund (beginning FY 2004/05 until FY 29/30), in order to cover contractual costs from the year 2030 to 2035. The annual contributions to the sinking fund are funded by connection fees.
Justification	This sinking fund is to cover contractual costs from the year 2030 to 2035. Origin: Amendments 19, 20, 21, 23, and 25 to Zone 7's water supply contract with DWR
Responsible Section	ASD Administrative Services Division
Operating Impact	None.
In Service Date	Month: June Year: 2030
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$12,734,000

Expansion Project Summary Report

Project	Fourth Contractor's Share of the SBA (capital costs)
Project ID:	WP7
Strategic Plan Priority	1.2,1.8
Project Description	Zone 7 contracted to purchase 22,000 AFA of previously-unallocated capacity in the South Bay Aqueduct under Amendments 19 and 20 to its water supply contract with DWR. This project reflects Fund 73's share of the Water System Revenue Bond and Transportation Capital Cost Component charges associated with this capacity per Amendments 19 and 20. A separate fund (Fund 51) pays for the Transportation Minimum (OMPR) Cost Component of this capacity.
Justification	<p>Purchase of this unallocated share of the SBA was to allow Zone 7 to meet the water supply and peaking needs of new customers.</p> <p>Origin: Amendments 19 and 20 to Zone 7's water supply contract with DWR.</p>
Responsible Section	ASD Administrative Services Division
Operating Impact	The purchases were required to meet Zone 7's long-term water supply needs, and thus allow Zone 7 to continue to meet its treated and untreated water customer demands.
In Service Date	Month: June Year: 2035
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$73,193,000

Expansion Project Summary Report

Project	Groundwater Management Plan/SNMP Update
Project ID:	GW10
Strategic Plan Priority	1.1,1.2,1.4,1.6,1.13
Project Description	<p>This project updates the 2005 Zone 7 Groundwater Management Plan and its incorporated 2004 Salt Management Plan to satisfy the new requirements of the State's Recycled Water Policy. It develops plans for a salt nutrient management plan (SNMP) and constituents-of-emerging-concern (CEC) monitoring. The project also includes updating and recalibrating the Agency's numeric groundwater model, and then using it to evaluate the sustainability of the various water supply "portfolios" described in the 2011 Water System Evaluation with respect to groundwater levels and TDS concentrations. It also reviews the effectiveness of the Mocho Groundwater Demineralization Plant to mitigate the existing salt loading and assesses the options available for mitigating projected future salt loading. Public and agency outreach is a major component of this effort.</p>
Justification	<p>The updating of the GMP to include nutrient management and CEC monitoring is mandated by the Water Board's new Recycled Water Policy (SWRCB Res No. 2009-0011). Also, the WSE only grossly estimated the potential groundwater impacts of the various water supply "portfolios" being considered for buildout conditions. A more in-depth analysis is needed to assess the areal groundwater sustainability, and to refine plans for future salt mitigating facilities.</p> <p>Origin: State Water Resources Control Board Recycled Water Policy, 2011 Water Supply Evaluation Report</p>
Responsible Section	GP Groundwater Protection
Operating Impact	<p>This project itself does not impact operations because it is a planning only project. However, its implementation will likely require operations and maintenance of additional groundwater demineralization plants and monitoring wells.</p>
In Service Date	Month: April Year: 2014
Source of Funds	Fund 72 Water Rates 70% Fund 73 Connection Fees 30%
Total Project Cost	\$1,489,000

Expansion Project Summary Report

Project	High-Efficiency Toilet Rebate Program
Project ID:	PR1
Strategic Plan Priority	1.6
Project Description	<p>This program encourages the replacement of existing high-water-using toilets with high-efficiency toilets (HET) that use 1.28 gallons or less per flush in residential dwelling by offering homeowners a \$75- \$125 rebate for installation of a HET. This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>This program replaces existing high-water-using toilets with HETs. The estimated water savings from an HET is about 48 gallons/day.</p> <p>The toilet rebate program is a water conservation BMP that Zone 7 implements in conjunction with its retailing water agencies.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	OGM Office of the General Manager
Operating Impact	Long-term water savings and less reliance on potable water supplies.
In Service Date	Month: June Year: 2018
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$554,000

