DRAFT

2010
Hollister Urban Area
Urban Water Management Plan

June 2011

San Benito County
Water District

Sunnyslope
County Water District

City of Hollister

Todd Engineers
Alameda, California

Draft

June 14, 2011

HOLLISTER URBAN AREA

2010 URBAN WATER MANAGEMENT PLAN

Date Plan Submitted to the Department of Water Resources: _____

San Benito County Water District
Sunnyslope County Water District
City of Hollister

Todd Engineers

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The water supplier is a: **Water district and water wholesaler**

Utility services provided by the water supplier include: **Water service**

Is this agency a Bureau of Reclamation Contractor? **Yes**

Is this agency a State Water Project Contractor? **No**

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The water supplier is a: **Water district and water retailer**

Utility services provided by the water supplier include: **Water and sewer service**

Is this agency a Bureau of Reclamation Contractor? **No**

Is this agency a State Water Project Contractor? **No**

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The water supplier is a: **City water department and water retailer**

Utility services provided by the water supplier include: **Water and sewer service**

Is this agency a Bureau of Reclamation Contractor? **No**

Is this agency a State Water Project Contractor? **No**

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EXECUTIVE SUMMARY

PURPOSE AND SCOPE

The 2010 Hollister Urban Area (HUA) Urban Water Management Plan (UWMP) has been prepared as a collaborative effort between the San Benito County Water District (District), Sunnyslope County Water District (Sunnyslope), and the City of Hollister (Hollister). The plan has been prepared in accordance with the Urban Water Management Planning Act and guidelines prepared by the Department of Water Resources (DWR). The 2010 HUA UWMP is intended to help guide the area's future water management efforts. At this time, it is anticipated that the three cooperating agencies will adopt this UWMP.

This Plan builds on and updates the 2005 UWMP, accounting for changes in the California Water Code and local planning and water management efforts. Specifically, Senate Bill 7 (Statewide Water Conservation) establishes a goal of 20 percent reduction in statewide urban water use (in gallons per capita per day) by 2020. Accordingly, this 2010 UWMP includes a baseline water use estimate, assesses current water use per capita, and develops specific water use targets to meet the 2020 goal of 20 percent water use reduction. The DWR has established an interim goal of 10 percent reduction of per capita daily water use by 2015 as a means of checking progress towards the 2020 goal.

The HUA agencies have provided for agency coordination and community participation in their urban water management planning efforts. Much of the coordination and community participation regarding water conservation within the HUA is undertaken by the Water Resources Association (WRA) of San Benito County. The WRA serves water customers of Hollister, Sunnyslope, the District, and the City of San Juan Bautista. The WRA has played an integral role in the preparation of this UWMP.

This UWMP presents the following elements relating to water supply and demand in the HUA:

- A description of the HUA service area, which is a regional alliance of the District, Sunnyslope, and Hollister.
- Past and current water demand as reported by the agencies in the HUA.
- Baseline daily per capita water demand, as required by Senate Bill 7.
- Projected water demand based on estimated population and per capita daily demand reductions as required by Senate Bill 7.
- A water use reduction plan.
- A summary of sources of water supply and plans for future water supply facilities.
- Discussion of water supply reliability and comparison of supply and demand, including the effects of drought and emergencies on water supply availability and the contingency plans in place to manage shortages.
- Details of the demand management measures employed within the HUA.

FINDINGS

The HUA is an approximately 20 square mile area comprising all of the incorporated, and some unincorporated county lands, surrounding the City of Hollister. This is the same area that was used in the 2005 UWMP and in the Hollister Urban Area Water and Wastewater Master Plan (Master Plan). There are two municipal water purveyors within the HUA: the City of Hollister and Sunnyslope County Water District. These water purveyors provide water supply to their individual service areas from sources described in Section 4 of this report. The District has the responsibility and authority to manage groundwater in San Benito County, which includes managing groundwater and surface water supplies. In addition, the District is the imported water wholesaler from the Central Valley Project (CVP) to Zone 6, which includes the HUA.

Table ES-1
Population — Current and Projected

	2010	2015	2020	2025	2030
Total HUA Population	40,121	49,469	53,739	58,009	59,871
Water Demand (acre-feet per year, AFY)	5,283	7,891	8,060	9,692	10,825
Water Supply - Normal Water Year (AFY)	5,811	13,424	13,424	13,424	13,424
Water Supply - Single Dry Water Year (AFY)	5,717	8,644	8,817	10,579	11,798

POPULATION

The annual population of the HUA for which water is supplied by Sunnyslope and Hollister was estimated for 1994 through 2010. These historical population estimates are based on data from the 2000 United States Census, in accordance with DWR guidelines.

Population for the HUA was also estimated through 2030 in five-year intervals. Future population was estimated as part of the Master Plan through the examination of general development plans for the City of Hollister and San Benito County. These population growth estimates were based on the Master Plan with some adjustments, as indicated in Section 2. Future population estimates are summarized on **Table ES-1**.

BASELINE AND FUTURE DEMAND

Historical population was combined with measured water use to calculate baseline per capita daily demand for the HUA, in accordance with DWR guidelines and Senate Bill 7. These calculations indicated that the per capita daily demand over the baseline period was 149 gallons per capita per day (gpcd) in Hollister, 178 gpcd for Sunnyslope, and 161 gpcd for the entire HUA regional alliance. The resulting target daily per capita water use values that the HUA will need to achieve to comply with the savings required by DWR and Senate Bill 7 are 145 gpcd by 2015 and 129 gpcd by 2020. Detailed discussions of the baseline and target water demands are presented in Section 3.

Future water demands have been calculated based on the target water use values and the population projections summarized above and described in detail in Sections 2 and 3. The resulting annual water demands are summarized in **Table ES-1**.

WATER SUPPLY

The HUA relies on both local groundwater and imported water from the Central Valley Project (CVP) for municipal water supply. The District manages all CVP imports for both agricultural and municipal and industrial (M&I) water deliveries. The District also manages the groundwater resources of the County, as indicated above. The District's management of groundwater includes recharge to the basin, exploration of expanded groundwater banking, monitoring water levels and water quality, and the preparation of annual reports on the state of the groundwater basin.

Since the initiation of CVP importation and construction of the Lessalt Water Treatment Plant the use of groundwater for M&I supply has declined. However, groundwater remains a major source of supply; in the past five years (2006 through 2010) groundwater has accounted for approximately 77 percent of the total water supplied by Hollister and Sunnyslope. The District's management has resulted in groundwater levels generally near their historical highs in most parts of the basin for the past several years. Based on these water levels and the stable management of the basin, overdraft is unlikely to occur in the near future. The quality of groundwater has been described as highly mineralized and of marginal quality for drinking and agricultural purposes. The water quality of groundwater in the HUA generally makes imported CVP water preferable for M&I uses.

The District's contract for municipal and industrial CVP deliveries with the United Stated Bureau of Reclamation (USBR) exceeds the current treatment capacity within the HUA. Hollister and Sunnyslope are in the process of planning to increase the operational capacity of the Lessalt water treatment plant and construct a second water treatment facility to treat CVP imports for delivery to areas of the HUA that are not currently served by Lessalt. These two facilities will have a combined capacity capable of treating the entire volume of the municipal and industrial CVP contract.

WATER SUPPLY RELIABLITY

Many factors could result in inconsistency of supply and shortages, including legal, environmental, water quality, climatic, or a combination of these. Hollister, Sunnyslope, and the District are preparing for these threats to water supply through their portfolio of supplies, improvement of their facilities (e.g., treatment plant expansion and groundwater banking), and through demand management. A detailed discussion of the factors affecting water supply and the steps that the agencies within the HUA are taking to address these factors, including a comparison of supply and demand during water shortages caused by drought, is presented in Section 5.

WATER USE REDUCTION PLAN

The HUA currently encourages water conservation through a variety of programs, which are discussed in depth in Section 6. To meet the future water use per capita demand targets, the HUA and WRA, through their water conservation coordinator, plan to focus their efforts on several demand management measures (DMMs). These specific DMMs are targeted as they represent the opportunities for maximum water savings. Additional DMMs, also referred to as best management practices (BMPs) developed by the California Urban Water Conservation Council (CUWCC), will continue to be implemented as discussed in Section 6. The programs that form the HUA Water Reduction Plan include:

- Retail conservation pricing
- Public information programs
- Water sense specifications (WSS) for residential development
- Commercial, Industrial, and Institutional (CII) audits and surveys
- Landscape audits and surveys for dedicated landscape accounts
- Surveys and Audits for Large Customers
- Water Softener Replacements
- Landscape Efficiency Classes

The Water Reduction Plan includes programs targeted to specific categories of users such as residential, commercial, industrial, institutional, and large landscape irrigators. The Plan also includes general BMPs that encourage conservation overall all types for example, public outreach, and retail conservation pricing. The programs for which estimated water savings can be quantified account for approximately 87 to 90 percent of the demand reduction necessary to achieve the 2015 goal (ten percent) and 57 percent of the 2020 goal (20 percent). The remaining reductions in demand will be accomplished by application of the unquantifiable programs.

1. INTRODUCTION

1.1 PLAN PREPARATION AND ADOPTION

This Urban Water Management Plan (UWMP or Plan) has been prepared for the Hollister Urban Area (HUA) to help guide the area's water management efforts to the year 2015 and beyond. The Hollister Urban Area UWMP is a collaborative effort between the City of Hollister (Hollister), Sunnyslope County Water District (Sunnyslope), and San Benito County Water District (District). The Plan has been prepared in accordance with the Urban Water Management Planning Act (Division 6 Part 2.6 of the Water Code §§10610 – 10656).

This Plan documents Hollister's and Sunnyslope's sources of water supply, defines water demands, presents a water shortage contingency plan, describes implementation of water demand management measures, and projects water supply and demand to the year 2030. The plan also describes ongoing work by the District to ensure and expand water supply in the area.

The HUA represents a regional alliance, as defined by Water Code sections 10608.20(a)(1) and 10608.28. Hollister and Sunnyslope choose to plan, comply, and report on a regional basis. Where possible, information for each entity is displayed individually in addition to the regional totals for the entire HUA.

This Plan builds on and updates the 2005 UWMP, accounting for changes in the California Water Code and local planning and water management efforts. On November 4, 2009, California lawmakers passed four inter-related water policy bills (called the 2009 Water Package). Bills in the 2009 Water Package amend the Urban Water Management Planning Act and revise requirements of 2010 UWMPs. Specifically, Senate Bill 7 (Statewide Water Conservation) establishes a goal of 20 percent reduction in statewide urban water use (in gallons per capita per day) by 2020. Accordingly, this 2010 UWMP includes a baseline water use estimate, assesses current water use per capita, and develops specific water use targets to meet the 2020 goal of 20 percent water use reduction.

In accordance with section 10642 of the Water Code and section 6066 of the Government Code, each agency held a public hearing at least 45 days after the circulation of the Draft Plan and prior to adoption of the Plan. A public notice was posted before the public hearing and is included in **Appendix A**. The Final Plan was adopted by Hollister on June 20, 2011, and by Sunnyslope and the District on June 29, 2011. The resolutions to adopt the Plan are included in **Appendix A**. The adopted Plan has been filed with the Office of Conservation in the Department of Water Resources, as required by law. California regulations require Urban Water Management Plans to be updated at least once every five years in years ending in five and zero. However, Senate Bill 7 extended the deadline for the 2010 UWMP to July 1, 2011.

1.2 AGENCY COORDINATION AND PUBLIC PARTICIPATION

The HUA agencies have provided for agency coordination and community participation in their urban water management planning efforts. **Table 1-1** lists the organizations contacted and summarizes citizen

participation. A Draft Plan was distributed to the public on _____, 2011 for comment with public presentations to Hollister on June 20, 2011 and Sunnyslope and the District on June 29, 2011.

The Water Resources Association (WRA) of San Benito County is an ongoing means for agency coordination and public participation, focused on water conservation. The WRA serves water customers of the following agencies: City of Hollister, City of San Juan Bautista, Sunnyslope County Water District and San Benito County Water District. The WRA coordinates and conducts water conservation programs for its participating agencies and maintains an active website, www.wrasbc.org.

Table 1-1 also summarizes circulation of the Draft and Final plans. The Draft Plan was sent to the listed organizations with a request to provide comments. Final Plan copies are available at Hollister City Hall and the City Library. An electronic version is available on the websites of all three agencies (Hollister, Sunnyslope, and the District).

1.3 ACKNOWLEDGEMENTS

This Plan was prepared by Iris Priestaf, Maureen Reilly, and Chad Taylor of Todd Engineers. We appreciate the considerable assistance provided by District, Hollister, and Sunnyslope staff, most notably Shawn Novak. This Plan was prepared using the checklists and worksheets provided by the California Department of Water Resources (DWR) from their website,

http://www.owue.water.ca.gov/urbanplan/index.cfm

and their Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (DWR 2011).

Table 1-1
Coordination with Appropriate Agencies

Coordinating Agencies	Participated in Developing the Plan	Commented on the Draft	Attended Public Meetings	Was Contacted for Assistance	Was Sent a Copy of the Draft Plan	Was Sent a Notice of Intention to Adopt	Not Involved / No Information
US Bureau of Reclamation							
Central Coast RWQCB							
San Benito County Planning	x			x		x	
City of San Juan Bautista						x	
Tres Pinos Water District					x	x	
San Benito County Farm Bureau					x	x	
San Benito County Business Council					x	x	
San Benito Co. Chamber of Commerce						x	
Public Library						x	
Sierra Club Loma Prieta Chapter						x	
General Public							

2. SERVICE AREA

2.1 LOCATION

The HUA is located about 90 miles south of San Francisco in the northern portion of San Benito County, California. The HUA is in a broad and flat valley between the Gabilan Range on the west and the Diablo Range on the east. The San Benito River runs through the southwestern portion of the HUA and Santa Ana Creek flows through the eastern portion of the HUA. The Arroyo de Las Viboras and Arroyo Dos Picachos flow to the northeast of the HUA (**Figure 2-1**). The City of Hollister was incorporated in 1872 and is the largest community in San Benito County. Other communities near the HUA include San Juan Bautista and Tres Pinos, which are also in San Benito County, and Gilroy in Santa Clara County. The HUA overlies a portion of the Gilroy-Hollister groundwater basin, designated as DWR Basin No. 3-3.

2.2 SERVICE AREA

The HUA is an approximately 20 square mile area comprising all of the incorporated, and some unincorporated county lands, surrounding the City of Hollister (**Figure 2-1**). This area has been used in the previous 2005 UWMP (Kennedy/Jenks 2009) and the Master Plan (HDR 2008).

There are two municipal water purveyors within the HUA: the City of Hollister and Sunnyslope County Water District. These water purveyors provide water supply to their individual service areas from sources described in Section 4 of this report. The year 2000 service areas for Hollister and Sunnyslope are shown on **Figure 2-2**. These service areas were used as the basis for the calculation of population.

The District was formed by a special act of the State with responsibility and authority to manage groundwater in San Benito County. As part of its management activities, the District manages recharge to the basin, explores expanded groundwater banking, monitors water levels and water quality, and reports annually on the basin. In addition, the District is the imported water wholesaler from the Central Valley Project (CVP) to Zone 6, the northern portion of the County. HUA is located completely within the Zone 6 areal extent.

2.3 CLIMATE

San Benito County has a moderate California coastal climate, with a hot and dry summer season typically lasting from May through October. Average annual rainfall ranges from 7 inches in the drier eastern portion of the County to 27 inches per year in high elevations to the south (PRISM, 2010). The City of Hollister, some 30 miles inland from the coast and separated from it by a low mountain pass, receives, on average, about 13 inches of rainfall annually. Snowfalls in the mountains are infrequent and relatively light. A comparatively long growing season of 265 days or more per year prevails, and year-round cropping is practiced to some extent. The area has a high percentage of sunny days, particularly in summer. Most of the rainfall occurs in the late fall, winter, and early spring, generally between November and April. Therefore, significant irrigation is required during summer months (HDR 2008).

Figure 2-3 is a graph of annual rainfall in Hollister from 1875 to 2010. While rainfall data have been collected monthly since 1875, since June 1994 precipitation and other weather data have been collected from a California Irrigation Management Information System (CIMIS) station located by the San Benito County Water District office in Hollister (Station #126). As shown, annual precipitation is subject to wide annual variations; the lowest recorded annual rainfall was 5.2 inches in 1953, and the greatest annual rainfall was 26.2 inches in 1983.

Evapotranspiration (ET) is the loss of water to the atmosphere by evaporation from soil and plant surfaces and transpiration from plants. It is an indicator of how much water is needed by plants (e.g., crops and landscaping) for healthy growth and productivity. ET from a standardized well-watered grass surface is the common reference, denoted as ETo. The least ET occurs in the cool wet winter months and greatest ET occurs during the hot dry summer months. This results in peak monthly water demands in summer that are three times the comparable winter demand. Average annual ETo in the HUA is 49 inches, peaking at 6.3 to 6.9 inches per month in June, July, and August.

Average monthly temperatures in the HUA range from approximately 48 degrees Fahrenheit in January and December to near 65 degrees in July and August. In these two months, daily maximum temperatures typically reach as high as 86 degrees.

2.4 POPULATION

The HUA is the urban center of a highly productive agricultural area that has been in continuous production for over one hundred years. The primary industry of the HUA is agriculture and agriculture related businesses, although in recent years there has been an increase in the number of residents who commute to other areas for work. The area is primarily single family residences, with less than sixteen percent of the population in multifamily dwellings.

Table 2-1 shows the area's population in 2005 and 2010. The population actually decreased by 0.5 percent between 2005 and 2010, which is likely the result of the recent recession. Population is anticipated to increase in the coming years, as planned developments are constructed.

Population estimates for the Hollister and Sunnyslope service areas, from 1994 through 2010, were calculated in accordance with DWR guidelines entitled Methodologies for Calculation of Baseline and Compliance Urban Per Capita Water Use (DWR 2010). The guidelines require estimation of the population to which water is actually supplied. Both Hollister and Sunnyslope are Category 2 Water Suppliers, as defined in the guidelines referenced above. For Category 2 Water Suppliers, population estimates must be founded on one of the following sources of data: an association of local governments (of which the water supplier is a member) that develop population estimates for its members using GIS maps of actual distribution areas, the California Department of Finance (DOF), or the United States Census Bureau. Data from the 2000 Census were used in calculating the HUA year 2000 service area populations for both Hollister and Sunnyslope.

The steps prescribed by the guidelines for estimation of service area population for the year 2000 are:

1. Locate or develop a GIS map of the boundaries of the service area(s) in the year 2000.
2. Determine which census blocks were completely or partially within the 2000 service area boundaries.
3. Determine which of these census blocks have fifty percent or more of their area within the boundaries.
4. Sum the population for the service area from all those census blocks that are at least fifty percent within the boundaries.

The year 2000 service areas for Hollister and Sunnyslope are shown on **Figure 2-2**. Population estimates for the two service areas were calculated separately. Annual connection data for both Hollister and Sunnyslope were used to scale the 2000 population estimates to the study period 1994 to 2010 based on the annual number of single family and multifamily connections.

Table 2-1 shows the area's population projections to the year 2030 in five-year intervals. Future population was estimated as part of the Master Plan through the examination of general development plans for the City of Hollister and San Benito County. These plans were used to generate population growth estimates through the Master Plan planning horizon (2023), and at intermediate milestone years 2013 and 2018. These population growth estimates were used to estimate future growth population for the UWMP, with some adjustments. The adjustments include:

- Use of the population growth rate rather than total population. The Master Plan and UMWP use different data sources to develop the baseline population; the Master Plan relies on Department of Finance estimates and the UWMP relies on US Census information.
- Adjustment of the timing of growth projections. Growth in the county has been slower than expected and the growth projections are not likely to occur as previously planned. To account for the slow growth, the timing of the planned development has been postponed by five years. For example, the development expected by the Master Plan to occur by 2020 is estimated to occur in 2025 in the UWMP.
- Assumption of linear growth. To estimate water demands in 5-year intervals for the UWMP, growth is assumed to be linear between Master Plan milestones.

By 2030, population is expected to increase by 49 percent over current levels, as shown on **Table 2-1.**

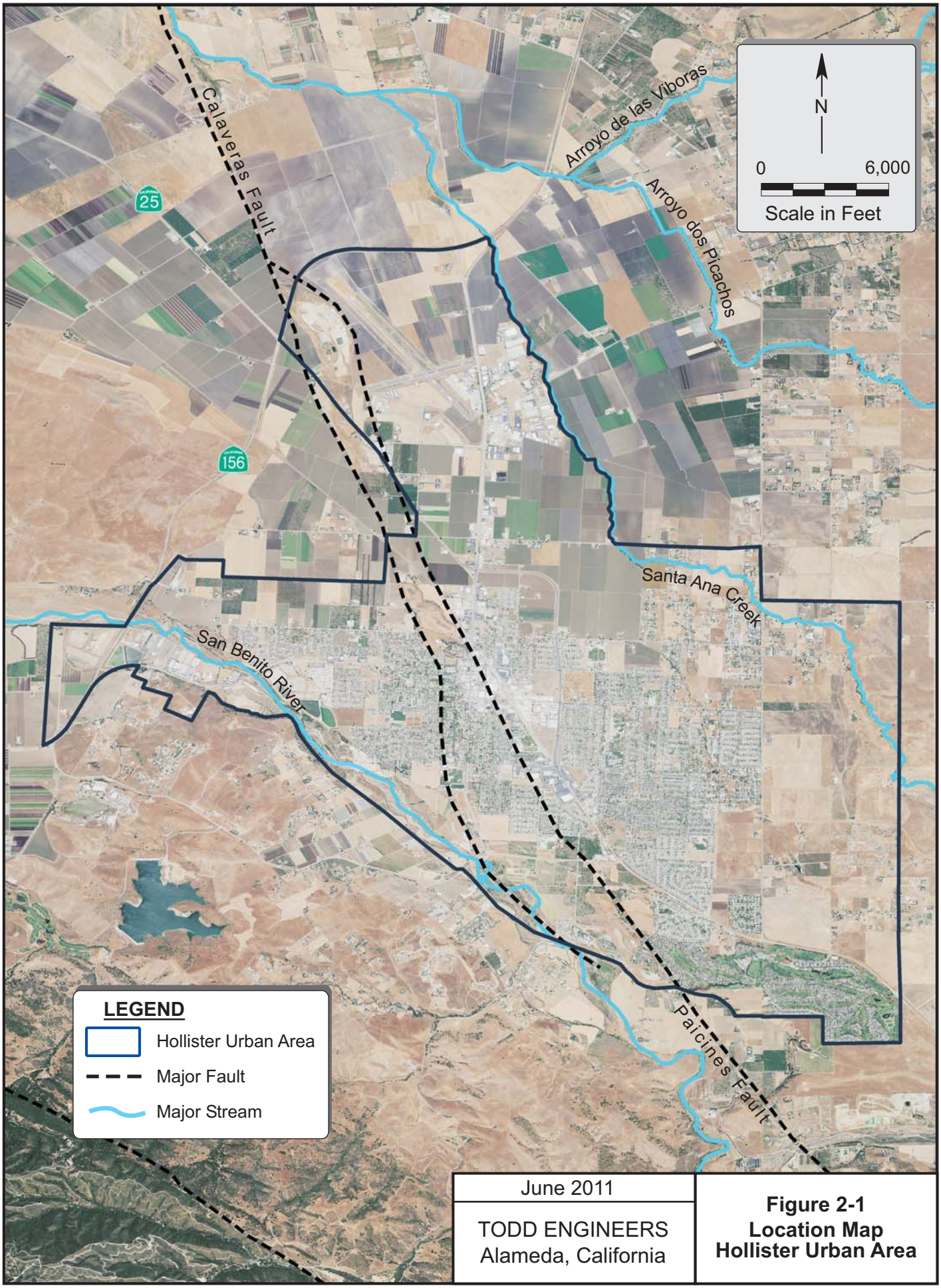
Table 2-1
Population — Current and Projected

	2010	2015	2020	2025	2030
City of Hollister Population[1,2,3]	23,021	28,385	30,835	33,285	34,353
Sunnyslope Service Area Population[1,2,3]	17,100	21,084	22,904	24,724	25,518
Total HUA Population	**40,121**	**49,469**	**53,739**	**58,009**	**59,871**

[1] *Service area population is defined as the population served by the distribution system. See Technical Methodology 2: Service Area Population (2010 UWMP Guidebook, Section M).*

[2] *Population based on US Census service area populations and increased based on estimated future developments.*

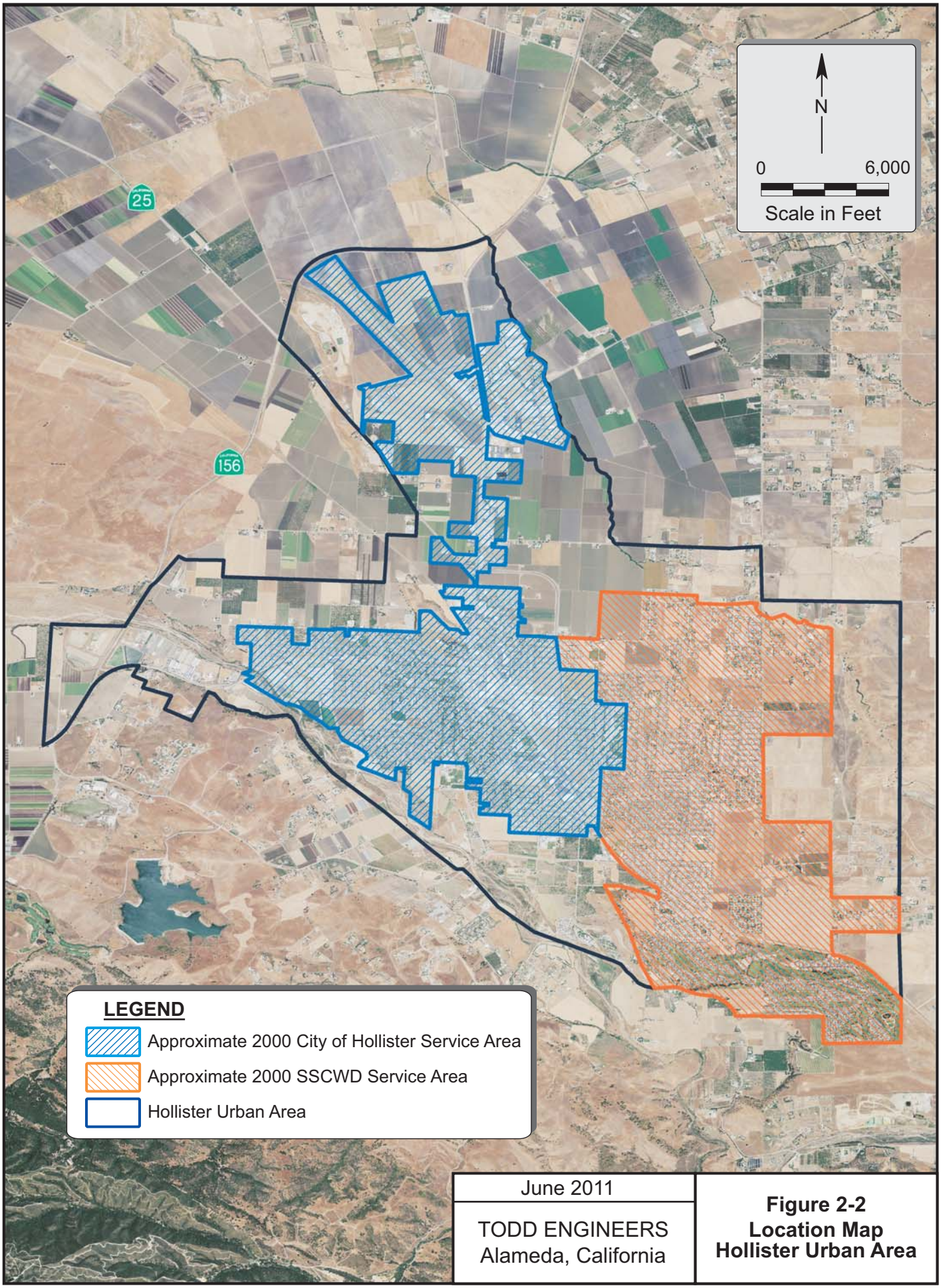
[3] *Future population Split between Hollister and Sunnyslope expected to remain similar to that calculated for 2010.*



