SECTION 4.14
WATER SUPPLY

4.14.1 INTRODUCTION

The purpose of this Section is to analyze potential Project-related impacts related to water supply. This section also analyzes the availability of water to serve the needs of the proposed Project as well as ongoing water supply entitlements in the vicinity of the Project site. Information presented in this section is based on the *Water Supply Assessment for Butterfield Specific Plan* (WSA) (Appendix J), the City's 2011 *Maximum Perennial Yield Estimates for the Banning and Cabazon Storage Units, and Available Water Supply from the Beaumont Basin* report prepared by Geoscience Support Services, Inc., the *City of Banning Draft 2010 Urban Water Management Plan* (UWMP)[1], and the City of Banning General Plan and the City's General Plan EIR. The thresholds of significance used in these analyses are found in Section 4.14.3 (*Significance Threshold Criteria*) and were derived from Appendix G of the CEQA Guidelines. These thresholds incorporate one topical area from Appendix G, Section VIII, *Hydrology and Water Quality* and two from Appendix G, Section XVI, *Utilities and Service Systems*.

As noted in greater detail below, water supplies are variable and subject to restrictions in accordance with water rights, water delivery contracts, and other permits. For example, since 2003, there has been a declaration of statewide drought, and curtailing of deliveries of water from the Bay-Delta area on which the City relies.

Anticipated water supply is dependent on a number of conditions, including but not limited to the following: water demand for existing development; anticipated levels of growth within the state, region, and service area of a water provider; and availability of water from existing entitlements based on drought and other variable conditions. Water supply and demand in relationship to the Project will be analyzed below based upon the WSA and the *Maximum Perennial Yield Estimates* report, along with other relevant considerations and evidence.

Numerous other investigations of the water resources in the City of Banning and San Gorgonio Pass area have been conducted, including the following:

- GEOSCIENCE Support Services, Inc. (1990) conducted a geohydrologic investigation and well site evaluation in the City of Banning area.
- GEOSCIENCE Support Services, Inc. (1991) prepared the results of drilling, construction, testing, and pump design for new wells for the City of Banning.
- Boyle Engineering (1996) conducted a Safe Yield Study of the Beaumont Unit.
- GEOSCIENCE Support Services, Inc. (2003) conducted a geohydrologic investigation to determine maximum perennial yield for the Banning Basins.
- City of Banning, *Urban Water Management Plan*, prepared by Wildermuth Environmental, 2005.

[1] Note: the 2010 UWMP only evaluates years 2015 through 2035; therefore, the WSA covers the full Project buildout till 2045.

- San Gorgonio Pass Water Agency, *2008 Annual Report on Water Conditions*, 2008.
- Riverside County Regional Detention Center Environmental Impact Report prepared by LSA Associates, Inc., 2009.
- GEOSCIENCE Support Services, Inc. (2009) conducted a geohydrologic investigation to update the maximum perennial yield for the East and West Banning and Banning Bench Basins.
- United States Geological Survey, *Geology, Ground-Water Hydrology, Geochemistry, and Ground-Water Simulation of the Beaumont and Banning Storage Units, San Gorgonio Pass Area, Riverside, California, Special Investigations Report (SIR) 2006-5026*, 2006.
- San Gorgonio Pass Water Agency, *2010 Report of Sustainability of the Beaumont Basin and Beaumont Management Zone*, November 2010.
- San Gorgonio Pass Water Agency, *Annual Report on Water Conditions: Reporting Period 2009,* April 2011.
- Beaumont Basin Watermaster, *Sixth Annual Report of the Beaumont Basin Watermaster*, April 2010, prepared by Wildermuth Environmental, Inc.
- Beaumont Basin Watermaster, *Second Biennial Engineer's Report 2003 – 2008*, February 2010, prepared by Wildermuth Environmental, Inc.

The *Maximum Perennial Yield Estimates* report is the most-current and comprehensive study of the Banning, Banning Bench, Banning Canyon and Cabazon Basins. The report estimates the maximum perennial yield for the Banning, Banning Bench, Banning Canyon, and Cabazon basins, projects the City's available supply from each of these basins, and concludes that the City's existing operations and projected future pumping within the estimated maximum perennial yields and projected available supplies will not cause undesirable effects on the these basins.

The *Maximum Perennial Yield Estimates* report updates GEOSCIENCE's previous 2009 geohydrologic investigation of the City of Banning area with the following: new and additional water level data, historical groundwater production information, additional well driller logs, and supplemental lithologic and hydrologic data for the area. The report also relies on the most-recent Basin boundaries, as defined by the USGS in its 2006 report and which have been accepted by the SGPWA.

Sources of data on this report included driller's logs, geophysical borehole logs, production data, water level data, weather data, pumping test data, wastewater percolation data and water quality data. These data were obtained from the City of Banning and other public agencies. Production data for the Cabazon Basin was obtained from San Gorgonio Pass Water Agency, *Annual Report on Water Conditions: Reporting Period 2009*. The pumping data for the Morongo Tribe was obtained from the Water Supply Assessment conducted for the Riverside County Regional Detention Center prepared by LSA Associates Inc., 2009. It should be noted that the

Morongo Indian Tribe which pumps water from the Cabazon Basin does not report annual pumping volumes.

A complete discussion of Global Climate Change as it relates to water resources is provided in Section 4.5 of this EIR.

4.14.2 EXISTING CONDITIONS

4.14.2.1 ENVIRONMENTAL SETTING

The City of Banning's Water and Wastewater Department provides potable water to approximately 11,000 service connections serving a population of approximately 29,603 persons The Department's service area covers approximately 23 square miles and incorporates most of the City of Banning with the exception of a small area of north Banning. The Project's development area is within the Departments service area. The City's Wastewater Treatment Plant (WWTP) currently treats water to a secondary standard; however, expansion of the plant to add 1.5 mgd of capacity and provide the means to treat water to a tertiary standard will allow the City to offer recycled water for landscape irrigation once pipeline infrastructure is in place.

Sources of Water

Currently, the City's public water system relies on local groundwater supplies and imported water from the State Water Project through the San Gorgonio Pass Water Agency (Pass Agency) to meet water demand. The City also relies on surface water and treated wastewater supplies to recharge local groundwater basins. Other potential sources include recycled water made available following completion of the City's WWTP expansion, currently underway, and return flows from irrigation with both recycled and potable water supplies.

GROUNDWATER SUPPLIES

Currently, approximately 87 percent[2] of the City's water supply comes from existing groundwater pumped through 24 active wells that draw water from 5 local groundwater basins listed in Table 4.14.-1, *Summary of City of Banning Active Production Wells (May 2010)*: (1) Beaumont, (2) Banning, (3) Banning Bench, (4) Banning Canyon, and (5) Cabazon. An additional five wells are available but not equipped and one well has been abandoned. Refer to Exhibit 4.14-1, *City of Banning Groundwater Basins*, and Section 4.9.2.1, *Hydrology and Water Quality – Existing Setting,* for a detailed description of regional groundwater hydrology and basin location, size and status. The City operates two additional wells used to recharge excess

[2] Draft 2010 UWMP, Table 4-1, *Current and Projected Water Supplies for the City of Banning*.

pumped groundwater back into the Banning Canyon Basin.[3] Refer to Exhibit 4.14-2, *City of Banning Well Locations*.

Table 4.14-1
Summary of City of Banning Active Production Wells (May 2010)

Basin	Number of Active Wells
Beaumont	8
Banning	4
Banning Bench	3
Banning Canyon	8
Cabazon	1
TOTAL	**24**

Source: Geoscience Maximum Perennial Yields Report 2011
Notes: a. City of Banning co-owned production Wells 24, 25, and 26, including in this total, extract groundwater from the Beaumont Basin.

Historically, the City of Banning has been able to meet the water demand of its customers with available groundwater supplies; however, with additional population growth, demand has increased to the level where production limitations are being realized in certain portions of the City during dry years. Declining water levels have been detected in the Beaumont Basin, Banning Canyon, and Banning Bench since 1995. The *Maximum Perennial Yield Estimates* report was commissioned to support the City's 2010 UWMP update and to provide a foundation for management of these key water resources. The report, and underlying hydrogeologic study, determines the long-term average amount of groundwater that can be extracted by the City from the Banning area basins without causing gradual reduction of natural groundwater in storage over long-term hydrologic cycles and adverse impacts to groundwater quality.

Beaumont Basin

The Beaumont Basin is an adjudicated basin which quantifies pumping rights among various agencies, including the City of Banning, and provides for the use of available storage capacity. The allocation of water from the Beaumont Basin is the responsibility of Watermaster and the use of groundwater and available storage space in the Beaumont Basin is subject to the terms of a court adjudication referred to as the Beaumont Basin Judgment.[4] The City's Beaumont Basin production right for the years 2015–2045, not including water available for pumping from the City's stored water account (described below) — i.e., the City's minimum production right is presented in Table 4.14-2.

[3] Draft 2010 UWMP, Section 4.2.2.

[4] http://beaumontbasinwatermaster.org (accessed December 23, 2010).

Table 4.14-2
City's Beaumont Basin Production Right (2011 to 2045)
(Not Including Stored Water Account) (AFY)

Year	2011	2012	2013	2014	2015	2020	2025	2030	2035	2040	2045
Estimated Safe Yield[5] of Basin	8,650	8,650	8,650	8,650	8,650	8,650	8,650	8,650	8,650	8,650	8,650
City's Allocation (31.43%) of Operating Yield	5,029	5,029	5,029	0	0	0	0	0	0	0	0
[+] Appropriative Right (31.43%) of Safe Yield Remaining after Satisfaction of Overlying Water Rights Production[6]	1,645	1,659	1,618	1,830	1,805	1,635	1,478	1,328	1,194	1,178	1,162
[=] Estimated Minimum Beaumont Basin Production Right (without Project)	6,674	6,688	6,647	6,859	1,805	1,635	1,478	1,328	1,194	1,178	1,162

Source: *Water Supply Assessment* (Appendix J), Table 6.1.5.9.4B.

Unadjudicated Groundwater Supplies (Banning, Banning Bench, Banning Canyon, and Cabazon Basins)

Groundwater rights in the Banning, Banning Bench, Banning Canyon and Cabazon Basins have not been adjudicated, and no groundwater management plan has been adopted by any agency with proper authority. Thus, these four Basins are currently unregulated.

According to the 2011 Geoscience *Maximum Perennial Yield Estimates* report, the Cabazon Basin has a maximum perennial yield of 5,265 AFY, a portion of which may be produced by the City, on average, without causing undesirable results on the basin. The safe yield for the Banning, Banning Bench, and Banning Canyon Basins are 1,130 AFY, 1,960 AFY, and 4,070 AFY, respectively. Estimates of maximum perennial yield for the three Banning Basins and the Cabazon basin are described in detail in Chapter 7 of the 2011 Geoscience Report, and presented below in Table 4.14-3.

[5] "Safe yield" is a water management construct that describes the sustainable supply of a groundwater basin and is defined herein as the amount of water that can be withdrawn from a groundwater basin annually without producing an undesirable result.

[6] Watermaster's most-recent projections (on file with the City) are available through 2040 only. Although the percentage of decrease in the City's Appropriative Right is projected to get smaller over time, for purposes of this EIR, the City conservatively assumes that the City's right will continue to decrease by an additional 1.34% by 2040, the same percentage of decrease as the Watermaster projects between 2039 and 2040.

Table 4.14-3
Maximum Perennial Yield of Banning Basins and Cabazon Basin (AFY)

Basin	Maximum Perennial Yield	City's Projected Supply
Banning	1,130	1,130
Banning Bench	1,960	1,960
Banning Canyon	4,070	4,070
Subtotal (Banning Basins combined)	7,160	7,160
Cabazon	5,265	2,515
Total	**12,425**	**9,675**

Source: *Water Supply Assessment* (Appendix J), Table 6.1.6.4.

Table 4.14-4 presents the City's projected available supply from the Banning, Banning Bench, and Banning Canyon for all water year types.

Table 4.14-4
City's Projected Banning Basin Supplies (2015-2045) (All Year Types) (AFY)

Basin	Average ("Normal") Years (based on Maximum Perennial Yield	Single Dry Years	Multiple Dry Years
Banning	1,130	1,103	843
Banning Bench	1,960	733	598
Banning Canyon	4,070	4,070	4,070
Total	**7,160**	**5,906**	**5,511**

Source: *Water Supply Assessment* (Appendix J), Table 6.1.6.7.

Table 4.14-5 presents the City's projected available supply from the Cabazon Basin for all water year types for the study period. Pumping from the Cabazon Basin is not affected by water year type. However, the City's projected available supply from the Cabazon Basin is anticipated to change over time. This is because the City's recharge of treated wastewater to the basin—an important element of the basin's hydrologic balance—will fluctuate over time as a result of the City's development of recycled water. By 2015, the City will complete the first phase of an upgrade to its main Wastewater Treatment Plant. This project will allow the City to provide tertiary treatment to a portion of the wastewater flows generated within the City, thereby allowing those tertiary treated supplies to be delivered directly to serve non-potable demands. As a result, the quantity of wastewater flows available for recharge into the Cabazon Basin will change over time.

