

INITIAL STUDY/ENVIRONMENTAL CHECKLIST

WATER SYSTEM MASTER PLAN UPDATE

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1.0 INTRODUCTION

Following preliminary review, the City of Solvang has determined that the proposed Water System Master Plan Update Project is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA) and California Code of Regulations, Title 23, Section 844. This Initial Study addresses the direct, indirect, and cumulative environmental effects associated with the proposed City's Water System Master Plan Update Project.

2.0 STATUTORY AUTHORITY AND REQUIREMENTS

In accordance with CEQA (Public Resources Code §21000 - §21178.1), this Initial Study has been prepared to analyze the environmental effects associated with the implementation of the Water System Master Plan Update Project. The purpose of this Initial Study is to also inform the City of Solvang decision-makers, affected agencies, and the public of potential environmental impacts associated with implementation of the Project. The City of Solvang has determined that the Project may have significant effects on the environment; therefore, the preparation of an EIR is required.

The Initial Study and NOP will undergo a 30-day public review period. During this review, comments by the public and responsible agencies on the Project relative to environmental issues are to be submitted to the City of Solvang. The City of Solvang will review and consider all comments as a part of the proposed Project's environmental analysis, using the comments to further determine the necessary environmental document, as required in §15082 of the State *CEQA Guidelines*. The comments received with regard to this NOP and Initial Study will be included in the environmental document, for consideration by the City of Solvang.

3.0 CONSULTATION

As soon as the Lead Agency determines that an Initial Study is required for the proposed Project, the Lead Agency is directed to consult with all Responsible Agencies and Trustee Agencies that are responsible for resources affected by the proposed Project, in order to obtain the recommendations of those agencies on the environmental documentation to be prepared for the Project. Following the City of Solvang's receipt of any written comments from those agencies, the City would consider any recommendations of those agencies in the formulation of the City's preliminary findings. Following preparation of this Initial Study, the City of Solvang would initiate formal consultation with these and other governmental agencies as required under CEQA and its implementing guidelines.

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4.0 INCORPORATION BY REFERENCE

The following references were utilized during preparation of this Initial Study. These documents are available for review at the City of Solvang, Annex, located at 411 Second Street, Solvang, California 93463.

- *CEQA and CEQA Guidelines*, Office of Planning and Research, 2010
- *City of Solvang Land Use Element*, Adopted June 23, 2009
- *City of Solvang Conservation and Open Space Element*, Adopted 1998
- *City of Solvang Safety Element*, Adopted 1988

5.0 AGREEMENTS, PERMITS, AND APPROVALS

The City of Solvang is the Lead Agency for the proposed Project and has discretionary authority over the proposed Project. To implement this proposed Project, the Project Applicant would need to obtain, at a minimum, the following discretionary permits/approvals:

- **CITY OF SOLVANG**
 - Site Plan Review/Approval
 - Grading Plan Approval
 - Building Permit Approval
- **OTHER AGENCIES**
 - U.S. Fish and Wildlife Service (USFWS)
 - U.S. Army Corps of Engineers (ACOE)
 - State Water Resources Control Board (SWRCB)
 - U.S. Army Corps of Engineers (ACOE)

Coordination with the following adjacent jurisdictions, agencies, and utility companies may be required:

- California Department of Fish and Game (CDFG)
- State Department of Health Services
- California Coastal Commission

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- Regional Water Quality Control Board (RWQCB), Central Coast Division
- County of Santa Barbara
- Santa Barbara County Air Pollution Control District (SBCAPCD)
- Santa Ynez River Water Conservation District (SYRWCD)
- SYRWCD Improvement District #1

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6.0 BACKGROUND

1. **Project Title:** City of Solvang Water System Master Plan Update

2. **Lead Agency Name and Address:**

City of Solvang
1644 Oak Street
Solvang, CA 93463

3. **Contact Person and Phone Number:**

Mr. Brad Vidro
(805) 688-5575
(805) 686-2049 (fax)

4. **Project Location:** The City of Solvang is situated within a tri-County regional area encompassing the counties of San Luis Obispo, Santa Barbara, and Ventura. As illustrated in **Figure 1, Regional Location**, the City is generally located midway between the City of San Luis Obispo and the City of Santa Barbara. As illustrated in **Figure 2, Site Vicinity**, the City is located almost equidistant between the communities of Buellton and Santa Ynez. State Route 246 bisects the City and provides a key regional east-west link between U.S. Highway 101 and State Route 154.

5. **Project Applicant**

City of Solvang
1644 Oak Street
Solvang, CA 93463

6. **General Plan Designation:** Multiple designations

7. **Zoning:** Multiple designations

8. **Description of the Project:** *(Describe the whole action involved, including but not limited to, later phases of the project, and any secondary support or off-site features necessary for its implementation.)*

The proposed Project is intended to update the *Water System Master Plan* for the *City of Solvang* and to install all facilities to implement the updated plan. The *Water System Master Plan Update* will indicate that the City has a reliable supply of water from a variety of sources that will be adequate for the City's General Plan full build-out conditions. The *Water System Master Plan Update* recommends that the City prioritize

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the development and use of its various water supply sources in the following order of decreasing preference:

- Installation of Santa Ynez River wells
- Utilize State Water Project (SWP) water
- Utilize upland wells located in the City
- Purchase water from the Santa Ynez River Water Conservation District, Improvement District No. 1 (ID #1)

To implement the above strategy, the City proposes to install additional wells in the Santa Ynez River and increase pumping of the river underflow within its rights under State Water Resources Control Board Diversion Permit 15787. As shown on **Figure 4, Overview of Existing and Proposed Wells**, only two of the City's four wells in the Santa Ynez River are currently operating due to flood damage to two of the wells. The significant benefits of the new wells are: 1) water produced from the wells is the least expensive water source available to the City; 2) additional wells will improve the City's ability to meet peak daily flows and fire protection demands; and 3) greater use of river water will increase water supply reliability by conjunctively using both local and imported SWP water supplies. Installation of additional river wells is intended to demonstrate beneficial water use at the permitted diversion rate. That will allow the City to apply for a license of its water diversions.

As shown on **Figure 3, City of Solvang Water System**, two City wells, Wells 3 and 7A are operated to extract groundwater from the Santa Ynez River. When operable, these two wells have a maximum flow rate of 0.98 cubic feet per second (cfs) or a total annual extraction amount of 709 acre-feet per year. The City's current permit to appropriate water from the Santa Ynez River provides for extractions of up to 5 cfs and up to 3,600 acre-feet per year. To achieve the permitted diversion rate of 5 cfs (to meet peak hour demand), the City proposes to install new wells. The City also proposes to construct a new pressure treatment filtration plant to treat existing and future water developed from Santa Ynez River wells when required to meet water quality standards.

Based on the *Water System Master Plan Update*, Solvang also proposes to construct and repair or replace various new facilities that will be needed over the next 10 years to ensure redundancy in the system for reliability and improve water distribution throughout the City. These facilities include:

- Miscellaneous water piping system improvements identified in the 1996 Master Plan

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- Facilities and a plan to monitor the fluctuation of Solvang municipal reservoir levels on maximum summer days to determine if additional local storage is required in the next five years.
- Roof replacement for reservoir #1 in 2015.
- SCADA system upgrade in 2011.
- Water treatment facility filtration equipment.
- A new operational storage tank to be constructed on a site to be identified and procured.
- A new booster pump station and water storage tank in Zone 2 by 2013

State Water Rights Permit

In May of 1969, the State Water Resources Control Board (State Water Board), in Decision No. 1338, approved Solvang Municipal Improvement District's (now the City) application for Permit No. 15878 to appropriate up to 5 cfs and 3,600 acre feet per year of underflow from the Santa Ynez River to be put to beneficial use within the boundaries of the City. Since that time, the City has been granted various amendments to change the points of diversion and places of use. The most recently approved petition was granted in 1981 and changed the diversion area to that shown on **Figure 5, Authorized Diversion Reach**.

In a letter dated December 9, 1990, the City petitioned for another permit time extension. In 2001, the State Water Board staff indicated that the City could pursue either of two options to resolve the permit deadline issue. Under the first option, the City could request a license for an amount based on the highest established extractions and beneficial uses by the City under the permit. In 2001, the State Water Board determined that the maximum amount diverted from the river with existing, intact wells, was 1,053 acre-feet per year, with a maximum diversion rate of 1.85 cfs from Wells 3 and 7A. Under the second option, the City could prepare an Environmental Impact Report (EIR) to support a request for additional time and study the effects of new river wells that would demonstrate the City's capability to extract and beneficially use up to 5 cfs or 3,600 acre-feet per year. The State Water Board would then consider the new extractions and beneficial uses in the City's subsequent request for license.

The City has been pursuing the second option. The City proposes to install six new river wells and extract up to the permitted rate and the permitted annual limits until such time that the State Water Board and the City have determined that the City has demonstrated the maximum amount it can divert and put to beneficial use. Once the City has demonstrated its full diversion and beneficial use of Santa Ynez River water, the City

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will request that the State Water Board grant the City a license for the proven amount. A license is essentially a permanent water right.

City Water System

The City of Solvang’s Water Department provides water to City residents for residential, commercial, industrial, and landscape irrigation purposes. The City maintains and operates a small municipal system with various storage, treatment, and distribution facilities. An overview of the City’s water supply, demand, and distribution system is provided below. The City’s water system facilities are presented in **Figure 3, City of Solvang Water System**.

Water Demand and Use

The annual water production by the City from 1986 to 2009 is shown in **Table 2-1, Summary of Water Production, 1986-2009**. Water production in 2009 was 1,527 acre-feet. Overall water production has decreased since 1986 even though the population has increased due to the following factors:

- Increased water conservation by all users, but particularly by large commercial users, due to greater stewardship and higher water costs
- Reduced landscape irrigation due to changes in residential and commercial practices

Water use is primarily residential at 67 percent of the total delivery. Commercial uses, industrial uses, and landscaping irrigation, make up 19 percent, 3 percent, and 11 percent of the total delivery, respectively.

The primary water source has varied considerably over the years, as is presented in **Table 2-1, Summary of Water Production**. River water was the primary source for many years, until several wells were damaged by flooding. The reduction in river well production was offset with purchases from ID #1 and then with SWP water starting in 2003. Upland wells have been a steady source for about 10 years, but recently have been curtailed due to water quality and pumping limits. Deliveries of SWP water began in 2002 and are currently the single largest source. In 2008 and 2009 Solvang purchased supplemental SWP water from San Luis Obispo County due to restrictions in Solvang’s allocation of SWP water due to issues in the San Francisco Bay Delta.

**TABLE 2-1
SUMMARY OF WATER PRODUCTION, 1986-2009**

Year	Acre-feet Per Year				Total Production
	Upland	River	SYRWCD ID#1	SWP Water	
1986	111	1,340	577		2,028

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1987	103	1,287	609		1,999
1988	33	1,366	754		2,153
1989	22	1,283	775		2,080
1990	16	1,356	591		1,963
1991	150	1,135	567		1,852
1992	125	1,182	561		1,868
1993	466	368	1,055		1,889
1994	353	564	888		1,805
1995	486	515	604		1,605
1996	311	1,016	314		1,641
1997	482	1,040	136		1,658
1998	501	879	46		1,426
1999	480	915	172		1,568
2000	555	674	327		1,556
2001	739	292	464		1,495
2002	373	288	378	459	1,498
2003	201	190	10	1,103	1,504
2004	179	313	43	1,042	1,577
2005	143	50	36	1,225	1,454
2006	99	102	32	1256	1,489
2007	143	200	31	1303	1,677
2008	191	183	31	1168	1,573
2009	162	207	66	1092	1,527

Source: Provost & Pritchett (2002). 1986-2003. Water production information for the years of 2004 through 2009 is based on records kept by the City's Public works Department.

Water production varies greatly during the year. The minimum monthly demand occurs in February when temperatures are cool and tourist visitation is low. The peak monthly demand in the later part of the summer and early fall is generally three times greater than the minimum monthly demands. The peak daily demand is approximately 2 million gallons per day (or 3 cfs or 24 hours).

The per capita water use in the City has been relatively stable at about 250 gallons per person per day for many years. A summary of the per capita water use since 1995 is shown in **Table 2-2, Per Capita Water Use, 1995-2009**.