June 2011

TODD ENGINEERS
Alameda, California

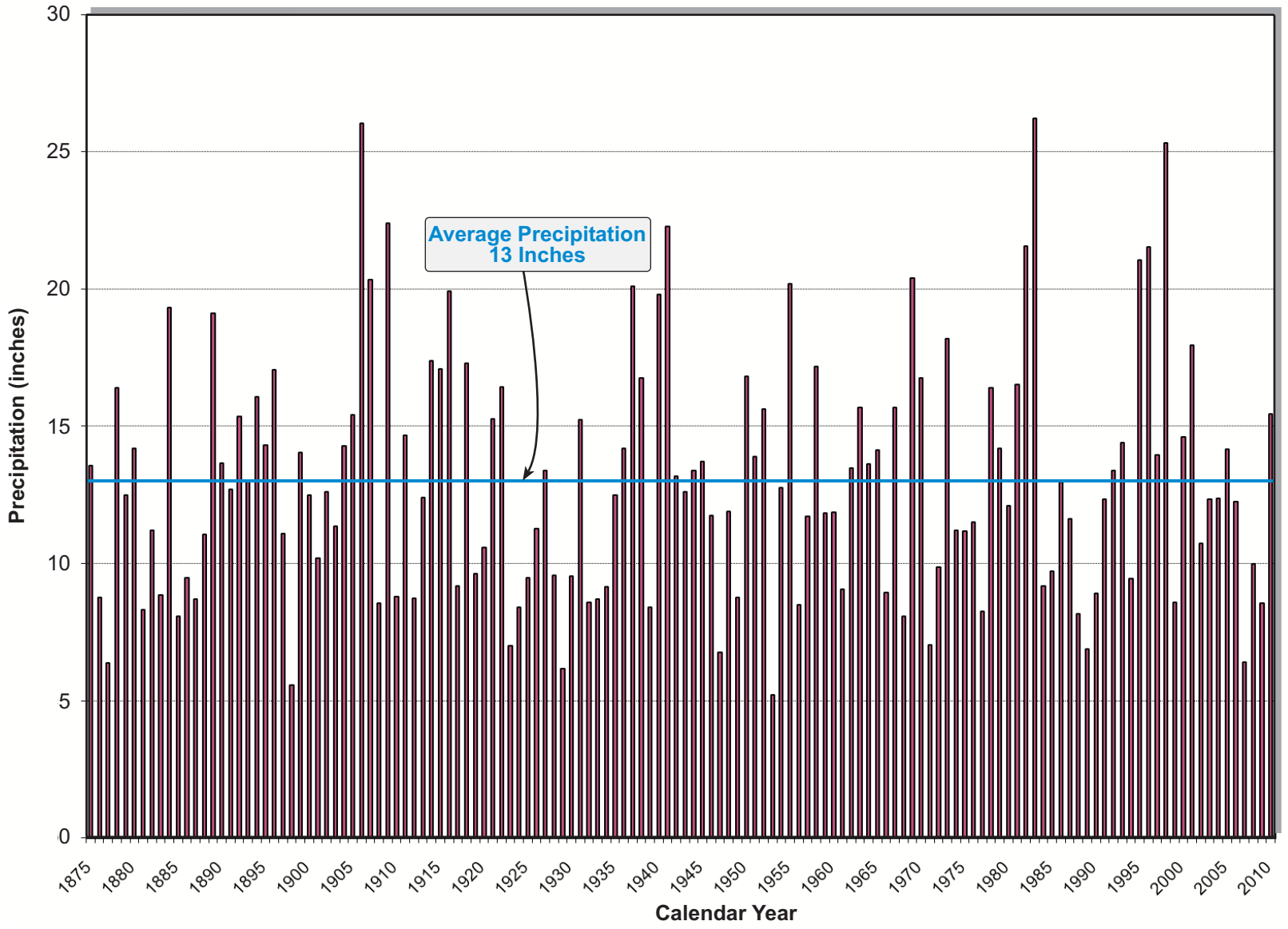
Figure 2-1
Location Map
Hollister Urban Area



June 2011

TODD ENGINEERS
Alameda, California

Figure 2-2
Location Map
Hollister Urban Area



June 2011

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Figure 2-3
Annual Precipitation
Hollister Urban Area

3. WATER DEMAND

Hollister's and Sunnyslope's past, current and projected water demands are presented in this section. In accordance with Senate Bill 7 (Statewide Water Conservation), this section also includes a baseline water use calculation and develops specific water use targets to meet the 2020 goal of 20 percent water use reduction. Current water demand is provided by water use sector and projected to 2030 in five-year increments. Current system losses are also provided and projected to 2030.

3.1 PAST AND CURRENT WATER DEMAND

Tables 3-1 and 3-2 show the number of water service accounts and delivery volumes by customer type for the City of Hollister and Sunnyslope, and for 2005 and 2010, respectively. In recent years, the number of accounts (specifically residential connections) decreased slightly in Hollister but increased slightly in the Sunnyslope service area. The basic breakdown into the seven water use sectors (single family, multi-family, commercial, industrial, institutional, landscape, and other) was derived from current meter reading categories. There are no agricultural accounts for Hollister or Sunnyslope. It should be noted that the number of multi-family accounts is not the same as the number of multi-family units because one connection could supply multiple units.

The delivery volumes by customer type for both Hollister and Sunnyslope from 1996 through 2010 are illustrated in **Figure 3-1.** The number of water service connections and volume of water served provide insight into different customers' water use, which can be useful in defining effective water conservation measures. As indicated, most service connections are residential. On average, single family residential represents most of the total demand, 68 percent. Multiple family homes and commercial uses each total about 10 percent of total demand. Other uses, including industrial and dedicated landscape irrigation, represent a combined 10 percent of total demand. Water demand in the HUA peaked in the early 2000s and has decreased since then. The decline in total water demand likely reflects a water conservation response to the multiple year drought and the slow economic growth in the region.

These annual delivery volumes do not include unaccounted-for water. A small portion of water produced in any water system is unaccounted between metered water production and metered water usage. Unaccounted urban water (for example, main flushing, meter error, and leaks) in California generally ranges from 6 to 15 percent. In 2005, water losses for the combined system (Hollister and Sunnyslope) amounted to one percent and in 2010 losses were 7 percent.

Five interties between Hollister and Sunnyslope allow water to flow in between the two systems such that strict accounting of each individual system may result in unaccounted for or excess water. The measured flow between the two retailers is documented as sales to other water agencies and is shown in **Table 3-3.** In the future, this transfer is expected to continue around 100 acre feet per year (AFY).

State legislation (SB 1087 and Government Code section 65589.7), effective January 1, 2006, specifies that local water agencies and sewer districts must grant priority for service hook-ups to projects that help meet the community's fair housing need. In other words, policies and procedures should be written

to provide priority service to new developments with affordable housing and these policies should be updated every five years. **Table 3-4** shows estimated water deliveries to low income residents in 2010 (1,053 AFY or about 25 percent of the total residential demand).

Other water use sectors such as sales to other agencies, groundwater recharge, and conjunctive use are not performed by retailers in the HUA at this time, are not planned in the future, and are not included in these demand tables.

3.2 BASELINE DEMAND

In accordance with Senate Bill 7, water suppliers must define a 10- or 15-year water use Base Period. This Base Period is used to calculate a Base Daily per Capita Water Use, which is the baseline for computation of required future reductions. By 2015, the per capita water use in the retailer's service area must be reduced by 10 percent and by 2020, per capita water use must be reduced by 20 percent.

Base period determination is shown in **Table 3-5**. Because no recycled water was supplied in 2008, a 10-year base period is required. The selected baseline period for the City of Hollister is 1996 through 2005 and for Sunnyslope is 1999 to 2008. These periods are representative of recent water use for each retailer; water use in more recent years was artificially low because of drought and economic factors. **Table 3-5** also shows the 5-year base period used to calculate the minimum Water Use Reduction Requirement.

HUA represents a regional alliance and the agencies choose to plan, comply, and report as individuals and as a region. As a regional alliance, the two retailers choose to calculate individual baseline demand and targets and then combine these individual targets to develop the regional target. The regional target is comprised of the individual targets weighted by the retailer's population. **Table 3-6** presents the calculations for the average Base Daily per Capita Water Use over the selected 10-year Base Period. Population for the Base Period is discussed in Section 2 and the water demand is discussed in Section 3.1. The Base Daily per Capita Water Use was calculated to be 149 gallons per day per capita (gpcd) for Hollister and 178 gpcd for Sunnyslope. Annual daily per capita water use varied between 168 gpcd (1997) and 140 gpcd (1999) over the Base Period for Hollister (**Table 3-6a)** and varied between 195 gpcd (2007) and 160 gpcd (2005) for Sunnyslope (**Table 3-6b)**. The regional alliance baseline demand, weighted by US Census population in 2000, is 161 gpdc, as shown in **Table 3-6c**.

Four methods are allowed by Senate Bill 7 for calculating the 2015 and 2020 water use targets. The first method was used (wherein per capita daily water use in 2020 is 80 percent of the Base Daily per Capita Water Use), because it is the most applicable to available data as well as the water use and demographic characteristics of the HUA. Target water use in 2015 should be 90 percent of the Base Daily per Capita Water Use. For Hollister, the target 2015 water use is 134 gpcd (149 x 0.90 = 134) and the 2020 target 2020 is 119 gpcd (149 x 0.80 = 119 gpcd). For Sunnyslope, the target 2015 water use is 160 gpcd (178 x 0.90 = 160) and 2020 target is 142 gpcd (178 x 0.80 = 135 gpcd). The regional alliance value is the weighted average of the two retailer's use based on compliance-year population. The target water use

for the regional alliance is calculated using the population methodology from DWR. The target 2015 water use is 146 gpcd and the target 2020 water use is 129 gpcd.

Tables 3-7a and 3-7b show the calculation for the five-year baseline per capita water use for Hollister and Sunnyslope. The same base period (2003-2007) was selected for the two retailers. For Hollister, the five-year base period results in a five-year baseline water use of 137 gpcd, while the five-year baseline water use for Sunnyslope is 182 gpcd. Because the five-year baseline per capita water use for each retailer is greater than 100 gpcd, then the minimum water use reduction requirement must be calculated (per Section 10608.22 of the water code). The minimum reduction requirement ensures that the retailers, regardless of method used to generate future targets, will reduce water demand by an adequate amount. The target 2020 per capita water use target cannot exceed 95 percent of the 5-year baseline water use. For Hollister, the 2020 minimum water use target is 130 gpcd (.95 x 137 gpcd = 130 gpcd). For Sunnyslope, the 2020 minimum water use target is 173 gpcd (.95 x 182 gpcd = 173 gpcd).

For both retailers, the calculated reduction of water use under Method 1 is greater than the minimum reduction requirement, shown on **Table 3-8**. Therefore, the retailers meet the minimum reduction requirement and are not required to change the target as calculated by Method 1. The HUA regional target 2015 water use is 146 gpcd and the target 2020 water use is 129 gpcd. The target 2020 per capita water use of 129 gpcd also applies to 2025, 2030, and 2035.

3.3 PROJECTED WATER DEMAND

Tables 3-9, 3-10, and 3-11 provide projections for water service connections and deliveries in five-year intervals between 2015 and 2030.

Future water demand was calculated based on future population, discussed in Section 2, and the future per capita water use targets discussed in Section 3.2. It should be noted that the gross per capita use is the average amount of water used by HUA residents each year. This includes not only direct residential water use, but also indirect water uses that benefit residents such as fire fighting, park and school irrigation, commercial and industrial uses, and other municipal uses. To break out the future growth by water use type, the 2010 proportion of residential uses was projected into the future**.** For example, because single family residential water use represented 83 percent of total supply for Sunnyslope in 2010, it was assumed to represent 83 percent of the target demand through 2030. To calculate the future number of connections, the 2010 average values (accounts per acre foot of water use) were applied into the future.

The HUA is expected to experience a significant increase in industrial water use in the future. To incorporate this development, additional water use was calculated and added to the tables as industrial water demand. The acreage of developable industrial area at build out (1,419 acres) and the expected water use (2 AFY per acre) are documented in the Master Plan. Phasing of the development was derived from previous draft documents supporting the Master Plan. Relative to the Master Plan, the phasing of development was shifted slightly into the future (by five years) as economic growth in the region in recent years has been slower than expected.

Table 3-12 sums up the future water demand of Hollister and Sunnyslope. This table addresses uses not included in the demand projections, such as system unaccounted water and demand currently supplied by recycled water. These uses are detailed in **Table 3-13.** Current recycled water use is not included in demand totals, but future recycled water use is expected to replace demand currently served by potable water. Unaccounted water is expected to be 7 percent for the combined HUA, similar to 2010 levels. There are no additional water uses such as saline barriers and groundwater recharge. As indicated in the bottom row of **Table 3-12**, water deliveries are projected to increase from 5,856 AFY in 2010 to 11,798 AFY in 2030. Between 2010 and 2030, total water use is expected to double in volume. The relative increase for Hollister and Sunnyslope respectively is 146 and 64 percent.

Table 3-4 shows the estimated low income water demand for the same period. The HUA last completed a regional housing needs assessment (RHNA) as part of the City of Hollister 2005 General Plan (Moore Iacofano Goltsman 2005). At the time that the General Plan was developed, the City was under a building moratorium, so planning for new construction was limited. As a result, no allocation of lower income housing units was included in the RHNA. However, the RNHA indicated that approximately 25 percent of the population of the HUA is lower income. The values presented in Table 3-4 represent 25 percent of the estimated single family and multi-family demand for each time period shown.

3.4 WATER USE REDUCTION PLAN

The HUA currently encourages water conservation through a variety of programs, which are discussed in depth in Section 6. To meet the future water use per capita demand targets, the HUA and WRA, through their water conservation coordinator, plan to focus their efforts on several demand management measures (DMMs). These specific DMMs are targeted as they represent the opportunities for maximum water savings. Additional DMMs, also referred to as best management practices (BMPs) developed by the California Urban Water Conservation Council (CUWCC), will continue to be implemented as discussed in Section 6. The DMMs that form the HUA Water Reduction Plan include:

- **Retail conservation pricing (formerly BMP 11)** – "Conservation pricing" provides incentives to customers to reduce average or peak use, or both. All water rates and charges at Hollister, the District, and Sunnyslope are established through ordinance by the appropriate governing body. Currently, both Hollister's and Sunnyslope's rate structures for water service are increasing block structures while sewer service rates are flat for all customers. Adjusting the rates or adding additional blocks for water rates may improve water conservation.
- **Public information programs (formerly BMP 7 and 8)** – One of the cornerstones of an effective water conservation program is effective public outreach and education. Public information and outreach—which convey the need for efficient water use and show how customers can reduce water use—supports all other elements of the program. Public outreach promotes water conservation in general, by informing customers of the needs, benefits, and methods of conserving water. Outreach can also foster understanding regarding how water conservation fits into the overall water management for the HUA. Public outreach targeted to schools and students covers classroom presentations promoting efficient water use and supplementation of presentations with

grade level-appropriate education materials. While the effect of public outreach is unquantifiable, its qualitative effect on water conservation is considered very important.

- **Water sense specifications (WSS) for residential development** – The WSS involves providing incentives (such as rebates, recognition programs, or reduced connection fees), or ordinances requiring residential construction to meet WSS for single-family and multi-family housing units until a state or federal regulation is passed requiring this standard. This DMM provides an untapped opportunity for the HUA agencies as they have not yet developed WSS incentives or adopted WSS codes. By adopting these incentives and codes, the HUA enhance enforcement of water conservation requirements for future developments. Future development is a significant part of the future water demand. Approximately 36 percent of the water demand in 2020, and over half of the demand in 2030, is expected from future developments.
- **Commercial, Industrial, and Institutional (CII) (formerly BMP 9)** – This DMM can be accomplished though implementation of flexible BMPs that fit the HUA's customer characteristics, including the California Green Building Standards Code (Title 24, Part II) effective January 1, 2011, landscape assistance, retrofits of showerheads, aerators, and ultra low flow toilets (ULFT).
- **Landscape (formerly BMP 5)** – This DMM applies to non-residential accounts that have dedicated irrigation meters and to CII accounts with mixed-use meters. Both the City and Sunnyslope continue to implement landscape audit and incentive programs and these programs can be expanded to account for more water savings. In addition, the WRA has offered landscape efficiency programs over the past two years to encourage water conservation for large landscape and residential customers.
- **Surveys and Audits for Large Customers (formerly BMP 9)** – The goal of this DMM, as outlined by the CUWCC MOU, is to achieve a 10 percent reduction in baseline use for this sector. This can be accomplished though implementation of flexible best management practices tailored to the individual customer. Compliance with these measures is based on meeting goals for percentage reductions in CII annual water use. The WRA has met with difficulty in implementing this program due to customer budget restraints. The WRA will attempt to make this program mores successful by working with large customers to identify and apply for grant funding to assist with water conservation.
- **Water Softener Replacements** – Since 2007, the WRA has conducted a water softener rebate program that encourages people to upgrade from their timer-based models (pre-1999) to demand-initiated regenerating (DIR) models or demolish these older softeners with no replacement. This program has multiple benefits, including saving over 3,000 gallons of water per unit replaced and the reduction of salt loading to wastewater, which helps maintain groundwater quality and support water recycling. It also provides the public with information about DIR and exchange-type water softeners, encouraging replacement of less efficient timer models. This program is currently slated to end December 2011, but additional funding to extend the program is being sought. Extension of this program would benefit the HUA's goals for water conservation and reduced salt loading.
- **Landscape Efficiency Classes –** The District, along with the WRA has been conducting a series of classes on irrigation efficiency for the past two years. This program enlists the expertise of instructors from the Irrigation Training and Research Center (ITRC) at California Polytechnic State

University in San Luis Obispo. While the effects of this program are not quantifiable, WRA personnel have observed landscape contractors implementing the water saving measures taught in the classes. The program is due to end in 2011, but additional funding for extending the program is currently being investigated. Extension of this program would benefit to the HUA's water conservation goals.

The Water Reduction Plan includes programs targeted to specific categories of users such as residential, commercial, industrial, institutional, and large landscape irrigators. The Plan also includes general BMPs that encourage conservation overall all types for example, public outreach, and retail conservation pricing. A complete list of the DMMs that will be employed by the HUA and the estimated water reductions resulting from their implementation is presented in **Table 3-14**. The DMMs for which estimated water savings can be quantified account for approximately 87 to 90 percent of the demand reduction necessary to achieve the 2015 goal (ten percent) and 57 percent of the 2020 goal (20 percent). The remaining reductions in demand will be accomplished by application of the unquantifiable DMMs.

Table 3-1
Water Deliveries
2005 Actual

Water use sectors	2005					
	City of Hollister		Sunnyslope		Total	
	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)
Single Family	5,190	2,262	4,985	2,467	10,175	4,729
Multi-Family	221	360	200	234	421	594
Commercial	373	460	40	52	413	512
Industrial	32	168		0	32	168
Institutional / Governmental	111	138	51	159	162	297
Landscape	117	271	16	34	133	305
Agriculture	0	0	0	0	0	0
Other	5	187	0	0	5	187
Total	6,049	3,846	5,292	2,945	11,341	6,791

All water delivieries are metered

Table 3-2
Water Deliveries
2010 Actual

Water use sectors	2010					
	City of Hollister		Sunnyslope		Total	
	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)
Single Family	5,148	1,675	4,985	2,019	10,133	3,694
Multi-Family	245	296	210	220	455	516
Commercial	347	314	41	36	388	350
Industrial	51	128	0	0	51	128
Institutional / Governmental	104	94	54	138	158	232
Landscape	143	231	19	11	162	242
Agriculture	0	0	0	0	0	0
Other	5	122	0	0	5	122
Total	6,042	2,859	5,309	2,424	11,351	5,283

All water delivieries are metered

Table 3-3
Sales to Other Water Agencies (AFY)

Water distributed	2005	2010	2015	2020	2025	2030	2035
COH to SSCWD	187	122	100	100	100	100	100
Total	187	122	100	100	100	100	100

[1] *Water transfers reflect use of an intertie between the two systems.*

Table 3-4
Low-Income Projected Water Demands (AFY)

Low Income Water Demands[1]	2010[2]	2015[3]	2020[3]	2025[3]	2030[3]
Single Family Residential	923	1,412	1,363	1,472	1,519
Multi-Family Residential	129	197	191	206	212
Total	1,053	1,609	1,554	1,677	1,731

[1] *Low income demand estimated as a percentage of total demand. The Hollister General Plan (Moore Iacofano Goltsman 2005) indicates that twenty five percent (25%) of the households in Hollister are low income, very low income, or extremely low income.*

[2] *Current low income demand estimated based on metered use as presented in Table 3-2.*

[3] *Future demand estimates based on per-capita daily use targets presented in Table 3-8.*

Table 3-5 Base Period Ranges			
Base	**Parameter**	**Value**	**Units**
10- to 15-Year Base Period	2008 total water deliveries	6,460	*AFY*
	Hollister	*3,394*	*AFY*
	Sunnyslope	*3,066*	*AFY*
	2008 total volume of delivered recycled water	0	*AFY*
	2008 recycled water as a percent of total deliveries	0	percent
	Hollister		
	Number of years in base period[1]	10	years
	Year beginning base period range	1996	
	Year ending base period range[2]	2005	
	Sunnyslope		
	Number of years in base period[1]	10	years
	Year beginning base period range	1999	
	Year ending base period range[2]	2008	
5-Year Base Period	**Hollister**		
	Number of years in base period	5	years
	Year beginning base period range	2003	
	Year ending base period range[3]	2007	
	Sunnyslope		
	Number of years in base period	5	years
	Year beginning base period range	2003	
	Year ending base period range[3]	2007	

[1] If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.

[2] The ending year must be between December 31, 2004 and December 31, 2010.

[3] The ending year must be between December 31, 2007 and December 31, 2010.

Table 3-6a Base Daily Per Capita Water Use City of Hollister 10-Year Range				
Base Period Year		**Distribution System Population**	**Daily System Gross Water Use (mgd)**	**Annual Daily Per Capita Water Use (gpcd)**
Sequence Year	**Calendar Year**			
Year 1	1996	19,268	3.01	156
Year 2	1997	20,420	3.44	168
Year 3	1998	21,254	3.07	145
Year 4	1999	22,742	3.18	140
Year 5	2000	23,254	3.58	154
Year 6	2001	24,027	3.44	143
Year 7	2002	24,394	3.69	151
Year 8	2003	24,222	3.57	147
Year 9	2004	24,115	3.45	143
Year 10	2005	24,043	3.53	147
Base Daily Per Capita Water Use				149

Table 3-6b Base Daily Per Capita Water Use Sunnyslope 10-Year Range				
Base period year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence Year	Calendar Year			
Year 1	1999	15,415	2.52	163
Year 2	2000	15,838	2.86	181
Year 3	2001	16,130	2.94	182
Year 4	2002	16,267	2.92	179
Year 5	2003	16,242	2.95	181
Year 6	2004	16,254	3.10	190
Year 7	2005	16,264	2.61	160
Year 8	2006	16,243	2.95	182
Year 9	2007	16,106	3.14	195
Year 10	2008	16,048	2.73	170
			Base Daily Per Capita Water Use	178

Table 3-6c Base Daily Per Capita Water Use Regional Alliance 10-Year Range		
Retailer	Population [1]	Annual Daily Per Capita Water Use (gpcd)
Hollister	23,254	149
Sunnyslope	15,838	178
Regional Alliance	**39,092**	**161**

[1] *Population based on US Census 2000.*

Table 3-7a Base Daily Per Capita Water Use City of Hollister 5-Year Range				
Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	24,222	3.57	147
Year 2	2004	24,115	3.45	143
Year 3	2005	24,043	3.53	147
Year 4	2006	24,215	2.97	122
Year 5	2007	24,124	3.02	125
Base Daily Per Capita Water Use				137

Table 3-7b Base Daily Per Capita Water Use Sunnyslope 5-Year Range				
Base Period Year		Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	16,242	2.95	181
Year 2	2004	16,254	3.10	190
Year 3	2005	16,264	2.61	160
Year 4	2006	16,243	2.95	182
Year 5	2007	16,106	3.14	195
Base Daily Per Capita Water Use				182

Table 3-8 Baseline and Target Per Capita Water Use (gcpd)							
Retailer	Population	Baseline Water Use		Minimum Water Use Reduction Requirement		Target Water Use	
		10-year	5-year	2015	2020	2015	2020
Hollister	23,254	149	137	140	130	135	120
Sunnyslope	15,838	178	182	176	173	161	143
HUA	39,092	161	155	154	147	**145**	**129**

Table 3-9 Water Deliveries Projected 2015						
	City of Hollister		Sunnyslope		Total	
Water Use Sectors	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)
Single Family	8,658	2,561	8,384	3,086	17,042	5,648
Multi-Family	412	452	353	337	765	789
Commercial	583	479	69	55	652	534
Industrial	86	196	0	0	86	196
Institutional / Governmental	174	143	91	211	265	354
Landscape	240	353	32	17	272	370
Agriculture	0	0	0	0	0	0
Total	10,153	4,185	8,929	3,707	19,082	7,891

Future water demand is divided between Hollister and Sunnyslope based on 2010 divisions, future industrial demand is expected to be all in Hollister's service area.

Table 3-10 Water Deliveries Projected 2020						
	City of Hollister		Sunnyslope		Total	
Water Use Sectors	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)
Single Family	9,120	2,473	8,831	2,980	17,952	5,453
Multi-Family	434	437	372	325	806	762
Commercial	614	463	73	53	686	516
Industrial	301	629	0	0	301	629
Institutional / Governmental	183	138	96	204	279	342
Landscape	253	341	34	17	287	357
Agriculture	0	0	0	0	0	0
Total	10,906	4,481	9,405	3,579	20,311	8,060

Future water demand is divided between Hollister and Sunnyslope based on 2010 divisions, future industrial demand is expected to be all in Hollister's service area.

Table 3-11
Water Deliveries
Projected 2025 and 2030

Year	Water Use Sectors	City of Hollister		Sunnyslope		Total	
		Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)	Number of Accounts	Volume (AFY)
2025	Single Family	9,845	2,670	9,533	3,217	19,378	5,887
	Multi-Family	469	472	402	351	870	823
	Commercial	663	500	78	57	741	557
	Industrial	799	1,671	0	0	799	1,671
	Institutional / Governmental	198	149	103	220	301	369
	Landscape	273	368	36	18	310	386
	Agriculture	0	0	0	0	0	0
	Total	12,247	5,829	10,153	3,864	22,400	9,692
2030	Single Family	10,161	2,755	9,839	3,320	20,000	6,076
	Multi-Family	484	487	414	362	898	849
	Commercial	684	516	81	59	765	575
	Industrial	1,218	2,546	0	0	1,218	2,546
	Institutional / Governmental	204	154	107	227	311	381
	Landscape	282	379	38	19	320	398
	Agriculture	0	0	0	0	0	0
	Total	13,033	6,838	10,479	3,988	23,512	10,825

Future water demand is divided between Hollister and Sunnyslope based on 2010 divisions, future industrial demand is expected to be all in Hollister's service area.

