

WATER SUPPLY ASSESSMENT FOR “BARRETT RANCH EAST”

INTRODUCTION

This Water Supply Assessment (WSA) contains the data and analysis required by California State Senate Bill 610 (Chapter 643, Statutes of 2001), which amended Water Code Section 10910, et seq. The intent of SB 610 is to ensure that information on water supply availability is considered in connection with certain land use decisions made by cities and counties. Specifically, SB 610 promotes more collaborative planning between local water suppliers and cities and counties by requiring that detailed information regarding water availability be provided to city and county decision makers prior to approval of specified large development projects (as defined in Water Code Section 10912(a)). Such water supply information must be included in the administrative record for an approval action by the city or county on such projects.

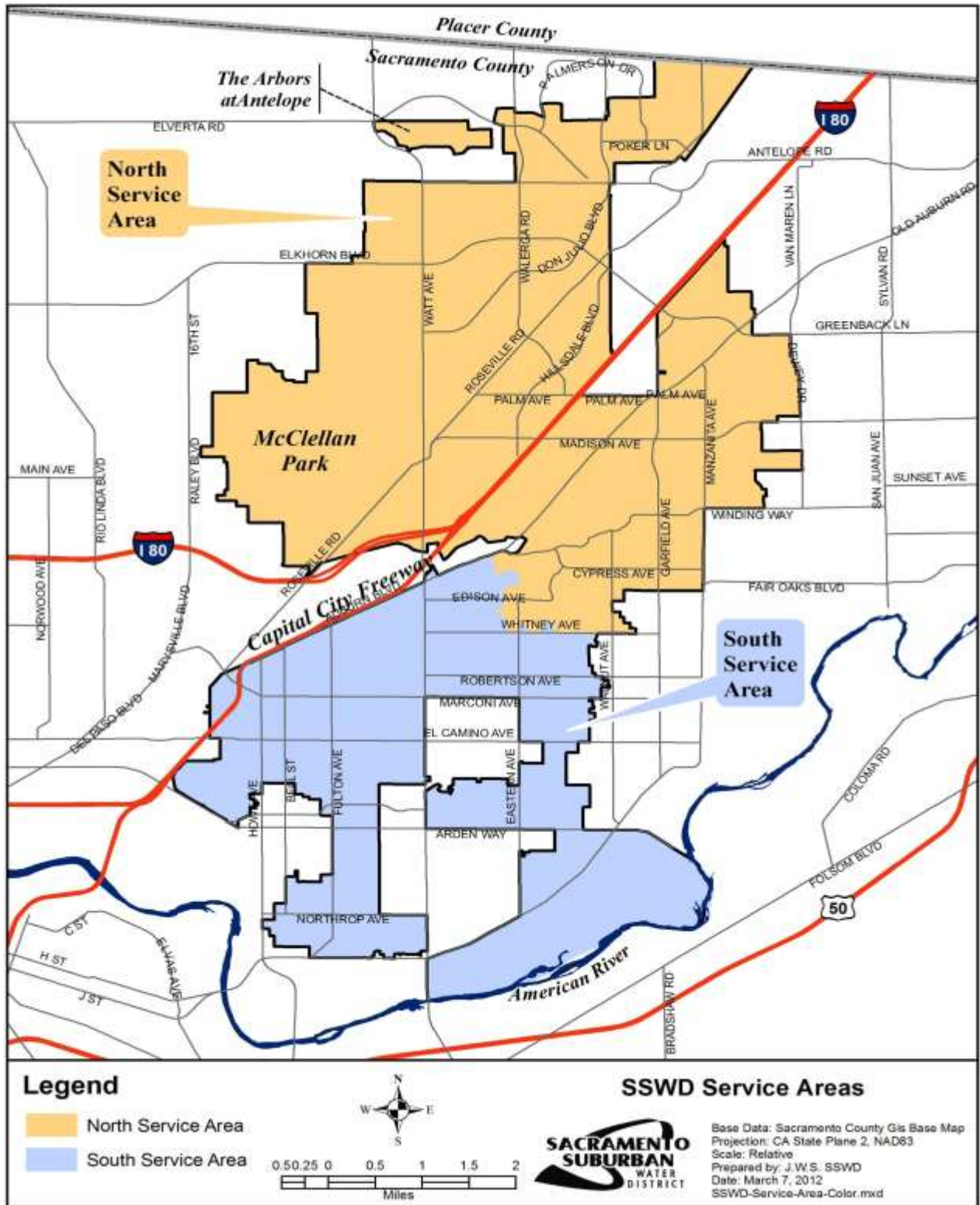
Further, under SB 610, water supply assessments must be furnished to local governments for inclusion in the environmental documentation for certain projects (as defined in Water Code Section 10912 [a]) that are subject to the California Environmental Quality Act (CEQA).