**TABLE 2-2
PER CAPITA WATER USE, 1995-2009**

Year	Population	Water Delivered (acre-feet)	Water Delivered (million-gallons)	Water Use (gal/cap/day)
1995	5,100	1,443	470	252
1997	5,122	1,502	489	261

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1998	5,242	1,277	416	217
1999	5,299	1,400	456	236
2000	5,233	1,532	499	261
2001	5,383	1,560	508	259
2002	5,383	1,519	494	251
2003	5,383	1,382	450	229
2004	5,383	1,464	477	242
2005	5,434	1363	444	223
2006	5351	1321	430	221
2007	5340	1512	493	253
2008	5398	1483	483	246
2009	5446	1396	456	229

Source: Provost & Pritchett (2002). 1986-2003. Water production information for the years of 2004 through 2009 is based on records kept by the City's Public Works Department.

Existing City Water Sources

Improvement District #1:

The City purchases water from Improvement District #1 (ID#1) on an as-needed basis. Water is provided by direct connections in Zones I and II of the City's water system. The Zone I connection is located on Old Mill Street and has a source capacity of 1,200 gpm (or 2.67 cfs). The Zone II connection is located at the crossing of Ladan Drive and Alamo Pintado Road and has a source capacity of 2,000 gpm (or 4.44 cfs). The delivered water represents a mixture of SWP water purchased by ID #1 from its own SWP entitlement or obtained in exchanged for ID#1 Cachuma Project entitlements, and water developed from their wells extracting underflow from the Santa Ynez River.

The ID#1 has two river well fields – the 4.0 cfs and 6.0 cfs well fields. The former is located about approximately 1.0 mile upstream of Alisal Bridge, while the latter is located immediately upstream of the City's river wells, as shown of **Figure 5, Authorized Diversion Reach**. The delivered water has been chlorinated, but not filtered. Hence, river water production by ID#1 is subject to curtailment if surface water in the river channel is located within 150 feet of the wells. The annual amount of water purchased from ID#1 has varied greatly from a maximum of 1,055 acre-feet in 1993 to as little as 10 acre-feet in 2003.

State Water Project (SWP) Water:

The City has a 1,500 acre-foot per year SWP Table A Allocation. SWP water deliveries to the Central Coast began in 2002 with the completion of the Coastal Aqueduct. SWP water is delivered directly to the City from the Central Coast Water Authority (CCWA) through a 12-inch connection with a capacity of 1,300 gpm (2.89 cfs). The City began SWP water deliveries in August 2002. SWP water is filtered and disinfected at the CCWA Polonio Pass water treatment plant in San Luis Obispo County. Delivery of

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SWP water is subject to climatic factors in Northern California which may reduce runoff into the San Joaquin Delta. As such, the long-term average reliability delivery of SWP water deliveries are expected to be about 50 percent of the City's allocation, or about 750 acre-feet per year.

Upland Wells:

The City operates two wells that extract water from the Santa Ynez Uplands Groundwater Basin. Well 4, shown on **Figure 3, City of Solvang Water System**, is located near City Hall. It was drilled in 1953 to a depth of 146 feet. The perforations begin at a depth of 100 feet. The well produces about 380 gpm and is chlorinated at the well head. The well exhibits declining production with good quality water; however, it is old and requires ongoing repairs and upgrades.

Well 21, also shown on **Figure 3, City of Solvang Water System**, is located outside the City of Solvang limits atop a hill just east of Chalk Hill Road, on the site of Reservoir 2. This well has a current capacity of 115 gpm. The *1996 Water System Master Plan* noted that this well has problems complying with the Department of Health Services (DHS) Secondary Treatment Standards for iron (Fe), manganese (Mn) and hydrogen sulfide (H₂S). Although neither concentration exceeds a mandatory or public health standard, the presence of these minerals in the water could cause customer complaints on occasion. This well is also equipped with a chlorine dosing system. This well has remained inactive due to those water quality concerns. Well 22, also shown on **Figure 3, City of Solvang Water System**, is located in the Creekside Subdivision on the east side of town and was never used as a producing well due to its high levels of H₂S experienced during well development.

River Wells:

The City currently has two active river wells, one inactive river well, and one abandoned river well located along the Santa Ynez River channel shown on **Figure 3, City of Solvang Water System**. Water produced from the river has been substantially reduced since the City achieved its peak production due to two factors. River flows during the El Nino conditions in 1995 destroyed Well 7 (abandoned) and damaged Well 5 (inactive), both of which are located in the river channel. Furthermore, under state law, drinking water produced from wells within 150 feet of surface water must be filtered.

River wells 3 and 7A are located near the Santa Ynez River channel in the floodplain. Well 3 (active) was drilled in 1993 to a depth of 55 feet and has a capacity of about 330 gpm. Well 7A (active) was drilled in 1995 to a depth of 55 feet. Well 7A was constructed to replace Well 7, which sustained flood damage and was abandoned. Well 7A has a capacity of about 110 gpm.

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Because the river channel moved, both river wells 3 and 7A are considered to be under the influence of surface water when Santa Ynez River flow is within 150 feet of the wells. When the wells are under the influence of surface water, filtration is required to make the water legally potable. Solvang does not yet have filtration equipment. During periods of heavy rain, the water in the river can rise to levels within 50 feet of either well. Rain and discharges from the Bradbury Dam during the winter of 2000, changed the Santa Ynez River flow course. The normal river flow is 210 feet from Well 3. Well 3 is also located 100 feet from a storm channel that has water when it rains. The river flow is over 400 feet from Well 7A. Therefore, Well 7A is rarely shut down due to the proximity of surface flows but Well 3 occasionally has to be shut down due to high surface flows. The casing of Well 5 remains intact, but it has not been used since the 1995 flood because it remains within 150 feet of surface water. The river has moved close to the City' wells, but the City does not have filtration facilities. Therefore, production has been curtailed.

Well 3 can produce up to 330 gallons per minute (gpm), which represent 0.73 cfs, or if pumped continuously, about 530 acre-feet per year. Well 7 a capacity of about 110 gpm (or 0.25 cfs). The current pumping capacity from the two operating river wells (3 and 7A) is only 440 gpm (or 0.98 cfs). To achieve the maximum extraction rate of 5 cfs (or 2,250 gpm), the City proposes to install six new wells with a similar capacity of about 300 gpm.

Future Demand and Water Supply Conditions

The City's *Water System Master Plan Update* provides an estimate of the future maximum annual water production which is presented in **Table 2-3, Potential Future Maximum Annual Water Production**. The estimate is based on the assumption that the City will install six new wells, SWP water deliveries will be fully realized, and that all wells would be operating again, and at a high production level.

**TABLE 2-3
POTENTIAL FUTURE MAXIMUM ANNUAL WATER PRODUCTION**

Supply Source	Annual Production (acre feet)
Santa Ynez River wells (two existing and 6 new wells)	3,600
Upland Well 4	180
SWP entitlement	1,500
Water purchased from ID#1	1,500
Total	6,780

Source: Provost & Pritchett (2002) and Master Plan Update 2009.

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The *City of Solvang General Plan* estimates that the total number of housing units at full build-out will be 2,532 units. A substantial portion of the new units will be associated with the Skytt Mesa subdivision. Most of the remaining units will be due to in-fill development throughout the City because there is little remaining undeveloped land. The *Water System Master Plan Update* estimates the future water demand at General Plan build-out based on a per capita rate of 241 gallons per day. The estimate is also based on the assumption that commercial, industrial, and irrigation demands will be at current levels at build-out. This estimate is shown below:

- Existing average annual demand: 1,477 acre-feet
- Future average annual demand at full build-out: 2,003 acre-feet

The *Water System Master Plan Update* concludes that the City has water supplies to meet future average annual demands if all are fully developed. The current average daily demand is about 2 million gpd (or 3 cfs). The Master Plan Update estimated future peak daily demand by multiplying average daily demand by 1.9 as presented below:

- Future average daily demand: 1,788,041 gpd or 2.8 cfs
- Future peak daily demand: 3,397,278 gpd or 5.3 cfs

The Master Plan Update indicates that the peak daily production from the City's various water sources would be more than adequate to meet the future demands, as shown in **Table 2-4, Potential Future Peak Daily Water Production**.

**TABLE 2-4
POTENTIAL FUTURE PEAK DAILY WATER PRODUCTION**

Supply Source	Peak Daily Production, million gallons per day (cfs)
Santa Ynez River wells (two existing and 6 new wells)	3,214,356 (4.97)
Upland Wells 4 and 21	713,408 (1.10)
SWP entitlement	1,339,315 (2.07)
Water purchased from ID#1	1,728,609 (2.67)
Total Supply	6,995,688 (10.82)

Source: Based on data in Provost & Pritchett (2002).

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The *Water System Master Plan Update* recommends that the City prioritize the development and use of its various water supply sources in the following order of decreasing preference:

- Installation of Santa Ynez River wells
- Utilize State Water Project (SWP) water
- Utilize upland wells located in the City
- Purchase water from the Santa Ynez River Water Conservation District, Improvement District No. 1 (ID #1)

The *Water System Master Plan Update* recommends a 3cfs average annual diversion rate from the existing and new river wells—for a total diversion of approximately 2,200AFY. The river wells would be used to meet peak daily demand up to the maximum allowable 5 cfs diversion rate. The future peak daily demand would be 5.8 cfs – the City’s other sources of water would be used to meet this additional demand. Hence, the future water production would be almost entirely from the Santa Ynez River in normal and high precipitation years in the Santa Ynez watershed. The City’s other sources will remain sufficient to provide a significant percentage of the City’s demand in years when the Santa Ynez River supplies are curtailed due to hydrologic conditions. The projected monthly water production from the river wells at full General Plan build out would range from 70 to 293 acre-feet. Under the water production scenario recommended in the *Water System Master Plan Update*, the City’s functioning upland well would still be utilized but the others would remain inactive and very little to no water would be purchased from ID#1 except under unusual conditions.

Proposed Additional River Wells

Overview of New Wells:

The City proposes to install new wells to extract underflow from the Santa Ynez River to maximize the use of lower-cost water and increase flexibility in water supplies.

The City’s water rights permit specifies a 3.75-mile-long reach of the river where diversions are allowed, as shown on **Figure 5, Authorized Diversion Reach**. This land is owned by Alisal Ranch that currently utilizes nine underflow wells within this reach to extract irrigation water pursuant to Alisal Ranch’s senior priority riparian rights. The City currently has easements for its existing wells and pipelines but new easements will be required for most of the proposed new wells and pipelines. The reach also includes the authorized points of diversions for ID#1’s 6.0 cfs well field

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which is also permitted by the State Water Board. In 1975, the Solvang Municipal Improvement District executed an agreement with ID#1 in which Solvang agreed that it would not drill any wells upstream of a boundary that is 1,800 feet downstream of the eastern boundary of Section 22, shown on **Figure 5, Authorized Diversion Reach**.

The City retained Hopkins Groundwater Consultants, Inc. (2002) to conduct a hydrogeologic investigation of the river in the City's diversion reach, and to assess the optimal placement and design of new wells that would meet the City's annual and daily production goals. The results of these investigations, including a description of the proposed well design and installation, are summarized below from this report.

Hopkins Groundwater Consultants (2002) recommended that six new wells be installed in the river floodplain, as shown on **Figure 4, Overview of Existing and Proposed Wells**. Wells 3 and 7A would remain and continue to operate. The new wells would be installed in a phased approach. Well performance would be measured from each new well, and a determination would be made as to whether additional wells are required to meet the City's production goals. Hopkins Groundwater Consultants (2002) has indicated that the maximum number of wells required would be six wells.

Subsequent river modeling by Stetson Engineers has indicated that the six well locations proposed in the Hopkins investigation will, under certain river conditions and pumping scenarios, cause well interference with both the Alisal Ranch wells and the ID#1 wells. In a significant percentage of year types, this interference will likely prevent full utilization of both the Solvang and the ID#1 wells during the summer months when water demand is at its peak. In addition, the concentration of wells just upstream of the Alisal Bridge may result in additional pumping restrictions due to potential impacts to steelhead trout. The river modeling indicates that the most effective way to mitigate the interference and potential environmental impacts is to reduce the number of Solvang wells upstream of Alisal Bridge by constructing some new Solvang wells downstream of the Alisal Bridge.