Table 3-12 Total Water Use (AFY)						
Water Use	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Total Water Deliveries	**6,791**	**5,283**	**7,891**	**8,060**	**9,692**	**10,825**
Hollister	*3,846*	*2,859*	*4,185*	*4,481*	*5,829*	*6,838*
Sunnyslope	*2,945*	*2,424*	*3,707*	*3,579*	*3,864*	*3,988*
Additional Water Uses and Losses [1]	**0**	**573**	**552**	**564**	**678**	**758**
Total	6,791	5,856	8,444	8,624	10,371	11,583

[1] *Detailed in Table 3-13*

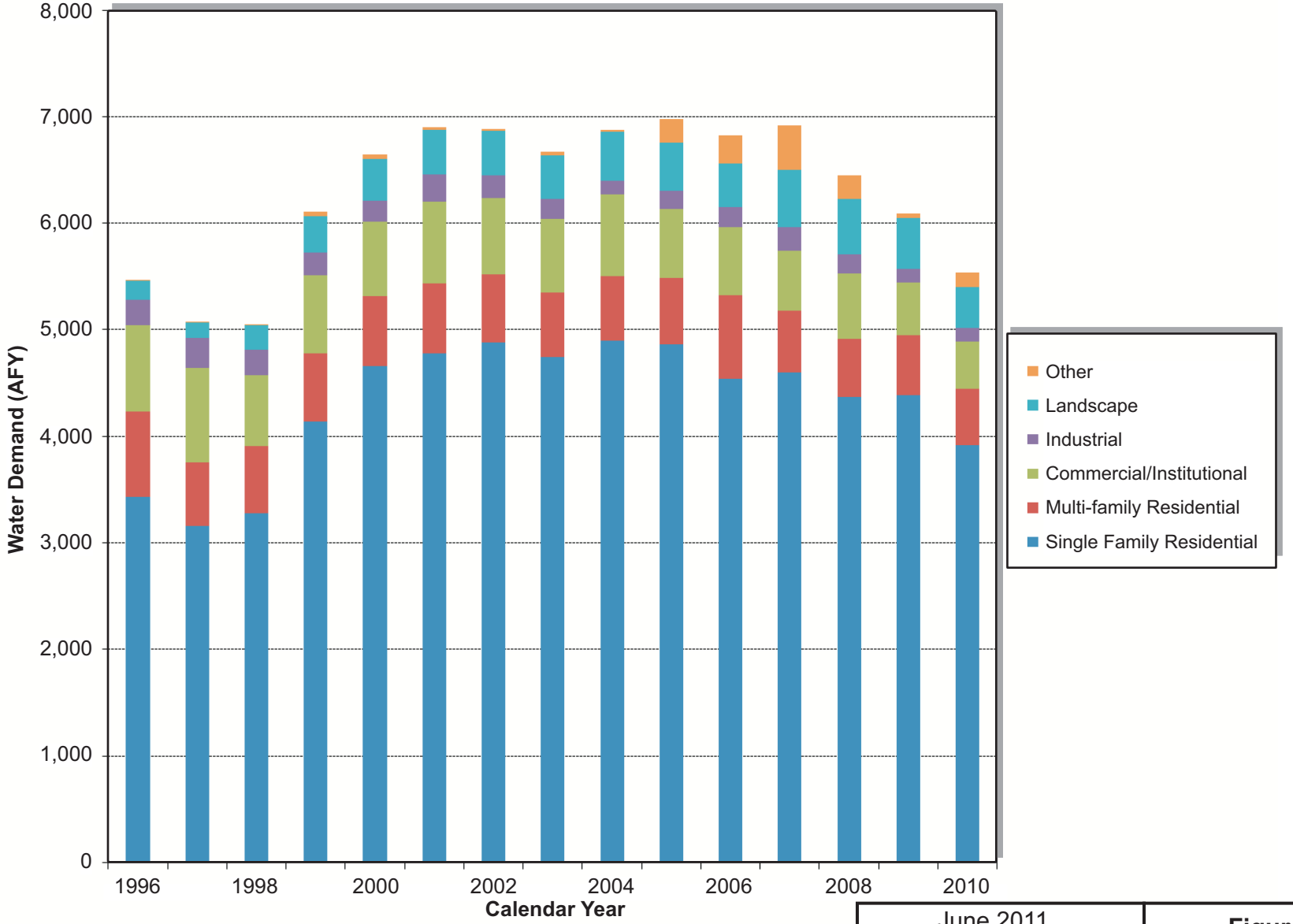
Table 3-13 Additional Water Uses and Losses (AFY)						
Water Use	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Saline Barriers						
Groundwater Recharge						
Conjunctive Use						
Raw Water						
Recycled Water		203				
System Losses[1]		370	552	564	678	758
Total	0	573	552	564	678	758

[1] *Unaccounted water is expected to be 7 percent of demand (2010 values).*

Table 3-14 Water Use Reduction and Demand Management Measure Implementation Plan					
Practice	**Former CUWCC BMP No.**	**Target Objectives**	**Potential Savings Annual Savings**	**Cumulative 2015 Savings[1] (AFY)**	**Cumulative 2020 Savings[1] (AFY)**
Residential Incentives and Services					
Single and Multi-Family Water Survey and Audits	BMP 1	Single Family 200 per year Multi-Family 50 per year	6 AFY	30	60
Plumbing Retrofit	BMP 2	Single Family 522 per year Multi-Family 133 per year	20 AFY	100	200
Ultra Low Flow Toilet Replacement	BMPs 9 and 14	540 per year	30 gpd per Unit	91	183
High Efficiency Washing Machine Replacement	BMP 6	200 per year	5,250 gpy per Unit	16	32
Water Sense Specifications for Residential Development	BMP 14	All new construction	4.32 gpd per Unit	42	48
Water Softener Rebate Program	NA	100 per year[2]	3,360 gpy per Unit	5	10
Actions for Retail and Wholesale Water Service Providers					
System Water Audits and Leak Detection	BMP 3	Reduce system loss to 7 %	300 AFY	300	300
Metering of Use	BMP 4	Completed	Unquantifiable		
Plan Checks and Reviews	BMPs 6b and 13	All new CII construction	Approximately 5%	19	39
Conservation Pricing and Rate Structure Study	BMP 11	As needed	Dependent on results of rate structure studies		
Water Conservation Coordinator	BMPs 10 and 12	Ongoing	Unquantifiable		
Public Information Program	BMPs 7, 2, 9 and 14	- Annually track the number of events and activities. - Provide updates on activities to WRA Board.	Unquantifiable		
Education	BMP 8	- Six classroom presentations per year to 4th to 6th grade students. - Provide supplementary class exercises, software, and field trips.	Unquantifiable		
Commercial, Industrial, and Institutional Incentives and Services					
Large Customer Landscape Audits	BMP 5	4 to 5 per year	5 to 10%	20 to 41	21 to 43
Surveys and Audits for Large Accounts	BMP 9	3 per year	10%	119	178

[1] *Savings as compared to 2010 use.*

[2] *This program is nearing the end of its original funding. However, it has multiple benefits for the HUA and should be continued.*



June 2011

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Alameda, California

Figure 3-1
Historic and Current Demand by Customer Type

4. WATER SUPPLY

4.1 SOURCES OF WATER SUPPLY

The Hollister Urban Area has historically relied on the San Benito County portion of the Gilroy-Hollister Valley Groundwater Basin (**Figure 4-1**) for its municipal water supply. Since 2003, imported water has been developed for urban use from the Central Valley Project. This section describes each existing water source plus recycled water, a planned future supply.

4.1.1 CVP IMPORTED WATER

The CVP is one of the nation's major water systems, covering the entire Central Valley and portions of California's mountain ranges. The CVP is a Federal water system operated by the U.S. Bureau of Reclamation (USBR) and was created to protect the Central Valley from water shortages and floods; improve navigation on the Sacramento River; ensure supplies of domestic and industrial water; enhance water quality; generate electric power, conserve fish and wildlife; and create opportunities for recreation. The CVP consists of 20 dams and reservoirs, 11 power plants, and 500 miles of major canals, conduits, and tunnels. About nine million AFY of water are managed by the CVP and about seven million AFY of water for agricultural, urban, and wildlife uses are delivered annually. An average of five million AFY of CVP water is provided to farms to irrigate about three million acres of land and about 600,000 AFY of water is provided for municipal and industrial uses. About 800,000 AFY are provided for fish and wildlife habitats and 410,000 AFY to State and Federal wildlife refuges and wetlands, pursuant to the Central Valley Project Improvement Act (CVPIA). Finally, the CVP generates 5.6 billion kilowatt hours of electricity annually (Mintier Harnish 2009).

CVP water brought into San Benito County is stored in San Justo Reservoir, which is used exclusively to store and regulate imported CVP water. The San Benito County Water District has a 40-year contract (extending to 2027) for a maximum of 8,250 AFY of municipal and industrial (M&I) water and 35,550 AFY of agricultural water. The District negotiated the renewal of this contract in May 2007. The imported water is delivered to agricultural, municipal, and industrial customers in Zone 6, the District's zone of benefit for CVP water. Zone 6 overlies the Pacheco, Bolsa Southeast, San Juan, Hollister East, Hollister West, and Tres Pinos subbasins (**Figure 4-2**) through 12 subsystems containing approximately 120 miles of pressurized pipeline laterals (SBCWD 2011).

The District distributes CVP water to both agricultural and M&I customers in the county. Hollister and Sunnyslope purchase M&I CVP water directly from the District. Actual CVP deliveries are modified on an annual basis by USBR, reflecting hydrologic conditions (e.g., drought), reservoir storage, and the environmental status of the Sacramento-San Joaquin Delta. In water year 2010, allocations were decreased to 45 percent of the contracted amount for agriculture and to 75 percent of historic use for M&I. Reductions in recent years are a combined result of sustained drought and recent Federal Court decisions on the status of endangered Delta fish species (Todd 2010).

In response to an over-commitment of CVP supplies, droughts, and supply limitations imposed by environmental, regulatory, and legal constraints in the Sacramento–San Joaquin River Delta (Delta), the USBR has instituted its Shortage Policy in 3 of the past six years. The Shortage Policy provides that the allocation of M&I CVP water will be based on a contractor's historical use of CVP M&I water (as adjusted for growth, extraordinary conservation measures, and use of non-CVP water). Under the Shortage Policy, the District's historical M&I usage is currently set at 4,026 AFY compared to its CVP M&I contract amount of 8,250 AFY (USBR 2001).

The direct use of CVP water for M&I purposes is limited by the available treatment capacity of the Lessalt Water Treatment Plant (WTP), which provides treatment for local municipal uses. Other M&I uses of CVP water include urban irrigation, golf courses, and potable supply for the Stonegate community. Contract documents between the District and USBR are found in **Appendix B**.

WATER SUPPLY FACILITIES

Water treatment for potable M&I supplies within the HUA is provided by the Lessalt WTP, a jointly-owned facility of Hollister and Sunnyslope. The Lessalt WTP was placed into operation in January 2003 and is designed to treat imported CVP water using microfiltration and chlorine disinfection (HDR 2008). The treated water is distributed to both Hollister and Sunnyslope customers. The Lessalt WTP was constructed to provide a source of water to supplement groundwater use and improve water quality by supplementing the existing groundwater supply with higher quality surface water. The plant was designed with a rated treatment capacity of 3,360 AFY of imported CVP supply. However, since the plant was placed in service in 2003, it has been unable to achieve its design capacity due to hydraulic constraints and treated water capacity issues. In 2010 Lessalt produced 1,510 AF for municipal supply, amounting to 40 percent of the design capacity.

FUTURE WATER PROJECTS

LESSALT TREATMENT PLANT EXPANSION

The Lessalt WTP was completed in 2002 with a nominal design capacity of 3 million gallons per day (MGD). Because of hydraulic constraints, process limitations, and reductions in CVP water availability, the WTP has operated at an average rate less than 1.6 MGD. Recognizing the WTP as an under-utilized asset, the Master Plan Implementation Program identified specific improvements to increase the operational capacity to meet the design capacity. This should result in Lessalt WTP being able to treat up to 3 MGD. The Master Plan Programmatic Environmental Impact Report (PEIR) estimates the Lessalt WTP expansion will be complete by 2012 (AECOM 2011).

SURFACE WATER TREATMENT PLANT

The HUA agencies are currently moving forward with a second surface water treatment plant to treat CVP imports for delivery to urban areas not served by the Lessalt plant. As described in the PEIR, the new plant will be sized to treat an additional 6 MGD. A site for the plant has been selected and work is

now focused on selection of the appropriate treatment technology. The PEIR estimates the new plant will be online before 2015 (AECOM 2011).

4.1.2 GROUNDWATER

The District was formed by a special act of the State with responsibility and authority to manage groundwater. As part of its management activities, the District manages recharge to the basin, explores expanded groundwater banking, monitors water levels and water quality, and reports annually on the basin. Groundwater is a major source of supply for Hollister and Sunnyslope. The two retailers pump directly from wells located in the Hollister Urban Area.

LOCATION

The HUA overlies the Gilroy- Hollister basin, designated as DWR Basin No. 3-3, shown on **Figure 4-1**. The San Benito County portion of the basin is bounded by the Pajaro River in the north, the Diablo Range on the east and the Gabilan Range to the southwest. The basin covers 200 square miles of the Pajaro River watershed and is drained by its tributaries, most notably the San Benito River. The San Benito River, intermittent in some parts of the basin, runs through the southern portion of the basin before reaching the Pajaro River. The San Benito River, when flowing, is a recharging stream along much of its channel, but groundwater contributes some base flow upstream of its confluence with the Pajaro River. The Hernandez Reservoir, located upstream of the basin on the San Benito River, is operated to enhance flow in the river by releasing flows to recharge the groundwater basin.

GEOLOGY

The Gilroy-Hollister groundwater basin lies within the Coast Ranges of California, which are a series of elongated ranges and valleys with a predominantly northwesterly trend. The Hollister Valley's origin and shape has been controlled by folding and faulting of basement rocks in the area, resulting in low-lying areas that have been infilled with unconsolidated to poorly consolidated alluvium of Tertiary and Quaternary age. The Quaternary alluvial deposits compose the valley floor and generally define the groundwater basin (California Geologic Survey 2002, Todd 2004).

Numerous investigators have recognized the difficulty in describing the subsurface stratigraphy of the basin, due, in part, to sparse geophysical log data and a lack of distinctive textures and composition among the sedimentary units (Kilburn 1972, Faye 1974 and 1976, Luhdorff and Scalmanini 1991).

Major geologic faults, including the San Andreas and Calaveras faults, cut through the area disrupting rock units and shaping the valley. The San Andreas Fault is a major structural feature in California with a trace of more than 740 miles, separating distinct crustal blocks. Numerous additional faults that are related to the San Andreas system have been mapped in the area and trend parallel or subparallel to the San Andreas Fault trace. Of these, the Calaveras fault is the most extensively mapped. It branches from the San Andreas south of Hollister and is active, responsible for offset curbs and sidewalks in and near downtown (Norris and Webb 1990). The trace trends north-northwest from Hollister to the Pajaro River

at San Felipe Lake, separating the northern valley into two distinct geologic units at depth. The fault is also thought to impact groundwater flow locally, perhaps due to the presence of low permeability rock fragments and blocks displaced upward and adjacent to more permeable alluvial material along the fault zone (Todd 2004).

The Quaternary-age alluvium contains the main aquifers in the groundwater basin. The aquifers are the coarse-grain layers of sands and gravels with interbedded layers of silts and clays. The geometry of the basin suggests that basin-fill units were deposited in alluvial fan and fluvial environments from a variety of source rocks and directions. These deposits interfinger in the subsurface, making the differentiation of discrete aquifer packages difficult on a regional basis. This also results in variable aquifer properties across the basin. Previous investigators indicate wide variability in aquifer transmissivities (Luhdorff and Scalmanini 1991, Faye 1974). Although poorly defined, regional variations in permeability likely create preferential pathways for groundwater, especially in paleo-channel deposits, which may exist beneath current major stream courses or elsewhere in the basin (Todd 2004).

SUBAREAS

Eight subbasins were originally delineated in 1996 for the District annual reports: Bolsa, Bolsa Southeast (SE), Pacheco, Hollister East, Tres Pinos, Hollister West, and San Juan subbasins, and the Llagas subbasin in Santa Clara County. This definition of subbasins is maintained in this report, supporting consistent analysis and reporting of groundwater conditions. In addition, for the purpose of the Annual Groundwater Report, Hollister East was subdivided along McClosky Road to form Northern Hollister East and Southern Hollister East. This division has allowed more focused analysis of the southern urban area and mainly agriculture northern area.

These subbasin boundaries are based on a combination of infrastructure (CVP subsystems), political boundaries (Zone 6), major roads, and geologic structures (faults). **Figure 4-2** shows the locations of these subbasins. The Hollister Urban Area overlies the Hollister East, Hollister West, and Tres Pinos subbasins. Hollister and Sunnyslope pump directly from these subbasins. In water year 2010, 48 percent of Hollister and Sunnyslope pumping was located in the Hollister West subbasin, 36 percent in the Tres Pinos subbasin and 16 percent in the Hollister East subbasin. The subbasins are hydrologically connected and pumping in the HUA subbasins will affect the entire groundwater basin.

GROUNDWATER LEVELS AND FLOW

In general, groundwater in the basin flows from the southeast and eastern portions of the basin toward the western and northwestern portions of the basin to the Pajaro River. However, general flow directions have been reversed in the Bolsa subbasin due to groundwater pumping; groundwater in the Bolsa subbasin near the Pajaro River flows southeast toward lower water levels.

Groundwater levels have been recorded in the basin since at least 1913 by various agencies including USBR, DWR, Pacheco Pass Water District, San Benito County, University of California Cooperative Extension, and the United States Geological Survey (USGS) (Clark 1924, Kilburn 1972, Farrar 1981,

Creegan & D'Angelo 1990). The District monitors water levels in approximately 80 to 100 wells on a semiannual and, more recently, a quarterly basis (Jones & Stokes and CH2M Hill 1998). Water levels and trends are presented in the District annual reports (Todd 2010). Groundwater generally occurs under unconfined and confined conditions. Surficial clay deposits, especially in the Bolsa and San Juan Valley subbasins, create confining layers. These layers have resulted in local artesian conditions wherein groundwater levels in wells have risen to the surface.

Water levels over time have varied in response to varying precipitation, groundwater pumping, and artificial recharge conditions. Water levels are estimated to have been at historical highs prior to 1913 before development of groundwater pumping (Kilburn 1972). In the drought conditions of the late 1970s, water levels in some areas had declined more than 150 feet from the estimated highs (Creegan & D'Angelo 1990). With the exception of a few areas of persistent water level lows, by 1998 groundwater levels had recovered close to the historical highs as a result of decreased pumping (following CVP importation), increased precipitation, and artificial recharge (Jones & Stokes 1999). **Figure 4-3** illustrates long term changes in groundwater levels in the basin. Water elevations in key wells from each subbasin for each monitoring event have been averaged to produce representative hydrographs for each subbasin. These key wells are shown on the map in **Figure 4-3**. It should be noted that these subbasin hydrographs represent average conditions in each subbasin and illustrate long term trends, but do not show localized variations in water levels. Over the past five years, water levels have remained fairly constant in most subbasins. Water levels in all subbasins show a seasonal variation with the lowest water levels occurring in the fall and the highest in the spring. The Bolsa subbasin shows the most variation: 20 to 50 feet of elevation change between seasons.

Water levels continue to remain generally near their historical highs in most parts of the basin. Based on these water levels and the stable management of the basin, overdraft is unlikely to occur in the near future. Nonetheless, a major focus of the District is management of groundwater levels and storage for long-term sustainable supply, given the uncertain reliability of CVP water, likelihood of repeated drought, and probability of climate change (Todd 2010).

GROUNDWATER RECHARGE

The District owns and operates two reservoirs along the San Benito River. Hernandez Reservoir (capacity 17,200 AF) is located on the upper San Benito River in southern San Benito County. Paicines Reservoir (capacity 2,870 AF) is an offstream reservoir between the San Benito River and Tres Pinos Creek. It is filled by water diverted from the San Benito River, with some of the diversions consisting of natural runoff and some consisting of water released from Hernandez Reservoir. Water stored in the two reservoirs is released for percolation in Tres Pinos Creek and the San Benito River to augment groundwater recharge during the dry season. Since 1996, releases from Hernandez have ranged between 3,500 AFY and 26,300 AFY, generally reflecting variations in inflow. The total releases from Paicines Reservoir range from 0 AFY to 4,147 AFY (Todd 2010).

In the past, the District has purchased and percolated additional CVP imported water for groundwater management. Since 1988, when CVP recharge began, percolation has ranged from 0 (2009) AFY to

11,087 AFY (1997). CVP percolation peaked in 1997 and was reduced subsequently in response to the successful recovery of the groundwater basin from overdraft. In recent years, no significant releases of CVP imported water occurred due to reduced allocations and local areas of high water levels.

In addition, Hollister and Sunnyslope percolate wastewater effluent to the groundwater basin. The City of Hollister Domestic Wastewater Treatment Plant (DWTP) represents the major portion, amounting to 1,922 AF in water year 2010. Wastewater percolation has been decreasing in recent years and is expected to continue to decrease as recycled water use increases.

WATER QUALITY

The District conducts semiannual sampling (spring and fall) of more than 24 wells distributed spatially over the basin. In addition, water suppliers with more than six connections, including Hollister and Sunnyslope, are required to monitor and report water quality to the Department of Public Health. These data and others are used by the District to determine the status of water quality basin-wide.

A comprehensive water quality database for the District was created in 2004. This database, funded in part by a DWR grant, involved compilation of all available water quality data with the intent of regular update with future data. The first major update occurred as part of the 2007 Annual Groundwater Report. The database is now regularly updated with readily available local data. A more complete update of the water quality database, including research at local, regional, and state agencies, occurs on a triennial basis. The database was updated in November 2010, as part of the Annual Groundwater Report for Water Year 2010 (Todd 2010).

The quality of groundwater in the Gilroy-Hollister groundwater basin has been described as highly mineralized and of marginal quality for drinking and agricultural purposes. The mineralized water quality is typical of other relatively small Coast Range groundwater basins, but has also been impacted by decades of human-related activities, both agricultural and urban.

Chemicals of concern (COCs) for the groundwater basin include boron, chloride, hardness, nitrate, and total dissolved solids (TDS) and are important indicators of basin water quality. In some parts of the basin, these COCs do not meet water quality standards necessary to support beneficial uses of water resources. The District, water purveyors, and other agencies are examining ways to improve quality in these localized areas. In addition to the historical COCs, current operations by regulated facilities have introduced new local COCs including perchlorate, metals, and volatile organic chemicals. All areas where these COCs have been discovered are regulated by the Regional Water Quality Control Board (RWQCB) (Todd 2010).

In most areas of the basin, water quality has remained stable in recent years (2004-2010). Other areas, such as the eastern portion of the San Juan subbasin, have shown variable but increasing trends in key constituents like nitrate and chloride. This localized change in water quality results from local factors including nearby regulated facilities, land use changes, and high groundwater levels.

A general measure of groundwater quality is total dissolved solids (TDS). For drinking water purposes, water with a TDS concentration of 500 milligrams per liter (mg/L) or less is recommended, but can be usable up to 1,000 mg/L. TDS concentrations are affected by both natural and anthropogenic sources. **Figure 4-4** shows generalized areas of similar TDS concentrations. The map is based on the maximum historical concentrations of TDS of all monitored wells and was updated in 2010 (Todd 2010).

WATER BALANCE AND SUSTAINABLE YIELD

The District produces an annual report that examines annual change in groundwater levels and storage as basic indicators of net water balance conditions. The entire water balance—including inflows, outflows, and change in storage—is documented on a triennial basis in the basin. All values for the basin-wide water balance in this section are those calculated and reported in the Annual Groundwater Report for water year 2008 (Todd 2008). A simplified version of the water balance for Zone 6 is shown in **Table 4-1**. The water balance encompasses the subbasins underlying the HUA.

Major inflows include deep percolation from rainfall, return flow from urban and agricultural uses, recharge of reclaimed water, stream percolation (both natural and managed through reservoir releases and CVP releases), and subsurface inflow from adjacent groundwater basins. Most of these inflows are controlled by hydrological conditions and are generally higher in wet years and lower in dry years.

Major outflows include pumping from agricultural and urban sources and subsurface outflow to adjacent basins. Agricultural groundwater pumping is measured directly in Zone 6. The amount of agricultural pumping is dependent on the volume of CVP imports and the amount and distribution of rainfall, as growers in the area often rely on both groundwater and CVP imports for water supply. Since 2005, domestic, municipal, and industrial pumping remained steady. As noted, municipal pumping is largely concentrated in the Hollister West, Hollister East, and Tres Pinos subbasins.

The annual change in groundwater storage can be determined by computing the difference in outflows and inflows or by independently assessing change in groundwater levels. The change in storage is calculated by both methods in the District Annual Report. Over the past ten years, the annual change in groundwater storage in Zone 6 has varied minimally from a decrease of 5,000 AF to an increase of 10,000 AF. These relatively small decreases and increases indicate that the basin is in equilibrium and that discharge equals recharge under current operating conditions (DWR 2003).

The total groundwater storage capacity of the basin is estimated to be approximately 500,000 AF within the uppermost 200 feet of the groundwater basin (Kennedy/Jenks 2003). Although the total storage volume is large, the usable storage is smaller and dependent on operating conditions (DWR 2003). Safe yield estimates, or the amount of groundwater that can be continually withdrawn without adverse impacts, are often used to gage the sustainability of groundwater pumping (DWR 2003). Safe yield estimates, which may be based on the estimated value of predevelopment recharge, are designed to maintain equilibrium in the basin. Previous estimates of the basin groundwater yield range from 40,000 to 54,000 AFY (Kennedy/Jenks 2003). However, relying on a single value or range of values may not accurately ensure sustainability of the water supply. In the USGS Circular 1186, the authors supported a

more fluid view of groundwater management rather than a static value: "As human activities change the system, the components of the water budget (inflows, outflows, and changes in storage) also will change and must be accounted for in any management decision (Alley et al. 1999)."

Annual water budgets provide a good summary of the groundwater basin's condition, as they identify changes in the basin operation and indicate the overall balance (or imbalance) of recharge and discharge. Groundwater discharge may exceed groundwater recharge for a short time, due to a temporary increase in demand or decrease in natural recharge (drought), without serious adverse impacts to the basin. However, if this imbalance persists for a number of years, overdraft may occur (DWR 2003). The total groundwater outflow in the HUA subbasins (Hollister East, Hollister West, and Tres Pinos) for water years 2006 through 2008 averaged 17,852 AFY. During these years, the average total change in storage in these subbasins was relatively small: a decrease of 1,116 AFY, generally indicating equilibrium.

Given the recent water balance findings, the HUA sustainable yield used for the two previous UWMPs (16,000 AFY) remains applicable. For the purposes of this UWMP update, a value of 16,000 AFY is used as the sustainable groundwater yield or groundwater production for planning purposes. This is approximately the pumping that occurred in the 1990s. In 1993, total pumping in the three subbasins totaled 16,600 AFY and in 1997 pumping was 15,800 AFY; both years had relatively normal precipitation. Since that time, groundwater use has decreased in the area reflecting increased CVP deliveries and changes in land use.

Hollister and Sunnyslope are not the only users of the three subbasins. Agricultural users, small water purveyors, and domestic wells rely on these groundwater subbasins for their water supply. The District measures all groundwater use in Zone 6 and records the amount of groundwater pumped semi-annually (February and September). In water year 2010 (October to September), groundwater pumped from the Hollister East, Hollister West, and Tres Pinos subbasins totaled 10,227 AFY (Todd 2010). Hollister and Sunnyslope pumped a total of 4,177 AFY (2,194 AFY and 1,983 AFY from Hollister and Sunnyslope, respectively) over the same period. Water year 2010 is indicative of groundwater pumping that has occurred over the last 10 years, in both volume extracted and response in groundwater levels. Groundwater pumping from other users is expected to remain steady. Moreover, future development is expected to be concentrated in the Hollister and Sunnyslope service areas. Therefore, the portion of the sustainable yield that will be available to Hollister and Sunnyslope in the future is 9,950 AFY. The sustainable yield of the HUA could be increased if groundwater from other subbasins is delivered to the HUA.

GROUNDWATER BASIN MANAGEMENT

The District manages the water resources for all of San Benito County. The District is a California Special District in 1953 by the San Benito County Water Conservation and Flood Control Act. The District has jurisdiction throughout San Benito County, and has formed three zones of benefit to fund surface water and groundwater management activities. Zone 1 covers the entire county and provides the funding base for certain District administrative expenses. Zone 3 generally covers the San Benito River Valley to the confluence with the Pajaro River, from the Highway 25 Bridge nine miles south of the town of Paicines

to San Juan Bautista, plus the Tres Pinos Creek Valley from Paicines to the San Benito River. Zone 3 provides the funding base for operation of Hernandez and Paicines reservoirs and related percolation and groundwater management activities. Zone 6 includes the six major delineated subbasins in the northern portion of the Gilroy-Hollister groundwater basin and provides the funding base for importation and distribution of CVP water and related groundwater management activities (Todd 2010, HDR 2008).

ANNUAL GROUNDWATER REPORT

Each water year, the District oversees the preparation of an Annual Groundwater Report that describes current groundwater conditions in the District and two zones of benefit: Zone 3 and Zone 6. The report documents water supply sources and use, groundwater levels and storage, and District management activities over the water year (October to September). Recommendations are provided with regard to the future water year imports, groundwater replenishment, groundwater pumping, and groundwater charges. This Annual Report is prepared at the request of the District to meet its information needs and to fulfill statutory reporting requirements (Todd 2010).

