Appendix J

Water Supply Assessment

SAN BENITO COUNTY

SB 610 WATER SUPPLY ASSESSMENT

FOR THE DEL WEBB AT SAN JUAN OAKS SPECIFIC PLAN

SB 610 Water Supply Assessment

Prepared for the
Del Webb at San Juan Oaks Specific Plan

Final Draft

June 2015

Prepared by:

Tully & Young
Comprehensive Water Planning

Prepared for:

Approved on

[Note: *date to be added upon County approval*]

Contact:
Byron Turner
Planning & Building Inspection Services
Phone: 831.637.5313
bturner@cosb.us

Table of Contents

SECTION 1 – PROJECT INTRODUCTION

1.1 INTRODUCTION

As the lead agency under the California Environmental Quality Act (CEQA), San Benito County (County) is assessing the potential environmental impacts associated with the proposed development under the San Juan Oaks Specific Plan (Specific Plan) in the southwestern portion of the County. To support the CEQA analysis a Water Supply Assessment (WSA) for the proposed development under the Specific Plan is necessary (Proposed Project).

Statutory Background

Enacted in 2001, Senate Bill 610 added section 21151.9 to the Public Resources Code requiring that any proposed "project" as defined in section 10912 of the Water Code comply with Water Code section 10910 *et seq*. Commonly referred to as a "SB 610 Water Supply Assessment," Water Code section 10910 outlines the necessary information and analysis that must be included in an environmental analysis of the project to ensure that proposed land developments have a sufficient water supply to meet existing and planned water demands over a 20-year projection.

Proposed "projects" requiring the preparation of a SB 610 water supply assessment include, among others, residential developments of more than 500 dwelling units, shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space and projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.[1] The Proposed Project requires a WSA because it is a residential development of more than 500 dwelling units.

The WSA will be incorporated into the CEQA document and made available for review during the 45-day DEIR public comment period — an Environmental Impact Report (EIR) — being prepared for the Proposed Project (Project EIR).[2]

Document Preparation and Approval

The WSA law requires that the lead agency (city or county) identify any water system that is or may become, as a result of serving the proposed project, a "public water system"[3] that may serve the project, and further requires the lead agency to request that each identified public water system prepare a WSA for the project. If the lead agency is not able to identify a public water

[1] Water Code § 10912, subdivision (a).
[2] Water Code § 10911(b).
[3] A "public water system" is a system that provides water for human consumption that has 3,000 or more service connections.

system that may supply water for the project, the lead agency must prepare the WSA itself after consulting with "any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site."[4]

In this case, the County has prepared the WSA because no "public water system," as defined by Water Code section 10910(b), serves the area of the Proposed Project.[5] While the City of Hollister, the Sunnyslope County Water District, and the City of San Juan Bautista are all public water systems within the meaning of the law, the service areas for these entities do not include the Proposed Project and/or are such adjacent to the Proposed Project site. In other words, none of these three entities could serve the Proposed Project without a change of boundaries. The San Benito County Water District's service area encompasses the Proposed Project site, but this entity does not directly supply water for human consumption and therefore is not considered a "public water system" within the meaning of the law.

Lastly, any investor-owned utility or mutual water company that may be formed to serve the Proposed Project (see further discussion below) would serve less than 3,000 connections as a result of serving the Proposed Project.[6] The Proposed Project is anticipated to require approximately 1,100 service connections. Accordingly, the County has prepared this WSA. The governing body of the County is required to approve this WSA.[7] The County will be required to determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands for the Proposed Project, in addition to existing and planned future uses.[8]

This document provides the necessary information for the County to make its determinations and to comply with the assessment of water supply sufficiency as required by statute.

Prior WSA for San Juan Oaks Expansion Project

The WSA law provides that if a project has been the subject of a WSA, no additional WSA shall be required for a subsequent project that was evaluated as part of the original or larger project, unless changes in the subsequent project will result in increased demand, or changes in the availability of identified supplies have occurred.[9]

In 2003, a WSA for the San Juan Oaks Expansion Project (2003 WSA),[10] an earlier project proposed for the site, was approved by the County, but not implemented. The 2003 WSA was approved and incorporated into the Final EIR for the San Juan Oaks Expansion Project, which

[4] Water Code § 10910(b).
[5] Water Code §§ 10910(b), 10912(c); Gov. Code § 677473.7(e).
[6] A "public water system" may be an investor-owned utility or mutual water company.
[7] Water Code § 10910(g).
[8] Water Code § 10911(b)-(c).
[9] Water Code § 10910(h).
[10] Yates, Administrative Draft, Water Supply Assessment for the San Juan Oaks Expansion Project (Sep. 26, 2003).

was certified by the County on May 11, 2004. Although the Proposed Project's estimated water demand is considerably less than that analyzed in the 2003 WSA for the prior San Juan Oaks Expansion Project, given the passage of time the County has elected to prepare a new WSA for the Proposed Project, and therefore this WSA does not rely on the prior WSA prepared in connection with the 2003 Expansion Project.

Document Organization

This WSA supports the Proposed Project's environmental review process and analyzes the sufficiency of water supplies to meet projected water demands of the Proposed Project through the required planning horizon. The WSA is organized according to the following sections:

- **Section 1: Proposed Project Introduction**. This section provides an overview of WSA requirements, and a detailed description of the Proposed Project, especially the land use elements that will require water service.

- **Section 2: Proposed Project Estimated Water Demands**. This section describes the methodology used to estimate water demands of the Proposed Project and details the estimated water demands at build-out of the Proposed Project.

- **Section 3: Water Supply Characterization**. This section characterizes the water supply that will serve the Proposed Project along with other current and future water demands. Water supplies are characterized for normal, single dry, and multiple dry year conditions.

- **Section 4: Sufficiency Analysis**. This section assesses whether sufficient water will be available to meet the Proposed Project's water demands. To provide the necessary conclusions required by statute, the analysis integrates the demand detailed in Section 2 with the characterization of the Proposed Project's water supply portfolio detailed in Section 3, while identifying and incorporating existing and other planned future uses of the water supply portfolio.

1.2 PROPOSED PROJECT DESCRIPTION

The Proposed Project is a new residential, mixed-use development on approximately 1,995 acres[11] located in unincorporated San Benito County between the City of Hollister and the City of San Juan Bautista, abutting and incorporating the existing San Juan Oaks Golf Course (see **Figure 1-1**) (Proposed Project Site).

Project Background

In October 2002 San Juan Oaks Golf Club submitted an application for a Vesting Tentative Map, file number TSM 02-67. On July 27, 2004 the San Benito County Board of Supervisors

[11] As noted in Table 1-1, two offsite community parks of about 17 acres are also proposed and included in the approximated 1995 acres.

approved the Vesting Tentative Map for the San Juan Oaks Expansion Project, and adopted Resolution No. 2004-85 with certain conditions. This prior Vesting Tentative Map allowed for the development of 156 market rate residential units, 30 affordable units, a resort hotel, a village commercial site, a park, open space, an additional 18-hole golf course and an additional 9-hole golf course. As described herein, the Applicant is proposing to amend the current Vesting Tentative Map as part of the current Specific Plan process.

However, for the reasons set forth above, a new WSA is being prepared in connection with the Proposed Project.

Project Amendments

This WSA includes an evaluation of the Proposed Project, which consists of two primary components. The first component will be developed by Del Webb, a subsidiary of Pulte Homes (the Del Webb component) and will consist of an active adult community of 1,017 single-family homes and an approximately 25,000 sf. Amenity Center. The remaining portion will be developed by San Juan Oaks LLC (the San Juan Oaks component) and will consist of 67 conventional (non age-restricted) single-family residential units, a 200 room resort hotel, an approximately 65,000 sf. neighborhood commercial center, and an approximately 4-acre assisted living/skilled nursing/memory care facility with up to 100 beds. The existing golf course and clubhouse will remain largely unchanged, with some minor renovations. The existing on-site agricultural operations, consisting of approximately 47 acres of olive tree orchard and row crops, will also remain largely unchanged.

As explained further below, these two existing uses (i.e. golf course and agricultural operations) are not considered when determining the new water demands of the Proposed Project as detailed in Section 2, but are considered when assessing overall water supply reliability in Section 4, as they are part of the "existing and planned other uses" that utilize the same water supply as the Proposed Project.

Table 1-1 summarizes the Proposed Project's land use acreages and dwelling unit counts.

Figure 1-1 – Proposed Project Location and Land Uses

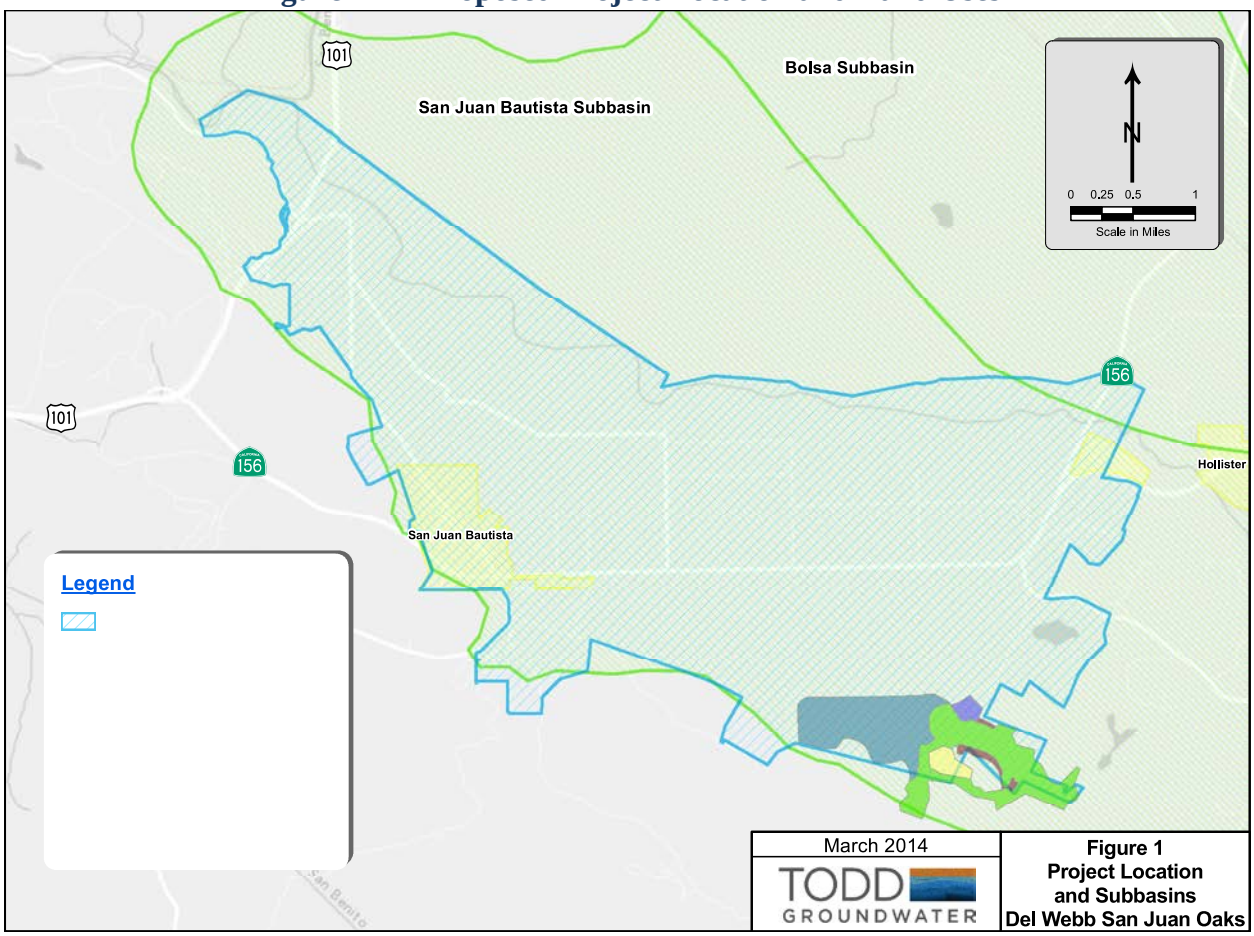

Table 1-1 – Summary of Project Land Uses and Acreages

Land Use	Acreage	Details
SF - Active Adult Residential	178	1,017 Dwelling Units
SF - Conventional Residential		67 Dwelling Units
Amenity Center	10.2	25,000 SF
Resort Hotel	34.5	200 Rooms
Neighborhood Commercial	10.2	65,000 SF
Senior Care Center	4.0	100 Beds
Neighborhood Parks	6.7	
Offsite Parks (Passive)	17	Existing olive orchard and new dog park/community gardens
Golf Course and Clubhouse	256.5	Existing facility at site
Agricultural Preserve	41.4	Existing on-site agriculture (additional 153 ac. located off site)
Common Area Open Space	99.6	
Permanent Wildlife Habitat	1,249.5	
Roadways	87.0	
Total	**1,995**	

Overall, the Proposed Project includes 1,084 dwelling units at an average density of six (6) per acre. Based on a projected population of 1.67 per household for the active adult community (1,017 units), referred to as the Del Webb homes, and 3.51 per household for the conventional single-family housing (67 units), the Proposed Project is expected to accommodate a little over 1,900 residents in the single-family detached residential neighborhoods. With the inclusion of guests at the resort hotel[12] and residents of the assisted living/skilled nursing/memory care facility[13], the Proposed Project is expected to accommodate over 2,200 "residents."

1.3 PROPOSED PROJECT PHASING

Table 1-2 describes the Proposed Project's anticipated construction phases for purposes of this WSA. Each phase represents a portion of the Proposed Project, focusing on particular land use classifications. Before constructing homes, commercial space, or other parts of the Proposed Project, the proponents will begin site grading and Project-wide infrastructure development. Some infrastructure and site grading will continue throughout all phases of the Proposed Project, as necessary. These activities include, among other things, installing facilities for potable water, recycled water (as appropriate for the Proposed Project), sewer, electric, telecommunications, gas, stormwater, and roads. During these activities, a small water demand will exist – referred to in this WSA as "construction water." This demand is included in the projected annual water demands presented in Section 2.

