2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The City of Solvang (City) desires to update its current Water System Master Plan to ensure there is adequate and reliable water supply and infrastructure to meet future demand as forecast in the City's General Plan at buildout. As part of the Master Plan Update, the City will be improving reliability to meet future demands including, installation of new wells to expand and replace lost pumping capacity, perfecting its existing water right Permit 15878 by extracting additional underflow from the Santa Ynez River, and implementing other improvements to the existing water system infrastructure.

2.2 PROJECT OBJECTIVES

2.2.1 Purpose and Intent

The purpose and intent of the Master Plan Update is to: (1) evaluate present and future water supply and demand conditions; (2) analyze and identify water system supply and distribution deficiencies; and (3) develop recommendations on prioritizing water sources, develop new and expanded water production and treatment facilities for water diverted from the Santa Ynez River, upgrade various distribution and storage facilities, and develop a capital improvement program to address deficiencies.

Further, the Master Plan Update establishes a framework to assist the City in its efforts to acquire a time extension to perfect and license its water right on the Santa Ynez River, and secure an expansion of the reach of diversion specified for water right Permit 15878 from the State Water Resources Control Board (SWRCB).

2.2.2 Objectives

The City has identified the following objectives:

- Ensure a future reliable water supply to meet the projected water demand at City buildout as provided for in the General Plan;
- Secure adequate water rights to reliably meet the City's water supply requirements ;
- Ensure adequate infrastructure to deliver water to the City's users and meet water quality requirements; and
- Avoid impacts either to public trust resources or to other water rights holders that have priority.

2.3 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 2.0-1, Regional Location**, the City is generally located midway between the City of Santa Maria and the City of Santa Barbara. As illustrated in **Figure 2.0-2, 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.

2.4 PROJECT CHARACTERISTICS

The proposed project is intended to update the Water System Master Plan for the City and to install all facilities to implement the updated plan. The Master Plan Update indicates that with implementation of its recommendations the City has a reliable supply of water from a variety of sources that will be adequate for the City's General Plan full buildout conditions.

