Water Supply Assessment for the Silverado Village Project
(April 4, 2013 Final)

Florin Resource Conservation District

Elk Grove Water District

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Table of Contents

Chapter 1. Background 1-1
  1.1 Project Description .................................................................1-1
  1.2 Need for Written Assessment and Verification ................................1-2
  1.3 Elk Grove Water District ..........................................................1-6
  1.4 Sacramento County Water Agency ...............................................1-7
  1.5 Related Documents and Reports ..................................................1-11
  1.6 Purpose of WSA ......................................................................1-12
  1.7 Senate Bill 610 ..........................................................................1-12
  1.8 Senate Bill 221 ..........................................................................1-12
  1.9 Use of 2010 Urban Water Management Plan ...............................1-13
  1.10 Senate Bill No 7 (SBX7-7), the Water Conservation Act of 2009 1-13

Chapter 2. Projected Service Area Demands 2-1
  2.1 Defining the Planned Future Growth Area ....................................2-1
  2.2 SBX7-7 Demand Reduction Goals ..............................................2-2
  2.3 Calculation of Baseline Water Demands ......................................2-5
  2.4 Unit Water Demands .................................................................2-6
  2.5 Calculation of Project’s Average Annual Water Demands ................2-6

Chapter 3. Elements of a WSA [Water Code Section 10910] 3-1
  3.1 Determine if Project is Subject To CEQA [Section 10910(a)] ..........3-1
  3.2 Identify Responsible Public Water System [Section 10910(b)] ..........3-1
  3.3 Determine if 2010 UWMP Includes Water Demands [Section 10910(c)]3-1
     3.3.1 Identify Existing Water Supplies for the Project [Section 10910(d)(1)]3-2
     3.3.2 Capital Outlay Program for Financing Delivery of Water [Section 10910(d)(2)(B)] 3-4
     3.3.3 Federal, State, and Local Permits Required [Section 10910(d)(2)(C)] .........................3-7
     3.3.4 Regulatory Approvals Required [Section 10910(d)(2)(D)] ........................................3-7
  3.4 Identify Potential Conflicts in Exercising Water Rights [Section 10910(e)]3-8
  3.5 Groundwater Assessment [Section 10910(f)] .................................3-8
     3.5.1 Section 10910(f)(1) ..............................................................3-8
     3.5.2 Section 10910(f)(4) ..............................................................3-8
     3.5.3 Section 10910(f)(5) ..............................................................3-9

Chapter 4. Determination of Water Supply Sufficiency 4-1
List of Figures

Figure 1-1. City of Elk Grove 2009 General Plan Land-Use Map .............................................................. 1-3
Figure 1-2. Silverado Project Water and Sewer Plan ............................................................................... 1-4
Figure 1-3. Silverado Project Water and Sewer Plan ............................................................................... 1-5
Figure 1-4. Florin Resource Conservation District and Elk Grove Water District Service Areas .......... 1-8
Figure 1-5. Sacramento County Water Agency Zone 40 Boundaries ....................................................... 1-9
Figure 1-6. Sacramento County Zone 41 Service Area ....................................................................... 1-10
Figure 1-7. Project Relationship with Zone 40, Zone 41 and EGWD ...................................................... 1-11

Figure 2-1. EGWD 2010 UWMP Water Demand Projection with Baseline of Existing Water Demands ........... 2-4
Figure 2-2. Projected Water Demands with Project ............................................................................. 2-5

Figure 3-1. Zone 41 Groundwater Wells and Treatment Plants ............................................................. 3-5
Figure 3-2. Zone 41 Conjunctive Use Water Delivery System, Wells and Influence Zones .................... 3-6
Figure 3-3. EGWD’s Conceptual Rate Design ....................................................................................... 3-7
Figure 3-4. 2010 Location of EGWD Wells ......................................................................................... 3-10

List of Tables

Table 1-1. Project Land Use Table ........................................................................................................ 1-6

Table 2-1. Water Demands Past, Present and Future ........................................................................ 2-3
Table 2-2. Project Water Demands ..................................................................................................... 2-6

Table 3-1. SCWA Water Rights ........................................................................................................... 3-3

Appendix A – Elk Grove Water District 2010 UWMP without Appendices

Appendix B – First Amended and Restated Master Water Agreement Between Sacramento County Water Agency and Florin Resource Conservation District/Elk Grove Water Service, Successors in Interest to Elk Grove Water Works

Appendix C – Detailed Breakdown of Land Uses
Abbreviations and Acronyms

CEQA California Environmental Quality Act
CVP Central Valley Project
CDPH California Department of Public Health
DMM Demand Management Measure
EGWD Elk Grove Water District
FRCD Florin Resource Conservation District
GWTP Groundwater Treatment Plant
Project Silverado Village Project
SB Senate Bill
UWMP Urban Water Management Plan
VSWTP Vineyard Surface Water Treatment Plant
WSMP Water Supply Master Plan
WSA Water Supply Assessment
WSE Water Supply Evaluation
WTP Water Treatment Plant
Foreword

The Elk Grove Water District (EGWD), owned and operated by Florin Resource Conservation District (FRCD), being the retail water provider for the Silverado Village Project, completed this Water Supply Assessment (WSA) in accordance with the California Water Code making the determination of water supply sufficiency on the basis of existing surface and groundwater supplies as fully described in this report.

This WSA makes full use of the 2010 Urban Water Management Plan (UWMP) adopted by the FRCD in June 2011, attached as Appendix A. In so doing, the Project’s water demand is taken into consideration and included within the UWMP 20+ year requirement of water sufficiency. As an important clarification, a recent change in the naming of the two service areas of EGWD is reflected in this WSA but not in the 2010 UWMP. To avoid confusion, the UWMP’s use of the “Tariff” area as a naming convention has been replaced with term “Service” area. The former term is no longer relevant since water rates are the same for the entire retail service area.

The Project WSA that follows adds Project specificity where needed to comply with SB610 and SB221 in the determination of water supply sufficiency as included in the EGWD 2010 UWMP.
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Chapter 1. Background

The California Water Code requires coordination between land-use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of a proposed development.

California Water Code Sections (§10910 through §10915 (inclusive)) requires land-use lead agencies: (1) to identify the responsible public water purveyor for a proposed development project, and (2) to request a Water Supply Assessment (WSA) from the responsible purveyor. The purpose of the WSA is to demonstrate the sufficiency of the purveyors' water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of existing customers. California Water Code Sections 10910 through 10915 delineates the specific information that must be included in the WSA.

1.1 PROJECT DESCRIPTION

The Proposed Project is located in the City of Elk Grove (City), California in Sacramento County. State Highway 99 is located less than two miles west of the Proposed Project. The regional location of the Proposed Project is presented in Figure 1-1 and Figure 1-2. The Proposed Project consists of the development of a 231.07-acre¹ site located on the northwest corner of the intersection of Bond Road and Waterman Road. The Proposed Project consists of 660 low- and medium-density single family homes on 115.10-acres and up to 125 independent living care units over 4.60-acres. Throughout the proposed Project, 13.23-acres of park lands (including landscaped bike and pedestrian trails) will be placed amongst the residential neighborhoods. Open space and public recreation areas will be a larger feature of this development with 103.16 acres of lands providing the equivalent of 13.23 acres of park land and 89.93 acres for the creation of preserve areas. A Subdivision Map of the Proposed Project is shown in Figure 1-3 and the estimated land use categories and acreages are presented in Table 1-1. A detailed breakdown of land uses and area is provided in 0.

The Project is presently located in the incorporated area of the City of Elk Grove, as delineated and defined in the 2009 General Plan Land Use Map (Figure 1-1). The Project’s proposed land uses are generally consistent with the 2009 General Plan including mixed land uses of residential, multi-family, commercial and industrial. Figure 1-2 shows the Project and its proximity to existing urban development. Table 1-1 includes the Project’s land use acreages that have been apportioned to closely match the 2035 General Plan land use designations shown in Figure 1-1.

¹ Identified as gross area. Net project area without Bond Road, Waterman Road and Silverado Drive right-of-way equals 225.87 acres
1.2 NEED FOR WRITTEN ASSESSMENT AND VERIFICATION

Due to the Project size and location, a WSA as per Senate Bill (SB) 610 is needed to identify the available water supplies for existing urbanized areas and foreseeable growth, including the Project, for 20 years into the future. SB 610 seeks to promote more collaborative planning among local water suppliers and cities and counties. This statute requires detailed information regarding water availability to be provided to the city and county decision makers before approval of specified large development projects. This statute also requires detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Both measures recognize local control and decision making regarding the availability of water for projects and the approval of projects.
Figure 1-1. City of Elk Grove 2009 General Plan Land-Use Map
Figure 1-2. Silverado Project Water and Sewer Plan
Figure 1-3. Silverado Project Water and Sewer Plan
1.3 ELK GROVE WATER DISTRICT

The EGWD has been a water purveyor in the southern part of Sacramento County for over 115 years, and previously went by the names Elk Grove Water Service and Elk Grove Water Works. The EGWD is a department of the FRCD who purchased the water system in 1999. EGWD is governed by a five-member Board of Directors, serving four-year terms.

EGWD services its customers in two service areas with pumped groundwater and the purchase of treated conjunctive use (groundwater and surface water) water supplies from the Sacramento County Water Agency (SCWA). The EGWD service areas cover approximately 13 square miles and are bounded by Sheldon Road to the north, Highway 99 to the west, Grant Line Road to the east, and the Union Industrial Park to the south.

The two EGWD service areas are shown in Figure 1-4. Service Area No. 1 is comprised of approximately 7,930 customers and its service boundary encompasses approximately 3,145 acres. Service Area No. 1 is supplied by groundwater wells, seven which are active, and a potable groundwater treatment plant with aboveground storage tanks.

Service Area No. 2 has a service area of approximately 4,875 acres and a customer base of approximately 4,115 connections. The SCWA wholesales the water to the EGWD customers in Service Area No. 2, under the wholesale water agreement between SCWA and FRCD2, included as O. EGWD is responsible for billing and customer service for Service Area No. 2.

While referred to by the District as Service Areas, the differentiation has to do with the separate water suppliers for Service Areas Nos. 1 (EGWD) and 2 (SCWA). The rate schedules for the areas are identical. The Project lies within Service Area No. 2 and will be served wholesale water from the Sacramento County Water Agency provided to EGWD as the retail water purveyor.

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2 “First Amended and Restated Master Water Agreement Between Sacramento County Water Agency and Florin Resource Conservation District/Elk Grove Water Service, Successors in Interest to Elk Grove Water Works.” (June 2002), referred to as Wholesale Water Agreement.
1.4 SACRAMENTO COUNTY WATER AGENCY

As the wholesale water supplier for the Project, the SCWA is an important element of this WSA as it is necessary to understand the legal definition of the wholesale water agreement and water supply reliability over the WSA 20 year planning horizon. As shown in Figure 1-5, the Project lies within Zone 40 of the SCWA, a wholesale water supplier which provides for the development and construction of water supplies and water system infrastructure.

Zone 40 implements SCWA’s conjunctive use program in the Central Sacramento Region as part of an effort which began in 1986. The creation of Zone 40 empowered SCWA to establish fees, charges, credits, and regulations for the wholesale supply of water to zones within the SCWA. Zone 40 was created by SCWA Resolution No. 663 in May 1985. The resolution describes the exact boundaries\(^3\) of Zone 40 and defines the projects to be undertaken as “…the acquisition, construction, maintenance, and operation of facilities for the production, conservation, transmittal, distribution, and sale of ground or surface water or both for the present and future beneficial use of the lands or inhabitants within the zone.”

Zone 41 of the SCWA, shown in red on Figure 1-6, was created in June 2000 to provide retail and wholesale water services within its existing water retail service areas. The relationship between the Zone 40, Zone 41 and EGWD is illustrated as a Venn diagram shown Figure 1-7. Zone 40 is the primary source of financing to staff the conjunctive use program and construct the needed capital facilities to implement surface water, groundwater and recycled water use\(^4\). The Project will be required to pay the necessary Zone 40 Development Fees to further the conjunctive use program in the region. Zone 41 operates the water treatment and large water distribution system which will deliver water via a metered turnout from an existing Zone 41 transmission main to the Project’s southern property line in Bond Road. Zone 41’s cost of treatment and conveyance is passed on to EGWD who owns and operates the Project’s water distribution system and retails the water to its customers. EGWD’s retail water rates pay for the Zone 41 wholesale supply as well as EGWD’s maintenance and operations costs. All three agencies are needed to provide reliable water supplies in the region with each playing a critical role to the Project’s determination of water supply sustainability.

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\(^3\) Zone 40 boundaries have changed over time as new development areas and General Plan boundaries have expanded.

\(^4\) Outdoor irrigation of remediated groundwater in the northeast portion of Zone 40 is also taking place.
Figure 1-4. Florin Resource Conservation District and Elk Grove Water District Service Areas
Figure 1-5. Sacramento County Water Agency Zone 40 Boundaries
Source: Zone 41 2010 UWMP

Figure 1-6. Sacramento County Zone 41 Service Area
1.5 RELATED DOCUMENTS AND REPORTS

As the retail water provider serving potable water supplies to the Project, EGWD is responsible for preparing the WSA for the Project. In so doing, EGWD has relied on and incorporates by reference its prior analysis including the following reference documents:

- Elk Grove Water District 2010 UWMP (Wood Rodgers, June 2011)
- Elk Grove Water District 2012-2017 Strategic Plan (Florin Resource Conservation District, 2012)
- 2010 Zone 41 Urban Water Management Plan (Sacramento County Water Agency/Brown and Caldwell, June 2011)
- Zone 40 Water System Infrastructure Plan (Sacramento County Water Agency/MWH, April 2006)\(^5\)
- Zone 40 Water Supply Master Plan (Sacramento County Water Agency/MWH, February 2005)

\(^5\) Zone 40 is currently updating the Zone 40 Water System Infrastructure Plan
First Amended And Restated Master Water Agreement Between Sacramento County Water Agency and Florin Resource Conservation District/Elk Grove Water Service (a.k.a. Wholesale Water Agreement), (June 2002)

1.6 PURPOSE OF WSA

Under SB 610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in California Water Code 10912 [a]) subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply. If coordinated and comprehensive water supply planning is underway at the time that the SB 610 water assessment is prepared, compliance with SB 221 will be greatly facilitated. SB 221 is intended as a ‘fail safe’ mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should – before construction begins. It is the intent of this WSA to serve both SB 610 and SB 221.

1.7 SENATE BILL 610

Under SB 610 (codified as California Water Code, Section 10910 through 10915) (Costa, 2001), each public water system responsible for serving proposed projects meeting specified criteria (e.g., residential projects of more than 500 residential dwelling units or industrial park projects greater than 50 acres) must prepare a WSA evaluating whether the water system’s “total projected water supplies...will meet the projected water demand associated with the proposed project,” together with existing and other foreseeable planned future uses over a 20-year horizon. If, as a result of its assessment, the public water system concludes that its water supplies are not sufficient, the assessment must detail its plans in acquiring the necessary water supplies.

1.8 SENATE BILL 221

In short, SB 221 (Kuehl, 2001) prohibits recordation of the project's final subdivision map until EGWD can provide written verification that a sufficient water supply is available. In the case of Silverado project, the lands are contiguous to existing developed lands on public water and has a water transmission main sized to serve the project area upon its development. As a result, this WSA also serves to meet the requirements of water supply sufficiency under SB 221.

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6 The primary difference between SB 221 and SB 610 is that SB 221 is later in the process after zoning and tentative maps have been approved and the planning agencies are seeking will-serve letters upon verification of tentative map conditions and recordation of the final map. Because this is often the final step prior to home occupancy, SB 221 is the last check to ensure sustainable water supplies.
1.9 Use of 2010 Urban Water Management Plan

The importance of the Urban Water Management Plan (UWMP) and the General Plan are best described from the Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, (October 2003, DWR) as follows:

A foundational document for compliance with both SB 610 and SB 221 is the Urban Water Management Plan (UWMP). Both of these statutes repeatedly identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners, and developers will all be able to utilize this document when planning for and proposing new projects.

UWMPs serve as important source documents for cities and counties as they update their General Plan. Conversely General Plans are source documents as water suppliers update their UWMPs. These planning documents are linked and their accuracy and usefulness are interdependent. It is crucial that cities /counties and water suppliers work closely when developing and updating these planning documents.

In most cases the information and findings used in this WSA will relate back to the EGWD 2010 UWMP or, if needed, the Zone 41 2010 UWMP. Given the full description of supply and demand for the EGWD service area in the EGWD 2010 UWMP, this WSA will fully rely on the EGWD 2010 UWMP to respond to specific requirements of SB 610. When cited, the section and page number of the EGWD 2010 UWMP are included as reference.

1.10 Senate Bill No 7 (SBX7-7), the Water Conservation Act of 2009.

Reference to SBX7-7 (20% reduction in average per capita water usage by 2020) in the beginning of the EGWD 2010 UWMP serves to highlight its importance in the overall UWMP implementation, and in planning estimates of water demand and demand management goals implemented over the next 10 years. SBX7-7 was enacted in November 2009 and requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20 percent reduction in urban per capita use by December 31, 2020. SBX7-7 establishes December 31, 2015 as an intermediate (interim) deadline for urban water suppliers to meet a water use target of 10 percent reduction over the baseline use established in the EGWD 2010 UWMP. The impact of this statewide goal has an effect on future projections of urban water demands on a per capita basis from 2010 to 2020. (Section 3.4, Page 20 of the EGWD 2010 UWMP)
Chapter 2. Projected Service Area Demands

Under the California Water Code, demand and supply must be evaluated over a 20-year horizon. Therefore, EGWD has evaluated and revised growth calculations for their Zone 41 wholesale water purchase area in the EGWD 2010 UWMP (Table 21, Page 20 of EGWD 2010 UWMP), which includes the Project’s water demand as well as water demand from planned future growth. Planned future growth is described in the guidebook published by the California Department of Water Resources as follows:

*Neither SB 610 nor SB 221 defines planned future uses. However, it would be a reasonable interpretation that planned future uses are those that would be undertaken within the same time frame as the project under consideration. Each preparer of an assessment will determine what planned future uses it will include in the demand calculation to insure that it is not identifying the same increment of water for more than one future use. (Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, California Department of Water Resources, October 2008)*

This WSA is based on a project that is defined as a planned future use that has submitted a development application and the planning agency (City of Elk Grove) has made a request for a WSA to the retail water provider serving the Project area. This WSA will consider the water demands for the above definition of growth and will compare this to water supplies from existing and future sources of supply. When looking at water supply sustainability, EGWD looks out to 2035 for both demands and supplies.

2.1 DEFINING THE PLANNED FUTURE GROWTH AREA

Given the Project’s location and the three congruent agencies (see Figure 1-7) playing necessary roles in meeting existing and foreseeable planned growth within the small wholesale area, there are two approaches to defining EGWD’s future growth area. The primary difference between the two is the aerial extent of the definition of the planned future growth area.

The first approach limits the future growth boundary to the EGWD Service Area No. 2, and considers foreseeable growth as those areas where development proposals can be submitted with the City of Elk Grove in compliance with the City of Elk Grove General Plan. This approach reduces the definition of future growth area to a smaller region requiring approval by the local planning agency, and requiring sustainable water supplies by EGWD. This approach implies that EGWD is responsible for meeting the water demands of planned new growth within their service area.

The second approach uses the Zone 41 wholesale and retail service area boundary as the future growth area. This is a much larger future growth area, with much of the area outside of the control of EGWD.
The Wholesale Water Agreement states the following SCWA water delivery commitment:

> SCWA shall deliver all potable water necessary for FRCD’s retail customers in the Expanded Franchise Area, including water for fire protection consistent with SCWA design and operations standards in effect at the time a facility is constructed. (SCWA/FRCD Wholesale Water Agreement, pg 3, Paragraph III.a)

By this statement, SCWA Zone 41 guarantees the contract water for EGWD’s use in perpetuity (contract provides 50 year term with one automatic 50 year extension), regardless of hydrologic conditions. SCWA concurs with this commitment regardless of growth taking place outside of Service Area No. 2. As a result, the recommended approach to limiting the future growth area in this WSA is per the first approach, which is consistent with the EGWD 2010 UWMP. As a result, the adopted Zone 41 2010 UWMP is considered to serve as sufficient proof of wholesale water supplies which are reliable during dry, critical and back to back drought years, and meets the test of sustainability of water supplies to 2035.

California Water Code 10631(k), identifying UWMP requirements, provides the following supplemental supporting language:

> Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier’s plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

### 2.2 SBX7-7 DEMAND REDUCTION GOALS

Table 2-1 provides a summary of EGWD water demands used as the basis for this WSA. Column 1 reflects past water demands based on individual customer metered data. Column 2 represents projected water demands to 2035 assuming full implementation of SBX7-7 by 2020. Column 3 values represent water demands assuming no implementation of SBX7-7 used to quantify the water savings upon reaching the reduction goals. Column 4 water demands reflect existing (2010) water demands if no new growth were to occur in Service Area No. 2 (note: explained further in Section 2.3). As can be seen by the sharp decrease in the baseline water demands, any increase from limited residual growth is sharply off-set from implementing SBX7-7 over the same area and period of time. The result is a net decrease in 2035 going from 2,935 AF/year in 2010 to 2,428 AF/year in 2035. The last column of Table 2-1 indicates the assumed build-up of the Project’s water demand over the planning horizon of the WSA with phased project development occurring from 2014 to 2020.

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7 Section VII of the Wholesale Water Agreement, titled, “Failure to Deliver Water,” does reduce liability for failure to deliver potable water if such failure is caused by reasons beyond the reasonable control of SCWA.
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<td>2033</td>
<td>4,560</td>
<td>5,715</td>
<td>2,428</td>
<td>395</td>
<td></td>
</tr>
<tr>
<td>2034</td>
<td>4,560</td>
<td>5,715</td>
<td>2,428</td>
<td>395</td>
<td></td>
</tr>
<tr>
<td>2035</td>
<td>4,560</td>
<td>5,715</td>
<td>2,428</td>
<td>395</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Baseline water use average 253 gpcd pre-SBX7-7 (pg 11, EGWD 2010 UWMP). Population based on census data for Service Area No. 2 in Table 3 of UWMP.
In Figure 2-1, the actions of SBX7-7 are shown by including the EGWD 2010 UWMP Water Demand projections with and without the SBX7-7 requirement. The middle solid purple line reflects water demand with SBX7-7 implemented. The increase in water demands from 2010 to 2015 reflected by this line is the result of three factors. The first factor is the low initial 2010 water demand that is expected to rise on a per capita basis as national economic conditions improve and people have confidence to spend more for the use of water. The second factor is the increase in population as an outcome from new development of large-acre parcels. The third factor is EGWD’s actions in meeting the SBX7-7 demand reduction goal in 2015 of 11 percent. Whereas the first two factors result in increases to water demands, the third factor decreases water demand. The resulting growth is the net of these three activities.

The EGWD 2010 UWMP curve from 2015 to 2020 is estimated to be very flat and in some cases falls below demands from preceding years. The reason for this flatness in demand projections is the increased need to reduce water demands on a per capita basis by 2020 as per SBX7-7. The curve implies that growth is occurring; however, the need to achieve a total 20 percent reduction in per capita water use by 2020 reduces overall water demands. Lastly, the increase in the EGWD 2010 UWMP’s water demand from 2020 to 2030 is based on new development occurring throughout the EGWD portion of the City of Elk Grove 2035 General Plan area assuming that the per capita water demands remain at the 2020 levels.
2.3 CALCULATION OF BASELINE WATER DEMANDS

In Figure 2-2, the Project water demands lie below the EGWD 2010 UWMP Projected Demands curve but on top of what is now considered to be existing growth and all approved growth (a.k.a. Baseline of Existing Water Demands). The best illustration of the baseline demands is by considering existing growth as existing water use that slowly increases with each year due to one or more of the following three factors:

- Purchase of vacant homes that are currently on the market for sale
- Construction and purchase of new homes in already approved developments (e.g., low-income housing and apartments)
- Construction of new homes in separate infill projects that do not meet the requirements of needing a WSA but require adherence to the 2035 General Plan and approval by City Council

Note: The Y-axis is exaggerated to show smaller increments of change over time.