Table 4.14-5
City's Projected Cabazon Basin Supply (2015-2045) (All Year Types) (AFY)

Year	2015	2020	2025	2030	2035	2040	2045
Cabazon	1,185	1,405	1,648	1,916	2,212	2,538	2,899

Source: *Water Supply Assessment* (Appendix J), Table 6.1.6.8.

BEAUMONT BASIN STORED WATER ACCOUNT

Pursuant to the Beaumont Basin Judgment and an agreement with the Watermaster, the City has the right to store up to 80,000 AF of water in the Beaumont Basin for later use. The City is authorized to bank new yield (e.g., imported water, storm runoff, surplus spring flows, or reclaimed water) in the aquifer. New yield is defined as "proven increases in quantities greater than the historical level of contribution from certain recharge sources."[7] This allows the withdrawal of the stored supply from the aquifer to meet future demand.

The safe yield value for the Beaumont Basin was estimated in the 2004 Judgment to be 8,650 acre-feet per year (AFY). For the period 2004-2013, the City's adjudicated right is 5,910 AFY. However, since the adjudication in 2004, the City has only produced 2,514 AFY on average; water not produced from the Basin remains in storage to be used in the future when needed.

The City's imported water supply is also stored in the Beaumont Basin. To augment the City's groundwater storage, the City conjunctively manages imported surface water supplies with local groundwater supplies which in turn increase the City's overall water supply reliability. The City's ability to store imported water supplies, when available, for use in later years allows the City to maximize its beneficial use of the Beaumont Basin by carrying over unneeded supplies for later use.

In most years, given anticipated future City pumping to meet projected demands, the City will be able to store and "bank" the majority of the imported water it purchases from the State Water Project (SWP). The City's stored imported water supplies are maintained in the City's Beaumont Basin stored water account. The City's stored water account balances will be drawn upon, and thus reduced, only when needed (i.e., only in the case of insufficient supplies).

To date, the City has already accumulated approximately 25,000 AF in storage. The City's projected quantity of water in storage at any time is expressed as the following equation:

[7] Watermaster Rules and Regulations, Rule 4.2(a).

Water in storage = Beginning stored water account balance + [Beaumont Basin production right + imported water] – City's Beaumont Basin pumping

Table 4.14-6 presents the City's projected account balances for its Beaumont Basin stored water account for the 2015-2045 period. The City's projections are based on the following assumptions: (1) the City, beginning in 2015, will purchase 2,595 AFY, on average, of imported water (refer to detailed discussion in the *Water Supply Assessment*, Appendix J, Section 6.3.6.2) and store that supply in the City's approved stored water account; and (2) the City will continue to pump groundwater from the Beaumont Basin for the study period at a rate equal to its historical average annual pumping from the basin (2,514 AFY).

Table 4.14-6
City's Beaumont Basin Stored Water Account Balances (2011-2045) (AFY)

Year	2011	2012	2013	2014	2015	2020	2025	2030	2035	2040	2045
Beginning Account Balance	24,640	30,112	35,543	41,186	41,775	51,205	59,565	67,138	73,963	80,338	86,633
[+] Beaumont Basin Minimum Production Right (without Project)	6,688	6,647	6,859	1,805	1,805	1,635	1,478	1,328	1,194	1,178	1,162
[+] Purchased Imported Water Delivered to Beaumont Basin	1,298	1,298	1,298	1,298[8]	2,595	2,595	2,595	2,595	2,595	2,595	2,595
[-] Projected Average Annual Pumping from the Beaumont Basin	2,514	2,514	2,514	2,514	2,514	2,514	2,514	2,514	2,514	2,514	2,514
[=] Ending Account Balance	**30,112**	**35,543**	**41,186**	**41,775**	**43,661**	**52,921**	**61,124**	**68,547**	**75,238**	**81,597**	**87,876**

Source: *Water Supply Assessment* (Appendix J), Table 6.1.5.10B.

IMPORTED

In addition to groundwater, the City purchases imported SWP water from the Pass Agency. The Pass Agency imports water directly from the SWP and is authorized to distribute this water to retailers, such as the City of Banning, within its boundaries. The SWP contract contains a Table "A" amount of 17,300 AFY, which is the maximum annual delivery amount over the period of the contract. In 2006, Pass Agency's allocation of SWP water was 100 percent of its Table "A" allocation. The Pass Agency's allocation was 60 percent in 2007, 35 percent in 2008, 40 percent in 2009, and 50 percent 2010.[9] It is anticipated that up to 25 percent of the Pass

[8] The City's projected stored water account balances in Table 4.14-6 differ slightly from those presented in the 2011 Geoscience Report, at p. 42, as a result of the fact that the Project WSA assumes that EBXII will not be completed until the end of 2014 and therefore the City will not be able to increase imported water purchases to 2,595 AFY, on average, until 2015. The 2011 Geoscience Report assumes increased imported water purchases will begin in 2014.

[9] DWR, Notice to State Water Project Contractors, Number 09-07 (May 20, 2009) [40%for 2009]; DWR, Notice to State Water Project Contractors, Number 10-11 (June 22, 2010) [50% for 2010].

Agency's Table "A" entitlement will be available for purchase by the City. For discussion of the long-term reliability of the City's imported water supply, refer to Section 6.2.7 of the WSA. The City takes delivery of it imported water supply via the Noble Creek Recharge Facility where the supply is percolated into the Beaumont Basin, stored in the City's Beaumont Basin stored water account, and then later extracted by the City through existing wells.

RECYCLED

Currently, the City has no recycled water; all non-potable demands are served with potable water supplies.

SUMMARY OF WATER SUPPLY

As described above, existing supplies for the City of Banning include groundwater from the Banning, Banning Bench, Banning Canyon, Cabazon, and Beaumont Basins. In addition, the City's water portfolio includes supplies accumulated its Beaumont Basin storage account, including unused Beaumont Basin production rights and SWP imported water. The City also has the right to surface waters that augment the yield of the Banning Canyon Basin.

All projected groundwater supplies, in all year types, are within the safe yields of all basins, either as calculated by the 2011 Geoscience *Maximum Perennial Yield Estimates* report in the case of the Banning and Cabazon basins, or by the Watermaster in the Beaumont Basin, and are supported by the City's water rights in each of the respective basins. Tables 4.14-7 through 4.14-9 summarize anticipated fluctuations in the availability of each of the City's supplies under varying hydrologic conditions – i.e., in normal, single dry, and multiple dry water years.

(DWR, Notice to State Water Project Contractors, Number 09-07 (May 20, 2009) [40% for 2009]; DWR, Notice to State Water Project Contractors, Number 10-11 (June 22, 2010) [50% for 2010].)

Table 4.14-7
Total Projected City Water Supplies (Average Year) (AFY)

Supply Source	2015	2020	2025	2030	2035	2040	2045
Beaumont Basin (Stored Water Account Balance)[10]	43,661	52,921	61,124	68,547	75,238	81,597	87,876
Banning Basin	1,130	1,130	1,130	1,130	1,130	1,130	1,130
Banning Bench Basin	1,960	1,960	1,960	1,960	1,960	1,960	1,960
Banning Canyon Basin	4,070	4,070	4,070	4,070	4,070	4,070	4,070
Cabazon Basin	1,185	1,405	1,648	1,916	2,212	2,538	2,899
Recycled Water (Phase I Upgrade only)	1,680	1,680	1,680	1,680	1,680	1,680	1,680
Total Supplies	53,686	63,166	71,612	79,303	86,290	92,975	99,615

Source: *Water Supply Assessment* (Appendix J), Table 6.7A.

Table 4.14-8
Total Projected City Water Supplies (Single Dry Year) (AFY)

Supply Source	2015	2020	2025	2030	2035	2040	2045
Beaumont Basin (Stored Water Account Balance)	43,661	52,921	61,124	68,547	75,238	81,597	87,876
Banning Basin	1,103	1,103	1,103	1,103	1,103	1,103	1,103
Banning Bench Basin	733	733	733	733	733	733	733
Banning Canyon Basin	4,070	4,070	4,070	4,070	4,070	4,070	4,070
Cabazon Basin	1,185	1,405	1,648	1,916	2,212	2,538	2,899
Recycled Water (Phase I Upgrade only)	1,680	1,680	1,680	1,680	1,680	1,680	1,680
Total Supplies	52,432	61,912	70,358	78,049	85,036	91,721	98,361

Source: *Water Supply Assessment* (Appendix J), Table 6.7B.

[10] Includes City's projected annual Production Right pursuant to Beaumont Basin Judgment and projected State Water Project, Table "A" imported water in storage – i.e., not produced to serve demand in prior years. Does not include stormwater flows from the Project proposed to be recharged into the Beaumont Basin pursuant to the Beaumont Basin Judgment.

Table 4.14-9
Total Projected City Water Supplies (Multiple Dry Year) (AFY)

Supply Source	2015	2020	2025	2030	2035	2040	2045
Beaumont Basin (Stored Water Account Balance)	43,661	52,921	61,124	68,547	75,238	81,597	87,876
Banning Basin	843	843	843	843	843	843	843
Banning Bench Basin	598	598	598	598	598	598	598
Banning Canyon Basin	4,070	4,070	4,070	4,070	4,070	4,070	4,070
Cabazon Basin	1,185	1,405	1,648	1,916	2,212	2,538	2,899
Recycled Water (Phase I Upgrade only)	1,680	1,680	1,680	1,680	1,680	1,680	1,680
Total Supplies	52,037	61,517	69,963	77,654	84,641	91,326	97,966

Source: *Water Supply Assessment* (Appendix J), Table 6.7C.

Projected Water Demand – Draft 2010 Urban Water Management Plan

The Draft 2010 UWMP addresses past and current water use in the City. In 1990, the demand on the City's water supply was approximately 4,096 acre-feet. By 2000, the demand almost doubled to 8,031 acre-feet, even though population growth was not significant. The large increase in water demand in relation to population growth during that period was due in large part to increased commercial consumption and irrigation. Future water demand is projected based on expected development in the region. The Draft 2010 UWMP determines future water demand using the water use factors reported in the *City of Banning Water System Hydraulic Modeling Report* (Montgomery Watson Harza 2002). The 2010 demand projections assume that the greatest percent increase in demand will come from new development in the residential and irrigation sectors. Approximately 75 percent of overall water demand is anticipated to come from residential land uses in year 2035.

Citywide Water – Demand and Supply Analysis

Table 4.14-10 summarize the City's assessment of the availability of the City's water supplies during all water year types to meet the water demands for the City's existing and planned future uses. The data assumes an average annual population increase of approximately 2 percent after the year 2010 based on average growth rate projections contained in the City of Banning 2008 Draft Housing Element Update for the years 2008-2014. Residential household units were based on population projection from 2010 forward and an occupancy factor of 2.7 persons per dwelling unit pursuant to the City's 2008 Draft Housing Element Update and the State Department of Finance.

Table 4.14-10
Comparison of Total City Water Supplies (AF) and Net Demand

	2015	2020	2025	2030	2035	2040	2045
Without Project							
Average Year							
Total Supplies	53,686	63,166	71,612	79,303	86,290	92,975	99,615
Total Demands (City Net Demand – Project Net Demand)	9,234	8,596	9,335	10,174	11,072	12,163	13,607
Difference	**44,452**	**54,570**	**62,277**	**69,129**	**75,218**	**80,812**	**86,008**
Single Dry Year							
Total Supplies	52,432	61,912	70,358	78,049	85,036	91,721	98,361
Total Demands (City Net Demand – Project Net Demand)	9,234	8,596	9,335	10,174	11,072	12,163	13,607
Difference	**43,198**	**53,316**	**61,023**	**67,875**	**73,964**	**79,558**	**84,754**
Multiple Dry Year							
Total Supplies	52,037	61,517	69,963	77,654	84,641	91,326	97,966
Total Demands (City Net Demand – Project Net Demand)	9,234	8,596	9,335	10,174	11,072	12,163	13,607
Difference	**42,056**	**51,729**	**59,115**	**65,636**	**71,331**	**76,586**	**81,651**

Source: *Water Supply Assessment* (Appendix J), Table 7A, 7B, and 7C

Residential water demand was calculated based on average water use/demand factor of 0.52 AFY and an average annual system loss of 7.8 percent. The average annual water demand was calculated by taking the average residential water use demand per dwelling unit for 2005 to 2010 multiplied by the average system losses for the same period. Demand projections include all new demands ranging from an individual single-family home to large-scale developments. Future demand also includes proposed developments that have a reserved (or entitlement to) future water supply and are considered to be moving toward construction. Taken into account are also projects proposed under Specific Plans (if the City has determined that they are likely to begin construction during the analysis period).

The City's landscape standards, adopted January 2006 (Ch 17.32 of the Municipal Code) require water use reductions of 25 percent for outdoor (landscape irrigation) water use. In addition, the 2010 California Green Building Code requires new residences to install weather or soil moisture irrigation controllers starting in 2011, which will reduce outdoor water use for new residences by 13 percent. Additional outdoor water use reductions are also assumed based on current standards. Accordingly, water demand projections assume that outdoor water use would be approximately 50 percent of residential uses as per the Draft 2010 UWMP. In addition, the

California Green Building Code will take effect in 2011 and will mandate additional potable water use reductions within buildings of approximately 20 percent. Moreover, all new residences are subject to the State's plumbing code requirements enacted in 1992, which require efficient plumbing fixtures in all new construction (such as low-flow shower heads and faucets and low-flush toilets) and the City's existing indoor water use regulations. These mandated reductions in demand are applied as a "water efficiency" factor in calculating future demand.