While the timing of the Proposed Project's ultimate build-out will be market driven, it is anticipated that all construction should be complete within about 10 years, well within the 20-year planning horizon of this WSA.

Table 1-2 – Proposed Number of Units per Project Phase

Project Element	Count					
	Current	2015	2020	2025	2030	2035
Active Adult (Units)	0	0	720	1,017	1,017	1,017
San Juan Oaks (Units)	0	0	67	67	67	67
Assisted Living (Beds)	0	0	0	100	100	100
Hotel (Rooms)	0	0	0	200	200	200
Commercial (Acres)	0	0	5	10.2	10.2	10.2
Neighborhood Parks (Acres)	0	2	4	6.7	6.7	6.7
Offsite Parks (Acres)	0	0	13	17	17	17

[12] Assumes 1.4 people per room and a 65% occupancy rate for the golf resort hotel based on data provided in *Golf and Resorts – Why Golf is Still Relevant*, HVS Golf Service Publication, August 2010. That report indicated that "[t]he latest data after the financial crisis show that the seasonality of occupancy at golf resorts is now very similar to national averages." Based on STR data stating: "In 2012, this sample of 307 resorts averaged 501 rooms and achieved an average occupancy of 65. 3 percent." (http://bluetoad.com/article/Resorts_Recover_Revenue_As_Occupancy_Levels_Bounce_Back/1359708/152883/article.html)

[13] The assisted living facility assumes full occupancy of the 100 individual beds.

SECTION 2 – PROPOSED PROJECT ESTIMATED WATER DEMANDS

2.1 INTRODUCTION

This section describes the methodology, provides the supporting evidence, and presents the estimated annual water demands for the Proposed Project. For the purpose of estimating annual water demand, the Proposed Project is planned to develop according to the phasing in **Table 1-2**.

2.2 DETERMINING UNIT WATER DEMAND FACTORS

As detailed in Section 1, the Proposed Project has specific residential and non-residential land uses with defined residential lot-sizes, types of commercial and office uses and other characteristics. As these attributes vary among the types of proposed land uses, so too will the water needs. To understand the water needs of the entire Proposed Project, unique demand factors that correspond with each unique land use are necessary. This subsection presents the methodology for determining the baseline unit water use demand factors that become the basis of the Proposed Project water demand estimates. Two distinct groups of demand factors are presented: (1) residential, and (2) non-residential.

Values developed for each distinct group are based on several sources of information, details of which are provided in the following subsections.

2.2.1 Current and Future Mandates

There are several factors that affect the development of unit water demand factors, ranging from state mandates to changes in the types of housing products being offered. These factors are incorporated into the determination of unit water demand factors, as discussed later in this section. Characteristics of the most important factors are described below.

2.2.1.1 Water Conservation Objectives

On November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill No. 7 (SBX7-7), which established a statewide goal of achieving a 20 percent reduction in urban per capita water use by 2020 for urban retail water suppliers. [14] Since the Proposed Project is yet to be built, this legislation only indirectly applies.

The efforts undertaken throughout San Benito County by other urban retail suppliers to comply with this statute, though not directly, will affect the Proposed Project's use of appliances, fixtures, landscapes and other water using features, through changes or additions to County ordinances and/or through an emerging "conservation ethic" anticipated to develop in communities in and around the Proposed Project. In addition, the County, as established in Title

[14] Water Code § 10608.20

15, Chapter 15, Article IV of the County Code, will condition the Proposed Project's building permits to assure the Proposed Project encourages water conservation, prohibits certain water wasting uses, and generally complies with the County's water conservation objectives for residential developments.

2.2.1.2 Indoor Infrastructure Requirements

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the "CAL Green Code") that requires the installation of water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. The CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations.[15] The Cal Green Code was revised in 2013 with the revisions taking effect on January 1, 2014; however these revisions do not have substantial implications to the water use already contemplated by the 2010 Cal Green Code.[16] The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. All Proposed Project land uses must satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code.

The CAL Green Code requires residential and non-residential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside each building and structure by 20 percent. The 20 percent water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building "water use baseline."[17] The Proposed Project will satisfy one of these two requirements through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, or other fixtures as well as Energy Star and California Energy Commission-approved appliances as detailed in the Specific Plan's design guidelines.[18]

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[15] The CAL Green Code is Part 11 in Title 24. All references in this WSA will be to the Chapter and Section numbers that appear in the adopted document which may be obtained by visiting the California Building Standards Commission web site at: http://www.documents.dgs.ca.gov/bsc/CALGreen/2010_CA_Green_Bldg.pdf

[16] "The 2010 CAL Green Code was evaluated for updates during the 2012 Triennial Code Adoption Cycle . HCD evaluated stakeholder input, changes in technology, implementation of sustainable building goals in California, and changes in statutory requirements . As such, the scope of the CAL Green Code was increased to include both low-rise and high-residential structures, additions and alterations." *Guide to the 2013 California Green Building Standards Code (Residential)*, California Department of Housing and Community Development, 2013.

[17] See CAL Green Code. For Residential construction, Section 4.303.1 provides the residential water conservation standard and Table 4.303.2 identifies the infrastructure requirements to meet this standard. Table 4.303.1 and Worksheets WS-1 and WS-2 are to be used in calculating the baseline and the reduced water use if Option 2 is selected. For non-residential construction, Section 5.303.2.3 provides the water conservation standard as well as the baseline and reduced flow rate infrastructure standards. Note that Worksheets WS-1 and WS-2 incorporate both residential and non-residential fixtures, yet the water use is still to be analyzed by "building or structure" as specified in Chapter 1, Section 101.3.

[18] See Chapter 3.1.13 of the draft San Juan Oaks Specific Plan, December 2013.

2.2.1.3 California Model Water Efficient Landscape Ordinance and County Ordinance

The Water Conservation in Landscaping Act was enacted in 2006, requiring the Department of Water Resources (DWR) to update the Model Water Efficient Landscape Ordinance (MWELO).[19] In 2009, the Office of Administrative Law (OAL) approved the updated MWELO, which required a retail water supplier or a county to adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions.[20] San Benito County has yet to adopt a water efficient landscaping ordinance so the Proposed Project is obligated to comply with the requirements set forth in the State MWELO. This WSA uses the methods described in the MWELO in setting landscaping irrigation limits.

The MWELO applies to new construction with a landscape area greater than 2,500 square feet.[21] The MWELO "highly recommends" use of a dedicated landscape meter on landscape areas smaller than 5,000 square feet, and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems.[22] The MWELO provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency.[23] Finally, MWELO requires the landscape design plan to delineate hydrozones (based upon plant factors) and then to assign a unique valve for each hydrozone (low, medium, high water use).[24]

2.2.1.4 Metering, Volumetric Pricing, and Water Budgets

California Water Code §525 requires water purveyors to install meters on all new service connections after January 1, 1992. California Water Code §527 requires water purveyors to charge for water based upon the actual volume of water delivered if a meter has been installed. Though the water retailer for the Proposed Project will be billing customers on a volumetric basis, this action alone is not expected to substantially reduce water use. However, it is anticipated that the retail billing system will encourage and help maintain reasonable use (e.g. through implementation of tiered rate structure and/or water budgets with penalties), so that the Proposed Project's water demands at build-out are not expected to grow as the Proposed Project ages.

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[19] Gov. Code §§ 65591-65599

[20] California Code of Regulations (CCR), Tit. 23, Div. 2, Ch. 27, Sec. 492.4. The MWELO provides the local agency discretion to calculate the landscape water budget assuming a portion of landscape demand is met by precipitation, which would further reduce the outdoor water budget. For purposes of this WSA, precipitation is not assumed to satisfy a portion of the outdoor landscape requirement because the determination of an appropriate effective precipitation factor is highly uncertain given the various landscape slopes, terrain composition, concurrent watering schedules, etc.

[21] CCR Tit. 23, Div. 2, Ch. 27, Sec. 490.1.

[22] CCR Tit. 23, Div. 2, Ch. 27, Sec. 492.7(a)(1)(A)-(B).

[23] In calculating Estimated Total Water Use, the MWELO requires use of at least a 71% irrigation efficiency factor. Assuming 71% irrigation efficiency, the average plant factor must be 0.50. It would be possible to stay within the water budget if the average plant factor were higher than 0.50 by designing a system with an irrigation efficiency higher than 71%. Again the relationship between a Plant Factor (PF) and Irrigation Efficiency (IE) in the Applied Water formula is: AW=(ETo*PF)/IE.

[24] CCR Tit. 23, Div. 2, Ch. 27, Secs. 492.3(a)(2)(A) and 492.7(a)(2).

2.2.1.5 Executive Order B-29-15

In response to the continuing severe drought conditions throughout California, on April 1, 2015, California Governor Edmund Brown, Jr., issued Executive Order B-29-15 ordering the State Water Resources Control Board to impose restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016. These restrictions will require suppliers to reduce potable water deliveries as compared to the amount delivered in 2013. Additionally, the SWRCB is ordered to: impose restrictions on commercial, industrial and institutional properties, including golf courses, to reduce potable water usage; prohibit certain landscape irrigation with potable water use; direct urban water suppliers to develop rate structures and other pricing mechanisms to maximize water conservation; and to prohibit irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or microspray systems. Implementation of Executive Order B-29-15 has the potential to significantly reduce existing urban water use. However, because the Executive Order is temporary – only applicable until February 28, 2016 – this WSA does not rely on any long-term reductions in existing or future demand that may result from implementation of these extraordinary drought conservation regulations.

2.3 RESIDENTIAL WATER USE DEMAND FACTORS

The Proposed Project anticipates six general lot-size designations. The size of the lot has the greatest impact on the annual per-lot demand for water as the irrigation needs for landscaping increase with larger landscaped areas. In contrast, indoor water demands remain relatively consistent regardless of lot size, but do vary slightly based on the number of people per dwelling unit. Distinct demand factors are provided for the following residential uses:

- Indoor Residential Use – this category differentiates the slight variance anticipated to occur between the conventional housing and the active adult housing to reflect the difference in people per dwelling unit.

- Outdoor Residential Use – this category addresses the landscape water demands for varying lot sizes planned within the Proposed Project.

For purposes of this WSA, residential unit water demand factors are described as “the acre-feet of water use annually per dwelling unit” – or simply put, acre-feet/dwelling unit (af/du).

2.3.1 Indoor Residential Water Use Factors

The Proposed Project’s residential elements will be built in accordance with all applicable, then-current building codes including the Cal Green Code discussed previously.

Typical indoor demands for modern homes with water efficient fixtures and appliances are generally around 0.18 af/du for a family.[25] Based on data analysis from many residential water meters throughout California's Central Valley, this value is consistent for new suburban single-family dwelling units and older homes retrofitted with new water efficient fixtures and appliances.[26]

The active adult residential housing anticipates 1.67 people per house, which generally translates to lower indoor water use given the fewer number of people per household. To estimate the water demands for this non-typical residential type, this WSA uses a daily per-capita value of 55 gallons per person per day (gpcd), multiplied by the number of people per household. The gpcd value is consistent with guidelines from DWR[27] and as set forth in statute.[28] Multiplied by the estimated household population, the estimated annual per-unit water demand used by this WSA is 0.10 af/du.

Additionally, the size of the house has little impact on indoor water demands. While a bigger house may have more space dedicated to living areas, water use is predicated on bathroom fixtures and appliances, which are limited by the previously mentioned CAL Green Code. For the purposes of this WSA, indoor demands are assumed to be fixed regardless of lot size, and only vary slightly based on the number of people per unit.

2.3.2 Outdoor Residential Water Use Factors

The primary factor driving outdoor water use on a per lot basis is the size of the lot and square footage of landscaping. The Proposed Project includes several residential lot types, each having a unique proposed housing layout and landscaped area. As discussed in the Specific Plan, turf plantings in the front yards of the active adult lots will be restricted to a maximum of 25 percent (or less) of each lot's landscaped area.[29] For the remaining planted area, the plantings will consist of low-water, drought-tolerant and native plants. Backyards are not subject to these limitations, however homeowners will be strongly encouraged to follow the sustainability principles. The proposed conventional (non age-restricted) homes will also be encouraged to follow these landscaping principles.

[25] Tully & Young observed number from several meter studies and associated Water Supply Assessments around California.
[26] With the increasingly stringent requirements of building codes as well as water and energy efficiency codes it is likely that the actual indoor unit water demand of the Proposed Project's residences will be below the stated 0.18 AFY number. This value equates to approximately 45 to 50 gallons per person per day for a typical home with an average of 3.5 people per house. Furthermore, Water Code Section 10608.20(b)(2)(A) states that a value of 55 gallons per-capita per day be used for estimating indoor residential use targets.
[27] See Methodology 5 detailed in DWR's "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use", February 2011 available at http://www.water.ca.gov/wateruseefficiency/sb7/docs/MethodologiesCalculatingBaseline_Final_03_01_2011.pdf
[28] Water Code 10608.20(b)(2)(A)
[29] Draft San Juan Oaks Specific Plan, December 2013, p. 6-11

To provide flexibility for the Proposed Project to landscape lots as needed and to provide a conservative assumption for this analysis, each lot is assumed to have a landscaped area equal to the lot square footage minus the house footprint and a reasonable amount of hardscaping. The remaining area of each lot is conservatively assumed to demand the maximum allowed by MWELO. This provides for a conservative estimated water demand as the landscaping goals set forth in the Specific Plan may result in a lower outdoor residential water demand than is estimated by this WSA.[30]

The MWELO provides for determining the Maximum Applied Water Allowance (MAWA), where the maximum is determined as 70 percent of the reference evapotranspiration for the area, resulting in the following equation:

> *MAWA = (ETo) (0.62)(0.7 x LA), where ETo is the reference evapotranspiration in inches per year, LA is the landscape area, and 0.62 is a conversion factor. The resulting value is in "gallons per year"*

The reference evapotranspiration for the Proposed Project area used by this WSA is approximately 45.1 inches per year.[31] The conservative per-dwelling unit outdoor demand factor for each is described below.