These three factors are all intended to accommodate the adsorption of planned growth in the EGWD Service Area No. 2 assuming no new developments are approved. These growth measures result in an increase to the City of Elk Grove population and an increase to EGWD’s water demands. The subtle increase in the baseline demand to account for the population increase is assumed to be 0.14% per year in 2010 to 0.4% per year in 2020 and 0.16% per year in 2025. These estimated values are intended to approximate the timing and rate of growth for future water demands. The 15 year horizon (i.e., assumed build-out in 2025) of growth is based on the amount of land with entitlements, or seeking entitlement, to build new homes that are assumed to be within the Service Area No. 2 service area.
2.4 UNIT WATER DEMANDS

The calculation of total water demand for the Project is based on regional unit water demand factors for Zone 40. The EGWD 2010 UWMP includes water demand projections as required to show total project water demand in five year increments from 2010 to 2035. However, because the EGWD billing system does not distinguish between the various land use classifications, the UWMP has no separate break out of land use-based water demands. To quantify future water demand for purposes of assessing water rights and facility sizing, Table 2-2 includes unit water demand factors from the 2005 Zone 40 WSMP\(^8\) which have been used in the design of Zone 41’s current water system and in the planning of Zone 40’s infrastructure plan.

Table 2-2. Project Water Demands

<table>
<thead>
<tr>
<th>Land Use Categories for WSA</th>
<th>Land Use (Acres)</th>
<th>Unit Water Demand Factor (AF/ac/year)</th>
<th>Total Water Demand (AF/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>115.10</td>
<td>2.89</td>
<td>332.64</td>
</tr>
<tr>
<td>Multi-Family (Low Density)</td>
<td>2.50</td>
<td>3.70</td>
<td>9.25</td>
</tr>
<tr>
<td>Commercial</td>
<td>2.10</td>
<td>2.75</td>
<td>5.78</td>
</tr>
<tr>
<td>Public Recreation</td>
<td>13.23</td>
<td>3.46</td>
<td>45.76</td>
</tr>
<tr>
<td>Open Space</td>
<td>89.93</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Right of Way</td>
<td>8.21</td>
<td>0.21</td>
<td>1.72</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>231.07</strong></td>
<td>-</td>
<td><strong>395.15</strong></td>
</tr>
</tbody>
</table>

Notes: Unit Water Demand Factors are taken from Table 2-2 of the 2005 Zone 40 WSMP

Given requirements of SBX7-7, the unit demand factors are taken from the 2030 “build-out” table of the Zone 40 WSMP. This recognizes the change in unit water demands (i.e., AF/year/connection or AF/year/acre) which will occur over time as demand management measures to meet SBX7-7 and the Water Forum Agreement are implemented. The permanent change in per capita water use as a result of hardened water conservation will be captured in the 5 year updates to the UWMP and in the progress reporting for meeting SBX7-7.

2.5 CALCULATION OF PROJECT’S AVERAGE ANNUAL WATER DEMANDS

Application of the unit demand factors in Table 2-2 on the Project land-use acreages yields the total estimated annual water demand of the Project at build-out to be 395 AF/year. The light blue area above the existing Baseline of Existing Demands on Figure 2-2 reflects the Project’s phased construction and occupancy with build-out occurring over a 6 year period from 2014 to 2020.

---

\(^8\) The Zone 40 WSMP has two unit water demand tables to reflect a 25.6% reduction in water demands by 2030 pursuant to the Sacramento Area Water Forum Agreement. 2030 unit water demand factors (Table 2-2 of 2005 Zone 40 WSMP) were applied for this WSA based on accelerated schedule of SBX7-7 and 15 year lapsed period.
Chapter 3. Elements of a WSA [Water Code Section 10910]

The format of this WSA is intended to follow California Water Code Sections 10910 through 10915 to delineate clearly the specific requirements of a WSA. This WSA is structured according to those requirements. Section 10910 of the California Water Code is intended to evaluate if existing water supply sources are adequate to meet existing water demands, the Project demands and the demands of all planned foreseeable future uses within the public water system. What follows is a breakdown of the elements of the California Water Code that respond to the adequacy of existing supplies. If under Section 10910 existing water supplies are adequate to serve existing water demands, the Project and all planned future uses within the public water system over the 20-year horizon, the WSA can move forward with a positive finding of sufficiency in water supplies. If Section 10910 is not satisfied, further evaluation into planned water supply sources and projects need to be included as per Section 10911 of the California Water Code.

In addition to meeting the California Water Code, this WSA will also assist City Planners in their evaluation of the Project’s compliance in meeting 2035 General Plan policies (Goal PFS-2).

3.1 DETERMINE IF PROJECT IS SUBJECT TO CEQA [SECTION 10910(A)]

The City of Elk Grove Planning Department has determined that the Project is subject to CEQA and satisfies the criteria set forth in Section 10912 of the California Water Code requiring the completion of a WSA. The information contained within this WSA will partially, or in whole, address 2035 General Plan policies PFS-2.1 through PFS 2.13.

3.2 IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [SECTION 10910(B)]

The City of Elk Grove Planning Department has identified EGWD as the responsible public water system purveyor for the Project. The Planning Department possesses information regarding existing and approved development and pending development applications (i.e., reasonably foreseeable development) within the City of Elk Grove that may be provided water by one or more of the water retailers, which should be considered in the preparation of this WSA.

3.3 DETERMINE IF 2010 UWMP INCLUDES WATER DEMANDS [SECTION 10910(c)]

The 2010 UWMP adopted for the EGWD includes all (i.e., assumed build-out for the Project is 2020) of the projected water demand associated with the proposed Project and has applied forecasted water supply conditions to 2035. The UWMP also includes EGWD’s preferred methodology in meeting the
requirements of SBX7-7 that requires all California state water agencies to develop interim and ultimate urban water use targets to achieve a statewide 20-percent reduction in water demands per capita by 2020.

EGWD’s water conservation best management practices and dry hydrologic year rationing measures are incorporated into the per capita water demands of the EGWD 2010 UWMP (Section 7, Water Shortage Contingency Plan, Page 7-1 of EGWD 2010 UWMP; and, Table 30, Page 7-2 of EGWD 2010 UWMP). EGWD’s 11 Water Demand Management Measures (DMMs) are fully described in the EGWD 2010 UWMP (Section 6, Page 6-1 of EGWD 2010 UWMP), and are incorporated into EGWD’s overall water demand growth projections illustrated in Figure 2-1 and Figure 2-2 in this WSA.

### 3.3.1 Identify Existing Water Supplies for the Project [Section 10910(d)(1)]

Section 10910(d)(1) requires identification of existing water supply entitlements, water rights, or water service contracts relevant to the Project and quantification of water obtained by the City of Elk Grove pursuant to those water supply entitlements, water rights, or water service contracts in previous years.

All of EGWD’s existing water supplies are included in the EGWD 2010 UWMP (Section 4, Page 21). Water for Service Area No. 2 (includes Project area) is characterized as follows:

_Service_ Area No. 2 is supplied water from the SCWA through a wholesale master water agreement with SCWA. _Service_ Area No. 2, which is located within SCWA’s Zone 40, uses both groundwater and surface water as sources of water supply. EGWD has an agreement with SCWA to provide the water necessary to serve the _Service_ Area No. 2 franchise area. Although SCWA has recently acquired surface water supplies and recycled water, _Service_ Area No. 2 is not currently supplied with recycled water and currently does not receive any significant amount of surface water. SCWA is developing substantial surface water supplies as part of the Freeport Regional Water Authority (FRWA), which may become available to _Service_ Area No. 2.

As explained in Section 1.3, EGWD gets its full water supply entitlement through the Wholesale Water Agreement between FRCD and SCWA. This supply has been included in both the EGWD and Zone 41 2010 UWMP’s and is characterized as 100 percent reliable, and sustainable in dry and critical years, and back to back drought years. Table 3-1 is provided to summarize the source of the different surface water supplies which will be used to fulfill the portion of the Project’s water supply requirement not met by indigenous groundwater resource.

**Table 3-1**’s raw Sacramento River surface water rights are diverted at differing quantities based on hydrologic year type and the water right contract terms. As shown in Figure 3-1, the Freeport Regional Water Authority’s (FRWA) Freeport Diversion Structure pumps the water into an approximate 12 mile conveyance pipeline to the Vineyard Surface Water Treatment Plant (VSWTP) now in operation. Prior to the VSWTP, all water demands within Service Area No. 2 were being met with groundwater extracted and treated at one of several centralized groundwater treatment plants (GWTP) as shown on Figure 3-1.

**Figure 3-1** shows the three primary Central Service Area GWTPs (Waterman, Wild Hawk, and East Elk Grove), their respective wells, and the estimated areas of influence to which groundwater extends from each GWTP. The figure also shows large size transmission mains with some indicated as planned for construction by Zone 40 south in Bradshaw Road to connect the southern
### Table 3-1. SCWA Water Rights

<table>
<thead>
<tr>
<th>Surface Water Right</th>
<th>Contract Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate Water</td>
<td>Intermittent Water</td>
<td>In February 2008, the State Water Resources Control Board (SWRCB) approved SCWA’s appropriative right permit application to divert water from the American and Sacramento Rivers (Permit 21209). Water under this permit is considered “intermittent water” that is typically available during the winter months of normal or wet years. These flows could range up to 71,000 ac-ft/yr.</td>
</tr>
</tbody>
</table>
| CVP Water           | CVP water is described under three different contracts, as follows. | 1. SMUD 1 Assignment 15,000 ac-ft/yr of SMUD’s CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD.  
2. SMUD 2 Assignment 15,000 ac-ft/yr of SMUD’s CVP contract water has been assigned to SCWA under the terms of an agreement with SMUD.  
3. CVP Water Public Law 101-514 (“Fazio” Water) In April 1999, SCWA obtained a CVP water service contract pursuant to PL 101-154 that provides a permanent water supply to Zone 40 of 15,000 ac-ft/yr. Part of the “Fazio” water is currently used in the SSA of Zone 40. This portion of surface water supply is treated at the City’s Sacramento River WTP, wheeled through the City’s distribution system, and then delivered to SCWA through the Franklin Intertie. The capacity of the Franklin Intertie is 11 MGD, or 12,320 AF/year. The remaining portion of the “Fazio” water and the SMUD 1 and SMUD2 assignment will be diverted from the Sacramento River at the Freeport Regional Water Authority (FRWA) facility and treated at SCWA’s Vineyard Surface WTP. |
| Other Surface Water Supplies | Other surface water supplies are considered to be firm water supplies either from the City of Sacramento to serve the American River Place of Use (POU) area within Zone 40, or water transfers from other upstream water districts on the Sacramento and/or American Rivers. | 1. Wholesale Water Agreement(s) with the City of Sacramento to Serve a Portion of Zone 40 in the City of Sacramento’s American River POU SCWA’s Water Forum purveyor specific agreement (PSA) directs SCWA to enter into an agreement with the City of Sacramento whereby the City of Sacramento will sell surface water to SCWA for use in the portion Zone 40 that lies within the City of Sacramento’s American River POU. The amount of water required to serve the POU area is estimated to be 9,300 ac-ft/yr.  
2. Water Transfers To obtain transfer water supplies, SCWA would enter into purchase and transfer agreements with other entities that currently hold surface water rights upstream of SCWA’s points of diversion. According to the WSMP, the amount of water needed is estimated to be 5,200 ac-ft/yr. |

Source: Zone 41 2010 UWMP
portion of the Central Service Area region (Service Area No. 2) to the VSWTP. As this occurs, surface water will become a greater water supply in the Elk Grove area, especially in the wet years.

**Figure 3-2** shows this migration outward of surface water from the VSWTP once the transmission mains are constructed. Areas of overlapping influence between the GWTPs and the VSWTP are considered to be the conjunctive use program areas where groundwater will naturally recharge in years when surface water supplies are used in-lieu of groundwater. The project is located within this conjunctive use overlap area.

### 3.3.2 Capital Outlay Program for Financing Delivery of Water \[Section 10910(d)(2)(B)]\]

This subsection requires a copy of the capital outlay program for financing the delivery of water to the Project. Groundwater is provided by groundwater wells operated by Zone 41, and raw surface water is purchased from the SCWA through Zone 41. Treatment and conveyance of both groundwater and surface water is constructed by Zone 40.

**Figure 3-3** illustrates the two arms of water service in Service Area No.2 starting at the top with the program title being implemented, services being provided by the program, and lastly, the funding sources which pay for the programs and listed specific water supply requirements. To ensure adequate water service is available upon development, Zone 40 is relied upon to plan, design and build the necessary conjunctive use infrastructure as identified in their capital improvement program and paid for through Zone 40 development fees. For daily water service to Service Area No. 2 customers, EGWD relies on Zone 41 to provide the water at a fixed quality, volume and pressure. Ultimately, however, EGWD is the responsible water purveyor accountable to their customers who pay monthly service charges.

EGWD’s fixed water rate is approximately **$62.64** per month for a single-family home, and the tiered metered rate is $1.46 for every 100 cubic feet of water for the first 3,000 cubic feet and $1.80 thereafter. The current rate structure for EGWD (see **Figure 3-3**) assumes that maintenance and operations costs of both the local EGWD system and the Zone 41 major treatment and conveyance system are recovered from revenues generated from quantity and fixed rate service charges.

---

9 Groundwater is used throughout the year to meet short-term peaking requirements and to supplement surface water in dry months and dry years when either capacity or supply are curtailed.
Figure 3-1. Zone 41 Groundwater Wells and Treatment Plants
Figure 3-2. Zone 41 Conjunctive Use Water Delivery System, Wells and Influence Zones
3.3.3 Federal, State, and Local Permits Required [Section 10910(d)(2)(C)]

This subsection requires identification of any federal, state, and local permits required for construction of any infrastructure associated with the delivery of water to the Project.

Any new wells constructed for growth based on the Zone 40 WSMP will be added to Zone 41’s California Department of Public Health (CDPH) permit to serve potable water supplies. The design of those facilities will require coordination with CDPH. Future expansions of VSWTP capacity and construction of the large conjunctive use pipelines will also be done in accordance with CDPH requirements. Large efficiency enhancements may also require local permitting and possible CEQA action depending on the extent of new construction. No other regulatory approvals are anticipated for meeting existing demands plus the Project demands.

3.3.4 Regulatory Approvals Required [Section 10910(d)(2)(D)]

This subsection requires identification of any regulatory approvals required for delivery of the water supply to the Project.

The local groundwater and surface water facilities to serve the Project will be added to the CDPH permit to serve potable water supplies within the EGWD service area. The design of those facilities will require coordination with CDPH. No other regulatory approvals are anticipated.
3.4 IDENTIFY POTENTIAL CONFLICTS IN EXERCISING WATER RIGHTS [SECTION 10910(E)]

This section states:

If no water has been received in prior years by the public water system,...under the existing water supply entitlements, water rights, or water service contracts [identified to serve the proposed project], the public water system,...shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system,...has identified as a source of water supply within its water supply assessments.

The intent of this section is to identify any potential conflicts that may arise from the exercise of an existing water supply entitlement, water right, or water service contract to serve a proposed project if such water supply entitlement, water right, or water service contract has not been previously exercised.

- **Use of Groundwater** – The water demands of the EGWD Service Area No. 2 will be met in part with groundwater. The EGWD and Zone 41 have both previously exercised their rights as overlying groundwater appropriators to serve the water demands of their customers through above normal, drought, and multiple drought years over the past 20+ years and will continue to exercise those rights to sustainable levels to provide potable water supplies.

- **Use of Surface Water** – The surface water supplies associated with the conjunctive use program fall into three categories: (1) water supplies derived from the Central Valley Project (CVP), (2) supplies based on an appropriative Water Right Permit(s), and (3) water from other sources either through the City of Sacramento or water transfers from upstream water right holders. Intermittent supplies may be used, if available, but are not considered “firm” and not used in the WSA.

- The parties that could most directly be affected by exercise of these water rights are CVP contractors, State Water Project (SWP) contractors, water rights holders subject to Term 91 conditions, and riparian diverters downstream from the points of diversion for each contract.

3.5 GROUNDWATER ASSESSMENT [SECTION 10910(F)]

The water demands of the Project will be met partially with groundwater. Consequently, Section 10910(f) requires specific additional information.

3.5.1 Section 10910(f)(1)

Section 10910(f)(1) requires a review of groundwater data contained in the UWMP.

The EGWD and Zone 41 2010 UWMPs identify past volumes of groundwater extracted by EGWD and SCWA (Section 4.2 on Page 21 of the EGWD 2010 UWMP) and fully describes the EGWD’s past and future use of groundwater as a supply source.

3.5.2 Section 10910(f)(4)
Section 10910(f)(4) requires a description of the projected volume and geographic distribution of groundwater extractions from the basin. For the existing supplies, this is presented in Section 10910(d)(1) above and the location of EGWD groundwater wells are represented on Figure 3-4, and for Zone 41 wells, see Figure 3-1.

3.5.3 Section 10910(f)(5)

Section 10910(f)(5) requires an analysis of the sufficiency of the groundwater basin to meet the demands associated with the Project.

This is presented in the EGWD 2010 UWMP (Section 4.3 Water Service Reliability, Page 26 of EGWD 2010 UWMP), concluding with the following statement:

Based upon the Central Basin’s total projected water supplies for normal, single-dry, and multiple-dry years over a 20-year projection, as demonstrated by the County’s UWMP and [Groundwater Management Plan] GMP, the Central Basin will have sufficient water to meet estimated water demands for the build-out of the EGWD [Service] Area No. 1 and [Service] Area No. 2.
Figure 3-4. 2010 Location of EGWD Wells
Chapter 4. Determination of Water Supply Sufficiency

This WSA determines that the EGWD can support the Project based on the EGWD 2010 UWMP. EGWD has shown, without a doubt that sufficient water supplies exist to meet the Project’s build-out water demand as well as all existing and reasonably foreseeable water demands.

EGWD makes this determination based on the information provided in this WSA and on the following specific facts:

- The existing near-term and long-term reliable supplies of surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the EGWD or Zone 41.

- The Project water demands will be positively affected by the implementation of EGWD’s 11 Demand Management Measure and adherence to SBX7-7 (i.e., required statewide 20 percent reduction on a per capita basis by 2020).

- The existing and future use of groundwater supplies has been extensively described in the EGWD 2010 UWMP which includes the Groundwater Management Plan for the Central Sacramento County Groundwater Basin. All studies show that sufficient groundwater supplies exist.

It should be noted that the determination of sufficiency for this project does not constitute a reservation of supply to serve this project. SB 610 only requires that the Assessment be conducted at the time that the EIR is prepared, and does not require that the Assessment be updated at any point in the future.
Appendix A

EGWD 2010 UWMP (without appendices) and

Central Sacramento County GMP
# TABLE OF CONTENTS

ACRONYMS ........................................................................................................................................ vii

EXECUTIVE SUMMARY ..................................................................................................................... ES-1

**Section 1 – Plan Preparation** ........................................................................................................... 1
  1.1 Urban Water Management Planning Act .................................................................................. 1
  1.2 Agency Coordination .............................................................................................................. 2
  1.3 Public Participation .................................................................................................................. 3
  1.4 Plan Adoption and Implementation ....................................................................................... 4

**Section 2 – System Description** ..................................................................................................... 5
  2.1 EGWD Overview .................................................................................................................. 5
  2.2 EGWD System Overview ...................................................................................................... 5
    2.2.1 Transmission and Distribution Main Facilities ........................................................ 5
    2.2.2 Groundwater Wells ..................................................................................................... 6
    2.2.3 Water Treatment Plant and Storage Tank .................................................................. 6
  2.3 Location .................................................................................................................................. 6
  2.4 Climate .................................................................................................................................... 7
  2.5 Population ............................................................................................................................ 8
  2.6 Demographics ....................................................................................................................... 9
  2.7 EGWD Customer Base ......................................................................................................... 9
    2.7.1 Single-Family ............................................................................................................... 10
    2.7.2 Multi-Family ................................................................................................................. 10
    2.7.3 Commercial/Institutional ......................................................................................... 10
    2.7.4 Industrial ...................................................................................................................... 10

**Section 3 – System Demands** ....................................................................................................... 11
  3.1 Baselines and Targets .......................................................................................................... 11
  3.2 Water Demands ................................................................................................................... 13
  3.3 Water Demand Projections .................................................................................................. 20
  3.4 Water Use Reduction Plan .................................................................................................... 20

**Section 4 – System Supplies** ....................................................................................................... 21
  4.1 Water Sources .................................................................................................................... 21
  4.2 Groundwater ...................................................................................................................... 22
4.2.1 Regional Groundwater Planning ........................................................................... 23
4.2.2 Basin Description ................................................................................................... 25
4.2.3 Historical and Projected Groundwater Use ............................................................ 26
4.3 Water Service Reliability ........................................................................................... 26
4.4 Transfer and Exchange Opportunities ....................................................................... 27
4.5 Desalination ............................................................................................................... 27
4.6 Wastewater Collection, Treatment, and Disposal ....................................................... 27
4.7 Recycled Water Background ....................................................................................... 28
4.8 Coordination with SRCSD ......................................................................................... 29
4.9 EGWD Recycled Water Opportunities ....................................................................... 29
4.10 Future Water Projects ............................................................................................... 32

Section 5 – Water Supply Reliability and Water Shortage Contingency Planning ............... 34

Section 6 – Demand Management Measures (DMMs) ....................................................... 44

June 22, 2011
6.2.11 DMM L: Conservation Coordinator ...............................................................59
6.2.12 DMM M: Water Waste Prohibition ..............................................................60
6.3 Evaluation of DMMs Not Planned to be Implemented ......................................61
6.3.1 DMM F: High-Efficiency Washing Machine Rebate Programs ......................61
6.3.2 DMM N: Residential Ultra Low-Flush Toilet (ULFT) Replacement Programs .................................................................................................................63

Section 7 – Climate Change (Optional) ................................................................66
Section 8 – Completed UWMP Checklist (Optional) ...........................................67
References .............................................................................................................68

TABLES

Table 1 – Coordination With Other Agencies .......................................................... 3
Table 2 – Elk Grove Water District Climate Conditions ............................................. 8
Table 3 – Elk Grove Water District Population – Current and Projected ..................... 9
Table 4 – Base Period Ranges .................................................................................. 12
Table 5 – Base Daily Per Capita Water Use – 10 Year Range .................................... 12
Table 6 – Base Daily Per Capita Water Use – 5 Year Range ....................................... 13
Table 7 – Water Deliveries (Tariff Area No. 1) – Actual 2005 .................................. 14
Table 8 – Water Deliveries (Tariff Area No. 2) – Actual 2005 .................................. 14
Table 9 – Water Deliveries (Tariff Area No. 1) – Actual 2010 ................................. 15
Table 10 – Water Deliveries (Tariff Area No. 2) – Actual 2010 ............................... 15
Table 11 – Water Deliveries (Tariff Area No. 1) – Projected 2015 ............................ 16
Table 12 – Water Deliveries (Tariff Area No. 2) – Projected 2015 ............................ 16
Table 13 – Water Deliveries (Tariff Area No. 1) - Projected 2020 ............................. 17
Table 14 – Water Deliveries (Tariff Area No. 2) - Projected 2020 ............................. 17
Table 15 – Water Deliveries (Tariff Area No. 1) – Projected 2025, 2030, and 2035 ........ 18
Table 16 – Water Deliveries (Tariff Area No. 2) – Projected 2025, 2030, and 2035 ........ 18
Table 17 – Lower Income Projected Increased Water Demands .............................. 19
Table 18 – Sales to Other Water Agencies ................................................................. 19
Table 19 – Additional Water Uses and Losses ............................................................... 19
Table 20 – Total Water Use.......................................................................................... 20
Table 21 – Retail Agency Demand Projections Provided to Wholesale Suppliers........ 20
Table 22 – Water Supplies – Current and Projected...................................................... 21
Table 23 – Wholesale Supplies – Existing and Planned Sources of Water ..................... 22
Table 24 – Groundwater (Tariff Area No. 1) – Volume Pumped .................................... 26
Table 25 – Groundwater (Tariff Area No. 1) – Volume Projected to be Pumped .......... 26
Table 26 – Transfer and Exchange Opportunities.......................................................... 27
Table 27 – Wastewater Collection and Treatment....................................................... 28
Table 28 – Wastewater Disposal.................................................................................. 28
Table 29 – Potential Future Recycled Water Use .......................................................... 31
Table 30 – 2005 UWMP Projection versus 2010 Actual ............................................... 32
Table 31 – Methods to Encourage Recycled Water Use ............................................... 32
Table 32 – Potential Future Water Supply Projects....................................................... 33
Table 33 – Factors Resulting in Inconsistency of Supply .............................................. 36
Table 34 – Supply Reliability – Current Water Sources .............................................. 36
Table 35 – Water Quality – Current and Projected Water Supply Impacts .................... 37
Table 36 – Basis of Water Year Data ............................................................................ 38
Table 37 – Supply Reliability – Historic Conditions...................................................... 38
Table 38 – Supply and Demand Comparison (Tariff Area No. 1) – Normal Year .......... 38
Table 39 – Supply and Demand Comparison (Tariff Area No. 2) – Normal Year .......... 39
Table 40 – Supply and Demand Comparison (Tariff Area No. 1) – Single-Dry Year ...... 39
Table 41 – Supply and Demand Comparison (Tariff Area No. 2) – Single-Dry Year ...... 39
Table 42 – Supply and Demand Comparison (Tariff Area No. 1) .................................... 40
Table 43 – Supply and Demand Comparison (Tariff Area No. 2) .................................... 40
Table 44 – Water Shortage Contingency – Rationing Stages ....................................... 41
Table 45 – Water Shortage Contingency – Mandatory Prohibitions ............................ 42
Table 46 – Water Shortage Contingency – Consumption Reduction Methods ............ 42
Table 47 – Water Shortage Contingency – Penalties and Charges ......................................................42
Table 48 – Elk Grove Water District DMMs .........................................................................................44