The total amount of water available to the City from the Beaumont Basin is declared in the 2004 stipulated judgment, as further described in subsequent reports of the Beaumont Basin Watermaster. The total amount of water available for the City from the aggregate unadjudicated Basins (Banning, Banning Bench, Banning Canyon, and Cabazon Basins) isper the 2011 Geoscience *Maximum Perennial Yield Estimates for the Banning and Cabazon Storage Units, and Available Water Supply from the Beaumont Basin* report. It is also assumed that the City will continue to purchase SWP water from the Pass Agency and to store that water in the City's approved stored water account in the Beaumont Basin. The estimated total water demand (without the Project) for the City of Banning is expected to increase from 9,234 AFY in 2015 to 13,607 AFY in 2045. The supply of water to the City of Banning from all sources (including the Beaumont Basin stored water account) is expected to grow from 53,686 acre-feet per year in 2015 to 99,615 acre-feet per year (without Project) in 2045 due to projected increased pumping of the Cabazon Basin and the increase in recycled water from the City's Phase I Upgrade of its Main Treatment Plant. Given the City's projections for City-wide demand, the City will be able to store and bank the majority of the imported water supplies it purchases, which would be maintained in the City's Beaumont Basin stored water account until needed. The City's stored water account balances would be drawn upon, and thus reduced, only when needed. Based on the analysis above, the City will have water supplies available during normal, single dry and multiple dry years during a 35-year projection to meet the City's existing and planned future uses.

For detailed supply analysis in single dry years and multiple dry years with and without SWP water allocations refer to the WSA (2011) contained in Appendix J.

4.14.2.2 REGULATORY FRAMEWORK

State Senate Bills 901 and 610

Senate Bills 901 (1995) and 610 (2001) established the primary legal standards for assessing the sufficiency of water supplies for new development projects.[11] Affected land developments are those that meet certain size thresholds. Those thresholds are met for developments that include more than 500 residential dwelling units, or industrial, manufacturing or processing plants, or

[11] See Cal. Water Code §§ 10910-10914.

an industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.[12]

These statutes require that as part of the environmental review conducted for a qualifying project pursuant to the California Environmental Quality Act ("CEQA"), the relevant public water supplier must prepare a "water supply assessment" or "WSA" of the reliability of water supplies, considering normal, single dry and multiple dry years, analyzed over a 20-year horizon.

If a project's water supply includes groundwater, the WSA must include the following information:

> (1) A review of any information contained in the Urban Water Management Plan relevant to the identified water supply.
>
> (2) A description of any groundwater basin or basins from which the proposed project will be supplied.
>
> (3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system for the past five years from any groundwater basin from which the proposed project will be supplied.
>
> (4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system from any basin from which the proposed project will be supplied.
>
> (5) An analysis of the sufficiency of the groundwater from the basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.[13]

Upon the water provider's adoption of the WSA, the WSA must be forwarded to the lead agency and incorporated into the CEQA document being prepared for the project and the lead agency must determine, based on the entire record, whether projected water supplies will be sufficient to satisfy demands for the project, in addition to existing and future uses.[14]

[12] Cal. Water Code § 10912(a).

[13] Cal. Water Code § 10910(f).

[14] Cal. Water Code § 10911(b)-(c).

According to Senate Bill 610, a project's public water supplier must prepare and approve a "water supply assessment" that contains the three parts described below (if SB 610's minimum threshold for water demand is triggered):

1. Explicit identification of existing and anticipated water supply entitlements, water rights and water service contracts, demonstrated by contracts, Capital Improvement Plans and applicable permits.
2. If no water has been received by the source identified to supply the development, other competing purveyors that receive from the new source must be identified.
3. If groundwater is a proposed supply, factors such as adjudicated rights, groundwater management practices and historical pumping must be presented to establish proper use of the resource.

In compliance with SB 610, the City prepared a WSA as the public water supplier for the Specific Plan project, regarding the availability of water for the Specific Plan area pursuant to Water Code section 10910 et seq.

California Administrative Code
Title 24 of the California Administrative Code includes the California Building Standards, which in turn includes the California Plumbing Code (Part 5), which promotes water and water-related energy conservation. Section 25352 addresses pipe insulation requirements that reduce the amount of energy needed to heat water and maintain water temperature before it reaches equipment and fixtures. Title 20 addresses public utilities and energy and includes appliance and efficiency standards that promote water conservation. In addition, a number of State laws require water-efficient plumbing fixtures in structures.

Recycled Water
Title 22 California Code of Regulations, Division 4, Chapter 3 defines water-recycling criteria and appropriate uses for recycled water. Title 22 states that only tertiary water, defined as filtered and subsequently disinfected wastewater and subject to additional criteria, can be used for irrigation of food crops, including all edible root crops where the recycled water comes into contact with the edible portion of the crop; on parks, playgrounds, and school yards; for residential landscaping; and for unrestricted access golf courses.

Secondary recycled water is broken down into secondary-2.2 recycled water, secondary-23 recycled water, and non-disinfected secondary recycled water. These categories allow for progressively more restricted irrigation uses. Under Title 22, secondary-23 recycled water is acceptable for irrigation of the following: cemeteries, freeway landscaping, restricted access golf courses, ornamental nursery stock and sod farms (not requiring restricted general public access), pasture for animals producing milk for human consumption, any non-edible vegetation

where access is controlled so that irrigated areas cannot be used as if these areas were part of a park, playground, or schoolyard.

Water Conservation Act of 2009

The Water Conservation Act of 2009, also known as Governor Schwarzenegger's 20x2020 Plan, requires urban retail water suppliers to develop urban water use targets in order to achieve a 20-percent reduction in per capita water use by December 31, 2020. In order to achieve this goal, the act established an interim goal of a 10-percent reduction in per capita water use by 2015. Per capita reductions can be accomplished through any combination of increased water conservation and improved water use efficiency to offset potable demand. This 20-percent reduction also includes a 10-percent reduction in non-residential water uses (commercial, industrial, and institutional) by 2020. Under the new law, suppliers such as the City must develop urban water use targets and interim urban water use targets by July 1, 2011. The City's Draft 2010 UWMP sets forth the City's conservation targets.

County of Riverside General Plan

The County of Riverside General Plan administers policies and programs designed to manage existing supplies, by promoting the efficient use of water to the maximum extent possible, so that they can be maintained for future use. The Multipurpose Open Space and Land Use Elements address the County's policies on water supply and conservation.

While the County General Plan policies do not directly impact properties within the City, which is governed by its own General Plan, the County's General Plan does govern land use within the City's unincorporated Sphere of Influence and the unincorporated Planning Area until such time as those areas are annexed into the City. The Project site includes a 21-acre parcel in the unincorporated area. The following are the water supply policies that are applicable to the unincorporated portion of this Project site:

OS 1.1 Balance consideration of water supply requirements between urban, agricultural, and environmental needs so that sufficient supply is available to meet each of these different demands.

The following are the policies applicable to water conservation and groundwater recharge:

LU 4.1 Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

[Subsections a-e are not applicable to this section.]

f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate.

OS 2.3 Encourage native, drought-resistant landscape planting.

OS 4.1 Support efforts to create additional water storage where needed, in cooperation with federal, state, and local water authorities. Additionally, support and/or engage in water banking in conjunction with these agencies where appropriate, as needed.

OS 4.2 Participate in the development, implementation, and maintenance of a program to recharge the aquifers underlying the County. The program shall make use of flood and other waters to offset existing and future groundwater pumping, except where:

a. groundwater quality would be reduced;

b. available groundwater aquifers are full; or

c. rising water tables threaten the stability of existing structures.

OS 4.3 Ensure that adequate aquifer water recharge areas are preserved and protected.

OS 4.4 Incorporate natural drainage systems into developments where appropriate and feasible.

OS 4.5 Retain storm water at or near the site of generation for percolation into the groundwater to conserve it for future uses and to mitigate adjacent flooding.

OS 4.6 Use natural approaches to managing streams, to the maximum extent possible, where groundwater recharge is likely to occur.

City of Banning General Plan and Zoning Code

The City of Banning General Plan, Environmental Resource Element, provides goals and policies to balance development in such a way that assures the maintenance of the water supply and its continued high quality. This Element pursuant to Policy 3 also requires the use of recycled wastewater for new developments as a means of reducing demand for groundwater resources. Policy 3 states the following:

Policy 3 The City shall require the use of recycled wastewater for new development, or where it is unavailable, the infrastructure for recycled water when it becomes available, as a means of reducing demand for groundwater resources.

Finally, this Element requires the use of drought-tolerant, low-water consuming landscaping to reduce water demand generated by new development pursuant to Policy 2 of this Element. Policy 2 states the following:

Policy 2 The City shall require the use of drought-tolerant, low-water-consuming landscaping as a means of reducing water demand for new development.

Title 13, Public Services, of the City of Banning Municipal Code provides the minimum standards for construction, reconstruction, abandonment, and destruction of all wells in order to: (a) protect underground water resources, and (b) provide safe water to persons within Riverside County. Pursuant to the authority cited in Chapter 13801(c) of the California Water code, the Riverside County health department enforces the provisions of this chapter within its jurisdiction. Title 13 also regulates water conservation within the City.

Clean and Green: Report and Recommendations

In June 2008, the City released its Clean and Green: Report and Recommendations (Clean and Green Report) in which the City recommends both expanded and new conservation programs. The Clean and Green Report identifies existing conservation programs as a baseline for improved conservation. As part of the policy contained in the Clean and Green Report, the City advises that all new projects, like this Project, and, whenever possible, all redevelopment projects should be designed to keep as much water as possible onsite to allow for penetration into the soil to filter and clean the water and recharge the aquifers.

1992 Plumbing Code Change and 2010 Green Building Standards

In 1992, through the federal Energy Policy Act of 1992 and state law amendments, major changes were enacted to the state and City plumbing codes, requiring greater water conservation and efficiency in plumbing fixtures in all new construction as of January 1, 1994.

Under the 2010 California Green Building Standards Code (CGBSC), new residences must reduce their indoor potable water use by 20 percent beginning on January 1, 2011. These standards apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. These reductions can be demonstrated in one of two ways: (1) by providing a calculation demonstrating a 20-percent reduction in the building water use "baseline;" or (2) by proof that each plumbing fixture and fitting meets reduced flow rates.

Post-1994 Changes Impacting Indoor Use for Existing Residences

In 2009, new rules were imposed to require pre-1994 residential and commercial development to replace all non-compliant plumbing fixtures with water-conserving fixtures starting in 2014 in a phased approach through 2019. As a condition for issuance of a certificate of final

completion and occupancy or final permit approval by the local building department after January 1, 2014, water-conserving plumbing fixtures must replace noncompliant plumbing fixtures for all building alterations or improvements to single-family residential real property, and for specified building alterations or improvements to multifamily residential real property and commercial real property.

By January 1, 2017, property owners must replace all noncompliant plumbing fixtures in single-family residences with water-conserving plumbing fixtures. Likewise by January 1, 2019, all noncompliant plumbing fixtures in multi-family residential and commercial property must be replaced with water-conserving plumbing fixtures. After January 1, 2017, a seller or transferor of a single-family or multifamily residence, or commercial property must disclose to the purchaser or transferee, in writing, any specified requirements for replacing plumbing fixtures, and whether the real property includes noncompliant plumbing. Cities must either enact local ordinances or establish policies that promote compliance with these regulations or enact such ordinances or policies that will result in a greater amount of water savings than those resulting from implementation of these regulations.

Model Water Efficient Landscape Ordinance and City's Landscape Requirements

In accordance with the Water Conservation in Landscaping Act of 2006 (AB 1881), DWR has prepared an updated Model Water Efficient Landscape Ordinance (Model Ordinance) intended to establish a structure for designing, installing, maintaining and managing water efficient landscapes in new and rehabilitated projects. The goal is to reduce water use to the lowest practical amount by setting maximum water use limits and by establishing provisions for water management practices and water waste prevention for established landscapes. The Model Ordinance provides guidance such as the Landscape Documentation Package, the Water Efficient Landscape Worksheet, as well as various plans, reports, and audits to require landscape developers to install efficient landscape and irrigation systems.

All local agencies (cities, counties, cities and counties, charter cities and charter counties) had until January 1, 2010, to adopt DWR's updated Model Ordinance or their own local water efficient landscape ordinance that was at least as effective in conserving water as the updated model ordinance. If a local agency has not yet adopted its own ordinance, the updated Model Ordinance applies within the jurisdiction of that local agency.

City Ordinance No. 1339 (2006)

On January 26, 2010, the Banning City Council adopted Resolution No. 2010-06, making the required findings that the City's water efficient landscape ordinance and existing municipal code sections are as effective as the state's Model Ordinance (attached as Exhibit D to the WSA, Appendix J). The City Council found that these existing municipal code sections and the actions of DWR, taken together, meet the goals and policies of the Water Conservation in

Landscaping Act regulations. The City submitted a copy of Resolution No. 2010-06 to DWR in accordance with AB 1881 requirements. The City's conservation regulations are found in its zoning regulations (Chapter 17.32 *Landscaping Standards*) and its Water Conservation (Chapter 13.16) and Stormwater Codes (Chapter 13.24).