Expansion Project Summary Report

Project	High-Efficiency Washing Machine Rebate Program
Project ID:	PR3
Strategic Plan Priority	1.6
Project Description	<p>This program encourages the purchase and installation of high-efficiency clothes washers by offering water customers a \$75 water rebate. Regulations require all washers to be water and energy-efficient.</p> <p>This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>Studies show that approximately 20% of a household's water is used by washing machines. High-efficiency washing machines use about 40% less water per load. This could lead to an annual water savings of approximately 5,100 gallons per machine.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	OGM Office of the General Manager
Operating Impact	Long-term water saving and less reliance on potable water supplies.
In Service Date	Month: July Year: 2022
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$1,378,000

Expansion Project Summary Report

Project	Lakes H, I and Cope Facility Planning
Project ID:	COL13
Strategic Plan Priority	1.6,1.1,2.2,2.4,2.7
Project Description	This project will plan the near-term operations and facilities necessary to integrate Lakes H, I, and Cope into Zone 7's water supply system, Zone 7's regional flood protection system, and into various general plans, specific plans, on-going construction, or other activities in the Livermore-Amador Valley.
Justification	<p>Zone 7 already owns Lakes I and Cope, and anticipates receiving Lake H in October 2014 when Hanson's lease expires with Pleasanton Gravel Company. These lakes can be used in the near-term for water management purposes, which will allow Zone 7 to reduce evaporative losses and implement mitigative measures for salt loading in the Livermore Valley Groundwater Basin, and enhance artificial recharge and flood protection activities. These near-term activities are especially vital in light of the current crisis in the Sacramento-San Joaquin Delta.</p> <p>Origin: 2006 Stream Management Master Plan, 2011 Water Supply Evaluation Report</p>
Responsible Section	IP Integrated Planning
Operating Impact	Enhances Zone 7's ability to manage water.
In Service Date	Month: June Year: 2013
Source of Funds	Fund 50 Flood Control/General Fund 22% Fund 72 Water Rates 15% Fund 73 Connection Fees 35% Fund 76 Flood Protection and Special Drainage Area 28%
Total Project Cost	\$310,000

Expansion Project Summary Report

Project	New Water Treatment Plant Transmission Pipeline
Project ID:	DS49
Strategic Plan Priority	1.11
Project Description	<p>This project is a transmission pipeline from either the Altamont or Patterson Pass Water Treatment Plant (WTP) site to Zone 7's existing transmission system. The connection point is anticipated to be at the Altamont Pipeline - Livermore Reach near Vasco Road. Project timing is tied to the need to expand the WTP, which may occur sometime between 2020 and 2025 pending the ability to replace the ultra-filtration unit at the Patterson Pass WTP with a conventional unit that also provides additional capacity.</p>
Justification	<p>The existing pipeline from Patterson Pass WTP does not have the capacity to handle maximum production from an expanded treatment plant or, in the case of a future Altamont WTP, there is no existing pipeline connection.</p> <p>Origin: 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2011 PPWTP Expansion Feasibility Evaluation</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Provides needed water system transmission capacity and operational flexibility.
In Service Date	Month: July Year: 2025
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$36,560,000

Expansion Project Summary Report

Project	PPWTP Maintenance Yard and Building Improvements
Project ID:	PP67
Strategic Plan Priority	1.3
Project Description	This project provides space for a maintenance yard and building that includes: 1) additional outdoor material storage and stockpile areas, 2) office building including amenities such as lunch area, showers/restrooms, locker room, and file storage, 3) storage area for equipment that needs to be stored in a climate controlled area, 4) warehouse storage and work areas for various maintenance disciplines such as electrical, SCADA/instrumentation, mechanical, general/carpentry, and mechanics, and, 5) covered areas for maintenance vehicles and various equipment.
Justification	<p>With increased reliance on in-house staff for facility maintenance responsibilities, Zone 7 has limited space for personnel, storage of spare parts, maintenance vehicles, maintenance gear, and files. Providing adequate space for personnel will improve work efficiency. Protecting spare parts and/or maintenance vehicles extends the useful life of facilities and allows Zone 7 to have the means readily available to deal with maintenance issues as they come</p> <p>Origin: ESR No. Z7-11-01, 2011 PPWTP Expansion Feasibility Evaluation (in progress)</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Provides operational and maintenance efficiency.
In Service Date	Month: December Year: 2021
Source of Funds	Fund 72 Water Rates 70% Fund 73 Connection Fees 30%
Total Project Cost	\$2,070,000