FIGURES

Figure 1 – Florin Resource Conservation District Vicinity Map .......................................................7
Figure 2 – Sacramento County Central Basin Water Purveyors .......................................................23
Figure 3 – Regional Sacramento County Groundwater Basins .......................................................24
Figure 4 – SRCSD Water Recycling Target Areas Map .................................................................30
Figure 5 – Central Groundwater Basin Historic Groundwater Levels ............................................35

APPENDICES

A Urban Water Management Plan Act
B Agency Coordination Letters
C Notice of Public Hearing for 2010 Urban Water Management Plan
D Resolution Adopting 2010 Urban Water Management Plan
E Elk Grove Water District Service Area Map
F City of Elk Grove General Plan Land Use Exhibit
G DWR Bulletin 118-Update 2003
H Central Sacramento County Groundwater Management Plan (CD)
I Central Groundwater Basin Historic Groundwater Elevations Exhibit
J Ordinance 04-28-10-01 Water Shortage Contingency Plan
K Ordinance 06-22-11-01 Prescribing Rates for Water Service
Acronyms

AF  Acre-Feet
AFY  Acre-Feet per Year
CDPH  California Department of Public Health
CII  Commercial, Industrial, and Institutional
CIP  Capital Improvement Program
CSCGMP  Central Sacramento County Groundwater Master Plan
CUWCC  California Urban Water Conservation Council
DMM  Demand Management Measure
DWR  Department of Water Resources
EGWD  Elk Grove Water District
EGCSD  Elk Grove Community Services District
ET₀  Evapotranspiration Rate
FRCD  Florin Resource Conservation District
FRWA  Freeport Regional Water Authority
GIS  Geographic Information System
GMP  Groundwater Master Plan
GPD  Gallons per day
GPCD  Gallons per Capita Day
HECW  High-Efficiency Clothes Washers
I.C.E.  Irrigation Consultation and Evaluation
MIE  Media in Education
PSA  Public Services Announcement
RWA  Regional Water Authority
RWEP  Regional Water Enhancement Program
SACOG  Sacramento Area Council of Governments
SCWA  Sacramento County Water Agency
SGA  Sacramento Groundwater Authority
SRCSD  Sacramento Regional County Sanitation District
SRWTP  Sacramento Regional Wastewater Treatment Plant
ULFT  Ultra Low-Flush Toilet
UWMP  Urban Water Management Plan
WET  Water Education for Teachers
WROS  Water Recycling Opportunities Study
WRP  Water Recycling Program
Executive Summary

The Urban Water Management Act (Act) became part of the California Water Code during the 1983-1984 regular session of the California Legislature. The California Water Code requires every urban water supplier providing water for municipal purposes either directly or indirectly to more than 3,000 customers (water connections) or supplying more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan every five years to the California Department of Water Resources. Water Suppliers are to prepare or update Urban Water Management Plans in years that end in 0 and 5.

The Elk Grove Water District (EGWD), a department of the Florin Resource Conservation District, had approximately 12,100 water connections in 2010 and, as such, is required to submit an updated Urban Water Management Plan. The EGWD serves a population in excess of 35,000 residents.

The EGWD service covers a triangular shaped area of approximately 13 square miles and is generally bounded as follows: to the north by Sheldon Road, to the east by Grant Line Road, to the south by Union Industrial Park, and to the west by State Route 99. The service area is separated into two distinct subareas. These areas are referenced as Tariff Area No. 1 and Tariff Area No. 2. In general, Tariff Area No. 1 is served by the pumping of groundwater wells owned by the EGWD, and Tariff Area No. 2 is service by purchased water from the Sacramento County Water Agency.

This 2010 Urban Water Management Plan presents an analysis of EGWD’s water supply sources and water demands to determine water reliability through 2035. There is expected to be sufficient water supplies to meet future demands.

In accordance with the Act and subsequent amendments, the required components of the 2010 Urban Water Management Plan include:

- A description of the water service area.
- A description of the existing and planned surface and groundwater sources available.
- Estimates of past, present, and projected water use.
- A description of opportunities for water transfers or exchanges.
Elk Grove Water District
2010 Urban Water Management Plan

- A description of the water conservation Demand Management Measures already in place, planned to be implemented, or not being pursued.

- A description of the Water Shortage Contingency Plan.

- Opportunities to utilize recycled water to reduce water demands.

The UWMP also includes a discussion of how the EGWD plans to meet requirements to reduce average per capita water usage by 20% by 2020.
Section 1 – Plan Preparation

1.1 Urban Water Management Planning Act

The Urban Water Management Act (Act) became part of the California Water Code with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California Legislature. The California Water Code requires every urban water supplier providing water for municipal purposes to more than 3,000 customers, either directly or indirectly, or supplying more than 3,000 acre-feet of water annually to adopt and submit an Urban Water Management Plan (UWMP) every five years to the California Department of Water Resources (DWR). The specific planning requirements are in the California Water Code Division 6, Part 2.6 Urban Water Management Planning. The complete UWMP Act text is contained in Appendix A.

In an effort to enable local districts to comply with the Act and cover all required topics in a clear and concise manner, DWR has issued the “Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan” (Guidebook). The Guidebook includes section outlines, templates, and guidance in developing a UWMP. This UWMP has been prepared consistent with the Guidebook outline.

In accordance with the Act and subsequent amendments, the required components of the 2010 UWMP include:

- A description of the water service area.
- A description of the existing and planned surface and groundwater sources available.
- Estimates of past, present, and projected water use.
- A description of opportunities for water transfers or exchanges.
- A description of the water conservation Demand Management Measure already in place and planned to be implemented, including a discussion of how Elk Grove Water District plans to meet requirements to reduce average per capita water usage by 20% by 2020.
- A description of the Water Shortage Contingency Plan.
- Opportunities to use recycled water to reduce water demands.
This UWMP is divided into 8 sections. The sections include:

- **Section 1** is an introduction to the Urban Water Management Act requirements and describes the plan preparation and adoption.

- **Section 2** provides the background and description of the Elk Grove Water District (EGWD) service area and system, including population projections.

- **Section 3** describes water system baseline demands and targets along with future demand projections.

- **Section 4** discusses water system supplies.

- **Section 5** describes water supply reliability planning and water shortage contingency planning.

- **Section 6** discusses the suite of available demand management measures (DMM) and whether they are being, or planned to be, implemented by EGWD.

- **Section 7** is an optional section that could be used to discuss global warming impacts. It is not addressed in this UWMP, but is included to maintain consistency with the Guidebook.

- **Section 8** contains the UWMP completeness checklist.

### 1.2 Agency Coordination

The EGWD coordinated with the appropriate public agencies in developing the 2010 UWMP, to provide the opportunity for these agencies to participate during its preparation. Presented on **Table 1** are the agencies that were invited to participate and comment on the preparation of the UWMP. EGWD sent letters to each agency stating that the UWMP was being updated and they were invited to participate in the process. These agencies either interact with the EGWD or have direct interest in EGWD’s water system. Copies of the letters, sent more than 60 days in advance of the public hearing to adopt, are included in **Appendix B**.
Table 1 – Coordination With Other Agencies

<table>
<thead>
<tr>
<th>Coordinating Agencies</th>
<th>Participated in UWMP Process</th>
<th>Commented on Draft</th>
<th>Attended Public Meetings</th>
<th>Contacted for Assistance</th>
<th>Received Copy of Draft UWMP</th>
<th>Received Notice of Intention to Adopt</th>
<th>Not Involved/No Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sacramento County Water Agency</td>
<td>✅</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Elk Grove Public Works Dept.</td>
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</tr>
<tr>
<td>Elk Grove Planning Dept.</td>
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</tr>
<tr>
<td>Elk Grove Unified School District</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cosumnes CSD</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sacramento Regional County Sanitation District</td>
<td>✅</td>
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<td></td>
</tr>
</tbody>
</table>

1.3 Public Participation

The Act requires encouragement of public participation, as well as a public hearing for the UWMP. The opportunity for public input was provided at three scheduled events as follows:

- May 25, 2011 – An update and presentation on the development of the UWMP was provided at the monthly EGWD board meeting.
- June 2, 2011 – The Board hosted a public workshop specific to the 2010 UWMP.
- June 22, 2011 – The Board held a public hearing prior to adopting the UWMP.

Copies of the draft report were available to the public at EGWD’s office two weeks prior to the public hearing. Appendix C includes the noticing of the public hearing, which met the Act requirements.

In addition to noticing the public hearing, EGWD advertised the workshop within the community, and believes that the methods employed provided sufficient outreach such that a wide range of social, cultural, and economic elements of the community were given both opportunity and encouragement to participate.
On a broader public participation level, EGWD is a member of the Regional Water Authority (RWA), which is instrumental in making the public aware of regional water issues. RWA is a joint powers authority founded in 2001, with the mission to serve and represent over 20 agencies and water providers in the Sacramento area. Public participation is a large aspect of RWA’s goals. EGWD is involved with RWA’s School Education Program and Public Information Program.

1.4 Plan Adoption and Implementation

The draft UWMP was prepared during the spring of 2011, and a final UWMP was adopted by EGWD’s Board on June 22, 2011, for submittal to DWR by July 31, 2011. Appendix D includes the Resolution of Plan Adoption by EGWD’s Board. Upon adopting the UWMP and submitting it to DWR, the Board of Directors for EGWD affirms that the following will occur in accordance with the requirements of the Act:

- A copy of the UWMP will be submitted to the California State Library within 30 days.

- A copy of the UWMP will be provided to the City of Elk Grove within 30 days.

- Copies of the EGWD 2010 UWMP will be made available for public review during normal business hours at EGWD’s office located at 9257 Elk Grove Blvd., Elk Grove, CA 95624

EGWD will use the 2010 UWMP as a planning tool, as well as for implementing and maintaining its focus on DMMs in order to meet the 20% per capita water use reduction by 2020.
Section 2 – System Description

2.1 EGWD Overview

The EGWD has been a water purveyor in the southern part of Sacramento County for over 115 years, and previously went by the names Elk Grove Water Service and Elk Grove Water Works. The EGWD is a department of the Florin Resource Conservation District (FRCD) who purchased the water system in 1999. EGWD is governed by a five-member Board of Directors, serving four-year terms.

EGWD services its customers in two tariff areas with pumped groundwater and the purchase of treated conjunctive use (groundwater and surface water) water from the County of Sacramento Water Agency (SCWA). The EGWD service area covers approximately 13 square miles and is bounded by Sheldon Road to the north, Highway 99 to the west, Grant Line Road to the east, and the Union Industrial Park to the south.

2.2 EGWD System Overview

The EGWD is comprised of two service areas referred to as Tariff Area No. 1 and Tariff Area No. 2. Tariff Area No. 1 is comprised of approximately 7,930 customers and its service boundary encompasses approximately 3,145 acres. Tariff Area No. 1 is supplied by groundwater wells, seven which are active, and a potable groundwater treatment plant with aboveground storage tanks.

Tariff Area No. 2 has a service area of approximately 4,875 acres and a customer base of approximately 4,115 connections. The Sacramento County Water Agency wholesales the water to the EGWD customers in Tariff Area No. 2, under the first amended and Restated Master Water Agreement between SCWA and FRCD. EGWD is responsible for billing and customer service for Tariff Area No. 2. A service area map is included in Appendix E.

While referred to by the District as Tariff Areas, the differentiation has to do with the separate water suppliers for Tariff Areas Nos. 1 (EGWD) and 2 (SCWA). The rate schedules for the areas are identical.

2.2.1 Transmission and Distribution Main Facilities

EGWD is responsible for the maintenance and operation of the transmission and distribution mains for Tariff Area No. 1 and the distribution mains for Tariff Area No. 2.
2.2.2 Groundwater Wells

EGWD owns and operates groundwater wells that provide potable water to the Tariff Area No. 1 customers. The groundwater wells within the EGWD system obtain water from aquifers between 200 and 1,000 feet below the ground elevation.

2.2.3 Water Treatment Plant and Storage Tank

The EGWD owns and operates a water treatment plant site that receives water from wells. This treatment plant also includes a pump station and two 1.0 million gallon aboveground water storage tanks. This facility is used to serve the customers within Tariff Area No. 1. The water treatment plant facility is referred to as the Railroad Street Treatment and Storage Facility. EGWD also has a well and water treatment plant in the south end of Tariff Area No. 1. This facility is currently not in service and is classified as a “stand-by” well with the California Department of Public Health (CDPH). This facility is referred to as the Hampton Water Treatment Plant. There is a single water treatment plant within the Tariff Area No. 2 service boundary, which is owned and operated by SCWA. This plant is referred to as the East Elk Grove Groundwater Treatment Plant.

2.3 Location

The FRCD is located in the southern portion of Sacramento County and its service boundary encompasses approximately 8,300 acres. The FRCD service area is shown on Figure 1. EGWD, being a portion of the FRCD service boundary, is bounded to the north by Sheldon Road, the east by Grant Line Road, the south by Industrial Park, and the west by State Route 99. EGWD’s main office is located at 9257 Elk Grove Boulevard, Elk Grove, CA 95624.
2.4 Climate

The EGWD service area has a climate characterized by damp to wet, cool winters and hot, dry summers. The wet season is generally October through April. The mean annual temperature is 61°F. Summer heat is often moderated by a sea breeze known as the "delta breeze" which comes through the Sacramento-San Joaquin River Delta from the San Francisco Bay. On average, there are approximately 75 days when the high temperature exceeds 90°F. The average annual precipitation is approximately 18 inches.
The Western Regional Climate Center was used to document historical data trends for regional temperature and precipitation records. The Sacramento Executive Airport station is the nearest station and is located northwest of EGWD. Table 2 displays the monthly averages for maximum and minimum temperatures and precipitation.

<table>
<thead>
<tr>
<th>Table 2 – Elk Grove Water District Climate Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Average ET$_0$ (in)</td>
</tr>
<tr>
<td>Total Rainfall (in)</td>
</tr>
<tr>
<td>Average Maximum Temperature (F)</td>
</tr>
<tr>
<td>Average Minimum Temperature (F)</td>
</tr>
<tr>
<td>Aug</td>
</tr>
<tr>
<td>Monthly Average ET$_0$ (in)</td>
</tr>
<tr>
<td>Total Rainfall (in)</td>
</tr>
<tr>
<td>Average Maximum Temperature (F)</td>
</tr>
<tr>
<td>Average Minimum Temperature (F)</td>
</tr>
</tbody>
</table>

Source: Monthly climate summary from Western Regional Climate Center, Sacramento Executive Airport station California (047630). ET$_0$ report from California Irrigation Management Information System - Zone 14.

2.5 Population

The year 2000 population of the EGWD was calculated using data from the U.S. Census Bureau Website, www.census.org, and the steps outlined in “Baseline Daily Per Capita Water Use” (Section M) and in Appendix A of the Guidebook. Population for the years 2005 and 2010 were calculated by applying a ratio of population to residential service connections.
With the use of the Geographic Information System (GIS) boundaries for both Tariff Area No. 1 and Tariff Area No. 2, the population projections for future years beyond 2010 were calculated and are presented in Table 3. To determine the projected populations for years after 2010, the SACOG Website and land use data from the City of Elk Grove’s General Plan was used to determine build-out populations. The population projections for 2015 to 2035 were estimated for each five-year estimate based upon assumed population absorption. Tariff Area No. 1 is currently 90-95% built-out and is assumed to build out through 2020. Tariff Area No. 2 was assumed to reach build out at 2030.

<table>
<thead>
<tr>
<th>Table 3 – Elk Grove Water District Population – Current and Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff Area No. 1</td>
</tr>
<tr>
<td>Tariff Area No. 2</td>
</tr>
<tr>
<td>Total Service Area Population</td>
</tr>
<tr>
<td><strong>Data Source</strong></td>
</tr>
</tbody>
</table>

### 2.6 Demographics

The EGWD service area demographics are consistent with that of the City of Elk Grove. Elk Grove, according to the 2000 Census data, consisted of approximately 60,000 people and 18,500 households. Of that total, the EGWD service area contained a population of approximately 24,400 with 8,100 residential households. It is estimated that the average household family consists of 3.0 persons per household, which is consistent with the City of Elk Grove. The majority of the EGWD service area is residential-type development. Commercial business uses consists of approximately 11.5% of the land use. There is less than 2.5% of industrial-type land use.

### 2.7 EGWD Customer Base

The build-out of the EGWD service area consists mainly of residential, multi-family, and commercial land uses. The City of Elk Grove General Plan (General Plan) was the basis for the calculation of the total future customer connections and future population estimates. A copy of the April 2009 City of Elk Grove General Plan Land Use Exhibit is presented in Appendix F for reference. Following is a brief discussion on the main land use categories that constitute the EGWD service area.
2.7.1 **Single-Family**

Single-family customers make up approximately 84.0% of the service connections in the EGWD’s system. Single-family customers are made up of single-family residential homes, rural residential, and estate residential.

2.7.2 **Multi-Family**

Multi-family customers make up approximately 2.0% of the land use area within the combined tariff areas. Multi-family customers include apartments, duplexes, and a trailer park within the EGWD.

2.7.3 **Commercial/Institutional**

Commercial and institutional customers make up approximately 11.5% of the service area in EGWD’s tariff areas. Commercial/institutional and public/quasi public customers include any commercial businesses, schools, churches, or business parks.

2.7.4 **Industrial**

Industrial-type land uses consist of approximately 2.5% of the build-out land use. These land uses are mainly in the Tariff Area No. 1 service area and are concentrated along State Route 99 and the Union Pacific Railroad corridor. These land uses consist of institutional, public/quasi-public, light industrial, and heavy industrial.
Section 3 – System Demands

This section includes the assumptions, methods, and rationale used to generate the gross water use and baseline per capita per day water use required to generate the 2020 target water use demands. The baseline and target demands were developed specific to EGWD, as opposed to being based upon regional data.

The following sections discuss the approaches used to develop the baselines and target demands that are consistent with the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use that is presented in the “Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan.”

3.1 Baselines and Targets

Beginning with the 2010 UWMP, retail water suppliers are required to include the following:

- Baseline daily per capita water use.
- Urban water use target for 2020.
- Interim water use target for 2015.

In accordance with the Act requirements, a 10-year continuous calendar year was used to generate an average (baseline) per capita per day water use, since less than 10% of recycled water is used within the EGWD service area. In fact, no recycled water is used within the EGWD service area. Gross water usage was determined based upon the annual usage reported to CDPH by EGWD. EGWD reported usage for pumped groundwater and surface water, which were attributed 100% each to Tariff Area No. 1 and Tariff Area No. 2, respectively. Table 4 and Table 5 present the details of the data used to calculate the baseline water use. Using the allowable ranges of historical data, EGWD selected the years 1994-2004 to calculate baseline usage. (Note: Data was not located for 1997, so 1996 and 1998 were treated as continuous for purposes of the analysis.) This resulted in a calculated baseline water use of 253 gpcd.

The Guidebook identifies up to four methods that can be used to calculate the urban water use target. A water agency is free to utilize the results from any method. Each of these methods is discussed below. EGWD used Method 1 to establish its urban water use target.

Method 1 – Target is 80% of the water supplier’s baseline per capita water use. This results in a water use target of 202 gpcd in 2020, based upon the baseline of 253 gpcd. The interim target water use target is 227 gpcd in 2015.
Method 2 – Per capita daily water use estimated using a sum of performance standards. This method requires accurate estimates of all landscaped areas within the EGWD, such as through the use of satellite imagery or site visits.

Method 3 – Ninety-five percent of the applicable regional target.

Method 4 – This approach is based upon calculated reduction targets.

As mentioned previously, EGWD decided to use Method 1 in setting the target water use at 202 gpcd in 2020.

<table>
<thead>
<tr>
<th>Table 4 – Base Period Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Parameter</td>
</tr>
<tr>
<td>2008 Total Water Deliveries$^1$</td>
</tr>
<tr>
<td>2008 Total Volume of Delivered Recycled Water</td>
</tr>
<tr>
<td>2008 Recycled Water as a Percent of Total Deliveries</td>
</tr>
<tr>
<td>Number of Years in Base Period$^2$</td>
</tr>
<tr>
<td>Year Beginning Base Period Range</td>
</tr>
<tr>
<td>Year Ending Base Period Range</td>
</tr>
<tr>
<td>5-year Base Period</td>
</tr>
<tr>
<td>Year Beginning Base Period Range</td>
</tr>
<tr>
<td>Year Ending Base Period Range</td>
</tr>
</tbody>
</table>

$^1$Volume is in AFY.

$^2$Data was not located for 1997, so 1996 and 1998 were treated as contiguous for purposes of the analysis.

<table>
<thead>
<tr>
<th>Table 5 – Base Daily Per Capita Water Use – 10 Year Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Period Year</td>
</tr>
<tr>
<td>Sequence Year</td>
</tr>
<tr>
<td>Year 1</td>
</tr>
<tr>
<td>Year 2</td>
</tr>
<tr>
<td>Year 3</td>
</tr>
<tr>
<td>Year 4</td>
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<tr>
<td>Year 5</td>
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<tr>
<td>Year 6</td>
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<tr>
<td>Year 7</td>
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<tr>
<td>Year 8</td>
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<tr>
<td>Year 9</td>
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<tr>
<td>Year 10</td>
</tr>
</tbody>
</table>
As an additional step, the Guidebook requires that a maximum allowable 2020 target be calculated, and that the target used cannot be set any higher than that number. This is established by calculating a continuous 5-year period of the average daily per capita water use ending no earlier than 2007, and multiplying the average daily water use by 95%. EGWD calculated the 5-year average from 2003 to 2007, and the resulting average for this period of time is 240 gpcd; 95% of this water use is 228 gpcd. In accordance with the Guidebook, the 2020 target per capita water use cannot be higher than 228 gpcd. Table 6 shows the calculation of the average daily per capita water use for the 5-year span.

<table>
<thead>
<tr>
<th>Base Period Year</th>
<th>Distribution System Population</th>
<th>Daily System Gross Water Use (gpd)</th>
<th>Annual Daily Per Capita Water Use (gpcd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>2003</td>
<td>30,050</td>
<td>7,116,497</td>
</tr>
<tr>
<td>Year 2</td>
<td>2004</td>
<td>31,800</td>
<td>7,583,288</td>
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<tr>
<td>Year 3</td>
<td>2005</td>
<td>32,950</td>
<td>7,065,753</td>
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<tr>
<td>Year 4</td>
<td>2006</td>
<td>33,495</td>
<td>8,380,822</td>
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<tr>
<td>Year 5</td>
<td>2007</td>
<td>33,900</td>
<td>8,893,150</td>
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</tbody>
</table>

3.2 Water Demands

This section discusses the historic and future projected water demands for EGWD for both Tariff Area No. 1 and Tariff Area No. 2. The demands for Tariff Area No. 2 were provided to SCWA to incorporate into its UWMP as a wholesale water supply requirement, refer to Table 21.