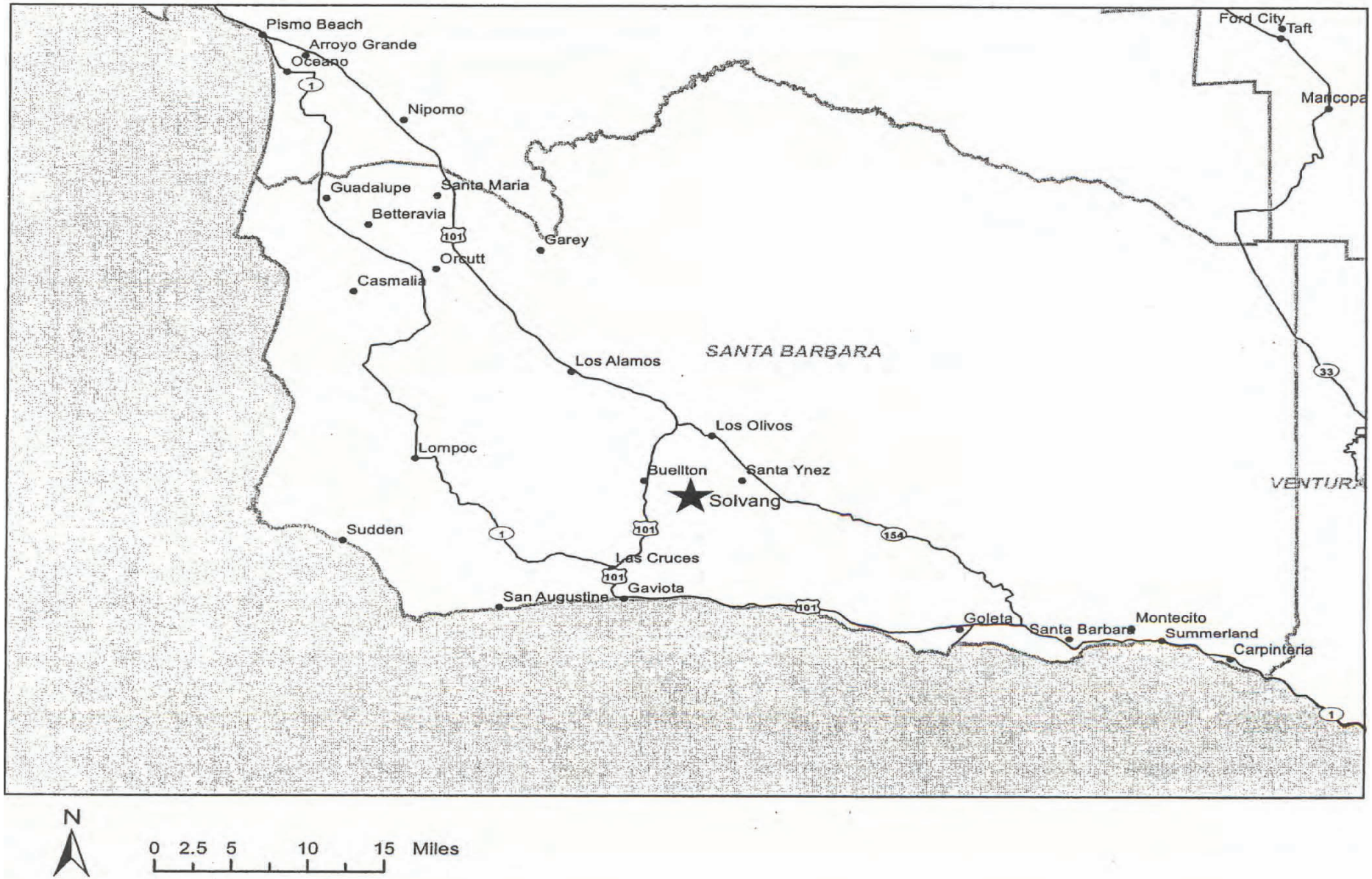
2.4.1 Current City Water System

The City's Water Division provides water to users within the service area for residential, commercial, industrial, and landscape irrigation purposes. The City maintains and operates a small municipal system with various supply wells, 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 2.0-3, City of Solvang Water System**.

Santa Ynez River Water Conservation District, Improvement District No. 1

The City purchases water from Santa Ynez River Water Conservation District, Improvement District No. 1 (ID No. 1) on an as-needed basis. Water is provided by direct connections in Zones 1 and 2 of the City's water system. The Zone 1 connection is located on Old Mill Road and has a source capacity of 1,200 gallons per minute (gpm) (or 2.67 cubic feet per second [cfs]). The Zone 2 interconnection 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 State Water Project (SWP) water purchased by ID No. 1 from its own SWP entitlement or obtained in exchange for ID No. 1 Cachuma Project entitlements, and water from ID No. 1 wells that extract water from the Santa Ynez Upland Groundwater Basin and Santa Ynez River underflow.

The ID No. 1 has two well fields along the Santa Ynez River: the 4.0 cfs and 6.0 cfs well fields. The former is located approximately 2 miles upstream of the Refugio Bridge, while the latter is located 1 mile