This WSA documents the adequacy of the water supply to serve the project over the next 20 years under average year, single dry year, and multiple dry year conditions (Water Code Section 10910(c)(3)). The project is located within the Sacramento Suburban Water District (District) North Service Area (See Figure 1). Section 10912(c) of the California Water Code defines a “public water system” as a system for the provision of piped water to the public for human consumption that has or will have 3,000 or more service connections. All urban water suppliers as defined in Water Code Section 10617 (including whole-sales), either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet per year (af/y) are required to prepare an Urban Water Management Plan (UWMP). The District supplies approximately 36,387 (year 2010) acre-feet (AF) of water annually to a population of approximately 170,600, and it is therefore subject to this requirement. The District has an adopted UWMP dated May 2010. Additionally, the District has a Water System Master Plan (Master Plan), which was adopted by the District’s Board of Directors on July 20, 2009. According to the District, the Master Plan is intended to be a “comprehensive assessment and description of the District’s ultimate needs (to the year 2035) for water distribution, supply and treatment based on future population growth, land use, proposed water quality regulations, etc. The master plan is intended to allow the District to better plan and budget for future facilities projects and capital improvements”.

Information from the District’s UWMP and Master Plan were utilized in the following WSA.

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Figure 1: Water District Boundaries Map



WATER SUPPLY ASSESSMENT FOR “BARRETT RANCH EAST” PROJECT’S NEED FOR WATER ASSESSMENT

Water Code Section 10912(a) (2) defines a “Project” as “a mixed-use project that includes one or more of the projects specified in this subdivision”. “Projects” include “a proposed residential development of more than 500 dwelling units” or “a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.” The Barrett Ranch East project is a land use plan that could result in development of up to 692 additional residential units (both single-family and multi-family) and up to 56,600 square feet of new retail within the Antelope Area. The proposed project is a mixed-use project that includes more than 500 dwelling units and thus qualifies as a “Project” under SB 610, requiring a Water Supply Assessment (WSA).

BACKGROUND

THE PROPOSED DEVELOPMENT PROJECT

An application for the Barrett Ranch East project has been filed with the County of Sacramento (County). The proposed development area is located in the Antelope Area of the unincorporated area of Sacramento County. The project is north of Antelope Road on both sides of Don Julio Boulevard (See Figure 2). The County of Sacramento has identified the District as the responsible water purveyor for the County’s proposed project, and the District has prepared this WSA in accordance with Water Code Sections 10910 – 10915.