EGWD’s historical gross water use includes records for both Tariff Area No. 1 and Tariff Area No. 2. The billing software used by EGWD only recorded the customer use records by categories of residential, commercial, public, or other. The residential water connections are not distinguished between single-family and multi-family. Table 7, Table 8, Table 9, and Table 10 present the historical data from EGWD that were presented to the California Department of Health Services on annual reports.
### Table 7 – Water Deliveries (Tariff Area No. 1) – Actual 2005

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th># of Accounts</th>
<th>Volume³</th>
<th># of Accounts</th>
<th>Volume³</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>1,443</td>
<td>--</td>
<td>5,804</td>
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</tr>
<tr>
<td>Multi-Family²</td>
<td>--</td>
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<td>--</td>
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</tr>
<tr>
<td>Commercial</td>
<td>219</td>
<td>--</td>
<td>144</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
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<td>Institutional/Governmental</td>
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<tr>
<td>Landscape</td>
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<tr>
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<td>--</td>
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<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,662</strong></td>
<td><strong>1,180</strong></td>
<td><strong>5,948</strong></td>
<td><strong>4,219</strong></td>
<td><strong>5,399</strong></td>
</tr>
</tbody>
</table>

¹Volume is in AFY.
²EGWD customer billings do not distinguish between single-family and multi-family connections.
³Volumes by service connection type are not available.

### Table 8 – Water Deliveries (Tariff Area No. 2) – Actual 2005

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th># of Accounts</th>
<th>Volume³</th>
<th># of Accounts</th>
<th>Volume³</th>
<th>Volume</th>
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<tbody>
<tr>
<td>Single-Family</td>
<td>3,847</td>
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</tr>
<tr>
<td>Multi-Family²</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>87</td>
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<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
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<td>--</td>
</tr>
<tr>
<td>Institutional/Governmental</td>
<td>--</td>
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</tr>
<tr>
<td>Landscape</td>
<td>--</td>
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</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
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<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,934</strong></td>
<td><strong>2,516</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>2,516</strong></td>
</tr>
</tbody>
</table>

¹Volume is in AFY.
²EGWD customer billings do not distinguish between single-family and multi-family connections.
³Volumes by service connection type are not available.
Table 9 – Water Deliveries (Tariff Area No. 1) – Actual 2010

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th>Metered # of Accounts</th>
<th>Volume3</th>
<th>Not Metered # of Accounts</th>
<th>Volume3</th>
<th>Total1 Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>2,663</td>
<td>--</td>
<td>4,855</td>
<td>--</td>
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</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>278</td>
<td>--</td>
<td>136</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
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</tr>
<tr>
<td>Governmental</td>
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<tr>
<td>Landscape</td>
<td>--</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,941</strong></td>
<td><strong>1,405</strong></td>
<td><strong>4,991</strong></td>
<td><strong>2,380</strong></td>
<td><strong>3,785</strong></td>
</tr>
</tbody>
</table>

1Volume is in AFY.
2EGWD customer billings do not distinguish between single-family and multi-family connections.
3Volumes by service connection type are not available.

Table 10 – Water Deliveries (Tariff Area No. 2) – Actual 2010

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th>Metered # of Accounts</th>
<th>Volume3</th>
<th>Not Metered # of Accounts</th>
<th>Volume3</th>
<th>Total1 Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>3,999</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>113</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
<td>--</td>
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<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Governmental</td>
<td>--</td>
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<tr>
<td>Landscape</td>
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<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4,112</strong></td>
<td><strong>2,935</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>2,935</strong></td>
</tr>
</tbody>
</table>

1Volume is in AFY.
2EGWD customer billings do not distinguish between single-family and multi-family connections.
3Volumes by service connection type are not available.

Table 11 and Table 12 present the projected Tariff Area No. 1 and Tariff Area No. 2 metered and non-metered connections and gross water use for 2015. EGWD’s customer billing software does not have the capacity to categorize the residential customers by structure type. For this reason, presented on Table 7 through Table 12 are the total numbers of accounts by single-family and commercial only.
### Table 11 – Water Deliveries (Tariff Area No. 1) – Projected 2015

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th># of Accounts</th>
<th>Volume</th>
<th># of Accounts</th>
<th>Volume</th>
<th>Total</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>8,130</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>8,130</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family²</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>430</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>430</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
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<td>--</td>
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<tr>
<td>Governmental</td>
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</tr>
<tr>
<td>Landscape</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL¹</td>
<td><strong>8,560</strong></td>
<td><strong>6,205</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>8,560</strong></td>
<td><strong>6,205</strong></td>
</tr>
</tbody>
</table>

¹Volume is in AFY.
²EGWD billing does not distinguish between single-family and multi-family connections.
³EGWD is estimating all connections will be metered by 2015.
⁴Volumes per service connections are not available from EGWD.

### Table 12 – Water Deliveries (Tariff Area No. 2) – Projected 2015

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th># of Accounts</th>
<th>Volume</th>
<th># of Accounts</th>
<th>Volume</th>
<th>Total</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>4,680</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>4,680</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family²</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>145</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>145</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
<td>--</td>
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<td>--</td>
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</tr>
<tr>
<td>Governmental</td>
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<tr>
<td>Landscape</td>
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<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL¹</td>
<td><strong>4,825</strong></td>
<td><strong>3,570</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>4,825</strong></td>
<td><strong>3,570</strong></td>
</tr>
</tbody>
</table>

¹Volume is in AFY.
²EGWD billing does not distinguish between single-family and multi-family connections.
³EGWD is estimating all connections will be metered by 2015.
⁴Volumes per service connections are not available from EGWD.
Tariff Area No. 1 is estimated to be built-out in 2020. Table 13 and Table 14 represent the built-out demands of Tariff Area No. 1 and Tariff Area No. 2, based upon the 2020 unit water demand factor of approximately 202 gpcd.

<table>
<thead>
<tr>
<th>Water use sectors</th>
<th>Metered</th>
<th>Not Metered</th>
<th>Total 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of Accounts</td>
<td>Volume</td>
<td># of Accounts</td>
</tr>
<tr>
<td>Single-Family</td>
<td>8,745</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>580</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Governmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscape</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL 1</strong></td>
<td>9,325</td>
<td>5,940</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Volume is in AFY.

<table>
<thead>
<tr>
<th>Water use sectors</th>
<th>Metered</th>
<th>Not Metered</th>
<th>Total 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of Accounts</td>
<td>Volume</td>
<td># of Accounts</td>
</tr>
<tr>
<td>Single-Family</td>
<td>5,360</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>177</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Governmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscape</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL 1</strong></td>
<td>5,537</td>
<td>3,640</td>
<td>0</td>
</tr>
</tbody>
</table>

1 Volume is in AFY.
Table 15 and Table 16 show the estimated projected Tariff Area No. 1 and Tariff Area No. 2 demands. It is assumed that Tariff Area No. 1 is built-out in 2020, and Tariff Area No. 2 is built-out in 2030.

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th>2025 # of Accounts</th>
<th>2025 Volume $^1$</th>
<th>2030 # of Accounts</th>
<th>2030 Volume $^1$</th>
<th>2035 – Optional # of Accounts</th>
<th>2035 – Optional Volume $^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>8,745</td>
<td>--</td>
<td>8,745</td>
<td>--</td>
<td>8,745</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>580</td>
<td>--</td>
<td>580</td>
<td>--</td>
<td>580</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
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<td>--</td>
</tr>
<tr>
<td>Institutional/ Governmental</td>
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<tr>
<td>Landscape</td>
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</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL $^1$</td>
<td>9,325</td>
<td>5,940</td>
<td>9,325</td>
<td>5,940</td>
<td>9,325</td>
<td>5,940</td>
</tr>
</tbody>
</table>

$^1$Volume is in AFY.

<table>
<thead>
<tr>
<th>Water Use Sectors</th>
<th>2025 # of Accounts</th>
<th>2025 Volume $^1$</th>
<th>2030 # of Accounts</th>
<th>2030 Volume $^1$</th>
<th>2035 – Optional # of Accounts</th>
<th>2035 – Optional Volume $^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>6,040</td>
<td>--</td>
<td>6,720</td>
<td>--</td>
<td>6,720</td>
<td>--</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Commercial</td>
<td>208</td>
<td>--</td>
<td>240</td>
<td>--</td>
<td>240</td>
<td>--</td>
</tr>
<tr>
<td>Industrial</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Institutional/ Governmental</td>
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</tr>
<tr>
<td>Landscape</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Agriculture</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL $^1$</td>
<td>6,248</td>
<td>4,100</td>
<td>6,960</td>
<td>4,560</td>
<td>6,960</td>
<td>4,560</td>
</tr>
</tbody>
</table>

$^1$Volume is in AFY.

The Act requires that projected increased water use for proposed lower income single-family and multi-family housing be specifically identified. SACOG has prepared and adopted a 2006-2013 Regional Housing Needs Plan, which identifies the City of Elk Grove’s allocation of low and very low housing at 49.8%. EGWD believes it is a reasonable assumption to apply this percentage within their district boundary through build out, and that based upon the typical
housing product in these categories, per capita water use would be generally consistent across the overall range of housing units.

Table 17 lists the projected increases. Water demands for these units are included in future water demands used elsewhere in this UWMP.

<table>
<thead>
<tr>
<th>Table 17 – Lower Income Projected Increased Water Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Income Water Demands</td>
</tr>
<tr>
<td>Single- and Multi-Family Residential (Tariff Area No. 1)</td>
</tr>
<tr>
<td>Single- and Multi-Family Residential (Tariff Area No. 2)</td>
</tr>
<tr>
<td>TOTAL(^1)</td>
</tr>
</tbody>
</table>

\(^1\)Volume is in AFY.

EGWD is not planning to be in a position to wholesale or sell water to another water agency in the future. Table 18 shows that the EGWD does not anticipate on wholesaling any water from its current and planned water supply sources.

<table>
<thead>
<tr>
<th>Table 18 – Sales to Other Water Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Distributed</td>
</tr>
<tr>
<td>N/A</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Table 19 presents areas of water use that are not a part of residential, commercial, or industrial uses. In general, potable water is used exclusively for residential, commercial, public, and industrial uses. System losses are not identified in the table since EGWD uses the end user customer billings to document the gross water uses. Once all the connections are metered, EGWD shall record system losses as an independent volume. At this time, system losses are included in the customer demands.

<table>
<thead>
<tr>
<th>Table 19 – Additional Water Uses and Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saline Barriers</td>
</tr>
<tr>
<td>Groundwater Recharge</td>
</tr>
<tr>
<td>Conjunctive Use</td>
</tr>
<tr>
<td>Raw Water</td>
</tr>
<tr>
<td>Recycled Water</td>
</tr>
<tr>
<td>System Losses</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
Table 20 presents a summary of the potable water uses for EGWD. Additional water use and loss volumes are not available, since EGWD calculates the gross water use by the customer billings.

<table>
<thead>
<tr>
<th>Table 20 – Total Water Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Water Deliveries (Tariff Area No. 1)</td>
</tr>
<tr>
<td>Total Water Deliveries (Tariff Area No. 2)</td>
</tr>
<tr>
<td>Sales to Other Water Agencies</td>
</tr>
<tr>
<td>Additional Water Uses and Losses</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

1Volume is in AFY.

3.3 Water Demand Projections

Future potable water demand needs have been calculated through 2035, based upon historical gross water use and customer connections. In regards to Tariff Area No. 2, the calculated water estimated to be purchased from SCWA is presented in Table 21. These estimated demands were supplied to SCWA to use in the 2010 Sacramento County Zone 41 UWMP.

<table>
<thead>
<tr>
<th>Table 21 – Retail Agency Demand Projections Provided to Wholesale Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesaler</td>
</tr>
<tr>
<td>SCWA</td>
</tr>
</tbody>
</table>

1Volume is in AFY.

3.4 Water Use Reduction Plan

EGWD plans to implement a variety of DDMs as discussed in Section 6, with the goal of reducing water use to comply with the Water Conservation Bill of 2009. As discussed in Section 3.1, EGWD is setting a water use reduction goal of 20% by 2020, reducing per capita usage from a current average use of 253 gpcd to 202 gpcd by 2020. An interim target has also been set for reducing the per capita water use of 227 gpcd by 2015.
Section 4 – System Supplies

4.1 Water Sources

EGWD relies primarily on groundwater as the source of supply for both service areas, Tariff Area No. 1 and Tariff Area No. 2. Groundwater is supplied to Tariff Area No. 1 by a series of three shallow and four deep wells, which are owned and operated by EGWD. There are normally closed intertie connections with the SCWA. Tariff Area No. 2 is supplied water from the SCWA through a wholesale master water agreement with SCWA. Tariff Area No. 2, which is located within SCWA’s Zone 40, uses both groundwater and surface water as sources of water supply. EGWD has an agreement with SCWA to provide the water necessary to serve the Tariff Area No. 2 franchise area. Although SCWA has recently acquired surface water supplies and recycled water, Tariff Area No. 2 is not currently supplied with recycled water and currently does not receive any significant amount of surface water. SCWA is developing substantial surface water supplies as part of the Freeport Regional Water Authority (FRWA), which may become available to Tariff Area No. 2. The quality of the groundwater supplied by EGWD meets the California Department of Public Health (CDPH) drinking water standards. EGWD provides centralized water quality treatment to remove manganese and provide blending to reduce arsenic concentrations at the Railroad Street Water Treatment Plant for EGWD’s four deep wells. The three active shallow wells do not require treatment to meet CDPH water quality standards. EGWD does not provide recycled water to its service areas.

Table 22 presents the current and future water supplies used and that are planned to be used by EGWD.

<table>
<thead>
<tr>
<th>Water Supply Sources</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water Purchased From</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesaler Supplied Volume (Yes/No)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sacramento County Water Agency</td>
<td>Yes</td>
<td>2,935</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
</tr>
<tr>
<td>Supplier-Produced Groundwater</td>
<td>3,785</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Supplier-Produced Surface Water</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Transfers in</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Exchanges In</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Recycled Water</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Desalinated Water</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6,720</td>
<td>9,775</td>
<td>9,580</td>
<td>10,040</td>
<td>10,500</td>
<td>10,500</td>
</tr>
</tbody>
</table>

1Volume is in AFY.
As part of the coordination efforts with the wholesale water supplier SCWA, Table 23 was sent to SCWA to use in its UWMP. The data in the table represents the existing and planned wholesale water supplies that were calculated by EGWD for use in the Tariff Area No. 2 service area.

<table>
<thead>
<tr>
<th>Wholesale Sources 1</th>
<th>Contracted Volume</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjunctive Use (Groundwater and Surface Water)</td>
<td>4,560</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
</tbody>
</table>

1Volume is in AFY.

4.2 Groundwater

EGWD pumps groundwater from the South American Subbasin (Basin 5-21.65), as defined in the DWR Bulletin 118 – Update 2003 (Appendix G). Resultant of the Water Forum Agreement, the groundwater basins underlying the Sacramento County, as defined in the Central Sacramento County Groundwater Management Plan (CSCGMP), have been divided into three geographic subareas: (1) North Basin, (2) Central Basin, and (3) South Basin. A copy of the CSCGMP is included on a CD in Appendix H. The former general manager of EGWD was a key member of the task force that developed this plan. EGWD overlies and extracts groundwater from the Central Basin from seven wells that range in total depth from 450 to 1,075 feet below ground surface. The public water systems or water service providers that receive water from the Central Basin include EGWD, the California American Water Company, SCWA, the Golden State Water Company, and numerous private landowners who have overlying rights on their property. The Central Basin water providers and the groundwater basin boundaries are shown on Figure 2 and Figure 3, respectively. The Central Basin is not adjudicated or considered to be in a state of being over drafted. Due to the active planning by water agencies, the basin is not foreseen to be over drafted in the future.
Source: Central Sacramento County Groundwater Management Plan (February 2006).

**Figure 2 - Sacramento County Central Basin Water Purveyors**

### 4.2.1 Regional Groundwater Planning

Groundwater use is regularly monitored within the Sacramento County region. The Sacramento Groundwater Authority (SGA) Basin Management Report that was prepared in 2007-2008, found that groundwater use in the Central Basin, where EGWD is located, has remained relatively constant at approximately 262,500 AFY during the preceding four years and had a high of 264,860 in 2008. In communication with the other groundwater users from the basin
(SCWA, the Golden State Water Company, and the California American Water Company), it is not anticipated that groundwater extraction would have increased in the years of 2009 or 2010, given the dramatic decline in home construction and the depressed local economy. This would indicate a remaining groundwater capacity of approximately 8,140 AFY in regards to the agreed-upon sustainable yield of 273,000 AFY for the Central Basin stakeholders.

Source: Central Sacramento County Groundwater Management Plan (February 2006).

Figure 3 - Regional Sacramento County Groundwater Basins
4.2.2 Basin Description

EGWD is located in the Central Basin of the Sacramento County Groundwater Basin, as identified in the CSCGMP (February 2006). The Central Basin is a portion of the South American Subbasin of the greater Sacramento Valley Groundwater Basin. The South American Subbasin is bounded by the American River to the north, the Sacramento River to the west, the Sierra Nevada to the east, and the Cosumnes and Mokelumne Rivers to the south.

The Central Basin includes a number of groundwater users that consist of agriculture, agricultural residential, urban, and environmental uses. The Central Basin boundary was defined by the Sacramento County groundwater model that was used in the Water Forum process. In October 2004, SCWA adopted a Groundwater Management Plan (GMP) for the portion of the Central Basin that is served water through Zone 40 of the SCWA. As stated in the CSCGMP, the Water Forum estimated the long-term average annual sustainable groundwater pumping yield from the Central Basin to be 273,000 AFY.

Numerous water purveyors within Sacramento County pump groundwater from public groundwater wells. This data is being collected as part of the Water Forum Successor Effort’s “Central Sacramento County Groundwater Forum,” and is presented in the CSCGMP, February 2006. This document presents the expected groundwater pumping rates through 2030, if the groundwater extraction is not supplemented with additional surface water contracts. SCWA also completed a GMP under California Water Code Section 10750. The Water Forum estimated the long-term average annual sustainable groundwater pumping yield from the Central Basin to be 273,000 AFY.

Groundwater elevations are regularly monitored within the region by DWR. Some of these records date back to the early 1950s. Hydrographs in the vicinity of EGWD’s service areas indicate that the groundwater elevations have declined from the early 1950s through the late 1970s. From approximately 1980, the groundwater elevations have remained relatively consistent, except for a temporary decline in the early to mid-1990s. The static depth to groundwater within EGWD currently ranges between 60 to 110 feet below the ground surface.

The aquifer system within the Central Basin consists of continental deposits of the late Tertiary to Quaternary age (DWR Bulletin 118). The major fresh water bearing geologic units are the Laguna Formation and the Mehrten Formation. EGWD has wells constructed in both of these formations. The Laguna Formation, which extends to a total depth of approximately 300 feet within the Central Basin, is used for private domestic wells and municipal water supply wells.
Water produced from the Laguna Formation and the Mehrten Formation is considered generally good quality with low total dissolved solids. Water produced from the Laguna Formation often meets all CDPH water quality standards, but exceeds the CPPH Maximum Contaminant Level (MCL) for arsenic within some areas of the Central Basin. The Mehrten Formation often contains manganese and odor, which exceed the CDPH MCLs. The upper portion of the Mehrten Formation, (between 300 feet to 700 feet within EGWD), often exceeds the CDPH MCL for arsenic within the Central Basin. The lower portion of the Mehrten Formation, (between 700 feet to 1,300 within EGWD) generally has concentrations of arsenic that are under the CDPH MCL, but still require treatment to remove manganese and odor.

4.2.3 Historical and Projected Groundwater Use

Table 24 presents the historical groundwater pumping volumes used to service Tariff Area No. 1.

<table>
<thead>
<tr>
<th>Table 24 – Groundwater (Tariff Area No. 1) – Volume Pumped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basin Name(s)</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Central Basin / South American Subbasin</td>
</tr>
<tr>
<td>Total groundwater pumped</td>
</tr>
<tr>
<td>Groundwater as a Percent of Total Water Supply</td>
</tr>
</tbody>
</table>

1Volume is in AFY and based on volumetric monthly meter records.

Table 25 presents the anticipated groundwater pumping volumes used to service Tariff Area No. 1.

<table>
<thead>
<tr>
<th>Table 25 – Groundwater (Tariff Area No. 1) – Volume Projected to be Pumped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basin name(s)</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Central Basin / South American Subbasin</td>
</tr>
<tr>
<td>Total Groundwater Pumped</td>
</tr>
<tr>
<td>Percent of Total Water Supply</td>
</tr>
</tbody>
</table>

1Volume is in AFY and based on projected volumetric monthly meter records.

4.3 Water Service Reliability

The CSCGMP was adopted by the SCWA on February 2006. One goal of the CSCGMP was to model the groundwater basin and establish a sustainable annual groundwater yield for the Central Basin. The CSCGMP is the result of the Water Forum process, a decade-long effort
involving multiple agencies and stakeholders within the region, and culminated in the negotiation and signing of the Water Forum Agreement. The CSCGMP provides for the long-term protection of groundwater quantity and quality within the region, and contains policies directing the development of surface water supplies, conservation, and other measures to service urban development as it occurs, thereby protecting the sustainable annual groundwater yield threshold of 273,000 AF.

Based upon the Central Basin’s total projected water supplies for normal, single-dry, and multiple-dry years over a 20-year projection, as demonstrated by the County’s UWMP and GMP, the Central Basin will have sufficient water to meet estimated water demands for the build-out of the EGWD Tariff Area No. 1 and Tariff Area No. 2.

4.4 Transfer and Exchange Opportunities

EGWD has opportunities for limited potable water transfers or exchanges with SCWA. EGWD does have interties between Tariff Area No.1 and Tariff Area No. 2. This allows the available exchange of water between the two service areas by the use of 12 valves, which are normally closed. Since EGWD is surrounded on all sides by SCWA, SCWA would be the only viable water provider for the exchange of potable water. Table 26 presents the current and proposed short-term water supply exchanges with SCWA. The estimated quantity represents a short-term exchange through the valves, if needed.

<table>
<thead>
<tr>
<th>Transfer Agency</th>
<th>Transfer or Exchange</th>
<th>Short Term or Long Term</th>
<th>Proposed Volume¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sacramento County Water Agency</td>
<td>Emergency Exchange</td>
<td>Short Term</td>
<td>500</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>500</td>
</tr>
</tbody>
</table>

¹Volume is in AFY.

4.5 Desalination

Desalination of ocean water is not physically or financially viable for EGWD, given its distance from the Pacific Ocean. Desalination of brackish groundwater is not an option, given the water quality of the groundwater basins from which SCWA and EGWD pump.

4.6 Wastewater Collection, Treatment, and Disposal

The EGWD lies within the sanitary sewer collection system of the Sacramento Area Sewer District (SASD), and the sanitary sewer treatment boundaries of the Sacramento Regional County Sanitation District (SRCSD). Based upon the estimated population within the EGWD service area, an approximate average daily dry weather flow of 4.7 MGD is conveyed by SASD.
sanitary sewer mains to the Sacramento Regional Treatment Plant (SRWTP). This is based upon a unit flow factor of approximately 135 gallons per capita per day, and a population of 35,000 within the EGWD service boundary. Currently, the average daily dry weather flow into the SRWTP from the Sacramento area is approximately 135 MGD. Treated wastewater not recycled, as discussed in the next section, is discharged into the Sacramento River. The projected average dry weather flow in 2020 is approximately 218 MGD. EGWD does not own, operate, or maintain any wastewater collection or treatment facilities. Table 27 presents the estimated sanitary sewer flow that is generated from the EGWD service areas of Tariff Area No.1 and Tariff Area No. 2. Since EGWD does not have recycled water backbone infrastructure to use recycled water, the volume shown meeting recycled water is zero. As mentioned previously, the volumes in Table 27 and Table 28 assumes a unit flow factor of 135 gallons per capita per day and the population projections in Table 3.