SOURCE: City of Solvang - September 2011

FIGURE **2.0-1**

Meridian Consultants

Regional Location

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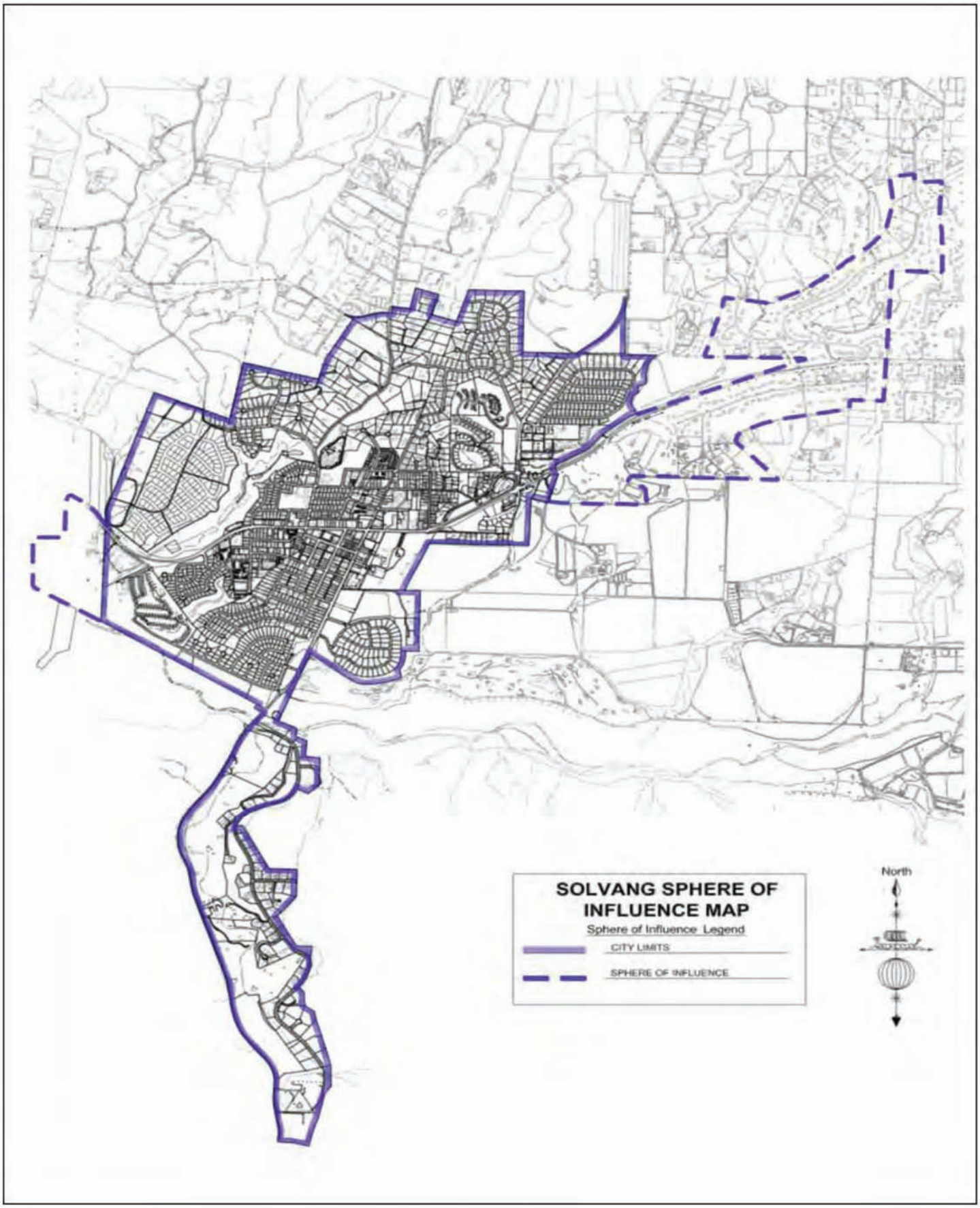