- **Del Webb 4,500 sf.** – The proposed 301 lots of this designation will include single story structures with an approximate building footprint of 1,350 sf.[32] An assumed 400 sf driveway combined with another 250 sf of patios and walkways creates 650 sf of hardscape. The remaining square footage is estimated to be 2,500 sf. This translates to a conservative outdoor unit demand factor of 0.15 af/du.

- **Del Webb 5,000 sf.** – The proposed 412 lots of this designation will include single story structures, with an approximate building footprint of 2,000 sf.[33] An assumed 400 sf driveway combined with another 250 sf of patios and walkways creates 650 sf of hardscape. The remaining square footage is estimated to be 2,350 sf. This translates to a conservative outdoor unit demand factor of 0.14 af/du.

[30] The statement regarding potentially lower outdoor water use is based upon the Proposed Project's success with high rates of implementation and adoption of the landscaping sustainability goals established in the Specific Plan (see Chapter 6.6.2).
[31] Reference Evapotranspiration is obtained from the City of Hollister Municipal Code 15.22.080 (Table 15.22-1). This WSA uses the City's value as a representative evapotranspiration value for the general area, including the area of the Proposed Project.
[32] From San Juan Oaks Specific Plan
[33] From San Juan Oaks Specific Plan

- **Del Webb 6,500 sf.** – The proposed 304 lots of this designation will include single story structures, with an approximate building footprint of 2,600 sf.[34] An assumed 400 sf driveway combined with another 250 sf of patios and walkways creates 650 sf. of hardscape. The remaining square footage is estimated to be 3,250 sf. This translates to a conservative outdoor unit demand factor of 0.20 af/du.

- **Conventional 6,000 sf.** – The proposed 56 lots of this designation are not age restricted and are not yet defined specifically. For purposes of this WSA, the building footprint is assumed to be 2,500 sf.[35] An assumed 400 sf. driveway combined with another 250 sf. of patios and walkways creates 650 sf. of hardscape. The remaining square footage is estimated to be 2,850 sf. This translates to a conservative outdoor unit demand factor of 0.17 af/du.

- **Conventional 7,000 sf.** – The proposed 3 lots of this designation are not age restricted and are not yet defined specifically. For purposes of this WSA, the building footprint is assumed to be 2,500 sf.[36] An assumed 400 sf. driveway combined with another 250 sf. of patios and walkways creates 650 sf. of hardscape. The remaining square footage is estimated to be 3,850 sf. This translates to a conservative outdoor unit demand factor of 0.23 af/du.

- **Conventional 10,000 sf.** – The proposed 8 lots of this designation are not age restricted and are not defined specifically. For purposes of this WSA, the building footprint is assumed to be 2,500 sf.[37] An assumed 400 sf. driveway combined with another 250 sf. of patios and walkways creates 650 sf. of hardscape. The remaining square footage is estimated to be 6,850 sf. This translates to a conservative outdoor unit demand factor of 0.41 af/du.

2.3.3 Summary of Residential Water Use Demand Factors

Table 2-1 provides a summary of the baseline demand factor for each residential land use category and the resulting unit demand factor used to estimate the Proposed Project's water use.

[34] From San Juan Oaks Specific Plan
[35] Estimated conservative home size for all conventional (non age-restricted) home lots
[36] Estimated conservative home size for all conventional (non age-restricted) home lots
[37] Estimated conservative home size for all conventional (non age-restricted) home lots

Table 2-1 – Summary of Residential Baseline and Proposed Project Demand Factors

Water Demand Category	Average Density (du/ac)	Indoor Factor	Outdoor Factor	Total Demand Factor (af/du)
Del Webb 4,500 sqft	9.7	0.10	0.15	0.25
Del Webb 5,000 sqft	8.7	0.10	0.14	0.24
Del Webb 6,500 sqft	6.7	0.10	0.20	0.30
Conventional 6,000 sqft	7.2	0.18	0.17	0.35
Conventional 7,000 sqft	6.2	0.18	0.23	0.41
Conventional 10,000 sqft	4.4	0.18	0.41	0.59

2.4 NON-RESIDENTIAL WATER USE DEMAND FACTORS

The non-residential factors are developed from either: (1) details provided in the Specific Plan, and/or (2) recent water use trends for similar types of land classifications found in other supporting materials.

For purposes of this WSA, the per-lot demand for non-residential classifications is described as either "the acre-feet of water use annually per acre of land", acre-feet/acre (af/ac), or as a single demand projection for a demand category such as an amenity center (e.g. which has a unit of "1"), acre-feet/unit (af/unit). These values reflect indoor and outdoor water needs expected for typical non-residential use for each of the following classifications:

- Neighborhood Commercial
- Senior Care Assisted Living Facility
- Amenity Center
- Neighborhood Parks and Offsite Parks
- Resort and Hotel
- Other miscellaneous uses, including common area open space, wildlife preserve, and construction water

The method and basis for determining the unit water demand factor for each of these classifications is detailed in the following subsections.

Neighborhood Commercial

The proposed neighborhood commercial facilities are anticipated to include approximately 65,000 square feet (sf) of commercial and office space located on approximately 10 acres (adjoining the 4-acre senior care facility, discussed later). Water uses will primarily include small-scale retail, medical, and professional services meant to serve the daily convenience needs of the Proposed Project's residents. This could include but is not limited to a bank, medical offices and outpatient services, a restaurant, a small market, a coffee shop and bakery,

professional services, golf cart sales and service, and other similar services that support the planned community's needs.

Utilizing currently available information, water use data is derived from regional commercial data from the Marina Coast Water District's 2010 UWMP (MCWD) of 0.0003 af/sf.[38] For the 65,000 sf of proposed neighborhood commercial uses, the demand is estimated to be 19.5 acre-feet.[39] However, as this portion of the Proposed Project may become occupied by commercial and office tenants over time, the 19.5 acre-feet of demand is divided by the neighborhood commercial acreage to facilitate a phased water estimate as described later in this section. Using this method, the demand factor is estimated to be 1.91 af/ac. This value is consistent with commercial and office demands seen elsewhere and represented in other local water supply studies.[40] This value includes nominal aesthetic landscaping around parking areas and walkways, which generally only contributes a small demand when compared to the indoor component. As with other components of the Proposed Project, commercial landscaping will follow water conserving landscape principles detailed in the Specific Plan and as otherwise required by the County.

Senior Care Assisted Living Facility

Located on approximately 4 acres adjacent to the Neighborhood Commercial area, the senior care facility will offer assisted living, skilled nursing, and memory care. The facility consists of 100 beds in individual unit accommodations. Because water use data on such facilities is not readily available, this WSA assumes the facility will mimic the water demands of a hotel or timeshare facility.[41] However, due to the fact that the facility is designed for individual beds, it assumes only one person per equivalent "unit." Thus, a conservative estimate of 75 percent of the full occupancy hotel value of 0.17 af/unit – or 0.13 af/bed – is used as a conservative value for this WSA.[42]

[38] Marina Coast Water District is the nearest purveyor that uses demand factors to project future demands. In its 2010 Urban Water Management Plan (Table 3-4), a series of factors are listed. Though this coastal purveyor may see cooler temperatures, affecting landscape demands, the indoor use is viewed as comparable. And, outdoor uses with typical commercial facilities is very limited and only a small percentage of the overall demand. Thus, the value from Marina Coast Water District is assumed to be representative of the outdoor and indoor commercial unit demand factors as used this WSA.

[39] 65,000 sf x 0.0003 af/sf = 19.5 af

[40] Tully & Young has observed similar numbers from several meter studies and associated Water Supply Assessments around California.

[41] For this WSA, an assisted living facility is assumed to mimic a hotel with uses such as frequent laundry services of linens and towels, a common kitchen for food service, and necessity for hotel-like cleanliness (e.g. frequent floor mopping, etc.)

[42] Tully & Young has observed similar but slightly lower numbers from several meter studies around California for timeshares and condominiums. As senior care centers can vary greatly in terms of layout, facilities, landscaping, and level of care, this WSA assures the higher water demand number.

Amenity Center

The proposed amenity center facilities are anticipated to function as the community center for the Proposed Project. Located on approximately 10 acres, the center will include a main building of up to 25,000 sf as well as other features such as a covered swimming pool and separate outdoor pool, various hardscapes including sports courts, a fitness center, and landscaping features.

The complexity of this facility (given its various features) requires a unique set of assumptions to determine the unit demand factor. First, applying the same demand factor of 0.0003 af/sf as the neighborhood commercial land use for the indoor portion of the center results in a projected demand of 7.5 af/unit for the primary facility. Use of the same demand factor reflects the anticipated occurrence of similar features as commercial and office space that reflect a commercial area that may have a mix of retail stores, restaurants and office space (e.g. bathroom facilities, a kitchens, cleaning, etc.), but no anticipated extraordinary water uses. Second, it is assumed about 25 percent (2.5 acres) of the facility will be landscaped, likely with turf.[43] Applying the MWELO requirements results in a conservative estimated demand of 6.5 af/unit. The additional demands related to the fitness center, swimming pools and other unique features are conservatively assumed to add another 6 af/unit annually.

Together, these demand elements add to an estimated unit demand factor for the amenity center of 20 af/unit – approximately 13.5 acre-feet for indoor/pool uses and 6.5 acre-feet for landscape needs. When viewed from a per-acre demand factor basis, the resulting 1.96 af/ac is very similar to the per acre demand factor determined for neighborhood commercial uses.

Neighborhood Parks and Offsite Park

The Proposed Project includes four neighborhood parks, totaling 6.7 acres and two offsite community parks totaling approximately 17 acres.[44]

The recreational needs of active adult communities differ from the needs of conventional (non age-restricted) communities. Conventional communities have residents of all ages and recreational uses that cater to various demographics. Demand for traditional active recreational uses (e.g., playgrounds and sports fields and courts) tend to outweigh the demand for passive recreational uses (e.g., nature preserves, view areas, and trails). Active adult communities have a greater demand for passive recreational uses, with an emphasis on access, efficiency, comfort, and negotiability. Instead of larger sports fields and similar uses, active adult communities typically include smaller-scale facilities that are aesthetically pleasing and promote leisure and fitness tailored to the specific age group, such as those contemplated by the Proposed Project.

[43] Turf areas shall be limited to areas of lawn that are necessary for certain active recreational purposes and active pedestrian use, such as parks, the Amenity Center, and pedestrian corridors. [Draft San Juan Oaks Specific Plan, December 2013, p. 6-15]

[44] The first offsite park, referred to as Olive Hill Park, is located at the entrance to San Juan Oaks at the intersection of San Juan Oaks Drive and Union Road. The second park is located about ½ mile closer to the existing golf course, also adjacent to San Juan Oaks Drive.

As described more fully in the Specific Plan, the neighborhood parks will provide passive recreation amenities such as walking paths, picnic tables, and barbeque grills. They will be landscaped with signature trees, shrubs and flowers, and/or other structural features appropriate to the sites. "Smart meters" will control the irrigation system at each park as required under MWELO. These devices adjust water use to actual climate data, including precipitation events, or through direct monitoring of the moisture in the soil.

While it is acknowledged that lawn and turf areas are necessary for certain active recreational and aesthetic purposes, use of turf areas will be restricted in order to reduce irrigation water and energy usage.[45] If an area is intended for active pedestrian use, then lawn and turf should be used. In areas that will not receive active foot traffic, such as along major streets or other common planting areas within the project site will, for the most part, rely primarily on native or adaptive grasses, drought- tolerant trees, groundcovers, and shrubs.

As a result of the predominance of a passive recreational focus this WSA assumes the unit water demand factor equal to 70 percent of the reference ETo – equal to that set for the residential landscaping. Therefore, the demand factor used to estimate water demand for neighborhood parks is 2.6 af/ac. This is still a conservatively high assumption and actual use for this component of the Proposed Project will likely be lower.[46]

The two offsite parks are anticipated to have very minimal new water demands. Olive Hill Park consists of two existing olive tree groves on either side of San Juan Oaks Drive near the intersection with Union Road. As these orchards are currently both irrigated, their continued irrigation is not a new water demand.

The second offsite park will be about 4 acres, consisting of a 1-acre community garden area, a 2-acre dog park, a restroom and parking. The 1-acre garden is estimated to use approximately 2 acre-feet per year. The restrooms will have nominal use of less than 0.25 acre-feet per year. The dog park will only require water to establish planned native landscaping, after which the park will rely on annual rainfall. Collectively, this second offsite park is expected to create a new demand for approximately 2.25 acre-feet per year, or 0.5 acre-feet per acre.

[45] San Juan Oaks Specific Plan, Chapter 6.6.2.

[46] Under MWELO, park areas can have water demands up to 100% of evapotranspiration values – reflecting significant turf areas. These are referred to as "special landscape areas." Given the sustainable landscape principles detailed in the Specific Plan, it is anticipated that the parks will have limited turf areas and instead rely on "a goal of less than 25 percent will be the design objective for common landscape areas such as parks, amenity centers, and entry features, within the active adult community." (San Juan Oaks Specific Plan, Chapter 6.6.2). This goal is lower than that for residential landscaping. However, to be conservative, demand factors for parks do not reflect this even lower goal.

Resort and Hotel

The Proposed Project includes a 200-room resort hotel with spa facilities and on-site restaurant. As with the amenity center, the resort hotel has two primary elements for water use; indoor uses for guests and guest services, and outdoor landscaping needs.

Outdoor landscaping is conservatively assumed to be planted similar to the neighbor parks, resulting in a conservative demand based upon 70 percent of the reference ETo.[47] Preliminary plans reflect approximately 270,000 sf of landscaped area as part of the hotel facility. Therefore, the outdoor demand for the hotel is estimated at 16 af/unit.