GROUNDWATER MANAGEMENT PLAN (GWMP)

The GWMP is a voluntary planning process for groundwater basin management. The GWMP process was established in 1992 by the State Legislature through Assembly Bill (AB) 3030, amended in 2002 by Senate Bill (SB) 1938 and codified in the Water Code. While the Water Code lays out specific requirements (used for State funding eligibility), a GWMP is voluntary. A completed GWMP must be sponsored and adopted by one or more eligible public agencies (such as the City or County), but is intended to be a collaborative process with local landowners, groundwater users, and other interested people. Such a plan describes groundwater conditions, addresses groundwater issues, identifies basin management objectives and actions to achieve objectives, and lays out an implementation plan for actions including funding sources, continued monitoring, and regular reporting.

In 1998, the first GWMP was prepared for the San Benito portion of the Gilroy-Hollister Valley Groundwater Basin. The GWMP included the major water retailers and wholesalers of the basin including Aromas Water District, the cities of Hollister and San Juan Bautista, the District, Sunnyslope, and the Tres Pinos County Water District. The 1998 plan was accepted as complete, but never formally adopted by these agencies. The GWMP Update in 2003 builds upon the 1998 plan. The overall goal of the GWMP Update is to maintain and enhance the agricultural and economic productivity of San Benito County in an environmentally responsible manner (AECOM 2011). A copy of the GWMP is included as **Appendix C**.

WATER RIGHTS

The Gilroy-Hollister basin is not an adjudicated basin and groundwater entitlements or rights have not otherwise been defined. The long-term reliability of groundwater supply for the HUA is not likely to be predicated on water rights, but is likely to be defined by the overall state of the groundwater basin.

WATER SUPPLY FACILITIES

Both Hollister and Sunnyslope pump directly from the groundwater basin to meet their water demands. **Figure 4-5** shows the location of the major pumping wells from each agency. **Table 4-2** lists the wells along with the date drilled, subbasin location, and the volume pumping in 2010.

HOLLISTER

The City has eight groundwater wells, Wells 1 through 6 and Cullum Wells 1 and 2. Cullum Wells 1 and 2 are in Cienega Valley (south of the Study Area and not shown on Figure); San Felipe Well 1 is inactive due to high nitrate levels. In January 2010, the casing in Fallon Road Well 3 collapsed, causing a failure of the well. Hollister does not currently plan to replace this well. As shown on **Table 4-2**, the remaining six wells (four in the basin and two in Cienega Valley) are currently active. In 2010, Hollister pumped a total of 2,056 AF mainly from the Hollister West subbasin.

SUNNYSLOPE

Sunnyslope has a total of nine groundwater wells, of which five remain active. Well No. 2 previously had problems with high nitrate and as a result is temporarily inactive. Well No. 11 is the retailer's most recent well drilled in 2009. As shown, on **Table 4-2**, Sunnyslope pumped a total of 1,948 AF in 2010.

FUTURE WATER PROJECTS

NORTH COUNTY GROUNDWATER

The Master Plan identified north county groundwater subbasins as sources of additional long-term supply. Initial investigations associated with its Implementation Plan indicate that North County pumping could provide additional supply to the Lessalt WTP and help alleviate local high groundwater conditions. In addition, banking groundwater in the north could provide opportunities for percolation and storage of relatively high quality imported supplies when available to help meet the needs of the HUA. The North County Groundwater Bank would include a combination of facilities to pump and recharge water, plus a network of monitoring wells in the Pacheco and Northern Hollister East subbasins. Water from the groundwater bank would be pumped into the Hollister Conduit for conveyance to the HUA. The North County Groundwater Bank could produce 2,000 to 5,000 AFY of groundwater with a water quality target of TDS concentrations less than 500 mg/L. It is estimated that pumping could lower the unconfined groundwater table, which would benefit areas currently being impaired by high groundwater (Yates 2011). The PEIR indicates that such banking could be in operation by 2013 (AECOM 2011). Current work includes development of a refined hydrogeologic conceptual model and update of the existing numerical model in the area, which can be applied to various well pumping scenarios, intended to develop high quality groundwater and help control groundwater levels (Todd 2010).

NEW MUNICIPAL WELLS

Hollister and Sunnyslope rely on groundwater wells for water supply. Based on demand projections, additional groundwater may be needed to supplement supply in the event of significant cut backs in CVP allocations. This additional capacity could be provided by drilling one or more new wells in the HUA. The location of new urban wells would be determined by the retailers based on system needs (AECOM 2010). No new municipal wells are currently planned for Hollister. Sunnyslope plans to install a new well (Number 12) in the next 5 to 10 years. The environmental review has already been completed and Sunnyslope is currently in the land acquisition phase. The Master Plan PEIR anticipates new urban wells to be online between 2015 and 2023.

4.2 TRANSFER OPPORTUNITIES

Through its CVP contract, the District has the capability to engage in transfer or exchange with other CVP customers.

Currently, the District has a one-time contract with SCVWD allowing the storage of some of their unused CVP allocation in the Semitropic Water Storage District (Semitropic). Semitropic has a large groundwater banking operation located in Kern County. At Semitropic, wet year and surplus water is stored in the groundwater basin primarily through in-lieu recharge; Semitropic delivers surface water to its local farmers for irrigation in lieu of pumping groundwater (Semitropic 2011). In 2010, the District banked 5,000 AF with Semitropic with the intent of withdrawing this water during the next water shortage (Todd 2010).

The District is the CVP wholesaler to many agricultural and M&I users in addition to Hollister and Sunnyslope. During the next water shortage, Hollister and Sunnyslope may be eligible to purchase additional water that the District has obtained from its water transfers with other CVP customers, purchases on the spot market, and water banked at Semitropic. The amount of available water would be variable, based on the District's overall water needs.

4.3 DESALINATION WATER OPPORTUNITIES

The Master Plan PEIR examines the demineralization of urban wells as a potential project to increase water supply reliability and improve water quality. This improved water quality would in turn improve wastewater and recycled water quality. Groundwater pumped from local wells would be treated using reverse osmosis (R/O). The Master Plan developed a phased approach for implementation. The phasing would result in 3 mgd (3,400 AFY) of demineralization capacity by 2015, and a total of 5 mgd (5,600 AFY) by 2019. This schedule represents the earliest implementation of phased demineralization of urban wells (AECOM 2011). Facilities may include a mix of existing and new wells, with either wellhead or centralized treatment. The timing and capacity of demineralization facilities is currently being refined and it is likely that these facilities will not be in operation until after 2015.

The brine stream generated by the demineralization process is estimated to be 7-20% of the volume to be treated. The amount of water to be treated and the brine generated would vary from year to year,

depending on demands, source water quality, and other factors. Brine disposal would include concentration of the brine stream and disposal. Once concentrated, possible brine disposal alternatives could include:

- Landfill
- Deep Well Injection
- Ocean Discharge

The District, Hollister, and Sunnyslope are not considering desalination from ocean water or brackish surface water at this time because of a lack of such water sources in the region.

4.4 RECYCLED WATER OPPORTUNITIES

This section presents a summary of HUA wastewater collection, treatment, and disposal; current and projected recycled water use, programs to encourage recycled water use, and the HUA plan for optimizing recycled water use. In 2004 Hollister, the County, and the District executed a Memorandum of Understanding (MOU) forming a partnership to undertake the development of the Master Plan for the HUA. The MOU was amended in 2008 to include Sunnyslope. Copies of both MOUs are included as **Appendix D**. These parties have undertaken a coordinated effort to plan water supply and wastewater strategies for the HUA. These strategies include the collection and treatment of wastewater as well as disposal and recycled use, as appropriate.

Planning for recycled water use has included the preparation of a Recycled Water Feasibility Study prepared by the District in 2005 (RMC 2005) and a subsequent Recycled Water Feasibility Study Update prepared jointly by the District and Hollister (HDR 2008b), the Long Term Waste Water Master Plans (LTWWMPs) prepared respectively by Hollister and Sunnyslope, and the Master Plan prepared jointly by Hollister, Sunnyslope, and the District (HDR 2008a).

Recycled water is currently being used for irrigation at two sites within the HUA and plans for increased use are ongoing. There is also a coordinated effort to supply recycled water to areas outside of the HUA for agricultural irrigation (HDR 2008a, HDR 2008b).

Although recycled water is currently available, and will become more widely available in the near term, potable reuse opportunities within the HUA are not targeted for implementation because of water quality concerns. A major goal of the MOU is to increase the quality of treated wastewater in order to provide recycled water with TDS concentrations between 500 and 700 mg/L. As efforts to improve potable water quality become more effective, recycled water quality will also improve and reuse within the HUA will become more likely. Some of this recycled water use could displace current potable use.

4.4.1 WASTEWATER COLLECTION, TREATMENT AND DISCHARGE

Five wastewater treatment plants treat the domestic, commercial, and industrial wastewater flows generated within the HUA (**Figure 4-5**). The existing wastewater facilities are owned by three separate

agencies: Hollister, Sunnyslope, and San Benito County (Cielo Vista Estates Wastewater Treatment Plant). The facility descriptions are included below, organized by agency.

Current and projected wastewater collection and treatment volumes for each of the treatment plants are presented on **Table 4-3**. Projected future wastewater flows are estimated using the population growth estimates. Residential growth will also occur in unincorporated areas in the Hollister area; however, wastewater generated by new developments will typically be treated by septic systems or by onsite package treatment plants with effluent discharge to the groundwater basin. San Benito County's General Plan requires tertiary treatment for new residential developments with lot sizes less than one acre that are outside the existing wastewater service areas. The effluent from tertiary facilities would meet California Code of Regulations Title 22 requirements for unrestricted use; however, the high salt concentrations would likely preclude the use of such effluent for irrigation.

CITY OF HOLLISTER WASTEWATER FACILITIES

Hollister owns and operates two waste water treatment plants (WWTPs); the domestic wastewater treatment plant/water reclamation facility (DWWTP/WRF) and the industrial wastewater treatment plant (IWTP). The DWWTP/WRF is located on the western edge of the HUA (**Figure 4-5**) and was built in 1979 to treat Hollister's domestic wastewater. The IWTP treats seasonal industrial wastewater and storm water from the downtown area. The IWTP is located west of downtown Hollister at the west end of South Street and on the north side of the San Benito River less than a mile east of the DWWTP/WRF. The City of Hollister's collection system consists of gravity pipelines and force mains ranging from 4- to 36-inches in diameter.

The Hollister DWWTP/WRF began operating in March 1980, was renovated in 1987 to increase capacity, improved in 2002 and 2003 to improve treatment efficiency, and upgraded in 2009 to include the WRF and improve treatment to tertiary levels. The DWWTP/WRF receives wastewater flow from all municipal and most industrial customers within Hollister City limits, including portions of the Sunnyslope service area. The system treats water to disinfected tertiary recycled water standards through the use of a Membrane Bioreactor (MBR).

The DWWTP/WRF is currently capable of treating up to 4 MGD and the current dry weather average flow is approximately 3 MGD. The DWWTP/WRF can be expanded to accommodate peak flows of 5 MGD through the installation of additional membranes, when required by additional development.

The Hollister IWWTP began operating in 1971 and is located on 78 acres less than a mile east of the DWWTP (**Figure 4-5**). The facility was constructed to treat effluent from local tomato canneries and stormwater. Only one of the canneries is currently in operation from mid-June through mid-October. The IWWTP is a conventional aerated pond treatment system that produces secondary-treated discharge. The capacity of the IWWTP has been estimated to be as high as 7.5 MGD; however, the current RWQCB permit limits flows to 3.5 MGD during the canning season and 1.72 MGD of stormwater during the non-canning season (HDR 2008a). The estimated maximum cannery wastewater flow is 4.0

MGD, and the maximum sustained disposal capacity is 2.6 MGD. The Industrial WWTP receives approximately 0.2 million gallons of stormwater flow per inch of rainfall (RMC 2005).

The secondary effluent from the IWWTP is discharged to evaporation and percolation ponds, which recharge the Hollister West and San Juan groundwater subbasins (RMC 2005).

SUNNYSLOPE COUNTY WATER DISTRICT WASTEWATER FACILITIES

Two domestic wastewater treatment plants serving the Ridgemark Estates community are managed by Sunnyslope. The two treatment systems in the Ridgemark WWTP are designated Ridgemark I and Ridgemark II (**Figure 4-5**). The Ridgemark I facility currently includes two treatment ponds and four disposal ponds on 8.83 acres. The Ridgemark II facility is two treatment ponds and two disposal ponds on 7.74 acres. The two facilities are connected by a pipeline to allow diversion of flow from Ridgemark II to Ridgemark I. The combined average daily discharge from the two facilities is 0.26 MGD (RMC 2005).

Sunnyslope is upgrading the Ridgemark WWTP to improve wastewater effluent quality. This improvement project includes the construction of a sequencing batch reactor (SBR) to produce disinfected tertiary recycled water. Construction of these improvements is expected to take begin in 2011.

Sunnyslope plans to provide recycled water for irrigation in the spring, summer, and fall to the Ridgemark Golf Course following the completion of the improvement project. The Ridgemark Golf Course is one of the largest landscape irrigation customers in the HUA. Recycled water use at the golf course would make potable water available for other uses.

OTHER WASTEWATER FACILITIES

Wastewater treatment within the HUA by parties other than the two municipal water purveyors is limited to the Cielo Vista Estates, operated by San Benito County, and private residential septic systems.

Cielo Vista Estates is a residential development within Sunnyslope's service area and is comprised of approximately 75 single-family homes located at the intersection of Airline Highway and Fairview Road (**Figure 4-5**). Wastewater from the community is treated by a SBR system operated by San Benito County. Secondary effluent from the treatment system is infiltrated to the groundwater basin via a leach line system. The Cielo Vista development is complete and new connections to the wastewater system are not anticipated (Schaaf & Wheeler 1999).

There are some private residences within the HUA that are still serviced by individual septic systems. No estimate of the quantity of wastewater generated from these small systems has been made.

4.4.2 WASTEWATER EFFLUENT QUALITY AND DISPOSAL

The wastewater treatment facilities within the HUA utilize a number of treatment methods, which result in varying effluent quality, as described above. Current requirements for recycled water use are

administered by Title 22 of the California Code of Regulations, referred to hereafter as Title 22. The Hollister DWWTP/WRF has the capacity to meet the requirements for disinfected tertiary recycled water as defined by Title 22. The remaining wastewater treatment facilities produce effluent that meets the Title 22 requirements for undisinfected secondary recycled water. Sunnyslope is currently upgrading their wastewater treatment facilities to produce higher quality effluent. However, the effluent streams from all of the treatment facilities have high levels of TDS, which may preclude local reuse on orchards and vineyards or non-food bearing trees. The parties to the MOU have committed to reducing these high concentrations by reducing the TDS of supplied water as part of the Master Plan (HDR 2008a).

The Hollister DWWTP/WRF currently treats all wastewater flows to tertiary standards, but only disinfects what is used offsite for landscape irrigation. Offsite reuse of recycled water from the DWWTP/WRF takes place at Riverside Park (formerly known as the Brigantino Site) and Hollister Municipal Airport. Irrigation at these sites began in a limited capacity in 2009 and use increased in 2010 as the projects neared completion. These sites will use approximately 960 AFY of recycled water for landscape irrigation of 292 acres. The remaining treated wastewater from the DWWTP/WRF is currently disposed of by evaporation and percolation. The DWWTP/WRF will increase the quantity of disinfected tertiary recycled water that it produces as demand for recycled water increases, in accordance with the Master Plan.

As previously noted, the remaining wastewater treatment facilities (the Ridgemark WWTP and Cielo Vista Estates) produce undisinfected secondary effluent, which is disposed of through evaporation and/or percolation. Sunnyslope's upgrade of the Ridgemark WWTP will result in production of disinfected tertiary recycled water available for use for golf course irrigation. There are no plans to upgrade or expand the Cielo Vista Estates wastewater treatment system.

The current and anticipated future quantities of wastewater treated to recycled water standards are presented in **Table 4-4**. The current use of recycled water (203 AF of landscape irrigation in 2010) is slightly less than the 335 AFY of agricultural irrigation use that was anticipated in the 2008 UWMP (Kennedy/Jenks 2009).

4.4.3 WATER RECYCLING OPTIONS

Current plans for use of HUA recycled water focus primarily on agricultural irrigation of high value, quality-sensitive crops. This agricultural use is currently outside the service areas of Hollister and Sunnyslope. The planning for recycled water is an ongoing and iterative process that has been carefully considered by the parties to the MOU. The initial San Benito County Regional Recycled Water Project Draft Feasibility Study Report (RMC 2005) was completed collaboratively by Hollister, Sunnyslope, the District, the City of San Juan Bautista, and the County. This study included preliminary investigations into the feasibility of a regional recycled water system in northern San Benito County. The conclusions of this study were:

- A regional recycled water system would reduce the dependency on existing water supplies, enhance water supply reliability, provide an acceptable wastewater management and disposal strategy, and enhance groundwater level management strategies.
- Landscape irrigation, agricultural irrigation, and industrial uses are feasible existing markets for recycled water. Groundwater recharge is not a feasible use of recycled water because of the stringent treatment requirements and brine disposal challenges. Environmental enhancement is a potential future recycled water market.
- The recommended regional project included a two-phase implementation strategy that could supply up to 9,400 AFY of disinfected tertiary recycled water to the San Juan Valley project area (located outside of the HUA).

As a result of these conclusions, the parties to the study identified uses for recycled water. These uses were:

1. Landscape and golf course irrigation
2. Industrial use
3. Agricultural irrigation

The original feasibility study found that environmental and groundwater recharge uses of recycled water were not feasible due to concerns regarding water quality and regulatory requirements. The 2008 UWMP built on the original feasibility study and evaluated the areas of the HUA where recycled water could be used. The 2008 UWMP identified 35 sites as potential recycled water customers. Of these potential sites, only the Hollister Municipal Airport, Riverside Park, and Ridgemark Golf Course sites remain as potential locations for recycled water use within the HUA. The study pointed out that existing irrigation and industrial customers must undertake retrofits before their sites can be supplied with recycled water to ensure that the potable water system is isolated from the recycled water system. The complexity of site retrofits would vary greatly and depend on the complexity of the onsite water systems. Site retrofit requirements are regulated by the California Department of Public Health (DPH) and can be very costly. As a result, neither Hollister nor Sunnyslope are pursuing extensive recycled water delivery to existing customers, with the exception of the Ridgemark Golf Course. Currently, Hollister requires that new development and parks be constructed with dual potable/non-potable plumbing. New developments in the Sunnyslope service area will also be required to included dual potable/non-potable plumbing, where appropriate.

Hollister, Sunnyslope, and the District further evaluated recycled water use in the HUA following the initial feasibility study. For Hollister and the District, this additional evaluation was focused exclusively on the provision of high quality water for valuable agricultural crops near the HUA. Phase I of this plan was to construct a pipeline to bring recycled water to the Hollister Municipal Airport for landscape irrigation and a branch pipeline to Riverside Park. Meanwhile, Sunnyslope evaluated the option of redirecting all of their wastewater flow to the Hollister DWWTP/WRF, but decided instead to pursue upgrading the Ridgemark WWTP.

Hollister and the District updated the recycled water feasibility study in 2008 (HDR 2008b), evaluating six alternative areas for the next phase of recycled water development through the 2023 planning horizon. Similar to potable water, development of recycled water has slowed due to the economic downturn. Accordingly, the recycled water development schedule has been shifted by five years. Most of the areas considered in the feasibility update were completely outside of the HUA and focus solely on agricultural supply. The updated study concluded that Phase IIA of the project should be the extension of the Phase I facilities to provide agricultural supply to the Wright Road /McCloskey Road corridor. This area is estimated to have an agricultural recycled water demand of 4,785 to 9,570 AFY, but is outside the HUA (HDR 2008b). Phase IIB of the project is likely to be extension of recycled water supply to an area east of Fairview Road, which would increase the agricultural demand for recycled water by an additional 2,205 to 4,410 AFY (HDR 2008b). Phase IIB is not expected to occur until after 2030. The recycled water feasibility plan is currently being re-evaluated and another update is expected prior to initiation of Phase IIA. The proposed future use of Recycled Water is shown in **Table 4-5.**

All agricultural recycled water use will depend on the ability of the MOU parties to meet their TDS goals of 500 to 700 mg/L. The MOU established 2015 as the target date for meeting these water quality goals. Plans to meet these goals are described in the Master Plan (HDR 2008a).

4.4.4 ENCOURAGING RECYCLED WATER USE

This section addresses the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

Implementation of the recommended recycled water project includes public outreach efforts, a detailed market evaluation of agricultural growers, environmental compliance, RWQCB and DPH regulatory permitting, and funding initiatives. An effective implementation strategy will include the methods listed on **Table 4-6**. Actions taken to date to promote water recycling in the HUA include:

- Completion of the San Benito County Regional Recycled Water Project Draft Feasibility Study Report (RMC 2005),
- Completion of the Hollister Area Urban Area Water and Wastewater Master Plan (HDR 2008a),
- Completion of the Recycled Water Feasibility Study Update (HDR 2008b),
- Recent upgrades to the Hollister DWWTP/WRF,
- Construction of the Phase I recycled water distribution pipelines,
- Initiation of recycled water delivery to the Hollister Municipal Airport and Riverside Park sites,
- Environmental review and planning for upgrades to the Ridgemark WWTP,
- Completion by Hollister and the District of an EIR for the Master Plan which includes recycled water facilities (AECOM 2011),
- Re-evaluation by Hollister and the District of the Recycled Water Feasibility Study,
- Requirement by Hollister that new development and parks be constructed with dual potable/non-potable plumbing,

- Public education, including a District demonstration garden using recycled water.

Once the next feasibility study update has been finalized and the participating agencies reach consensus on next steps, additional promotional activities will continue the momentum achieved to date. At this time, it is not possible to determine how much recycled water use will result from promotional activities.

4.4.5 RECYCLED WATER OPTIMIZATION

The Feasibility Study and subsequent update include several project optimization measures in their recommendations (copies of each of these documents are provided in **Appendix E**). Specifically, the following considerations have been incorporated into the recommended project:

- The production of disinfected tertiary recycled water improves project flexibility because the potential market for the recycled water is not limited by water quality (except for groundwater recharge).
- The market for recycled water use is primarily comprised of agricultural customers who use large volumes of recycled water. This reduces the number of overall user agreements to be implemented and simplifies the retrofit process.
- Targeting large agricultural uses reduces the infrastructure requirements for delivering recycled water. This reduces construction costs and minimizes the impacts of construction on residents.
- Communication and educational programs with agricultural customers must be maintained throughout the project to address water quality concerns.
- Discussions need to be initiated with potential users along the Wright/McCloskey Road corridor. These discussions need to address potential blending of CVP and recycled water supplies, and the use of recycled water instead of groundwater. Discussions should also continue with potential users to the east of Fairview Road, including the Lone Tree area and Santa Ana Valley, for potential long-term use of recycled water.
- A financial plan must be developed to address all costs (treatment and distribution) and allocation of those costs to the appropriate beneficiaries. Investigation of grants and loans should be part of the financial planning.
- Institutional agreements must be developed for the distribution and sale of recycled water. The MOU for recycled water studies between the City and the District should be amended to assign responsibilities for the next phases of work.

4.5 CURRENT AND PROJECTED WATER SUPPLIES

The Hollister Urban Area currently relies on imported water from the CVP and groundwater. In 2010, Hollister began using recycled water for limited landscape irrigation. **Table 4-7** shows the current water supply by source.

Table 4-8 documents the future CVP demand based on capacity of the surface water treatment plants. The Lessalt WTP expansion and the new surface water treatment plant combined will allow for up to 9

mgd (10,081 AFY) of treatment, allowing for the full contract amount of CVP imported water (8,250 AFY) to be delivered to Hollister and Sunnyslope customers. According to the PEIR, both projects will be in operation by 2015 (AECOM 2011). The actual portion of CVP imports going to each retailer is assumed equal as the water enters the system and the distribution is currently unmetered. During drought conditions, the CVP allocation could be reduced based on the Water Shortage Policy. This is discussed further in the Water Reliability section.

Table 4-9 shows the historical and current groundwater pumping for the Hollister Urban Area. The groundwater pumped by Hollister and Sunnyslope is shown separately. Hollister pumping includes a small volume that is pumped by Hollister but delivered to Sunnyslope customers. Groundwater remains a critical water supply source, making up 72 percent in the relatively wet year 2006 to 84 percent of total supply in the very dry year of 2009. This range of groundwater use is due in part to the reduced CVP imported water in dry years.

Table 4-10 shows the projected future groundwater supply. It is expected that CVP imports will be the most desirable water source and that additional demand will be met with local groundwater. As discussed in the groundwater section, the HUA overlays three groundwater subbasins. These subbasins have a sustainable yield of roughly 16,000 AFY. Of this yield, 9,950 AFY would be available to Hollister and Sunnyslope; the remaining yield is available for agricultural users, small purveyors, and domestic wells. In addition, the North County Groundwater Bank could make an additional 2,000 to 5,000 AFY of groundwater available. In 2030, the HUA plans to use groundwater as a supplemental supply during normal, single dry, and multiple dry years respectively. The projected pumping is within the sustainable yield of the area and discussed in detail in Section 5.

Table 4-5 shows the projected recycled water use in the area. The agricultural demand is not currently served by Hollister or Sunnyslope. These customers either purchase CVP water directly from the District or pump their own groundwater through irrigation wells. Projected water use for agricultural uses are not included in the projected supply or demand totals, as it is unclear at this time if the use would be within the HUA or served directly by the retailers. The projected recycled water for the retailers in the HUA from 2010 to 2030 is 1,170 AFY including landscape irrigation of parks and golf courses, as shown in **Table 4-5.** This recycled water demand is expected to offset current potable water use.

To meet future demand, the District with Hollister and Sunnyslope plan to rely on a portfolio of supplies. By utilizing different types of supply, the HUA agencies will reduce the impact of water shortage from each source. **Table 4-7** shows the current and projected water supply by source through 2030. This table summarizes the future supply from groundwater (shown on **Table 4-10**)**,** CVP imported water **(Table 4-8**) and recycled water (**Table 4-5**).

Table 4-1 Groundwater Balance for Zone 6 (AFY)				
	2005	**2006**	**2007**	**2008**
Inflow				
Deep Percolation				
Rainfall	9,015	13,059	2,478	9,723
Return Flow	2,951	3,207	3,311	2,531
Reclaimed Water	3,490	3,257	3,126	2,996
Stream Percolation				
Natural	11,540	7,263	1,241	2,719
Managed	5,050	2,669	4,134	1,170
Groundwater Inflow	7,500	16,250	15,000	16,500
Total Inflow	39,546	45,704	29,290	35,639
Outflow				
Pumping				
Agricultural	(12,056)	(12,234)	(14,247)	(14,796)
Pumping - Domestic and M&I	(7,769)	(7,255)	(8,297)	(7,947)
Groundwater Outflow	(9,500)	(16,250)	(12,250)	(14,500)
Total Outflow	(29,325)	(35,739)	(34,794)	(37,243)
Change in Storage				
Inflow Minus Outflow	10,221	9,965	(5,504)	(1,604)

Table 4-2
Groundwater Wells

Well Name	Status	State Well Number	Total Depth (ft)	Date Drilled	Subbasin	Pumping WY 2010 (AFY)	Pumping 2010 (AFY)
Hollister							
Cullum Well 01	Active	14S06E18D01	106	1962	Out of basin	0	102
Cullum Well 02	Active	14S06E18C01	105	1973	Out of basin	0	0
San Felipe Road Well 01	Inactive	NA	445	2000	Hollister East	0	0
Bundeson Road Well 02	Active	13S05E03A02	645	1996	Hollister East	454	518
Fallon Road Well 03	Failed - August 2010	12S05E14M02	NA	1965	Hollister East	217	117
South Street Well 04	Active	12S05E34F01	624	1968	Hollister West	813	596
Nash Road Well 05	Active	12S05E34P02	590	1968	Hollister West	506	501
Airline Highway Well 06	Active	NA	500	1997	Hollister West	203	223
					TOTAL	**2,194**	**2,056**
Sunnyslope							
Southside Well 01	Inactive	13S05E02K04	240	1959	Hollister West	0	0
Southside Well 02	Active	NA	527	1998	Hollister West	486	390
Southside Well 02A	Destroyed	NA	NA	NA	Hollister West	0	0
Ridgemark Well 04	Inactive	13S05E12K01	336	1980	Tres Pinos	0	0
Ridgemark Well 05	Active	13S05E12K02	402	1980	Tres Pinos	281	259
Enterprise Well 06	Inactive	13S05E12D03	500	1983	Tres Pinos	0	0
Enterprise Well 07	Active	13S06E12D01	550	1989	Tres Pinos	216	196
Ridgemark Well 08	Active	NA	480	1997	Tres Pinos	504	409
Well 11	Active	NA	NA	2009	Hollister West	467	694
					TOTAL	**1,953**	**1,948**

NA : Not Available

Table 4-3 Recycled Water Wastewater Collection and Treatment (AFY)						
Type of Wastewater	**2010[1]**	**2015[3]**	**2020**	**2025**	**2030**	**2035**
Wastewater Collected and Treated in Service Area						
Hollister DWWTP/WRF [2]	2,501	3,292	3,730	4,167	4,604	5,041
Hollister IWWTP [3]	598	500	0	0	0	0
Sunnyslope Ridgemark I & II [4]	212	243	274	304	335	366
Cielo Vista Estates [5]	18	18	18	18	18	18
Volume that meets recycled water standard	2,501	3,535	4,003	4,471	4,939	5,407

[1] 2010 Wastewater collection and treatment values from individual system operators, except Cielo Vista Estates.