Solvang is, therefore, proposing an amendment to its diversion permit from the State Water Resources Control Board to increase its permitted diversion reach by approximately 1.5 miles downstream of Alisal Bridge. This increase in the diversion reach is intended to minimize adverse impacts on the other diverters in the river, the riparian environment and the fisheries.

Solvang has not determined how many of the wells and what percentage of the total Solvang diversions from the Santa Ynez River can occur downstream of the Alisal Bridge. Solvang cannot make that determination until it begins drilling wells in that

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reach and tests the actual amount of water available. Therefore, for the purposes of project analysis, Solvang has modeled three alternative scenarios 1. All six new wells upstream of Alisal Bridge; 2. All six wells downstream of Alisal Bridge; 3. Three wells upstream and three wells downstream of Alisal Bridge.

Wells upstream of Alisal Bridge extract groundwater from the Santa Ynez River Riparian Sub-basin – an alluvial basin that extends from Bradbury Dam to Alisal Road. The basin primarily receives water via river channel seepage from regulated releases and spills from Bradbury Dam and tributary stream inflow, and secondarily from direct percolation of precipitation and from river bank inflow from the underlying bedrock. The groundwater in the alluvial aquifer is in direct hydraulic communication with the river's surface flow. The basin is narrow and shallow with limited storage. As such, it fills quickly during the wet season and is quickly depleted by pumping if surface flows are limited due to drought conditions. The river aquifer is underlain by bedrock comprised of non-water-bearing marine shale formations. The thickness of the river aquifer is variable, ranging from 40 to 55 feet.

Wells downstream of Alisal Bridge will pump from a sub-basin with almost identical characteristics that is separated only by a subsurface natural barrier located approximately at Alisal Road.

Well Number and Locations:

All proposed well sites are located along on the north side of the river between a point approximately 1.5 miles west of the the Alisal Bridge and the confluence of Alamo Pintado Creek, as shown on **Figure 4, Overview of Existing and Proposed Wells**. The locations were selected to maximize water production, minimize well interference, provide ease of access, and maximize use of existing water lines for conveyance piping (Hopkins Groundwater Consultants, 2002).

The proposed well sites are located within the 100-year floodplain, but are outside and above the ordinary high water mark of the active river channel. Each wellhead will be placed at an elevation that is within the 100-year flood level. The proposed well sites are currently at least 150 feet from any surface water flows in accordance with DHS requirements for extraction without additional monitoring and filtration treatment. The proposed locations are intended to be no closer than approximately 500 feet from each other and from existing wells in the river. Well sites may be closer at the mouth of Alamo Pintado Creek to make use of the groundwater recharge mound created from the year-round stream inflows and because the alluvial basin in this area may be wider allowing higher well production rates.

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The proposed six new wells would provide the City with a total of eight potentially active wells that are capable of providing an average of 300 gpm each (for a total of 2,400 gpm or 5.33 cfs). Solvang is proposing a large number of small wells for several reasons: 1) the shallow aquifer will limit the possible production of each well; 2) as the active river channel migrates to within 150 feet of wells water will require treatment-shutting off individual wells is a lower cost alternative to treatment; and 3) the multiple wells provide flexibility to avoid interference with the Alisal wells.

The City would be required to acquire additional easements for the new river wells and associated water lines from Alisal Ranch and other owners downstream of Alisal Bridge. The wells would be located outside the City limits.

Well Design:

Each proposed well will be designed to produce up to 400 gpm (.89cfs) on a long-term continuous basis.

The proposed well design is shown on **Figure 6, Proposed Well Design**. Borehole depths for the proposed wells will likely not exceed 65 feet below ground surface and the proposed diameters will be 12 inches. The proposed wells will be constructed in the riverbed alluvium and will terminate at a depth of approximately 10 feet below the contact of the underlying bedrock materials which define the effective base of the aquifer. To maximize available drawdown, a pump chamber is designed to be constructed below the screen section at the bottom of the well and have a length of approximately 10 feet. If use of a submersible pump is desired, the pump chamber diameter should be sufficient to allow installation of a flow diverting pump shroud for proper motor cooling (minimum 10-inch-diameter).

At a minimum, wellhead protection would consist of a 16-inch diameter conductor casing set to a depth of 20 feet and cemented in place. The conductor casing would be installed prior to pilot hole drilling and well construction.

A concrete sanitary seal will be emplaced in the upper 20 feet of the well annulus between the well casing and the conductor casing. This will add additional mass and wellhead protection. The well screen section should be encased with clean imported gravel that is emplaced in the annulus below the sanitary seal. The screen slot size will likely be in the range of a 0.060- to 0.090-inch opening and based on formation materials observed. The gravel gradation will be selected according to the final screen slot size.

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Well Installation:

Construction of the wells will require access by construction equipment, trucks, and a drilling rig. Access to Wells 9, 10, and 11 would be provided by an existing dirt access road along the north side of the river channel. Access to the dirt road is from Fjord Drive. The road is currently used to access the existing City and Alisal Ranch wells. Construction vehicles would not travel along the golf course cart road along the top of the river channel to access Wells 9, 10, and 11 in order to avoid an inconvenience to golfers.

Construction vehicles would access Wells 12, 13, and 14 from the Alisal Golf Course. Vehicles would enter the golf course from Refugio Road and travel along the paved road along the river bank to Well 12. Several existing informal dirt roads on the floodplain would be used to access Wells 13 and 14. Wells 12, 13, and 14 would not be accessed from the west because the bridge over Alamo Pintado Creek is not rated for large trucks or drilling rigs.

At each well site, a 2,500 square foot area (about 50 by 50 feet) will be cleared and graded to a flat surface. The well will be installed within this area, which will also be used for the drilling rig, stockpiling, and other equipment parking. It may be necessary for construction trucks to also temporarily park along the existing dirt roads at each well site.

The preferred drilling method is the dual tube drilling method that utilizes a direct rotary air drill rig, a down-the-hole air hammer to break up the rocks, and a casing driver to advance a drill casing for hole stabilization. This method of drilling uses air to lift the cuttings along with a relatively small amount of fresh water to cool the drill bit.

The drilling process will produce cuttings of native clay, silt, sand, and gravel (predominantly sand and gravel) that will be discharged to the ground adjacent the drill hole. Initial drilling will be conducted using a bucket auger rig to drill a hole 24 inches in diameter to a depth of 20 feet. This phase of drilling will produce approximately 63 cubic feet (2.33 cubic yards) of material. A 16-inch diameter low carbon steel conductor casing will be placed into the hole and cemented into place to provide fortification for the well.

Subsequently a 12-inch diameter borehole will be drilled to a depth of approximately 65 feet and will generate approximately 35 cubic feet of native material (1.3 cubic yards). During this phase of drilling, the cuttings and groundwater produced from the hole(s) will be discharged into a containment area created by excavating an area 10 by 10 feet to a depth of about 24 inches, and surrounding the area with hay bales. The

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water will soak into the ground and the sediment will be contained. No cuttings or fluids will be permitted to flow into the active river channel. After reaching the final depth, the well screen and casing materials will be installed and the drill casing will be extracted.

A 12 to 24 inch high well pad, measuring about 25 by 25 feet, will be constructed at each site. The well pad will be constructed of native material at the site, including the suitable drilling cuttings. The wellhead will consist of several pipes. The well pump will be submersible, and therefore will not be visible. A 10- by 10-foot chain link enclosure, about 6 feet high, will be constructed around the wellhead. The finished well site will resemble the existing Well 7A.

Water lines will be constructed to each well, as shown conceptually on **Figure 7, Proposed Wells, Water Lines, and Access** for the potential well sites upstream from Alisal Bridge. A similar system will be used for wells downstream from Alisal Bridge but the potential routs have not yet been identified. These pipes will consist of 6-inch-diameter high density polyethylene pipe (HDPE) pipes that will be buried at least 18-inches below ground surface. The water lines in the river floodplain will be installed with a trenching machine that will excavate a 12-inch-wide trench and temporarily store the removed soils along the trench. Work crews will place the pipe in the trench, which will be backfilled by a loader or backhoe, and then compacted to match existing grade. The temporary disturbance zone associated with pipe installation will be about 30 feet wide. Electrical conduits will be installed with the water lines to deliver power to each well.

The main water line will be installed beneath the paved service road along the southern perimeter of the Alisal golf course, as shown on **Figure 7, Proposed Wells, Water Lines, and Access**. The asphalt surface will be saw cut, and then a trenching machine will be used to excavate a trench for the pipe. The road will be restored to pre-construction conditions after installing the pipe and backfilling the trench. The pipe will be attached to the side of the cart bridge over Alamo Pintado Creek, as shown on **Figure 7, Proposed Wells, Water Lines, and Access**.

The lateral pipes from Wells 9, 10, and 11 will be installed on a very steep and densely wooded slope below the golf course service road. Installing the pipes in a trench on the face of the slope will require clearing vegetation and possibly several large trees in a 30-foot wide corridor. After installing the pipes, the slopes will likely require slope stabilization by erosion control mats, geo-webbing, and plants.

Upon completion of well construction, each well must be developed by means of swabbing, bailing, air-lifting, and pumping and surging. These actions produce water from the well and facilitate the removal of fine-grained materials that can inhibit well

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production. The resultant fluids will be discharged to open areas of the floodplain and allowed to percolate. Up to 10,000 gallons of groundwater will be produced from each well during well development.

After well development is complete, each well will be subject to several days of pump testing, which would occur on a 24-hour basis. A portable diesel engine and generator will power the well pumps. Pumped groundwater will be discharged to open areas in the floodplain near the well site in such a manner as to avoid erosion. It is estimated that well testing will occur for 1 to 2 days for each well, at up to 800 gpm and total production of about 300,000 gallons (or 0.92 acre-feet) per well.

Well drilling, completion, development, and testing will require about 5 days at each well site. Work will likely be coordinated so that one well is being drilled while another is being developed and tested. Pump testing will occur immediately after well installation. The water lines and electrical conduits would be installed after well testing. The proposed well installation will be completed in a phased approach.

Water Treatment Plant

Water produced from existing Wells 3 and 7A and from the proposed new river wells must meet the requirements of the current and proposed regulations including the Disinfectants/Disinfection By-Products Rule and the Surface Water Treatment Rule promulgated by the State Department of Health Services. The objective of the former rule is to minimize the formation of potentially carcinogenic disinfection byproducts, while the objective of the latter rule is to ensure adequate pathogen removal and inactivation through filtration and disinfection.

Water from Wells 3 and 7A is currently chlorinated at two small aboveground units located along the water lines from these wells. However, as noted earlier, water cannot be produced from these wells when surface water in the river channel occurs within 150 feet of these wells, unless the water is filtered and meets the standards of the Surface Water Treatment Rule.

To utilize water from the existing and new river wells on a continuous basis, the City proposes to construct a water treatment plant. The City has determined that the most cost effective and reliable treatment technology is pressure filtration. DHS has approved several different microfiltration and/or ultrafiltration membrane systems. The membrane systems are comprised of thousands of hollow membrane fibers grouped together in a pressure or submerged vessel. Modules are grouped together to form units or "trains." The membranes remove particles including bacteria, *Giardia*, *Cryptosporidium*, and viruses from the water by a physical straining process. The 0.01 micron pore size of a membrane fiber is much smaller than a typical 3 to 14-micron

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sized organism. DHS requires 3-log *Giardia* and 4-log virus removal or inactivation using a multi-barrier approach to the protection of drinking water. Disinfection by chlorine or ozonation is also required to supplement filtration for virus removal, up to 2-log virus inactivation. DHS requires disinfection inactivation of *Giardia* (0.5-log) and virus (2-log) independent of filtration membranes for surface water treatment plants.

The City presently plans to purchase a package treatment plant with an initial capacity of 2.5 million gallons per day (3.87 cfs), with provisions to expand to 3.2 million gallons per day (5 cfs) in the future. The plant would be enclosed in a stucco building constructed in the City's Alisal Commons Open Space, located along Alisal Road. The building dimensions would be about 12 feet high, 20 feet wide, and 40 feet long. The building would be constructed adjacent to the existing SWP water booster pump station, and would have the same architecture and color scheme. The treatment plant building will be unoccupied, but will be visited daily by maintenance personnel. The building will have a small security light at the entrance door. No landscaping is proposed at this time.