SOURCE: City of Solvang - September 2011

FIGURE **2.0-2**

Meridian Consultants

Site Vicinity

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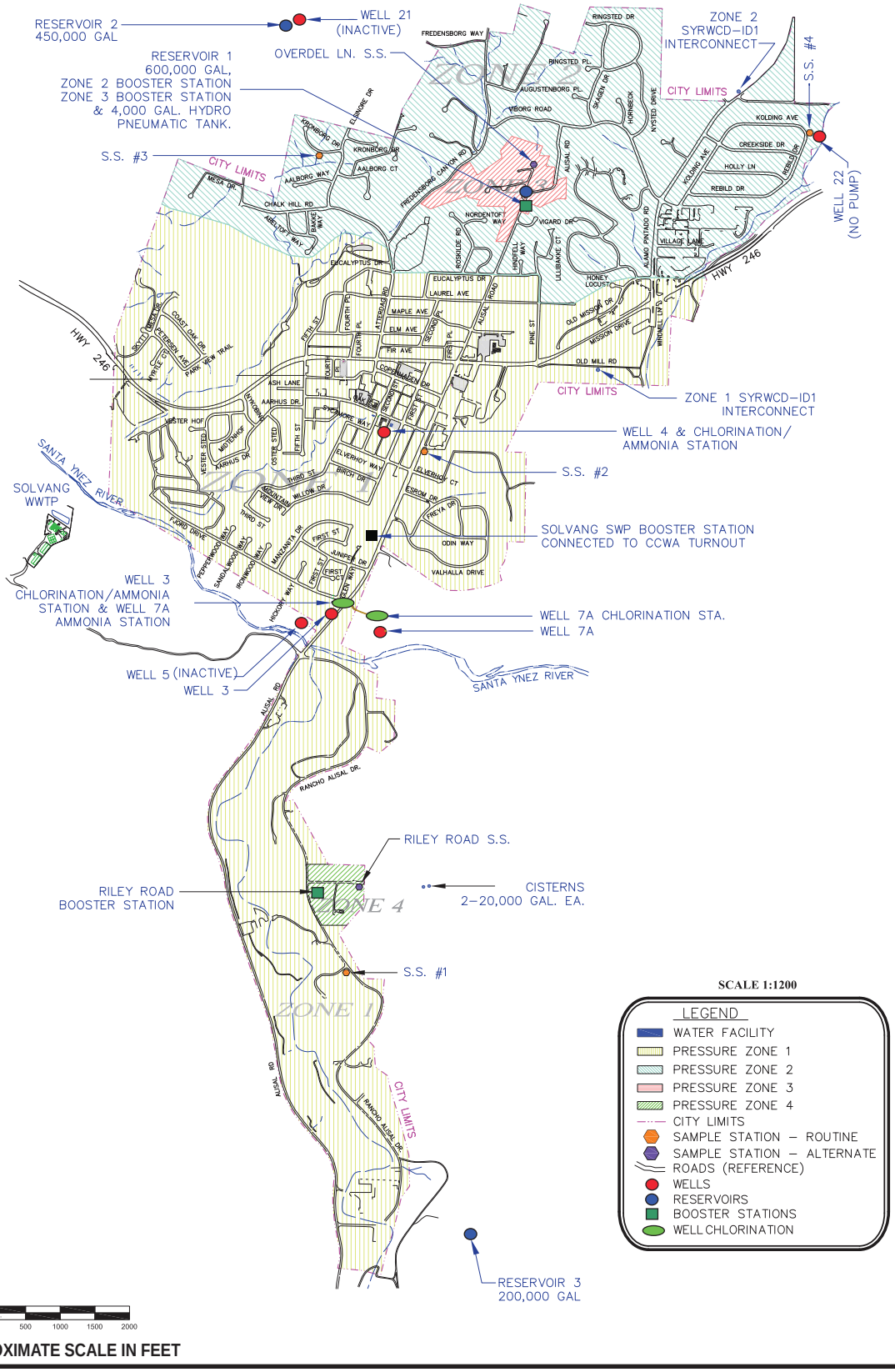

SOURCE: City of Solvang - September 2011

FIGURE **2.0-3**

Meridian Consultants

City of Solvang Water System

001-001-12

upstream of the Alisal Bridge. In addition, ID No. 1 produces water from its Upland wells. ID No. 1 chlorinates, but does not filter the delivered water. Hence, river water production by ID No. 1 is subject to curtailment due to California Department of Public Health (DPH) regulations if surface water in the river channel is located within 150 feet of the wells. The annual amount of water the City purchases from ID No. 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

SWP water deliveries through the Coastal Branch Aqueduct to Santa Ynez Valley began in 1997 and 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). SWP water is filtered and disinfected at the CCWA Polonio Pass water treatment plant in San Luis Obispo County. Delivery of SWP water is subject to climatic factors in Northern California, which may reduce runoff into the Sacramento-San Joaquin Delta and to environmental regulations that curtail pumping from the Delta.