Expansion Project Summary Report

Project	Reliability Intertie						
Project ID:	WP24						
Strategic Plan Priority	1.5						
Project Description	Zone 7 plans to investigate the feasibility of a reliability intertie with another major water agency (e.g., EBMUD). The cost estimates for this project are based on a 5.6-mile, 24-inch diameter pipeline that connects Zone 7's transmission system with another agency. The cost estimate assumes that grants and/or others fund 25% of Zone 7's share of the total project costs.						
Justification	<p>Approximately 90% of Zone 7's long-term average water supplies are conveyed to its service via the South Bay Aqueduct (SBA); moreover, access to Zone 7's non-local storage in Semitropic and Cawelo during droughts is also dependent on the SBA. Consequently, an outage of the SBA or major disruptions of the Sacramento-San Joaquin Delta (Delta) would prevent Zone 7 from access to most of its water supplies, which could potentially have catastrophic results to Zone 7's service area. According to DWR's Delta Risk Management Study Phase 1 Report, there is a 62% chance of a major earthquake in the vicinity of the Delta Region sometime between 2003 and 2032.</p> <p>In such an event, Zone 7 would only have access to groundwater and a portion of supplies in Lake Del Valle; these supplies may not be able to meet indoor use depending on hydrologic conditions when such an event occurs. This project will help mitigate these risks by constructing a new intertie with another major water agency that would provide additional means of acquiring water supplies during such an event.</p> <p>Origin: 2011 Water Supply Evaluation Report</p>						
Responsible Section	IP Integrated Planning						
Operating Impact	Increases reliability. Adds additional renewal/replacement costs.						
In Service Date	Month: October Year: 2021						
Source of Funds	<table> <tr> <td>Fund 72</td> <td>Water Rates</td> <td>30%</td> </tr> <tr> <td>Fund 73</td> <td>Connection Fees</td> <td>70%</td> </tr> </table>	Fund 72	Water Rates	30%	Fund 73	Connection Fees	70%
Fund 72	Water Rates	30%					
Fund 73	Connection Fees	70%					
Total Project Cost	\$24,960,000						

Expansion Project Summary Report

Project	Second Groundwater Demineralization Facility
Project ID:	W25
Strategic Plan Priority	1.1, 1.2 1.4, 1.6,1.12
Project Description	<p>Design and construction of a second groundwater demineralization facility utilizing reverse osmosis technology. The anticipated capacity for this facility is 6.2 mgd of delivered water with lower total dissolved solids (TDS) and hardness, and will remove up to an additional 3,000 tons of salt per year. The combined salt removal capacity of the first two demineralization facilities will be about 6000 tons per year. The location of this proposed facility is anticipated to be at the Zone 7 Parkside building location. Timing and location of this facility may be revised in the future depending upon the performance of the Mocho Groundwater Demineralization Plant and additional analysis and study planned as part of the Groundwater Management Plan Update, which will include an update to the Salt and Nutrient Management Plan. The cost estimate for this facility has been revised based on the cost of the Mocho Groundwater Demineralization Plant.</p>
Justification	<p>This project supports both the Water Quality Management and the Salt Management Programs adopted by the Zone 7 Board of Directors. This project would improve delivered water quality to Zone 7's retailers and mitigate salt build-up in the groundwater basin by exporting the salts out of the basin via the LAVWMA pipeline.</p> <p>Origin: 2003 Water Quality Management Program, Salt Management Plan</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increased operations and maintenance costs estimated at up to \$1.5 to \$2 million per year
In Service Date	Month: Year: 2028
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$65,380,000