[2] Values for the City DWWTP/WRF calcuated from those presented in the Hollister Urban Area Water and Wastewater Master Plan (HDR 2008a). Growth has been slower than anticipated in the Master Plan due to the downturn in the economy, therefore the wastewater flow projections were offset by five years. The values shown between 2010 and 2025 were interpolated based on 2013, 2018, and 2023 values from the Master Plan (offset to 2018, 2023, and 2028). Values shown for 2030 and 2035 were extrapolated from the Master Plan projections. All interpolations and extrapolations were made assuming flow will increase linearly over time.

[3] Disposal at the Hollister IWWTP will be decreased as uses of recycled water grow. The Recycled Water Feasibility Study Update (HDR 2008b) indicated that use of the IWWTP would be phased out between 2014 and 2017.

[4] Values for the Sunnyslope Ridgemark I & II facility calcuated from the Draft and Final Environmental Impact Reports for the Ridgemark Wastewater Treatment and Recycled Water Improvements Project (Sunnylsope 2009a and 2009b). This EIR indicates that an additional 457 wastewater connections will be added to the existing 1,210 by 2023. The values shown between 2010 and 2020 were interpolated based on measured 2010 and 2023 values derived from the EIR. Values shown for 2025, 2030, and 2035 were extrapolated from these same data points. All interpolations and extrapolations were made assuming flow will increase linearly over time.

[5] The Cielo Vista Estates facility serves a development that is complete and no additional connections are anticipated. Data for the Cielo Vista Estates faciltiy is from the 2008 UWMP (Kennedy-Jenks 2009).

Table 4-4 Recycled Water Total Volumes Treated to Recycled Water Standards and Method of Disposal								
Agency	**Method of Disposal**	**Treatment Level**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Hollister (DWWTP/WRF)	Landscape Irrigation	Disinfected Tertiary Recycled Water	203	960	960	960	960	960
Hollister (DWWTP/WRF)	Agricultural Irrigation	Disinfected Tertiary Recycled Water	0	0	2,770	3,207	3,644	4,081
Hollister (DWWTP/WRF)	Evaporation/Percolation	Tertiary Recycled Water	2,298	2,332	0	0	0	0
Sunnyslope (Ridgemark I & II)	Golf Course Irrigation	Disinfected Tertiary Recycled Water	0	131	131	131	131	131
Sunnyslope (Ridgemark I & II)	Evaporation/Percolation	Disinfected Tertiary Recycled Water	0	112	143	173	204	235
		Total	2,501	3,535	4,003	4,471	4,939	5,407

Table 4-5 Recycled Water (AFY) Potential Future Use							
User type	**Feasibility**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Agricultural Irrigation[1]	Dependent on recycled water quality	0	0	2,770	3,207	3,644	4,081
Landscape Irrigation	These facilities are complete	203	960	960	960	960	960
Commercial Irrigation							
Golf course Irrigation	Dependent on water quality	0	131	131	131	131	131
Wildlife Habitat							
Wetlands							
Industrial Reuse							
Groundwater Recharge							
Seawater Barrier							
Geothermal / Energy							
Indirect Potable Reuse							
	Total	203	1,091	3,861	4,298	4,735	5,172

[1] *Technical and economic feasibility.*

[2] *The areas for agricultural irrigation are outside of the HUA.*

Table 4-6 Methods to Encourage Recycled Water Use
Actions
Public education
Subsidized Costs
Rate Discounts/ Incentive Program
Long-Term Contracts (Price/Reliability)
Grants
Low interest loans
Use Ordinances
Regional Planning
Water Quality Guarantee

Table 4-7 Water Supplies Current and Projected (AFY)						
Water Supply Sources		**2010**	**2015**	**2020**	**2025**	**2030**
Water purchased from[1]:	**Wholesaler supplied volume (yes/no)**					
Wholesaler[1] USBR-CVP		1,510	8,250	8,250	8,250	8,250
Supplier-produced groundwater[2]		**4,098**	**4,004**	**4,004**	**4,004**	**4,004**
Hollister		*2,056*	2,056	2,056	2,056	2,056
Sunnyslope		*1,948*	1,948	1,948	1,948	1,948
Intertie Hollister to Sunnyslope		*94*				
Supplier-produced surface water		0				
Transfers in		0				
Exchanges In		0				
Recycled Water		203	1,170	1,170	1,170	1,170
Desalinated Water		0				
Total		**5,811**	**13,424**	**13,424**	**13,424**	**13,424**

[1] *Volumes shown here are based on the total WTP capacity and full allocation of CVP supplies.*

[2] *Groundwater pumping is expected to supplement CVP supplies and remain similar to 2010 levels.*

Table 4-8 Wholesale Supplies Existing and Planned Sources of Water (AFY)						
Wholesale sources	**Contracted Volume**	**2015**	**2020**	**2025**	**2030**	**2035**
USBR-CVP [1]	8,250	8,250	8,250	8,250	8,250	8,250

[1] *Base on WTP capacity and full allocation, wholesale supplies would be decreased during dry years, see Table 5-8.*

Table 4-9 Groundwater Volume Pumped (AFY)						
Basin name(s)	**Metered or Unmetered[1]**	**2006**	**2007**	**2008**	**2009**	**2010**
Gilroy-Hollister Basin (Hollister Subbasin)						
Hollister	Metered	*2,620*	*3,025*	*2,808*	*2,728*	*2,056*
Sunnyslope	Metered	*2,133*	*2,405*	*2,206*	*2,323*	*1,948*
Total groundwater pumped		4,753	5,430	5,014	5,051	4,004
Groundwater as a percent of total water supply		*72%*	*79%*	*78%*	*84%*	*74%*
	Hollister	*72%*	*78%*	*79%*	*85%*	*75%*
	Sunnyslope	*72%*	*79%*	*76%*	*83%*	*72%*

[1] *All Water delivieries are monitored.*

Table 4-10 Groundwater Volume Projected to be Pumped (AFY)					
Basin Name		**2015**	**2020**	**2025**	**2030**
Gilroy-Hollister Basin (Hollister Subbasin)					
Hollister	Metered	*2,056*	*2,056*	*2,056*	*2,056*
Sunnyslope	Metered	*1,948*	*1,948*	*1,948*	*1,948*
Total groundwater pumped		**4,004**	**4,004**	**4,004**	**4,004**
Groundwater as a percent of total water supply		0.00%	0.00%	10.96%	20.15%

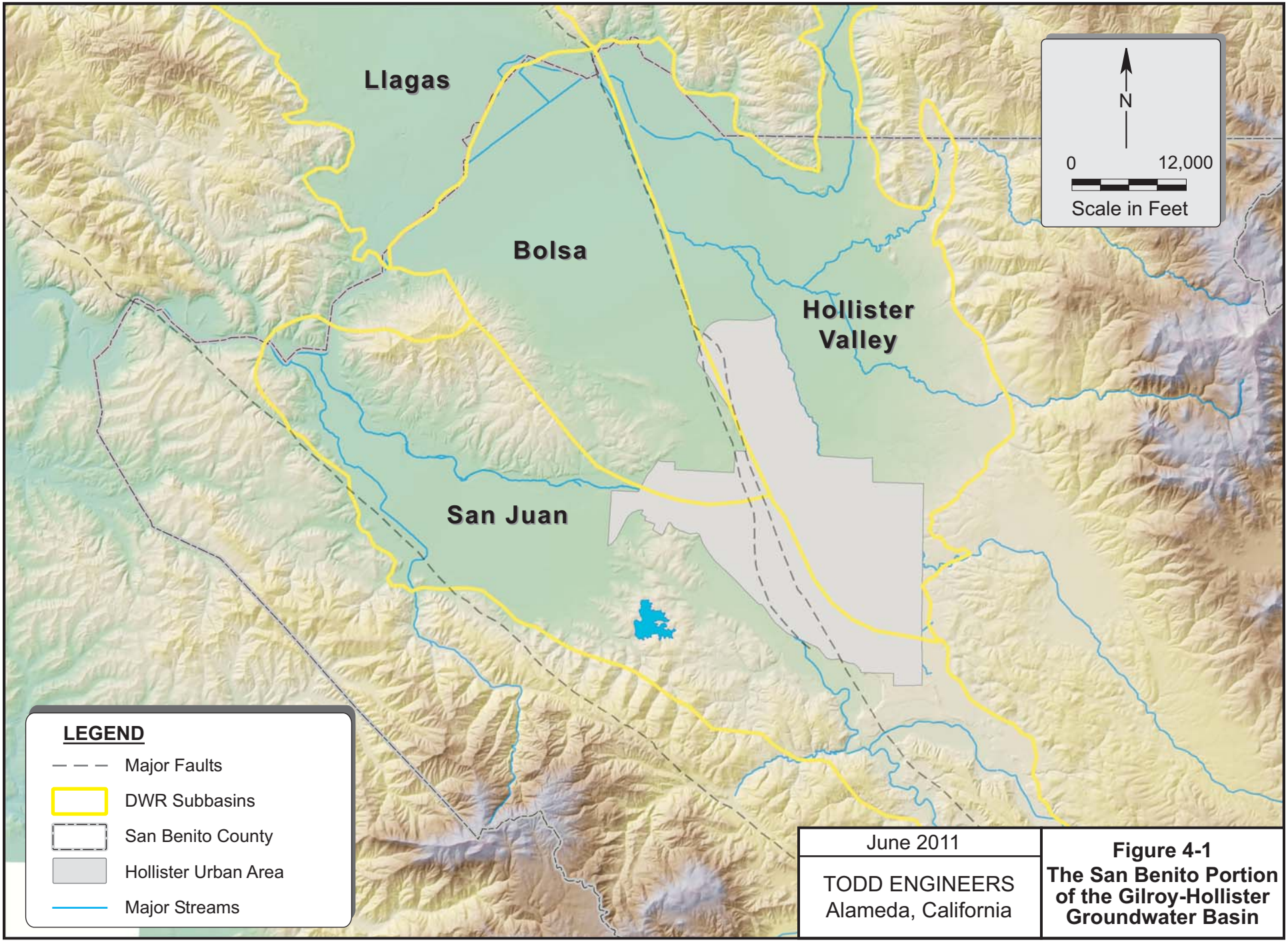

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Figure 4-1
The San Benito Portion of the Gilroy-Hollister Groundwater Basin

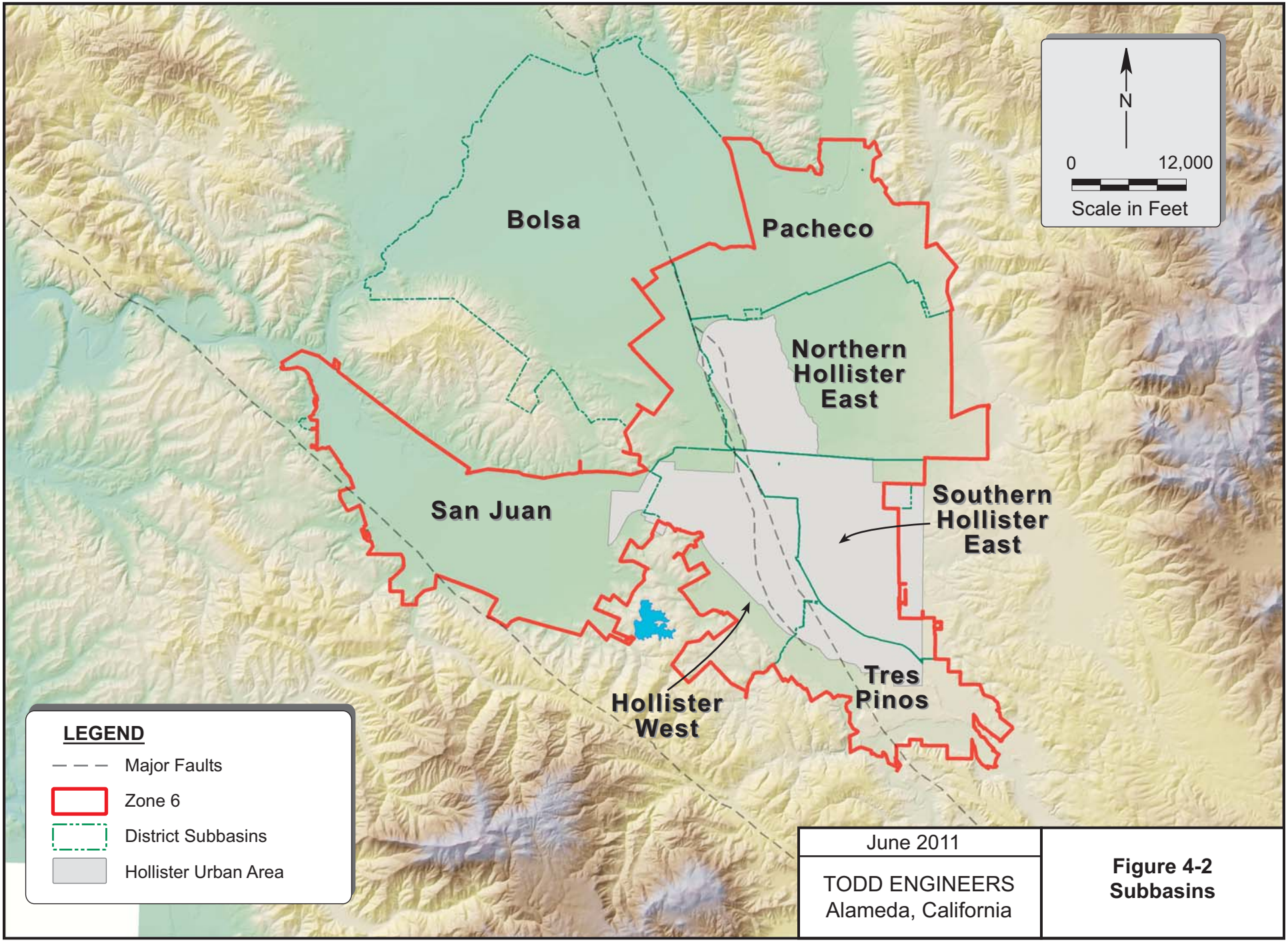
N
0
12,000
Scale in Feet
Bolsa
Pacheco
Northern Hollister East
San Juan
Southern Hollister East
Hollister West
Tres Pinos
LEGEND
Major Faults
Zone 6
District Subbasins
Hollister Urban Area
June 2011
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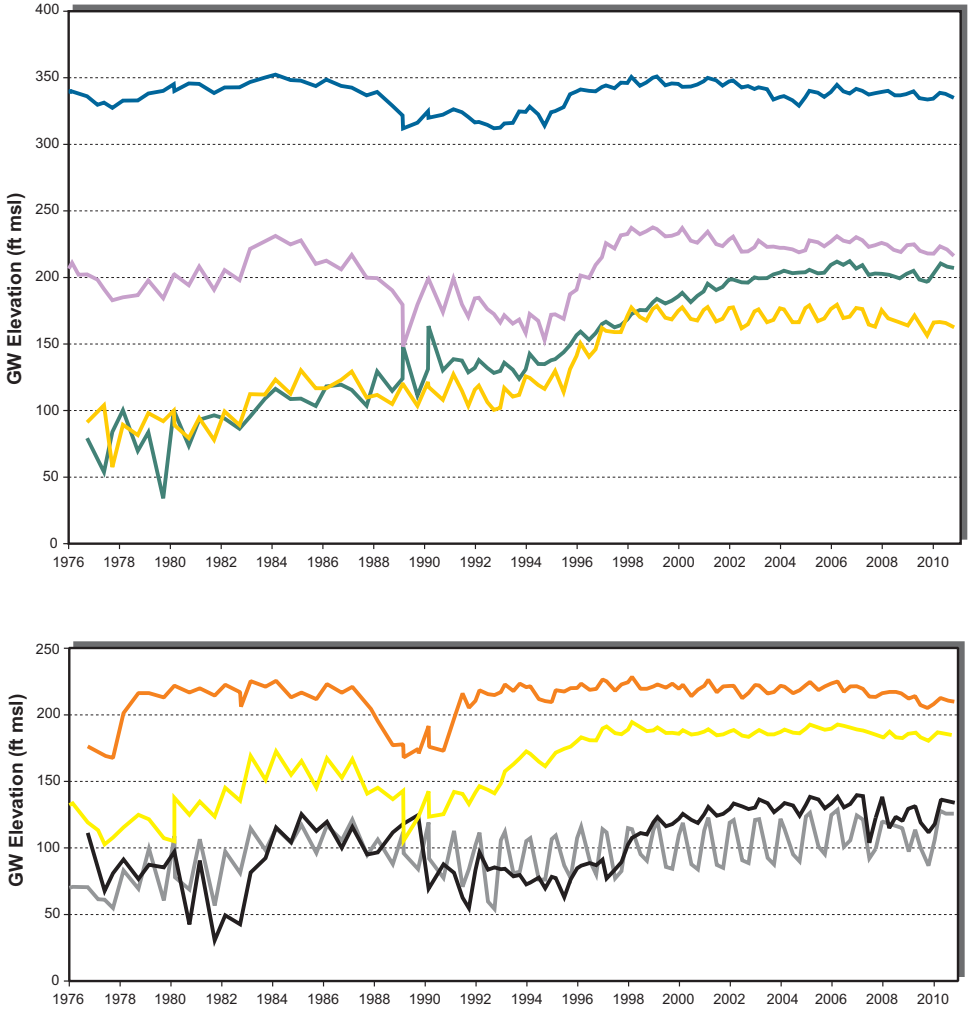
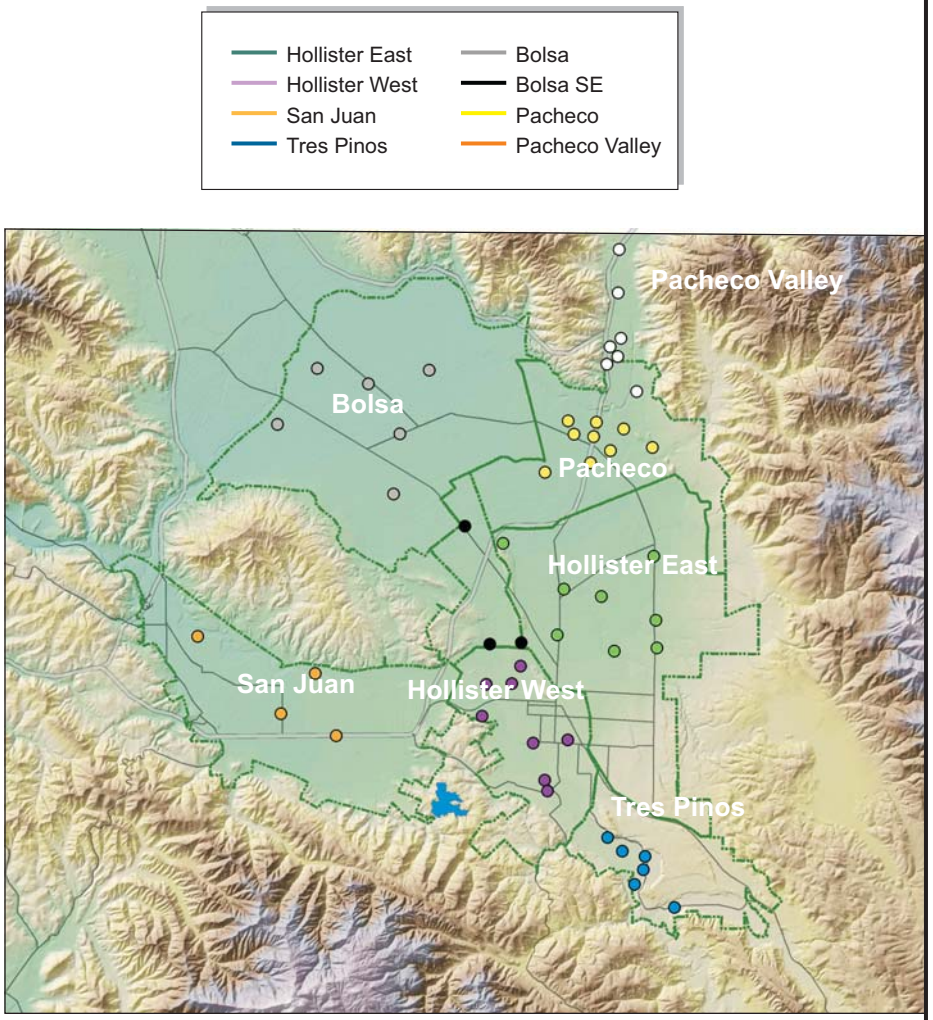
Figure 4-2
Subbasins





June 2011	**Figure 4-3 Hydrographs of Key Wells**
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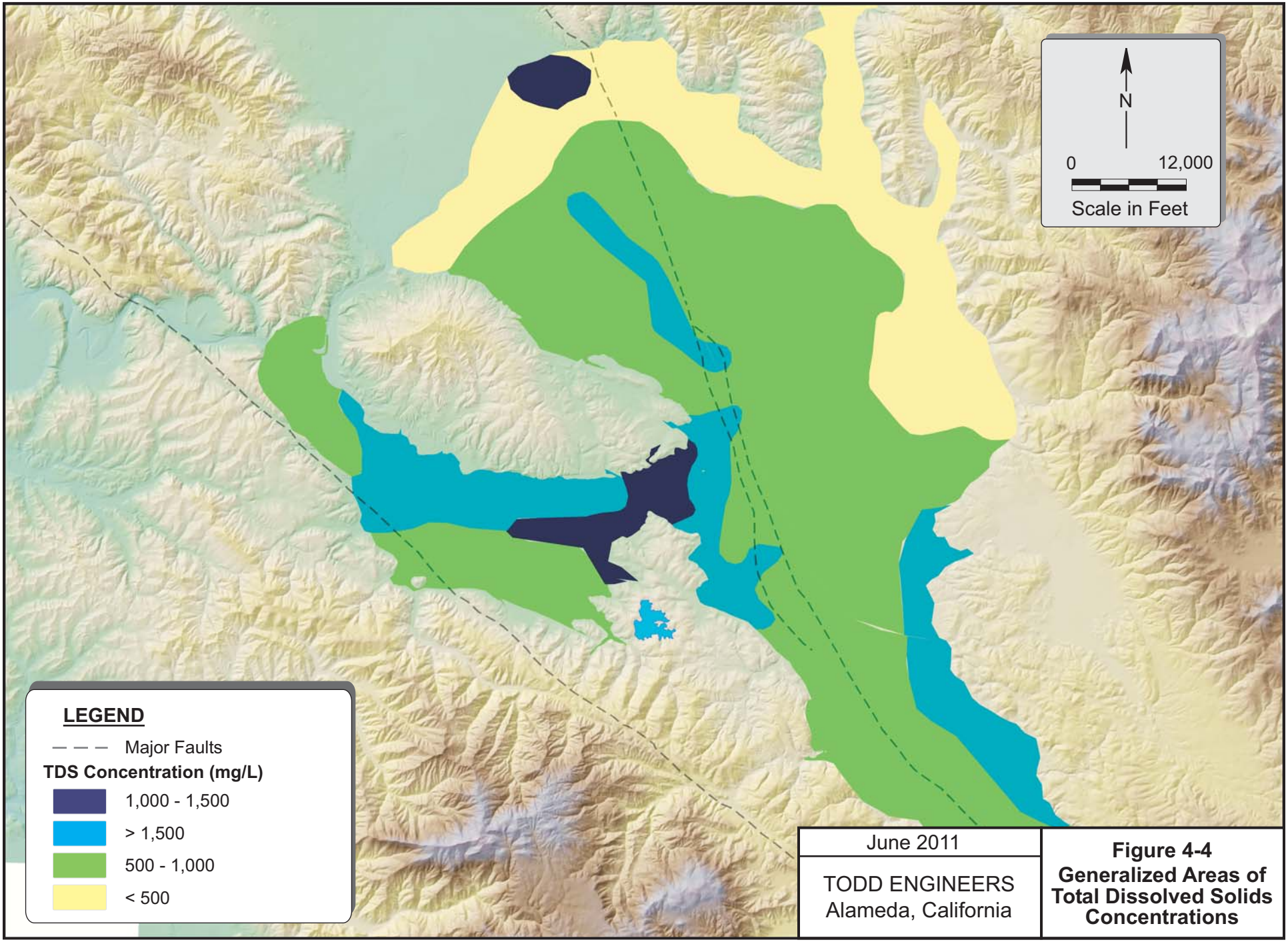

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Figure 4-4
Generalized Areas of Total Dissolved Solids Concentrations