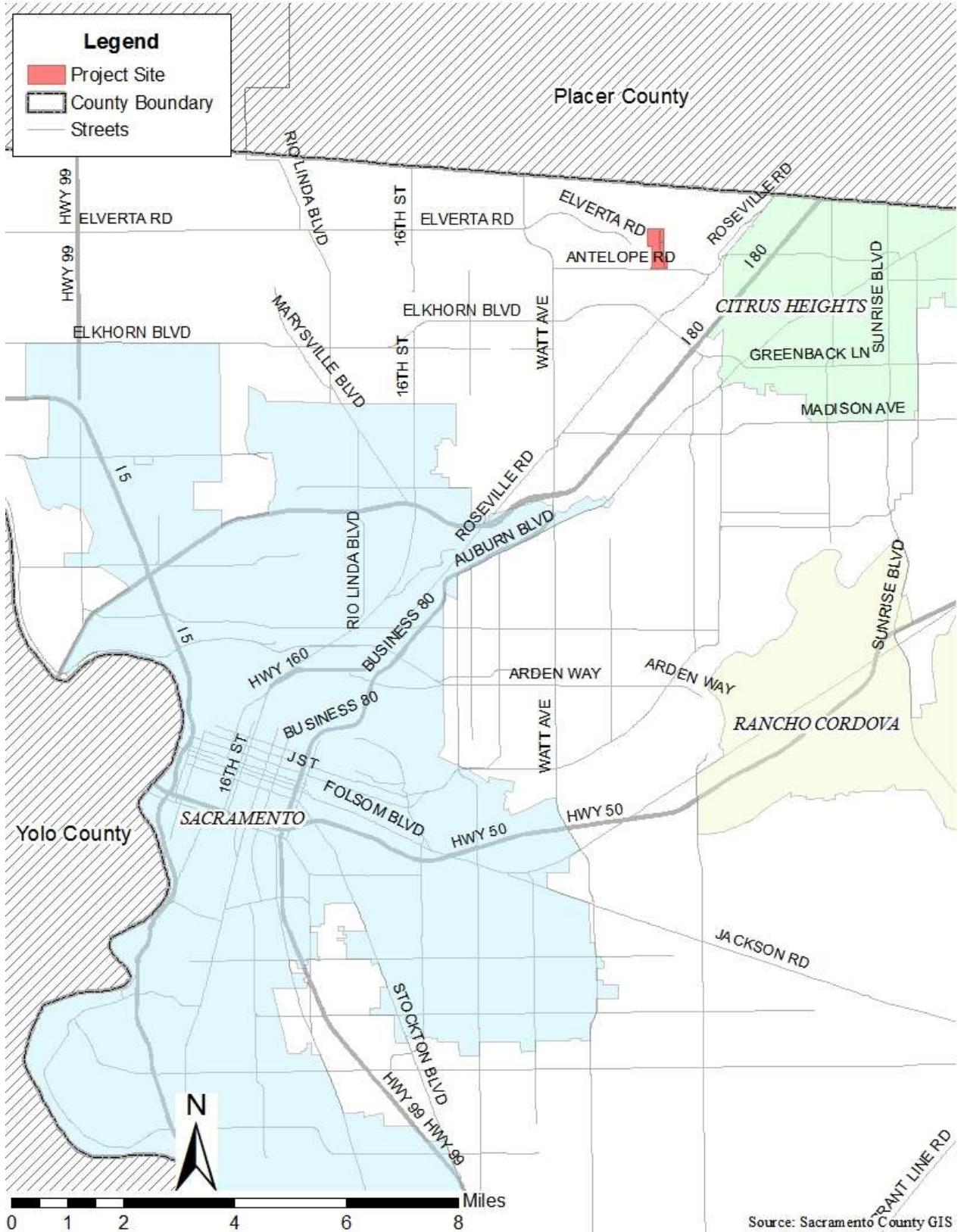
The Barrett Ranch East project is a request for a General Plan Amendment, Community Plan Amendment and corresponding rezone of the parcels within the project area. See Figure 3 for the proposed land use plan. In all, the Barrett Ranch East project could result in the addition of up to 692 additional residential units (both single-family and multi-family) and up to 56,600 square feet of new retail.

WATER SUPPLY ASSESSMENT OBJECTIVE

The objective of the Barrett Ranch East WSA is to verify that the planned water supplies of the District are sufficient to meet the demands of the project in addition to the existing and projected water supply obligations of the purveyor.