Because peak water demand in the City occurs in the summer when River flows are low, the system will be designed to save costs by bypassing the treatment plant when surface water is not within 150 feet of the operating wells. Solvang may also install a double pipe and valve design to minimize treatment costs by filtering water from those wells under the influence of surface water and bypassing filtration with water from the other wells. Of course, all water will be disinfected.

The treatment plant building would be a conventional concrete slab foundation structure that would be cut into the side of a small slope to reduce its visibility. A 12-inch diameter existing water line would deliver water to the treatment plant from near Well 3, as shown of **Figure 8, Proposed Treatment Plant Site**. The existing line is presently located in the road bed of Glen Way and the driveway to Alisal Commons. A small extension to the line would then traverse the grassy open space to the treatment building.

The treatment system will include a booster pump and backwash system. Backwash will be discharged to a 10-inch sewer line to the west of the site. Electrical power will be provided from Pacific Gas and Electric (PG&E) lines that will be run to the building underground. The treatment system will be monitored and controlled at City Hall using land line and satellite connections.

Solvang may reach an agreement with ID#1 for joint development and use of the treatment plant. If so, the building size and the type of facilities and method of construction will remain approximately the same. The only change will be the piping to bring water to the treatment plant and the capacity of the treatment facilities

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contained in the building. Because the joint use of the treatment facilities is speculative at this time, any impacts of that joint use will be analyzed as a separate project if and when the two agencies reach agreement.

Construction of the treatment plant will occur in the following phases:

1. Grading and construction of foundation and retaining wall, if necessary on the east side of the building site
2. Building construction
3. Utility connections, including electricity, cable, sewer, and the water line from the river wells.
4. Installation of the treatment modules

Construction activities are expected to be completed in a 12 week period. The initial grading will involve the use of a loader and backhoe for several days, followed by concrete trucks. Building construction and system installation will involve various work trucks and construction worker vehicles. A construction staging area will be established adjacent to the building site in the open space.

Proposed Sale of SWP Water

The City has a 1,500 acre-foot per year SWP Table A allocation. Currently the SWP allocation is projected to have a 50% long term reliability so the City can expect to have 750 acre feet of SWP water available on average each year. Based on the projected water demand discussed above and the project well yields, the City has determined that it may have excess SWP water when the proposed river wells are completed. As a result, the City proposes to sell up to a maximum of 300 acre-feet of its allocation to willing buyers within the Central Coast Water Authority (“CCWA”) service area. All sales will require CCWA approval. The City proposes to consider SWP allocation sales after the new river wells are operable and the actual yield from the river wells is more certain.

The sale of the entitlement would not result in any physical impacts to the environment associated with the City of Solvang. The likely buyer would be a private party or a municipality that is seeking additional water supplies to meet a current or future demand. Acquisition of the additional SWP water may allow the private party or municipality to meet an immediate demand created by land development or growth. The impacts of that growth, if any, will be studied and addressed by the relevant lead agency that performs the California Environmental Quality Act (CEQA) evaluation of the purchaser’s project. The most likely scenario is that the purchaser will be required

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to buy SWP water entitlement as mitigation for the potential adverse impacts of a proposed project.

Collaboration with ID#1

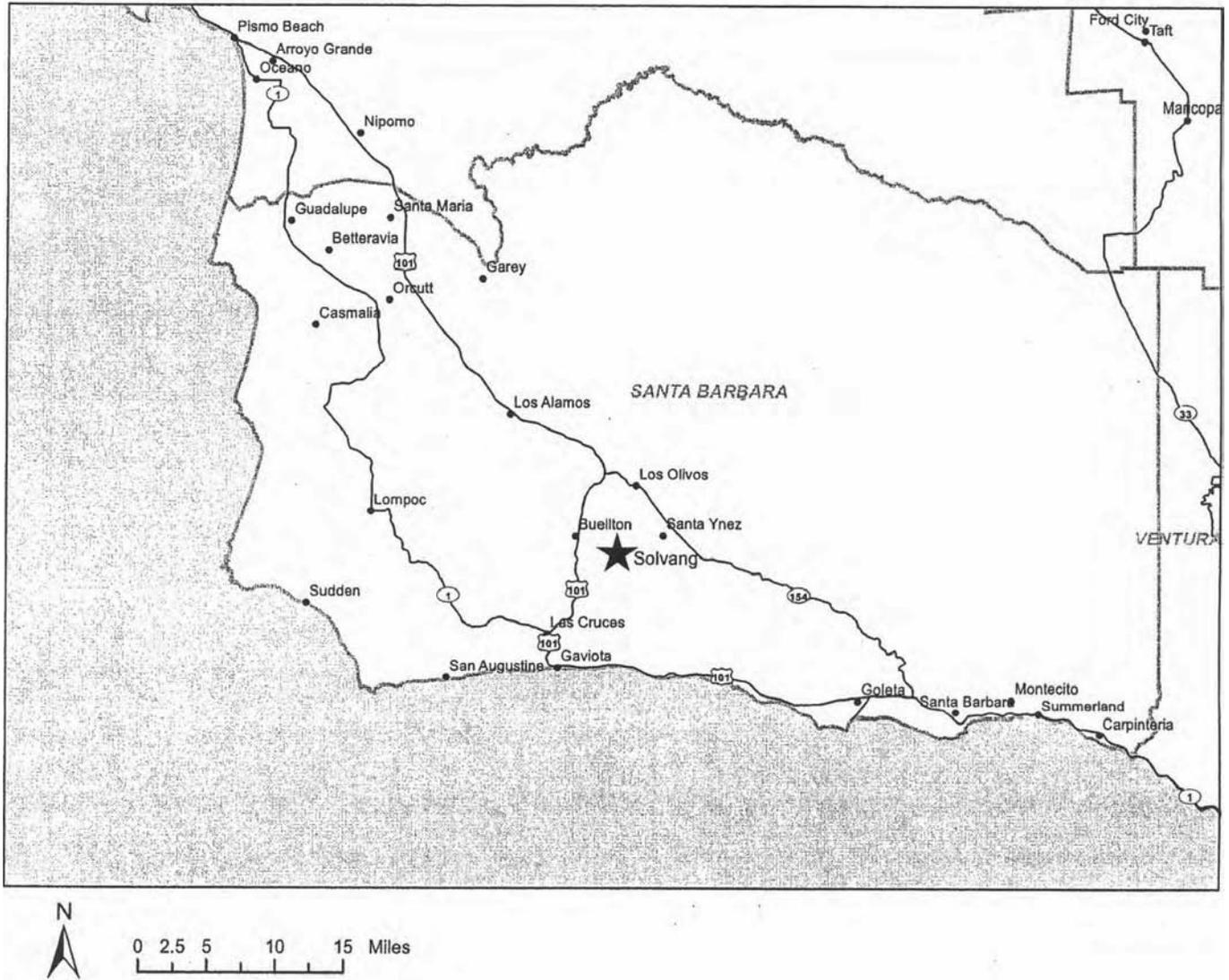
The City has been in discussions with ID#1 and joint engineering evaluation to understand the potential benefits and costs of further integrating the two water systems. The work is in the preliminary phases and no agreement has been reached on the concept or the design of any facilities that would be constructed to allow more integrated operations. Should any agreement be reached on new facilities their potential will be evaluated in a supplemental EIR. This analysis, however, will include the use of water from Solvang's well field within the portion of the permitted place of use that is outside the Solvang City limits and within the ID#1 service area.

9. **Surrounding Land Uses and Setting:** The City of Solvang is surrounded by the Purisima Hills to the north, the upper Santa Ynez Valley to the east, the Santa Ynez Mountains to the south, and the lower Santa Ynez Valley to the west. The City is situated primarily along an alluvial plain formed by the Santa Ynez River and on the southeastern edge of the Purisima Hills. It is located almost equidistant between the communities of Buellton and Santa Ynez. State Route 246 bisects Solvang and provides a key regional east-west link between U.S. Highway 101 and State Route 154.
10. **Other public agencies whose approval is required (e.g., permits, financing approval or participation agreement).**

Refer to Section 5.0, Agreements, Permits and Approvals.

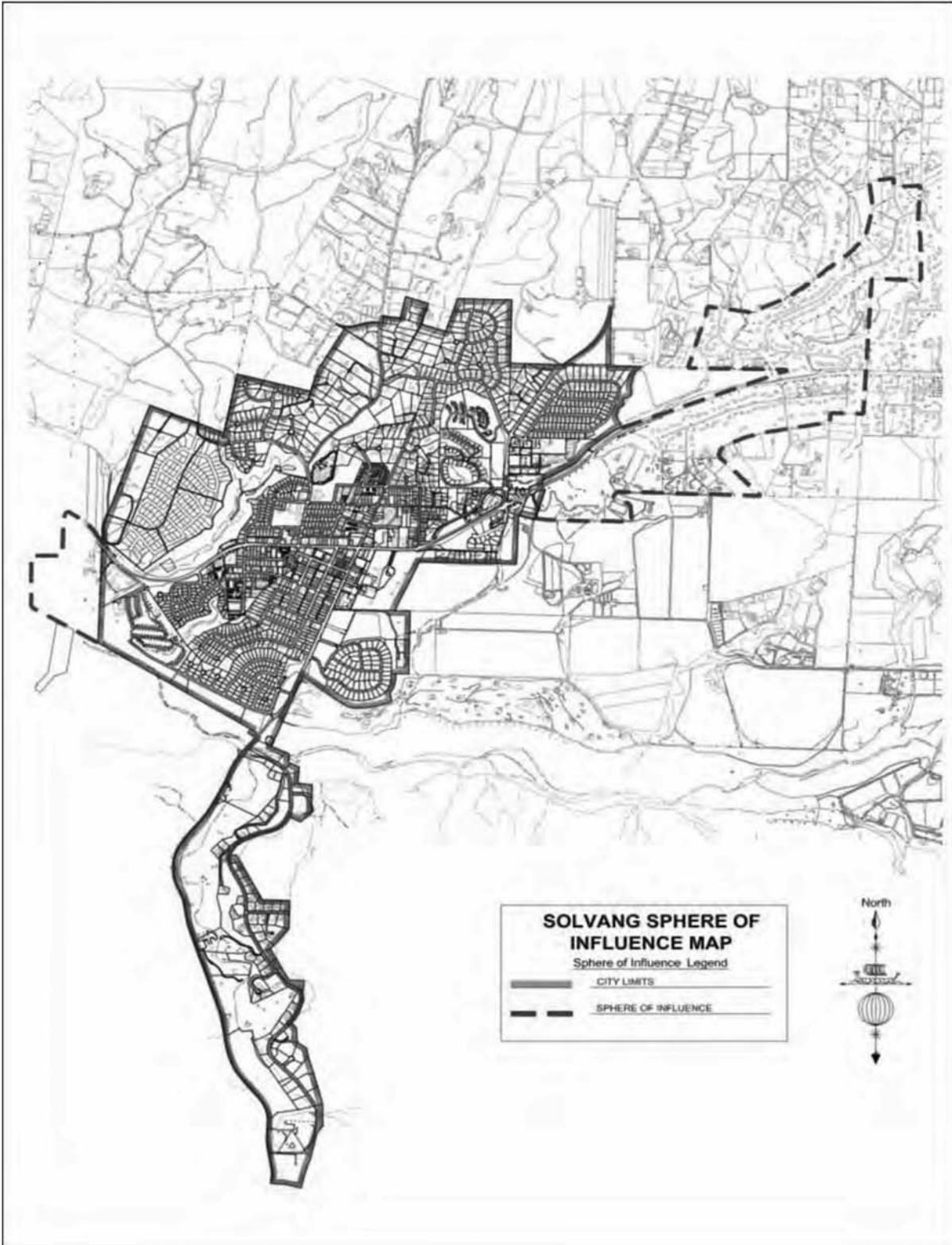
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FIGURE 1, REGIONAL VICINITY