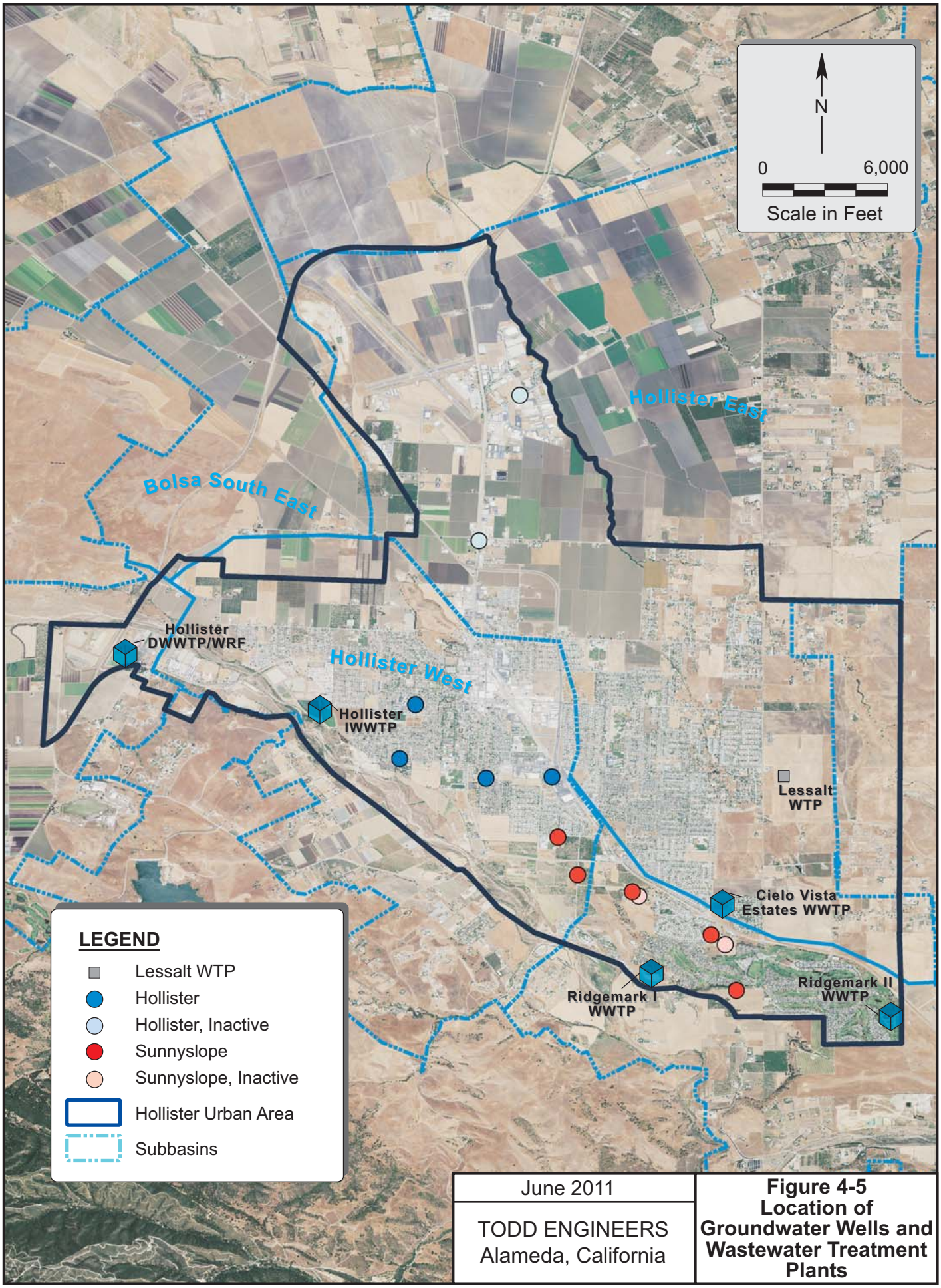

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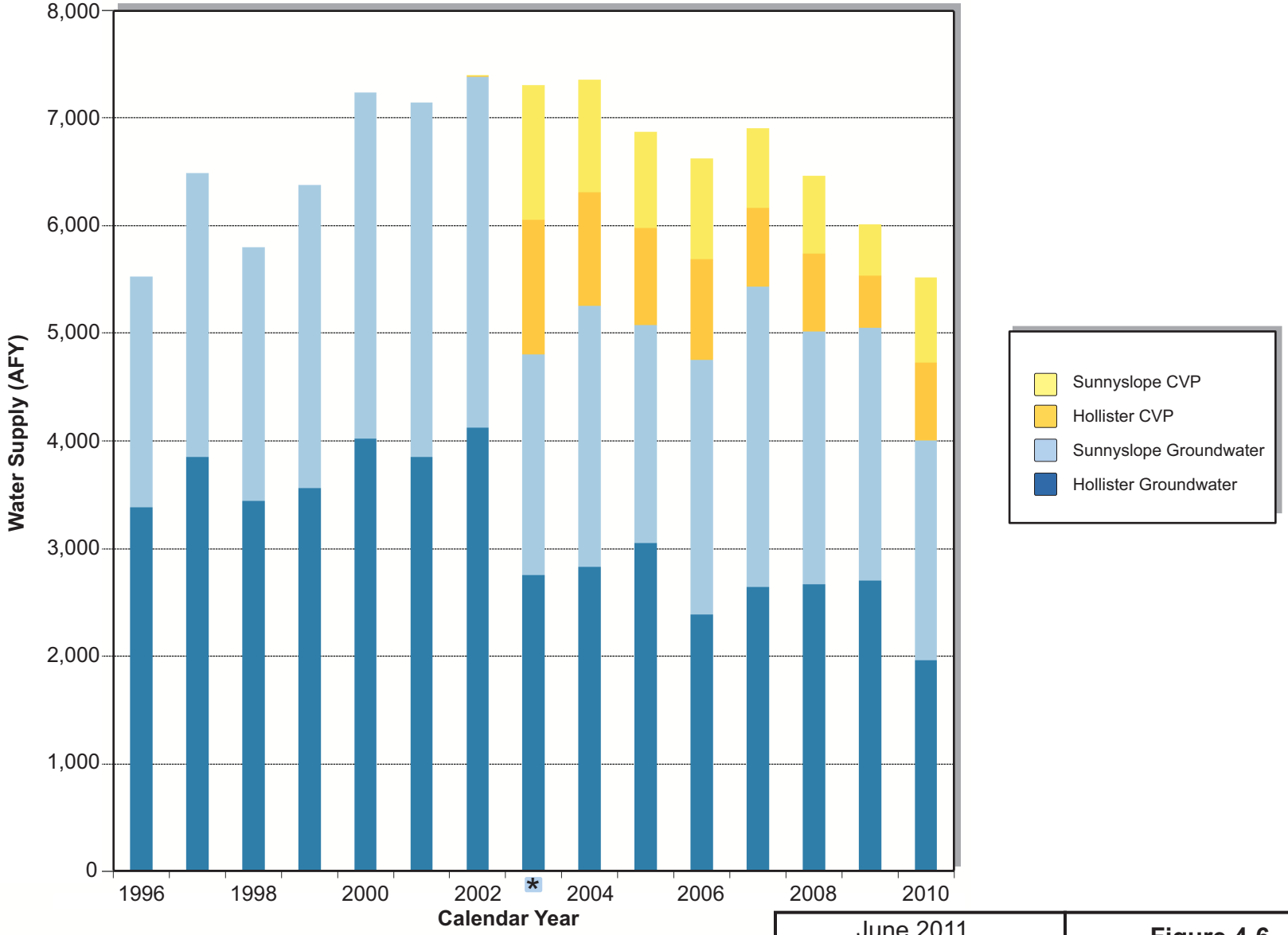
Figure 4-5
Location of Groundwater Wells and Wastewater Treatment Plants



* Lessalt WTP began operation in 2003.

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Figure 4-6
Historic and Current Supply by Source Type

5. WATER SUPPLY RELIABILITYAND WATER SHORTAGE CONTINGENCY PLANNING

5.1 RELIABILITY OF WATER SUPPLY

The California Urban Water Management Planning Act requires that each water supplier provide an assessment of the reliability of its water supply during normal, dry, and multiple dry years. This section considers the impact on water supplies during a single extreme dry year and a multiple dry year period. In addition, a catastrophic water shortage could also occur, for example, as a result of earthquake damage, regional power outage, or water quality emergency. This section presents the response to potential water shortages for Hollister, Sunnyslope, and the District, including catastrophic water supply interruption and drought. **Table 5-1** shows the base years selected to define average, single-dry year, and multiple-dry year period.

5.1.1 AVERAGE CONDITIONS

Rainfall data have been collected monthly in the Hollister area since 1875. Precipitation and other weather data have been collected from a California Irrigation Management Information System (CIMIS) station located by the District office in Hollister since June 1994 (Station #126).

Average conditions are defined by the UWMP guidebook as “median runoff over the previous 30 years or more.” Runoff varies over the area and depends on many variables including impervious surfaces, slope, soil type, land use, and antecedent soil moisture conditions. For the purposes of drought planning, rainfall is used as an indicator of dry and wet years. The average rainfall from 1875-2010 was 13.0 inches in Hollister.

Rainfall in 1986, 1992, 2003, and 2004 was about average. For the purposes of this UWMP, 2004 is selected as the typical average year because the most recent year is representative of current basin operations.

5.1.2 SINGLE-DRY YEAR

DWR guidelines suggest a single dry year should be the lowest annual runoff since water-year beginning 1903. The calendar year with the lowest annual rainfall was 1953, 5.2 inches. The second lowest calendar year was 2007, 6.4 inches. Because CVP imports, beginning in 1983, have significantly changed the way the groundwater basin is managed, the later dry year of 2007 was selected to represent a single dry year. Selecting a more recent year allows for the use of data documenting what actually happened under such conditions.

5.1.3 MULTIPLE- DRY YEAR PERIOD

A multiple-dry year period is defined as the lowest average runoff for a consecutive multiple year period (three or more years) for a watershed since 1903. In the HUA, the two lowest three year period occurred in 1988-1990 when rainfall averaged 8.0 in/year and 2007-2009 when rainfall averaged 8.3 in/yr.

In May 2007, the U.S. District Court in Fresno ruled that the existing 2005 biological opinion for Delta smelt (issued by the U.S. Fish and Wildlife Service) was not in compliance with the Endangered Species Act. Similar rulings for other fish species followed. The biological opinion guides pumping operations for the CVP (and State Water Project) in the Delta with the intent of doing no harm to the endangered Delta. As a result of this ruling, the Court also ordered interim actions to protect the smelt including reductions of water supply from the Delta (the source of the CVP imported water. Since that time, CVP allocations have been affected by the ruling and they will continue to be affected. As with the single dry year, the more recent multiple-dry year period (2007-2009) is more indicative of future CVP allocations and how the HUA would response in a future similar drought.

5.2 FACTORS IN WATER SUPPLY RELIABILITY

Many factors could result in inconsistency of supply and shortages, including legal, environmental, water quality, climatic, or a combination or multiple of these. **Table 5-2** lists the sources of water supply to the HUA and the potential factors that could reduce supply. Each is discussed below. The HUA will have three major sources of water supply in the future. Factors affecting surface water supply from the CVP include environmental and climatic variations. The groundwater basin has had a recent history of consistent supply, but may be affected by climatic variations, poor water quality, natural disasters, and regional power outages. The potential uses of recycled water will rely on the water quality of the source and legal/environmental constraints on its use.

Hollister, Sunnyslope, and the District are preparing for these threats to water supply through their portfolio of supplies, improvement of their facilities (e.g., treatment plant expansion and groundwater banking), and through demand management like the Water Shortage Plan (discussed in the next section). The major threats to water supply are discussed here briefly.

5.2.1 LEGAL

The Hollister basin has not been adjudicated, so specific groundwater rights have not been quantified. Although the possibility exists that adjudication proceedings could be initiated, the success of local groundwater management activities with stakeholder involvement reduces the likelihood that such lengthy and costly legal action will occur.

Imported water is secured for the future through contracts that include provisions for reductions in water supply. Such interruption of imported water would induce additional groundwater pumping that, depending on the magnitude and persistence of the interruption, could reduce groundwater storage and affect the reliability of the groundwater supply.

The collection, treatment, and disposal of wastewater and recycled water uses are governed by the MOUs between the County, the District, Hollister, and Sunnyslope, and regulatory requirements. The local parties have undertaken a coordinated effort to plan water supply and wastewater strategies for the HUA.

5.2.2 ENVIRONMENTAL

The most likely environmental factors affecting HUA water supply would be reductions to CVP imports due to concerns over endangered species in the Delta. The potential uses of recycled water may be limited by environmental concerns. Potential uses will need to be in compliance with policies set by the Regional Water Control Board and other agencies. Other environmental concerns could include substantially increased pumping from other groundwater basin users resulting in basin overdraft.

DELTA PUMPING RESTRICTIONS

The Sacramento-San Joaquin Delta, at the confluence of the Sacramento and San Joaquin rivers, is a key component to the state's water system (DWR 2009b). Much of the water that feeds the State Water Project and Central Valley Project flows through the delta. The Delta is also home to a sensitive ecosystem with several federally listed threatened species (San José 2008). Balancing the needs of California's water supply with those of the environment has been a challenge for the State of California and DWR.

In 2007, pumping from the Delta for water supply was limited by a federal court to protect the Delta Smelt, a federally listed threatened species. Further restrictions have been imposed to protect other fish species, including the Longfin Smelt and Chinook salmon (San José 2008). These pumping limits directly affect the amount of CVP imported water available to the HUA and other San Benito County users.

The State of California and DWR are currently working to "avert an ecological disaster and ensure reliable water supplies for Californians now and in the future". Former governor Schwarzenegger appointed a Delta Vision Blue Ribbon Task Force, which produced a final document with recommendations in January 2008. DWR also recommended strategies for the future of the Delta in its Water Plan Update 2005. In addition, the DWR is currently working on the Bay-Delta Conservation Plan (BDCP) environmental documents. These documents focus on both water supply reliability and the recovery of listed species and examine alternatives to ensure the success of both (DWR 2009b).

In December 2010, a U.S. District Court Judge overturned major portions of a plan, known as the biological opinion, developed by U.S. Fish and Wildlife Service to protect the Delta Smelt by reducing pumping from users like the CVP. The plan was overturned on the basis that restrictions on Delta pumping were not adequately justified. U.S. Fish and Wildlife Service is currently reconsidering the biological opinion and the effect of this decision on future CVP supplies is currently uncertain (ACWA 2010).

POTENTIAL FOR OVERDRAFT

Currently, groundwater levels in the Zone 6 portion of the basin are at or near historic highs. Based on these water levels and the stable management of the basin, overdraft is unlikely to occur in the near future. Future growth is expected to be focused near the urban centers of Hollister and Sunnyslope

within the HUA. Pumping from other users in the HUA subbasins is not expected to increase significantly.

5.2.3 WATER QUALITY

Water samples from the municipal wells are monitored for various water quality constituents. If these constituents are detected at concentrations higher than the drinking water standard or maximum concentration limit (MCL) set by the U.S. Environmental Protection Agency (USEPA) or the DPH, the well may be taken offline. In the past, municipal wells have been taken offline as a result of high nitrate concentrations. Although high nitrate concentrations can be treated, removal of wells from the system and fitting for treatment technology may temporarily impact the system and affect the cost of supply.

As discussed in the supply section, the groundwater basin is highly mineralized and the relative poor water quality may limit the uses of groundwater for some uses. The HUA is taking steps to improve water quality of the groundwater supply. At this time there are no immediate threats to the groundwater supply from water quality sources. This is reflected in **Table 5-3** that shows the projected impacts on water supply from water quality issues.

As with groundwater, the water quality of recycled water may also limit its potential uses. Current recycled water has high concentrations of TDS. The Master Plan includes procedures by which the quality of recycled water can be improved over time. The changing quality of recycled water was taken into consideration in the projection of future use.

5.2.4 CLIMATIC

The climatic events most likely to affect water supply are droughts, which are addressed in other sections of this report by examining historical droughts and considering their impact on current and future water supply and demand. However, future climate change—and specifically global warming—brings additional uncertainty to water supply management. It is notable that five of the six extreme drought years have occurred within the past 26 years, suggesting greater climatic variability in recent decades.

DROUGHT

Recorded droughts have been sufficiently intense and prolonged to temporarily affect groundwater levels in the basin, but have not affected the long-term consistency of supply. However, paleoclimatic data indicate that extreme prolonged droughts have occurred in prehistoric California and current climate research indicates that extreme drought may occur more frequently with climate change. This is discussed in more detail below.

As reported in past UWMPs, basic review of groundwater hydrographs for wells in the basin suggested that one or even three consecutive extreme dry years did not have a discernable impact on groundwater levels.

GLOBAL CLIMATE CHANGE

Global climate change represents a serious threat to water supply and the total impact is not fully understood or quantified. According to the Intergovernmental Panel on Climate Change, global warming could significantly alter California's hydrologic cycles and water supply. These impacts could include decreased Sierra snowpack, increased temperatures, more severe droughts, sea level rise, and increased floods. Climate models indicate that precipitation as rainfall is expected to increase as snowfall decreases over the Sierra Nevada and Cascade mountain ranges (San José August 2008). Sierra snowpack is expected to be reduced by 25 percent by 2050 (DWR 2007). This reduction directly impacts the volume of imported water sources available for San Benito County. Sierra snowmelt feeds rivers that flow to the Delta, the source of CVP imported water.

Climate change may also increase regional temperatures and cause more variable weather patterns. The minimum daily temperature in California has increased over one degree Fahrenheit and continues to rise (DWR 2009a). In addition to decreasing snowpack, these increased temperatures may also increase water demand. Higher temperatures could increase water demand throughout the state through increased agricultural irrigation and in the HUA service areas through increased outdoor residential and commercial irrigation. Changing weather patterns could cause more severe flooding and longer droughts.

The Sacramento-San Joaquin Delta is at risk from climate change. More severe flooding and a rising sea level threaten the water ways that serve as a vital link in the state's water system. Additional threats to water supply and the Delta are discussed below.

The State of California and DWR in particular are working to reduce the effects of climate change through reduction of emissions and strategies to address the impacts of climate change. The State of California plans to reduce its impact on climate change through recent legislation such as AB 32, which called for a reduction in greenhouse gas emissions. DWR voluntarily joined the California Climate Action Registry, a tool to track and report emissions. DWR is also working to add more clean and renewable energy resources to its power portfolio and to reduce its carbon footprint. To address the impacts of climate change, DWR has included an extensive discussion of the topic in the state's Water Plan Update 2005 and published 2009 California Climate Adaptation Strategy. The 2009 report summarizes climate change threats and ways to manage those threats. In addition, DWR has developed strategies to address impacts including increased monitoring of climatologic and water resource conditions, reduction of greenhouse gas emissions from water management activities, studying the combined effects of increased atmospheric carbon dioxide and increased temperature (to predict future water demand), and adaptation of statewide water management systems by incorporating more flexibility (DWR 2009a).

5.2.5 CATASTROPHIC WATER SHORTAGE

The Urban Water Management Planning Act requires that water purveyors describe actions to be taken in the event of catastrophic water supply interruption, such as earthquake and regional power outage. Regional power outages represent a potential interruption in water supply.

REGIONAL POWER OUTAGE

Power outages occur in the HUA especially during the summer when water demands are at their peak. These power outages may last up to two hours or longer. To ensure that the water system is capable of providing an adequate level of service during power outages, standby power is required. Hollister Wells No. 3, 4 and 5 are equipped with standby power. Hollister has portable generators to supply emergency power the other active wells (HDR 2008). Sunnyslope also has portable generators at all potable well sites, wastewater pump stations, and their wastewater treatment plant.

NATURAL DISASTERS

Disasters such as earthquakes could threaten water delivery infrastructure. The wholesalers that provide HUA with water supply are taking steps to ensure water supply reliability. USBR is responsible for about 370 storage dams and dikes that form a significant part of the water resources infrastructure for the western United States. As the owner of these facilities, USBR is committed to providing the public and the environment with adequate protection from the risks inherent to collecting and storing large volumes of water for later distribution and/or release (USBR 2011). The District routinely monitors the conditions of their two dams used for both water supply and flood prevention. The City of Hollister, San Benito County, and the District each have an emergency response plan that provides plans and tools to deal with natural disasters (see section 5.3.3).

5.3 WATER SHORTAGE CONTINGENCY PLANNING

The District, the City, and Sunnyslope have all passed ordinances/resolutions to address shortages in water supply. As HUA agencies, they have developed a water shortage plan that details how to reduce demand in the event of a water supply shortage. In addition, Hollister and the District have prepared Water Shortage Emergency Response Plans to assist in planning and managing supply disruption due to natural disaster. These are discussed in greater detail below and included in **Appendices F and G**.

5.3.1 HUA WATER WASTE ORDINANCES

Hollister and Sunnyslope have each approved water conservation ordinances to reduce water waste. The ordinances were originally created as a response to the multiple dry years of the early 1990's but have continued to support sustainable water supply. Hollister Ordinance Number 755 and Sunnyslope Ordinance Number 45 prohibit several water wasting activities and are included as **Appendix F.** These are in effect at all times and include:

- Indiscriminate or excessive water use, which results in water waste.
- Washing of cars, buildings, or exterior surfaces without the use of a quick-acting, positive shut-off nozzle.

- Use of potable water to irrigate turf, lawns, gardens, or ornamental landscaping between 9:00 a.m. and 5:00 p.m. by means other than drip irrigation or hand watering with a quick-acting, positive shut-off nozzle.
- Use of potable water to wash sidewalks or roadways when the use of airblowers or sweeping would provide a reasonable alternative.
- Allowing water waste caused by easily correctable leaks, breaks, or malfunctions, after a reasonable time within which to correct the problem.
- Operation of decorative fountains, even if they use recirculating systems.
- Use of water for construction purposes, such as consolidation of backfill, except when no other method can be used.
- Restaurant water service unless upon customer request.
- Hydrant flushing, except where required for public health and safety.
- Refilling existing private pools, except to maintain water levels.

San Benito County has also created a Water Conservation Plan (also included in **Appendix F**). The plan prohibits certain water wasting uses, limits others, creates guidelines for plumbing fixtures in new developments, and encourages water conservation.

5.3.2 HUA WATER SHORTAGE RESPONSE

The HUA agencies have developed a water shortage response plan in the event of supply interpretation. The plan includes a four-stage rationing plan with voluntary and mandatory rationing depending on the severity and duration of the water supply shortage. This water shortage response is included as part of the Sunnyslope No Water Ordinance No. 45 and was first documented for the HUA as part of the 2000 UWMP. The District adopted the Sunnyslope ordinance when it accepted the 2000 UWMP.

STAGES OF ACTION

Table 5-4 shows the four stages of action based on a series of triggers. The triggers are defined in detail to incorporate current supply, future supply, and water supply lost due to water quality issues or natural disasters. In addition, stages may be triggered based on qualitative methods such as declaration of below “normal” years and excessive groundwater pumping.

The first stage occurs when current supply is reduce by up to 15 percent and uses voluntary rationing to reach the demand reduction goal of 15 percent. The other stages operate in a similar manner using mandatory rationing to reach the stage goal.

WATER DEMAND REDUCTION

Table 5-5 shows the methods to reduce demand in the event of a water supply shortage. There are three main categories: voluntary water conservation, mandatory prohibitions, and consumption reduction methods. Water conservation occurs at all stages and encourages retail customers to be more efficient with their water use. Water conservation also includes the water waste ordinances passed by

Hollister and Sunnyslope. Mandatory prohibitions come into effect for more severe supply shortages and include restrictions on building permits, reducing flow in pipelines, and restricting water supply for priority uses. Consumption reduction methods were established by the HUA entities to reduce water use by a specified percent of "normal" use by total usage, per capita usage, or usage on a per acre basis based on use type and stage of action.

The level of total usage reduction would be equal to the demand reduction goal of the stage. For example, in Stage I, a 15 percent reduction of total usage would be required from all users. In Stage II through IV, residential users would be limited to a per capita usage defined by the retailer and commercial, industrial, and institutional customers would be required to reduce consumption by 25 to 50 percent (depending on the stage).

PENALTIES AND CHARGES FOR VIOLATION

Any customer violating the regulations and restrictions on water use set forth in the "No Waste" Ordinances will receive a written warning for the first violation. On the second violation, the customer will receive a second written warning and the retailer may install a flow-restrictor. If a flow-restrictor is placed, the violator will pay the cost of installation and removal. Any willful violation occurring subsequent to the issuance of the second written warning will constitute a misdemeanor and may be referred to the District Attorney's office for prosecution pursuant. Misdemeanor convictions could include imprisonment and/or fines. The length of time for imprisonment and the magnitude of the fine vary between Hollister and Sunnyslope. If water service is disconnected, it will be restored only upon payment of a reconnection charge. These penalties apply at any time but are likely to be more closely adhered to during drought periods.

Sunnyslope's "No Waste" Ordinance details additional penalties that may be enforced by a future ordinance in the event that water waste prohibitions do not adequately reduce demand. Such ordinance would impose a use/penalty fee upon the water user, calculated at the rate of ($.30 per gallon), to all water users who use water in excess of the ration.

MECHANISM FOR DETERMINING REDUCTIONS

Under normal water supply conditions, potable water production values for Hollister and Sunnyslope are recorded daily and reported monthly to the Water Supervisor. During a Stage I or Stage II water shortage, daily production figures will be reported to the Water Supervisor of each agency. The Supervisor will compare the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports will be forwarded respectively to the General Manager of Sunnyslope and the Public Works Director at the City of Hollister. During a Stage III or Stage IV water shortage, the daily production report will be provided to the General or City Manager of each agency. In Stages I through IV, monthly reports will be sent to the City Council and the Sunnyslope Board of Directors. If reduction goals are not met, the respective managers will notify the governing board of each agency that additional action is required.

IMPACT ON REVENUES AND EXPENSES

All surplus revenues that the District, Hollister, and Sunnyslope collect are currently deposited in Rate Stabilization Funds, conservation funds, recycling funds, and other capital improvement funds. The agencies have estimated projected ranges of water sales by shortage stage. This allows each entity to quantify the impact of each level of shortage on projected revenues and expenditures.

Based on this water revenue analysis, the entities determined rate increases would be needed in Stage II through IV. In Stage I, no additional water purchases and no rate increases are required. For stages II, III, and IV, a rate increase of 25, 50, and 100 percent would be needed, respectively.

5.3.3 WATER SHORTAGE EMERGENCY RESPONSE PLAN

Hollister, Sunnyslope, and the District also have water shortage emergency response plans in place. Hollister has general emergency plans that include their water supply. Sunnyslope and the City have general Emergency Disaster Response Plan as well as a Power Failure Emergency Response Plans. The plans also include steps to be taken during and after a disaster and the use of the Standard Emergency Management System (SEMS). Copies of these plans are included as **Appendix G**. The District relies on their current Water User's Handbook and County emergency plans.

These plans develop the procedures for each agency before and during a disruption of water supply during a natural disaster. In 1999, the California Emergency Management Agency (Cal EMA) published *Emergency Planning Guidance for Public and Private Water Utilities* to improve coordination among water utilities and other emergency response agencies and to assist water utilities in developing or revising emergency plans and procedures. It is recommended that ongoing coordination between the City, Sunnyslope, and the District take place to ensure these water supply emergency plans remain consistent and meet the goals provided in the guidance documents. With these plans in place, the retailers in the HUA can adequately handle a water supply shortage due to a natural disaster or another interruption of the water supply (Cal EMA 1999).

5.4 WATER SUPPLY RELIABILITY IN NORMAL AND DRY YEARS

5.4.1 IMPACTS TO WATER SUPPY

The HUA currently relies on groundwater and CVP imported water for its water supply. Both of these supplies will be impacted during dry years.

In response to an over commitment of CVP supplies, droughts, and supply limitations imposed by environmental, regulatory, and legal constraints in the Delta, the USB R has instituted its Shortage Policy in 3 of the past 6 years. The Shortage Policy provides that the allocation of M&I CVP water will be based on a contractor's historical use of CVP M&I water, as adjusted for growth, extraordinary conservation measures, and non-CVP water. Under the Shortage Policy, the District's historical M&I usage is currently

set at 4,026 AFY compared to its CVP M&I contract amount of 8,250 AFY. The historical M&I usage is part of the District's contract with USBR and could be increased in future negotiations.

Table 5-6 shows the supply reliability of each source based on current and historical conditions. In the past, CVP imports were reduced consistent with the Water Shortage Policy. However, the full allocation of M&I supplies were not used by Hollister and Sunnyslope due to lack of treatment facilities. CVP imports are currently limited by treatment capacity for M&I use rather than allocation amount. The current treatment capacity of Lessalt WTP is approximately 1.6 mgd (1,800 AFY). Current projects, discussed in Section 4, are underway to ensure adequate treatment capacity to maximize CVP allocations. Total surface water treatment capacity is expected to increase to 9 mgd (10,081 AFY) by 2015.

Increased treatment capacity would allow for the full use of the M&I CVP contract for imported water to be used by Hollister and Sunnyslope, when available. This increased delivery would be significantly affected by the CVP water shortage policy. **Table 5-7** shows the CVP allocations as percent of historical use for agricultural and M&I uses respectively for 2007 through 2009. The allocations are reported by the San Luis & Delta-Mendota Water Authority (SLDMWA) for the USBR water year (March-February). **Table 5-7** also shows the total M&I volume available based on the historic use of 4,026 AFY. In 2007, the District was eligible to purchase 3,020 AF for its M&I customers, but by the end of the multiple dry year period (2009), the District was only eligible to purchase 2,416 AF.

The increased treatment capacity and the CVP Water Shortage policy reductions in allocations are reflected in future supply reliability of each source, **Table 5-8**. The volume of CVP in a normal year is equal to the total contract volume available to the District. The volume of CVP imported water available in a future single dry year and multiple dry year periods were assumed to be equal to the actual 2007-2009 allocations; currently, the limiting factor remains treatment capacity.

In **Table 5-6**, the volume of available groundwater is not reduced from the sustainable yield (discussed in Section 4) of 9,950 AFY. The yield available to Hollister and Sunnyslope is based on the sustainable yield of the three groundwater subbasins currently supplying the HUA less the groundwater pumped by other users in the area. Actual total pumping by Hollister, Sunnyslope, and other users in the three HUA subbasins ranged from a high of 16,600 AFY in the nineties to around 10,000 AFY in recent years. Since the actual pumping has been less than that of the sustainable yield in recent years, groundwater levels remain constant. This is shown through examination of selected hydrographs (**Figure 4-3**). Water levels in Hollister East and Tres Pinos remained steady. Water levels in Hollister West continued their long term trend slightly decreasing from historical highs in the late nineties. As reported in past UWMPs, basic review of groundwater hydrographs for wells in the basin suggest that one or even three consecutive extreme dry years did not have a discernable impact on groundwater levels.