<table>
<thead>
<tr>
<th>Table 27 – Wastewater Collection and Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Wastewater</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>2005</strong></td>
</tr>
<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Wastewater collected from EGWD service area</td>
</tr>
<tr>
<td>4,455</td>
</tr>
<tr>
<td>5,220</td>
</tr>
<tr>
<td>5,805</td>
</tr>
<tr>
<td>6,425</td>
</tr>
<tr>
<td>6,715</td>
</tr>
<tr>
<td>7,010</td>
</tr>
<tr>
<td>7,010</td>
</tr>
<tr>
<td>Volume Meeting Recycled Water Standard</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

*Volumes is in AFY.

Since EGWD does not currently use recycled water and the future opportunities for using recycled water do not appear to be feasible, Table 28 presents the current and projected wastewater disposal methods for the wastewater generated from the EGWD service areas.

<table>
<thead>
<tr>
<th>Table 28 – Wastewater Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposal Method</td>
</tr>
<tr>
<td>Wastewater from EGWD service area discharged to Sacramento River</td>
</tr>
<tr>
<td>Recycled Water from SRWTP</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

*Volumes is in AFY.

### 4.7 Recycled Water Background

SRCSD has a Water Recycling Program (WRP), which is a partnership between SRCSD, SCWA, and Sacramento County Environmental Management Department, Water Protection Division. Within this partnership, SRCSD is responsible for treating the wastewater and providing recycled water supply. SCWA utilizes the recycled water and is responsible for the
distribution to customers. In general, SCWA is responsible for the recycled water once the water is pumped from the wastewater treatment plant.

Since April 2003, SRCSD’s WRP has provided a recycled water supply used for landscape irrigation, industrial uses, and environmental restoration. SRCSD's water recycling facility is located on the property of the SRWTP in the City of Elk Grove. The current recycling facility can sustainably provide up to 3.5 million gallons per day of recycled water to parks, landscaped street medians, and commercial and school sites in the Laguna West, Lakeside, and Stone Lakes developments. Recycled water treated at SRCSD's water recycling facility meets the California Department of Health Services' most stringent irrigation requirements for recycled water.

In January 2004, the SRCSD Board of Directors approved the concept for a large-scale WRP, which includes the following goals:

- Increase water recycling throughout the Sacramento region on the scale of 30 to 40 million gallons per day (MGD) over the next 20 years.
- Increase utilization of recycled water to expand SRCSD's effluent management options beyond continued discharge to the Sacramento River.
- Increase utilization of recycled water to meet growing non-potable demands, allowing Sacramento area water purveyors to reduce demands on their existing potable water supplies and reducing the need for additional water supplies in the future.

4.8 Coordination with SRCSD

EGWD staff and preparers of this UWMP met with SRCSD staff to discuss the current and future opportunities of supplying recycled water to EGWD’s service area. SRCSD discussed the anticipated build-out service area anticipated through 2030. EGWD and SRCSD discussed the contents of the SRWTP’s 2020 Master Plan and the Water Recycling Opportunities Study (WROS). The following section discusses the future opportunities for EGWD to utilize recycled water within its service area.

4.9 EGWD Recycled Water Opportunities

SRCSD prepared a study that investigates possible future recycled water use that is anticipated to be generated from the SRWTP. In November 2004, SRCSD began preparing its Water Recycling Opportunities Study (WROS). The WROS was the first step in identifying possible areas within Sacramento County where recycled water could be used on a large scale. These
areas of potential recycled water uses are referred to as Target Areas. The WROS identifies five Target Areas. Within the five Target Areas, the WROS identified 18 large-scale projects that are candidates for recycled water deliveries. These 18 projects were evaluated and ranked on five criteria that consisted of Life Cycle Cost, Water Supplies and Demands, annual Yield, Implementability, and Public Acceptance and Environmental Benefits. The Elk Grove Area-South County Agricultural and Habitat Area was ranked No. 1 with the highest priority to receive future recycled water. Figure 4 shows the five highlighted Target Areas.


**Figure 4 - SRCSD Water Recycling Target Areas Map**

EGWD is located within the boundary of the Target Area 1 South Area. Within Target Area No. 1, EGWD is located in an area that is shown to have a lesser potential for future recycled water use. In discussions with SRCSD staff, areas east of State Route 99 were not anticipated to receive recycled water due to: (1) limited overall use potential, (2) the cost of providing a conveyance system crossing State Route 99 to the east, and (3) the cost of installing distribution facilities in existing streets.
Target Area No. 2 involves a possible large recycled water transmission main that would be built from the Sacramento Regional Wastewater Treatment Plant (SRWTP) to the Rancho Cordova/Mather area. If these backbone facilities were constructed in the future, it may be possible for EGWD to work with SRCSD to construct a service line off the transmission main to serve Tariff Area No. 2. Based upon discussions with SRCSD staff, this possibility is currently being shown as less than anticipated. Table 29 shows the projected recycled water uses through 2035.

### Table 29 – Potential Future Recycled Water Use

<table>
<thead>
<tr>
<th>Land Use</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Irrigation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Landscape Irrigation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Commercial Irrigation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Golf Course Irrigation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wildlife Habitat</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wetlands</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Industrial Reuse</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Groundwater Recharge</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Seawater Barrier</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Geothermal/Energy</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Indirect Potable Reuse</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1Volumes is in AFY.

As the table shows, it is not anticipated that the EGWD service area will use recycled water for its existing built-out areas or the future growth areas for the next 20 years. Future possibilities will continue to be investigated and are planned to be discussed again in the 2015 EGWD UWMP. Table 30 outlines the same land uses presented in Table 29 and is used to document the projected recycled water use for 2010, as shown in the 2005 EGWD UWMP. As the shown in the table, the 2005 UWMP also did not anticipate the use of recycled water within the EGWD service area, due mainly to the lack of infrastructure.
As discussed within this section of the Plan, EGWD does not have the infrastructure to supply recycled water to its customers. On a regional perspective, it is anticipated that increased use of recycled water will occur, but in areas better suited for it. At this time, and as projected through 2035, financial incentives are not seen to be a viable option as shown in Table 31.

4.10 Future Water Projects

EGWD is developing a Capital Improvement Program (CIP) that will identify anticipated future water system improvements planned to be constructed to meet future water demand projections. These improvements are estimated to be required based upon the timing of new land development projects. The water supply projects are listed in Table 32.
Table 32 – Potential Future Water Supply Projects

<table>
<thead>
<tr>
<th>Project Name1</th>
<th>Projected Start Date</th>
<th>Projected Completion Date</th>
<th>Potential Project Constraints</th>
<th>Normal Year Supply</th>
<th>Single Dry Year Supply</th>
<th>Multiple Dry Year First Year Supply</th>
<th>Multiple Dry Year Second Year Supply</th>
<th>Multiple Dry Year Third Year Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Capacity Improvement</td>
<td>5/2011</td>
<td>12/2011</td>
<td>Water Quality</td>
<td>2,200</td>
<td>2,100</td>
<td>2,100</td>
<td>2,000</td>
<td>1,900</td>
</tr>
<tr>
<td>South Deep Well</td>
<td>7/2011</td>
<td>12/2012</td>
<td>Treatment Plant Restoration</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>1,750</td>
<td>1,700</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td>4,000</td>
<td>4,000</td>
<td>3,900</td>
<td>3,850</td>
<td>3,600</td>
</tr>
</tbody>
</table>

1Volumes are in AFY.

The FY 2010-2011 Source Capacity Improvement Project consists of increasing the well capacity of the existing groundwater wells of Well 4D and Well 11D. The project consists of increasing the existing pumps from 125 horsepower to 200 horsepower. The project anticipates that groundwater pumping yields will be increased from approximately 1,400 gpm and 1,580 gpm to the yields shown in Table 32. The pumping rates shown within the table represent anticipated peak capacities and will not affect EGWDs ability to meet annual supply needs during multiple dry weather years. Peak pumping rates are estimated to drop due to resulting lower groundwater elevations during multiple dry weather years.

The South Deep Well project consists of constructing a new deep groundwater well in the southern portion of the service area. The well site is currently being investigated and the project is currently in the planning stage. The new well is anticipated to be constructed and operational by the end of 2012.
Section 5 – Water Supply Reliability and Water Shortage Contingency Planning

Section 5 discusses and compares EGWD’s future projected water demands versus available water supplies; presents the overall water supply reliability in regards to dry years and emergency water shortage conditions; and presents EGWD’s Water Shortage Contingency Plan, which outlines the actions for EGWD’s board to take when water reduction policies are required.

5.1 Water Supply Reliability

The water supplies available to the EGWD consist of groundwater pumping and the purchase of conjunctive use water from SCWA. As previously discussed in Section 4, EGWD pumps groundwater from the Central Basin. The Central Basin has been extensively studied and modeled as presented in the CSCGMP. One goal of the CSCGMP was to model the groundwater basin and to determine and establish a sustainable annual groundwater yield. The regional sustainable annual pumping amount of 273,000 AF was agreed to by the stakeholders that utilize groundwater from the Central Basin. The CSCGMP provides for the long-term protection of groundwater quantity and quality within the region, and contains policies directing the development of surface water supplies, conservation, and other measures to service urban development as it occurs, thereby protecting the sustainable annual groundwater yield. Of this sustainable yield, EGWD is allotted approximately 8,000 AFY to service its customer base. Figure 5 provides an illustration of the groundwater elevations that have been stable or increasing in most wells surrounding EGWD. Appendix I presents the same figure in a larger scale.

The CSCGMP is the result of the Water Forum process, a long effort involving multiple agencies and stakeholders within the region, and culminated in the negotiation and signing of the Water Forum Agreement. In 1995, the Water Forum was created by City and County of Sacramento in an attempt to develop programs that focused on maintaining a long-term plan for a number of factors that mainly consisted of developing a sustainable yield of groundwater, conservation and responsible planning for surface water, and the protection of the American River watershed. The Water Forum was signed by 40 stakeholders in April 2000. The stakeholders consist of mainly water purveyors, agriculturalists, business leaders, and environmentalists.

Zone 40 provides wholesale water to the Tariff Area No. 2 portion of the EGWD service area. The wholesale agreement is based upon the terms of the First Amended and Restated Master Water Agreement between SCWA and EGWW, which was executed in the mid 1990’s. The agreement was assumed by FRCD when it purchased EGWW. The original agreement was developed to provide a way for new development in the FRCD/EGWD service area to access new water supplies being developed through the Zone 40 conjunctive use program.
FRCD/EGWD agreed to purchase water from SCWA to serve its expanded retail area (Tariff Area No. 2). New development within the Tariff Area No. 2 is required to pay the Zone 40 Development Fee for new building permits, and a monthly user fee for Zone 40 capital projects, which support conjunctive use in the Central Basin. The EGWD Tariff Area No. 2 area is served by water facilities constructed, maintained, and operated by EGWD. Zone 40’s conjunctive use water supply is considered a reliable source as demonstrated by the 2010 SCWA UWMP.

Figure 5 – Central Groundwater Basin Historic Groundwater Levels
Table 33 lists the factors that may affect municipal water supply sources. As previously discussed, EGWD serves its customers with purchased wholesale potable water from SCWA for the Tariff Area No. 2 service area and serves the Tariff Area No. 1 service area by groundwater wells owned and operated by EGWD. There are no water supply limitations in regards to legal contracts, environmental constraints, water quality issues, or climate conditions.

<table>
<thead>
<tr>
<th>Water Supply Sources</th>
<th>Specific Source Name, if Any</th>
<th>Limitation Quantification</th>
<th>Legal</th>
<th>Environmental</th>
<th>Water Quality</th>
<th>Climatic</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCWA Tariff Area No. 2</td>
<td>See Note²</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Groundwater Tariff Area No. 1</td>
<td>8,000³</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

¹Volume is in AFY.
²Agreement does not list a specific limitation per the SCWA UWMP, there is 100% reliability.
³Per analysis of sustainable yield prepared through the Water Forum.

For the purposes of this document, the term average year is a representative year or range of years that represents the median runoff levels and patterns that affect EGWD’s water supply. Single-dry year represents the lowest annual runoff within EGWD’s watershed since 1903. The multiple-dry year period is considered the lowest average runoff for a conservative range of three or more years. Table 34 documents the reliable water supply available to EGWD’s service area for average years and multiple dry years.

<table>
<thead>
<tr>
<th>Water Supply Sources</th>
<th>Average / Normal Water Year Supply¹</th>
<th>Multiple-Dry Water Year Supply¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCWA</td>
<td>As Needed</td>
<td>As Needed</td>
</tr>
<tr>
<td>Groundwater</td>
<td>8,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Percent of Normal Year</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

¹Volume is in AFY.

5.2 Water Quality

EGWD receives potable water from separate sources to serve Tariff Area No. 1 and Tariff Area No. 2. Tariff Area No. 1 is served solely from a series of groundwater wells within the Tariff Area No. 1 service area. These wells consist of four deep wells and three shallow wells. The shallow wells pump from the upper South American Subbasin, which tends to require the treatment for arsenic and magnesium. The deep wells penetrate into the deeper aquifer where
water quality is relatively good and treatment is typically not necessary. Water quality is not seen as an issue on the reliability of the groundwater supply. **Table 35** depicts that there are no impacts due to the water quality of the pumped groundwater and water supplied by SCWA. This table was included in the UWMP to be consistent with the Guidebook. SCWA does not identify any water quality issues that would impact water supply for Tariff Area No. 2.

<table>
<thead>
<tr>
<th>Water Source</th>
<th>Description of Condition</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCWA</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Groundwater</td>
<td>Arsenic, Magnesium, etc.</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note: All treated water meets current and anticipated CDPH standards.

### 5.3 Drought Planning

California and the Sacramento Valley experienced a severe drought from 1987 to 1992. The regional drought resulted in low water levels in area reservoirs and temporary declining groundwater elevations in the Central groundwater basin, which is also referred to as the South American Subbasin, according to DWR’s Bulletin 118.

In the Sacramento County area, specific historical drought years are referenced in regards to a single-dry and multiple-dry years. These represent past years where drought conditions were experienced. **Table 36** identifies the years for a typical average water year, a single-dry water year, and years that represent a multiple year period where drought conditions were in effect.

The Act requires water providers to evaluate their water supplies for the next three years assuming that the years constitute multiple dry years. EGWD relies on groundwater supply for Tariff Area No. 1. SCWA relies on groundwater for service to Tariff Area No. 2. This section of the Plan presents data for the water supply during these types of events. Assuming that 2011, 2012, and 2013 were equivalent to the three driest years as in 1987 thru 1990, EGWD and SCWA are equipped to meet 100% of the Tariff Area No. 1 and Tariff Area No. 2 water demands using existing groundwater supply sources. The data is presented in the following tables in this section.
Table 36 – Basis of Water Year Data

<table>
<thead>
<tr>
<th>Water Year Type</th>
<th>Base Year(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Water Year</td>
<td>1981</td>
</tr>
<tr>
<td>Single-Dry Water Year</td>
<td>1977</td>
</tr>
<tr>
<td>Multiple-Dry Water Years</td>
<td>1987-1990</td>
</tr>
</tbody>
</table>

Table 37 presents the reliable water supply source during multiple–dry water years for Tariff Area No. 1 and Tariff Area No. 2. SCWA is to provide the necessary water needed to serve Tariff Area No. 2.

Table 37 – Supply Reliability – Historic Conditions

<table>
<thead>
<tr>
<th>Average / Normal Water Year</th>
<th>Single-Dry Water Year</th>
<th>Multiple-Dry Water Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
</tr>
<tr>
<td>8,000 (Tariff Area No. 1)</td>
<td>8,000</td>
<td>8,000</td>
</tr>
<tr>
<td>As Needed (Tariff Area No. 2)</td>
<td>As Needed</td>
<td>As Needed</td>
</tr>
<tr>
<td>Percent of Average/Normal Year</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

As discussed in the water supply reliability section, EGWD has a number of deep groundwater wells that are able to produce reliable potable water during multiple dry years. As shown in Table 38, EGWD does not have a water supply deficiency with respect to annual usage for Tariff Area No. 1 water demands through 2035.

Table 38 – Supply and Demand Comparison (Tariff Area No. 1) – Normal Year

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Totals</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Demand Totals</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Volume is expressed in AFY.

Table 39 presents the supply and demand projections for Tariff Area No. 2 during normal precipitation years.
Table 39 – Supply and Demand Comparison (Tariff Area No. 2) – Normal Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Totals</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Demand Totals</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1Volume is expressed in AFY.

EGWD Tariff Area No. 1 is capable of providing the required water supply to meet the demands for a representative single-dry year as shown in Table 40.

Table 40 – Supply and Demand Comparison (Tariff Area No. 1) – Single-Dry Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals1</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Demand Totals1</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1Volume is expressed in AFY.

Table 41 presents the supply and demand projections for Tariff Area No. 2 during a typical single-dry precipitation year.

Table 41 – Supply and Demand Comparison (Tariff Area No. 2) – Single-Dry Year

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply totals1</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Demand Totals1</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1Volume is expressed in AFY.

Table 42 presents the Tariff Area No. 1 groundwater supply and the associated demands during multiple-dry years. Due to the deep groundwater wells within Tariff Area No. 1, EGWD does not foresee a water supply shortfall with respect to the anticipated future water demands.
## Table 42 – Supply and Demand Comparison (Tariff Area No. 1)
### Multiple-Dry Year Events

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First Year Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals¹</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Demand Totals¹</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Second Year Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals¹</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Demand Totals¹</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Third Year Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals¹</td>
<td>6,205</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
</tr>
<tr>
<td>Demand Totals¹</td>
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<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
<td>5,940</td>
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<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

¹Volume is in AFY.

### Table 43 shows the reliable water supply from SCWA for Tariff Area No. 2 during a multiple-dry precipitation years.

## Table 43 – Supply and Demand Comparison (Tariff Area No. 2)
### Multiple-Dry Year Events

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035 Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>First Year Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals¹</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Demand Totals¹</td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Second Year Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Totals¹</td>
<td>3,570</td>
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<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Demand Totals¹</td>
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<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
<tr>
<td>Difference</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Supply</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Difference as % of Demand</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Multiple-Dry Year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supply Totals¹</strong></td>
<td>3,570</td>
<td>3,640</td>
<td>4,100</td>
<td>4,560</td>
<td>4,560</td>
</tr>
</tbody>
</table>
5.4 Water Shortage Contingency

EGWD adopted a Water Shortage Ordinance (Ordinance 06-21-06-01) in 2006, after the adoption of the 2005 EGWD UWMP. The Water Shortage Ordinance was updated in 2010 (Ordinance 04-28-10-01) to align with the water prohibition stages of other local water agencies. The Water Shortage Contingency Plan allows the FRCD Board to implement a Water Shortage Conservation Plan when it has been deemed necessary. A copy of the ordinance is presented in Appendix J.

EGWD has established financial reserves available to assist with dealing with water supply shortage contingencies, if needed. The reserve fund may also assist EGWD during mild summers if water use is lower than normal and does not create normal revenues as historically has been the case. The most significant revenue impact would be in the case of a catastrophe where water shortage would reduce revenue and possible damaged infrastructure would increase maintenance costs. At this point, EGWD would look to possibly increase water rates and look to local, state, and federal agencies for disaster relief grants and or loans.

Table 44 shows the stages of water rationing that are implemented by EGWD’s Board during multiple-dry water years. These stages are consistent with the information included in the Water Shortage Contingency Plan Ordinance.
Table 45 outlines the water use prohibitions and related stages when the prohibitions are implemented. These measures are consistent with Water shortage Contingency Plan of the SCWA.

<table>
<thead>
<tr>
<th>Examples of Prohibitions</th>
<th>Stage When Prohibition Becomes Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Potable Water for Street Washing</td>
<td>5</td>
</tr>
<tr>
<td>Washing Personal Vehicles</td>
<td>5</td>
</tr>
<tr>
<td>Irrigating Residential Lawns and Landscape</td>
<td>5</td>
</tr>
<tr>
<td>Excessive Water Use (Runoff in Gutters)</td>
<td>5</td>
</tr>
<tr>
<td>Other – Restaurants Shall Serve Water to Customers Upon Request</td>
<td>5</td>
</tr>
<tr>
<td>Other – Ponds, Fountains, and Pools Shall be Equipped with Recirculating Pumps</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 46 is an estimate of the water savings when the five water shortage contingency stages are implemented.

<table>
<thead>
<tr>
<th>Consumption Reduction Methods</th>
<th>Stage When Method Takes Effect</th>
<th>Projected Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Rationing</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>No New Water System Connections</td>
<td>2</td>
<td>15 - 25</td>
</tr>
<tr>
<td>Limit Landscape Irrigation to Once per Week</td>
<td>3</td>
<td>25 - 35</td>
</tr>
<tr>
<td>Prohibit Landscape Irrigation</td>
<td>4</td>
<td>35 - 50</td>
</tr>
<tr>
<td>Mandatory Prohibition on Water Use</td>
<td>Final</td>
<td>50 or more</td>
</tr>
</tbody>
</table>

EGWD’s Ordinance 06-22-11-01 states the financial penalties for excessive water use when the ordinance is in effect. These violations are presented in Table 47.

<table>
<thead>
<tr>
<th>Penalties or Charges</th>
<th>Stage When Penalty Takes Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100 fine per violation.</td>
<td>Stage 1 – Third Violation</td>
</tr>
<tr>
<td>$200 fine and customer scheduled for water audit.</td>
<td>Stages 2 thru 5 – Third Violation</td>
</tr>
<tr>
<td>$500 fine and a flow restriction device installed.</td>
<td>Stages 2 thru 5 – Fourth Violation</td>
</tr>
<tr>
<td>$500 fine and water service is shut off. Connection fee assessed to re-activate water service.</td>
<td>Stages 2 thru 5 – Fifth Violation</td>
</tr>
</tbody>
</table>

An aspect of the overall water shortage contingency plan is be prepared for an unforeseen large scale water service interruption such as a flood, regional power outage or possible large fire that
inhibits wells or the treatment plant from operating. To prepare for these types of major water supply interruptions, EGWD has prepared or participated in the following:

- Participated in regional Disaster Preparedness Plans
- Performed Water System Vulnerability Assessment
- Updated Emergency Response Plan

EGWD also has the following infrastructure to assist in supplying water in case of a catastrophic event:

- Emergency back-up diesel generators at major facilities. Portable generators are also available to be moved to facilities, as needed.
- Aboveground water storage tanks are designed to hold emergency water supplies in case of emergencies.
- Water main intertie connections with SCWA, which allows water to flow between service areas.
Section 6 – Demand Management Measures (DMMs)

6.1 Demand Management Measures

EGWD is a member of the California Urban Water Conservation Council (CUWCC). The CUWCC was created to increase efficient water use statewide through urban water agencies partnerships, public interest organizations, and private entities. The CUWCC's overall mission is to integrate urban water conservation practices into the planning and management of California's water resources. The EGWD joined in November of 2009. This UWMP provides the required information for the implemented and non-implemented DMMs. Table 48 lists each measure and whether EGWD is either currently implementing or plans to implement in the next five years, or does not plan on implementing it in the next five years. Each DMM discusses the steps needed for implementation, marketing the DMM, the schedule of implementation, if applicable, and in some cases, the projected water savings due to the DMM implementation. FRCD/EGWD has a conservation coordinator on staff that oversees implications of the DMMs.