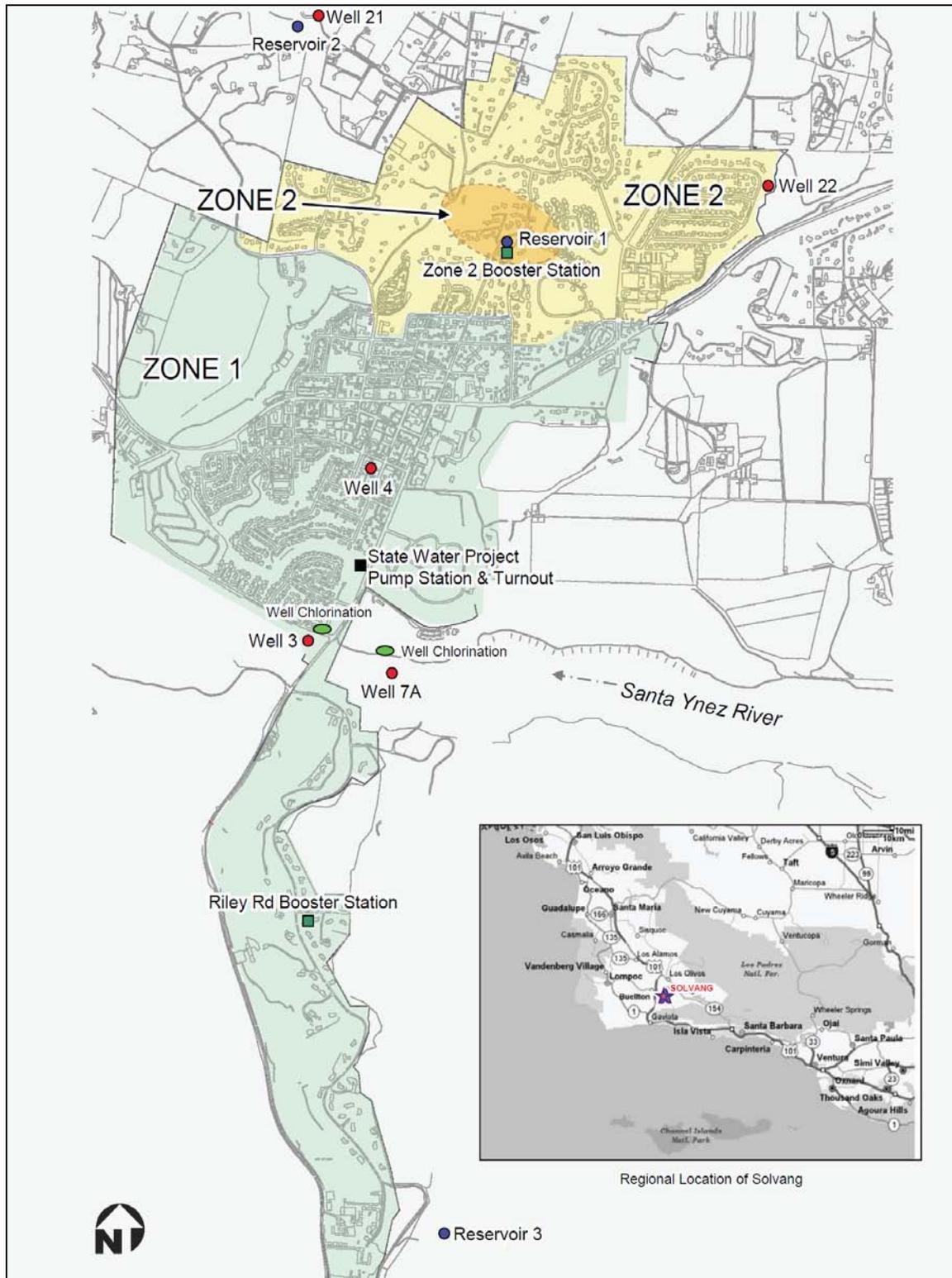
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FIGURE 2, SITE VICINITY



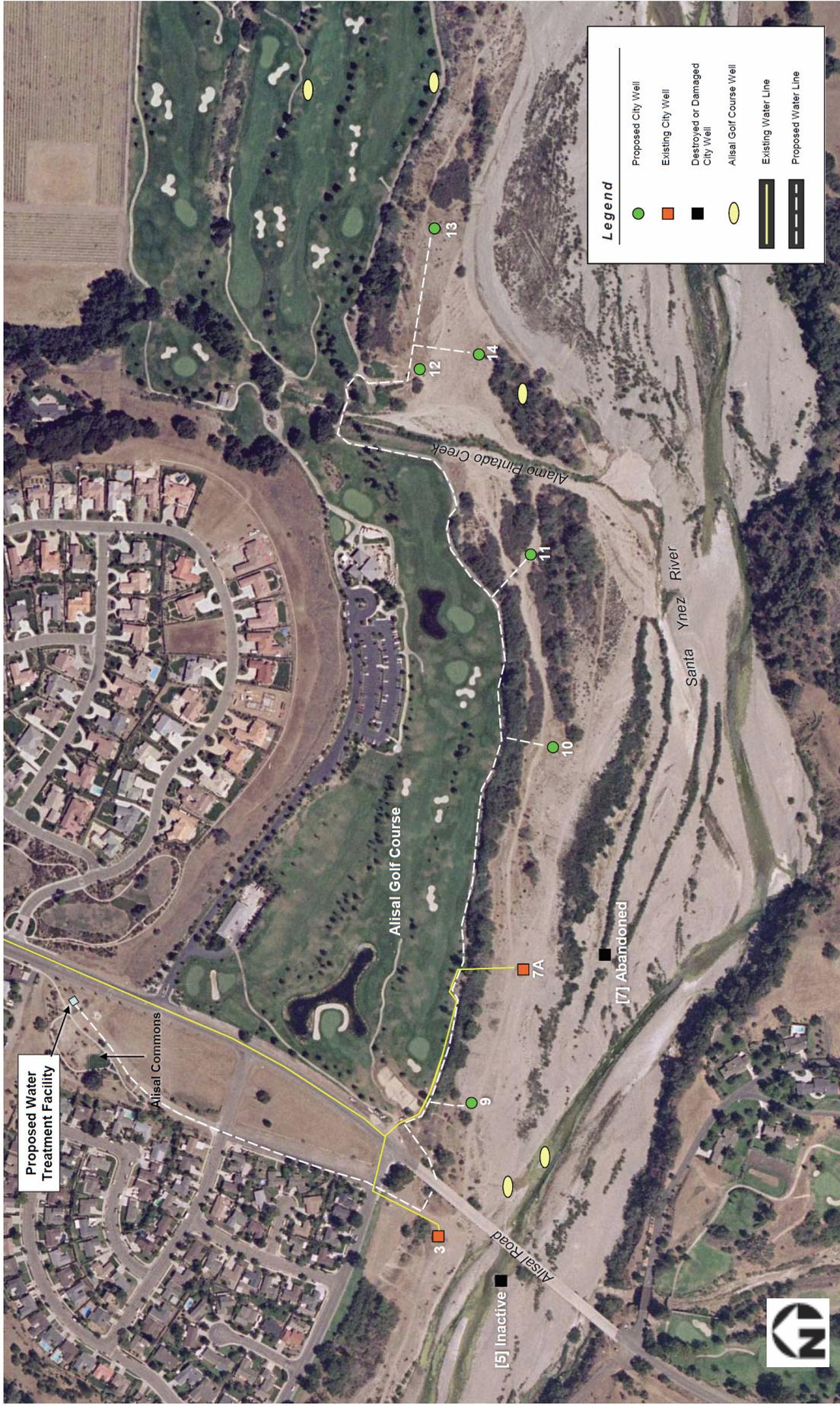
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FIGURE 3, CITY OF SOLVANG WATER SYSTEM



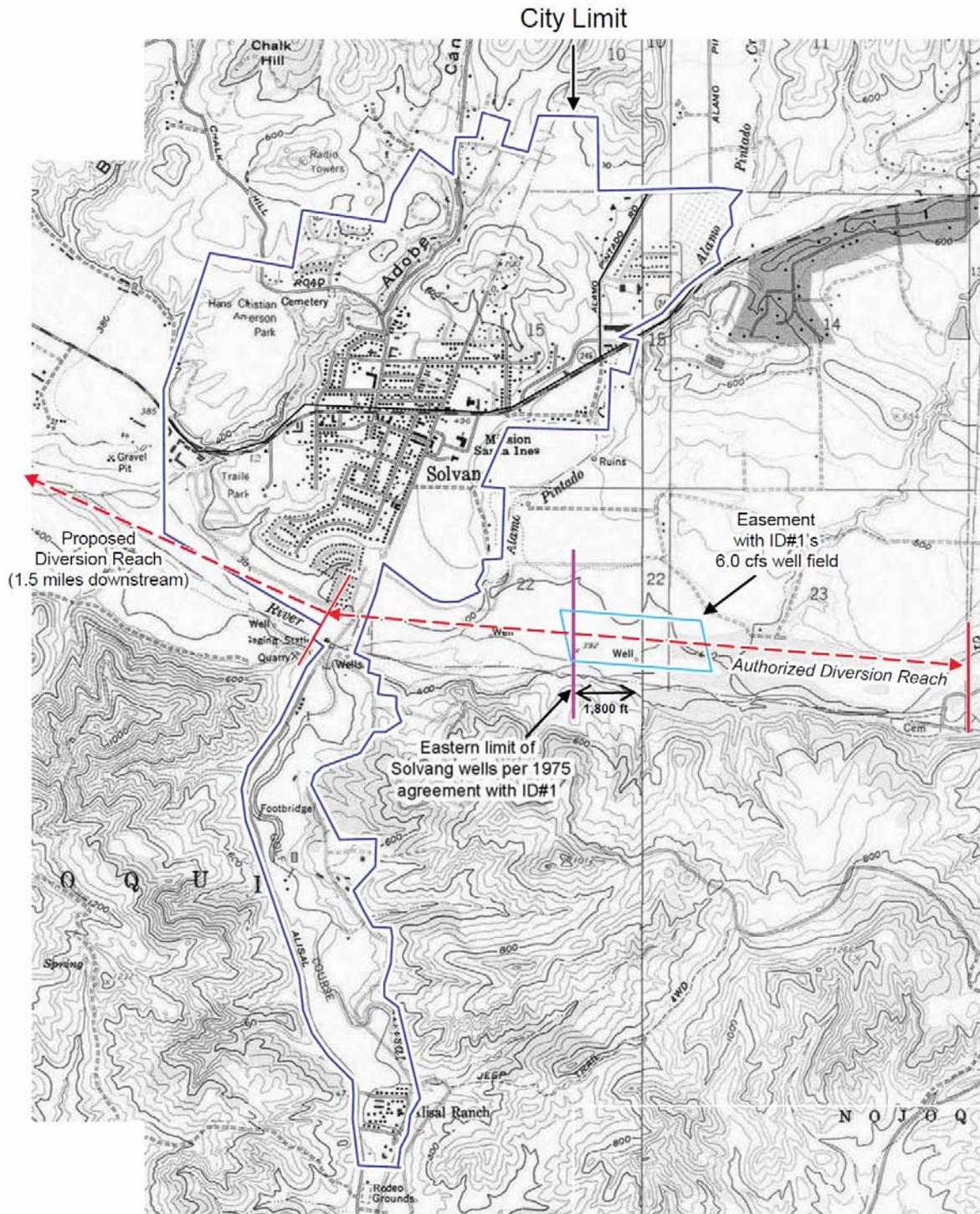
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FIGURE 4, OVERVIEW OF EXISTING AND PROPOSED WELLS