Using analysis of monthly water data from several hotels in the Sacramento area of California, per-room indoor use approximates the unit demand factors for apartments and condominiums – a value of approximately 0.17 af/du considering full occupancy (see **Appendix A**). But, because hotels are often operating at 65 percent to 70 percent occupancy, a slightly lower value is used for estimating the indoor water demands of the Proposed Project's hotel. For purposes of this analysis, a conservative value of 0.12 af/room is used.[48]

Other Miscellaneous Uses

The Proposed Project has additional miscellaneous land uses including common area open space, an on-site agricultural preserve, and wildlife preserve areas. With the exception of the agricultural preserve, these uses have minimal impacts to the overall projected water use due to their limited size and water needs.

Common Area Open Space

As of the preparation of this WSA, the Proposed Project includes about 75 acres of "common area open space" within the Del Webb component of the Proposed Project. While including informal trails and natural planted areas, a portion of this land will also be dedicated to providing storm drainage and biofiltration and storage of storm water aligned along streets and drainage courses. A small demand to meet entry landscaping and street median landscaping must also be met.

The Specific Plan identifies the landscaping in the common area open space as seeking to achieve a balance between "natural" open space landscaping, designed to blend into existing surroundings, and more structured landscape elements such as streetscape trees. Plantings will emphasize drought-tolerant, hardy materials and compatibility with existing surrounding native and adaptive plants.

Given the form and function of the landscaping of this project element, a water supply will only be needed to establish plantings for the first few years. After plant establishment, these

[47] See footnote associated with neighborhood park unit demand factors.
[48] See footnote in Section 1.2 regarding resort hotel occupancy rates.

landscape features will be served by annual precipitation. Establishment of water demand factors are conservatively based on 70 percent of the maximum applied water allowance under MWELO – 2.6 af/ac. For purposes of the WSA, half of this area will be established prior to 2020, with the remaining half to be established prior to 2025. Thus the first half will no longer need to be irrigated as the remaining area is planted and established.

Agricultural Preserve

The Proposed Project includes two on-site agricultural preserves totaling 41.4acres (which are existing uses, to be continued as part of the Proposed Project), and two off-site preserves totaling 153 acres. These parcels will be preserved for agricultural use with an easement placed on the land to ensure they are used for agricultural purposes in perpetuity.

The on-site agricultural area includes (1) a 13-acre olive tree orchard, and (2) a separate 28.4-acre row crop parcel. These existing farmed lands are currently irrigated with a combination of local groundwater and imported surface water purchased from the San Benito County Water District (see discussion in Section 3). These uses are anticipated to continue, and as they currently are recognized as part of the "existing water uses" in the basin, they do not represent a new water demand for the purposes of this WSA. The existing use is contemplated in the water supply sufficiency analysis included in Section 4.

The water demands from the off-site agricultural preserves are also not included as they are not new demands resulting from the Proposed Project. However, these existing demands are reflected in the water supply sufficiency analysis included in Section 4.

Wildlife Preserve

The Proposed Project intends to set aside about 1,250 acres of the Project Site for permanent wildlife habitat. Outside of minimal access roads and trails, no building will be permitted in this area and no mitigation requirements exist that would result in long-term or even temporary water demands. Therefore, this component of the Proposed Project has no estimated water demand.

Construction Water

As stated in Section 1, early phases of the Proposed Project will include site grading and infrastructure installation. These and other construction elements will require dust suppression and other incidental water uses. These are estimated to be nominal, and do not continue beyond the construction phases of the Proposed Project. For purposes of identifying incremental water demands, construction water is assumed for purposes of this WSA to be 2 acre-feet per year (this is about 600,000 gallons – or over 150 fill-ups of a 4,000 gallon water truck).

Summary of Non-Residential Demands

Table 2-2 provides a summary of the non-residential demand factors used to estimate the Proposed Project's future demands.

Table 2-2 – Summary of Non-Residential Demand Factors

Land Use	Indoor Factor	Outdoor Factor	Unit
Neighborhood Commercial	1.91		af/ac
Senior Care Facility	0.13		af/unit
Amenity Center	13.5	6.5	af/unit
Neighborhood Parks		2.60	af/ac
Offsite Park (other)	0.56		af/ac
Resort and Hotel Landscaping		16	af/unit
Resort and Hotel Guest Services	0.12		af/unit
Common Area Open Space		2.60	af/ac
On-Site Agriculture		3.76	af/ac
Construction Water		2	af/unit

2.5 PROPOSED PROJECT WATER DEMAND PROJECTION

Combining the Proposed Project's land use details and phasing as summarized in **Table 1-1** and **Table 1-2** with the demand factors presented in **Table 2-1** and **Table 2-2**, the water demands for the Proposed Project from initiation to build-out can be estimated. At completion, the Proposed Project is estimated to need approximately 402 acre-feet of water annually (prior to considerations of non-revenue water, described in the next subsection) and approximately 442 acre-feet when considering non-revenue water, as shown in **Table 2-3**. This value represents nearly even split between indoor potable demands and outdoor non-potable demands.[49]

2.5.1 Non-Revenue Water Demands

The demand factors presented earlier in this section represent the demand for water at the residential or non-residential customer meter for each category. To fully represent the demand on water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary to deliver to the customer accounts and reflects distribution system leaks, water demands from potentially un-metered uses such as fire protection, hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings.[50] In most instances, the predominant source of non-revenue water is from system leaks – the loss from fittings and connections from water sources through treatment plants, tanks, pumping plants, major delivery system back-bone pipelines, and community distribution systems. Because a

[49] As discussed previously, the estimated Proposed Project water demands do not include the existing golf course, clubhouse, or irrigation demands from existing agricultural uses. These existing water demands are considered under the water supply sufficiency analysis in Section 4.

[50] The American Water Works Association and the California Urban Water Conservation Council recognize the inherent non-revenue water that is either lost or not accounted for in urban treated water distribution systems and suggest purveyors strive for a value of 10% of all delivered water. Obtaining this value is dependent on numerous factors including the age and extent of distribution system infrastructure, meter rehabilitation programs, and how a purveyor accounts for actions such as fire flows and hydrant flushing.

significant portion of the delivery system used to bring water to the Proposed Project will be new, the percentage of non-revenue water is estimated to meet the 10 percent goal set forth by the American Water Works Association. Therefore, the Proposed Project's water delivery system is expected to require an additional 40 acre-feet at build-out to serve the residences and guests.[51]

2.5.2 Potential Recycled Water Demand

A portion of the Proposed Project's demands could be met with recycled water (see **Section 3** for further discussion of water supply sources). Through the use of a recycled water or "purple pipe" system, a separate water line could be run to serve recycled water for non-potable use only – essentially to serve common areas and commercial landscaping throughout the Proposed Project. As detailed in **Table 2-3**, indoor and outdoor demands are separated. Using this information, the maximum recycled water demand would equate to the estimated "commercial" and "public" outdoor demands as listed in the table. These equate to approximately 40 acre-feet annually. However, for purposes of the WSA and to be conservative, the Proposed Project is assumed to fully rely upon groundwater.

[51] This non-revenue estimate does not include the demands assumed for the on-site agricultural preserves or the existing golf course and clubhouse. These water demands will continue to be served by separate systems. Therefore, there are no distribution system losses that are recognized or included from these uses as part of the estimated water demands of the Proposed Project.

Table 2-3 – Estimated Proposed Project Water Demands[52]

	Unit Count or Acreage						Demand Factor	Demand (af/yr)					
Category	Current	2015	2020	2025	2030	2035	(af/du or af/ac)	Current	2015	2020	2025	2030	2035
Residential													
Dell Webb Indoor	0	0	720	1,017	1,017	1,017	0.10	0	0	72	102	102	102
Conventional Indoor	0	0	67	67	67	67	0.18	0	0	12	12	12	12
							Indoor Subtotal	0	0	84	114	114	114
Del Webb 4,500 sf. Outdoor	0	0	250	301	301	301	0.15	0	0	38	45	45	45
Del Webb 5,000 sf. Outdoor	0	0	341	412	412	412	0.14	0	0	48	58	58	58
Del Webb 6,500 sf. Outdoor	0	0	253	304	304	304	0.20	0	0	49	59	59	59
Conv. 6,000 sf. Outdoor	0	0	56	56	56	56	0.17	0	0	10	10	10	10
Conv. 7,000 sf. Outdoor	0	0	3	3	3	3	0.23	0	0	1	1	1	1
Conv. 10,000 sf. Outdoor	0	0	8	8	8	8	0.41	0	0	3	3	3	3
							Outdoor Subtotal	0	0	149	176	176	176
Commercial													
Neighborhood Commercial	0	0	5	10.2	10.2	10.2	1.91	0	0	10	19	19	19
Amenity Center	0	0	1	1	1	1	13.5	0	0	14	14	14	14
Resort Hotel	0	0	0	0	200	200	0.12	0	0	0	0	24	24
Senior Care Facility	0	0	0	100	100	100	0.13	0	0	0	13	13	13
							Indoor Subtotal	0	0	23	46	70	70
Amenity Center	0	0	1	1	1	1	6.5	0	0	7	7	7	7
Resort Hotel	0	0	0	0	1	1	16	0	0	0	0	16	16
							Outdoor Subtotal	0	0	7	7	23	23
Public													
Neighborhood Parks	0	2	4	6.7	6.7	6.7	2.60	0	5	10	17	17	17
Offsite Park (other)	0	0	0	4	4	4	0.56	0	0	0	2	2	2
Common Area Open Space	0	0	37.4	74.8	74.8	74.8	2.6 (establish)	0	0	97	97	0	0
							Outdoor Subtotal	0	5	108	117	20	20
Other Miscellaneous Uses													
Construction Water	0	2	2	0	0	0	1	0	2	2	0	0	0
							Outdoor Subtotal	0	2	2	0	0	0
							Indoor Total	0	0	107	160	184	184
							Outdoor Total	0	7	265	300	218	218
							Total	0	7	372	459	402	402
							Outdoor Non-revenue water 10%	0	1	26	30	22	22
							Indoor Non-revenue water 10%	0	0	11	16	18	18
							Total Indoor	0	0	118	176	202	202
							Total Outdoor	0	8	291	330	240	240
							Total Proposed Project Demand	0	8	409	505	442	442

[52] The higher demand shown in 2025 is due to the temporary water necessary to establish landscaping in the common open space areas. Establishment water is only needed for the first few years after planting to help the native plantings take root. The establishment between 2020 and 2025 is displayed fully in 2025, but actual timing will likely occur over the years between these two five-year points, making actual demand likely less than the ultimate build-out demand.

SECTION 3 – WATER SUPPLY CHARACTERIZATION

3.1 INTRODUCTION

This section characterizes the intended water supply that will be used to serve the estimated water demands of Proposed Project as detailed in Section 2.[53]

As discussed in this section, this WSA assumes the Proposed Project will rely solely on groundwater to meet the new water demand of 442 acre-feet per year at build-out (see Section 2, Table 2-3). Many existing users, including the existing land uses on the site of the Proposed Project Site, share groundwater available in the aquifer beneath the respective properties. This section provides a detailed characterization of the aquifer, as well as historic and projected uses of this shared resource. Section 4 details the assessment of sufficiency of groundwater when considering the new water demand of the Proposed Project in addition to existing and other planned future demands for groundwater.

3.2 CHARACTERIZATION OF GROUNDWATER SUPPLIES

If a project's water supply includes groundwater, the WSA must include: a description of any groundwater basin or basins from which the proposed project will be supplied, a detailed description and analysis of historical and projected groundwater pumping, and an analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project (the sufficiency analysis is presented in Section 4).[54]

The Proposed Project overlies the San Juan Valley, west of the City of Hollister and east of San Juan Bautista. This valley is largely agricultural, with a significant groundwater subbasin that has been used historically for irrigation and, to a much lesser degree, for municipal demands in San Juan Bautista and for individual domestic uses scattered throughout the valley. The area of this subbasin and its connection with adjacent subbasins has been assessed differently by the California Department of Water Resources (DWR) and the San Benito County Water District (SBCWD).

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[53] WATER CODE § 10910(d)(1) requires that "The assessment… include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system…under existing water supply entitlements, water rights, or water service contracts. (2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system…shall be demonstrated by providing information related to all of the following: (A) Written contracts or other proof of entitlement to an identified water supply. (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system. (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply. (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply."

[54] Water Code § 10910(f).

DWR includes the San Juan Valley in the San Juan Bautista Subbasin of the Gilroy- Hollister Groundwater Basin as defined in DWR's 2003 Bulletin 118. The DWR- defined Subbasin includes areas that are significantly less permeable than the main part of San Juan Valley and extends over 25 miles southeast of the San Juan Valley, encompassing areas with limited connection to the valley itself. These low permeability areas near the San Juan Valley are the Flint Hills (continental mudstone) north of the valley and the Purisima Formation outcrops southeast of the valley. The areas south of the San Juan Valley that are within the DWR-defined Subbasin also include the Tres Pinos and Paicines valleys as well as significant upland areas that have not been well characterized. See **Figure 3-1** for DWR's representation of the San Juan Bautista Subbasin.

In contrast, the SBCWD, the local groundwater management agency, defines the area of the San Juan Subbasin differently. As defined by SBCWD, the San Juan Subbasin is based on geology, hydrogeology, existing water infrastructure, and other features, and more closely approximates what is generally recognized as San Juan Valley. The SBCWD has consistently used this boundary for planning, data compilation, and water resources management since 1996. The SBCWD collects groundwater and surface water use, groundwater level, and water quality data and uses this Subbasin boundary as the basis for compiling these data. In addition, the SBCWD-defined Subbasin boundary has been used as the area in which water balances are calculated as part of SBCWD's annual groundwater reporting.[55] **Figure 3-1** indicates the boundaries of SBCWD's defined San Juan Subbasin and the relation to the DWR defined subbasin.