On February 14, 2006, the City adopted a water efficient xeriscape ordinance to reduce water consumption in landscaping. The City adopted updated Landscape Standards46 to ensure efficient landscapes in new developments and to reduce water use. The Landscape Standards apply to all new and rehabilitated landscaping for private, residential, commercial, public and governmental development projects.

The City's Landscape Standards set new maximum applied water allowance (MAWA) requirements for new landscapes and require documentation of MAWA calculations based on a new formula. MAWA is the "not-to-exceed" calculation required by the City for landscape designers and developers to determine an annual water use estimate. Because MAWA does not factor in rainfall, this calculation highlights the maximum water usage permitted for a site of a specified size. The evapotranspiration adjustment factor (ETAF) in the formula, which influences the amount of water that can be applied to a landscape, is set at a factor of 0.6, which is 25 percent lower than the MAWA factor that was typically applied in the City's previous landscape designs (previous ETAF 0.8). Based on this change, it is expected that new City landscapes will use 25 percent less water in the future. Actual new landscapes could achieve an even greater water demand reduction through the use of drought-tolerant plants and more efficient irrigation systems that exceed the MAWA requirements.

2010 California Green Building Standards Code (Sec. 4.304) Irrigation Controllers

The 2010 CGBSC now requires new residences to install weather or soil moisture irrigation controllers starting in 2011. Studies have shown that these controllers result in an additional 13 percent water savings. While the City's 2006 Landscape Standards do not require use of controllers with these features in residential use, the CGBSC mandates that the City start requiring them beginning in 2011. Accordingly, beginning in 2011, all landscape irrigation demand for future residential development should be reduced an additional 13 percent.

City of Banning Non-Residential Landscape Ordinance

The Banning Municipal Code contains standards for water efficiency that must be implemented for all landscaping plans required under section 17.32.020. In addition to developer-installed landscaping in single-family tracts and multifamily projects, the standards apply to "all new and rehabilitated landscaping for private, public, commercial and governmental development projects that require a permit." These standards apply to all new projects, redevelopment projects, and project modifications which add 25% or more to a structure's building area.

Each landscape documentation package must include a water conservation concept statement, calculation of the maximum applied water allowance (MAWA), calculation of estimated applied and total water use, a landscape design plan, an irrigation design plan, and a certificate of substantial completion.

Furthermore, all existing landscaped areas which use groundwater and are over 60,000 square feet, including golf courses, green belts, common areas, multifamily housing, schools, businesses, parks, and cemeteries must conduct a landscape irrigation audit at least every five years unless granted an exemption by the City.

City of Banning Non-Residential Water Conservation and Xeriscape

The City's emergency water conservation measures pursuant to Municipal Code Chapter 13 apply to "any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the city." Chapter 13 also implements the City's "Water Conservation Using Xeriscape Principles." In addition to qualifying new residential developments, these conservation provisions apply to rehabilitated landscaping (for projects on parcels greater than ten thousand square feet) for industrial, commercial, institutional, multifamily and residential common areas of PUDs (Planned Unit Developments); interior remodels, tenant improvements and demolitions for any of the above projects; and schools, parks, golf courses or similar public open spaces. However, "water conservation landscape requirements apply to all new developments." Any new development applications must include landscape plans which require final approval at the time of final project approval. .

Under these requirements, the maximum allowed turf and/or water area (expressed as percent of planted area) is 25 percent for industrial, commercial, residential developments with common area, institutions and public/semi-public developments. At least 90 percent of the plants in non-turf areas must be drought resistant. A small percentage of the planted area (up to 10 percent) can be used for non-drought tolerant varieties if they are grouped together and can be irrigated separately.

California Green Building Standards Code for Non-Residential

The CGBSC also includes standards for non-residential buildings. Separate meters or metering devices must be installed to help reduce indoor water use. For example, for buildings in excess of 50,000 square feet, separate submeters must be installed for each individual leased, rented or other tenant space within the building projected to consume more than 100 gpd. Submeters must also be installed for spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop projected to consume more than 100 gpd.

A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent must be provided for all new non-residential construction. The reduction must be based on the maximum allowable water use per plumbing fixture and fittings as required by the CGBSC. The CGBSC also mandates for non-residential buildings showerhead efficiency, wastewater reduction, and requires all plumbing fixtures to meet residential requirements.

For non-residential outdoor water use, the CGBSC requires a water budget for landscape irrigation, as well as separate meters for outdoor potable water use. In new nonresidential construction with between 1,000 and 22,500 square feet of landscaped area, builders must install irrigation controllers and sensors to reduce water use.

4.14.3 SIGNIFICANCE THRESHOLD CRITERIA

The criteria used to determine the significance of potential impacts related to water resources are derived from the Initial Study checklist in Appendix G of the State CEQA Guidelines. The project would result in significant impact related to water resources if it would:

a) *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.*
b) *Have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.*
c) *Require or result in the construction of new water system facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.*

4.14.4 IMPACT ANALYSIS AND MITIGATION MEASURES

ANALYTIC METHOD

The previously certified Deutsch Specific Plan EIR addressed development of the Project site with up to 5,400 dwelling units. Impacts discussed below are generally consistent with the impacts described in the 1985 Deutsch Specific Plan EIR and subsequent EIR Update in 1993. This analysis has been updated to reflect the currently proposed Butterfield Specific Plan, including the offsite infrastructure and 21-acre unincorporated parcel. The EIR analysis incorporates the best available information as provided by the proposed Specific Plan, WSA (Appendix J), the *Maximum Perennial Yield Estimates for the Banning and Cabazon Storage Units, and Available Water Supply from the Beaumont Basin*, Draft 2010 UWMP, and associated tract maps. The analysis of potential impacts to water resources was based on the increase in demand resulting from the Project relative to the capacity of the existing water distribution system and water supply and the ability to provide the required domestic and irrigation water

for the Project. The Project's potential impacts on groundwater recharge were based on the anticipated impervious surfaces associated with the Project, the effect of those surfaces on groundwater recharge, and the increased stormwater detention and recharge resulting from the proposed development.

PROJECT DESIGN FEATURES AND EXISTING REGULATIONS, RULES, AND REQUIREMENTS

The following Project Design Features are elements of the proposed water system infrastructure. Included among these elements are the recycled water facilities which would minimize Project water demand and, therefore, reduce, avoid or offset potentially adverse water supply impacts:

Groundwater Recharge Facilities

1) The Project proposes an onsite groundwater recharge system to assist the City in replenishing the Beaumont Basin located beneath the Project site. The proposed system would have the capacity to recharge the groundwater basin with a portion of the City's SWP allocation delivered by the Pass Agency, as well as surplus recycled water generated by the Project, which would be blended to acceptable water quality levels for recharge use. As an optional improvement, in lieu of, or in addition to, continuing to utilize the Beaumont Cherry Valley Water District's existing recharge facilities, the City or applicant may extend the SWP pipeline from the Noble Creek Spreading Grounds to the proposed North Basin in PA 71 via Brookside Avenue, to create areas for recharge of imported water within the Project site and within the City's boundaries (refer to Section 3.4.4, *Offsite Facilities*).

Water Distribution Facilities

2) The Project proposes three to four above-ground steel water storage tanks for domestic (potable) water. The Project proposes three (3) potential pump station locations and in-tract water pipelines, which would connect to the City's existing system at Highland Home Road and Wilson Street as well as "C" Street and Wilson Street. In addition, the Project would also provide opportunities for three potential interconnects (with additional pump stations) with the Beaumont-Cherry Valley Water District along Highland Springs Avenue.

Recycled Water

3) The City is presently pursuing expansion of its main WWTP to provide capacity for the treatment of wastewater to tertiary standards; however, to ensure the availability of recycled water to the Project, the Butterfield Specific Plan proposes the construction of an optional or alternative onsite "satellite" WWTP to be owned and operated by the City of Banning. Recycled water would be used to irrigate the golf course and the common landscaped areas of the Project in order to reduce the demand for domestic (potable) water, both onsite and City-wide. In order to provide a non-potable water supply to the

project, the recycled water system would require either pumping reclaimed water from the City's wastewater treatment plant via a pipeline to the project, or constructing the optional onsite satellite wastewater treatment plant and conveying residuals to the City's plant.

In order to supply the Butterfield Specific Plan area with recycled water from the City's main WWTP, off-site recycled water transmission pipelines will need to be constructed from Highland Home Road/Wilson Street intersection eastward along Wilson Street, south on Sunset Avenue, eastward on Lincoln Street, south on Hathaway Street, and eastward on Charles Street to the City's main wastewater treatment plant. The Banning WWTP with the planned upgrades would then send recycled water through the pipeline to the point of connection with the Butterfield site's onsite distribution system. Pumps would be needed at points along the off-site line to get recycled water to the site. Refer to Exhibit 3.9B, *Off-site Recycled Water Transmission*, of the Butterfield Specific Plan.

The environmental review (Initial Study/Mitigated Negative Declaration) for the City's Phase I Upgrade project analyzed approximately 5 miles of recycled water pipeline from the existing WWTP to the Sun Lakes housing development to its west. The pipeline alignment, as described, would be located primarily along existing roadways and within the City's right-of-way. The pipeline would run from the WWTP along Charles Street, north on Hathaway Street, continuing west on Lincoln Street to Sunset Avenue where it would turn south on Sunset Avenue to the unpaved City access road that crosses unimproved land to the Sun Lakes housing development on the west side (the unpaved access road is an extension of Westward Avenue). The recycled water line would continue west on this access road along with the existing water, sewer and gas line to reach the Sun Lakes housing development. The environmental review has been completed on this pipeline for the City's Phase I project. Thus, only the portion of the Project's offsite recycled water transmission pipelines that are not covered by the Phase I Upgrade IS/MND is analyzed within this EIR, meaning the pipeline from the Project site to the intersection of Lincoln Street and Sunset Avenue.

IMPACT ANALYSIS AND MITIGATION MEASURES

Impact 4.14-1: Groundwater Supplies

Threshold: *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

Determination: Less than Significant with Mitigation Incorporated

Planning Horizon

This impact analysis evaluates the City's water supply availability and demands for a period of up to 15 years beyond the 20-year planning horizon required by law. The Water Supply Assessment law requires that a WSA assess whether the water supplier's (in this case, the City's) total projected water supplies during normal, single dray and multiple dry years," during a 20-year project" are sufficient to meet the City's total projected water demand (including Project-generated demand). Because the project is anticipated to be built out within 30 years, the WSA incorporates a 35-year planning projection (or 2045).

Total Project Demand

The Butterfield Specific Plan would be constructed in five phases with an estimated 180 dwelling units to be developed per year on average. Through phasing, the associated water demands would start in 2013 to 2014 and reach capacity levels at expected Project build-out in 2045. Refer to the WSA, Section 4.5.2, for a more detailed breakdown of the water demand phasing.

The projected overall gross water demand for the Project at full build-out is approximately 4,224 AFY. The Project's gross or total potable water demand at build-out is 2,880 AFY. The non-potable demands of the Project, which includes golf course and landscape irrigation (parks and greenbelts), at build-out is approximately 1,344 AFY.

The Project's net total water demand with estimated future conservation reduction factored in is 3,103 AFY at full build-out. The Project's net potable water demand with conservation reductions is 1,783 AFY. The non-potable demand of the Project with conservation reductions is 1,321 AFY. Therefore, conservation measures would result in a total reduction in water demand of 1,121 AFY.

The Project also proposes an onsite groundwater recharge system to act as a partial offset (117 acre-feet at build-out) to the additional demand for domestic water posed by the development. At build-out, the Project alone will produce 942 AFY of direct wastewater flows, and the City may direct approximately 650 AFY of existing wastewater flows from areas surrounding the Project site in the event the City elects to construct the onsite satellite WWTP. This total wastewater flow of 1,592 AFY would be converted (at a 75-percent ratio) to a total Project recycled supply of 1,194 AFY. This recycled water supply would serve non-potable demands and reduce the City's demand for potable supplies by an equivalent amount.

If the satellite treatment plant is built on site, a portion of the Project's non-potable demands, and a portion of its potable demands, would be met through the Project's own infrastructure (described below). Table 4.14-11 details the project gross potable and non-potable water use for the proposed Project. Water demands for residential uses are based on the proposed maximum

number of dwelling units coupled with a water use factor of 0.52 AFY per dwelling unit (the water use factor is explained further in Section 5.1 of the WSA, Appendix J). Water demands for non-residential uses were calculated using the net acres for each use coupled with water use factors presented in the *City of Banning Water System Hydraulic Modeling Report* (2002) and utilized in the Draft 2010 UWMP.