<table>
<thead>
<tr>
<th>DMM</th>
<th>Description</th>
<th>Current Implementing or Planning to Implement in Next Five Years (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Water Survey Programs for Single-Family and Multi-Family Residential Customers</td>
<td>Y</td>
</tr>
<tr>
<td>B</td>
<td>Residential Plumbing Retrofit</td>
<td>Y</td>
</tr>
<tr>
<td>C</td>
<td>System Water Audits, Leak Detection, and Repair</td>
<td>Y</td>
</tr>
<tr>
<td>D</td>
<td>Metering with Commodity Rates for all New Connections and Retrofit of Existing</td>
<td>Y</td>
</tr>
<tr>
<td>E</td>
<td>Large Landscape Conservation Programs and Incentives</td>
<td>Y</td>
</tr>
<tr>
<td>F</td>
<td>High-Efficiency Washing Machine Rebate Programs</td>
<td>N</td>
</tr>
<tr>
<td>G</td>
<td>Public Information Programs</td>
<td>Y</td>
</tr>
<tr>
<td>H</td>
<td>School Education Programs</td>
<td>Y</td>
</tr>
<tr>
<td>I</td>
<td>Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts</td>
<td>Y</td>
</tr>
<tr>
<td>J</td>
<td>Wholesale Agency Assistance Programs</td>
<td>N/A</td>
</tr>
<tr>
<td>K</td>
<td>Retail Conservation Pricing</td>
<td>Y</td>
</tr>
<tr>
<td>L</td>
<td>Conservation Coordinator</td>
<td>Y</td>
</tr>
<tr>
<td>M</td>
<td>Water Waste Prohibition</td>
<td>Y</td>
</tr>
<tr>
<td>N</td>
<td>Residential Ultra Low-Flush Toilet Replacement Programs</td>
<td>N</td>
</tr>
</tbody>
</table>
6.2 Evaluation of DMMs Being Implemented

This section discusses the DMMs that EGWD currently implements or plans to implement within the next five years. Section 6.3 addresses those DMMs not planned to be implemented by EGWD in the next five years.

6.2.1 DMM A: Water Survey Programs for Single-Family and Multi-Family Residential Customers

EGWD and SCWA offer water survey audit programs for inside and outside water usage for residential customers, beginning in 2004. The inside water survey program consists of performing leak detection surveys for faucets and toilets. The outside survey consists of inspecting and providing recommendations for residential landscape irrigation service with respect to leaking systems, programming irrigation timers, and landscape irrigation system flaws.

SCWA has contracted with Irrigation Consultation and Evaluation (I.C.E.) to perform interior and exterior water surveys upon request for EGWD customers. The water audit provides the customer with the survey evaluation results and water-saving recommendations. These audits review the operational aspects for landscape water timers and overall irrigation system operations. The audit provides information to the customer to assist with the water-wise irrigation practices for its residential landscape areas. I.C.E. also will inspect for water leaks and offers a custom irrigation schedule along with water-saving tips specific to the customer’s property. I.C.E. provides a copy of its recommendations to EGWD so its conservation coordinator can further assist customers with their conservation goals. While it is not mandatory to implement the recommendations, I.C.E. provides this service hoping the customers take their recommendations into consideration to increase water efficiency. Following is a discussion of the marketing, implementation, schedule, effectiveness, and water savings estimate for this DMM.

Marketing DMM

Residential indoor and outdoor water audits are presented on both SCWA’s and EGWD’s Websites under the conservation sections. Audits have been promoted in the local newspaper and EGWD’s customer service representatives continually recommend the service to customers looking for ways to reduce their water bill. EGWD’s conservation coordinator and customer service representatives promote this program to all customers as part of their daily job tasks.
Steps Necessary to Implement

EGWD, in conjunction with SCWA, is currently implementing this DMM.

Schedule of Implementation

EGWD intends to update its residential water use efficiency program by the first board meeting in January 2012. The EGWD plans to aim for a minimum combined 1.0% per year in-house and landscape audits starting January 2012 to January 2015. This equates to approximately 120 audits per year. After this time, EGWD intends to evaluate the progress of the program and make necessary changes to ensure the program’s goals are being met.

Method for Evaluation of Effectiveness

EGWD has tracked the number of audits performed in the past. Approximately 190 audits have been performed from 2004 to 2011. The EGWD plans to continue tracking and setting goals for the number of annual audits performed for both single-family and multi-family customers. For metered residences, EGWD plans to compare residential water uses yearly for a sampling of residences that participate in the residential and landscape surveys compared to their historic water usage.

Estimated Water Savings

Because many of the audits were performed on unmetered homes, EGWD is unable to track direct improvements on water efficiency post-irrigation reviews. However, a single leak in an irrigation system can lose 2,700 gallons a week (source: I.C.E.). As most irrigation occurs between May and October; over 75,000 gallons can be lost on a single irrigation leak during that time period (not accounting for the rest of the calendar, if the homeowner leaves the irrigation system on year-round). A conservative estimate is that a leak is located in two-thirds of the audits. Over the seven years in which EGWD has offered landscape irrigation surveys, it is estimated that approximately 4.3 acre-feet of water have been saved annually, or 30 acre-feet over the program’s seven years. With continued effectiveness in implementation, the program could result in a 0.3% to 0.5% decrease in the baseline gpcd over a 10-year period.
6.2.2 DMM B: Residential Plumbing Retrofit

EGWD offers free plumbing retrofit kits. Due to budget constraints, EGWD discontinued purchasing new items for the program in 2009, though they still have a stock of shower heads. The City of Elk Grove enforces the use of water conservation plumbing fixtures, including ultra low-flush toilets (ULFT) and low-flow shower heads, in all new construction. Retrofit kit purchases will be included in the 2011-2012 budget recommendations. These kits will be offered to homes that receive new meters and would be on a first-come, first-serve basis. Following is a discussion of the marketing, implementation, schedule, effectiveness, and water savings estimate for this DMM.

Marketing DMM

EGWD’s Website contains information regarding the status of the plumbing retrofit program. EGWD intends to continue to include messages on customer billing statements that reference the available plumbing retrofit kits.

Steps Necessary to Implement

EGWD plans to enhance its residential plumbing retrofit program for the replacement of water-efficient plumbing fixtures to include shower heads, aerators, positive shut-off hose nozzles, and leak tablets.

Schedule of Implementation

EGWD plans to continue its existing program and aim for a retrofit of 1.0% of the customer base per year starting January 2012. The kits are kept at EGWD’s office and are available upon request. They are also distributed to all homes when they receive a meter retrofit.

Method for Evaluation of Effectiveness

EGWD estimates that it distributed 589 retrofit kits during the 2009-2010 Fiscal Year. A random selection of these homes was compared against a control set of similar residences, but no major difference in usage has been detected. EGWD believes that only a small percentage of the retrofit kits distributed were actually used.
Estimated Water Savings

EGWD estimates that a residential customer with replacements of one shower head may expect to save approximately 12 gallons a day per shower. This is equivalent to approximately a 5% reduction in water use for a typical residential customer per day. Based upon retrofitting 120 residences a year, this equates to approximately 1.5 acre-feet per year reduction, or 15 acre-feet over 10 years. With continued effectiveness in implementing, the program could result in a 0.1% to 0.15% decrease in the baseline gpcd over a 10-year period.

6.2.3 DMM C: System Water Audits, Leak Detection, and Repair

Currently, the EGWD owns a flow recorder or Meter Master that is used, upon a customer’s request, to determine if a customer has a leak past the meter location. The flow recorder is connected on both sides of the meter and records any flow that crosses the meter. The recorder can tell the difference between a running toilet, dripping faucet, or leaking irrigation valve.

EGWD is in the process of more fully implementing this DMM. Following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.

Steps Necessary to Implement

EGWD is utilizing GIS to track the locations and frequencies of leaks in different areas within their service area. This information will be utilized to develop a system approach to focusing on these areas for leak audits and/or pipe replacement programs. EGWD is continuing efforts to complete its meter retrofit program by 2015. Once meters are installed, it will be easier to troubleshoot where leaks are occurring.

EGWD needs to decide whether to purchase the required equipment and complete leak detection audits in-house, or hire an outside consultant. As it develops its CIP program, it also needs to identify funding levels for the program.

Schedule of Implementation

Tariff Area No. 2 consists of piping that is 10 years or less, and installed and inspected to modern standards. Therefore, there is less likelihood of significant leakage in this area, and EGWD will continue to focus on the older sections of Tariff Area No. 1 as it develops this DMM.
EGWD intends to continue to strategize on how to best implement this DMM as the meter retrofit program continues.

Method for Evaluation of Effectiveness

The best way to evaluate the effectiveness of this program is to compare water production data with water consumption from customers. This will be possible upon completion of the meter retrofit program.

Estimated Water Savings

As a rough estimation, EGWD may be able to reduce annual water consumption by 3% in Tariff Area No. 1 over a several year period. This would equate to a savings of approximately 189 AF.

6.2.4 DMM D: Metering with Commodity Rates for all New Connections and Retrofit of Existing

EGWD requires a water meter for new service connections. Water meter billing is a water efficiency tool that assists the customer’s knowledge of personal water use, and helps to identify water leaks and in establishing a rate that encourages conservation. EGWD is also implementing a mandated program by the State of California that requires EGWD to convert the existing flat fee customers to metered billing by 2025. Of the total 12,046 connections, 7,313 are metered. By 2015 all connections are planned to be metered.

EGWD currently has a two-tiered billing rate scale for residential and commercial customers. The district’s service area is fully metered in Tariff Area No.2, and approximately 35% of the customers in Tariff Area No. 1 are not metered. According to EGWD’s Water Rate Schedule from Ordinance 04-28-10-01, the following are the tiered rates for metered water connections.

<table>
<thead>
<tr>
<th>Residential Usage:</th>
<th>Per Meter, Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 3,000 cu. ft. per 100 cu. ft =</td>
<td>$1.46</td>
</tr>
<tr>
<td>Over 3,000 cu. ft. per 100 cu. ft. =</td>
<td>$1.80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Residential Usage:</th>
<th>Per Meter, Per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 3,000 cu. ft. per 100 cu. ft. =</td>
<td>$1.46</td>
</tr>
<tr>
<td>Over 3,000 cu. ft. per 100 cu. ft. =</td>
<td>$1.80</td>
</tr>
</tbody>
</table>
Following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.

Steps Necessary to Implement

EGWD is currently implementing the meter replacement program, and a two-tiered billing rate schedule. EGWD does not plan to change these programs within the next five years, but may give this further consideration during a Rate Study planned to occur in 2012.

Schedule of Implementation

EGWD is scheduled to convert approximately 1,200 flat fee customers to meters per year until the EGWD service area is fully metered in 2015.

Method for Evaluation of Effectiveness

The effectiveness of the tiered water rate billing and meter replacement program are proven methods to reduce customer water use. The EGWD has the ability to revise water rates based upon volumetric use if deemed necessary in the future. The effectiveness of the program is measured by comparing current customer billings to historical billings.

Estimated Water Savings

Meter retrofits combined with the volumetric rates are estimated to result in a 10% water use reduction for the retrofitted customers. With approximately 4,800 existing customers to convert to meters, the EGWD expects to see a water reduction of approximately 375 acre-feet per year for the existing non-metered customer base upon completion of the meter retrofits.

6.2.5 DMM E: Large Landscape Conservation Programs and Incentives

EGWD provides guidelines and information to non-residential customers with support and incentives to improve its large-scale landscape water-use efficiency. In addition, landscape water-use efficiency information is provided to all new customers. The EGWD plans to identify the non-residential customers who currently do not have meters and provide a plan to implement the meter retrofit program. The EGWD encourages local parks and nurseries to promote the use of low water-use plants, and currently serves approximately 17 public parks that are two acres or larger. A 21-acre park is under construction and a small, one-acre park is getting a three-acre extension. Upon build-out of the EGWD service area, a total of 18-20 public parks are estimated
to be constructed. Several parks, schools, and churches have already been retrofitted. Following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.

Steps Necessary to Implement

EGWD plans on continuing to meet with and discuss conservation practices with the Elk Grove Community Services District (EGCSD) staff that are responsible for the park maintenance. EGWD plans to offer to perform landscape audits with the EGCSD on a yearly basis.

Schedule of Implementation

EGWD intends to meet with the EGCSD staff once a year between April 1 and May 1 starting April 2012, to discuss the large landscape conservation programs under this demand management measure.

Method for Evaluation of Effectiveness

The effectiveness of the program will be measured by comparing future meter billing amounts with historical billings to the same large landscape customers.

Estimated Water Savings

EGWD currently does not have an estimate of the water savings for this program.

6.2.6 DMM G: Public Information Programs

EGWD provides public information programs mainly through its active participation with the efforts of the RWA. The RWA has implemented a regional water conservation program for the past 10 years. In 2001, a full-time staff person was hired by RWA. In subsequent years, the Regional Water Efficiency Program (RWEP) has been supported through member dues and federal and state grant funds. EGWD fully participates in the RWEP Public Information Campaign. The overall goal of the RWEP is to maximize customer participation in water conservation programs. Historically and for the foreseeable future, the regional public information and school education program elements include: school outreach materials and presentations, media advertising campaigns, commercial consumer outreach, promotional materials, community events and fairs, evapotranspiration data availability, a website, and allied organizations outreach.
In 2010, the RWA and 19 local water providers announced a new public outreach and advertising campaign called “Blue Thumb.” The campaign is designed to help residents use less water outdoors. With the Sacramento region's hot, dry climate and long summer season, more than 65% of a household's yearly water consumption typically goes toward landscape irrigation. Of that, 30% is lost due to overwatering or evaporation, and is the target of the campaign messaging with the call for customer behavioral changes in watering practices. Following is a discussion of the marketing, implementation, schedule, effectiveness, and water savings estimate for this DMM.

**Goals for the Regional Public Information Campaign**

- Raise awareness about the need to use water efficiently outdoors.
- Motivate target audience to undertake key behaviors that are most likely to reduce outdoor water use.

The ongoing regional campaign shows residents how to use water efficiently outdoors through everyday tasks such as adjusting their irrigation system according to the season or using a shut-off nozzle on their hose. The Blue Thumb Campaign has a Website (BeWaterSmart.info) where visitors can take the pledge to use water wisely and view video clips from spokespersons, such as Sacramento Mayor Kevin Johnson, and campaign participants explaining how they earned their Blue Thumb. The website has been expanded to be a more comprehensive water conservation related site.

In the future, EGWD and RWA will continue to work with participating agencies on a regional outreach message appropriate for the current year’s water outlook. EGWD and RWA intends to continue on providing key messages and update water provider tools as necessary, track the number of media stories (or hits), interviews conducted, and number of impressions of audience viewings.

**Tracking and Results of Participation**

After the first year of the “Blue Thumb” program, results were tracked for 2010 and include the following outcomes:

- Nearly 30 earned media hits covering topics such as the campaign announcement/search for residents to participate, campaign launch, Home Depot events/Water Awareness Month, and Blue Thumb Website pledge.
Interviews on multiple public service radio programs, including Clear Channel (where the host even took the Blue Thumb pledge on the air!), which broadcasts on five local stations and family radio, and aired on two local stations.

Nearly 3.9 million impressions via paid television advertising and 6.3 million impressions via paid radio advertising.

More than 1.2 million impressions for the (no-cost) television Public service Announcement (PSA) (worth an estimated $24,500) and over 3 million impressions for the radio PSA (worth an estimated $96,264).

**Planned Implementation Schedule**

The general schedule for the regional public information campaign follows the annual calendar with the following seasonal activities:

- **Winter** – Planning for upcoming year’s activities and continuing to promote participation in RWA’s programs.

- **Spring** – Ramping up messaging and strong focus in soliciting media coverage and paid advertising in support of May as Water Awareness Month. Messaging surrounds the traditional spring planting season and checking of irrigation systems as they are turned on and taking the “Blue Thumb Pledge” to lower outdoor water use this season.

- **Summer** – Key messaging hits on the issues of efficient irrigation techniques, avoiding water waste, and lowering peak demands on hot summer days.

- **Fall** – Participating in local Harvest Day events and providing efficient landscape irrigation trainings for professionals that focus on selecting more water efficient plants and irrigation equipment, and when the weather cools and rains return, then messaging calls for shutting down irrigation systems for the winter months.

The implementation schedule for 2011-2015 includes plans to continue to promote water conservation through the RWEP’s outreach program supplemented by EGWD’s outreach efforts. In addition, EGWD will continue to support community events similar to those conducted in the past, as described above.
RWA’s annual budget for direct expenses to continue with the regional outreach campaign is planned for 2011-2015 to be approximately $160,000 each fiscal year.

Method for Evaluation of Effectiveness

EGWD and RWA plan to conduct an evaluation on a minimum of a bi-annual basis to determine the campaign’s effectiveness using the following means:

- Website analytics analysis.
- Tracking water provider materials that carry Blue Thumb messages.
- Media and online mentions and content analysis of hits.
- Impressions for television and radio advertising and public service announcements.
- Impressions for partner activities (such as the Sacramento River Cats).
- For the Community Based Social Marketing Program: Internet/written surveys (and potentially informal phone interviews) and water use data tracking.

In the future, RWA will conduct another random survey of Sacramento area residents, which will seek to measure if the following goals for the campaign are being achieved:

- Increase the number of residents willing to utilize various yard design and maintenance practices promoted by the campaign.
- Increase the number of residents who say they have adopted yard design and maintenance practices promoted by the campaign.
- Increase the number of residents that have seen, read, or heard news stories, public information, advertisements, or other messages regarding water efficiency in the past six months.
- Increase the number of residents naming key messages promoted by the campaign in verbatim responses about the advertising or messages they heard.

Based upon the results of the post-campaign survey, EGWD and RWA are expecting to measure the success of this DMM based upon the metrics listed above.
If the campaign is not proving effective based upon these metrics, then RWA will update or revise the campaign, or if necessary begin a new campaign, to garner more customer participation.

**Estimated Water Savings**

There is no current method in the industry to evaluate water savings for this program.

The popularity of public programs can be measured through the acceptance of brochures and attendance at various water conservation related events, etc.

6.2.7 **DMM H: School Education Programs**

The EGWD currently implements a regional school education program known as the RWEP School Education Program. The RWEP program has focused mainly on K-8 programs. RWEP has continued to use the legacy Sacramento Bee Newspapers in Education, now called Media in Education (MIE) program that originated back in the mid-1990s as part of the Sacramento Area Water Works Association Program, in order to meet the baseline requirements for school education outreach. It includes an annual Water Conservation Pledge and Quiz Contest.

Historically between 2004 and 2008, RWEP also sponsored the Great Water Mystery School Assembly Program that was co-funded with the Sacramento Stormwater Quality Partnership. Over the years, a total of 60,208 Sacramento County students in Grades 3-6 were educated about the benefits of better water management practices at home to save water resources and reduce polluted storm water runoff.

In Fiscal Year 2011, RWEP embarked on a new program, in partnership with the Bureau of Reclamation’s American River Water Education Center and the Water Education Foundation, to include sponsorship of Project Water Education for Teachers (WET) workshops. A total of 25 teachers attended the first workshop in April 2011. Following is a discussion of the marketing, implementation, schedule, effectiveness, and water savings estimate for this DMM.

**Steps to Implement**

The RWEP is in the process of evaluating whether a more effective school program is warranted that will reach more students. Working with the RWEP members and local educators, RWA plans to: (1) evaluate the existing program; (2) evaluate the success of other programs in the region and around the state; (3) develop objectives...
and a target audience (e.g., grade level); (4) provide materials; and (5) implement a strategy for the school education program into the future.

**Marketing Strategy**

The current marketing strategy for the SacBee MIE program is to email teachers that have participated in the past, and conduct a direct mail campaign to local schools for the whole series of topics throughout the year. Each teacher decides on which week’s topics to participate in that cover a wide range of education topics including RWEP’s sponsored week of “Be Water Smart News, Water the Never Ending Story.”

RWA continues to track by a variety of means participation in the regional school education program. For the Sacramento Bee MIE Program, the metrics tracked annually include:

- Number of teacher guides downloaded.
- Number of schools.
- Number of classrooms.
- Number of students reached.
- Number of students participating in the pledge (Grades K-3) or contest (Grades 4-8) entries received by the Sacramento Bee.
- Comments from teachers.

**Planned Implementation Schedule and Budget**

RWEP plans to continue with regional school education program activities along with the distribution of school-age educational materials and Project WET Workshops. The school schedule dictates when participation in the RWEP school education program occurs and follows the months that schools are in session from August to the following May.

The annual budgeted direct expenses for EGWD’s portion of the regional school education program have been $20,000, and will continue at this level for the foreseeable future.
Method for Evaluation of Effectiveness

Based upon the annual results of the participation levels tracked, EGWD and RWA are expecting to measure the success of this DMM based on the metrics listed above. As described above, EGWD and RWA are currently conducting an evaluation process of the existing regional school education program, which includes interviews of local school teachers at a variety of grade levels. The program will continue as currently planned until the evaluation process is complete and the program’s content and/or implementation strategy may be revised in the future.

Estimated Water Savings

EGWD currently does not have an estimate of the water savings for this program.

6.2.8 **DMM I: Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts**

CII water demands are estimated to make up approximately 5% of EGWD’s existing water demand and approximately 5% of the overall customer connections for Tariff Area No. 1 and Tariff Area No. 2. EGWD does not serve a large CII land use base. The school district and community services district are the most significant CII customers, and the outreach to these customers is covered elsewhere in this document. EGWD currently performs minor recommendations for CII customers with respect to water efficiency practices. CII customers are eligible for all conservation programs offered by EGWD and have taken advantage of these.

In 2004 and 2005, the EGWD received funding from a SRCSD awarded grant fund to retrofit commercial kitchens and cafes with pre-rinse faucets. With the EGWD service area having a relatively small commercial business base with kitchens; EGWD was able to retrofit nearly all the commercial kitchens with the pre-rinse faucets. At this time, EGWD does not see any additional action items specific to this DMM being undertaken in the future, but will continue to evaluate potential programs for implementation. Following is a discussion of the factors affecting implementation, schedule, effectiveness, and water savings estimates for this DMM.
Steps Necessary to Implement

The EGWD plans to continue to offer to review proposed water uses for new CII customers and make recommendations for improving efficiency before completion of the building permit process. EGWD’s CII customers have minimal water use.

EGWD has implemented a commercial pre-rinse faucet retrofit program in the recent past and continues to plan to offer this incentive. With the service area consisting of a relatively small commercial restaurant customer base, EGWD estimates that the retrofit program was able to reach a large majority of the commercial customers.

Schedule of Implementation

EGWD plans to continue to offer the current CII surveys to their customers on a first-come first-serve basis.

Method for Evaluation of Effectiveness

EGWD gauges the successfulness of this DMM on the active participation of their CII customers.

Estimated Water Savings

Water savings is difficult to estimate for this measure.

6.2.9 DMM J: Wholesale Agency Assistance Programs

EGWD is a retail water agency and receives assistance from SCWA. SCWA is the largest water purveyor and water wholesaler in the Sacramento area. SCWA provides technical support to EGWD on issues that pertain to both parties. Being a wholesaler to EGWD, it is a beneficial relationship for SCWA to work with EGWD. This DMM is not applicable to EGWD.

6.2.10 DMM K: Retail Conservation Pricing

EGWD continues to implement its water metering retrofit program and tiered billing based upon volumetric water use. Conservation pricing is generally defined as providing economic pricing incentives to customers for the efficient use of water. Conservation pricing requires the water purveyor to measure the volume of water used by the customer in which metered customer connections are necessary for retail conservation rates. Following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.
Steps Necessary to Implement

Retail conservation rates are in effect for EGWD. EGWD intends to focus on the meter retrofit program to ensure all connections are converted to the meter billings system. EGWD plans to review its water rate pricing for each customer connection class and evaluate if a price adjustment is required to captivate water supply costs.

Schedule of Implementation

The EGWD plans on continuing with the meter retrofit program and retail pricing as has in the past. A Rate Study is scheduled for 2012; the last Rate Study was conducted in 2007.

Method for Evaluation of Effectiveness

EGWD has performed rate study audits in the past and plans to continue to perform rate study audits to ensure that the customer billing rates are adequate and inline with industry standards. EGWD follows the AWWA guidelines in determining rates.

Estimated Water Savings

Water savings are difficult to estimate for this measure.

6.2.11 DMM L: Conservation Coordinator

FRCD/EGWD has had a Conservation Coordinator since February 2004. This individual has been responsible for all aspects of water conservation duties for the District, as well as the duties of the landscape irrigation auditor as discussed under DMM A. The following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.

Steps Necessary to Implement

This DMM has been implemented by the FRCD/EGWD.

Schedule of Implementation

This DMM has been implemented by the FRCD/EGWD.

Method for Evaluation of Effectiveness

FRCD/EGWD intends to clearly define the role, tasks, and expectations of the conservation coordinator.
Estimated Water Savings

EGWD currently does not have an estimate of the water savings for this program.