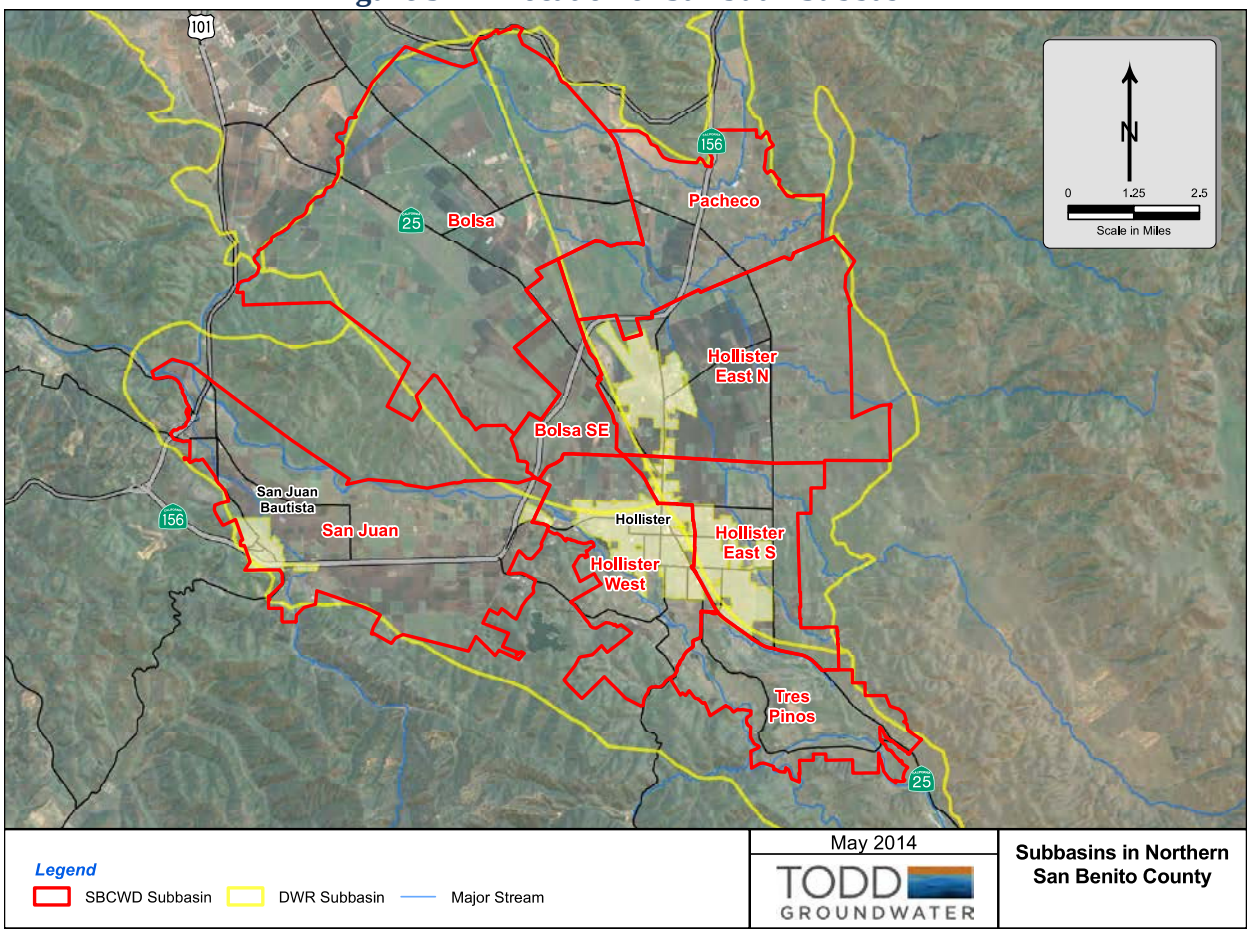
The County has the discretion to determine the appropriate geographical area to support a WSA based on technical and practical factors, and to use its own method to conduct a groundwater sufficiency analysis. [56] For this WSA, the County will use SBCWD's defined basin.[57]

The San Juan Subbasin is isolated by mountain ranges on the North and South with the San Benito River running through the valley from east to west. The eastern and western boundaries are defined by narrow gaps in the mountain ranges where permeable alluvial soils allow for groundwater flows and connection to adjacent groundwater basins. The eastern boundary lies against the SBCWD-defined Hollister West Subbasin, which is upgradient and spills groundwater into the San Juan Subbasin. Groundwater flows roughly follow the San Benito River in a westerly direction. Groundwater in the basin originates from percolating rainfall, San Benito River percolation, percolation of irrigation water applied to the active farming in the

[55] SBCWD annually prepares annual groundwater reports that include assessing the San Juan Subbasin. Reports are available at www.sbcwd.org.
[56] O.W.L. Foundation v. City of Rohnert Park (2008) 168 Cal.App.4th 568.
[57] As stated in DWR's *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001*, p. 17 "(b) The description of the groundwater basin may be excerpted from the groundwater management plan, from DWR Bulletin 118, California's Ground Water, or from some other document that has been published and that discusses the basin boundaries, type of rock that constitutes the aquifer, variability of the aquifer material, and total groundwater in storage (average specific yield times the volume of the aquifer)."

Valley, percolation and seepage from San Justo Reservoir releases, and percolation of reclaimed municipal water in ponds located near the eastern boundary of the basin.

Figure 3-1 – Location of San Juan Subbasin



3.3 GROUNDWATER MANAGEMENT IN THE SAN JUAN SUBBASIN

In California, regulation of groundwater has largely been left to local authorities because the state has not implemented a comprehensive statewide program to regulate or manage groundwater resources – until recently (see Section 3.3.1). There are a variety of methods available for managing groundwater resources in California and the degree of groundwater management in any basin is often dependent on water availability and demand.[58] Typically, local groundwater management strategies include monitoring groundwater levels and production amounts, and facilitating conjunctive use of groundwater and surface water supplies.

[58] Department of Water Resources, Bulletin 118 (2003), Ch. 2.

"Conjunctive use" refers to the coordinated use of surface and groundwater supplies to improve water supply reliability.[59] Given that precipitation in much of California occurs unevenly over wet and dry periods, state policy favors conjunctive use projects and has declared that the "conjunctive management of surface water and groundwater is an effective way to improve the reliability of water supply for all sectors in California."[60] "Well planned conjunctive management not only increases the reliability and the overall amount of water supply in a region, but provides other benefits such as flood management, environmental water use, and water quality improvement."[61] Conjunctive use may be either passive or active. In its passive form, also called in-lieu conjunctive use, surface water is used in wet years and groundwater is used in dry years. In active conjunctive use, surface water is directly injected or percolated into aquifers to be used as needed as part of groundwater management operations.[62]

In the San Juan Subbasin, groundwater management is undertaken by SBCWD. The SBCWD is a California Special District formed in 1953 by the San Benito County Water Conservation District Act.[63] SBCWD encompasses around 47,000 acres of San Benito County and delivers water to approximately 32,000 acres, including land overlying the San Juan Subbasin as well as a number of other basins within the greater Gilroy-Hollister groundwater basin. It is the mission of the SBCWD to preserve the economic and environmental health and well-being of San Benito County through the control, management and conservation of waters and the provision of water services in a practical, cost-effective and responsible manner. SBCWD actively manages groundwater supplies within its jurisdiction, including groundwater elevation monitoring, water quality monitoring and conjunctive use. Annually, SBCWD prepares and publishes its Groundwater Report documenting and assessing groundwater conditions in the San Benito County portion of the Gilroy-Hollister basin, including the San Juan Subbasin. This WSA relies on the most recent information available from the SBCWD, including water supply sources and use, groundwater levels and storage, and SBCWD management activities through September 2014.[64]

The principal sources of water within the SBCWD are groundwater and water imported from the Central Valley Project (CVP). SBCWD conjunctively manages local groundwater supplies by making imported CVP water available for direct use by agricultural and municipal and industrial users in wet and normal years, which reduces groundwater pumping and replenishment of groundwater supplies – a method of in-lieu groundwater recharge. In dry years, when imported

[59] Department of Water Resources, Bulletin 118 (2003), Glossary, p. 100; see also *Central and West Basin Water Replenishment District v. Southern California Water Co.* (2003) 109 Cal.App.4th 891, 897.
[60] Water Code § 79170.
[61] Department of Water Resources, California Water Plan (2009) Vol. 2, Ch. 8, "Conjunctive Management and Groundwater Storage," p. 8-5.
[62] Water Code § 79171.
[63] Water Code App. § 70.
[64] See, e.g., San Benito County Water District, Annual Groundwater Report (2014).

water supplies are limited, demand on groundwater supplies increases, tapping the groundwater supplies that were stored during the wetter periods.

In addition to the SBCWD's local groundwater management, the County, pursuant to its police powers, has adopted rules for the protection of groundwater resources within its jurisdiction.[65]

3.3.1 The 2014 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA), enacted in October 2014, applies to all groundwater basins in the state.[66] Any local agency that has water supply, water management or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin.[67] Local agencies have until January 1, 2017 to elect to become or form a groundwater sustainability agency. In the event a basin is not within the management area of a groundwater sustainability agency, the county within which the basin is located will be presumed to be the groundwater sustainability agency for the basin.[68] By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction.[69]

The San Juan Subbasin, which is identified as the source of supply for this Project, is not identified as a separate basin by DWR. As described in Section 3.2 of this WSA, the boundaries of the San Juan Subbasin, as described by SBCWD, are different from the San Juan Bautista Subbasin, which is included in DWR's Bulletin 118. Nevertheless, it is possible that one or more local agencies such as the SBCWD or the County may elect to become the groundwater sustainability agency for a basin that includes some or all of the San Juan Subbasin. Alternatively, a local agency – for example, the SBCWD – may request that DWR revise the boundaries of a basin, including the establishment of one or more new subbasins.[70]

Any groundwater sustainability agency established for the San Juan Subbasin, or for a portion of the San Juan Subbasin, or for an area that includes the San Juan Subbasin, would have additional powers under the SGMA to manage groundwater within the basin and regulate groundwater extractions from individual groundwater wells or wells generally.[71] In exercising its authority under the SGMA, a groundwater sustainability agency must consider the interests of holders of overlying groundwater rights, among others, and may not make a binding determination of the water rights of any person or entity.[72]

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[65] *See generally*, San Benito County Code § 15.15.001 *et seq*.
[66] Water Code § 10720.3.
[67] Water Code § 10723.
[68] Water Code § 19724.
[69] Water Code § 10720.1.
[70] Water Code §§ 10722.2, 10721(b).
[71] See generally, Water Code § 10725 et seq.
[72] Water Code §§ 10723.2, 10726.8.

The SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority.[73] All basins designated as high- or medium- priority basins must be managed under a "groundwater sustainability plan" that complies with Water Code section 10727 *et seq*. Groundwater sustainability plans must be prepared by January 31, 2020 for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR. Groundwater sustainability plans must be prepared by January 31, 2022 for all other high- and medium-priority basins.[74] In lieu of preparation of a groundwater sustainability plan, a local agency may submit an alternative that complies with the SGMA no later than January 1, 2017.[75]

DWR has identified San Juan Bautista Subbasin of the Gilroy-Hollister Groundwater Basin as a "medium-priority basin." [76] Therefore the San Juan Bautista Subbasin is required to be managed pursuant to a groundwater sustainability plan, which must be prepared by January 31, 2022.

The SGMA provides local agencies with additional tools and resources designed to ensure that groundwater in the greater San Juan Valley is sustainably managed. Implementation of the SGMA is not anticipated to affect the availability of water to serve the Project because the San Juan Subbasin is currently sustainably managed and existing and future groundwater extractions from the San Juan Subbasin are projected to be sustainable over the long-term, as further discussed in Section 4.0.

3.3.2 Historic Use and Future Reliability

As discussed previously, the conjunctive management objectives of the SBCWD result in greater groundwater pumping in dry years when CVP supplies are limited. In wet years, CVP deliveries are generally higher, and groundwater pumping is much lower. When coupled with percolation from various sources, the increased surface supplies and decreased groundwater use in wetter years allows the San Juan Subbasin to be replenished. This fluctuation in groundwater use has been going on within the San Juan Subbasin since the CVP supplies were brought to the region in the late 1980's. **Figure 3-2** provides several representative well locations with historic groundwater level conditions. It should be noted that historic groundwater levels in the San Juan subbasin show a recovery of over 50 feet since the 1977 drought with significant gains coinciding with the completion of facilities to import CVP supplies. Elevations have remained stable since, even with the fluctuations in CVP deliveries experienced on a year-to-year basis. This indicates that historical quantities of groundwater use have not resulted in long-term decreases in groundwater elevation or conditions of overdraft.

[73] Water Code §§ 10720.7, 10722.4.
[74] See Water Code §§ 10720.7.
[75] Water Code § 10733.6.
[76] Water Code §§ 10933, 10722.4; see http://www.water.ca.gov/groundwater/casgem/basin_prioritization.cfm. The Llagas, Bolsa and Hollister Subbasins of the Gilroy-Hollister Basin are also listed as high-, medium-, and medium-priority basins respectively.

Groundwater pumping in the San Juan Subbasin from the early 1990's to 2014 period averaged a little over 8,000 acre-feet per year, ranging from nearly 12,000 acre-feet in 2009 – the third year in a series of dry years, to as low as just under 5,000 acre-feet in 2011, a very wet year. **Table 3-1** provides the historic groundwater pumping, along with the CVP deliveries since 1993.[77] Notably, the average groundwater pumping for the entire period (1993 through 2014) is nearly equivalent to the average pumping since 2007 when CVP deliveries faced increased challenges from revised environmental constraints placed on CVP diversions from the Sacramento-San Joaquin River Delta.[78] As evidenced in the table, CVP deliveries since 2007 averaged about 1,900 acre-feet per year less than prior to 2007, in large part due to the unprecedented drought conditions of 2014 that significantly reduced CVP deliveries. Average groundwater use subsequent to this reduction remains consistent with prior periods.