Table 4.14-11
Projected Gross Potable and Non-Potable Water Use for the Project at Build-out (2045)

Land Use	Net Dwelling Units	Net Acres	Water Use Factor	Gross Water Use (gpd)	Gross Water Use (AFY)
Potable Water Use					
Residential					
All Residential Units	5,387	937.4	0.52 AFY/DU	2,500,884	2,801
Non-Residential					
Schools[a] (40% of area)	N/A	9.2	1.76 AFY/AC	14,456	16
Commercial/Office[b]	N/A	36	1.21 AFY/AC	38,889	44
Golf Course Club House	N/A	4.3	1.21 AFY/AC	4,645	5
Golf Course Greens[c]	N/A	4	3.44 AFY/AC	12,285	14
Irrigated Areas – Non-Potable Water Use					
Parks	N/A	66.5	3.44 AFY/AC	204,232	229
School Landscaping/Fields	N/A	13.8	3.44 AFY/AC	42,382	47
Golf Course	N/A	245.6	3.44 AFY/Ac	754,276	845
Other Common Open Space					
South Channel Area (PA 19)[d]	N/A	7.9	2,885 GPD/AC	22,792	26
North Basin Landscape Area (PA 71)[e]	N/A	15	2,490 GPD/AC	37,350	42

Table 4.14-11 (*continued*)
Projected Gross Potable and Non-Potable Water Use for the Project at Build-out (2045) (continued)

Land Use	Net Dwelling Units	Net Acres	Water Use Factor	Gross Water Use (gpd)	Gross Water Use (AFY)
Landscape Easement (PA 71)[f]	N/A	4.4	2,490 GPD/AC	10,956	12
Fire Protection & Slope Areas[g]	N/A	25	1,000 GPD/AC	25,000	28
Water Tank Landscaping	N/A	3	1,000 GPD/AC	3,000	3
Major Street Parkways & Medians Landscaping[h]	N/A	40	2,490 GPD/AC	99.600	112
Total Potable Water Demands				**2,571,159**	**2,880**
Total Non-Potable Water Demands				**1,199,587**	**1,344**
Total Gross Water Demands for the Project				**3,770,746**	**4,224**

Source: *Water Supply Assessment* (Appendix J), Table 4.5.1. Footnotes follow on next page.

Notes:
a. The potable water use factor for schools is a factor used for Public Facilities in the City of Banning May 2002 Water System Hydraulic Modeling Report (irrigation demand is accounted for separately). (Banning's 2005 UWMP also uses the 1.76 AFY per acre factor, as well as the Pass Agency 2009 Supplemental Water Supply Planning Study.
b. The potable water use factor for commercial use, including the golf course clubhouse, is a factor used for commercial land use in the City of Banning's 2002 Water System Hydraulic Modeling Report. Banning's 2005 UWMP also uses the 1.21 AFY/AC factor, as well as the Pass Agency 2009 Supplemental Water Supply Planning Study.
c. Due to the sensitive nature of the Project's golf course greens, the 4 acres of greens will require potable water. However, the majority of the golf course's landscaping (fairways and roughs) will be irrigated with non-potable supplies. The water use factor for golf course greens, tees, fairways, roughs, parks and school fields is used in the City of Banning's 2002 Water System Hydraulic Modeling Report. Banning's 2005 UWMP also uses the 3.44 AFY/AC factor for golf courses, which could be a blended factor for all golf course landscaping, not just turf.
d. The water use factor for the South Channel area is a blended factor based on 50% of the area being planted with irrigated reinforced turf mat for the channel and low water use plants with drip irrigation in the other 50% of this area.
e. The water use factor for the North Basin (PA 71) is based on use of medium water use plants with drip irrigation in this area. Based on this factor, it is expected that this area would meet the City's MAWA as allowed by Banning Municipal Code Chapter 17.32 ("Landscaping Standards").
f. The water use factor for the landscaped easement area (PA 74) is based on use of medium water use plants with drip irrigation in these areas. Based on this factor, it is expected that this area would meet the City's MAWA as allowed by Banning Municipal Code Chapter 17.32 ("Landscaping Standards").
g. The water use factor for the open space fuel modification slope areas and the water tank landscaping is based on the use of low water use plants with drip irrigation. Based on this factor, it is expected that these areas would meet the City's MAWA as allowed by Banning Municipal Code Chapter 17.32 ("Landscaping Standards").
h. The water use factor for the major street parkways and medians areas is based on the use of medium water use plants with drip irrigation. Based on this factor, it is expected that these areas would meet the City's MAWA as allowed by Banning Municipal Code Chapter 17.32 ("Landscaping Standards").

Summary of Projected Conservation Reductions in City and Project Water Demand

Section 5.3 of the WSA (Appendix J) defines the new and existing conservation requirements that are anticipated to reduce demand within the City. The City's net demand projection incorporate demand reduction of residential and non-residential development in the City, including the Project. The Project WSA included two methods for calculating net demand: (1) reductions based on California Governor Schwarzenegger's 20x2020 Plan (Section 5.3.1 of the WSA); and (2) focused, incremental demand reduction based on existing conservation programs and requirements for new and existing development (Section 5.3.2 of the WSA).
In 2010, the City's gross water demand was 8,479 AFY. Thirty-five years later, in 2045, the City projects that its gross water demand will be 19,491 AFY. However, the City has estimated that total savings utilizing the 20x2020 reductions from the baseline in 2015, 2020, and 2045 are 384 AFY, 1,697 AFY and 2,781 AFY respectively. Using the focused, incremental demand reduction method, with implementation of conservation measures, the City will reduce its demand over time: by 257 AFY in 2015; and by 3,422 AFY in 2045 — a demand reduction of almost 18 percent.

This projections of water demands under the study period are conservative — as noted in the WSA, Appendix J, Section 5.3 — and therefore provide a reasonable evaluation of City-wide demands for the study period. For example, the conservation water reduction estimates are conservative, because additional conservation with existing residential (outdoor use, as well as indoor use) and existing non-residential water uses within the City are expected to experience additional water demand reductions. Further, the WSA uses a conservative factor of a 40-percent reduction in indoor water use from conservation, even though the City's studies demonstrate that indoor water uses will be reduced by as much as 50 percent for new homes. A conservative baseline for water use of 325 gpd per capita was also used as compared to other service areas with similar demographics that have much lower baselines.

Because of these conservation efforts described above, City demand will not increase as quickly as population. Over time demand per capita will decrease or level out.[15] Table 4.14-12 below summarizes the net total projected Project water demand after conservation measures are applied.

This methodology is used to project the Project's specific demands as specific land use information, such as the size of the golf course and parks, is available for the Project. Table 4.14-13 summarizes the net total projected City water demand after conservation measures. Demand reductions are based on subtracting the City's existing (as of 2010) residential households (10,838 households per Census data) from each successive five-year increment of projected City households (refer to WSA, Appendix J, Table 5.2.4) to provide projections for future new residential households. The baseline for projected reductions is based on the City's recent historic average of 0.52 AFY of water per household factor. These factors are separated

[15] See MWD's Regional 2010 UWMP, Exhibit A.

into indoor/outdoor use, using the 50/50 ratio. Then, the baseline is reduced by the following conservation factors: 40 percent for indoor use; and 38 percent for outdoor use. The projected indoor and outdoor water demand reduction factors result in an overall residential demand reduction factor of 39 percent for future new residences, which equates to an average water demand factor of 0.32 AFY per new residential household.

Table 4.1412
Net Total Projected Project Water Demand (AFY)

	2015	2020	2025	2030	2035	2040	2045
Gross Projected Water Demand	1,253	1,891	2,398	2,913	3,496	4,019	4,224
Demand Savings from Conservation	111	304	490	674	863	1,047	1,121
Net Total Projected Demand after Conservation Savings	1,142	1,587	1,908	2,239	2,633	2,972	3,103

Source: *Water Supply Assessment* (Appendix J), Table 5.3.2.4.

Notes: The water demand savings from conservation are based on a 39% reduction on residential use (50/50 split on indoor/outdoor use, 40% reduction on indoor and 38% reduction on outdoor); 10% reduction on commercial uses, including golf course clubhouse; and 10% reduction on park demand based on the rationale set forth in Section 5.3.2 of the WSA.

Table 4.14-13 demonstrate that the City's incremental conservation projections are nearly identical to the City's 20x2020 conservation target projections, and therefore support the conclusion that the City's 20x2020 conservation projections are reasonable and can be achieved (refer to WSA, Appendix J, Table 5.3.1 and Table 5.3.2B).

Table 4.1413
Net Total Projected City Water Demand (AFY)

	2015	2020	2025	2030	2035	2040	2045
Gross Projected Water Demand	10,760	11,880	13,117	14,482	15,989	17,653	19,491
Demand Savings from Conservation	257	1,081	1,506	1,968	2,469	2,926	3,422
Net Total Demand	10,503	10,800	11,610	12,513	13,521	14,727	16,069

Source: *Water Supply Assessment* (Appendix J), Table 5.3.2.3B.

TOTAL PROJECT SUPPLY

Project Generated Supply

Optional Satellite Wastewater Treatment Plant (or use of City reclaimed water)
One option of providing wastewater treatment to the Project is to construct a satellite treatment plant within the Project area. The satellite plant can receive wastewater gravity flows from the Project, treat them to tertiary levels and pump back recycled water into the Project's recycled water system for non-potable uses. Recycled water would be delivered to the areas through a piping system.

At build-out, the Project could produce approximately 942 AFY of wastewater flow.[16] In addition, there are 650 AFY of existing wastewater flows in the surrounding areas that could be diverted and treated by the satellite WWTP for a total of 1,592 AFY for recycled water generation. Based on the industry standard of a 75-percent factor for converting wastewater into recycled water, 1,592 AFY of wastewater could generate 1,194 AFY of recycled water at build-out. At build-out, the Project's non-potable water demands are projected to be 1,321 AFY, including anticipated water conservation. Therefore, if constructed, the satellite WWTP would produce, at build-out, recycled water to serve the entire Project's non-potable demands.

If the onsite satellite plant is not constructed, the applicant would pump reclaimed water from the City's WWTP Phase I Upgrade to the site, for use in meeting non-potable water demands. Recycled water is expected to be available to consumers in the City of Banning beginning in 2015, when the Phase I expansion of the City's Wastewater Treatment Plant is completed and tertiary treatment of wastewater is available.

Pursuant to State regulations, recycled water treated to tertiary standards can be used for irrigation of public parks, golf courses, landscape medians, other landscape and industrial uses. An initial distribution line to the Sun Lakes development is currently planned. The Butterfield Specific Plan is expected to extend a line to the City's WWTP for recycled water to the Specific Plan area. Implementation of recycled water distribution infrastructure will take place over time to meet emerging needs. The City's 2010 Draft UWMP anticipates this infrastructure expansion and includes recycled water as part of the City's anticipated water portfolio.

[16] Project wastewater generation is based on 139.3 gpd per Project residential unit (5,387 max. units) and 101 AFY of total wastewater generation from the Project's non-residential uses (commercial, schools, club houses, recreation centers). The Project's projected wastewater flows are based on net demand – e.g., after residential indoor conservation measures projected for the Project have been applied. The project residential wastewater flow estimates are based on the Project indoor water demand. Wastewater flow is reflective of indoor water demand, since most of the indoor water use is flushed or sent down sinks and drains which ultimately makes its way to wastewater facilities. The Project is estimated to generate 50% of 0.52 AFY per unit for indoor water demand. This equates to 0.26 AFY or 232 gpd. Imposing the 40% reduction for conservation, the estimated wastewater per residential unit equals 139.3 gpd. The 101 AFY non-residential factor was based on wastewater flow factors presented in the November 2006 *Sewer System Study*, prepared by Carollo Engineers.

This projected use of recycled water from the City's WWTP and associated appurtenant facilities are already covered by an adopted Mitigated Negative Declaration (MND).[17] However, the portion of the Project-related offsite recycled water pipelines from the project site to the intersection of Lincoln Street and Sunset Avenue was not analyzed in this MND. Impact discussion 4.12-9B in Chapter 4.12 of this EIR analyzes offsite impacts related to recycled water system improvements. This section concludes that the majority of these improvements would be constructed within existing roadways and would be below ground. Impacts associated with construction of these facilities have been addressed in appropriate sections of this EIR. No long-term environmental effects associated with operation of these subsurface facilities are anticipated.

Recapture and Recharge of Stormwater

The Project at build-out is estimated to create an increased average annual stormwater drainage runoff of approximately 470 AFY in the developed condition as compared to the existing undeveloped site condition. A portion of this increased runoff would percolate into the Beaumont Basin as it flows over pervious areas (open ground, unpaved areas, landscape areas, water quality features, soft-bottomed channels and Smith Creek, or as it collects in proposed infiltration or recharge basins) and would be stored in the City's stored water account for future use.

The portion of the stormwater that would seep into the ground and percolate into the Beaumont Basin is approximately 25 percent[18] of the increased runoff calculated amounts (25 percent of the ultimate 470 AFY at build-out = 117 AFY). The percentage of runoff that would recharge the basin is a conservative estimate, since the Project is not designed to capture 100 percent of the increased runoff. Also, the proposed system is designed to direct runoff to the project recharge basins where it could be recharged; however, this would require significant storm events to generate the necessary flows. These events would occur infrequently and irregularly. The Beaumont Basin Watermaster would account for all flows that recharge the Beaumont Basin. .