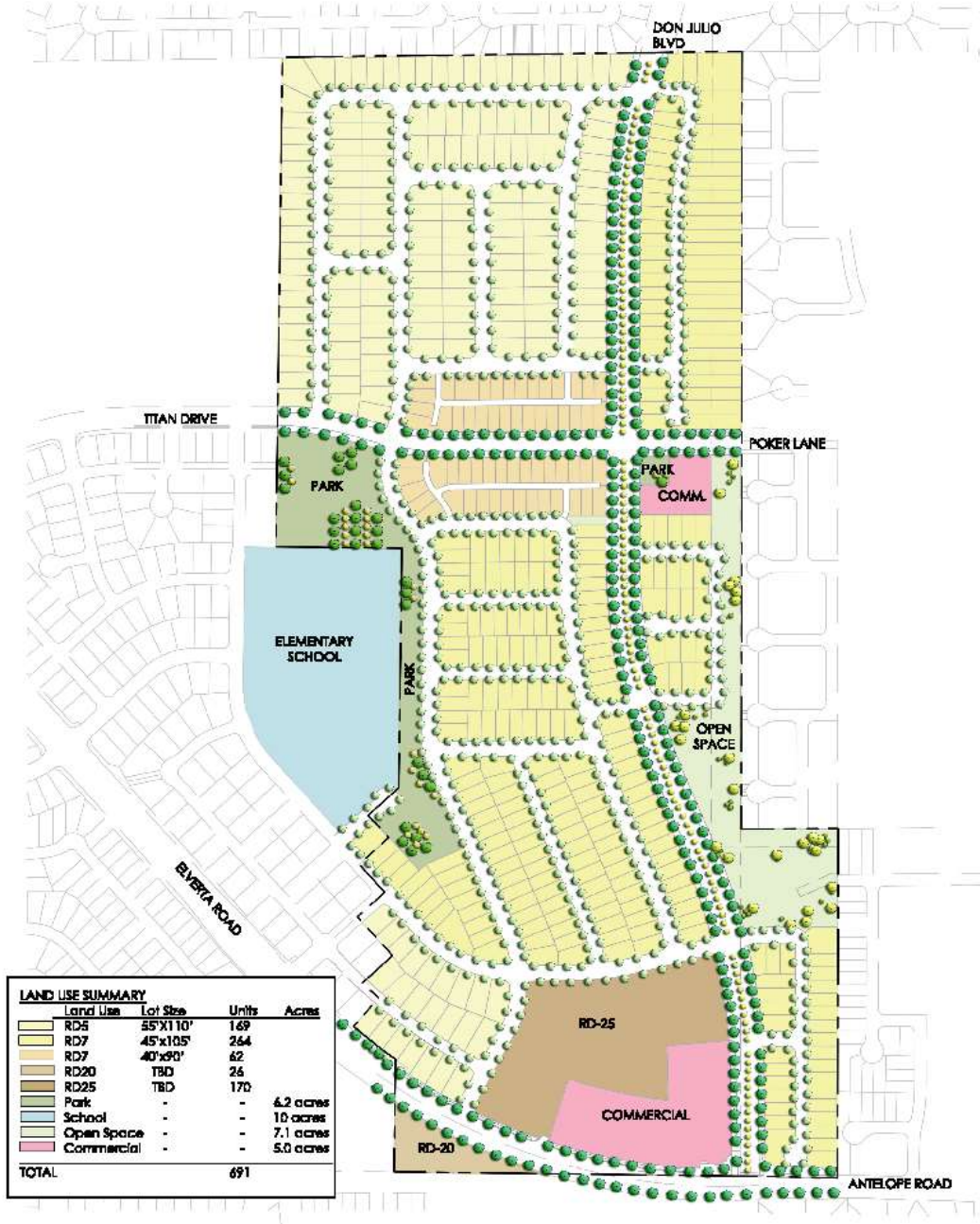
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Figure 2: Regional Project Location



WATER SUPPLY ASSESSMENT FOR “BARRETT RANCH EAST”

Figure 3: Proposed Land Use Plan



ILLUSTRATIVE SITE PLAN		Date: May 2014	
Barrett Ranch East Antelope, CA		1" = 300'	 WOOD ROGERS <small>DEVELOPMENT • INNOVATION • DESIGN • ANALYTICS</small>

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OVERVIEW OF THE BARRETT RANCH EAST WATER SUPPLY ASSESSMENT

The proposed Barrett Ranch East Plan lies entirely within the boundaries of the District’s North Service Area. The Barrett Ranch East Plan with other infill and redevelopment in the District’s NSA will increase projected 2030 water demands by 595 acre-feet per year (AFA) above estimated year 2010 levels (approximately a 1.5% increase). This relies on information from the District’s 2010 UWMP. Additionally, the WSA utilizes information from the District’s Water System Master Plan, which was adopted by the District’s Board of Directors on July 20, 2009.

WATER SUPPLY ASSESSMENT FOR THE BARRETT RANCH EAST PLAN PROJECT

The Water Supply Assessment for the Barrett Ranch East Plan project is structured according to the specific requirements of the Water Code Sections 10910 - 10915.

DETERMINE IF PROJECT IS SUBJECT TO CEQA [Section 10910 (a)]

The County has determined the proposed Barrett Ranch East Plan project is subject to CEQA.

IDENTIFY RESPONSIBLE PUBLIC WATER SYSTEM [Section 10910(b)]

The County has identified the District as the responsible public water system for the project. The District serves a population of approximately 170,600 in Sacramento County. The District is split into two service areas, the north service area (NSA) and the south service area (SSA). The proposed Barrett Ranch East Plan is located entirely within the NSA. Sacramento Suburban Water District’s water source is primarily served by 82 active groundwater wells, 39 of which provide water in the NSA. These wells are supplemented by surface water in the NSA. Surface water is purchased through agreements from the Placer County Water Agency and wheeled through Folsom Dam and treated at San Juan Water District’s (SJWD) Peterson Treatment Plant. Water is delivered through SJWD’s Cooperative Transmission Pipeline and the District’s Antelope Pipeline into the NSA. The District owns 59 million gallons per day (MGD) capacity in the Cooperative Pipeline and owns the Antelope Transmission Pipeline.