Expansion Project Summary Report

Project	Semitropic Stored Water Recovery Unit
Project ID:	WP12
Strategic Plan Priority	1.1,1.8
Project Description	<p>Semitropic Water Storage District and Zone 7 have finalized the amendment to the Semitropic Banking Program agreement that will provide for additional recovery capacity. On February 18, 2004, the Zone 7 Board approved Zone 7's participation in its proportional share (6.5%) of the Stored Water Recovery Unit (SWRU) project. Under the proposed amendment, Zone 7's minimum recovery capacity will increase by 3,250 AFA (from 5,850 AFA to 9,100 AFA).</p> <p>Zone 7's cost share of the SWRU project will be about \$1.4 million (not including interest). The total cost of the SWRU project consists of about \$10.5 million for a 120-inch pipeline from Semitropic to the California Aqueduct and about \$5.5 million for new wells and conveyance enhancements to the Semitropic water system. The \$10.5 million pipeline portion of the SWRU project will be financed by 30-year bonds (5.266% bond sale interest rate), and debt service will be passed on to Zone 7 as annual payments.</p>
Justification	<p>Increase reliability by providing additional water supplies during drought years.</p> <p>Origin: 2004 Agreement between Zone 7 and Semitropic Water Storage District</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increased operational reliability.
In Service Date	Month: Year:
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$1,536,000

Expansion Project Summary Report

Project	South Bay Aqueduct Enlargement Project - Sinking Fund
Project ID:	SP12
Strategic Plan Priority	1.1,1.11
Project Description	<p>SBA improvements by the California Department of Water Resources (DWR) that will convey for Zone 7 an additional 130 cubic feet per second (cfs) through Reach 1 and 80 cfs through Reaches 2 through 4. Improvements include an expanded South Bay Pumping Plant, third (parallel) Brushy Creek Pipeline, raised linings on open channel sections and Patterson Pass Reservoir, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed March 2002), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed March 2002), enlarged Patterson Reservoir, and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road.</p> <p>Note that Amendment No. 24 of Zone 7's water supply contract with DWR allows for debt financing of the SBA Improvement & Enlargement Project by DWR. Annual repayment by Zone 7 began in 2006 and end in 2036. To ensure there is adequate funding available to repay debt after buildout occurs (2025), a sinking fund has been established. This sinking fund will fund the remainder of the debt from 2026 to 2036. The costs shown reflect the actual repayment of the debt plus interest for the enlargement component.</p>
Justification	<p>This sinking fund is necessary to cover contractual costs from 2030 to 2036, during which time there will essentially be minimal on-going water connection fee revenues available because development buildout within the Valley is expected to be nearly complete by this time.</p> <p>Origin: 1999 Water Supply Master Plan, 2001 Water Conveyance Study</p>
Responsible Section	FE Facilities Engineering
Operating Impact	None.
In Service Date	Month: Year: 2030
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$30,297,000

Expansion Project Summary Report

Project	South Bay Aqueduct Enlargement Project
Project ID:	SP5
Strategic Plan Priority	1.1,1.11
Project Description	<p>SBA improvements by the California Department of Water Resources (DWR) that will convey for Zone 7 an additional 130 cubic feet per second (cfs) through Reach 1 and 80 cfs through Reaches 2 through 4. Improvements include an expanded South Bay Pumping Plant, third (parallel) Brushy Creek Pipeline, raised linings on open channel sections and Patterson Pass Reservoir, replacement of 54-inch pipe under I-580 with 78-inch pipe (completed March 2002), application of hydraulically smoother elastomeric polyurethane lining on the Altamont Pipeline (completed March 2002), and new 425 acre-foot (operational storage) raw water reservoir (Dyer Reservoir) located near Dyer Road.</p> <p>Note that Amendment No. 24 of Zone 7's water supply contract with DWR allows for debt financing of the SBA Improvement & Enlargement Project by DWR. Annual repayment by Zone 7 began in 2006 and end in 2036. To ensure there is adequate funding available to repay debt after buildout occurs (2025), a sinking fund has been established. This sinking fund will fund the remainder of the debt from 2026 to 2036. The costs shown reflect the actual repayment of the debt plus interest for the enlargement component of the project.</p>
Justification	<p>Provides for long-term Zone 7 raw water conveyance capacity through planned service-area build-out.</p> <p>Origin: 1999 Water Supply Master Plan, 2001 Water Conveyance Study</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Provides for enhanced long-term water supply, reliability and flexibility.
In Service Date	Month: June Year: 2035
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$306,771,000