Onsite Groundwater Recharge (Smith Creek and North Basin Reservoir; Optional SWP)

Designated areas have been delineated along the Smith Creek channel in the expanded central golf course areas of the Project or in line with other tributaries to Smith Creek for potential artificial groundwater facilities. Stormwater flows in Smith Creek from upstream (north) of the Project site can be collected in the proposed North Basin Reservoir in PA 71 of the Project site in an amount, when available, equal to the increase in runoff amount. These flows would then be conveyed to the Project's planned recharge basins to ensure recharge to the groundwater.

In addition to the recaptured Project runoff of 117 AFY, described above, the Project's

[17] City of Banning, Water/Wastewater Utilities Department, *Initial Study/Mitigated Negative Declaration: Wastewater Treatment Plant Expansion and Phase I Recycled Water System*, May 2008.

[18] This factor was based on recharge potential discussed in the City's 2005 Urban Water Management Plan.

groundwater recharge system may be used in the future for recharge of imported water supplies and recycled water. The City's projected increase in purchases of imported water to service the Project and other future demand will not cause any new impacts not previously identified in the certified East Branch Extension – Phase II EIR.[19] Delivery of 17,300 AFY Table "A" SWP supply to the SGPWA and the East Branch Extension, Phase 2 project was already covered by the East Branch Extension - Phase II EIR and SGPWA *Water Importation Project* EIR and subsequent Addendum Nos. 2 and 3.[20] As shown in Table 4.14-6, the City will purchase 2,595 AFY, on average, of imported water beginning in 2015. An extension of the SWP pipeline from its current terminus to the Butterfield Project would allow an increase in the amount of recharge capacity (though there are no plans for any more water supply than the existing 176,300 AFY and thus no additional capacity is needed) and a greater diversity of recharge location for the City.

However, the potential SWP pipeline to the Project site was not analyzed in these EIRs. Impacts associated with construction of this potential facility have been addressed in appropriate sections of this EIR. No long-term environmental effects associated with operation of this subsurface facility are anticipated. The extension of the SWP pipeline to the Butterfield Project site shall comply with site-specific improvement guidelines as reflected in PSU-4, which requires fair market compensation for private land acquisition, if City-owned parcels are not available, and a general biological assessment for off-site aboveground infrastructure, by a qualified biologist.

Infiltration rates measured along Smith Creek were approximately 6 feet per day (6 ft/day) or greater (refer to the *Preliminary Geohydrologic Evaluation of Artificial Recharge Potential*, Appendix G, Section 2.3.3). However, long-term average infiltration rates are typically lower due to reduction in recharge from clogging. Therefore, a range of long-term average infiltration rates of 1 to 2 ft/day is assumed. Given the assumed range of 1 to 2 ft/day and an effective recharge area of 13 acres, the artificial recharge potential for the Project site estimated to range from approximately 13 to 26 AF/day. Assuming this rate is maintained 270 days of the year (excluding maintenance period of 3 months), a preliminary estimate of annual artificial recharge potential for the Project ranges from approximately 3,500 to 7,000 AFY. This amount exceeds the projected potable water demand of the Project, estimated to be approximately 2,880.

Comparison of Water Supplies and Demands

Table 4.14-14 compares the total available water supplies with water demands for the Project and other anticipated City demands. The City's existing and projected water supplies are sufficient during normal, single dry, and multiple dry water years during a 35-year period to meet the projected water demands of the Project, in addition to the City's existing and planned

[19] Department of Water Resources, *East Branch Extension – Phase II Environmental Impact Report* (SCH No. 200704101), Draft prepared September 2008.
[20] San Gorgonio Pass Water Agency, *Water Importation Project Environmental Impact Report* (1994107039), Notice of Determination filed April 1994.

future uses. Therefore, sufficient water supplies are available to serve the Project.

Table 4.14-14
Comparison of Total City Water Supplies (AF) and Net Demand (with Project)

Year	2015	2020	2025	2030	2035	2040	2045
With Project							
Average Year							
Total Supplies	53,686	63,166	71,612	79,303	86,290	92,975	99,615
Total Demands	10,376	10,183	11,243	12,413	13,705	15,135	16,710
Difference	**43,310**	**52,983**	**60,369**	**66,890**	**72,585**	**77,840**	**82,905**
Single Dry Year							
Total Supplies	52,432	61,912	70,358	78,049	85,036	91,721	98,361
Total Demands	10,376	10,183	11,243	12,413	13,705	15,135	16,710
Difference	**42,056**	**51,729**	**59,115**	**65,636**	**71,331**	**76,586**	**81,651**
Multiple Dry Year							
Total Supplies	52,037	61,517	69,963	77,654	84,641	91,326	97,966
Total Demands	10,376	10,183	11,243	12,413	13,705	15,135	16,710
Difference	**41,661**	**10,183**	**58,720**	**65,241**	**70,936**	**76,191**	**81,256**

Because the stormwater supply described above (117 AFY) would be recharged into the Beaumont Basin for storage, this supply would offset the Project net demand by 117 AFY at buildout. This additional source of recharge can be credited to the City's Beaumont Basin stored water account as new yield for future use. To ensure a conservative estimate of the City's projected water supplies, the WSA does not include the anticipated stormwater supply associated with the Project in its projections.

Impacts to Existing Groundwater Wells

The proposed Project would create new demand on the City's water supply; however, this demand could be met through the City's existing and future supplies. Adequate groundwater production may be achieved through the City's existing wells. However, the City may need to develop one additional well in the Cabazon Basin if the City's R-1 cannot be used for the production of potable water given its proximity to the City's Cabazon percolation ponds. The

City intends to extract all historical and future water percolated into the Cabazon Basin from the City's WWTP and other future groundwater recharge operations. In addition, the City intends to develop additional groundwater supplies from the Cabazon Basin as part of its conjunctive use groundwater management. Groundwater extractions from the Cabazon Basin will be that amount which will not result in adverse impacts to the Basin. It is expected that this amount may also vary with both location and hydrologic conditions."

Groundwater pumping, and associated City infrastructure such as groundwater wells and conveyance facilities, are being or would be provided by the City as part of their obligation to meet City water demands. Individual facility construction for the City-wide system is subject to the City's own discretionary review process.

There are no proposed onsite wells. Water for the Project is proposed to come primarily from existing offsite City wells. One additional Cabazon well may need to be equipped to accommodate the additional Project and other projected water demand.

In Geoscience's *Maximum Perennial Yield Estimates* report, an estimate of the maximum perennial yield for the Cabazon Basin was developed using the equation of hydrologic equilibrium, or water budget. The study showed that on average, a positive change is storage of 1,805 AFY occurs in the Basin including the average annual extraction of 710 AFY from City well C-6 (the City's only active groundwater well in the Cabazon Basin). The positive change in storage is, in part, due to the City's annual percolation of secondary treated wastewater of approximately 2,655 AFY into the Cabazon Basin. The study concluded that the City may extract a total of 2,515 AFY, on average (an increase of 1,805 AFY over historical average annual extractions from C-6 of 710 AFY) from the Cabazon Basin without inducing overdraft conditions. Well C-6 has the capacity of extracting 1,018 AFY if pumped at its 70-percent (256 days per year) operational capacity (which allows for maintenance) at 900 gallons per minute. Therefore, an additional 1,497 AFY on average (2,515 AFY – 1,018 AFY = 1,497 AFY) could be extracted from the Cabazon Basin if an additional City well is constructed for pumping.

The City's second (inactive) well (R-1), which has a design capacity of 1,500 gpm/2,421 AFY, may be equipped for production at any time. However, given the location of R-1 in close proximity to the City's Main WWTP, it is possible that the RWQCB may conclude that the R-1 well is under the direct influence of surface water and, therefore, may only be used for non-potable uses. No environmental review or approvals would be required for the City's continued groundwater production from C-6 for potable uses and the City's use of R-1 for non-potable uses. In the event the City wishes to construct a second potable well in the Cabazon Basin, it must obtain a permit from the Riverside County Department of Environmental Health. This is not considered unique mitigation pursuant to CEQA Guidelines, but rather is a standard permitting procedure for the construction of groundwater wells within Riverside County. The

City has allocated $5.9 million for the construction of additional wells as necessary to serve future development and to augment existing supply.[21]

The closest non-City of Banning pumping well to Well R-1 is located approximately one mile away. However, a negligible drawdown would occur from increased pumping from R-1. This negligible drawdown would not result in any significant impact to the well or operation of the well. If an additional well is constructed to maximize use of the Cabazon Basin for groundwater development, the well can be located so as to not result in impacts to existing wells (refer to Mitigation Measure WS-1).[22] Groundwater pumping from the Cabazon Basin is not anticipated to affect existing wells due to the distance from existing City wells to other wells.[23] For any future well, the City would proceed with a well development program as is done for other City wells, including locating new wells to minimize adverse effects upon nearby active wells based on hydrogeologic investigation and initial well development tests (refer to Mitigation Measures below).
The City does not propose additional pumping within Banning Basin, Banning Bench Basin or Banning Canyon Basin to serve the Project and therefore would not impact nearby wells. The City's existing wells in each of these basins provide sufficient capacity to continue to produce historical amounts.

The Beaumont Basin is an adjudicated basin. Pursuant to the Beaumont Basin Judgment, the Court appointed a Watermaster. The Beaumont Basin Watermaster ("Watermaster") is a multi-party agency consisting of representatives from the Cities of Banning and Beaumont, BCVWD, Yucaipa Valley Water District (YVWD), and South Mesa Water Company (SMWC). The Watermaster is responsible for managing the Beaumont Basin and administering adjudicated water rights pursuant to the Court's continuing jurisdiction. The Watermaster is responsible for accounting for production from the basin, among other things. Groundwater pumping in the Beaumont Basin is subject to extensive monitoring, replenishment and appropriator coordination pursuant to the Watermaster rules and basin adjudication. The City's pumping is subject to the Judgment and the Watermaster's ongoing management.

The City proposes to maintain average historical amounts from the Beaumont Basin in order to promote the accumulation of water (both from the City's unused production rights and recharged imported water) in the City's stored water account. Therefore, the City does not propose increases in pumping from the Beaumont Basin and does not propose pumping in excess of its rights in the basin. The City's existing wells provide sufficient capacity to continue to produce historical amounts. All water production and storage operations in the basin are subject to the adjudication and resulting court judgment. The court's and Watermaster's ongoing management of the basin ensures that the City's production of its rights in the basin,

[21] City of Banning, Capital Improvement Program: 2007-2012 (Jan. 8, 2008), p. 2.

[22] City of Banning, *Maximum Perennial Yield Estimates* (2011), p. 37-40.

[23] City of Banning, Draft 2010 UWMP (2011), Figure 5-4.

including withdrawal of water from storage, does not result in adverse impacts on the basin or material interference with other basin right holders. Therefore, less than significant impacts to groundwater levels are anticipated.

Mitigation Measures

The Project has reduced, avoided or offset potentially adverse impacts to water supply through Project Design Features noted above (all of which are summarized in Section 3.8, *Project Design Features*). To ensure groundwater levels in the Banning, Banning Bench, Banning Canyon and Cabazon Basins are maintained within acceptable levels and to avoid interference with existing wells when new wells are constructed, the City will:

WS-1: With respect to all City groundwater supplies, the City will:

1. Periodically, conduct a groundwater audit that evaluates groundwater level trends, production rates, groundwater quality or other aquifer/well/pump considerations from the previous year (through use of a on-going groundwater monitoring and data collection system).

2. Develop a groundwater model to allow accurate simulation of groundwater flow and groundwater quality (including potential impacts by recharge of recycled water) in the City of Banning groundwater resource area.

Additionally, to avoid injury to other legal users of the Cabazon Basin, the City will:

3. Site any new well so as to not result in material interference to existing wells.

Impact 4.14-2: New or Expanded Entitlements

Threshold: *Would there be sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Determination: Less than Significant

The City of Banning possesses vested appropriative rights to extract groundwater from the Banning, Banning Bench, and Banning Canyon Basins. The City also possesses vested appropriative and developed water rights in the Cabazon Basin. As noted above, the Beaumont Basin is an adjudicated basin. Beginning in 2014, the City's right to pump will be determined by the Watermaster. The anticipated future Project demand would not cause the City to exceed its rights in any of the five groundwater basins from which it presently obtains its supply.

Given the City's integrated water supply and distribution system, groundwater produced from the Beaumont, Banning, Banning Bench, Banning Canyon, or Cabazon Basins may serve the Project. As presented in Table 4.14-14, the projected City water supply would exceed the projected City water demand (with Project).

Construction of the Project would create up to 117 AFY of additional supply (stormwater) at buildout for recharge into the Beaumont Basin, either via the North Basin or Smith Creek recharge areas, subject to the limits of the City's approved Stored Water agreement and approval by the Beaumont Basin Watermaster. Additionally, the Project Applicant (or City) would be required to file a Report of Waste Discharge with the RWQCB as well as comply with Title 22 regulations. RWQCB would prescribe waste discharge requirements for proposed uses of recycled water which relate to the conditions in the use area. The requirements implement relevant water quality control plans, take into consideration beneficial uses to be protected, and establish water quality objectives reasonably required for that purpose. The Project Applicant would be required to apply for an individual order setting waste discharge requirements (WDRs). The City may be restricted from using recycled water that exceeds water quality objectives for total dissolved solids (TDS) or nitrogen.