The NSA experiences a Mediterranean climate with hot and dry summers and cool winters. According to historical data obtained from the Western Regional Climate Center, the project area and surrounding region have average monthly temperatures ranging from 46 to 75 degrees Fahrenheit, with extreme low and high daily temperatures of 18 and 115 degrees Fahrenheit, respectively. As a result of hot and

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dry summers in the project area, the District experiences relatively high water demand in the summer months. A summary of precipitation, temperature, and evapotranspiration data for the District’s service area is presented in Table WS-1.

Table WS-1: Monthly Average Climate Data

Month	Temperature °F	Rainfall (inches)	Evapotranspiration (inches)
January	47	3.6	1.6
February	51	4.5	2.2
March	55	2.2	3.7
April	48	1.7	5.1
May	66	1.0	6.8
June	72	0	7.8
July	76	0	8.7
August	75	0	7.8
September	71	0.1	5.7
October	62	1.2	4.0
November	53	2.1	2.1
December	47	4.0	1.6
Annual		20.5	57.1

DETERMINE IF UWMP INCLUDES WATER DEMANDS [Section 10910(c)]

The project is located entirely within the Sacramento Suburban Water District. The project is made up of approximately 128 acres distributed along a three-quarter mile stretch of Don Julio Boulevard. The current 2010 UWMP for the District was crafted based on the development projections provided within the certified Final Environmental Impact Report (FEIR) for the Sacramento County 2030 General Plan. The FEIR reported that the projected annual water demand for the District’s NSA for the year 2030 would be increased by 595 AFA over 2010 levels. This projected water demand was based on assumed land use planning for the NSA. With the Barrett Ranch conceptual land use plan, the District is able to estimate a water demand for the proposed project based on the proposed land use plan. Using the information from the UWMP an estimated calculation of the proposed water demands based on the “conceptual land use plan” for Barrett Ranch is presented in Table WS-2 Estimated Water Demand – Barrett Ranch.

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Table WS-2: Estimated Water Demand – Barrett Ranch

Land Use Table (1)						
Zoning	Acres	Units	Density/SF	gpd/DU(2)	gpd/AC(3)	AFA
RD-5	36.1	170	5 du/ac	700		133
RD-7	59.4	326	7 du/ac	500		183
RD20	2.1	26	20 du/ac	300		9
RD25	8.4	170	25 du/ac	300		57
SC	6.4		56,600 SF		3,460	5
Park	7.8				5,250	46
OS	7.9				5,250	47
Roads	25.2					0
Totals	153.3	692		Estimated Total		480

- (1) Proposed land use table for Barrett Ranch
- (2) Calculated gpd/DU from 2010 UWMP
- (3) Calculated gpd/AC from 2010 UWMP

Based on the above calculations, the estimated projected annual water demand for the proposed Barrett Ranch is approximately 480 AFA, which is within the scope of the estimated future increase in demand of 595 AFA for the NSA. Per the 2010 UWMP, the estimated water demands for the District (Table WS-3) are:

Table WS-3: SSWD Past, Current, and Projected Water Demand (AFA)

	2005	2010	2015	2020	2025	2030	2050
Total Water Demand	41,615	38,015	39,669	40,491	41,331	42,190	58,571

The District has also prepared an updated Water Master Plan (Master Plan), adopted in July 2009. The assumptions of demand from 2005 to 2025 in table WS-3 are estimated using the projected growth factors based on SACOG’s blue print. The 2050 demand is estimated from the adopted Regional Blueprint preferred vision, which may not take into consideration the same growth factors as use in 2005 to 2025. The additional usage assumptions used for the Master Plan is consistent with that projected for the proposed Sacramento County General Plan (2030 update), which included commercial corridors, other infill and redevelopment and potential new growth areas. According to District staff, the District should have an adequate groundwater supply to meet the new demand without adversely affecting the groundwater pumping limitation imposed by the Water Forum Agreement.

The Master Plan also forecasts future improvements to maintain the transmission and distribution of water throughout the District’s service area. Based on future

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demands, aging infrastructure and undersized facilities, the master plan looked at new replacement facilities to be constructed over the next 30 years to maintain the water system and supply for the District. Included in those improvements are such items as transmission mains, meter retrofits, groundwater pump station rehabilitations, water main replacements and new water sources such as groundwater wells to replace aging infrastructure and provide additional redundancy to maintain adequate service for the District.