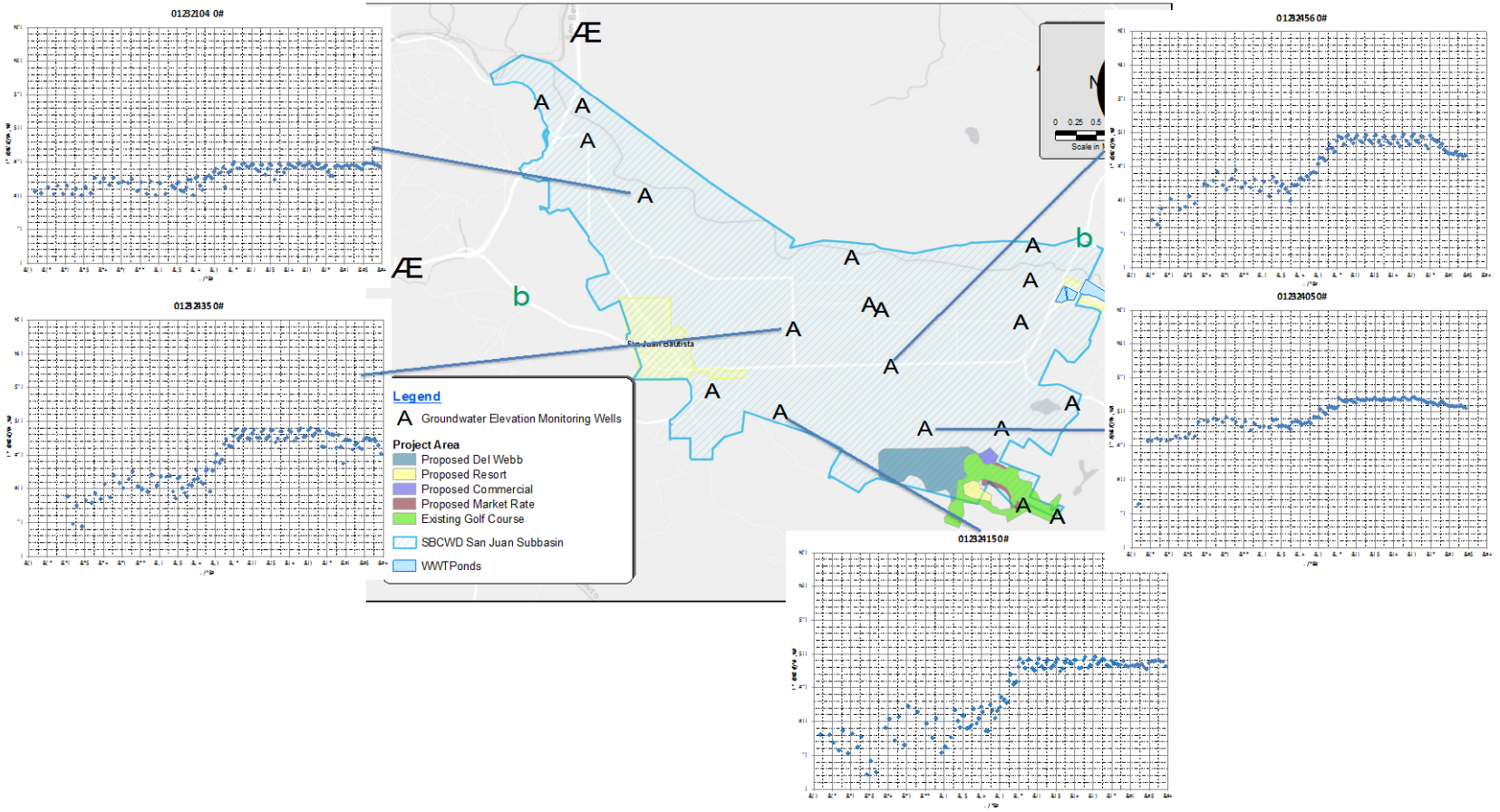
The changes in groundwater levels over time, as seen in the hydrographs in Figure 3-2, have been small and relatively consistent, indicating that the historical range in the volume of groundwater pumped does not significantly affect groundwater elevations. Rather, other factors (like river recharge, areal precipitation, and agricultural return flows) may have greater impact on groundwater elevations and storage. In addition, groundwater elevation hydrographs show that groundwater elevations in the San Juan Subbasin appear to respond quickly to changes in the inflow/outflow balance from year to year. This means that groundwater elevations in the Subbasin can and have recovered quickly from the effects of dry years when potential recharge water is available in average and wet years.

[77] Data in Table 3-1 is from the San Benito County Water District Annual Groundwater Report (2014), Table E-2. Values reflect groundwater pumping by agriculture as well as municipal and industrial and domestic users.
[78] 2006 was the last year SBCWD received a 100% allocation of its agricultural CVP contract supplies. Using CVP delivery quantities since 2007 represents a potential future condition with long-term reduced CVP supply reliability.

Table 3-1 – Historic Groundwater Pumping and CVP Deliveries in the San Juan Subbasin (values are in acre-feet)

Year	GW	CVP	Total
1993	9,278	4,300	13,578
1994	10,859	3,836	14,695
1995	9,328	4,554	13,882
1996	8,726	5,187	13,913
1997	9,587	6,191	15,778
1998	6,963	4,099	11,062
1999	9,312	5,990	15,302
2000	8,681	6,372	15,053
2001	7,977	7,232	15,209
2002	7,571	7,242	14,813
2003	7,434	7,127	14,561
2004	8,121	7,357	15,478
2005	6,608	6,245	12,853
2006	6,741	7,200	13,941
2007	7,658	6,160	13,818
2008	7,796	3,160	10,956
2009	11,956	1,605	13,561
2010	9,561	3,452	13,013
2011	4,987	5,623	10,610
2012	5,782	5,976	11,758
2013	11,044	4,134	15,178
2014	10,018	1,984	12,002
Ave. '93-'14	8,454	5,228	13,682
Ave. '07-'14	8,600	4,012	12,612
Ave. '93-'06	8,370	5,924	14,294

Figure 3-2 – Groundwater Levels in San Juan Valley from Representative Well Locations[79]



[79] Sources: Map – Todd Groundwater, March 2014; Hydrographs – Todd Groundwater, San Juan Subbasin Groundwater Elevation Hydrographs March 2014

3.3.3 Long Term Groundwater Availability

The long term sustainability of the groundwater supply is in part a function of the quantity of CVP water imported to the Subbasin each year. From 2007 through 2014, CVP imports have supplied approximately one-third of the water used in the Subbasin. Dry periods, both single-year and multiple-year, when less CVP water is imported, have historically resulted in slight groundwater elevation declines. However, during normal and wet years groundwater elevations in the Subbasin quickly recover to historical high elevations. This shows that in dry years groundwater from the Subbasin serves as a large reserve to meet demands but quickly refills. As can be seen in Figure 3-2, the below average CVP deliveries that occurred in years such as 2008, 2009, and 2010 did not result in significant decline in groundwater levels and the basin appears to be equilibrium (inflow is similar to outflow).

Given the stability of groundwater levels over a mix of year types and significant differences in groundwater demand year to year, the availability of groundwater is considered relatively stable for continued long-term operation. Historical groundwater elevation records show that the Subbasin recovers quickly during normal and wet years if any dry-year induced groundwater elevation declines occurred. This could be due in part to reduced *rejected recharge*. In normal and wet years, when groundwater elevations in the Subbasin are at or near historic highs there is limited available storage space to accept potential recharge in the form of precipitation, return flow, or surface water infiltration. This potentially available recharge water instead flows out of the Subbasin and is effectively rejected from the Subbasin's groundwater system, a circumstance commonly referred to as *rejected recharge.* This condition appears to historically help restore groundwater elevations and storage volumes in wet periods following both single and multiple dry year periods. Expanded groundwater use has the potential to increase the available capacity for groundwater recharge while still resulting in the historic cyclical recovery documented in the annual groundwater reports.

Given the limited impacts the current drought has had on the groundwater levels as shown in **Figure 3-2**, the historic and on-going conjunctive use operation of the groundwater basin by SBCWD will continue to maintain a high level of groundwater reliability in the San Juan Subbasin into the future. An assessment of the reliability of groundwater for the Proposed Project, when considering existing and other planned future uses, is included in Section 4.

3.4 WATER RIGHTS, FINANCING, AND REGULATORY APPROVALS[80]

Upon construction of the Proposed Project, ownership and operation of all water utility systems will be transferred to a qualified water purveyor. There are two alternatives for the water purveyor: (1) an investor-owned public utility company, or (2) a mutual water company. The water purveyor will be responsible for the continued operation and maintenance of all utility systems. Importantly, however, the type of water purveyor used will not have any significant

[80] See Water Code Section 10910(d)(2)

impact on the Proposed Project's estimated water demand or the availability of the groundwater resources available to serve the Proposed Project, as described in Section 4.

Though it is expected that the Proposed Project's landowner, San Juan Oaks, LLC, will continue to purchase CVP water from SBCWD pursuant to an annual Municipal and Industrial Water Purchase Agreement for irrigating the existing golf course and on-site agriculture, CVP water is not considered as a source of water for the Proposed Project.[81]

Absent an adjudication of a groundwater basin, California common law governs the right to use and extract percolating groundwater from a basin. The San Juan Subbasin is an unadjudicated groundwater basin and therefore subject to these common law rules. The owner of real property overlying a groundwater aquifer possesses a right as part and parcel of the land to extract groundwater from beneath the property for use on overlying land within the watershed. The Proposed Project applicants are, or will become as a result of approval of the Proposed Project, landowners overlying the San Juan Subbasin. Accordingly, both parties are overlying owners and are entitled to produce groundwater from the San Juan Subbasin to serve their reasonable and beneficial uses within the watershed or drainage area of the basin.

3.4.1 Financing the Water Supply

The Proposed Project anticipates drilling at least two new wells on the Project Site to access groundwater in the San Juan Subbasin. These wells and other related infrastructure will be constructed by either the develop or the eventual water purveyor. The anticipated expenses of this infrastructure are relatively modest compared to the expenses of the development as a whole, and financing is not expected to create a barrier to implementing the water supply plans identified in this WSA.

3.4.2 Regulatory Approvals and Permits

Prior to drilling new municipal wells, the Proposed Project will need to seek and acquire permits from the County as detailed in Title 15, Chapter 15.05, Article 1 of the County's municipal code.

Additionally, the Proposed Project will likely be subject to at least the following regulatory approvals and filings:

- Well Completion Report must be filed with the Department of Water Resources[82]
- County Permit for Water System Design Standards[83]

[81] San Juan Oaks, LLC and/or the water purveyor will continue to use a combination of CVP water purchased from SBCWD and pumping of groundwater from the San Juan Subbasin as appropriate each year, based upon the availability of CVP supplies, groundwater conditions, costs, and other factors. The continued purchase of CVP water for the golf course and existing on-site agriculture are not considered part of the water supplies for the Proposed Project, since CVP supplies are already purchased and used in conjunction with local groundwater to meet the existing water demands of the these uses.

[82] Water Code § 13750, et seq.

- Registration of New Wells within SBCWD Zone 6.[84] SBCWD may levy a groundwater charge for any groundwater production in any zone within its boundaries.[85] SBCWD requires that all new wells be registered according to Zone in order to monitor production and apply the applicable Zone's groundwater production charge.

- County Service Line Certification.[86]

[83] San Benito County Code § 23.31.060; 22 C.C.R. § 64254.
[84] Water Code Appx. 70, § 70-7.13.
[85] Wat. Code Appx. 70, §§ 70-7.1, 70-7.6 to 70-7.8.
[86] San Benito County Code § 23.31.062.

SECTION 4 – SUFFICIENCY ANALYSIS

4.1 INTRODUCTION

The analysis detailed in this section provides a basis for determining whether sufficient water supplies exist to meet the estimated water demand of the Proposed Project.[87] The WSA must provide a reasoned analysis of the likely availability of the identified supplies to serve the Proposed Project, while considering the demands of existing and other future planned-for demands on those supplies. [88]

This section includes:

- Analysis of sufficiency of groundwater to serve the Proposed Project, considering variations in supply and demand characteristics under normal, single-dry and multi-dry hydrologic conditions.
- Analysis of conclusions for purposes of determining water supply sufficiency..
- Alternatives analysis of sufficiency when considering optional CVP and/or recycled water supply sources that could become available to meet a portion of the demands of the Proposed Project.

4.2 GROUNDWATER SUPPLY SUFFICIENCY ANALYSIS

The sufficiency analysis integrates the water demands detailed in Section 2 with the groundwater supplies characterized in Section 3 and the assessment of existing and other planned future uses discussed in Section 4.2.1. The results are presented in **Table 4-1** beginning with "current" conditions (recognized as the average of 2007 to 2014)[89] and continuing with 5-year increments from 2015 through 2035. While the analysis at various intervals before build-out is important, the most critical projection for the sufficiency analysis occurs in 2035. This analysis assumes that the Proposed Project is fully constructed before 2035.

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[87] Water Code § 10910 (c)(4) provides that "If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

[88] *Vineyard Area Citizens for Responsible Growth, Inc*. v. *City of Rancho Cordova* (2007) 40 Cal.4th 412, 430-32.

[89] This period was chosen to represent the "current" condition as it reflected volumes of CVP deliveries and groundwater pumping in the San Juan Subbasin during a period where CVP deliveries averaged less than 40% of the total SBCWD CVP allocation. 2006 was the last year with 100% allocation.