The level of recycled water is based on 2010 values, 203 AF. Recycled water is also not reduced in **Table 5-6** because the source is not affected significantly by year to year hydrological variability. However, a significant long-term increase of groundwater use (for example due to low CVP allocation and assuming no wellhead demineralization) could affect wastewater quality and thus the quality of the recycled

water. A decrease in recycled water quality would affect its desirability as a supply for some sensitive uses.

Table 5-9 documents water supply conditions if the next three years were a dry period. Current capacity of Lessalt WTP is about 1,800 AFY. This capacity is less than the reduced allocation expected in dry years; therefore CVP supply levels are expected remain steady. The available groundwater is also expected to remain steady as documented in **Table 5-6**. In addition, recycled water remains steady in normal and dry years, as it is not affected by hydrologic variations. If the next three years are dry hydrologic conditions, the HUA will have sufficient supplies to meet demand.

Table 5-8 shows the projected supply for each water source in normal, single dry year and multiple dry year periods from 2010 through 2030 in five year intervals. For 2010, actual water use values are used. Future CVP allocations in normal years are shown as the cContract amount, **Table 4-8,** and dry year reductions are based on the allocations from 2007 through 2009 as shown on **Table 5-7**. The volume of groundwater required by the HUA is dependent on the CVP allocation. Groundwater quality in the area is relatively poor and users prefer the higher quality CVP water. All of the CVP allocation is expected to be used by HUA and groundwater is expected to be used as a supplemental source. Groundwater volumes in **Table 5-8** reflect this water preference and are checked to ensure groundwater pumping does not exceed yield. Groundwater yield is the sustainable yield of the three subbasins (Hollister East, Hollister, West, and Tres Pinos) less the pumping from other users. Available groundwater for the HUA may increase with the development of the North County Groundwater Banking Project. By 2015, the North County Groundwater Bank could produce 2,000 to 5,000 AFY of groundwater from the Pacheco subbasin. As with current and historic conditions, the availability of groundwater is not expected to decrease over a single dry year or multiple dry year periods. Recycled water use is based on the landscape and golf course irrigations projections in **Table 4-5** and is also not reduced in dry times.

5.4.2 COMPARISON OF SUPPLY AND DEMAND

Table 5-10 compares supply and demand in a normal year. The water supply as documented in **Table 5-8** is compared to the future demand in **Tables 3-9, 3-10, and 3-11.** CVP has relatively higher water quality than groundwater and is the preferred source in the HUA. Groundwater banking, urban well demineralization, and other future projects will serve to improve groundwater quality in the future. For future supplies in **Table 5-8**, it is assumed the CVP allocation is the primary water supply and groundwater will be pumped as needed to meet demand. Unaccounted for water is included in the total demand as 7 percent of projected uses.

Table 5-11 and **Table 5-12** provide a comparison of supply and demand in a single dry year and multiple dry year periods, respectively. Water supply is expected to decrease in dry years. During these dry years, the HUA Water Contingency Plan could be triggered to decrease water demand to meet the reduced supply, as discussed in Section 5.3.2. Based on the projected future supply in **Table 5-8**, supply could be reduced between 18 and 21 percent, triggering a Stage II response. Under Stage II, the demand reduction goal could be up to 25 percent. However, because of the adequate groundwater supply, it is unlikely the HUA will enforce these demand reduction measures. A dry year reduction is assumed to be

0 percent, in order to examine the maximum volume of groundwater that could be pumped in dry years. In dry years, the preferred CVP water source will be reduced and groundwater use will increase to meet demand. For example, in 2030, groundwater pumping for a normal year, single dry year and the most severe year of a multiple dry year period are shown in **Table 5-8** and expected to be 3,902 AF, 7,608 AF and 8,212 AF, respectively. In all cases the total pumping is within the sustainable yield for the HUA without the need to enforce the demand reduction goal.

Table 5-1
Basis of Water Year Data

Water Year Type	Base Years
Average Water Year	2004
Single-Dry Water Year	2007
Multiple-Dry Water Years	2007-2009

Table 5-2
Factors Resulting in Inconsistency of Supply

Water supply sources	Legal	Environmental	Water Quality	Climatic
CVP Imported Water				x
Groundwater			x	x
Recycled Water		x	x	

Table 5-3
Water Quality
Current and Projected Water Supply Impacts (AFY)

Water source	Description of condition	2010	2015	2020	2025	2030
CVP Imported Water	No issues	0	0	0	0	0
Groundwater	Highly mineralized	0	0	0	0	0
Recycled Water	Highly mineralized	0	0	0	0	0

Table 5-4
Water Shortage Contingency
Rationing Stages to Address Water Supply Shortages

Stage	Triggers			Goal	Action
	Percent Shortage - Current Supply	Percent Shortage - Future Supply	Percent Shortage - Water Quality	Percent Demand Reduction	Type of Rationing
I	Up to 15	20%	10%	15%	Voluntary
II	15 to 25	25%	20%	25%	Mandatory
III	25 to 35	35%	30%	35%	Mandatory
IV	35 to 50	50%	40%	50+%	Mandatory

Table 5-5
Water Shortage Contingency
Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Water Conservation	
Demand Reduction Program	All Stages
Use Prohibitions (Water Water Ordinances)	All Stages
Water Shortage Pricing	All Stages
Plumbing Fixture Replacement	All Stages
Incentives to Reduce Consumption	All Stages
Education Programs	All Stages
Mandatory Prohibitions	
Restrict Building Permits	II, III, IV
Reduce Pressure in Water Lines	III, IV
Restrict for Only Priority Uses	III, IV
Flow Restrictions	IV
Consumption Reduction Methods	
Voluntary Rationing	I
Mand atory Rationing	II, III, IV
Percentage Reduction by Customer Type	II, III, IV
Per Capita Allotment by Customer Type	IV

Table 5-6 Supply Reliability Current and Historic Conditions (AFY)					
	Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
CVP Imported Water [1]	1,800	1,800	1,800	1,800	1,800
Groundwater [2]	9,950	9,950	9,950	9,950	9,950
Recycled Water [3]	203	203	203	203	203
Percent of Average/Normal Year:	100	100	100	100	100

[1] *Average year based on current WTP capacity, dry year allocations of CVP have been greater than capacity.*

[2] *Based on sustainable yield of subbasins less groundwater pumping from other users.*

[3] *Based on 2010 usage.*

Table 5-7 CVP Imported Water Reliability Historic Conditions			
Water Year[1]	**Agriculture Allocation (%)**	**M&I Allocation[2] (%)**	**M&I Volume (AFY)[2]**
2007	50	75	3,020
2008	40	75	3,020
2009	10	60	2,416
Average	33	70	2,818

[1] *Based on USBR water year (March - February).*

[2] *Based on Water Shortage Policy Historic Use (4,026 AFY).*

Table 5-8 Supply Reliability Future Water Sources (AFY)					
Water Supply Sources	**2010**	**2015**	**2020**	**2025**	**2030**
Normal Year					
CVP Imported Water [1]	1,510	8,250	8,250	8,250	8,250
Groundwater [2]	4,004	0	0	1,159	2,377
Recycled Water [3]	203	394	567	1,170	1,170
Total	5,717	8,644	8,817	10,579	11,797
Single Dry Year					
CVP Imported Water [1]	1,510	3,020	3,020	3,020	3,020
Groundwater [2]	4,004	4,454	4,627	6,389	7,608
Recycled Water [3]	203	1,170	1,170	1,170	1,170
Total	5,717	8,644	8,817	10,579	11,798
Percent of Normal	100%	100%	100%	100%	100%
Multiple Dry Year Period -Years 1 and 2					
CVP Imported Water [1]	1,510	3,020	3,020	3,020	3,020
Groundwater [2]	4,004	4,454	4,627	6,389	7,608
Recycled Water [3]	203	1,170	1,170	1,170	1,170
Total	5,717	8,644	8,817	10,579	11,798
Percent of Normal	100%	100%	100%	100%	100%
Multiple Dry Year Period -Year 3					
CVP Imported Water [1]	1,510	2,416	2,416	2,416	2,416
Groundwater [2]	4,004	5,058	5,231	6,993	8,212
Recycled Water [3]	203	1,170	1,170	1,170	1,170
Total	5,717	8,644	8,817	10,579	11,798
Percent of Normal	100%	100%	100%	100%	100%

[1] 2010 based on actual usage as the allocation in dry years was larger than the current capacity. 2015-2030 average year based on future WTP capacity, dry year allocations of CVP has based on actual allocations 2007-2009.

[2] 2010 based on pumping, 2015-2030 based on required pumping to meet demand as long as it remains below sustainable yield.

[3] Recycled water reduced to meet demand in normal years and used at full availablity during drought conditions.

Table 5-9 Supply Reliability Next Three Years (AFY)					
Water Supply Sources[1]	**Average / Normal Water Year Supply[2]**	**Single Dry Water Year Supply[2]**	**Multiple Dry Water Year Supply[2]**		
		Year 2011	**Year 2011**	**Year 2012**	**Year 2013**
CVP Imported Water [2]	1,800	1,800	1,800	1,800	1,800
Groundwater [3]	14,000	14,000	14,000	14,000	14,000
Recycled Water [4]	203	203	203	203	203
Total:	16,003	16,003	16,003	16,003	16,003
Percent of normal year:	100%	100%	100%	100%	100%

[1] *From Table 4-7.*

[2] *Average year based on future WTP capcacity, dry year allocations of CVP has been based on actual allocations 2007-2009.*

[3] *Based on sustainable yield of subbasins less groundwater pumping from other users.*

[4] *Based on projected 2010 uses.*

Table 5-10 Supply and Demand Comparison Normal Year (AFY)				
	2015	**2020**	**2025**	**2030**
Total Supply	8,644	8,817	10,579	11,797
Total Demand	8,444	8,624	10,371	11,583
Difference	200	193	208	214
Difference as % of Supply	2.3%	2.2%	2.0%	1.8%
Difference as % of Demand	2.4%	2.2%	2.0%	1.8%

Table 5-11 Supply and Demand Comparison Single Dry Year (AFY)				
	2015	**2020**	**2025**	**2030**
Total Supply	8,644	8,817	10,579	11,798
Total Demand	8,444	8,624	10,371	11,583
Demand Reduction Due to Water Shortage Contingency[1]	0%	0%	0%	0%
Drought Demand	8,444	8,624	10,371	11,583
Difference	200	193	208	214
Difference as % of Supply	2.3%	2.2%	2.0%	1.8%
Difference as % of Demand	2.4%	2.2%	2.0%	1.9%

[1] *Reduction based on Water Contingency Plan Stage II.*

Table 5-12 Supply and Demand Comparison Multiple Dry-Year Events (AFY)					
		2015	**2020**	**2025**	**2030**
Multiple Dry Years - First Year Supply	**Supply Totals**[1]	8,644	8,817	10,579	11,798
	Demand Totals[2]	8,444	8,624	10,371	11,583
	Demand Reduction Due to Water Shortage Contingency[3]	0%	0%	0%	0%
	Drought Demand	8,444	8,624	10,371	11,583
	Difference	200	193	208	214
	Difference as a Percentage of Supply	2.3%	2.2%	2.0%	1.8%
	Difference as a Percentage of Demand	2.4%	2.2%	2.0%	1.9%
Multiple Dry Years - Second Year Supply	**Supply Totals**[1]	8,644	8,817	10,579	11,798
	Demand Totals[2]	8,444	8,624	10,371	11,583
	Demand Reduction Due to Water Shortage Contingency[3]	0%	0%	0%	0%
	Drought Demand	8,444	8,624	10,371	11,583
	Difference	200	193	208	214
	Difference as a Percentage of Supply	2.3%	2.2%	2.0%	1.8%
	Difference as a Percentage of Demand	2.4%	2.2%	2.0%	1.9%
Multiple Dry Years - Third Year Supply	**Supply Totals**[1]	8,644	8,817	10,579	11,798
	Demand Totals[2]	8,444	8,624	10,371	11,583
	Demand Reduction Due to Water Shortage Contingency[3]	0%	0%	0%	0%
	Drought Demand	8,444	8,624	10,371	11,583
	Difference	200	193	208	215
	Difference as a Percentage of Supply	2.3%	2.2%	2.0%	1.8%
	Difference as a Percentage of Demand	2.4%	2.2%	2.0%	1.9%

[1] *From Table 5-9.*

[2] *From Table 3-12.*

[3] *Reduction based on Water Contingency Plan Stage II.*

6. DEMAND MANAGEMENT MEASURES

6.1 INTRODUCTION

The California Urban Water Management Planning Act requires that each water supplier provide a report describing its implementation of fourteen demand management measures (DMMs, also known as best management practices (BMPs). This section describes the current status of implementation and the planned implementation of these measures in the future. The descriptions of the programs and measures are organized to correspond to the recent grouping of measures by the California Urban Water Conservation Council (CUWCC). These grouping are:

Utility Operations Programs

- Conservation coordinator (formerly BMP 12)
- Water waste prevention (formerly BMP 13) - Programs that focus on existing users, new development, and water shortage measures
- Wholesale agency assistance programs (formerly BMP 10)
- Water loss control (formerly BMP 3)
- Metering with commodity rates (formerly BMP 4)
- Retail conservation pricing (formerly BMP 11)

Education Programs

- Public information programs (formerly BMP 7)
- School education programs (formerly BMP 8)

Residential Measures

- Residential assistance program (formerly BMPs 1 & 2)
- Landscape water survey (formerly BMP 1)
- High efficiency clothes washer (HECWs) (formerly BMP 6)
- Water sense specification toilets (formerly BMP 14)
- Water sense specifications for residential development

Commercial, Industrial, and Institutional (CII) (formerly BMP 9) – The goal of these programs is to achieve a 10 percent reduction from baseline water usage at CII accounts (focused on interior and process-related water usage).

Landscape (formerly BMP 5) - These programs apply to accounts with dedicated irrigation meters or commercial landscapes served by mixed meters.

The purpose of this section is to summarize both demand management measures that have been implemented since the 2008 UWMP and scheduled measures to be implemented in the near future. To meet the conservation targets of Senate Bill 7 and prepare for extended drought, the HUA agencies will

continue these water management activities, and explore other strategies to ensure adequate water supplies to agricultural, municipal and industrial customers.

The City of Hollister is signatory to the CUWCC MOU for urban water conservation in California. Signatory agencies agree to follow guidelines for developing, implementing and evaluating water conservation BMPs to be included in their UWMP. As a signatory to the CUWCC MOU, Hollister reports implementation of BMPs directly to the CUWCC database (http://bmp.cuwcc.org/). Although the District and Sunnyslope have not signed the MOU, they also report on BMP implementation to the CUWCC as requested by the USBR through the CVP contract agreement. Information on BMPs by the District and Sunnyslope is compiled by the WRA and entered into the CUWCC database by the WRA.

Signatories to the CUWCC MOU are required to report the status of each BMP implementation every two years. Reporting includes the status for two consecutive years. The City's data for 2009/2010 are currently being compiled and submitted to the CUWCC website. Therefore, reports are only available through 2008 for the City. In addition to the CUWCC reporting requirements, the Water Conservation Coordinator reports to the WRA during the WRA meetings, providing the status of BMP implementation, ongoing activities, and scheduled events. The WRA funds water conservation activities through contributions from Hollister, Sunnyslope, the District, and to a lesser extent the City of San Juan Bautista. **Appendix H** includes the available CUWCC BMP annual reports for the City, Sunnyslope and the District. **Table 6-1** quantifies the water savings for each DMM for both Hollister and the WRA.

6.2 UTILITY OPERATIONS PROGRAMS

6.2.1 CONSERVATION COORDINATOR (FORMERLY BMP 12)

Hollister, Sunnyslope, and the District are committed to implementing water conservation and water recycling programs. The three agencies, along with the City of San Juan Bautista, participate in the WRA of San Benito County. The WRA retains a Water Conservation Coordinator, who is a District employee, to serve the water conservation needs for the WRA members. This person's duties focus primarily on ongoing programs within the District to encourage wise water use among the agricultural community and within the Hollister Urban Area. The duties of this position (and any support staff, as necessary) include the following:

- Coordination and oversight of conservation programs and BMP implementation;
- Preparation and submittal of the CUWCC BMP Implementation reports
- Communication and promotion of water conservation issues to agency senior management;
- Coordination of agencies' conservation programs with operations and planning staff;
- Preparation of annual conservation budget;
- Attendance at Bay Area Water Conservation Coordinator Meetings with representatives from the CUWCC
- Reporting to the governing bodies of the participatory agencies on the progress of the Water Conservation Program.

As required by USBR, the WRA coordinator also enters water conservation data to the CUWCC database for Sunnyslope, the District, and San Juan Bautista. Hollister's Utility Technician, a certified and functional Conservation Practitioner, enters this information into the CUWCC's database on behalf of the City.

IMPLEMENTATION

The Conservation Coordinator will continue to oversee water conservation activities for the HUA. To gauge the effectiveness of this DMM, the conservation coordinator and Hollister staff will continue to document the number of programs, materials and attendance at water conservation activities. The benefits of a coordinator are indirect and the water savings due to this DMM cannot be quantified.

BUDGET

The total budget for the fiscal year 2009 – 2010 is $82,400 for water conservation staff costs. Each of the three agencies (Hollister, Sunnyslope, and the District) has a separate budget of $26,500, $26,500, and $28,000.

6.2.2 WATER WASTE PREVENTION (FORMERLY BMP 13)

Hollister, Sunnyslope, the District, and San Benito County have all established "No-Waste" ordinances, policies, and resolutions for their respective jurisdictions. Hollister, Sunnyslope, and the County prohibit specific water-wasting practices, such as use of potable water to wash sidewalks or roadways when a reasonable alternative is available, or washing of cars, buildings, or exterior surfaces without the use of a quick-acting, positive shut-off nozzle. The Hollister and Sunnyslope ordinances and County resolution are included in **Appendix F**. The District has a Water Users Handbook that explains each water user must take steps to control tailwater. If these policies are not followed, the District has the authority to discontinue service.

These Ordinances were passed in the early 1990's in response to the multiple year drought. Currently, no concerted enforcement of these ordinances is in effect, although customers are encouraged to follow the ordinance.

IMPLEMENTATION

The WRA handles complaints of water waste or pursues water waste violations if observed by staff. The WRA issues 'Water Waste' violation cards and follows up with letters to the violators and offers our assistance to correct the problem.

Over the period of implementation of this DMM, the WRA has seen a small but steady number of violations, 3-6 complaints a year. Since 2004, all the people contacted corrected the problem. The water savings due to this DMM cannot be quantified.

BUDGET

Enforcement costs are a part of each agency's overhead.

6.2.3 WHOLESALE AGENCY PROGRAMS

This DMM focuses on developing strong partnerships between area wholesalers and retailers. The DMM directs the wholesaler, insofar as possible to:

- Join with retail water agencies to plan, design, implement, manage, and evaluate regional conservation programs
- Provide conservation-related technical support and information to retail agencies they serve
- Operate all or part of the conservation program
- Provide reports on BMP implementation within their service area by retail water agencies that are not signatories to the MOU
- Encourage all of their retail agencies to become MOU signatories

The District is the wholesaler to Zone 6 (Northern San Benito County) for CVP imported water. Both Hollister and Sunnyslope are retailers that purchase CVP water from the District. These agencies have a strong partnership and have joined together to plan the future water supply for the HUA through this document and others, including the Master Plan. The District provides conservation support in the form of the conservation coordinator for the WRA, its financial contribution and technical support to the WRA, and reporting on BMP implementation for Sunnyslope (not a signatory to the MOU).

6.2.4 WATER LOSS CONTROL (FORMERLY BMP 3)

This DMM focuses on minimizing lost and unaccounted-for water (non-revenue water) though system leak detection and repair, and through comprehensive audits of the water production and water distribution system. A water audit is a thorough examination of the accuracy of water agency records and system control equipment. Leak detection is the systematic method of using listening equipment to survey the distribution system, identify leak sounds, and pinpoint the exact locations of hidden underground leaks so that maintenance and repair activities can be prioritized and scheduled. The overall goals of a water audit and leak detection program are to identify, quantify and verify water and revenue losses at the purveyor level. Water audits and leak detection programs help to identify inaccurate meters and to identify leaks early, before they can cause property damage or create a circumstance of legal liability.

Both Hollister and Sunnyslope own and operate leak detection equipment. Currently, there are no leak detection programs being coordinated between the District and the other agencies. The City has been actively implementing this DMM by completing a pre-screening audit on a regular basis to keep records of the total supply into their system and all metered sales. Through the pre-screening audits, the City continues to make efforts to improve their water accounting system. Additional on-going programs to

reduce unaccounted-for water include a replacement program for customer meters based on billing record analysis.

As a signatory to the CUWCC MOU, Hollister reports its estimated annual water auditing results to the CUWCC every two years. Comparisons of the Hollister's metered sales and total supply into the system show that water losses were approximately 7 percent for 2005 and less than 7 percent for 2010. As a result, a full-scale system audit has not been required since the late 1990s when the last full- scale system audit was conducted in coordination with the District.

Sunnyslope also performs pre-screening audits and maintains in-house records of monthly water purchase, metered sales, and groundwater pumping. In coordination with the District, Sunnyslope implemented a full-scale system audit in the late 1990s using an independent contractor. Since then, no significant water losses have been encountered. During 2005 and 2006, unaccounted water losses were reported to be less than 1 percent. Leaks are typically detected through water ponding on the ground. Once detected, leaks are repaired by Sunnyslope technicians.

The District is the local water wholesaler and has audited its system. The audit identified problems with the meters and systems control and monitoring practices. Efforts are currently underway to update the metering and systems control technology for the San Felipe distribution system within Zone 6.

IMPLEMENTATION

It is recommended that the City and Sunnyslope continue to conduct annual water audits and leak detection and incorporate these activities into their respective yearly operations in order to pinpoint problem areas and prioritize water main replacements. This type of approach will help identify opportunities to improve the overall system operation and billing system, and for benchmarking current conditions to track the benefits of systems improvements related to water conservation.

Both the City and Sunnyslope will coordinate and maintain an active distribution system auditing program and repair identified leaks when discovered. The results of the pre-screening audit will be documented using the completed American Water Works Association (AWWA) Audit Worksheets for each completed audit period. It is estimated that an extensive leak detection and repair program will be conducted over a 2 to 3-year period. The City has permanently incorporated this DMM into its operations and maintenance procedures, and has established a three-year rotation schedule.

To gage effectiveness of this BMP, accounting staff of all agencies annually review the data records to confirm that the unaccounted for water losses stay under 7 percent.

It is estimated that Hollister's and Sunnyslope's water distribution systems are presently losing anywhere between 5 – 10 percent of the water pumped from the systems' wells or from Lessalt prior to delivery to customers. A system water audit and leak detection program will likely reduce system losses by approximately 5 percent, a savings of approximately 300 AF.

BUDGET

Currently, the City and Sunnyslope do not have a designated budget for this DMM. Pre-screening audits and leak repairs are typically handled as part of their system maintenance expenditure.

6.2.5 METERING WITH COMMODITY RATES (FORMERLY BMP 4)

This measure has two components: 1) metering of all new connections and existing connections, and 2) implementation of commodity water rates whereby monthly charges are based on the volume of usage. Both Hollister and Sunnyslope meter all customers with their service areas. Both retailers have a meter replacement program. Hollister has been replacing approximately 700 to 800 meters annually. As of early 2008, nearly half of the City's old meters have been replaced with new meters that allow reading through a radio. Sunnyslope began the meter replacement program about 10 years ago, replacing up to 600 meters annually. Hollister is making continuous efforts to identify the number of accounts by specific customer type, including installation of dedicated landscape meters for customers who had mixed-use meters.

Both Hollister and Sunnyslope have instituted commodity rates for water service, specifically, increasing block structures.

IMPLEMENTATION

Hollister, Sunnyslope, and the District will continue to install and read meters on all new services, and will continue to conduct their respective meter calibration and replacement programs. To ensure effectiveness of this DMM, the agencies perform periodic review of customer water use, comparing current water use per capita with historical data. Metered accounts may result in a 20 percent reduction in demand compared to non-metered accounts. Use of commodity rates will be continued.

BUDGET

Meter installation costs are part of new service connection fees.

6.2.6 RETAIL CONSERVATION PRICING (FORMERLY BMP 11)

The CUWCC MOU requires that member agencies eliminate non-conserving water pricing and adopt water conservation pricing structures. This DMM applies to pricing of both water and sewer service. "Conservation pricing" provides incentives to customers to reduce average or peak use, or both. All water rates and charges at Hollister, the District, and Sunnyslope are established through ordinance by the appropriate governing body. Currently, both Hollister's and Sunnyslope's rate structures for water service are increasing block structures while sewer service rates are flat for all customers.

Hollister adopted rates and charges for water services in February 2005 through Resolution No. 2005-24. Rates and charges are effective for five years from fiscal year 2004-2005 through fiscal year 2008-2009.

Water rates and service charges are scheduled to increase every year during this period. Hollister is not anticipating a rate structure adjustment at this time. Hollister applies an increasing rate structure with three rate blocks for single-family residential, multi-family residential and commercial/institutional customers and two rate blocks for industrial and landscape irrigation customers. Hollister adopted wastewater service rates in August 2009 to fund the upgrade and expansion of the wastewater treatment plant, operation, and maintenance of the sewer system.

The current water pricing used by Sunnyslope was established in July 2009 through Ordinance 68, and took effect December 21, 2010. The Sunnyslope rate structure for single-family residential customers (approximately 83 percent of water sales in 2010) are an inclining block with five tiers; for all non-single-family customers are there is one for all water consumption. Both Hollister and Sunnyslope comply with the CUWCC minimum that 70 percent of total water sales revenue be derived from volumetric charges as opposed to fixed monthly charges.

For sewer services, Sunnyslope Ordinance 64 was adopted in March 2007 to establish increasing rates, fees, and charges. The current sewer rate structure includes a flat charge that varies depending on a customer type (single family residential, multi-family residential, commercial/industrial and others). For single and multi-family customers, the rate includes a flat charge plus a new additional charge depending on average winter usage during February and March. Industrial customers, which are monitored for water quality, are metered, and charged according to quality and volume of discharge. Charging sewer service rates in proportion to metered water usage provide additional incentive to customers in the Sunnyslope service area to reduce wastewater generation through reduced water consumption.

The District, as the CVP wholesaler, applies water charges for non-agricultural use (M&I) to cover the operations and maintenance costs associated with the delivery of water. The current M&I water pricing was established based on the Board-approved Proposition 218 Notice dated December 10, 2009.As a wholesaler of raw water, the District does not provide potable water services of any CVP water and does not provide sewer services.

Water and sewer fee schedules are included in **Appendix I**.

IMPLEMENTION

Comparison with previous average usage rates might provide some information regarding the effectiveness of changing from non-conserving to conservation pricing. It is assumed that the economic incentive to customers to conserve water under conservation pricing structures is sufficient to make this program efficient.

Hollister has experienced a significant decline in wastewater flows over recent years, much of which is likely attributable to water conservation activities. Decline in wastewater flows is attributed to the increasing block structure in the water rate in combination with other water conservation activities undertaken in the City's service area.

It is expected that most of the conservation savings will occur with the largest water users, who will see larger benefits for conserving water. The expected annual water savings is 100 AFY, compared to the scenario where non-conserving pricing is used.

BUDGET

This DMM is not expected to cost the agencies anything, as they have already implemented conservation pricing structures.

6.3 EDUCATION PROGRAMS

6.3.1 PUBLIC INFORMATION PROGRAMS (FORMERLY BMP 7)

One of the cornerstones of an effective water conservation program is effective public outreach and education. Public information and outreach—which convey the need for efficient water use and show how customers can reduce water use—supports all other elements of the program.

Public outreach promotes water conservation in general, by informing customers of the needs, benefits, and methods of conserving water. Outreach can also foster understanding regarding how water conservation fits into the overall water management for the HUA.