6.2.12 DMM M: Water Waste Prohibition

Water waste prohibition is an ongoing component of EGWD’s water conservation program and goal of the conservation coordinator. Any reported water waste incident receives immediate response from field staff. If water waste is identified, the customer is notified (or a door tag is left at the property) of the violation and follow-up technical assistance is provided.

EGWD’s Website has a section for customers and the general public to report water misuse. The categories consist of gutter flooding, over-watering, sprinklers need adjustment, and algae on sidewalk along with a date and time when the observation was made. EGWD uses the language in ordinance 06-22-11-01 to issue warnings and subsequent citations to customers exceeding the conservation constraints. A copy of this ordinance is included in Appendix K. Following is a discussion of the implementation, schedule, effectiveness, and water savings estimate for this DMM.

Steps Necessary to Implement

EGWD currently prohibits water misuse by its customers.
Schedule of Implementation

EGWD currently implements water misuse prohibitions.

Method for Evaluation of Effectiveness

Water waste complaints, fines, and service shut-offs are documented and tracked by EGWD.

Estimated Water Savings

Water savings have not been estimated for this measure.

6.3 Evaluation of DMMs Not Planned to be Implemented

EGWD continues to encourage water conservation within its service boundaries area by implementing the DMMs listed in the Act, and as presented by the California Urban Water Conservation Council. Not all of the DMMs are practical for EGWD to implement due to a number of factors. This UWMP performed the CUWCC cost/benefit analysis for these DMMs. The DMMs that are not being implemented and not planned for implementation within the next 5 years, are discussed below.

6.3.1 DMM F: High-Efficiency Washing Machine Rebate Programs

The high-efficiency clothes washers (HECW) DMM is intended to have water providers encourage the use of high-efficiency clothes washing machines with the use of incentives or mandating by ordinances to require the use of HECWs. Incentives may consist of rebates or reduced connection fees. Ordinances may require residential construction for single-family and multi-family housing to meet the WaterSense Specifications in regards to HECWs until a local, state, or federal regulation is passed that requires the use of high efficiency appliances.

EGWD does not offer a high-efficiency washing machine rebate at this time. EGWD has determined that it is not economically viable to provide this program while maintaining reasonable water rates to its customers, which are already among the highest in the region.

It is estimated that any water savings from this program, were it to be implemented, would not be economically offset by a commensurate reduction in water supply projects.
Following is a discussion of the cost/benefit analysis and DMM coverage requirements for this DMM.

### Cost/Benefit Analysis

EGWD performed a cost/benefit analysis on HECWs for the EGWD service area. Research estimates that approximately 75% of the available washing machines on the market are Energy Star certified, which has a water factor of 6.0. This DMM requires an efficiency rating of 5.0. In reviewing data from the 2004 American Housing Survey for Sacramento County, approximately 68% of households have clothes washing machines. Using this percentage for the EGWD service area of 12,050 households at the end of 2010, it can be assumed that approximately 8,200 households have washing machines.

Data shows that an average lifespan of a clothes washer is 12 years. With high efficiency clothes washers entering the market in 1993, it can be assumed that the majority of households have purchased new clothes washing machines since 1995. If 70% of these washers are high-efficiency washers of the 8,200 households with clothes washers, it is estimated that approximately 5,740 households have high efficiency washing machines.

EGWD performed a second cost/benefit analysis using the CUWCC BMP Cost Effectiveness tool spreadsheet. Using data from EGWD, the Cost Effectiveness Summary is as follows in respect to EGWD’s perspective:

- **Total Costs** = $19,850
- **Total Benefits** = $8,773
- **Benefit / Cost Ratio** = 0.44
- **Cost of Water ($ per AF)** = $1,469 per AF
- **Water Savings (AFY)** = 13.5 AFY

The results of the Cost Effectiveness analysis show that this DMM is not cost-effective to implement from the EGWD perspective, but is cost-effective from the public’s perspective.

This DMM evaluation takes into account economic and non-economic factors, social factors, and customer impacts. In regards to funding to implement this DMM, EGWD would be required to most likely apply for any available grants or to
raise the current customer water rates. EGWD does have the legal authority to implement this DMM, if it is decided the impacts are acceptable to EGWD.

Funding to construct a new water supply source such as a new groundwater well, pump station, and water quality treatment would be generated by customer water use billings or from reserves. A new groundwater well, pump station, and water quality treatment providing a sustainable yield of 1,800 gpm is estimated to cost approximately $2.5 million dollars. A new water source equates to approximately $860 per AFY based upon construction costs alone. Spread over 10 years, this is equivalent to approximately $90 per AFY based upon construction costs alone.

**DMM Coverage Requirements**

The DMM suggests that water providers provide a financial incentive for the purchase of HECWs that meet a minimum water factor of 5.0. It is suggested that incentives shall be provided to 0.9% of the current single-family accounts during the first year. After the first year, the incentives should be offered at 1.0% per year for the next 10 years.

A check can be performed to evaluate that the existing customer base currently has HECWs that equate to 1.4% per year of market penetration. This is equal to 1.4% of 12,040 of the current population, or approximately 170 new high-efficiency washing machines per year. According to the previous calculation of a customer base of 5,740 households who currently have a high efficiency washer, it appears that the EGWD service area contains households that meet the requirement of the DMM coverage.

The Sacramento Municipal Utility District provides electrical service to EGWD customers, and offers rebates of up to $125 for those customers with electric water heaters.

PG&E provides gas service to EGWD customers, and offers rebates of up to $50 for those customers with gas water heaters.

**6.3.2 DMM N: Residential Ultra Low-Flush Toilet (ULFT) Replacement Programs**

RWA and SRCSD, along with a number of other participating water districts, currently participate in a regional area first-come, first-serve Toilet Rebate Program. These rebates are for residential households and commercial businesses and consist of rebates up to $175 for residential and up to $200 for businesses. EGWD was a participant in this program in 2008 and 2009. During these years, 206 toilet rebates were given to EGWD customers. EGWD is not
currently a participant in this replacement program. For future residential developments, EGWD enforces the California Health and Safety Code, Section 17921.3, which requires all new buildings since 1994 to install ULFTs. Following is a discussion of the cost/benefit analysis for this DMM.

Cost/Benefit Analysis

EGWD performed two benefit/analysis calculations for this DMM. The first calculation consisted of an in-house cost/benefit analysis on the estimated outstanding households with pre-1992 toilets. At the end of 2010, EGWD customers consisted of approximately 4,855 unmetered homes and 6,660 metered homes. Assuming 75% saturation is required for compliance, EGWD estimates that of the approximately 12,050 total customers, approximately 2,380 households are in need of ULFTs. With an estimated 2,380 households and applying percentages of one toilet and two toilets per household, it is estimated that there are approximately 595 one toilet households and 1,785 two toilet households in the EGWD service area. This equates to approximately 4,165 toilets that are pre-1992 and non-conserving toilets. Assuming a rebate of $175 per toilet, the rebate program will cost EGWD approximately $772,000 in rebates alone.

Toilets manufactured prior to 1992 use approximately 3.5 to 7 gallons per flush. By replacing a 3.5 gallon per flush with a 1.28 gallon per flush high efficiency toilet, a family is estimated to save over 0.05 AFY per toilet. Assuming the rebate program was a success and all the toilets were replaced over time, the water supply savings is estimated to be 208 AFY. This volume equates to approximately a 1% water savings per year.

EGWD performed a second cost/benefit analysis using the CUWCC BMP Cost Effectiveness tool spreadsheet. Using data from EGWD the Cost Effectiveness Summary is as follows in respect to both EGWD’s and the public’s perspective:

- Total Costs = $771,750
- Total Benefits = $2,087,204
- Benefit / Cost Ration = 2.70
- Cost of Water ($ per AF) = $240 per AF
- Water Savings (AFY) = 210 AFY
The results of the Cost Effectiveness analysis show that this DMM is both cost-effective to implement from the EGWD perspective as well as from the public’s perspective.

This DMM evaluation takes into account economic and non-economic factors, social factors, and customer impacts. In regards to funding to implement this DMM, EGWD would be required to most likely apply for any available grants or to raise the current customer water rates. EGWD does have the legal authority to implement this DMM, if it is decided the impacts are acceptable to EGWD.

Funding to construct a new water supply source such as a new groundwater well, pump station and water quality treatment would be generated by customer water use billings or from reserves. A new groundwater well, pump station and water quality treatment providing a sustainable yield of 1,800 gpm operating at 75% of the year is estimated to cost approximately $2.5 million dollars. A new water source equates to approximately $1,200 per AFY based on construction and operational costs for the first year. Spread over 10 years, this is equivalent to approximately $165 per AFY based on construction and operating costs.
Section 7 – Climate Change (Optional)

The topic of climate change is subject to a great deal of debate and is not addressed in this UWMP. However, in anticipation of new information becoming available within the next five years, EGWD expects to discuss the topic in the 2015 UWMP.
Section 8 – Completed UWMP Checklist (Optional)
References


SACOG, “2006-2013 Regional Housing Needs Plan”


Appendix B

First Amended and Restated Master Water Agreement Between Sacramento County Water Agency and Florin Resource Conservation District/Elk Grove Water Service, Successors in Interest to Elk Grove Water Works
ROBERT A. RYAN, JR. County Counsel
JOHN F. WHISENHUNT, Assistant
[State Bar No. 89823]
DIANE E MCELHERN, Deputy
[State Bar No. 167460]
LISA A. TRAVIS, Deputy
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Attorneys for
SACRAMENTO COUNTY WATER AGENCY
and the COUNTY OF SACRAMENTO

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF SAN JOAQUIN

SACRAMENTO COUNTY WATER
AGENCY and the COUNTY OF
SACRAMENTO,

Plaintiffs,

vs.

FLORIN RESOURCE CONSERVATION
DISTRICT; et al.,

Defendants.

FLORIN RESOURCE CONSERVATION
DISTRICT and the BOARD OF DIRECTORS FOR THE FLORIN
RESOURCE CONSERVATION DISTRICT

Cross-Complainants,

vs.

SACRAMENTO COUNTY WATER
AGENCY and the COUNTY OF
SACRAMENTO, and DOES 1
through 100,

Cross-Defendants.

CASE NO: CV016036

STIPULATED JUDGMENT

ANSWER TO FIRST AMENDED CROSS-COMPLAINT
The Court ORDERS, ADJUDGES AND DECREES as follows:

1. The parties shall comply with the terms and conditions of the First Amended and Restated Master Water Agreement as amended on June 28, 2002, and as attached hereto as Exhibit "A".

2. FRCD is a successor-in-interest to the Elk Grove Water Works under the First Amended and Restated Master Water Agreement, as amended on June 28, 2002, and FRCD is barred from challenging the validity or enforceability of such agreement, or any portion thereof, as amended and restated.

3. The parties shall comply with the terms and conditions of the Settlement Agreement attached hereto as Exhibit "B".

4. Unless otherwise provided in a written agreement between the parties, SCWA shall have the sole right to design, construct, own and operate all facilities and perform all other activities, including but not limited to groundwater management and banking, necessary to manage the water resources and provide wholesale and retail water service within the boundaries of SCWA Zone 41, as said zone is shown on attached Exhibit "C", as it may change from time to time.

5. The Amended Cross-Complaint in this matter is dismissed with prejudice.

6. Each party shall bear its own costs and attorneys' fees.

7. This judgment shall be deemed to be the decision of the Court and, in the event of a dispute, shall not be construed in favor of or against any party by reason of that party's contribution to the drafting of the judgment or the stipulation by which it is entered.
8. The Court retains jurisdiction over the parties at their request pursuant to Code of Civil Procedure section 664.6, in order to enforce full performance of the settlement.

IT IS SO ORDERED

DATED: 6/10/99

JUDGE OF THE SUPERIOR COURT

APPROVED AS TO FORM:

Diane E. McElhern
Attorney for Plaintiffs and Cross-Defendants

APPROVED AS TO FORM:

Urban Schreiner
Attorneys for Defendants and Cross-Complainants
FIRST AMENDED AND RESTATED MASTER WATER AGREEMENT
BETWEEN SACRAMENTO COUNTY WATER AGENCY AND
FLORIN RESOURCE CONSERVATION DISTRICT/ELK GROVE WATER SERVICE,
SUCCESSORS-IN-INTEREST TO ELK GROVE WATER WORKS

THIS FIRST AMENDED AND RESTATED MASTER WATER AGREEMENT is
made and entered into this 28th day of June, 2002, by and between
the Sacramento County Water Agency ("SCWA"), a political subdivision of the State of
California and Florin Resource Conservation District, an independent special district,
d.b.a., Elk Grove Water Service ("FRCD"), successors-in-interest to Elk Grove Water
Works ("EGWW").

RECITALS

WHEREAS, the SCWA and the Elk Grove Water Works have previously entered
into an agreement entitled "County of Sacramento Elk Grove Water Works Master Water
Agreement" dated February 28, 1995 to establish the terms and conditions under which
the SCWA would provide for a permanent supply of wholesale treated groundwater and/or
surface water to the Elk Grove Water Works for use within EGWW's Expanded Franchise
Area (hereinafter "Master Water Agreement"); and

WHEREAS, a major purpose of entering the Master Water Agreement was that
SCWA and EGWW had as a common goal the stabilization of the groundwater table by
managing the conjunctive use of surface water and groundwater in their respective
areas; and

WHEREAS, the Master Water Agreement has three key elements: (1) the
EGWW was to provide retail water service to the Expanded Franchise Area and in that
capacity owns, operates and maintains all retail water distribution facilities; (2) the
SCWA was to provide the wholesale water within the Expanded Franchise Area, and in
that capacity owns, operates and maintains all wholesale water production, treatment
and transmission facilities; and (3) the SCWA continues to collect Zone 40 fees from
those portions of Zone 40 lying within the boundaries of the Expanded Franchise Area;
and

WHEREAS, each of the parties to this Agreement is a local water purveyor
functioning within Sacramento County; and

WHEREAS, SCWA has available potable groundwater production capacity
and/or surface water to meet the needs of the Expanded Franchise Area as hereinafter
defined; and

WHEREAS, FRCD is desirous of purchasing a permanent supply of potable
ground and/or surface water from SCWA; and

WHEREAS, on December 8, 1999 FRCD acquired the assets of EGWW; and
WHEREAS, on August 20, 2001 SCWA filed a Complaint for Declaratory and Injunctive Relief against FRCD (Sacramento County Water Agency, et al. v. Florin Resources Conservation District, et al. Sacramento Superior Court Case No. 01AS05044, transferred to San Joaquin Superior Court and re-numbered San Joaquin Superior Court Case No. 01CV16036) seeking, among other things, a determination that FRCD was bound as a successor-in-interest to EGWW by the terms and conditions of the Master Water Agreement; and

WHEREAS, FRCD has acknowledged that it is a successor-in-interest to EGWW under the Master Water Agreement; and

WHEREAS, SCWA and FRCD desire to formally amend the Master Water Agreement to formally name FRCD as a successor-in-interest to EGWW and to address certain procedural issues associated with the Master Water Agreement.

NOW, THEREFORE, the Agreement is amended as follows:

I. PURPOSE

The parties are entering into this Agreement in order to establish the terms under which a permanent supply of wholesale treated groundwater and/or surface water will be provided by SCWA to FRCD, as successor-in-interest to EGWW, for use within its expanded franchise area.

II. DEFINITIONS

a. FRCD Water Facilities. All facilities, including distribution mains, services, meters, hydrants and all associated appurtenances, which are owned and operated by FRCD to supply water to its customers.

b. SCWA Water Facilities. All facilities, including wells, transmission mains, storage facilities and all associated appurtenances, which are owned and operated by SCWA to supply water to its customers.

c. Points of Connection. A point or points of connection for delivery of treated water from SCWA’s Water Facilities to the FRCD Water Facilities, including land, meters, and associated appurtenances.

d. Zone 40. A zone of the Sacramento County Water Agency established by the Agency Board of Directors on May 14, 1985, the boundaries of which are shown on attached Exhibit “A”, and as it may change from time to time.

e. Zone 41. A zone of the Sacramento County Water Agency established by the Agency Board of Directors on June 13, 2000, the boundaries of which are shown on attached Exhibit “C”, and as it may change from time to time.
f. **Expanded Franchise Area.** The area which the Sacramento County Board of Supervisors on June 30, 1987 granted to Elk Grove Water Works, Inc., FRCD's predecessor in interest, a non-exclusive franchise for the construction, operation and maintenance of Elk Grove Water Works facilities as said area is shown on attached Exhibit "B".

g. **Potable Water.** Ground or surface water that meets the State Department of Health Services Drinking Water Standards.

h. **Ordinance No. 18.** An Ordinance of the Sacramento County Water Agency establishing fees, charges, credits and regulations for the wholesale supply of water to zones within the Agency, adopted by the Board of Directors on August 26, 1986.

i. **Title 3.** A section of the Sacramento County Water Agency Code establishing fees, charges, and regulations for the sale of water within said Zone, adopted by the Agency Board of Directors on June 20, 2000

### III. WATER DELIVERY

a. SCWA shall deliver all potable water necessary for FRCD's retail customers in the Expanded Franchise Area, including water for fire protection consistent with SCWA design and operations standards in effect at the time a facility is constructed.

b. SCWA shall plan, construct, operate and maintain water facilities so as to provide FRCD with the quantity of potable water required to be delivered by this Agreement. SCWA may substitute treated surface water for the groundwater provided to FRCD.

c. SCWA shall be responsible for compliance with all applicable laws and regulations related to extraction, diversion, treatment and delivery of potable water to FRCD pursuant to this Agreement, such as the California Environmental Quality Act, the Federal and State Endangered Species Acts, Clean Water Act, the Porter-Cologne Water Quality Act and any other requirements of any federal, state or local agency.

d. FRCD shall pay SCWA for any and all costs associated with diverting, pumping, processing and delivering such water to FRCD pursuant to this Agreement. The amount to be paid by FRCD pursuant to this subparagraph shall be calculated in the manner described in paragraph 5 of this Agreement.

e. FRCD shall be responsible for compliance with all applicable laws and regulations related to delivery of potable water for use within the Expanded Franchise Area, such as the California Environmental Quality Act, the Federal
and State Endangered Species Acts, Clean Water Act, the Porter-Cologne Water Quality Act and any other requirements of any federal, state or local agency.

f. FRCD shall accept treated surface water, in lieu of groundwater, at the option of SCWA.

IV. POINTS OF CONNECTION AND DELIVERY STRUCTURES

a. Potable water shall be provided from SCWA facilities through Points of Connection to be located as determined by SCWA in coordination with FRCD.

b. All Points of Connection shall be designed and constructed or caused to be designed and constructed by and at the expense of SCWA, including land, meters, and associated appurtenances as described in subsequent paragraphs of this Agreement, and shall be the property of SCWA.

c. SCWA shall be responsible for the maintenance and operation of all Points of Connection.

d. With the exception of SCWA funded transmission mains, or other facilities as may be mutually agreed upon, FRCD shall design, construct, own, operate and maintain all facilities downstream of the Points of Connection.

e. SCWA shall calibrate Points of Connection metering devices at its discretion. Service charges shall be adjusted upward or downward, as appropriate, for metering errors in excess of two percent (2%), covering the known or estimated period of duration of such error, but in no event exceeding six months.

V. COST ALLOCATION AND PAYMENT

a. Operations and Maintenance Component. FRCD will pay for all costs incurred by SCWA for the procurement, extraction, diversion, treatment and conveyance of potable water on a cost-per-unit quantity basis for potable water actually delivered to FRCD. The cost will be determined by SCWA in an equitable manner such that FRCD neither subsidizes, nor is subsidized by another SCWA customer. In no event, however, shall the unit cost of water exceed SCWA's annual operating and maintenance costs for groundwater and/or surface water extraction, diversion, treatment and conveyance divided by the number of gallons produced allowing for a water loss factor mutually agreeable to both parties. Operating and maintenance costs shall include but not be limited to operating and maintenance personnel, services, supplies, capital replacement and improvement projects not funded by Zone 40 development fees, and an equitable proration of appropriate overhead. Operating and maintenance costs shall exclude those costs that are not related to the production and delivery of wholesale water to FRCD.
b. **Capital Component.** In addition to the operation and maintenance charge described in subparagraph (a) above, FRCD shall pay to SCWA user charges pursuant to Section 3.50.140, Special Capital Development Fee, Title 3 of SCWA Code. Said costs will be determined bi-monthly on the basis of the number and type of users being served SCWA wholesale water by FRCD in the Expanded Franchise Area and will be added to the charges determined per subparagraph (a), above.

c. Nothing in this Agreement shall preclude SCWA from adjusting unit costs for wholesale water to reflect actual cost increases in operation and maintenance.

d. On or before April 1 of each year SCWA shall provide FRCD an (1) an estimate of the unit cost of wholesale water for the ensuing twelve-month period beginning July 1; (2) a five-year projection of estimated wholesale water costs and (3) notice of SCWA’s intent to deliver treated surface water to FRCD, if applicable. SCWA will make a reasonable effort to keep wholesale water costs equal to or less than those contained in the five-year estimate. At the end of every bi-monthly period, the quantities of water delivered during the previous two months will be determined by FRCD from its retail customer water meters or by an equivalent method acceptable to both parties until water meters are in place, and service charges for that bi-monthly period will be based on the quantity of water delivered times the unit rate. Until the parties agree upon a more efficient method for determining the amount of wholesale water delivered by SCWA to FRCD, FRCD shall be responsible for submitting to SCWA within ten (10) days of the end of each period the quantity of water delivered during that bi-monthly period. A bill shall be submitted to FRCD within 30 days of the end of each bi-monthly period and payment shall be made by FRCD within 30 days following receipt of the bill.

VI. **TERM OF THE AGREEMENT**

This Agreement shall become effective as of the date of execution by all parties. The term of this Agreement is fifty (50) years. This agreement shall be automatically extended for one additional fifty year term at the end of fifty (50) years, unless the party desiring not to extend the Agreement provides five (5) years advanced written notice of that party’s intent not to extend the agreement. This Agreement may be terminated prior to the expiration of its term for cause or by mutual agreement of the parties.

VII. **FAILURE TO DELIVER WATER**

SCWA shall not be liable for failure to deliver potable water to FRCD hereunder in the amounts hereinabove, provided that such failure is caused by reasons beyond the reasonable control of SCWA.
VIII. RIGHTS TO CONSTRUCT FACILITIES

As between the parties to this Agreement, SCWA shall have the sole right to construct, operate and maintain public water production, treatment, storage and transmission facilities within the Expanded Franchise Area. SCWA may grant FRCD permission by separate written agreement to construct, operate and maintain such facilities in the Expanded Franchise Area for the sole purpose of providing water to the original certificated service area granted to EGWW by the California Public Utilities Commission (hereinafter “PUC Certificated Area”), as shown on Exhibit C. In the event SCWA is unable to provide potable water pursuant to this Agreement, FRCD shall have the right to construct, operate and maintain any new facilities necessary to provide the amount of water supply needed to correct deficiencies of the SCWA wholesale supply capacity in the Expanded Franchise Area; provided, however, that FRCD shall provide written notice to SCWA identifying such deficiencies and SCWA shall be provided fifteen (15) days to correct said deficiencies.

IX. RIGHT TO PROVIDE RETAIL WATER SERVICE

As between the parties to this Agreement, FRCD shall have the sole right to provide retail water service within the Expanded Franchise Area, which includes all activities necessary to deliver potable water from the Points of Connection to the end user. In the event FRCD is unable to provide such retail service, SCWA shall have the right to provide the same.

X. CAMDENS & SUPERBLOCK AREAS

The areas identified on the attached Exhibit “C” identified as “Camdens” and “Superblock” are excluded from the terms and conditions of this Agreement, however, the parties agree to negotiate in good faith to attempt to include said areas within the Agreement. In the interim, SCWA agrees to provide peaking water to the Camdens at the Sheldon Road Point of Connection, as such water is available.