Table 4-1 – Assessment of Sufficiency of Groundwater Supplies[90]

Year	Hydrologic Year Type (af/yr)		Demand on San Juan Subbasin Groundwater (af/yr)			Planned Pumping from San Juan Subbasin (af/yr)
			Proposed Project	Existing and Other Planned Future Use in San Juan Valley	Total Demand	
Current	Normal		0	8,400	8,400	8,400
	Single Dry		0	11,341	11,341	11,341
	Multiple Dry	Year 1	0	7,955	7,955	7,955
		Year 2	0	8,078	8,078	8,078
		Year 3	0	12,223	12,223	12,223
2015	Normal		8	8,407	8,415	8,415
	Single Dry		8	11,052	11,060	11,060
	Multiple Dry	Year 1	8	7,666	7,674	7,674
		Year 2	8	7,803	7,811	7,811
		Year 3	7	11,963	11,970	11,970
2020	Normal		409	8,415	8,824	8,824
	Single Dry		430	11,059	11,489	11,489
	Multiple Dry	Year 1	430	7,673	8,103	8,103
		Year 2	408	7,811	8,219	8,219
		Year 3	387	11,970	12,356	12,356
2025	Normal		505	8,422	8,927	8,927
	Single Dry		531	11,067	11,598	11,598
	Multiple Dry	Year 1	531	7,681	8,212	8,212
		Year 2	504	7,818	8,322	8,322
		Year 3	478	11,977	12,454	12,454
2030	Normal		442	8,422	8,864	8,864
	Single Dry		465	11,067	11,532	11,532
	Multiple Dry	Year 1	465	7,681	8,146	8,146
		Year 2	441	7,818	8,259	8,259
		Year 3	418	11,977	12,395	12,395
2035	Normal		442	8,437	8,879	8,879
	Single Dry		465	11,083	11,547	11,547
	Multiple Dry	Year 1	465	7,697	8,161	8,161
		Year 2	441	7,833	8,274	8,274
		Year 3	418	11,991	12,409	12,409

Table 4-1 incorporates the Proposed Project's water demand projection from **Table 2-3**, assuming the Proposed Project develops as detailed in Section 1, and presents "existing and planned future uses" on the San Juan Subbasin expected during normal, single-dry and multiple-dry years (see Section 4.2.1).[91]

[90] Table 4-1's columns are more fully explained on the following pages. Generally, the Proposed Project demand is from Table 2-3, while the "existing and other planned uses" reflect existing on-site uses, as well as agricultural use within the San Juan Subbasin and municipal use by San Juan Bautista.
[91] See Water Code Section 10910(c)(3)

Conservative modifications to the estimated Propose Project's water demand are made to reflect conditions expected during single-dry and multiple dry year events as follows:

Single dry year: Landscape irrigation demands will increase to reflect the generalized earlier start of the landscape irrigation season due to limited rainfall in the single driest year. Since this increase only applies to the outdoor portion of a customer's demand, an adjustment factor of 5 percent is applied to the total normal-year water demand values to conservatively reflect the expected increase in demand for water.[92]

Multiple dry years: During multiple dry years, demands are also expected to increase during the first in a series of dry years – as discussed above for the single dry year condition. However, during the second and third consecutive dry years, demands also are expected to reflect water shortage contingency plans implemented by the municipal water purveyor.[93] During the second year, the water purveyor is assumed to request a reduction target of 10 percent. The resulting demand, however, only reflects a 5 percent reduction to accommodate conservatively low participation by customers. During the third year, the purveyor is expected to set a conservation target of 20 percent. For this analysis, the demands in the third year are only reduced by 10 percent to again reflect a conservatively low participation rate by the customers.[94] Thus, during multiple dry conditions, demands both increase due to reduced effective precipitation, but also decrease (from the increased demand) to reflect implementation of short-term conservation measures. The estimated water demands for multiple dry years are shown in **Table 4-1**.

4.2.1 Existing and Planned Future Uses

As required by statute, the analysis of sufficiency needs to consider existing and planned future uses that would be served in addition to the Proposed Project. Since there is no defined municipal water purveyor, and the source of water for the Proposed Project is groundwater, the identification of existing and planned future uses expands to the boundaries of the San Juan Subbasin. As discussed in Section 3, the San Juan Subbasin supports four additional primary uses: the existing San Juan Oaks golf course and

[92] Through meter studies and work with DWR on "weather normalization" of per capita water use values, Tully & Young has been able to demonstrate that urban water use increases during low rainfall months. Based on conversations with urban purveyors, DWR and landscape water professionals, it appears common for landscape irrigation timers to be turned on "early" when February and March are unusually dry.
[93] Though the municipal water purveyor does not exist yet for the Proposed Project, this WSA assumes that whatever purveyor is established will develop a water shortage contingency plan to address drought conditions. This would be consistent with the County's ordinance regarding water conservation.
[94] This WSA is conservatively assuming low participation from customers during multiple dry-year drought conditions so that the assessment of water supply sufficiency is overly cautious. Furthermore, as demonstrated by the State's urban water conservation mandates that took affect on August 1, 2014, participation in a local water purveyors water shortage plan is often low. To combat this during 2014's unprecedented drought conditions, the State created mandatory conditions – subject to fines for violations.

clubhouse, existing irrigated agriculture, municipal and industrial (M&I) in San Juan Bautista, and individual domestic users scattered throughout the Subbasin.[95]

Existing Golf Course and Clubhouse: The San Juan Oaks golf course and clubhouse historically rely upon a combination of CVP water and groundwater.[96] In 2005, the golf course used 400 acre-feet of CVP supply and only 40 acre-feet of groundwater. However, more recently, the ratio has changed, with groundwater and CVP supplies each contributing to about 50 percent of the demands.[97]

In the future, the owner of the golf course and clubhouse intends to continue to rely upon this equal blend of CVP supplies and groundwater. For purposes of the WSA, the future golf course and clubhouse groundwater demand during normal years is determined to be 50 percent of the historic average demand of 415 acre-feet per year – or approximately 207 acre-feet. The remaining demand – 208 acre-feet – is assumed to be met with CVP supplies. As a conservative assumption, when the overall availability of CVP supplies to SBCWD is constrained, the golf course and clubhouse demand for groundwater would increase to offset the CVP reduction.[98] The following is assumed:

Single dry year: During a single dry year, CVP supplies are expected to be reduced to 75 percent of historic uses. This is consistent with Reclamation's policy for municipal and industrial water use contracts. For purposes of this WSA, the CVP supply of 208 acre-feet would drop to 156 acre-feet, and groundwater use would increase to offset the CVP reduction – an increase of 52 acre-feet. In addition, during a dry year, less precipitation generally occurs, resulting in a greater need for irrigation water to meet the water needs of the golf course. This is reflected by increasing the overall demand by 5 percent. Therefore, for purposes of this analysis, the golf course and clubhouse demand for groundwater during a single dry year increases from 207 acre-feet to 272 acre-feet – reflecting both a need to offset reduced CVP supplies and reduced effective precipitation.

[95] San Juan Bautista is the only municipal purveyor in the San Juan Subbasin. Existing and planned growth in the Hollister urban area is served by other defined groundwater subbasins.
[96] The use of CVP water in the subbasin is granted through SBCWD's contract with the United States Bureau of Reclamation (USBR Contract # 8-07-20-W0130).
[97] San Juan Oaks Specific Plan, Chapter 5. However, this change is by choice of the owner. CVP municipal water supplies continue to be available in quantities that would fully meet the demands of the golf course. The assumption by this WSA to restrict CVP is a conservative mechanism to help assure a rigorous assessment of groundwater availability.
[98] Though the golf course parcel has a Municipal & Industrial Water Purchase Agreement with SBCWD for at least 400 acre-feet of CVP water (and has requested and used this quantity in the past), for conservative purposes, this analysis assumes the CVP supplies will be reduced from the recent CVP use (i.e. 208 acre-feet) as if that quantity represented 100 percent of the parcel's CVP allocation. This is a conservative assumption since in most years, even with CVP M&I reductions, the full CVP amount of up to 400 acre-feet is available. As an example, during 2013, CVP agricultural allocation to SBCWD was 20% while the M&I allocation was 70% (http://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=42565).

Multiple dry years: To reflect demands during a series of dry years, assumptions similar to those for a single dry year are made. During the first year, the demands are assumed to match that of a single dry year. During the second year, demands for groundwater are further increased to reflect additional reductions in available CVP supplies. For this analysis, the CVP supplies are reduced to 60 percent of historic use during the second dry year of a series.[99] During the third dry year in a row, CVP supplies are further reduced to 50 percent of historic use, again increasing the demand for groundwater. During each of the multiple dry years, precipitation is assumed to be reduced, further increasing the demand for groundwater. The resulting increased groundwater use for each year of a series of three dry years is assumed to be 272 acre-feet, 305 acre-feet, and 327 acre-feet, respectively. These values are included in the "Existing and Other Planned Future Uses in San Juan Valley" column in **Table 4-1**.

Existing and Future San Juan Valley Agriculture, M&I and Domestic: The San Juan Valley is dominated by highly productive irrigated agriculture, but at the far western edge of the Valley a portion of the agricultural lands gives way to the city of San Juan Bautista (City)[100]. Additionally, several individual rural residences are scattered throughout the farmlands.

With the exception of the City and the individual rural residences, irrigated lands cover nearly every acre of the Valley, with little opportunity for additional lands to be added. Given the extensive existing acreage and lack of new irrigated land areas to be added, the existing irrigated acreage, and its associated water demands, is assumed to also be representative of future agricultural acreage and associated irrigation water demands.

Agricultural water demands are currently met with a combination of CVP supplies provided by SBCWD and private groundwater pumping. As discussed in Section 3, SBCWD conjunctively manages CVP supplies to help maintain reliable groundwater supplies in the San Juan Subbasin. Thus, each year the amount of groundwater pumped and CVP water delivered varies in relation to groundwater conditions, CVP water supply reliability, and grower planting decisions. **Table 3-1**, presented previously, provides a basis for representative "current" and "future" water demands for San Juan Valley – including the predominant use by irrigated agriculture.[101]

[99] As a conservative basis for assessing the potential draw on the San Juan Subbasin, CVP supplies were reduced to 60% and 50% in the second and third years of a the "multi-year dry period." As an example, in 2014, CVP allocations to SBCWD were 0% for agriculture and 50% of the M&I uses.
[100] The City has a current population of 1862 according to the 2010 census. Growth anticipated in the City's draft General Plan expects the population by 2035 to reach 2105 – an increase of 13%. (March 2013 Draft General Plan, Table 3-1. Accessed at *http://sjbgeneralplan.weebly.com/uploads/2/3/8/8/23882925/sjb_2035-general-plan_draft_3-26-2014.pdf)*
[101] The values in Table 3-1 are also inclusive of municipal and domestic pumping.

While the agricultural demand for water is expected to mimic current conditions, the City's demand for water to meet urban uses is expected to increase due to expected growth. As detailed in the City's March 2013 draft General Plan, population is expected to increase 13% between 2010 and 2035, adding approximately 250 people. According to the SBCWD's 2014 Annual Groundwater Report, the City pumped an average of 283 acre-feet between 2007 and 2014.[102] A simple increase in the existing average demand using the planned growth percentage estimates that the City would need about 320 acre-feet in 2035 – an increase in pumping of about 37 acre-feet to accommodate the expected population.

Using the period of 2007 through 2014, current agricultural demands (and associated rural residential uses generally accompanying housing on farmlands) can be calculated as the difference between the average total San Juan Subbasin pumping of 8,600 acre-feet per year and the existing golf course and clubhouse groundwater demand of 233 acre-feet plus the City's average demand of 283 acre-feet. This calculation results in an estimate of 8,084 acre-feet of water pumped to serve San Juan Valley agriculture. Similar to the golf course and clubhouse, the demand for groundwater is expected to increase when CVP water supplies are constrained during single dry and multiple dry year conditions. However, unlike the assumptions applied to the golf course and clubhouse, total historic groundwater pumping for particular years is used to derive the increase or decrease in irrigated agriculture's demand on the San Juan Subbasin. The following is assumed (also see **Table 4-1**):

Single dry year: 2013 was selected to represent pumping rates for a single dry year as it represents the highest total use in the San Juan Subbasin that corresponds to one of the highest quantities of groundwater pumped (see **Table 3-1**). This year is assumed to represent a high-demand year (with near average CVP deliveries) coupled with high groundwater use. As documented in the SBCWD 2014 Annual Groundwater Report, total pumping in the San Juan Subbasin in 2013 was 11,044 acre-feet.[103] After subtracting the golf course and clubhouse demand for groundwater during a dry year and similar estimates of City demand during a dry year, an estimate of anticipated agriculture demands can be derived.[104] No additional adjustments are necessary to reflect reduced effective precipitation or availability of CVP supplies as these factors are already represented in the totals for 2013. From the calculation, future agricultural demands on the groundwater basin during single dry years are estimated to be slightly less than 10,500 acre-feet per year.

[102] Table E-6, SBCWD's 2014 Annual Groundwater Report
[103] 2014 SBCWD Annual Groundwater Report, Table E-2
[104] Derivation of the City's single dry year and multi-dry year conditions assume City demands increase by 5% over normal conditions during the single dry year or the first year of a multi-dry year period. Additional years of the multi-dry period assume implementation of demand reduction measures by the City to achieve 5% and 10% reductions in the second and third years, respectively.

Multiple dry years: The series of dry years from 2007 through 2009 were chosen to reflect groundwater pumping conditions in the San Juan Valley for multiple dry years. As shown in **Table 3-1**, the total pumping in each year was 7,658 acre-feet, 7,796 acre-feet, and 11,956 acre-feet for 2007, 2008 and 2009, respectively. Though groundwater production values are lower for the first two years than the single dry year of 2013, CVP allocations during the second year were dropped from an average of 4,300 acre-feet to only 3,160 acre-feet. In 2009, CVP supplies dropped further to only 1,605 acre-feet. Given the dynamic effect on CVP availability, cropping patterns and resulting groundwater use during a series of multiple dry years, the lower groundwater production values are not a concern. Subtracting the golf course and clubhouse and City demand for each of the multiple dry years from the total groundwater production provides a solid estimate of expected groundwater production for San Juan Valley agriculture and associated rural residential uses. The resulting increased groundwater use by agriculture for each year of a series of three dry years is assumed to be approximately 7,360 acre-feet, 7,460 acre-feet, and 11,600 acre-feet, respectively. These values are combined with the estimated groundwater demands of the existing golf course and the City, and presented in the "Existing and Other Planned Future Uses in San Juan Valley" column in **Table 4-1**.

4.2.2 CVP Reliability as it Affects Future Groundwater Use for Existing and Planned Uses

As illustrated in the previous subsection, CVP supplies are still assumed to be available to help meet existing and planned future uses in the San Juan Valley. SBCWD's contract is for a maximum quantity of 43,800 acre-feet annually, with less than a fifth of the contract amount being designated for M&I.