In addition, the City has recently enrolled in the Maximum Benefits Program in the Beaumont Management Zone (BMZ). As a participant in the BMZ program, the City will be allowed to discharge recycled water of higher TDS (up to 480 mg/L) with the commitment to participate in actions to reduce the TDS concentrations or through a TDS offset using its allocation of imported water. As part of the Maximum Benefits Program, RWQCB has required BCVWD, the City of Beaumont, and YVWD to develop TDS and nitrate-nitrogen concentration projections for the Beaumont Management Zone. The City also participated in this study in anticipation of its use of recycled water within the BMZ. Because the maximum benefit objectives incorporated into the Basin Plan were based on model projections, the RWQCB requires that each new use be evaluated prior to issuing permits for additional recycled water uses and that the Region 8 Basin Plan be amended to include an updated maximum benefit implementation plan.

If the SWP Extension is constructed, it would require the City to potentially obtain encroachment permit approvals from Caltrans and SCE and approve grading and infrastructure permits and improvement plans. The extension would also require review from the Riverside County Flood Control and Water Conservation District, a permit for use of SWP facilities from the Department of Water Resources, approval from the SGPWA, and possibly approval by SBVMWD.

These approvals would be required for the new extension to the North Basin and *not* for the construction of the East Branch Extension, Phase II or the importation of SWP water, which was previously analyzed in the certified East Branch Extension – Phase II EIR, SGPWA Water Importation Project EIR, and subsequent Addendum Nos. 2 and 3).

For the Banning Basins, the City does not propose increasing its pumping from any of the Banning Basins (i.e., the project average annual available supply equals to the City's historical production from these Basins) and does not propose the construction of any new wells. Refer to Table 6.1.6.4 (WSA, Appendix J) for Banning Basins projected supply. The City is the only major producer in all three basins; minor private pumping is considered immaterial.

In the Geoscience *Maximum Perennial Yield Estimates* report, a water balance was prepared which determines that a positive change in storage has occurred as a result of inflow and outflow factors including wastewater percolated into the Cabazon Basin.

Groundwater recharge to the Cabazon Basin is also obtained from precipitation infiltrating into the ground within the surface water catchments tributary to the unit and from subsurface inflow from the Banning, Banning Bench, and Banning Canyon Basins. Groundwater outflow from the Cabazon Basin includes pumping[24] and subsurface outflow to the Indio subbasin and subsurface outflow to the San Jacinto Tunnel. The *Maximum Perennial Yield Estimates* report concludes that the maximum perennial yield of the Cabazon Basin is 5,265 AFY, of which 2,515 AFY may be produced by the City, on average, without causing undesirable results on the Basin.

The City proposes increases in the City's pumping from the Cabazon Basin to make use by extraction of all historical and future water percolated into the Cabazon Basin from the City's WWTP and other future groundwater recharge operations. In addition, the City intends to develop additional groundwater supplies from the Cabazon Basin as part of conjunctive use groundwater management. Groundwater extractions from the Cabazon Basin will be that amount which will not result in adverse impacts to the Basin. It is expected that this amount will amount may vary with both location and hydrologic conditions. Refer to Table 4.14-15 below for inflow and outflow terms used in calculating the Cabazon Basin's hydrologic budget.

For purposes of projecting Cabazon water supplies into the future, inflow of recycled water increases in time to account for the increase of wastewater generated by an increase in population over time. This recycled water will be percolated into the Cabazon Basin. However, once Phase I of the WWTP expansion is completed, 1,680 AFY will be used for irrigation purposes and may no longer be applied to the Cabazon Basin as direct percolation.

[24] Geoscience's analysis was based on the water budget which takes into account existing pumping by others; the *Maximum Perennial Yield Estimates* report based its future pumping estimates on average groundwater extractions from the Cabazon Basin during the period 2003 to 2009.

Table 4.14-15
Hydrologic Budget – Cabazon Basin (AFY)

Inflow					Outflow			
Underflow from Banning Basin	Underflow from Banning Bench Basin	Mountain Front Runoff and Arial Recharge	Recharge of Treated Wastewater	Total Inflow	Subsurface Outflow to Indio Subbasin and the San Jacinto Tunnel	Ground Water Pumping	Total Outflow	Average Annual Change in Storage
2,300	350	10,460	2,655	15,765	10,500	3,460	13,960	1,805

Source: *Maximum Perennial Yield Estimates* report (Appendix J, [sub] Appendix D), Section 7.4.2.1.

To determine the volume of treated wastewater that will be percolated into the Cabazon Basin, the volume of wastewater generated from Phase I completion (1,680 AFY) was deducted from the future wastewater generation estimates after 2015 (when completion of Phase I is expected to occur). The remainder of treated wastewater will be applied to the Cabazon Basin in the form of percolation and was incorporated in the hydrologic budget to estimate the anticipated future change in storage in the Cabazon Basin using the method and inflow and outflow parameters as described in the Geoscience's *Maximum Perennial Yield Estimates* report (refer to Section 7.4.2).

Geoscience has determined that the volume of groundwater represented by the change in storage is water available to the City for development. The projected change in storage in addition to the City's average production of 710 AFY (from Well C-6) was used to determine available future supplies to the City from the Cabazon Basin. Total supplies available to the City from the Cabazon Basin are shown in Table 4.14-9 (also refer to Table 4-1 of the UWMP[25]). As noted above, these values assume that Phase I of the WWTP expansion will be completed by 2015, and 1,680 AFY will be treated to tertiary standards and used to offset potable demand; therefore, the 1,680 AFY is excluded from these estimates.

Geoscience's *Maximum Perennial Yield Estimates* report determined that groundwater levels within the Cabazon Basin closely follow the pattern of rainfall, declining during dry periods and rising during wet periods. Overall, however, the long-term change in groundwater in storage appears to remain the same (i.e., no long-term declines or increase).

[25] Note: The 2010 UWMP covers years 2015 to 2035. However, the WSA's study period extends until 2045 to account for full build-out of the Project.

The projected water demands of the Project would not require additional extraction (beyond what is mentioned above) from the Cabazon and Banning Basins. These are unadjudicated Basins and would not require permits or agreements for additional groundwater extraction. Therefore, no new or expanded entitlements are anticipated for these particular Basins. Additionally, with implementation of Mitigation Measure WS-1, less than significant impacts are expected.

Impact 4.14-3: Construction of Water System Facilities

Threshold: *Would the project require or result in the construction of new water system facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Determination: Less Than Significant with Mitigation Incorporated

Direct Effect
The Project proposes construction of several water supply and water quality features that are described as part of the Project Design Features in Section 4.14.4. The Project proposes construction of comprehensive water treatment, storage and transmission facilities to meet projected water demands for uses in the proposed Specific Plan. The Project would be integrated into the City domestic water system.

As part of the storage and Project's transmission system, three to four above-ground water tanks are proposed, having a total storage capacity of approximately 3.5 million gallons (mg). These tanks would be constructed to serve homes in the Project's development that would become part of the City's existing lower Foothill West Pressure Zone, onsite Pressure Zone I, and onsite Pressure Zone II. The proposed Project's approximate 1.6 mg Foothill West storage tank would be located on the east side of PA 50 at an elevation of approximately 2,790 feet amsl. Alternatively, this storage tank could be buried under the playing fields of the PA 68 school site. Both the Project's approximate 1.5 mg Zone I and 0.5 mg Zone II storage tanks would be located in the east portion of PA 73, at minimum pad elevation of approximately 3,038 feet amsl for Zone I and approximately 3,205 feet amsl for Zone II. The Specific Plan would allow the construction of either a single tank or two side-by-side storage tanks to serve Pressure Zone I.

The ultimate size and location for the project storage tanks and pipelines would be based on effectively balancing deliveries throughout the Project as well as the City. Water tank locations/elevations are approximate and may change to reflect final grading, hydraulics, and fire suppression/code requirements. The timing of these improvements would coincide with the number of homes under construction to ensure that adequate pressures can be addressed.

Additional water treatment, storage and transmission facilities include the optional onsite satellite treatment facility, three pump stations, subsurface pipelines, and the offsite sewer lift station. The tallest structure for the treatment facility, a one million gallon water storage tank, would be 35 feet in height, similar to the maximum height of a residential structure. All treatment processes would take place within an enclosed structure(s). The proposed lift station would be located on a small commercial lot in an appropriately designed and screened building. Similarly, the pump stations would be located within an enclosed structure.

The water supply and water quality-related elements described in Section 4.14.4 are part of the overall Project, and therefore their environmental impacts are analyzed throughout Section 4 of this Draft EIR, including Impact 4.14-1 of this Chapter (including the optional SWP pipeline extension to the Project site, potential recharge of imported or recycled water within the North Basin, the optional satellite treatment plant, and the potential extension of Phase I Upgrade pipelines from the City's Main WWTP). Refer to applicable Mitigation Measures within Chapters 4.1, 4.3, 4.4, 4.6, 4.8, 4.9, 4.11, 4.12, and 4.14. As described under Impact 4.14-1, Mitigation Measures PSU-4 would reduce impacts to less than significant levels. PSU-4 requires fair market compensation for private land acquisition required for offsite infrastructure, if City-owned parcels are not available, and a general biological assessment for offsite aboveground infrastructure.

The Noble Creek recharge facilities (which may also be used for Beaumont Basin groundwater recharge from SWP water) have a previously certified Final EIR, as noted in Section 2.6, *Incorporation by Reference*. No additional impacts beyond those described throughout Section 4 are anticipated.

4.14.5 CUMULATIVE IMPACTS

Determination: Less than Significant with Mitigation Incorporated

As discussed above, the City and water management purveyors in the Basin have acquired water supplies and prepared water plans considering regional land use plans, including the relevant general plans. As the planned growth in the Banning area continues to occur, the demand on water resources will increase. However, the proposed Project and other reasonably foreseeable projects would be served by the existing and future water supplies identified in the analysis completed for the WSA, and also in the Draft 2010 UWMP, which evaluate anticipated cumulative water demand against existing and planned supply and determined a sufficient water supply (including groundwater pumping that would not result in long-term depletion of groundwater resources) is available to serve anticipated demand, including the proposed Project.

Accordingly, the cumulative impacts are analyzed in terms of impacts to water supplies and facilities operated by the City's of Banning along with impacts to other water users. The

analysis considers the significance of the contribution of the proposed Project to cumulative regional impacts on water supplies resulting from the increase in water demand generated by the Project.

The WSA (Appendix J) projects the City of Banning annual water demand will be 16,710 acre-feet in 2045. The WSA determined that the City's service area will have sufficient existing and planned supplies to meet 100 percent of the projected demand through 2045, under a normal hydrologic year, single dry hydrologic year, and a series of multiple dry years. When comparing supply and demand under the defined water years, the WSA concludes that the City is projected to maintain 100-percent water service reliability under each type of water year. The WSA also finds that the region is continuing to improve its water reliability by designing programs to protect and ensure water quality, maximize local supplies, promote conservation, encourage recycled water use, and meet its demands during shortages.

The WSA completed reliability analyses for each of the 5-year projection periods from 2015 through 2045 for imported water supply and projects that up to 25 percent of all Table "A" entitlement made available by the Pass Agency to its retailers will be available for purchase by the City.

The Pass Agency's SWP entitlement is not guaranteed every year due to climatic variability, environmental concerns and increasing demands for SWP delivery. The Pass Agency application provides that "due to the annual variable nature of the Pass Agency water supply, Pass Agency water deliveries do not constitute a vested right to a fixed amount of Pass Agency water each year or to any specific level of pressure." Further, Pass Agency water deliveries are "subject to all of the terms and conditions of Pass Agency's SWP contract with DWR, including delivery interruption by reason of DWR and/or Pass Agency's requirements for maintenance and operation of its facilities or by reason of demand by Purchasers in excess of Pass Agency's Table 'A' amount." DWR projects that the Table "A" water supplies will be 60 percent reliable, on average, in the future. To date, the City has received above and beyond its full requested amount each year.

The City does not rely on imported water supplies alone – it also has groundwater (from 5 separate Basins), surface water, and by 2015, recycled water, supplies. Further, the City conjunctively manages its groundwater and imported water supplies and therefore does not take direct delivery of imported water. As such, annual fluctuations in the delivery of imported water do not directly affect the reliability of the City's water supply. The City's water supply projections take into account the projected future reliability of imported water supplies. The City assumes that only 25 percent of 60 percent of the Pass Agency's Table "A" supply will be available to the City for purchase.

In terms of groundwater supplies, the City can pump all surplus water in the Banning Basins up to their safe yield given the City is the only major pumper. Pumping from the Beaumont Basin

is subject to Watermaster rules and the Basin adjudication. The City's projected pumping from the Cabazon Basin is based on the City's estimates of surplus water available for development by the City, including the City's wastewater flows recharged into the Basin. Periodically, the City evaluates hydrologic conditions in the basins, including groundwater levels and amount of groundwater in storage. The City's water supply reliability depends upon local groundwater supplies and the reliability of imported water from the Pass Agency.

The City's Water Shortage Contingency Plan in the Draft 2010 UWMP addresses how the agency will meet water demands during water shortages. The purpose of the Water Shortage Contingency Plan is to provide a plan to be followed during the various stages of a water shortage. The Water Shortage Contingency Plan includes the following elements: action stages, estimate of minimum supply available, actions to be implemented during a catastrophic interruption of water supplies, prohibitions, penalties and consumption reduction methods, revenue impacts of reduced sales, a draft water shortage contingency resolution, and water use monitoring procedures.