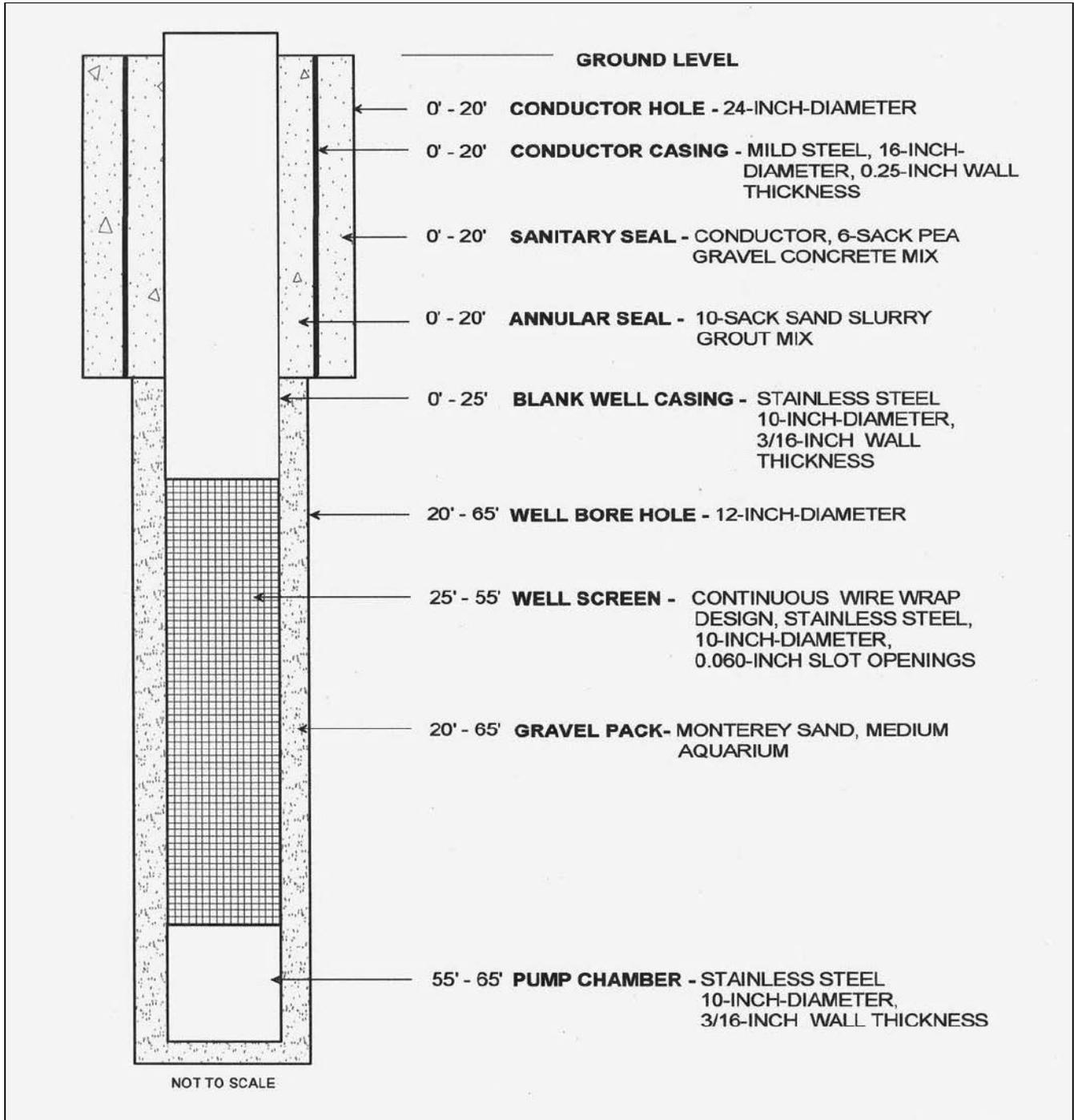
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FIGURE 5, AUTHORIZED DIVERSION REACH



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FIGURE 6, PROPOSED WELL DESIGN



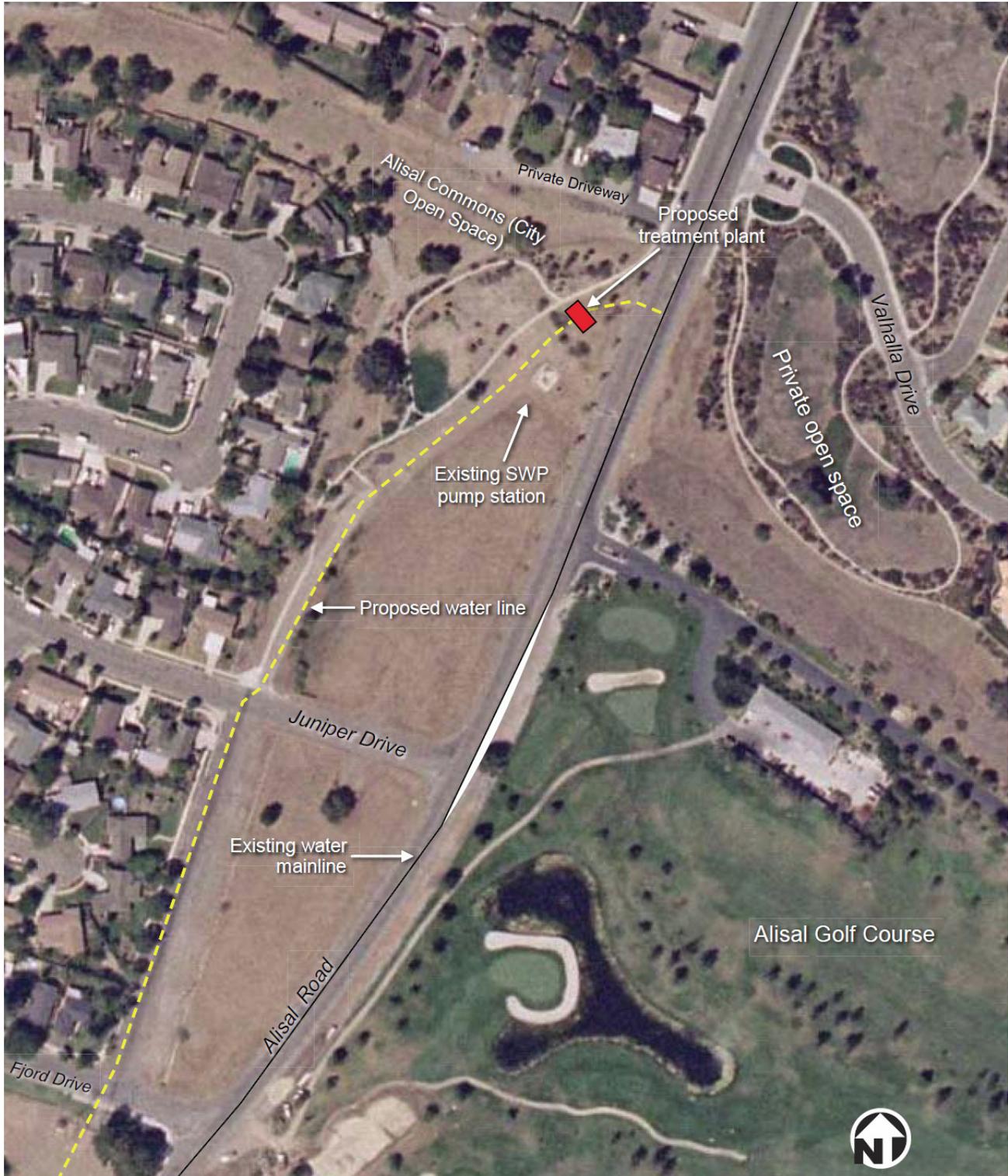
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FIGURE 7, PROPOSED WELLS, WATER LINES, AND ACCESS



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FIGURE 8, PROPOSED TREATMENT PLANT



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FIGURE 9, PROPOSED DOWNSTREAM ALTERNATIVE – WELL SITE ‘A’



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FIGURE 10, PROPOSED DOWNSTREAM ALTERNATIVE – WELL SITE ‘B’



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7.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

As indicated by the checklist on the following pages, the Project would result in potentially significant impacts with respect to the environmental factors checked below (*Impacts reduced to a less than significant level through the incorporation of mitigation are not considered potentially significant.*):

	Aesthetics		Land Use and Planning
	Agriculture Resources		Mineral Resources
X	Air Quality		Noise
X	Biological Resources		Population and Housing
	Cultural Resources		Public Services
	Geology and Soils		Recreation
	Hazards & Hazardous Materials		Transportation/Traffic
	Hydrology & Water Quality		Utilities & Service Systems
	Greenhouse Gas Emissions	X	Mandatory Findings of Significance

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8.0 ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

- I find that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.
- I find that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.
- I find that the proposed project **MAY** have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect has been (1) adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project **COULD** have a significant effect on the environment, because all potentially significant effects have been (1) analyzed adequately in an earlier **ENVIRONMENTAL IMPACT REPORT OR NEGATIVE DECLARATION** pursuant to applicable legal standards, and (2) avoided or mitigated pursuant to that earlier **ENVIRONMENTAL IMPACT REPORT OR NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Brad Vidro, City Manager

Printed Name

City of Solvang

Agency

January 4, 2011

Date

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9.0 EVALUATION OF ENVIRONMENTAL IMPACTS

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.
- 4) “Negative Declaration: Potentially Significant Unless Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, “Earlier Analyses,” may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Measures Incorporated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). References to a

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previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The analysis of each issue should identify:
 - a) The significance criteria or threshold used to evaluate each question; and
 - b) The mitigation measure identified, if any, to reduce the impact to less than significance

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.1 Aesthetics				
<i>Would the project:</i>				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	
9.2 Agriculture Resources				
<i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:</i>				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X
9.3 Air Quality				
<i>Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:</i>				
a. Conflict with or obstruct implementation of the applicable air quality plan?	X			
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d. Expose sensitive receptors to substantial pollutant concentrations?		X		
e. Create objectionable odors affecting a substantial number of people?			X	

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.4 Biological Resources				
<i>Would the project:</i>				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	X			
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?			X	
9.5 Cultural Resources				
<i>Would the project:</i>				
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?		X		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d. Disturb any human remains, including those interred outside of formal cemeteries?		X		
9.6 Geology And Soils				
<i>Would the project:</i>				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
2) Strong seismic ground shaking?			X	
3) Seismic-related ground failure, including liquefaction?			X	
4) Landslides?			X	
b. Result in substantial soil erosion or the loss of topsoil?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.7 Greenhouse Gas Emission				
<i>Would the project:</i>				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X
9.8 Hazards and Hazardous Materials				
<i>Would the project:</i>				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
9.9 Hydrology and Water Quality				
<i>Would the project:</i>				
a. Violate any water quality standards or waste discharge requirements?			X	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			X	
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			X	
j. Inundation by seiche, tsunami, or mudflow?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.10 Land Use and Planning				
<i>Would the project:</i>				
a. Physically divide an established community?			X	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
9.11 Mineral Resources				
<i>Would the project:</i>				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X	
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	
9.12 Noise				
<i>Would the project result in:</i>				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	
9.13 Population and Housing				
<i>Would the project:</i>				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
9.14 Public Services				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1) Fire protection?				X
2) Police protection?				X
3) Schools?				X
4) Parks?				X
5) Other public facilities?				X
9.15 Recreation				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.16 Transportation/Traffic				
<i>Would the project:</i>				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e. Result in inadequate emergency access?			X	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.17 Utilities and Service Systems				
<i>Would the project:</i>				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
9.18 Mandatory Findings of Significance				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	X			
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

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10.0 ENVIRONMENTAL ANALYSIS

The following is a discussion of potential proposed Project impacts as identified in the Initial Study/Environmental Checklist. Explanations are provided for each item.

10.1 Aesthetics

Would the project:

- a) *Have a substantial adverse effect on a scenic vista?*

No Impact. Scenic vistas are defined as expansive views of highly-valued landscapes from publicly accessible viewpoints. Scenic vistas include views of natural features such as topography, water courses, rock outcrops, and natural vegetation, as well as man-made scenic structures. Development of the proposed Project would not block or preclude views to any area containing important or what would be considered visually appealing landforms. No scenic vista will be impacted by implementation of this Project.

- b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

No Impact. The Project does not include the removal of trees, the destruction of rock outcroppings or degradation of any historic building. The Project is not adjacent to any state highway that is designated as “scenic.”

- c) *Substantially degrade the existing visual character or quality of the site and its surroundings?*

No Impact. Refer to Impact 10.1a. No significant impact would occur in this regard.

- d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Less than Significant Impact. Light pollution occurs when nighttime views of the stars and sky are diminished by an over-abundance of light coming from the ground. Light pollution is a potential impact from the operation of any light source at night. Proper light shields, lighting design, and landscaping are commonly used to reduce light pollution generated from lighting by blocking the conveyance of light upwards. The result is that the lights are not visible from above; therefore, ambient light is not added to the nighttime sky.