Currently, under normal operations, CVP deliveries will result in the full contract amounts being available to SBCWD. However under dry year conditions CVP deliveries historically have been significantly reduced (see **Table 3-1**). Additionally recent court decisions have had impacts that further limit Reclamation's pumping from the Sacramento-San Joaquin Delta (Delta) for delivery of CVP water to SBCWD. Future droughts and continued regulatory restrictions will continue to affect availability of CVP supplies to SBCWD. However, average CVP agricultural allocations from 2007 to 2014 averaged only 34 percent of the SBCWD contract. This low average allocation is conservatively used to reflect the "normal" groundwater pumping in the San Juan Subbasin. Single dry and multiple dry years assumes further reductions in CVP supplies and thus greater pumping, as was the case during 2014 and the 2007 through 2009 drought period.

The existence of SBCWD's contract for CVP supplies extending through 2027 coupled with a long history of use provides this WSA with sufficient basis that the CVP supplies

– as conditions in this assessment – are secure and available for planning purposes. Thus the resulting estimates of groundwater demand for existing and planned future uses are also sufficient for planning purposes.

This WSA recognizes that 2015 is an unprecedented drought year with yet to be known effect on the San Juan Subbasin's groundwater elevations. However, as demonstrated in Table 3-1 there is not a direct relationship between agricultural pumping and hydrologic conditions for a given year. As such, a conclusion about overall affects on the groundwater basin cannot be derived since agricultural water demands may have been significantly different in 2014 with an overall average groundwater pumping

The CVP supplies will continue to be a vital part of SBCWD's conjunctive management strategies throughout its entire service area.

4.3 SUFFICIENCY ANALYSIS CONCLUSIONS

As detailed in **Section 2**, this WSA estimates water demands for the Proposed Project to be 442 acre-feet per year at build-out during normal conditions (including non-revenue water demands). During single and multiple dry years, Proposed Project demands are estimated to increase to as much as 465 acre-feet, but also to decrease to as low as 418 acre-feet during multiple dry years.

Table 4-1 provides a detailed comparison of water demands and available groundwater supplies. The resulting "Planned Pumping from San Juan Subbasin" column depicts the expected pumping each year to match the estimated total demand in the San Juan Valley. As shown in the table, groundwater supplies are expected to be pumped as needed, with no identified "shortfall" between available supplies and projected demands. Based on this representation, sufficient water will be available under all hydrologic conditions in each of the 5-year increments through 2035.

When compared to the normal historic pumping conditions in the San Juan Subbasin, the addition of the Proposed Project combined with planned growth in the City is expected to increase pumping during normal conditions from approximately 8,600 acre-feet (see Table 3-1) to approximately 8,877 – an average increase of 3 percent. With the identified conditions of "rejected recharge" described in Section 3, which indicates that additional surface and subsurface recharge could occur within the San Juan Subbasin when groundwater levels are lower, recovery of groundwater conditions during normal and wetter conditions, as depicted in **Figure 3-2**, are expected to continue as they have historically, even with slightly increased average groundwater use. The subbasin's historical recovery of water levels from dry conditions, coupled with SBCWD's active conjunctive use of imported CVP and groundwater supplies, the San Juan Subbasin is likely to continue to provide for the needs of existing and planned for demands on this

basis. Based upon SBCWD's historic practice and future plans to conjunctively manage groundwater in the San Juan Subbasin in concert and CVP deliveries,[105] the San Juan Subbasin is expected to continue to sustainably provide for the needs of the San Juan Valley.

Notably, total water demands in a single dry year and during the third year of a multiple dry year period are 97 percent and 104 percent, respectively, of the maximum recent pumping value indicated by SBCWD in its annual report (see **Table 3-1**). Yet, even under circumstances that are conservatively estimated to slightly exceed the historic maximum,[106] sufficient storage exists in the groundwater basin to supply these dry year demands. Temporary decreases in groundwater levels are estimated to be within historic ranges and therefore pose no long-term risk to the health of the groundwater basin. However, even if elevations were periodically to drop below historic conditions, available recharge in normal and wet years and active conjunctive management by SBCWD would be expected to result in recovery of groundwater elevations following single dry and multiple dry year conditions.

With the Proposed Project assumed to be fully reliant on groundwater pumped from the San Juan Subbasin and the assessment of groundwater conditions given the Proposed Project and existing and planned future uses, sufficient groundwater is determined to exist to meet Proposed Project demands. The conclusion that sufficient water is available to meet the Proposed Project water demands rests on the following:

- Average CVP deliveries during normal years will continue to be at least 4,300 acre-feet (the average delivery for the period of 2007-2013). CVP deliveries are projected to drop to 3,160 acre-feet under a second year of a multiple dry year condition and to 1,605 acre-feet during the third year (e.g. mimicking reductions seen during 2008 and 2009 when CVP allocations were 40% and 10% respectively).

[105] As documented in the SBCWD 2014 Annual Groundwater Report, annual CVP use from 1988 through 2014 has ranged from about 8,000 acre-feet to a little over 22,000 acre-feet (Table E-2). SBCWD has a long-term CVP contract for a maximum of 8,250 AFY of M&I water and 35,550 AFY of agricultural water. Historic use of CVP has been significantly lower than the contract amount and often lower than the annual CVP allocation (e.g., see Table E-1 in the 2014 Annual Groundwater Report available at http://www.sbcwd.com/AnnualGWReport.pdf). As such, opportunity has existed in the past and is expected to exist in the future for more CVP water to be delivered into the San Juan Subbasin, as determined by annual CVP allocations.

[106] Note that Proposed Project demands detailed in Section 2 reflect some conservative assumptions. Actual demand realized at build-out will likely be lower than estimated in this WSA.

- If average groundwater production in the Subbasin increased to meet the demands of the Proposed Project, additional recharge historically "rejected" by the San Juan Subbasin would likely be accepted, resulting in continued cyclical recovery of groundwater conditions as documented in **Figure 3-2**.

- SBCWD will continue to conjunctively manage CVP supplies and groundwater conditions to assure reliable groundwater supplies in the San Juan Subbasin. The Sustainable Groundwater Management Act of 2014 requires that regional groundwater supplies be managed sustainably. The SGMA will benefit the SBCWD by providing it with additional authority and tools to manage groundwater within its jurisdiction.

This WSA finds that sufficient water supplies are likely to exist for all water demands of the Proposed Project for the next 20 years.

With completion of necessary groundwater production facilities and infrastructure, as described in the San Juan Oaks Specific Plan, water supplies would be available to serve the demands of the Proposed Project.

4.4 AVAILABILITY OF ALTERNATIVE WATER SOURCES

As detailed in the previous sections, this WSA assumes the Proposed Project would fully rely upon groundwater pumped from the San Juan Subbasin to meet projected demands. However, two alternative supplies do or potentially will exist that could provide alternative supplies to help meet demands of the Proposed Project, and reduce reliance on local groundwater resources. These include recycled water and CVP water.

4.4.1 Recycled Water

Wastewater produced by the Proposed Project will be sent to the City of Hollister's Domestic Wastewater Treatment Plant (DWTP). The City operates the DWTP, which is located on the East boundary of the Valley. The DWTP also produces recycled water supplies meeting tertiary treatment requirements.[107] Treatment to a tertiary level allows for the least restrictive use including all landscaping and irrigation including use on school playgrounds and edible food crops.[108]

Recycled water is considered a very reliable source of water for the Project as it is available throughout the year and will exist as long as wastewater is flowing. No foreseeable risks to this reliability exist beyond temporary interruptions in treatment plant and distribution operations. However, the Proposed Project only intends to install separate recycled water distribution lines to serve public and common areas, including

[107] 2010 City of Hollister Recycled Water Use Manual
[108] California Title 22 Recycled Water Reuse Regulations

parks and commercial landscaping. As detailed in Section 2.7.2, these uses reflect a demand of about 40 acre-feet per year. Use of recycled water to meet this portion of the Proposed Project's demand would reduce reliance on groundwater by an equivalent 40 acre-feet – reducing build-out demands in Table 4-1 to approximately 400 acre-feet during normal years.

Discussions among the applicants for the Proposed Project, the SBCWD, and the City will continue to identify terms and conditions for potential recycled water delivery to the Proposed Project, as well as required regulatory approvals.

In addition to meeting a portion of the Proposed Project's demands, recycled water could also be used to meet a portion of the demands at the existing golf course and clubhouse. The quantity of recycled water available to the Proposed Project and the existing golf course and clubhouse will be limited to the quantity of wastewater influent delivered from the Proposed Project to the City's DWTP. As detailed in **Table 2-3**, indoor demands equate to about 224 acre-feet. Assuming the majority of this is delivered to the DWTP, and assuming a processing loss factor of about 10 percent, a likely maximum of 200 acre-feet of recycled water could be available. If the Proposed Project chose to serve its 40 acre-feet as describe previously, there would be approximately 160 acre-feet available to the golf course. It is likely that this supply would be used in conjunction with the CVP and groundwater sources as necessary to manage salinity and other considerations of the recycled water source.

Should this supply source become fully available, its effect will primarily be a nominal reduction in potential fluctuations in groundwater conditions in the San Juan Subbasin through the reduction of up to 200 acre-feet of annual groundwater use. This quantity represents less than 3 percent of the current average groundwater production in the basin – an average of 8,400 acre-feet.

4.4.2 CVP Water

The SBCWD contracts with the Bureau of Reclamation ("Reclamation") for the delivery of CVP, and in turn, contracts with local agricultural and municipal and industrial users for the delivery of that water for use within a defined zone of benefit within SBCWD's boundaries – Zone 6 (San Felipe Project).[109]

Lands within Zone 6 have an entitlement to contract for CVP water according to SBCWD's rules and regulations.[110] A water user in Zone 6 is entitled to purchase and take delivery of a maximum allocation of water each year for all land entitled to be

[109] See, e.g., San Felipe Distribution System, Contract Water Year 2013-2014, M&I Water Purchase Agreement.
[110] See, generally, Rules and Regulations for Delivery and Receiving San Felipe Distribution System Water.

served. Municipal and industrial users are entitled to a maximum allocation of 1.2 acre-feet per acre per year, excluding paved portions of the land. SBCWD's San Felipe Project water is non-potable, supplemental and interruptible. The Project Site, including the parcels to be developed by San Juan Oaks, LLC and Pulte, are located within Zone 6.[111] The maximum annual allocation of CVP water to APN 018-19-0-033 is 464.63 acre-feet, when available. The maximum annual allocation to APN 021-19-0-030 is 454.55 acre-feet, when available. These parcels represent the lands of the Project Site.

As described previously, the golf course and clubhouse has used as much as 400 acre-feet of CVP water, but currently uses about 200 acre-feet. The existing on-site agriculture has not traditionally used its available CVP supplies. In the future, these supplies could be used to offset groundwater production as follows:

Existing Golf Course and Clubhouse: The parcel that includes the existing golf course and clubhouse, and will also house the new hotel, commercial center and senior care facility. The new outdoor water demands associated with these new facilities, in addition to the existing needs of the golf course and clubhouse, could be met with CVP supplies, up to the maximum allocation provided in the Municipal & Industrial Water Purchase Agreement with SBCWD. This could be as much as 400 acre-feet, though would only offset about 200 acre-feet of groundwater used for the golf course and the estimated 40 acre-feet of other non-residential outdoor demands.

Existing On-Site Agriculture: The two on-site agricultural preserve parcels could switch from groundwater to CVP to meet irrigated demands. Currently, these parcels are used to produce olives and row crops. Combined, the approximately 57 acres could have an annual demand, depending on the crop and climatic conditions, of 100 to 200 acre-feet. Use of CVP water, when adequately available, would preserve groundwater resources for use in other years.

It should be noted that while CVP shortages are addressed for planning purposes, there is CVP water presently available for these properties. No further financing or regulatory approvals are necessary prior to expanding CVP use. This source would serve to offset the assumed impacts to groundwater supplies.

[111] APN 018-19-0-033 and APN 021-19-0-030.

Appendi A

MEMORANDUM

To: File

Date: April 28, 2014

From: Tully & Young, Inc.

Subject: Summary of meter data review for Hotel and Time Share water use

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The purpose of this memorandum is to discuss and document the findings from reviewing meter data from a selection of hotels in the Sacramento Area.

RAW METER DATA

Tully & Young, Inc. reached out to a number of clients for a range of available data was able to get monthly water use data from 6 different hotels in the Sacramento area. This data contains monthly use totals from 2004 through 2013 where available with two hotels completed post 2008. Represented in said data are 701 rooms with only 1 hotel having fewer than 100 rooms. Initial review of the meter data showed 2012 and 2013 data was free apparent errors such as missing reads or anomalous values. More detailed review of the data and discussion with the water purveyor resulted in the inclusion of landscape demands associated with the hotels. Not all hotels had separate meters, or the installation of a separate landscape meter was not yet complete. As the inclusion of landscaping demands results in minor impacts to total demands the per room demand calculations include landscape use. The 2012 and 2013 data for each hotel is presented in the table below.

Table 1 – Hotel Water Use Data

Average Use Per Room Per Year		
Year	2012	2013
Hotel 1	0.13	0.11
Hotel 2	0.07	0.08
Hotel 3	0.11	0.07
Hotel 4	0.23	0.14
Hotel 5	0.12	0.13
Hotel 6	0.08	0.09
Average	0.12	0.11
Average	**0.11**	

ADJUSTING FOR OCCUPANCY

Data originally sourced from PKF Consulting, and published in the Sacramento Biz Journal, shows trends hotel occupancy rates in the Sacramento area for 2012 and 2013 have averaged 67%. By adjusting for this occupancy Tully & Young was able to derive a per room demand number at 100% occupancy.

Table 2 – Occupancy Adjustment

Average 2012-2013	
Use Per Room	0.11
Occupancy	67%
Use at 100%	**0.17**

USEFUL FACTOR

The 0.17 acre-feet per year number is consistent with apartment and condominium data collected elsewhere in the Sacramento Area. This value should be used with an appropriate occupancy factor for hotels in the area, an occupancy factor expected by the hotel operator, or by an occupancy factor used to calculate another impact of the hotel. Hotels in the San Francisco area had an occupancy rate between 80 and 90 percent, which results in a realistic per unit use as high as 0.15 acre-feet per room.