Public outreach can include:

- Providing speakers to community groups and the media
- Paid and public service advertising
- Bill inserts to promote water conservation practices and promote the capital facilities program
- Customers' bills showing use in gallons per day for the last billing period compared to the same period the year before
- Programs to coordinate with other government agencies, industry groups, public interest groups, and the media
- Production of a local lawn watering guide
- Activities through the Chamber of Commerce and Green Business Committee

The coordination of the public information program is currently tasked to the Water Conservation Coordinator and to the management staff at each of the organizations. Public information activities of the Water Conservation Coordinator include a public information event that is scheduled at least four times in a year. A newsletter titled “Water Conservation Update” is published biannually and distributed to all customers with water bills.

Bill inserts are sent out to all customers to promote water conservation. (Bills are sent out bimonthly by Hollister and monthly by Sunnyslope and the District.) Bill inserts focus on various topics depending on the time of the year. For instance, during spring, the focus is on offering free irrigation inspections;

during fall, the focus shifts to providing recommendations to customers to turn off their irrigation systems. During September and October, irrigation newsletters are sent out to customers.

In addition to bill inserts, information on water conservation is provided to customers during toilet give-away days, through newspaper advertisements, and newsletters distributed to customers. Public information fliers are also prepared in Spanish and posted in local markets and other businesses to reach out to the Spanish-speaking community. Several public service announcements (PSAs) and video presentations concerning water conservation and resource protection continue to air on the local Community Media Access Partnership (CMAP) television especially during February and April.

The WRA also participates in community events such as the Water Awareness Month Festival in May, the County Fair, and Farmer's Market to provide water conservation information to the public and answer public's questions. A welcome package with valuable information, tips, and retrofit kits on water conservation is provided to new residents through Hometown Hello program. Implementation of this DMM is reported to the CUWCC every two years.

Public information materials are included in **Appendix J**.

IMPLEMENTATION

Hollister and Sunnyslope will continue to provide public information services and materials to remind the public about water and other resource issues through the activities coordinated by the WRA Water Conservation Coordinator. In 2010, a number of public information activities were coordinated throughout the HUA, including 24 paid advertisements, 4 public announcements, 4 bill inserts/newsletters/brochures, 2 newsletters, 1 brochure for the Water Wise Garden and 1 media event, as reported by the WRA conservation coordinator.

The effect public of outreach on water conservation is not directly quantifiable.

BUDGET

The total budget approved for the fiscal year 2009 – 2010 is $41,000, for meeting coordination and materials. Each of the three agencies (Hollister, Sunnyslope, and the District) split the costs.

6.3.2 SCHOOL EDUCATION PROGRAMS (FORMERLY BMP 8)

This DMM covers classroom presentations promoting efficient water use and supplementation of presentations with grade level-appropriate education materials. The HUA agencies have an ongoing program through the WRA Water Conservation Coordinator. The WRA coordinator works with school districts and private schools in the area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural and environmental issues and conditions in the local watershed. In 2010, over 2,000 students were reached through this program.

In recent years, the WRA's Water Conservation Coordinator has participated in various school education events. Education efforts include events and materials reaching out to students in all grades with a focus on 5th grade students. In 2010, students in the After School Program as part of Hollister Youth Alliance also were a focus of the school education outreach. Some educational outreach activities include coordination with teachers and classroom presentations on water related topics (e.g., hydrologic cycle, water supply). A classroom hands on experiment was also used to educate students about the financial and ecological cost of water waste. A Farm Day is an annual event for all county 3rd graders for a demonstration of the groundwater model to students. During presentations and school outreach programs, some of course materials prepared by the Project WET are used. Sample school education materials are included in **Appendix K**.

IMPLEMENTATION

School programs remain an important part of the HUA water conservation. The school education program has been very successful in recent years, reaching out to thousands of students countywide and involving nearly 100 classroom presentations.

To document this BMP implementation, the following specific information will be tracked:

- Number of school presentations made during reporting period;
- Number and type of curriculum materials developed and/or provided by water purveying agencies, including confirmation that curriculum materials meet state education framework requirements and are grade-level appropriate;
- Number of students reached;
- Number of in-service presentations or teacher's workshops conducted during reporting period;
- Annual budget for school education programs related to conservation.

The potential water savings for this DMM are not quantified.

BUDGET

The cost of implementation the school education program has been around $2,500 to $3,000 annually. The budget approved for the fiscal year 2009 – 2010 is $4,000 for school education related activities. Each of the three agencies has a separate budget of approximately $1,300 for meetings and materials.

6.4 RESIDENTIAL PROGRAMS

6.4.1 RESIDENTIAL ASSISTANCE PROGRAM (FORMER BMP 1 &2)

This DMM involves providing leak detection assistance to customers. This may include, but is not limited to: a water conservation survey, water efficiency suggestions and/or inspection, and provision of showerheads and faucet aerators that meet current WaterSense specifications. The focus of the

program is on older neighborhoods with pre-1980 plumbing and the second priority is on other pre-1992 housing. Houses constructed after 1992 were required by state building codes to utilize water conserving plumbing fixtures. The program is marketed through advertising in bill inserts, bill messages, and newsletters. During the water survey, water conservation staff performs the following:

- Check for leaks, including toilets, faucets, and meter check
- Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, as necessary
- Check toilet flow rates and, direct customer to ultra low flush toilet (ULFT) replacement programs, as necessary; and replace leaking toilet flappers and floats if applicable
- Check irrigation system and timers
- Review or develop customer irrigation schedule
- Evaluate water softener operations and test water hardness to ensure proper settings
- Promote the retrofit program and provide other information on local water resource topics

Surveys take between 30 and 90 minutes. The results of the residential water survey are provided to the customer with water saving recommendations and specific local information packets prepared as part of the public information program described for DMM 7. The individual contacts made during the survey are used to actively promote the other programs and services offered by the Water Conservation Program, including retrofit and rebate programs offered under other BMPs. Both English and Spanish speaking persons conduct the surveys, and both English and Spanish language materials are available. The form used in the survey is shown in **Appendix J**.

The residential assistance program also includes plumbing retrofits. Since 2007, WRA has averaged about 500 retrofits per year. These retrofits include some combination of: showerheads, faucet aerators, and a hose nozzle with automatic shut off device, as is appropriate for each individual residence.

The CUWCC MOU coverage requirement for this DMM is to provide surveys to an average of 1.5 percent per year of single family and multi-family accounts. In the HUA, this amounts to approximately 200 single-family accounts per year and approximately 50 multi-family unit surveys per year. In addition,. The WRA goal is to provide plumbing retrofits to 522 single family and 133 multi-family units per year. Since this is a voluntary program, it is market driven by customer desire for the service. In 2010, the survey was completed for 274 single family accounts and 10 multi-family accounts.

IMPLEMENTATION

Based on CUWCC information, the potential water savings from this BMP are estimated to be 0.5 gpcd for repair of toilet leaks. The savings include reduced household water demand and wastewater flow generation. Combined annual water saving indoors is expected to be approximately 1 AF.

For each dwelling unit, a Water Conservation Assistant completes a customer data form (including number of people per household, number of bathrooms, age of clothes washer and water softener, and approximate landscaped area square footage). These data are used to analyze the customer's water use for both pre- and post-audit conditions, and to refine the program.

BUDGET

Proposed annual budget for both residential and landscape surveys is $18,000.This includes Job Training Program staff, brochures, and other miscellaneous materials (this budget item does not reflect the costs associated with ultra-low flush toilets - see DMM 16 – Ultra-Low Flush Toilet Replacement, or DMM 2 – Plumbing Retrofit). This budget amount assumes $72.00 about right/residence is available for the program. For the fiscal year 2009 – 2010, the WRA approved a budget of $23,100 for conducting single and multi-family residential surveys and audits and $6,500 for plumbing retrofits.

6.4.2 LANDSCAPE SURVEY (FORMERLY BMP 1)

This DMM involves performing a landscape water survey that includes a check of irrigation system and timers for maintenance and repairs needs, developing a customer irrigation schedule, reviewing scheduling with the customer, and providing the customer with an evaluation.

During a survey, the WRA checks irrigation schedules to see if they are adjusted for the season, checks/adjust sprinkler heads to make sure landscape is being irrigated and not fences, walkways, etc. Develops an irrigation schedule to follow for the year and makes recommendations to upgrade or repair equipment.

Hollister has a landscape ordinance that pertains to new and existing single family homes, and has adopted the model water efficiency landscape ordinance (MWELO) to promote landscape efficiency. The City is also considering a financial incentive program to help homeowners to convert landscaping toward more water efficiency (e.g., landscape materials, irrigation conversions, automatic controllers, etc.)

The WRA water conservation coordinator offers water use surveys and audits to single family residences, which are modified versions of audits offered to large landscape customers. The WRA also publishes a newsletter biannually entitled, "Water Conservation Update", included in **Appendix J**. The newsletter provides landscape water conservation information, and suggests seasonal water conservation measures such as turning off irrigation systems in the fall. WRA also offers free irrigation inspections in the spring and irrigation controller assistance in the fall. The WRA website provides useful tips for outside water conservation, a Watering Index to guide irrigation, and a Residential Lawn Watering Guide. The website also promotes a free custom sprinkler schedule.

IMPLEMENTATION

Based on CUWCC information, the potential water savings from this DMM is estimated to be 10 percent savings on outdoor landscaping uses. Assuming the outdoor use of a single family home is approximately 50 percent of demand for a single family home and 20 percent for a multi-family home (similar to other water systems in the region), combined annual water saving annual outdoor water savings is expected to be approximately 211 AFY and 11AFY.

The City and Sunnyslope staff review customer water use records and compare historic with current use. If current use rises above historic use, staff will flag the customer's account and offer a survey.

BUDGET

Proposed annual budget for all residential surveys is $23,100.

6.4.3 HIGH-EFFICIENCY CLOTHES WASHERS (HECWS) (FORMERLY BMP 6)

This DMM consists of offering financial incentives, if cost-effective, for the purchase of high efficiency washing machines. The goal is to reduce water use from traditional washing machines by replacing them with low water use high efficiency washing machines.

The CUWCC is working with the California Energy Commission and the Federal Department of Energy to revise energy and water savings standards for clothes-washer manufacturers. Therefore, over time these devices are expected to become more efficient, more commonplace, and less expensive on the retail market.

IMPLEMENTATION

The implementation of high efficiency washing machine rebate program has been very active and successful. Currently, the financial incentive is $100 per washer. The WRA has been implementing this DMM consistently since 2002.

Since 2007, nearly 729 rebates have been issued. As part of the rebate processing, customers are also offered an on-site inspection for a home water checkup and provided with free showerheads, toilet and faucet kits during the site inspection, at no charge. Customers usually receive their rebates within 4 – 6 weeks following the site inspection.

The CUWCC reports water savings estimate of 5,250 gallons per year per (0.2 AFY) high efficiency washing machine, for a total savings of 146 AFY since 2007.

BUDGET

This DMM was budgeted for 200 rebates for the current fiscal year. The fiscal year budget approved by the WRA is $20,000 for high efficiency washing machine rebate program, including a separate budget of approximately $6,500 for Hollister and Sunnyslope, and a budget of $6,800 for the District.

6.4.4 RESIDENTIAL ULTRA LOW FLOW TOILETS (ULFT) (FORMERLY BMP 14)

This DMM involves providing incentives or ordinances for the replacement of existing toilets using 3.5 or more gallons per flush (gpf) with a 1.28 gpf toilet. The WRA website provides information on the ultra-low flush toilet replacement program, including what to look for when purchasing new toilets. The financial incentive currently is $75 per toilet, and an additional $10 is given when residents deliver their old toilet to the District, as administrator of the program. In addition, the WRA provides a free toilet pick up day at the District office on a quarterly basis during the calendar year, limited to two free toilets per residence. For properties that have a need for more than two toilets, the WRA sends a technician to the requestor's home to verify the request.

Programs are also in place to encourage the installation of ULF toilets for commercial and institutional customers. The WRA, since 1999, has retrofitted all the schools, county and city offices in the urban areas. In 2010, the WRA became a member of the SBC Chamber of Commerce; it is a member of the Green Business Program (GBP). The GBP partnership involves environmental agencies, utilities and nonprofit organizations. To be certified "green," participants must be compliant with all regulations and meet program standards for conserving resources, preventing pollution and minimizing waste.

Toilet replacement rebates are for replacing old toilets (pre-1992) with new ones that have 1.6 gallons per flush or lower. Customers usually receive their rebates within 30 – 45 days. All public facilities in the City now have ULF toilets, urinals, showerheads, and self-closing faucets. The program has been extremely successful, with over 6,000 ULFTs installed since 2001. In 2010, 295 ULFTs were installed due to the program. This represents a lower level of replacement than previous years, most likely due to high percent of ULFT already installed in the HUA. The WRA and Hollister estimate 70 percent of toilets in the HUA are ULFT.

IMPLEMENTATION

The City will continue to implement this DMM at the current goal of replacing 540 toilets per year until the City's goal is met: at least 80 percent of all non-conserving and lowflush model toilets in the City will be replaced with ultra-low flush models.

Hollister calculates annual ULFT replacement program water savings to confirm that the savings are within 10 percent of calculated retrofit-on-resale water savings, using the CUWCC MOU Exhibit 6 methodology and water savings estimates. Projected total annual water savings from toilet retrofits at full implementation are 244 AFY, both in water demand and wastewater generation.

BUDGET

The fiscal year 2009 – 2010 budget for the WRA is $53,000 for materials, rebates, and advertising costs.

6.4.5 WATERSENSE SPECIFICATIONS (WSS) FOR RESIDENTIAL DEVELOPMENT

This aspect of residential DMMs was not included in the original BMPs, but is a new requirement of the CUWCC MOU. It involves providing incentives (such as rebates, recognition programs, or reduced connection fees), or ordinances requiring residential construction to meet WSS for single-family and multi-family housing units until a state or federal regulation is passed requiring this standard. Beginning in 2012, state law will require all toilets sold within California to be 1.28 gpf high efficiency toilets (HET) toilets (the current WSS standard). This new standard eliminates the need for a local ordinance. In addition, the California Green Building Standards Code (Title 24, Part II) effective January 1, 2011, now requires fixtures in new development to meet Water Sense Specifications. Sunnyslope and Hollister have not yet adopted these codes.

6.5 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL PROGRAMS (CII) (FORMERLY BMP 9)

The goal of this DMM, as outlined by the CUWCC MOU, is to achieve a 10 percent reduction in baseline use for this sector over a 10-year period. This can be accomplished though implementation of flexible best management practices that fit the HUA's customer characteristics. Compliance with these measures is based on meeting goals for percentage reductions in CII annual water use. The Green Business Program, as described in 6.4.4, supports landscape assistance, retrofits of showerheads, aerators, and toilets. The Hotel Program provides table cards to hotels and motels that allow guest to have linens washed only upon request. The WRA budget for large accounts surveys and audits in fiscal year 2009-2010 is $3,000.

6.6 LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES (FORMERLY BMP 5)

This DMM applies to non-residential accounts that have dedicated irrigation meters and to CII accounts with mixed-use meters. Both the City and Sunnyslope continue to implement landscape audit and incentive programs. In 2010, Hollister and Sunnyslope reported 122 dedicated irrigation meter accounts within the HUA service area recording water use at city parks, schools, landscape areas at multifamily complexes, and commercial and institutional sites.

The HUA agencies have undertaken a program to audit and survey the large landscape customers within their service areas. Implementation of such a program includes:

- Develop and distribute public information related to low water use and drought tolerant plants appropriate for the local area, local climate and sources of information on irrigation requirements from the California Irrigation Management Information System (CIMIS), and other related landscape water conservation.

- Provide customer notices prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary. Provide customer notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.
- Determine the landscaped areas for large water users and assist in developing irrigation schedules by assigning evapotranspiration based water use budgets equal to no more than 100 percent of reference evapotranspiration per square foot of landscape area in accordance with information available from CUWCC and/or local data produced by the CIMIS.

It is recommended that irrigation surveys be conducted for large landscape irrigation customers to calculate water budgets for the various sites -- the amount of water necessary for that site based on the size of the landscape and the climate. In addition, maintaining a database of the landscaped area can benefit the HUA to calculate future water demand goals based on the MWELO.

IMPLEMENTATION

The program has been in place since 2000. Since 2007, four audits have been performed for large landscape customers. During surveys, WRA or Hollister staff review irrigation schedules and provide recommendations. Follow-up calls are conducted to assess the status of the suggested recommendations, but customer response to follow-up surveys has been limited. Evapotranspiration based landscape budget information is provided to accounts that receive the surveys. In addition, Hollister staff review landscape customers' water use monthly. If the water budget is exceeded for three consecutive months, the customer is offered technical assistance. On-site follow-up evaluations are recommended for customers whose annual water use exceeds their water budget.

As part of this DMM program implementation, the following data are uploaded by the WRA and Hollister to the CUWCC database:

- Number of dedicated irrigation meter accounts
- Number of dedicated irrigation meter accounts with water budgets
- Aggregate water use for dedicated landscape accounts with budgets
- Aggregate budgeted water use for dedicated landscape accounts with budgets
- Number of large landscape surveys offered and accepted
- Estimated annual water savings by customers receiving surveys and implementing recommendations

The City of Hollister and the County have permanently incorporated Large Landscape Conservation Requirements, including the MWELO. The HUA entities will continue to implement this DMM through annual review of customers' water use, and by offering on-site follow-up evaluations to customers whose total water use exceeds their total annual water budget. The overall target of providing large landscape audits is 3 percent of existing accounts each year.

Landscapes that are upgraded based on survey recommendations could result in a 5 – 10 percent reduction in water demand for a savings of between 25 and 50 AFY (according to HUA UWMP 2000).

BUDGET

No added costs are anticipated for more rigorous enforcement of state and locally mandated landscaping requirements for new developments. This work is to be completed with existing City and WRA staff and fees collected by the Planning Department for the City. The WRA reviews landscape plans submitted to the Planning Department for compliance with the MWELO. The WRA also performs post project inspections to ensure the project was completed according to the plans.

It is estimated that the cost per landscape account survey and follow up work will be approximately $1,500. For the fiscal year 2009 – 2010, the budget for DMM5 related program implementation is $6,000. Hollister, Sunnyslope, and the District have a scheduled budget of approximately $2,000 per agency.

6.7 OTHER PROGRAMS

6.7.1 WATER SOFTENERS

Since 2007, WRA has conducted a water softener rebate program that encourages people to upgrade from their timer-based models (pre-1999) to demand-initiated regenerating (DIR) models or demolish these older softeners with no replacement. A shared goal of the District, City and Sunnyslope is to reduce salt loading to wastewater, and thereby help maintain groundwater quality and support water recycling. The program includes water softener checks as part of the home water audit programs. It also provides the public with information about DIR and exchange-type water softeners, encouraging replacement of less efficient timer models. Signatories to the CUWCC MOU (Hollister) are also expected to support efforts to develop state law regarding exchange-type water softeners that would:

- Allow the sale of only more efficient, demand-initiated regenerating (DIR) models
- Develop minimum appliance efficiency standards that
- Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used
- Implement an identified maximum number of gallons discharged per gallon of soft water produced
- Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency's governing board that there is an adverse effect on the reclaimed water or groundwater supply.

In addition, the WRA completed a feasibility study in 2005 to support issuance of an ordinance prohibiting the installation of brine-discharging water softeners that discharge to the sewer systems of the HUA (HDR 2008).

IMPLEMENTATION

In May 2007, the District, on behalf of the WRA and in cooperation with San Clara Valley Water District (SCVWD), initiated a Water Softener Rebate Program, based on the award of a Water Use Efficiency Grant as part of the 2004 Proposition 50 grant program. The grant is applied to provision of rebates to customers who agree to abandon and/or replace their pre-1999 inefficient water softener system with a newer, more efficient means of water softening. Currently, the rebate offer is $150 (per household) for a water softener replacement, $250 for a water softener replacement with offsite service, and $300 for a water softener demolition. The grant was extended to December 2011. As of (February 2011, 390 rebates have been issued, with 70 rebates in the past water year. The WRA has an overall target of 1,000 water softener replacement rebates.

Information on the water softener rebate program is posted on the WRA website and hard copies of rebate forms are provided at each agency's office.

BUDGET

The $300,000 grant is being applied, along with $152,780 from WRA and $152,780 from SCVWD, to fund this program. Hollister, Sunnyslope, and the District have a separate budget of $62,000, $75,000, $6,500 respectively. This budget covers, in addition to water softener replacement/demolition rebates, other salt reduction related activities, such as contractor costs (labor, inspections, processing rebates, database maintenance), activities of the water conservation program manager, public outreach, advertising, and bill inserts.

6.7.2 LANDSCAPE EFFICENCY CLASSES

In 2009, the District, along with WRA, initiated a series of classes on irrigation efficiency. This two-year program, partially funded by a cost-sharing grant from the USBR, enlists the expertise of instructors from the Irrigation Training and Research Center (ITRC) at California Polytechnic State University in San Luis Obispo.

IMPLEMENTATION

In 2010, instructors taught four water management classes, ranging in length from one to five days, each targeted to a specific group. These groups included landscape professionals, agricultural customers, and residential customers. Topics include Basic Soil, Plant and Water Relationships, Irrigation Scheduling, Salinity and Drainage, and Design of Landscape Irrigation Systems. Over 100 participants attended one of the four classes offered. These classes will continue through 2011. Some classes will be taught as separate modules to facilitate attendance by landscape and agriculture professionals.

BUDGET

The cost of this program was funded by a cost-sharing grant from the USBR. The WRA's budget for the program was $104,000.

6.7 CONSERVATION PROGRAM IMPLEMENTATION SUMMARY

The HUA continues to implement a variety of water conservation measures. While Hollister is the only signatory, all HUA agencies report their progress on DMM to the CUWCC database and confirm to the standards and procedures discussed in the CUWCC MOU. With the assistance of these programs and others, the HUA will reduce their per capita demand to meet the DWR targets.

Table 6-1 summarizes the water savings provided by each DMM for both Hollister and for the District and Sunnyslope (with combined reporting).

Table 6-1 Water Savings by DMM (AFY)					
Demand Management Measure	**Former BMP**	**Hollister[1]**		**SBCWD/SSCWD[2]**	
		Cumulative	**2010**	**Cumulative**	**2010**
Utility Operations Programs					
Conservation coordinator (formerly BMP 12)	12	Unquantifiable		Unquantifiable	
Water waste prevention (formerly BMP 13)	13	Unquantifiable		Unquantifiable	
Wholesale agency assistance programs (formerly BMP 10)	10	Unquantied		Unquantied	
Water loss control (formerly BMP 3)	3	Unquantied		Unquantied	
Metering with commodity rates (formerly BMP 4)	4	0	0	0	0
Retail conservation pricing (formerly BMP 11)	11	Unquantied		Unquantied	
Education Programs					
Public information programs (formerly BMP 7)	7	Unquantifiable		Unquantifiable	
School education programs (formerly BMP 8)	8	Unquantifiable		Unquantifiable	
Residential Measures					
Residential assistance program (formerly BMPs 1 & 2)	2	96	13	Unquantied	
Landscape water survey (formerly BMP 1)	1	176	19	Unquantied	
High efficiency clothes washer (HECWs) (formerly BMP 6)	6	59	10	Unquantied	
Water sense specification toilets (formerly BMP 14)	14	460	63	Unquantied	
Water sense specifications for residential development	NA	Not yet applied			
Commercial, Industrial, and Institutional (formerly BMP 9)	9	965	155	Unquantied	
	9a	66	7	Unquantied	
Landscape (formerly BMP 5)	5	104	8	Unquantied	

[1] *From CUWCC Database BMP report 9/10, which is an estimate based on scheduled DMM implmentation and previous CUWCC water savings calculation techniques.*

[2] *The SBCWD/Sunnyslope savings have not been calculated; the CUWCC is currently revising their DMM database and reporting system and no estimates of water savings are available.*

7. COMPLETED UWMP CHECKLIST

No.	UWMP requirement [a]	Calif. Water Code	Subject	UWMP Location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	Water Conservation	Sections 3.1 through 3.3 and Tables 3-5 through 3-12.
2	Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions.	10608.36	Water Conservation	Section 3.4 and Section 6 and Tables 3-14 and 6-1.
3	Report progress in meeting urban water use targets using the standardized form.	10608.4	Water Conservation	
4	Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)	External Coordination and Outreach	Page 1-1 and Table 1-1
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply (Water Management)	
6	Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.	10621(b)	External Coordination and Outreach	Section 1 and Table 1-1
7	The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).	10621(c)	External Coordination and Outreach	Section 1 and Table 1-1
8	Describe the service area of the supplier	10631(a)	Service Area	Section 2.2 (pg. 2-1)
9	(Describe the service area) climate	10631(a)	Service Area	Section 2.3 (pg. 2-1)
10	(Describe the service area) current and projected population . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	Service Area	Section 2.4 (pg. 2-2) and Table 2-1
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	Service Area	Section 2.4 and Table 2-1
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	Service Area	Section 2.4

13	Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).	10631(b)	Water Supply	Section 4 and Tables 4-1 through 4-10
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . .?	10631(b)	Water Supply	Yes, Section 4.1.2
15	(Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	Water Supply	Section 4.1.2, pg. 4-9 and included as Appendix C.
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	Water Supply	Section 4.1.2, pgs. 4-3 and 4-4.
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	Water Supply	Not Applicable.
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	Water Supply	Not Applicable.
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	Water Supply	Section 4.1.2, pgs. 4-5, 4-7, 4-8, and 4-9 and in Section 5.2, pg 5-3
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	Water Supply	Section 4.1.2, pg. 4-10 and Table 4-9.
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	Water Supply	Section 4.1.2 and Table 4-10.

22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Reliability	Section 5 Tables 5-1 through 5-12.
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)	Reliability	Section 5 Tables 5-1 through 5-12.
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	Water Supply (Transfers)	Section 4.2
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, thereof;(I) Agricultural. groundwater recharge, or conjunctive use, or any combination	10631(e)(1)	Water Demands	Sections 3.1 through 3.3 and Tables 3-1, 3-2, and 3-9 through 3-13.
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition;(N) Residential ultra low-flush toilet replacement programs.	10631(f)(1)	DMMs	Table 3-14 and Section 6.
27	A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.	10631(f)(3)	DMMs	Section 6.
28	An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.	10631(f)(4)	DMMs	Section 6.

29	An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.	10631(g)	DMMs	Section 6.
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.	10631(h)	Water Supply	Section 3.4, Table 3-14, and Seciton 6.
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	Water Supply	Section 4.3
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Appendix H
33	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).	10631(k)	Water Supply	Sections 4.1.1, Tables 4-7 and 4-8 and Section 5 and Tables 5-8 through 5-12.

34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	Water Demands	Section 3.3 and table 3-4.
35	Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.	10632(a)	Contingency	Section 5.3 and Tables 5-4 and 5-5.
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	Contingency	Section 5.4 and Table 5-9.
37	(Identify) actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	Contingency	Section 5.3.3
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Contingency	Section 5.3 and Tables 5-4 and 5-5.
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Contingency	Section 5.3 and Tables 5-4 and 5-5.
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Contingency	Section 5.3.2
41	An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Contingency	Section 5.3.2
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Contingency	Section 5.3
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Contingency	Section 5.3
44	Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area	10633	Recycled Water	Section 4.4 and Tables 4-3 through 4-6.
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	Recycled Water	Sections 4.4.1 and 4.4.2 and Tables 4-3 and 4-4.
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	Recycled Water	Sections 4.4.1 and 4.4.2 and Tables 4-3 and 4-4.

47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633©	Recycled Water	Section 4.4.2 and Tables 4-4 and 4-5.
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	Recycled Water	Section 4.4.3 and Tables 4-4 and 4-5.
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	Recycled Water	Section 4.4.3 and Tables 4-4 and 4-5.
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	Recycled Water	Sections 4.4.4 and 4.4.5 and Table 4-6.
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	Recycled Water	Section 4.4.5
52	The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.	10634	Water Supply (Water Quality)	Section 5.2.3 and Table 5-3.
53	Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)	Reliability	Section 5 and Tables 5-1 through 5-12.
54	The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.	10635(b)	External Coordination and Outreach	Section 1 and Table 1-1
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	External Coordination and Outreach	Section 1 and Table 1-1

56	Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.	10642	External Coordination and Outreach	Section 1 and Table 1-1
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	External Coordination and Outreach	Section 1 and Table 1-1
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	External Coordination and Outreach	Section 1 and Table 1-1
59	An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.	10644(a)	External Coordination and Outreach	Section 1 and Table 1-1
60	Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.	10645	External Coordination and Outreach	Section 1 and Table 1-1

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