The City receives 1,500 acre-feet per year (afy) of SWP water via an agreement with ID No. 1; ID No. 1 has 2,000 afy of SWP Table A Allocation that is delivered through CCWA; a copy of the agreement is provided in **Appendix 2.0**. The City began receiving SWP water deliveries in August 2002. According to the 2009 SWP Reliability Report, the long-term average reliability of SWP water deliveries is expected to be about 60 percent of the City's allocation, or about 900 afy. The City further discounts SWP water reliability by another 20 percent of the City's allocation of 1,500 afy (to 600 afy) to plan for the single dry year and multiple dry years scenarios.

Upland Wells

The City drilled two wells in the Santa Ynez Uplands Groundwater Basin, Wells 21 and 22, to determine if the quality is acceptable for municipal use. Well 21, also shown on **Figure 2.0-3**, is located outside the City 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 (H_2S). Although none of the concentrations exceed 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 2.0-3**, is located in the Creekside Subdivision on the east side of town. It was never equipped or used as a producing well due to its high levels of H_2S experienced during well development.

River Wells

The City currently has two active river wells (Wells 3 and 7A) and one inactive river well (Well 5), located along the Santa Ynez River channel shown on **Figure 2.0-3**. Under state law, drinking water produced from wells within 150 feet of surface water is considered "under the influence of surface water." Therefore, water produced by those wells under the influence of surface water must be filtered subject to the same rules applicable to surface water. Solvang does not currently have the filtration equipment that is required to make surface water (or water under the influence of surface water) legally potable. During periods of heavy rain, the water in the river can rise to levels within 50 feet of either well. The river also periodically changes course due to rain and releases from Bradbury Dam. Well production is curtailed whenever surface water is within 150 feet of a well.

The following is a summary of each well:

- **Well 3** is located near the Santa Ynez River channel in the floodplain. Well 3 was drilled in 1993 to a depth of 55 feet and has a capacity of about 340 gpm (which represent 0.73 cfs, or if pumped continuously, about 530 afy). The normal river flow is 210 feet from Well 3 because the river channel moved away from the well in the floods of 1998. Therefore, Well 3 is seldom considered to be under the influence of surface water because the main channel of the Santa Ynez River flow is outside 150 feet of the well. However, Well 3 is located 100 feet from a storm channel that has water when it rains so that does curtail pumping of Well 3 for a time during most winters.

- **Well 5** is located in the river channel. The well is inactive and has not been used since the 2005 flood because the wellhead was destroyed, although its casing remains. In addition, it cannot be used since it remains within 150 feet of surface water.

- **Well 7A** is also is located near the Santa Ynez River channel in the floodplain. Well 7A was constructed in 1995 to replace Well 7 that was destroyed in the El Nino conditions of the previous winter. Well 7A is drilled to a depth of 55 feet and has a capacity of about 110 gpm (which represent 0.25 cfs, [about 0.49 acre feet a day] or if pumped continuously, about 179 afy). The river flow is often over 200 feet from Well 7A. Therefore, Well 7A is rarely shut down due to the proximity of surface flows within 150 feet of the well.

To achieve the maximum extraction rate of 5 cfs (or 2,250 gpm), the City proposes to install up to six new wells, with a similar capacity of about 300 gpm each, and install filtration facilities so that the City will be able to meet potable water standards even when some wells are under the influence of surface water.

Other Wells

The City does utilize one well, Well 4, located near City Hall. This well is considered a “central” well and it is not located near the river or the upland wells. Well 4 was drilled in 1953 to a depth of 146 feet with perforations that begin at 100 feet. This well produces about 320 gpm and is chlorinated at the wellhead.

The well has good water quality; however, due to its age it requires ongoing repairs and upgrades. Historically, Well 4 provided a peak annual production of 380 afy but production has declined over time. The anticipated long-term average production is approximately 100 afy.