IDENTIFY EXISTING WATER SUPPLIES FOR THE PROJECT [Section 10910(d)]

Section 10910(d) (1)

Current water supplies in the District’s NSA are delivered through approximately 39 active deep groundwater wells. The District has no surface water supply entitlements or surface water rights in its NSA, though contract surface water is available. Supplemental surface water is available from the Placer County Water Agency (PCWA) through its Middle Fork Project. The District has in place agreements to purchase up to 29,000 AF of surface water from PCWA. The minimum take or pay quantity is 12,000 AF. Available PCWA water is restricted based on the unimpaired inflow into Folsom Lake. Currently the District can take surface water if the inflow is above 1,600,000 AF as calculated by the Department of Water Resources (DWR). Should the inflow be less than the limit, the District is not allowed to take surface water and must rely on groundwater supplies.

Section 10910(d) (2)

The District has a contract agreement with Placer County Water Agency to purchase up to 29,000 Acre-Feet (AF) with a 12,000 AF annual minimum of surface water from their Middle Fork Project. The District has also received annual Warren Act Contracts from The United States Bureau of Reclamation (Bureau) for the Conveyance of Non-Project Water through Bureau facilities into SJWD’s Peterson Treatment Plant near Folsom Reservoir. The District also has a contract agreement with SJWD for treatment of the surface water wheeled into Folsom Reservoir; however, the treatment capacity is shoulder capacity and is only available when the plant is not operating at full capacity. The treated water is conveyed through the San Juan Cooperative Transmission Pipeline of which the District owns a 59 million gallon per day (MGD) capacity and through the District-owned Antelope Pipeline and delivered into the NSA. The District also has 82 deep groundwater production wells – 39 in the NSA – to deliver groundwater when surface water or treatment capacity is not available. A copy of the PCWA contract, including amendments, is attached.

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Section 10910(d) (2) (A)

Water supply for the District is derived from both active groundwater wells and surface water when available; thus, the proposed Barrett Ranch East Plan water demands will ultimately be met by groundwater or a combination of groundwater and surface water. Each of the water supplies utilized within the system are discussed below.

Use of Groundwater

The District currently exercises, and will continue to exercise, their rights as groundwater appropriators to extract groundwater from the Sacramento Valley Groundwater Basin. The District when formed was primarily a groundwater system; therefore the existing groundwater wells are sufficient to handle the water requirement for its service area. The District’s groundwater source is served by 82 active groundwater wells, 39 of which provide water in the NSA. Total groundwater pumping capacity is approximately 92,480 gallons per minute (gpm) from all 82 active water wells. Due to conjunctive use efforts since 1998, the District has filed annual “Cessation or Reduction in the Extraction of Groundwater” statements to the State Water Resources Control Board on the quantity of groundwater that has been banked through the use of surface water in lieu of groundwater usage. From 2000 through 2013, the District has banked approximately 191,000 acre-feet of groundwater, which is available for use.

Use of Surface Water

Surface water is available to the District’s NSA through a contract with the Placer County Water Agency (PCWA) in the amount of up to 29,000 AFA (agreement signed in 1999 with the former Northridge Water District, which consolidated with the former Arcade Water District in February 2002 to become the Sacramento Suburban Water District). PCWA provides raw surface water through its Middle Fork Project delivered via Folsom Reservoir and treated through facilities at SJWD’s Peterson Water Treatment Plant. Water is then conveyed through the SJWD Cooperative Transmission Pipeline and the District’s Antelope Pipeline into the NSA. This surface water supply is not a permanent water source for the District. The surface water supply is a supplemental supply for the District, which is only available during wet years. During dry years the District relies solely on its groundwater wells for water supply. Surface water availability is contingent on the availability of flow acknowledged by PCWA to be available each year and the classification of the type of water per Department of Water Resources (DWR) Bulletin 120 – Water Conditions in California. When PCWA has determined that surface water is available and acknowledged by the Water Forum of wet year conditions, the District will take as much surface water as possible and supplement demand with groundwater. The PCWA agreement has a “take or pay” clause, which requires the District to pay for the available surface water even if it is not taken.

WATER SUPPLY ASSESSMENT FOR “BARRETT RANCH EAST”

In the first ten years of the PCWA agreement surface water was available if the unimpaired flow into Folsom Lake was greater than 950,000 acre-feet, which according to past records was approximately 9 out of 10 years. Starting in 2010 through the term of the agreement, the surface water supply is only available during wet years (Water Forum – Purveyor Specific Agreement (PSA)), which quantifies that the unimpaired inflow into Folsom must be greater than 1,600,000 acre-feet. According to past DWR records, this only occurs approximately 6 out of 10 years. In 2012 and 2013, the District did not receive any surface water through the PCWA agreement due to the unimpaired inflow into Folsom being less than the 1,600,000 acre-feet. The PCWA agreement includes a condition that at build out of PCWA’s service area, which is anticipated to occur after 2024, the surface water supply would be reduced to 12,000 AFA. Exhibit 1 is a copy of the PCWA agreement.