The Solvang Water System Master Plan Update does not include regulations that address light and glare. However, requiring that future development projects undergo

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environmental and design review on a site-specific basis will ensure that light and glare impacts would not substantially impact adjacent uses. Impacts resulting from light and glare are considered to be less than significant.

10.2 Agricultural Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. *Would the Project:*

- a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

No Impact. There are no designated important farmlands adjacent to or in the vicinity of the components associated with the proposed project. There are no agricultural uses within the location where earth disturbing activities would occur in association with the components of the Solvang Water System Master Plan Update. There are no lands included in Williamson Act contracts that would be impacted by the proposed project. No impacts to agricultural resources would occur.

- b) *Conflict with existing zoning for agricultural use or a Williamson Act Contract?*

No Impact. Refer to Impact 10.2a. No significant impact would occur in this regard.

- c) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?*

No Impact. Refer to Impact 10.2a. No significant impact would occur in this regard

10.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. *Would the project:*

- a) *Conflict with or obstruct implementation of the applicable air quality plan?*

Potentially Significant Impact. The project is located within the South Central Coast Air Basin, which includes all of San Luis Obispo, Santa Barbara, and Ventura Counties. The Santa Barbara County Air Pollution Control District (SBCAPCD) standards would be applied to the Water System Master Plan Update. Potential sources of air emissions

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associated with the proposed project include short-term construction activities and long-term operational activities. Air emissions will be quantified in order to determine if the Project is in conformance with the 2007 Clean Air Plan and/or any current updates.

- b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

Potentially Significant Impact. In accordance to the standards of the SBCAPCD, air emissions will be quantified to determine if the Water System Master Plan Update would cause air quality violations or contribute to projected air quality violations.

- c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

Potentially Significant Impact Unless Mitigated. Santa Barbara County meets the federal standards for ozone and particulate matter (PM10), and does not meet the state standards for these pollutants. The Water Master Plan update would contribute short-term construction and long-term operational emissions in the District from stationary and mobile sources. Potential impacts caused by these emissions could be mitigated through emission control measures.

- d) *Expose sensitive receptors to substantial pollutant concentrations?*

Potentially Significant Impact Unless Mitigated. Sensitive populations (i.e., children, senior citizens, and acutely or chronically ill people) are more susceptible to the effects of air pollution than are the general population. Land uses considered sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. Sensitive receptors in proximity to the proposed Project include existing residences to the north. Construction activities associated with the proposed Project have the potential to generate dust and other airborne pollutants from construction emissions. These activities, though transitory in nature, have the potential to expose workers and residents to air emissions that are likely to be produced by construction from the proposed Project. Impacts from these emissions would be short-term and would cease upon Project completion, but are considered a potentially significant impact. Potential impacts caused by these emissions could be mitigated through emission control measures.

- e) *Create objectionable odors affecting a substantial number of people?*

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Less Than Significant Impact. Construction activities associated with the proposed Project may generate detectable odors from heavy-duty equipment exhaust. Odors associated with diesel and gasoline fumes are transitory in nature and would not create objectionable odors affecting a substantial number of people. The impacts from these odors would be short-term, would cease upon Project completion, and are not anticipated to be significant.

10.4 Biological Resources

Would the project:

- a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Potentially Significant Impact. Sensitive biological resources are defined as species under study for classification as threatened, endangered, or have low population densities or a highly restricted range. Both native and non-native habitats within the project site are expected to provide nesting, foraging, and denning opportunities for wildlife species. Installation of proposed Santa Ynez River wells, water piping system improvements, and water treatment plant may result in the removal or altering of native and non-native habitats within the project site and would result in the displacement of small mammals, reptiles, amphibians, and other animals.

According to the Solvang Open Space and Conservation Element, the only rare or endangered species identified in the City of Solvang is the least bell's vireo and the spotted owl. The least bell's vireo is listed as endangered by both the California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFW), and is known to occur in riparian habitat along the Santa Ynez River. The spotted owl is considered a California Species of Concern (CSC) by CDFG and has occurred along creeks in the north-facing slope of the Santa Ynez Mountains, such as Alisal Creek. Since implementation of the proposed Project may alter habitat on the site, this is a potentially significant impact.

- b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Potentially Significant Impact Unless Mitigated. Development allowed under the Water System Master Plan Update may alter existing habitat. Installation of proposed Santa Ynez River wells, water piping system improvements, and water treatment plant may

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result in the removal or altering of native and non-native riparian habitats within the project site. Since implementation of the proposed Project may alter habitat on the site, this is a potentially significant impact. Impacts are considered potentially significant unless mitigated and will be discussed within the EIR.

- c) *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Less Than Significant Impact. The Water System Master Plan Update does not have any federally protected wetlands within the planning area. No significant impacts would occur in this regard.

- d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Potentially Significant Impact. Installation of proposed Santa Ynez River wells, water piping system improvements, and water treatment plant under the Water System Master Plan Update may impact the movement of native resident or wildlife species or impede the use of native wildlife nursery sites. Twenty-six species of fish inhabit the Santa Ynez River watershed, including eleven native species. Steelhead/rainbow trout, prickly sculpin, partially armored three-spine stickleback, and Pacific lamprey are native to the Santa Ynez River and seven additional native species are found only in the Santa Ynez River lagoon at Surf (tidewater goby, Pacific herring, topsmelt, shiner perch, starry flounder, staghorn sculpin, and striped mullet).

Fifteen fish species have been introduced to the watershed including the arroyo chub, large- and small-mouth bass, sunfish, and catfish among others. Fifteen introduced species have populations in the watershed. All of the introduced species occur in Cachuma Lake and along the Santa Ynez River above and below the lake, except for the white crappie and threadfin shad, which only occur in the lake. Most of these introduced species are game species or baitfishes that were originally planted in Cachuma Lake but have since spread. Many of the game fish can prey on steelhead and other native species. Most notable among these are largemouth and smallmouth bass, green sunfish, and black bullhead. Therefore, the proposed Project poses a potentially significant impact to the movement of native wildlife. As part of the biological assessment to be completed for the proposed Project, the site's potential to provide habitat for migrating, nesting, or nursery sites will be evaluated. These impacts will be fully evaluated in the EIR.

- e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

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Less Than Significant Impact. Installation of proposed Santa Ynez River wells, water piping system improvements, and water treatment plant under the Water System Master Plan Update would not conflict with local tree preservation policies or ordinances protecting biological resources. No significant impacts would occur in this regard.

- f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Less Than Significant Impact. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans in effect for Santa Barbara County.

10.5 Cultural Resources

Would the project:

- a) *Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?*

Potentially Significant Impact Unless Mitigated. The proposed Project site may have been previously disturbed due to past development activity of the Alisal Golf Course. However, it is likely that Native American peoples historically traversed the general region. A cultural resource evaluation shall be prepared to determine cultural resources in the proposed Project area. Impacts are considered potentially significant unless mitigated and will be discussed within the EIR.

- b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?*

Potentially Significant Impact Unless Mitigated. According the Solvang Conservation and Open Space Element, tribes associated with the Chumash peoples were known to be active within the Santa Ynez Valley area and evolved into what became known as the Inezeno group. Although the proposed Project site may have been graded in the past, and the upper layers of soil have been disturbed, the potential exists for buried archaeological resources to be disturbed or destroyed during site preparation and grading. A records search and on-site survey will be conducted as part of the proposed Project to determine if any archeological sites have been inventoried or identified on the proposed Project site. The disturbance of such resources is considered potentially significant unless mitigated and will be discussed within the EIR.

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- c) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Less Than Significant Impact. The absence or presence of paleontological resources within the area covered by the Water System Master Plan Update are not entirely known at this time. However, construction of the proposed Project would not destroy any unique geologic structure. Excavation is expected to occur at shallow depths and is not expected to incorporate deep cuts within a sensitive paleontological area. The proposed Project is not expected to impact paleontological or unique geologic resources. Less than significant impacts are anticipated in this regard.

- d) *Disturb any human remains, including those interred outside of formal cemeteries?*

Potentially Significant Impact Unless Mitigated. There is no evidence that the proposed Project is located within an area likely to contain human remains. However, there is potential for the inadvertent discovery of human remains during earthmoving activities. "Human remains" include both burials and cremations. If human remains are discovered during earth-movement activities, further excavation or disturbance would be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. If Native American remains are identified, Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the Public Resources Code provide specific measures for addressing the remains. Impacts are considered potentially significant unless mitigated and will be discussed within the EIR.

10.6 Geology And Soils

Would the project:

- a) *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

- 1) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

Less Than Significant Impact. The City of Solvang is located within a seismically active area. According to the General Plan Safety Element, major active fault systems are located within the Santa Barbara County region, with the Big Pine and Santa Ynez Fault being the most historically active. Other fault systems occur in the Solvang area and include the Big Pine Extension, Graveyard-Turkey Trap, Mesa, More Ranch, Nacimiento, Pacifico, Santa Cruz Island, Arroyo Parida, Bradley

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Canyon, Carpinteria, Goleta, Mission Ridge, Red Mountain, Rincon Creek, and San Jose.

The impact of earthquakes within the area covered by the Water System Master Plan Update on several factor including fault, fault location, distance from site, and magnitude of the earthquake. Each of these factors can help determine the degree of shaking that could occur within a given area. The two nearest fault systems to the area are the Carpinteria and Goleta Faults.

All improvements constructed as part of the Project will be required by State law and City Ordinance to be constructed in accordance with the Uniform Building Code (seismic zone 4, which has the most stringent seismic construction requirements in the United States), and to adhere to all modern earthquake construction standards, including those relating to soil characteristics. Furthermore, no structures are planned to be built as part of the proposed project that would be habitable by occupants, which would collapse during a severe earthquake event. No significant impacts would occur in this regard.

2) *Strong seismic ground shaking?*

Less Than Significant Impact. Refer to Response 10.6(a)(1), above.

3) *Seismic-related ground failure, including liquefaction?*

Less Than Significant Impact. Liquefaction refers to an unstable condition in which water-saturated soils are transformed from a solid to semi-solid state due to sudden shock or strain. Major factors influencing liquefaction are groundwater level, soil type, relative density, loading conditions, ground acceleration, and duration of shaking. Liquefaction typically occurs in areas where the groundwater is less than 30 feet from the surface, and where the soils are composed predominantly of fine sand. However, no habitable structures are planned to be built as part of the proposed Project. No impacts would occur.

4) *Landslides?*

Less Than Significant Impact. According to the General Plan Safety Element, several landslides have been mapped in the hillside area east of Alisal Creek and outside of the existing Solvang corporate boundary. These represent areas where the use of corrective grading and engineering practices would be necessary to ensure the safety of future development. However, no habitable structures are planned to be built as part of the proposed Project. No significant impacts would occur in this regard.

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- b) *Result in substantial soil erosion or the loss of topsoil?*

Less Than Significant Impact. Soil erosion is defined as the detachment and movement of soil particles by the erosive forces of wind or water. The Water System Master Plan Update includes provisions that encourage grading techniques that blend with the natural terrain, minimize earthmoving activities, and prevent erosion on the face of slopes due to drainage.

The area covered by the Water System Master Plan Update would also be subject to the City ordinance and standards relative to soils and geology. Standard compliance requirements include soils and grading reports prior to issuance of building permits and adherence to applicable building codes in accordance with the Uniform Building Code. Based on these programs and requirements, impacts associated with soil erosion are considered less than significant.

- c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant Impact. Refer to Responses 10.6(a)(3) and 10.6(a)(4), above.

- d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Less Than Significant Impact. Refer to Response 10.6(b), above.

- e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

No Impact. It is not anticipated that septic tanks are present within the proposed Project site. Additionally, the proposed Project would not be utilizing septic tanks for the development of the proposed Project. No impacts would occur.

10.7 Greenhouse Gas Emission

Would the project:

- a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less Than Significant Impact. The greenhouse gas effect is the natural process through which heat is retained in the troposphere. The greenhouse effect traps heat in the troposphere through a three step process as follows: short wave radiation emitted by the

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Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and greenhouse gases in the atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This “trapping” of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The presences of greenhouse gas emission within the area covered by the Water System Master Plan Update are not entirely known at this time. However, potential impacts associated with generation of greenhouse gas emissions from the Project will be evaluated. On June 16, 2010, the Santa Barbara County Planning & Development Department released an Interim GHG Emission Evaluation guidance document which set the threshold of significance for stationary sources at 10,000 metric tonnes of carbon dioxide-equivalent GHG emissions per year. GHG emissions resulting from the proposed Project are anticipated to be well below this threshold, therefore no significant impacts would occur in this regard.