2.4.2 Summary of Proposed Water System Master Plan Update

The Master Plan Update indicates that once implemented the City will have a reliable supply of water from a variety of sources that will be adequate for the City's General Plan full buildout conditions. The 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:

1. Install and utilize existing and new wells along the Santa Ynez River;
2. Utilize SWP water;
3. Utilize central and upland wells located in or near the City; and
4. Purchase water from ID No. 1.

The Master Plan Update provides recommendations (listed in the following five categories) to assist and guide the City in continuing to provide reliable and reasonably priced water service to its present and future customers.

The recommendations in the Master Plan Update include installation of new wells along the Santa Ynez river to replace the pumping capacity lost to flood damage and to allow the City to extract Santa Ynez River underflow at the 5 cfs maximum rate provided by water right Permit No. 15878. The added pumping capacity will allow the City to make the wells located along the Santa Ynez River its priority water source. The water from the wells located along the Santa Ynez River will be used as the priority water source in conjunction with a wide range of supplies for providing a reliable source to the water users within the City's municipal coverage area in all year types.

Water Supply Improvements

The first priority recommendation is that the City develop and secure its water rights from the Santa Ynez River underflow up to a maximum peak extraction rate of 5 cfs and a maximum annual total withdrawal of 1,980 afy. The Master Plan Update recommends that both the SWP contract and the Santa Ynez river wells should be maintained as firm water supply sources. Since new wells will take one to two years to install, water from the SWP will be required to fully supply demand until future wells can handle the average day and most of peak demand. The Master Plan Update recommends that the City

install as many new wells along the Santa Ynez River as is economically feasible up to the number necessary to extract a peak flow of 5 cfs from the river underflow.

The number of wells required to withdraw 5 cfs from the river underflow is a function of well discharge capacity. The Master Plan Update estimates that six new wells each with a capacity of 300 gpm will be required in addition to the two existing wells to achieve a peak capacity of 5 cfs. If the new wells located along the Santa Ynez River are capable of higher capacity, it may be possible to achieve 5 cfs with fewer wells.

Water from wells near the Santa Ynez River will require treatment whenever the wells are under the influence of (within 150 feet of) surface water. The Master Plan Update recommends a treatment plant at a site near the wells located along the Santa Ynez River to filter their combined output when one or more of the wells in use is under the influence of surface water. The Master Plan Update recommends that the treatment plant also include construction of a backwash system to contain filter backwash water and allow for recovery of most of the backwash water. The remaining backwash water must be discharged to the sewer system. The Master Plan Update recommends that treated water from the treatment plant be introduced into the City's piping network in two locations to improve water distribution throughout the service area.

Distribution System Improvements

The Master Plan Update recommends that the City implement an annual waterline, fire hydrant, and valve replacement program to replace aging infrastructure and undersized waterlines. Although the asbestos cement and PVC portions of the City's distribution piping are not susceptible to corrosion, the cast iron and ductile iron portions are. The Master Plan Update notes that:

- the existing 2-inch diameter piping is substandard for a municipal water system, and recommends that all sections of 2-inch diameter waterline should be replaced with 6-inch waterline;
- a section of 4-inch galvanized steel piping in First Street should be replaced or abandoned in place; and
- the existing 8-inch waterline in Kronborg Drive from Elsinore Drive to the 12-inch Reservoir 2 inlet/outlet pipe should be replaced with a 12-inch waterline. Although this replacement is not urgent, it is recommended, based on technical studies[1], that indicate this line is significantly undersized based on current standards and it should be replaced within the next 10 years or prior to any significant new development.

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1 Stetson Engineers, Inc., Water Distribution System Evaluation, February 22, 2008. (**Appendix 5.1**)

The typical life span of fire hydrants and valves is approximately 40 years. However, if properly maintained, fire hydrants and valves can function satisfactorily for many years beyond this. Therefore, the Master Plan Update recommends that fire hydrants and valves over 50 years old, or known to be malfunctioning, be inspected and scheduled for replacement as needed. Priority should be given to valves and fire hydrants within areas zoned institutional, commercial, or industrial. It is also recommended that the City update its Water System Atlas Maps.