XI. WATER MANAGEMENT/CONSERVATION

FRCD agrees to support and promote “Best Management Practices” for water conservation as required by contracts between SCWA and the United States Bureau of Reclamation, and to implement water management and conservation practices as may be imposed on SCWA or the County by other agencies. SCWA shall have the right to meet the non-potable demands in the Expanded Franchise Area with reclaimed water, pursuant to the policies and practices that are applicable to the SCWA service area for provision of reclaimed water.

XII. GROUNDWATER MANAGEMENT
SCWA and FRCD shall support and cooperate with each other regarding groundwater management.

XIII. FEES

FRCD agrees that SCWA may collect any and all assessments, fees and charges levied pursuant to sections 4.4 or 10.5 of the Sacramento County Water Agency Act within the Expanded Franchise Area for the provision of water in the Expanded Franchise Area.

XIV. NOTICE

Unless indicated otherwise herein, all notices, invoices, payments, statements or other writing authorized or required by this Agreement shall be deposited in the United States mail, postage prepaid and addressed to the respective parties as follows:

**SCWA:**  
Chief of Water Resources  
Sacramento County Dept.  
Of Water Resources  
827 7th Street, Room 301  
Sacramento, CA 95814

**FRCD:**  
General Manager  
Florin Resources Conservation District, dba Elk Grove Water Service  
9257 Elk Grove Boulevard  
Elk Grove, CA 95624

All notices, invoices, payments or other writings shall be deemed served on the day that they are deposited, postage prepaid, in the United States mail. Nothing in this paragraph shall preclude the service of any notice, invoices, payments, statements or other writings by personal delivery to the parties indicated above.

XV. INDEMNIFICATION & DEFENSE

a. By FRCD: FRCD shall fully indemnify and hold harmless SCWA from any claims, actions or liability for any damages, any injury to persons or property, or any violation of any law or regulation, occurring by reason of anything done or failed to be done by FRCD, its officers or employees, under this Agreement.

b. By SCWA: SCWA shall fully indemnify and hold harmless FRCD from any claims, actions or liability for any damages, any injury to persons or property, or any violation of any law or regulation, occurring by reason of anything done or failed to be done by SCWA, its officers or employees, under this Agreement.

XVI. RECORDS INSPECTION

7
Each party shall be entitled to inspect and photocopy the records of any other party which pertain to this Agreement, upon providing reasonable notice to such other party of its intent to do so. Each party may also appoint an auditor or auditors to examine the financial records of any other party to determine the adequacy of cost and billing information maintained by each party. After reasonable notice, each party shall make available to the other party’s auditor or auditors all requested records and shall assist and cooperate with such auditors. Each party shall keep its accounting and financial records in accordance with generally accepted accounting principals.

XVII. AMENDMENTS

No amendment or modification to this Agreement shall be valid unless executed in writing and approved by the governing bodies or authorized individuals of each party; provided, however, the annual schedule may be modified by mutual written agreement of SCWA and FRCD staff without obtaining approvals from the governing bodies of the parties hereto.

XVIII. NO THIRD PARTY BENEFICIARY

This Agreement is not intended to, and shall not be interpreted as conferring any benefits or rights whatsoever upon any person or entity which is not a party hereto.

XIX. ASSIGNMENT

This Agreement shall inure to the benefit and bind the successors and assigns of the parties including any successor water company or public agency which is obligated to serve water in the Expanded Franchise Area. FRCD is hereby specifically named as a successor-in-interest to the EGWW in the Master Water Agreement.

XX. RIGHT TO MATCH OFFER

FRCD shall provide SCWA with notice of any bona-fide offer to purchase or acquire the assets of FRCD within thirty (30) days of the date of said offer. SCWA shall have thirty (30) days beyond the date of said notice to match any offer to purchase the assets of FRCD.

XXI. EXHIBITS INCORPORATED

All Exhibits referred to herein are fully incorporated into this Agreement as if such Exhibits were set forth in their entirety at this place.

XXII. REAFFIRMATION
In all other respects, the above original Master Water Agreement, as amended, remains in full force and effect.

XXIII. ENTIRE AGREEMENT

This Agreement, as amended, and any attachments hereto, constitute the entire understanding between the COUNTY and FRCD concerning the subject matter contained herein.

XXIV. EFFECTIVE DATE

This First Amended and Restated Master Water Agreement shall be deemed effective as of the date and date first written above.

(SIGNATURE PAGE FOLLOWS)
Zone 40 Boundary
Sacramento County Water Agency (SCWA)

SCWA Zone 40 Boundary

Date: May 20, 2002
By: SCWA (R. Stenge)
Scale: 1" = 2.5 Miles
Elk Grove Water Service Expanded Franchise Area
Sacramento County Water Agency (SCWA)
Zone 41 Service Area
Sacramento County Water Agency (SCWA)

SCWA Zone 41 Service Area

Date: May 20, 2002
By: SCWA (R. Seng)
Scale: 1" = 2.5 Miles
IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first written above.

SACRAMENTO COUNTY WATER AGENCY, a political subdivision of the State of California.

By
Vice Chairman of the Board of Directors of Sacramento County Water Agency

Clerk of the Board of Sacramento County Water Agency

Reviewed and approved by County Counsel:

Deputy County Counsel

Attest:

Secretary, Florin Resources Conservation District

Reviewed and Approved by District Counsel

District Counsel

[Address information]

06/21/02 FRI 16:44 [TX/RX NO 89791] ©021
SETTLEMENT AGREEMENT

This Settlement Agreement is entered into this 28th day of June, 2002, by and between the Sacramento County Water Agency, a local public entity (hereinafter "SCWA"), the County of Sacramento, a political subdivision of the State of California (hereinafter "County") and the Florin Resources Conservation District, a resource conservation district established pursuant to the Public Resources Code, (hereinafter "FRCD").

RECITALS

WHEREAS, on August 20, 2001 SCWA and County filed a Complaint for Declaratory and Injunctive Relief against FRCD in Sacramento Superior Court (Case No. 01AS05044) which was subsequently transferred to San Joaquin Superior Court (San Joaquin Superior Court Case No. 01CV16036) seeking, among other remedies, a determination that FRCD was bound as a successor-in-interest to Elk Grove Water Works (hereinafter "EGWW") by the terms and conditions of the 1995 Master Water Agreement between SCWA and EGWW (hereinafter “Complaint”); and

WHEREAS, on October 23, 2001 FRCD filed a Cross-Complaint against County and SCWA in Sacramento Superior (Court Case No. 01AS05044) which was subsequently transferred to San Joaquin Superior Court (San Joaquin Superior Court Case No. 01CV16036) seeking, among other remedies, damages for alleged intentional and negligent interference with business and economic opportunities (hereinafter “Cross-Complaint”); and

WHEREAS, On September 1, 2001, County filed a Complaint for Quo Warranto which sought to challenge the appointments of two members of the Florin Resource Conservation District Board of Directors. On May 13, 2002, the Court sustained FRCD’S demurer without leave to amend; and

WHEREAS, COUNTY, SCWA and FRCD desire to settle the issues raised in the Complaint and Cross-Complaint, and all related amendments filed thereto, and the Complaint on Quo Warranto, together with other related issues, without the necessity of further litigation under the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth, COUNTY, SCWA and FRCD agree as follows:

1. FIRST AMENDED AND RESTATED MASTER WATER AGREEMENT.

The parties agree to execute as soon as practical a First Amended and Restated Master Water Agreement, in the form set forth in Exhibit “A” attached hereto. Pursuant to that agreement, FRCD acknowledges that it is a successor-in-interest to EGWW under the Master Water Agreement, as amended.
2. **SCWA RIGHT TO SERVE ZONE 41.**

Unless otherwise provided in a written agreement between the parties, SCWA shall have the sole right to design, construct, own and operate all facilities and perform all other activities, including but not limited to groundwater management and banking, necessary to manage the water resources and provide wholesale and retail water service within the boundaries of SCWA Zone 41, as said zone is shown on attached Exhibit "C", as it may change from time to time.

2. **FRCD COMMITMENT TO HOLDING ELECTION TO DETERMINE FUTURE FRCD BOARD MEMBERS.**

The FRCD shall select members of its Board of Directors solely by election as permitted by Division 9 of the Public Resources Code, sections 9000, et seq.

3. **SETTLEMENT/DISMISSAL OF PENDING LITIGATION.**

(a) SCWA shall submit the Proposed Stipulated Judgment, attached as Exhibit "B" hereto, to the Court in San Joaquin Superior Court Case No. 01CV16036. This Settlement Agreement shall become effective only after Entry of Judgment and execution of the First Amended and Restated Master Water Agreement.

(b) The County and the County Board of Supervisors shall not file an appeal related to their Complaint in Quo Warranto entitled *Sacramento County, et. al v. Riebe et. al.*, filed in Sacramento Superior Court and transferred to San Joaquin Superior Court (San Joaquin Superior Court Case No. CV015763) (hereinafter "Complaint in Quo Warranto").

(c) If the Court fails to accept the Proposed Stipulated Judgment or either party fails to execute the First Amended and Restated Master Water Agreement, this Settlement Agreement shall automatically terminate and parties shall be free to continue to pursue legal relief pursuant to the Complaint, Cross-Complaint or Complaint in Quo Warranto.

4. **WAIVER OF CLAIMS.** Except for the right to enforce this Settlement Agreement and subject to the approvals described in Section 2 above, each party shall release and forever discharge the other from and waive any and all claims, demands, controversies, actions, causes of action, obligations, damages, liabilities, costs and expenses of any nature whatsoever, whether at law or in equity, that it ever had, now has, or that it may hereafter have against the other that arise out of the subject matter of the Complaint, Cross-Complaint or Complaint in Quo Warranto.

5. **WAIVER OF UNKNOWN CLAIMS.**

(a) Each party understands that it may have sustained damages that arise or may arise out of or relate to either the subject matter of the Complaint, Cross-Complaint
or Complaint in Quo Warranto that may not have manifested themselves and that are presently unknown. The waivers and releases in this Settlement Agreement include waivers and releases of any claims for those damages. The waivers and releases in this Settlement Agreement also include waivers and releases of any other claims for unknown or unanticipated injuries, loses, or damages arising out of or relating to either the subject matter of the Complaint, Cross-Complaint or Complaint in Quo Warranto. Nothing in this section shall either (i) affect or prohibit the parties from enforcing any of the provisions of this Settlement Agreement or (ii) affect or prohibit the parties from taking, initiating or participating in any administrative or legal action not relating to any action covered by this Settlement Agreement.

(b) Each party further waives, with respect to the Complaint, Cross-Complaint and Complaint in Quo Warranto, all rights or benefits that it has or may have under section 1542 of the Civil Code of the State of California to the extent it would otherwise apply. Section 1542 reads as follows:

"A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor."

6. **COSTS AND ATTORNEY'S FEES.** The waivers and releases in this Settlement Agreement include waivers and releases for costs, expenses and attorney's fees incurred with respect to the Complaint, Cross-Complaint and Complaint in Quo Warranto.

7. **COMPLETE AGREEMENT.** The terms of this Settlement Agreement are intended by the parties as a final expression of their agreement and understanding with respect to such terms as are included in this Settlement Agreement, including, but not limited to, all prior agreements or understandings concerning the subject matter of this Agreement, and may not be contradicted by evidence of any prior or contemporaneous agreement. The parties further intend that this Settlement Agreement constitutes the complete and exclusive statement of its terms, and that no extrinsic evidence whatsoever may be introduced to vary its terms in any proceeding involving this Settlement Agreement.

8. **AMENDMENTS.** No amendment of, supplement to, or waiver of any obligations under the provisions of this Settlement Agreement will be enforceable or admissible unless set forth in a writing signed by the party against which enforcement or admission is sought.

9. **DUE DILIGENCE.** Each party declares that prior to the execution of this Settlement Agreement, it or its duly authorized representatives have apprized themselves of sufficient relevant data, either through experts or other sources of their own selection, in order that each party might intelligently exercise its judgment in deciding whether to execute, and in deciding on the contents of, this Settlement
Agreement. Each party assumes the risk that facts, other than those facts that are represented or warranted to be true in this Settlement Agreement, may later be found to be other than or different from the facts now believed by it to be true. Each party declares that its decision to execute this Settlement Agreement is not influenced by any representation not expressly set forth in this Settlement Agreement.

10. **AUTHORITY TO EXECUTE AGREEMENT.** Each party represents that it is duly authorized to enter into this Settlement Agreement, and each person signing on behalf of an entity represents that he or she is duly authorized to sign on behalf of that entity.

11. **BINDING ON SUCCESSORS AND ASSIGNS.** This Settlement Agreement shall be binding on, and inure to the benefit of, the successors and assigns of the respective parties hereto.

12. **INTERPRETATION.** It is agreed and acknowledged by the parties hereto that the provisions of this Settlement Agreement have been arrived at through negotiation, and that each of the parties has had a full and fair opportunity to revise the provisions of this Settlement Agreement and to have such provisions reviewed by legal counsel. Therefore, the normal rule of construction that any ambiguities are to be resolved against the drafting party shall not apply in construing or interpreting this Settlement Agreement.

13. **WAIVER.** The waiver at any time by any party of any of its rights with respect to a default or other matter arising in connection with this Settlement Agreement shall not be deemed a waiver with respect to any subsequent default or other matter.

14. **NOTICES.** Any notice, demand, request, consent, or approval that either party hereto may, or is required to, give the other shall be in writing and shall be deemed to have been received three (3) days after being deposited in the United States mail, first class postage prepaid, and addressed as follows:

TO COUNTY/SCWA:

Director of Water Resources  
Sacramento County Water Agency  
827 7th Street, Room 301  
Sacramento, CA 95814

TO FRCD:

General Manager  
Florin Resources Conservation District  
9257 Elk Grove Blvd., #A  
Elk Grove, CA 95624

Either party hereto shall have the right to serve any notice by personal delivery, and change the address at which it will receive such communications by giving fifteen (15) days advance notice to the other party.

_Dated: May 2002_  
_COUNTY OF SACRAMENTO_
APPROVED AS TO FORM:

Diane E. McEl
Deputy County Counsel
June
Dated: May 28, 2002

FLORIN RESOURCES CONSERVATION
DISTRICT

By
Chairperson, Board of Directors

APPROVED AS TO FORM:

Gary Park 6/21/02
District Counsel

---5---
Zone 41 Service Area
Sacramento County Water Agency (SCWA)
Florin RCD Proposed Budget Items FY 2001-2002

- Education Coordinator: $9,150: 16 hrs/week @ $10/hr = $322/hr + FICA & SDI

- RCD Secretary: $3,000 @ $725/month + FICA & SDI

- Membership Dues S225 Min · CARCD $175 & Area Dues $50.00

- Office Supplies & Maintenance $450.00 Including postage

- Business & Conf Expenses: $1500.00

- Building Ins & Liability: $2,000.00

- Other Accounting & Misc Exp: $1,500

- CARCD Speakoff: $100: $50 gift certificate to local 1st place speaker (September) additional $50 gift certificate if our student wins regional competition (October) gift certificate from Discovery Channel store or somewhere else science/education related

- Share Our Globe campout conference: $325: 5 students @ $65 each (September)

- Envirothon: $1150: $50 pre-registration (Nov), $700 registration (March) additional hrs for E.C. $400: 40 hrs @ $10/hr: 24 hr (April, competition): 16 hr (2 fieldtrips out of 5 scheduled) (if no grant funding is received, this is minimum to sponsor; with grant funding, $300 to sponsor; no transportation “costs” this year, driveable)

- Range Camp: $300 (May)

- Creek Week Activities Sponsorship: $750 (March/April)

- Cash match for grant projects: $5000 (portion can come from E.C. salary)

- 319(h) grant: $4000/yr (July 2002-July 2003)

Proposed Total: $25,450.00
Appendix C

Detailed Breakdown of Land Uses
## Residential Uses

<table>
<thead>
<tr>
<th>Village/ Lot Number</th>
<th>Land Use</th>
<th>Acres</th>
<th>Single Family Dwelling Units</th>
<th>Density</th>
<th>Water Demand (AF/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village 1-A</td>
<td>6300 sq. ft. &amp; 8,250 sq ft SFD</td>
<td>21.50</td>
<td>99.00</td>
<td>4.60</td>
<td>62.14</td>
</tr>
<tr>
<td>Village 1-B</td>
<td>6300 sq. ft. &amp; 8,800 sq ft SFD</td>
<td>8.60</td>
<td>36.00</td>
<td>4.19</td>
<td>24.85</td>
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<tr>
<td>Village 2-A</td>
<td>5750 sq. ft. SFD</td>
<td>39.00</td>
<td>196.00</td>
<td>5.03</td>
<td>112.71</td>
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<tr>
<td>Village 2-B</td>
<td>5750 sq. ft. SFD</td>
<td>12.30</td>
<td>62.00</td>
<td>5.04</td>
<td>35.55</td>
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<tr>
<td>Village 3</td>
<td>Age Restricted Patio Homes</td>
<td>33.70</td>
<td>267.00</td>
<td>7.92</td>
<td>97.39</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>115.10</strong></td>
<td><strong>660.00</strong></td>
<td><strong>5.36 Average</strong></td>
<td><strong>332.64</strong></td>
</tr>
</tbody>
</table>

## Public & HOA Use

<table>
<thead>
<tr>
<th>Village/ Lot Number</th>
<th>Land Use</th>
<th>Acres</th>
<th>Water Demand (AF/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot A</td>
<td>Age Restricted Lodge</td>
<td>2.50</td>
<td>9.25</td>
</tr>
<tr>
<td>Lot B</td>
<td>Age Restricted Clubhouse</td>
<td>2.10</td>
<td>5.78</td>
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<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>4.60</strong></td>
<td><strong>15.03</strong></td>
</tr>
</tbody>
</table>

## Open Space, Public Recreation & Right of Way

<table>
<thead>
<tr>
<th>Lot C</th>
<th>Wetland Conservation &amp; Open Space</th>
<th>Acres</th>
<th>Open Space</th>
<th>Public Recreation</th>
<th>Right-of-Way</th>
<th>Water Demand (AF/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot D</td>
<td>Trail Corridor - No. of Park K &amp; around Det Basin</td>
<td>0.90</td>
<td>-</td>
<td>0.40</td>
<td>0.50</td>
<td>1.49</td>
</tr>
<tr>
<td>Lot E</td>
<td>Open Space (former Park Site location)</td>
<td>6.30</td>
<td>6.30</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lot F</td>
<td>Trail Corridor (under Electrical Easement)along Waterman Rd</td>
<td>3.40</td>
<td>-</td>
<td>2.91</td>
<td>0.49</td>
<td>10.17</td>
</tr>
<tr>
<td>Lot G</td>
<td>Neighborhood Park</td>
<td>4.90</td>
<td>-</td>
<td>4.90</td>
<td>-</td>
<td>16.95</td>
</tr>
<tr>
<td>Lot H</td>
<td>Trail Corridor at C Court Open Space</td>
<td>0.50</td>
<td>-</td>
<td>0.23</td>
<td>0.27</td>
<td>0.85</td>
</tr>
<tr>
<td>Lot I</td>
<td>Detention Basin Outfall and Whitehouse Creek</td>
<td>0.60</td>
<td>0.60</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Lot J</td>
<td>Detention Basin</td>
<td>14.80</td>
<td>14.80</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lot K</td>
<td>Pocket Park</td>
<td>0.60</td>
<td>-</td>
<td>0.60</td>
<td>-</td>
<td>2.08</td>
</tr>
<tr>
<td>Lot L</td>
<td>Existing Landscape Lot</td>
<td>0.05</td>
<td>-</td>
<td>0.05</td>
<td>-</td>
<td>0.17</td>
</tr>
<tr>
<td>Lot M</td>
<td>Existing Landscape Lot</td>
<td>0.40</td>
<td>-</td>
<td>0.40</td>
<td>-</td>
<td>1.38</td>
</tr>
<tr>
<td>Lot N</td>
<td>Entry monument &amp; L/S</td>
<td>0.10</td>
<td>-</td>
<td>0.10</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Lot O</td>
<td>Entry monument &amp; L/S</td>
<td>0.10</td>
<td>-</td>
<td>0.10</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Lot P</td>
<td>Vil. 3 Park, near Bond Entry</td>
<td>0.10</td>
<td>0.10</td>
<td>-</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Lot Q</td>
<td>Existing Landscape Lot</td>
<td>0.70</td>
<td>0.70</td>
<td>-</td>
<td>-</td>
<td>2.42</td>
</tr>
<tr>
<td>Lot R</td>
<td>Vil 3 L/S Lot at Entry</td>
<td>0.10</td>
<td>0.10</td>
<td>-</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Lot S</td>
<td>Vil 3 Entry Rd &amp; Gate</td>
<td>0.30</td>
<td>-</td>
<td>0.30</td>
<td>-</td>
<td>0.06</td>
</tr>
<tr>
<td>Lot T</td>
<td>Vil 3 L/S Lot at Entry</td>
<td>0.10</td>
<td>-</td>
<td>0.10</td>
<td>-</td>
<td>0.35</td>
</tr>
<tr>
<td>Lot U</td>
<td>Silverado Dr. L/S &amp; pedestrian corridor, N. of Village Center Lane</td>
<td>0.40</td>
<td>-</td>
<td>0.32</td>
<td>0.08</td>
<td>1.12</td>
</tr>
<tr>
<td>Lot V</td>
<td>Silverado Dr. L/S &amp; pedestrian corridor Corner of lot 1</td>
<td>0.10</td>
<td>-</td>
<td>0.03</td>
<td>0.07</td>
<td>0.12</td>
</tr>
<tr>
<td>Lot W</td>
<td>Paseo Connector, from Silverado Drive to Basin Trail</td>
<td>1.00</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
<td>3.46</td>
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<tr>
<td>Lot X</td>
<td>Vil. 3 Park</td>
<td>0.17</td>
<td>-</td>
<td>0.17</td>
<td>-</td>
<td>0.59</td>
</tr>
<tr>
<td>Lot Y</td>
<td>Vil. 3 Park</td>
<td>0.18</td>
<td>-</td>
<td>0.18</td>
<td>-</td>
<td>0.61</td>
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<tr>
<td>Lot Z</td>
<td>Vil. 3 Park</td>
<td>0.17</td>
<td>-</td>
<td>0.17</td>
<td>-</td>
<td>0.58</td>
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<tr>
<td>Lot AA</td>
<td>Trail Corridor in Front of Neighborhood Park G</td>
<td>0.60</td>
<td>-</td>
<td>0.27</td>
<td>0.33</td>
<td>1.00</td>
</tr>
<tr>
<td>Lot BB</td>
<td>Trail Corridor in Front Wetland Open Space Conservancy</td>
<td>0.40</td>
<td>-</td>
<td>0.16</td>
<td>0.24</td>
<td>0.60</td>
</tr>
<tr>
<td>Lot CC</td>
<td>Trail Corridor in Front Lot E Open Space Conservancy</td>
<td>0.70</td>
<td>-</td>
<td>0.28</td>
<td>0.42</td>
<td>1.06</td>
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<tr>
<td>Lot DD</td>
<td>Paseo to Quail Ranch</td>
<td>0.10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.10</td>
</tr>
<tr>
<td>Lot EE</td>
<td>Trail Corridor along Silverado Drive from Bond entry to Lot K Park</td>
<td>0.40</td>
<td>-</td>
<td>0.27</td>
<td>0.13</td>
<td>0.96</td>
</tr>
<tr>
<td>Lot FF</td>
<td>Silverado Dr. L/S &amp; pedestrian corridor</td>
<td>0.40</td>
<td>-</td>
<td>0.32</td>
<td>0.08</td>
<td>1.12</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>106.17</strong></td>
<td><strong>89.30</strong></td>
<td><strong>13.86</strong></td>
<td><strong>3.01</strong></td>
<td><strong>48.58</strong></td>
</tr>
</tbody>
</table>

## Off-site and Major Arterial

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>Demands</th>
<th>Water Demand (AF/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond Road &amp; Waterman ROW</td>
<td>3.90</td>
<td>-</td>
<td>3.90</td>
</tr>
<tr>
<td>Silverado Drive (No Load Portion)</td>
<td>1.30</td>
<td>-</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>5.20</strong></td>
<td>-</td>
<td><strong>5.20</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>231.07</strong></td>
<td><strong>660.00</strong></td>
<td><strong>332.64</strong></td>
</tr>
</tbody>
</table>