- b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

The Water System Master Plan Update supports long term carbon reduction goals that are consistent with plans, policies, and regulations adopted for the purpose of reducing emissions of GHG’s. Therefore, impacts would be less than significant.

10.8 Hazards And Hazardous Materials

Would the project:

- a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less Than Significant Impact. The proposed Project would not involve the transportation, storage, use, or disposal of hazardous materials. No hazardous material sites are located in the locations that would be developed with components proposed as part of the project. No impacts would occur.

- b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

No Impact. Refer to Responses 10.8(a), above.

- c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

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No Impact. Refer to Responses 10.8(a), above.

- d) *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

No Impact. Refer to Responses 10.8(a), above.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. Refer to Responses 10.8(a), above.

- f) *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

No Impact. Refer to Responses 10.8(a), above.

- g) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

No Impact. Refer to Responses 10.8(a), above.

- h) *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

No Impact. Refer to Responses 10.8(a), above.

10.9 Hydrology and Water Quality

Would the project:

- a) *Violate any water quality standards or waste discharge requirements?*

Less Than Significant Impact. Implementation of the Water System Master Plan Update would result in the installation of new wells along the Santa Ynez River floodplain and would be located in proximity to the surface flows in the river. Typical construction activities could create conditions that generate materials that are susceptible to erosion from rainfall and runoff. These conditions primarily include riverbed material excavated to install the well conductor casing, drilling cuttings, and riverbed material that is graded, excavated, stockpiled, placed, and compacted to establish the well pad. This material is

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not expected to be eroded and conveyed to the Santa Ynez River where it could increase turbidity and total suspended solids as all construction activities are required to comply with the National Pollutant Discharge Elimination System (NPDES) general permit requirements.

General NPDES requirements require construction projects to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) containing structural treatment and source control measures appropriate and applicable to the project. The SWPPP will incorporate Best Management Practices (BMPs) by requiring controls of pollutant discharges that utilize best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to reduce pollutants.

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

Less Than Significant Impact. Implementation of the Water System Master Plan Update would result in the installation of new river wells along the Santa Ynez River floodplain and would be located in proximity to the surface flows in the river. Current water sources from Improvement District #1 along with the allocation of State Water Project (SWP) water will not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Based on these existing water resources, impacts associated with groundwater level or recharge are considered less than significant.

- c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?*

Less Than Significant Impact. The existing drainage pattern on the proposed Project site would not be substantially altered through the construction of new wells and a proposed treatment plant. The proposed wells would be located within the 100-year floodplain of the Santa Ynez River and the proposed treatment plant site would be located outside of the 100-year floodplain. No drainages are present at the proposed site.

- d) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

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Less Than Significant Impact. Refer to Response 10.9(c), above. No significant impacts would occur in this regard.

- e) *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less Than Significant Impact. Refer to Response 10.9(a), above. No significant impacts would occur in this regard.

- f) *Otherwise substantially degrade water quality?*

Less Than Significant Impact. As discussed above, the proposed Project could degrade water quality during construction and operation. Impacts to hydrology and water quality will be further analyzed in the EIR.

- g) *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

Less Than Significant Impact. There is no residential land uses or zoning residential designations for the proposed Project. No impacts would occur.

- h) *Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

Less Than Significant Impact. The proposed Project would not impede or redirect flood flows located within a 100-year flood hazard area. Refer to Response 10.9(g), above.

- i) *Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

Less Than Significant Impact. Bradbury Dam, which is located approximately 9-miles west of the City of Solvang, has a capacity to hold 190,000 acre-feet of water. The Bradbury Dam has been constructed to withstand the maximum credible earthquake, based upon extensive geological and geotechnical studies. The dam is inspected regularly and is certified safe by the U.S. Department of Interior, Bureau of Reclamation. Buildout of the Solvang General Plan would not affect the potential for a failure of the Bradbury Dam. Nevertheless, the increased levels of human activity within the potential inundation area would expose additional people to this potential hazard.

As a result of the possible dangers associated with the Bradbury Dam, flood areas in the Solvang area have been mapped through the National Flood Insurance Program (NFIP) administered by the U.S. Department of Housing and Urban Development (HUD) and the

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Federal Emergency Management Agency (FEMA). Compliance with the NFIP and FEMA would result in less than significant impacts. No significant impacts would occur.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The Project area is approximately 15-miles from the Pacific Ocean and approximately 496 feet above sea level. There is no danger of inundation by a seiche, tsunami. No significant impacts would occur in this regard.

10.10 Land Use and Planning

Would the project:

a) Physically divide an established community?

Less Than Significant Impact. The Water System Master Plan Update would not divide the physical arrangement of a community. The Water System Master Plan Update is a planning and policy document that contains provisions indicating that the City has a reliable supply of water from a variety of sources that will be adequate for the City's General Plan full build-out conditions. No significant impacts would occur in this regard.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The Water System Master Plan Update is required to be consistent with the General Plan and the City of Solvang Zoning Ordinance. There are no identified conflicts or inconsistencies with City policies or zoning regulations. No significant impacts would occur in this regard.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans in effect for Santa Barbara County.

10.11 Mineral Resources

Would the project:

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- a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

Less Than Significant Impact. There are no oil and gas field identified within of near the City of Solvang. The nearest oil extraction occurs at the Zaca Oil Field located approximately eight miles to the north of the City. Oil is also extracted at the Barham Ranch Oil Field located approximately eight and one-half miles to the northwest of Solvang. No significant impacts would occur in this regard.

- b) *Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

Less Than Significant Impact. Refer to Response 10.11(a), above. No significant impacts would occur in this regard.

10.12 Noise

Would the project result in:

- a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Potentially Significant Impact Unless Mitigated. Project construction and operation would result in short-term noise impacts. Short-term noise impacts would occur during earthwork, grading, construction operation, installation of infrastructure, and site development. These activities would expose adjacent uses to noise levels between 78-85 decibels at a distance of 50 feet. The magnitude of construction noise emissions typically varies over time because construction activity is intermittent and the power demands on construction equipment are cyclical. At the treatment plant site, the nearest noise-sensitive receptor is a residence about 200 feet away north of the site. A construction noise level of 85 dBA L_{eq} at 50-feet at the WTP site would attenuate to 73 dBA L_{eq} at this location. Hence, at this location, the construction noise would temporarily increase the ambient noise level. In the Santa Ynez River floodplain, well drilling at several well sites would occur about 300 feet from the golf fairways. The predicted peak noise level during construction would be 77 dBA L_{eq} . The operation of the water treatment plant would involve a small electrical booster pump inside the building. No other mechanical functions would occur that would generate noise. Impacts are considered potentially significant unless mitigated and will be discussed within the EIR.

- b) *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

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Potentially Significant Impact Unless Mitigated. As stated above, the proposed Project would include earthwork and grading to prepare the site for installation of infrastructure and for site development. Although these standard construction activities are not expected to generate significant vibration or groundborne noise, the potential exists for adjacent land uses to experience groundborne vibration or groundborne noise levels. Impacts are considered potentially significant unless mitigated and will be discussed within the EIR.

- c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Potentially Significant Impact Unless Mitigated. Refer to Response 10.12(a), above.

- d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

Potentially Significant Impact Unless Mitigated.. Refer to Response 10.12(a), above.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The Water System Master Plan Update is not located within an airport land use plan within two miles of a public airport or public use airport. Therefore, the Water System Master Plan Update would not expose people residing or working in the area to excessive noise levels.

- f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

No Impact. The Water System Master Plan Update is not located within the vicinity of a private airstrip. The Water System Master Plan Update would not expose people residing or working in the area to excessive noise levels.

10.13 Population and Housing

Would the project:

- a) *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

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No Impact. The Water System Master Plan Update would not induce population growth, either directly or indirectly, and therefore, would not result in any impacts to housing or related infrastructure, nor require construction of additional housing. No impacts would occur.

- b) *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. Refer to Response 10.13(a), above.

- c) *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. Refer to Response 10.13(a), above.

10.14 Public Services

- a) *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

- 1) *Fire protection?*

No Impact. The proposed project would not contribute to an increase in population in the surrounding areas nor have any impact on the existing level of public services of any governmental facilities. No additional fire or police protection would be required. No new housing would be constructed and no additional demands on schools or public parks would result. No impacts would occur.

- 2) *Police protection?*

No Impact. Refer to Response 10.14(a), above.

- 3) *Schools?*

No Impact. Refer to Response 10.14(a), above.

- 4) *Parks?*

No Impact. Refer to Response 10.14(a), above.

- 5) *Other public facilities?*

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No Impact. Refer to Response 10.14(a), above.

10.15 Recreation

- a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact. Refer to Response 10.14(a), above.

- b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

No Impact. Refer to Response 10.14(a), above.

10.16 Transportation/Traffic

Would the project:

- a) *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?*

Less Than Significant Impact. Construction equipment use for the proposed project would be staged at work locations and removed at the completion of the construction activities. Workers commuting to the project sites would cause an insignificant increase in traffic levels, since the traffic generated by the workers would not constitute a substantial percentage of the current daily volumes on surrounding roadways. No impacts would occur.

- b) *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

Less Than Significant Impact. Refer to Response 10.16(a), above.

- c) *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

Less Than Significant Impact. The activities associated with the project would not result in a change in air traffic patterns. No impacts would occur.

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- d) *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less Than Significant Impact. The proposed project does not involve the development or design of any road features. No impacts related to design, incompatible uses, or emergency access would occur.

- e) *Result in inadequate emergency access?*

Less Than Significant Impact. The proposed project does not involve inadequate emergency access. No impacts related to design, incompatible uses, or emergency access would occur.

- f) *Result in inadequate parking capacity?*

Less Than Significant Impact. Parking would be required for workers traveling to the site during the construction activities associated with components of the project. However, as the parking needs would be limited and can be supported adjacent to the locations where activities associated with the project would occur, no impact would occur.

- g) *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?*

Less Than Significant Impact. Refer to Response 10.16(a), above.

10.17 Utilities and Service Systems

Would the project:

- a) *Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

Less Than Significant Impact. No wastewater would be generated from the implementation of the proposed project. Portable bathroom facilities would be supplied for workers during construction activities associated with components of the Water System Master Plan Update. Portable bathroom facilities would be maintained and waste would be disposed off-site by the supplier. No wastewater-related impacts would occur.

- b) *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

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Less Than Significant Impact. The project does not involve residential, commercial, or institutional uses, which would result in a demand for water or generate wastewater. The project would not result in new demand for construction of new wastewater treatment facilities or expansion of existing facilities. No impacts would occur.

- c) *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less Than Significant Impact. Refer to Response 10.17(b), above.

- d) *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

Less Than Significant Impact. Refer to Response 10.17(b), above.

- e) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant Impact. Refer to Response 10.17(a)(b), above.

- f) *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

Less Than Significant Impact. The proposed project would not generate substantial amounts of solid waste. Solid waste generated from the proposed project would consist of general refuse generated during construction activities associated with various components of the proposed project. Since the proposed project in itself would not generate significant amounts of solid waste, no impacts would occur.

- g) *Comply with federal, state, and local statutes and regulations related to solid waste?*

Less Than Significant Impact. Refer to Response 10.17(f), above.

10.18 Mandatory Findings of Significance

- a) *Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

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Potentially Significant Impact. Response to Checklist Item 10.4(a) indicates that the proposed Project could have an impact on biological resources. A biological study will be conducted for the proposed Project and the evaluation will be included in the EIR. Mitigation measures will be recommended, where applicable, to reduce potentially significant impacts.

- b) *Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Potentially Significant Impact. A review of cumulative impacts for each issue area that has been identified as potentially significant will be required pursuant to Section 15130 of CEQA. A determination of significance will be made for each issue.

- c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Potentially Significant Impact. As stated in various sections of this Initial Study, the Water System Master Plan Update has the potential to result in significant impacts on the environment. The EIR will include a comprehensive review of existing conditions, potential impacts, and will recommend mitigation measures to reduce the levels of significance related to short-term construction and long-term operations, as necessary.