Expansion Project Summary Report

Project	SWP Peaking Payment (Lost Hills & Belridge Water Districts)
Project ID:	WP10
Strategic Plan Priority	1.1,1.8
Project Description	Zone 7 agreed to pay Lost Hills & Belridge Water Districts the extra SWP peaking payment when we acquired their SWP Table A amounts based on DWR billings to Kern County Water Agency (and to thus these 2 member agencies). These costs are paid by existing and future users on a sliding scale. The sliding scale is determined by the percent of new connections remaining out of the total connections projected between 1999 and build-out. Cost shown here are Fund 73's cost only.
Justification	Reliability of water supply. Origin: Amendments 20, 21 and 25 to Zone 7's water supply contract with DWR
Responsible Section	ASD Administrative Services Division
Operating Impact	Extra peaking allows Zone 7 to deliver or store additional water when available in the SWP system.
In Service Date	Month: June Year: 2035
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$855,000

Expansion Project Summary Report

Project	Water Conservation Best Management Practices
Project ID:	PR2
Strategic Plan Priority	1.6
Project Description	<p>This project includes the implementation of Water Conservation Best Management Practices as listed in the MOU regarding Urban Water Conservation in California, which includes financial and technical support for our retailers' conservation efforts; support and incentives to improve large landscape water efficiency; and public information and school education programs promoting water conservation.</p> <p>This project is split 70% Fund 52 and 30% Fund 73. The costs reflected here are Fund 73's share only.</p>
Justification	<p>Reduce long-term water demands by promoting Best Management Practices that encourage wise and efficient use of water. Zone 7 studies show that per capita water use in our service area is declining, thus illustrating the effectiveness of our program.</p> <p>Origin: Capital Improvement Program</p>
Responsible Section	OGM Office of the General Manager
Operating Impact	Decreased potable water demands and increase system reliability.
In Service Date	Ongoing
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$600,000

Expansion Project Summary Report

Project	Water Quality Management Program
Project ID:	PR9
Strategic Plan Priority	1.2,1.12
Project Description	<p>A comprehensive water quality management program and implementation plan (Water Quality Management Plan) was completed in April 2003. This plan addressed water quality concerns of our customers and the community. It has led to the Board adoption of policies that address specific water quality goals and objectives that meet internal (Zone 7) and customer and end user needs. This ongoing program is one component of Zone 7's overall master planning process. It helps guide both our water system operations and our CIP over the next 20 years.</p>
Justification	<p>Assists the Zone 7 Board of Directors in determining policies to effectively manage treated and untreated water quality issues. Provides guidance to Zone 7's water operations, helps establish capital facilities needs and design guidelines, and incorporates a funding strategy.</p> <p>Origin: 2003 Water Quality Management Program</p>
Responsible Section	WQ Water Quality
Operating Impact	Provides clear operational guidelines. Potential additional treatment and blending facilities to operate.
In Service Date	Ongoing
Source of Funds	Fund 72 Water Rates 70% Fund 73 Connection Fees 30%
Total Project Cost	\$1,380,000

Expansion Project Summary Report

Project	Water Supply Replacement
Project ID:	WP16
Strategic Plan Priority	1.1,1.4,1.6,1.8
Project Description	An extensive list of potential replacement water supplies, including costs, were identified as part of the 2011 Water Supply Evaluation (2011 WSE) to replace the water supply lost due to a projected reduction in the long-term average yield of State Water Project (SWP) Table A Amounts. Pending the completion of additional analysis and studies recommended in the 2011 WSE, this project could include, but is not limited to, any combination of operational improvements, water conservation, recycled water, desalination, or water transfers.
Justification	<p>Most of the water transfers acquired by Zone 7 since 1999 for future development were Table A water associated with the SWP. The long-term average yield of Table A water used to be 75%; however, the projected yield is now only 60% (DWR's 2009 Reliability Report) due to legal and environmental constraints in the Sacramento-San Joaquin Delta. This project will pay for the additional supply necessary to replace the lost yield associated with the reduced reliability of the SWP.</p> <p>Origin: 2011 Water Supply Evaluation Report</p>
Responsible Section	IP Integrated Planning
Operating Impact	Ensures a reliable supply of high quality water.
In Service Date	Month: June Year: 2025
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$78,570,000