Assessment of individual projects for impacts to the local and regional water supply system will continue to occur as part of the standard project planning process. This will ensure projects would only be approved if adequate water supplies exist at the time of their implementation. Therefore, cumulative impacts to water supply would be less than significant in this regard.

While the Project's increased water demand would represent a significant increase compared to current conditions, the WSA has determined that the incremental demand generated by this Project would not be cumulatively considerable and would be less than significant.

Climate Change

Under climate change and in some years, water levels in California's main supply reservoirs (Shasta, Oroville, Folsom, and Trinity) could fall below the lowest release outlets making the system vulnerable to operational interruption. By mid-century, it is expected that a water shortage worse than the 1977 drought could occur in one out of every six to eight years. In those years, it is estimated that an additional 575-850 thousand AF of water would be needed to meet current regulatory requirements and to maintain minimum system operations. DWR concluded that this water could be obtained through additional water supplies, reductions in water demands, or a combination of the two. For current conditions, the DWR 2009 SWP Reliability Report concludes the system is not considered vulnerable to this type of operational interruption.

The City's reliability analysis for imported water (Section 6.3 of the WSA, Appendix J) applies DWR's reliability analysis for future conditions and therefore already accounts for the potential impacts of climate change on the availability of the City's imported water supply, as predicted by DWR. As such, no further analysis is required.

While climate change is likely to have some impact on the City's groundwater supplies on a long-term basis, the direction and magnitude of that impact is unknown to the scientific community. Compared to surface water supplies, groundwater is likely to be more reliable in the face of climate change.

In light of these conclusions, both governmental agencies and non-governmental organizations recommend that water decision-makers operate existing water systems to allow for increased flexibility. Other recommendations include incorporating climate change research into infrastructure design, conjunctively managing surface water and groundwater supplies, and integrating water and land use practices. In order to address the potential impacts of climate change, the City will implement Mitigation Measure WS-2. With implementation of WS-2, less than significant impacts are anticipated.

Mitigation Measures

The following mitigation measure will reduce potentially significant impacts associated with climate change to less than significant levels. In addition, the Project has reduced, avoided or offset potentially adverse impacts to water supply through Project Design Features noted above (all of which are summarized in Section 3.8, *Project Design Features*):

WS-2: Additionally, to guard against the potential adverse effects of climate change on the City's water supplies, the City will:

1. Continue to manage its imported and surface water supplies conjunctively with its groundwater supplies to maximize opportunities for groundwater storage.

2. Continue to monitor expert technical analyses of the impacts of climate change on surface and groundwater supplies and incorporate any recommendations into the City's water supply planning efforts.

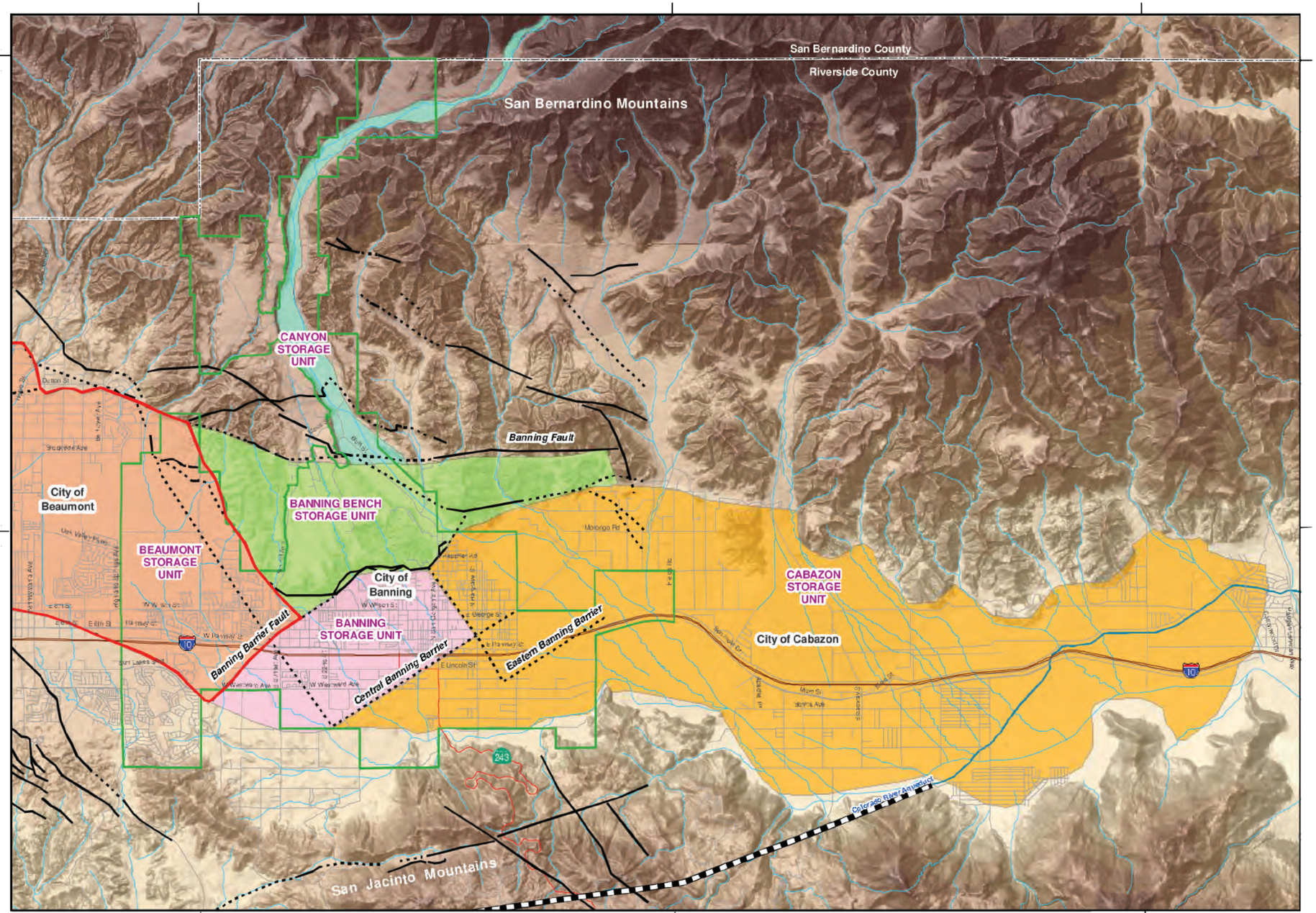
3. Continue to practice and promote integrated flood management. The City will incorporate climate change findings into infrastructure design and continue to integrate water and land use practices, such as encouraging new developments to capture and treat stormwater onsite. New water infrastructure will be designed to operate under a wide range of conditions and will consider climate change impacts.

4. Continue to diversify its portfolio through increased water use efficiency and aggressive demand reductions achieved by existing and new conservation programs. The development and use of a new recycled water supply will further diversity the City's portfolio and reduce potable water demands.

5. Continue to further develop regional alliances with cities, water districts and water agencies to integrate, improve and develop regional water management.

4.14.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The impact of the proposed Project on water supply would be less than significant after mitigation measures are incorporated.



GROUND WATER STORAGE UNITS IN THE CITY OF BANNING AREA

EXPLANATION

- City of Banning Boundary
- County Boundary

Fault Classification (USGS, 2006)

- Surface Fault
- Concealed Fault
- Colorado River Aqueduct
- San Jacinto Tunnel

Ground Water Storage Unit Boundary (Source: USGS, 2006)

- Banning Bench
- Banning
- Beaumont
- Cabazon
- Canyon

Southern California Inset

8-Apr-11

Prepared by: DWB. Map Projection: UTM 1927, Zone 11.

Source of Faults:
USGS Scientific Investigation Report 2006-5026, Fig. 2, 2006.

NORTH
0 1 2 Miles

DRAFT

GEOSCIENCE

GEOSCIENCE Support Services, Inc.
P.O. Box 220, Claremont, CA 91711
Tel: (909) 451-6650 Fax: (909) 451-6638
www.gssiwater.com

SOURCE: City of Banning, Draft 2010 Urban Water Management Plan, May 2011

NOT TO SCALE

RBF CONSULTING

5/27/11 JN: 65-100290

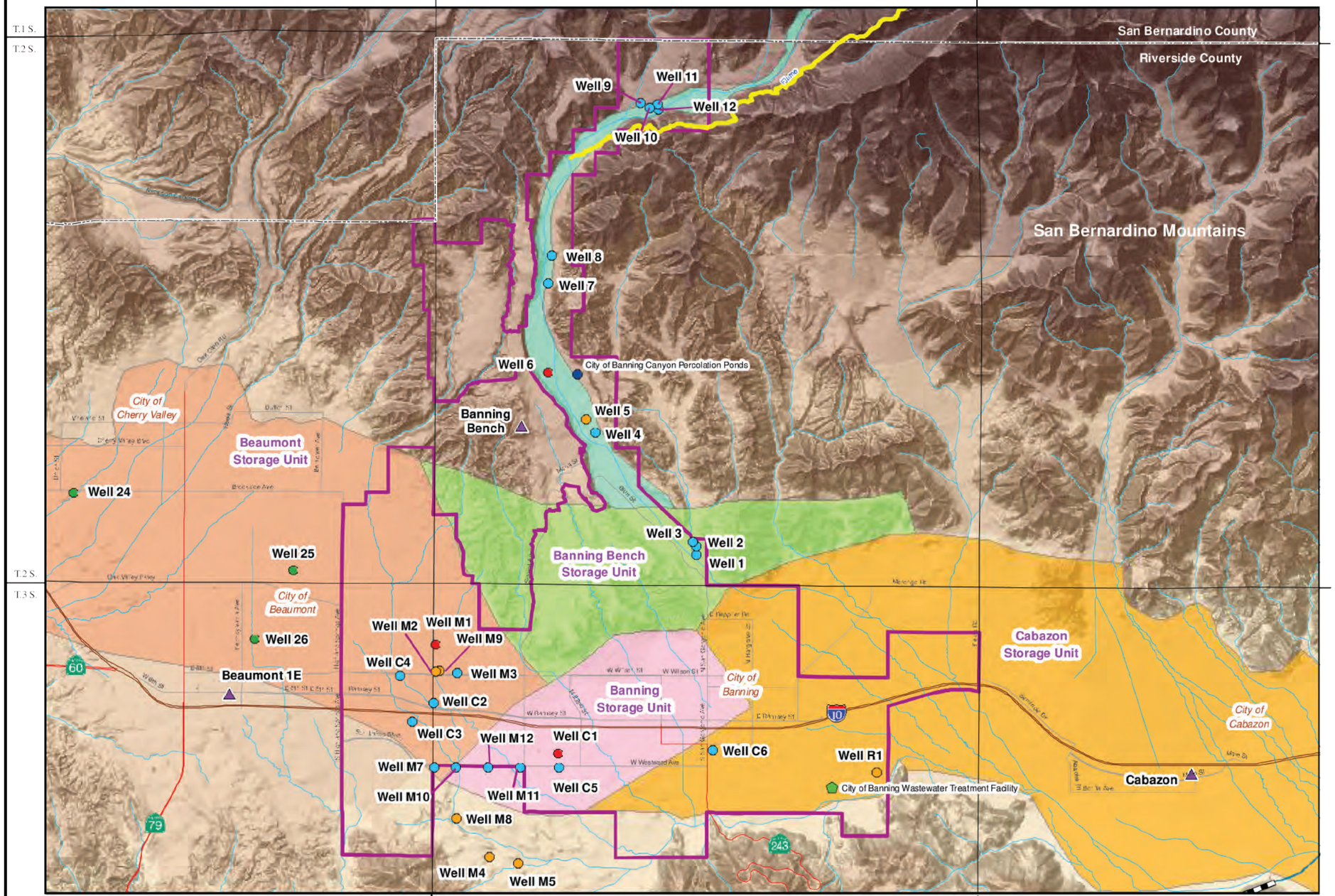
PARDEE HOMES • BUTTERFIELD SPECIFIC PLAN EIR

City of Banning Ground Water Basins

EXHIBIT 4.14-1

CITY OF BANNING

DRAFT 2010 URBAN WATER MANAGEMENT PLAN



CITY OF BANNING WELL LOCATIONS

EXPLANATION

City of Banning Well Classification

- Active Well
- Inactive Well
- Destroyed Well
- Active Wells Co-Owned by the City of Banning and Beaumont Cherry Valley Water District

Cabazon — Riverside County Flood Control and Water Conservation District Weather Station

- City of Banning Boundary
- Colorado River Aqueduct
- San Jacinto Tunnel
- SCE Trans-Basin Diversion from the Upper Whitewater River Watershed

Ground Water Storage Unit Boundary (Source: USGS, 2006)

- Banning Bench
- Banning
- Beaumont
- Cabazon

8-Apr-11

Prepared by: DWB. Map Projection: UTM 1927, Zone 11.

NORTH

0 0.5 1 Miles

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PARDEE HOMES • BUTTERFIELD SPECIFIC PLAN EIR

City of Banning Well Locations

EXHIBIT 4.14-2