Section 10910(d) (2) (B)

The project is a development proposal in an already urbanized area. As a result, there are Regulations Governing Water Service that require, at developer’s responsibility, improvements to the water system as a result of development and financing mechanisms that require collection of fees, including but not limited to, facilities development charges, inspection, hydrant permits, construction water, meters and plan check fees for facility improvements and expansions within the District.

The District has indicated that infrastructure improvements would be necessary to serve the proposed project. Infrastructure improvements would include, but would not be limited to, pipeline improvements capable of providing required domestic and fire protection and a new production well. The approximate cost for such improvements including associated connection fees is estimated at \$7,400,000 dollars (\$4.9 million for pipeline infrastructure improvements and associates fees and \$2.5 million for groundwater production infrastructure improvements). Funding for this work will be developer driven. The District’s Regulations Governing Water Service require the payment of connection fees for water service. As new development occurs, connection fees will be assessed and collected. New facilities will be the responsibility of the developers for installation as a condition of water service. Some facilities as required (groundwater production infrastructure improvements) may be installed by the District through funds collected for Capital Improvements as designated in the Master Plan or from potential eligible grants as they become available. The District has moved into a pay-as-you-go program for financing Capital Improvements; therefore, debt financing would not be a considered option.

Section 10910(d) (2) (C)

Impacts of potential new infrastructure are addressed within the CEQA document for the Barrett Ranch East land use plan. Supplemental project-specific CEQA analysis may be required for future tentative subdivision maps or other project-level

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proposals. If construction infringes on creeks or wetlands, a Streambed Alteration Agreement from California Department of Fish and Game and a Clean Water Act Section 401 and 404 permits may be required from the Central Valley Regional Water Quality Control Board and the United States Army Corps of Engineers. Standard County of Sacramento plan review and encroachment permits will be required prior to installation or upgrade of any new facilities connected to the water system. The District will also require review of all plans to connect into the water system. Water facilities connected to the water system must be in accordance to District’s current Regulations Governing Water Service and constructed per the District’s Technical Specifications and Standard Details.

Section 10910(d) (2) (D)

The existing groundwater wells are permitted through the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). Placer County Water Agencies’ surface water was permitted by the U.S. Bureau of Reclamation for use in Sacramento County through an application for “change in place of use” petition submitted by the former Northridge Water District in 1999. Water supplies must meet or exceed safe drinking water standards of DDW and the U.S. Environmental Protection Agency.

IDENTIFY PARTIES DEPENDENT UPON PROPOSED SUPPLY [Section 10910(e)]

The District is primarily a groundwater system with supplemental surface water as an auxiliary source. Groundwater is provided through 39 existing deep wells throughout the NSA. There are currently no restrictions to providing groundwater except for mechanical and quality constraints. The surface water is purchased through agreement with the Placer County Water Agency, which passes through Folsom Reservoir facilities through annual Warren Act agreements provided by the U.S. Bureau of Reclamation, and is treated at SJWD’s Treatment Plant.

Use of Groundwater

There are no adjudicated rights to groundwater supplies within Sacramento County. The groundwater is available source to any individual or entity that wishes to tap the resource. Neighboring agencies around the District have equal rights to extract groundwater from the same aquifer to provide water service to its customers. Currently the following neighboring agencies are extracting from the same groundwater aquifer as the District:

- California-American Water Company (Cal-AM)
- Carmichael Water District
- Citrus Heights Water District
- City of Roseville

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- City of Sacramento
- County of Sacramento
- Del Paso Manor Water District
- Fair Oaks Water District
- Golden State Water Company
- Rio Linda/Elverta Community Water District
- Private homeowner’s groundwater wells