Expansion Project Summary Report

Project	Water System Master Plan
Project ID:	WP20
Strategic Plan Priority	1.1,1.4,1.6,1.8,1.11,1.13
Project Description	<p>The purpose of this update is to develop and recommend a roadmap of major water supply acquisitions and facility improvements necessary to meet water demands through buildout, per adopted general plans in the Livermore-Amador Valley. This “blueprint” for major water system infrastructure will incorporate all of the results of the additional studies recommended as part of the 2011 Water Supply Evaluation (2011 WSE), actual data to support the success of implementing water conservation targets established as part of the Water Conservation Act of 2009, and any revisions made to Zone 7’s reliability policy.</p>
Justification	<p>In response to reduced reliability of the State Water Project, Zone 7 staff completed the 2011 WSE to help identify near- and long-term risks of water supply shortages, low-cost, zero impact actions that will minimize near-term risks of those shortage, and additional studies necessary to assist in refining yields and costs of various water supply options. Due to near-term uncertainty, the 2011 WSE did not layout the roadmap of investments necessary to meet water demands through buildout; however, a Water System Master Plan will layout this roadmap, which is required to help define priorities, funding sources, and facilitate required CEQA analysis.</p> <p>Origin: 2011 Water Supply Evaluation Report</p>
Responsible Section	IP Integrated Planning
Operating Impact	Adds additional costs to acquire water supplies and construct infrastructure.
In Service Date	Month: June Year: 2015
Source of Funds	Fund 72 Water Rates 40% Fund 73 Connection Fees 60%
Total Project Cost	\$820,000

Expansion Project Summary Report

Project	Water Treatment Plant Expansion (24 MGD)
Project ID:	WTP106
Strategic Plan Priority	1.11
Project Description	<p>This project is a water treatment plant expansion of up to 12-16 million gallon per day (MGD) that will be constructed at either the Altamont site near Dyer Reservoir or the Patterson Pass WTP. Project timing is tied to the ability to replace the ultra-filtration (UF) Plant at the Patterson Pass WTP with a conventional unit. The replacement of the UF plant will provide additional capacity, delaying the need for the water treatment plant expansion by a couple of years to 2025.</p>
Justification	<p>Analysis completed as part of the 2011 Water System Evaluation indicates that additional water treatment plant capacity is required to meet projected maximum day demands by 2023. In addition, the UF Plant at Patterson Pass WTP is a temporary plant that was constructed to meet near-term shortages and therefore, the production from this plant eventually needs to be replaced. The potential shortage which includes replacement of the UF plant, is anticipated to be between 20 to 24 mgd.</p> <p>Origin: 2009 Peer Review of the Altamont Water Treatment Plant Site and Treatment Process Study, 2011 PPWTP Expansion Feasibility Evaluation (in progress), 2011 Water Supply Evaluation</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Increases production and delivery capacity and improves operational flexibility.
In Service Date	Month: June Year: 2025
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$176,340,000

Expansion Project Summary Report

Project	Westside Transmission System Improvements
Project ID:	DS52
Strategic Plan Priority	1.11
Project Description	<p>This project involves making improvements to the west side of Zone 7's transmission system to accommodate future growth. The project could involve new pipelines, replacement pipelines and/or a pump station. The costs are based on a new 9,100-foot , 30-inch diameter pipeline. Zone 7 staff will better define the actual project through hydraulic modeling planned as part of the Water System Master Plan update.</p>
Justification	<p>Based on discussions with Zone 7's operational staff, the existing transmission system can maintain pressures for existing customers on peak days. Additionally, hydraulic modeling completed by Zone 7 staff indicates the west side of the existing transmission system will not maintain pressures on peak days with additional growth in water demand.</p> <p>However, Zone 7 staff has just completed the 2011 Water Supply Evaluation, which recommends a series of water demand reductions, including reducing unaccounted-for water, water conservation, and potentially recycled water. The ultimate mix of future water supply sources and water demand reductions could change, or even eliminate, the potential pressure issues identified by Zone 7 staff as a result of future water demand growth on the west side of the transmission system.</p> <p>Consequently, this project is a holding place in case additional improvements are required to maintain pressures, with future growth, on the west side of the transmission system.</p> <p>Origin: 2011 Water Supply Evaluation Report</p>
Responsible Section	FE Facilities Engineering
Operating Impact	Adds additional renewal/replacement costs.
In Service Date	Month: October Year: 2017
Source of Funds	Fund 73 Connection Fees 100%
Total Project Cost	\$7,370,000

Appendix D

Water System Expansion Program Financial Model Inputs and Results