Use of Surface Water

The District does not have any surface water entitlements. The District has an agreement with PCWA to purchase surface water when it is available during wet conditions. The PCWA water has restricted use outside Placer County. In May 2000, the former Northridge Water District petitioned the SWRCB for a “change of place of use” to use the water in Sacramento County. The “change of place use” allowed the PCWA water to be used in Sacramento County. The agencies that were included in the change included those, which could directly benefit from surface water from PCWA. Those agencies included: Sacramento Suburban Water District’s North Service Area (formerly the Northridge Water District and the Arcade Water District’s North Highlands Service Area), Cal-AM’s Antelope and Lincoln Oaks Service Areas, Citrus Heights Water District, Fair Oaks Water District, Orange Vale Water Company, Rio Linda/Elverta Community Water District and the San Juan Water District. With the exception of the District, PCWA does not have any agreements to provide surface water to any of the other agencies. The District does provide, through agreements, PCWA surface water to Cal-AM (2,000 AFY) and to Rio Linda (Interim Emergency) when surface water is available. The quantities are small and only available under the same conditions set forth in the PCWA agreement and only after District demands are satisfied. The surface water supplies are provided for these agencies to meet conjunctive use requirements for Cal-AM and for emergency issues for Rio Linda. Several agencies have existing surface water entitlements: Citrus Heights Water District, Fair Oaks Water District, Orange Vale Water Company and San Juan Water District. Those agencies would use their water entitlements prior to considering using any PCWA supplies of which agreements would need to be in place before supply could be provided.

DOES SUPPLY FOR PROJECT INCLUDE GROUNDWATER [Section 10190(f)]

The water demands of the project will be met with groundwater or a combination of groundwater and surface water supplies. During wet year conditions, surface water supplies will be the main source with demand supplemented by groundwater. During dry conditions, when surface water is not available, groundwater would be the main source of supply.

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Section 10910(f) (1)

The *2010 Urban Water Management Plan* and *2009 Sacramento Suburban Water District Master Plan* provide detailed data on past groundwater extractions for review.

Section 10910(f) (2)

The *Environmental Impact Report (EIR) for the Water Forum Proposal* (Sacramento City County Office of Metropolitan Water Planning, October 1999) provides detailed descriptions of the programs occurring in the Central Groundwater Basin to ensure that sustainable yields are met.

The *Water Forum Agreement* (Water Forum, January 2000), which outlines the methods by which sustainable groundwater yields will be assured, and includes provisions assuring each signatory that as it fulfills its responsibilities, other signatory organizations are also honoring their commitments. These understandings are included in the Memorandum of Understanding for the Water Forum Agreement.

The District has in place a conjunctive use program to use available surface water supplies in lieu of pumping groundwater. Since the early 1990’s the NSA (former Northridge Water District area) practiced conjunctive use by delivering purchased treated surface water into its service area. Starting in 2000, the Northridge Water District increased surface water deliveries into the NSA subsequently causing the groundwater table to stabilize. From 2000 through 2013, the District (Northridge and SSWD) filed “Annual Statements of Cessation or Reduction in the Extraction of Ground Water” with the SWRCB – Division of Water Rights for approximately 191,000 AF of banked groundwater.

Section 10910(f) (3)

This data was collected as part of the Water Forum Successor Effort’s (WFSE) “Central Sacramento County Groundwater Forum” (*WFSE 5-Year Review and Evaluation*, Sacramento Region Water Forum, 2005).

Section 10910(f) (4)

The *Environmental Impact Report (EIR) for the Water Forum Proposal* (Sacramento City County Office of Metropolitan Water Planning, October 1999) provides detailed descriptions of the projected groundwater extractions.

Section 10910(f) (5)

The *Environmental Impact Report (EIR) for the Water Forum Proposal* (Sacramento City County Office of Metropolitan Water Planning, October 1999) provides detailed descriptions of the sufficiency of groundwater extractions.

WATER SUPPLY ASSESSMENT FOR “BARRETT RANCH EAST” DETERMINATION OF SUFFICIENCY

The District currently serves the entire Barrett Ranch East project site. The District’s UWMP has calculated future water demands based on development intensities consistent with the proposed project. With the proposed land use planning for the Barrett Ranch, the District has determined that the proposed project will require a water demand of approximately 480 AFA at build out. This is consistent with projected future demands per the 2010 UWMP. Based on the proposed demand, the District has sufficient water supplies to serve the proposed zoning and land use of the area; however, per the District’s Master Plan the District will be looking at opportunities to secure future potential well sites for replacement sources for aging infrastructure, such as groundwater wells. Based on the location and influence of existing surrounding wells, the District would be looking at a future well site within the Barrett Ranch project area. A proposed well site would be approximately 10,000 square feet in size, would be located in an isolated area away for residential housing units, preferably in a public park or commercial area. With this in mind, the District will be seeking a potential well site as development plans are developed for the Barrett Ranch East project area. The District will request and purchase property for a potential well site(s) pending the scheduling of development in the Barrett Ranch East project area.