Reservoir Storage Improvements

The Master Plan Update recommends the City construct additional storage of approximately 400,000 gallons in Zone 1 within the next 10 years or prior to any significant new development. A 400,000-gallon reservoir is recommended to ensure the City's total useable storage is approximately 1.5 million gallons. Further recommendations include that Zone 4 be reconfigured by:

1. replacing the old cisterns (40,000 gallons capacity) with the new 400,000-gallon reservoir set to the Zone 1 hydraulic grade line,

2. relocating the Riley Road booster station (that serves Zone 4) up the hill next to the new reservoir, and

3. replacing the 6-inch diameter waterline in Riley Road with a 10-inch waterline from the new reservoir to Rancho Alisal Road.

In addition to providing the needed storage, the new reservoir will significantly improve fire protection to all customers south of the Santa Ynez River including the City's Wastewater Treatment Plant. The Master Plan Update recommends that the City take steps to procure this reservoir site in the next few years.

The roof at Reservoir 1 has been experiencing problems for the past few years and is deteriorating. The Master Plan Update recommends that the roof for Reservoir 1 be replaced.

Standby Power

Installation of a permanent emergency generator at the SWP Pumping Station is recommended to improve water supply reliability by ensuring the City's ability to provide water service during power outages. To reduce costs, a single generator can be sized and used to provide emergency power to the SWP Pumping Station and to the future river well water treatment facility.

Alternative Supply Sources

The Master Plan Update notes that the City may consider developing upland wells outside the City limits in areas of the groundwater basin where previously drilled wells have produced high yields and water of

relatively good quality. Currently, no future wells other than those identified to be installed along the Santa Ynez River and discussed herein are proposed. Should the City decide to drill wells outside the City limits in these areas, an environmental review will be completed at that time.

2.4.3 State Water Right Permit

In 1969, the SWRCB approved Solvang Municipal Improvement District's (SMID) application and issued water right Permit No. 15878 subject to Application 22423 (see **Appendix 2.0**) to appropriate by direct diversion at a rate up to 5 cfs from January 1 to December 31 of each year (for a maximum annual diversion of 3,620 acre-feet) of underflow from the Santa Ynez River to be put to beneficial use within the boundaries of the SMID service area (within projected Sections 10, 14, 15, 16, 21, 22, 27, 28, 33 and 34 of T6N and R31W, SBBM). Permit 15878 was subsequently assigned to the City in 1986.

Water right Permit 15878 provides that the maximum amount of diversion may be reduced by the SWRCB after inspection to determine the amount of water that had been put to beneficial use and originally allowed the City until December 1, 1974 to complete the application of water to the proposed use. The original water right permit identified the points of diversion to be Well No. 5 and Well No. 6. Since that time, the City has been granted various amendments to change the places of diversion and use. The City has also obtained extensions of time to complete its application of water to beneficial use. The most recently approved petition was granted in 1981 subject to the Diversion Agreement with ID No. 1 and changed the diversion area to that shown on **Figure 2.0-4, Existing and Proposed Diversion Reaches**.

The SWRCB Water Rights Division conducted a compliance inspection on August 11, 1999, found that there had been no changes in beneficial use, and determined that Solvang's annual beneficial use of diverted Santa Ynez River water was 1,053 afy and the maximum diversion rate was 1.85 cfs (see **Appendix 2.0**).[2]

In 2001, the SWRCB staff indicated that the City could pursue either of two options to progress toward licensing the City's appropriation from the Santa Ynez River. Under the first option, the City could request a license for an amount based on the highest extraction amount established in recent years (1,053 acre-feet) by the City under water right Permit 15878. Under the second option, the City could prepare a petition for extension of time to demonstrate additional diversion capacity and beneficial use of Santa Ynez River Water.

The SWRCB requires a CEQA document to analyze the environmental impacts of a time extension, the construction of facilities and increased water diversions that are proposed to occur pursuant to that time

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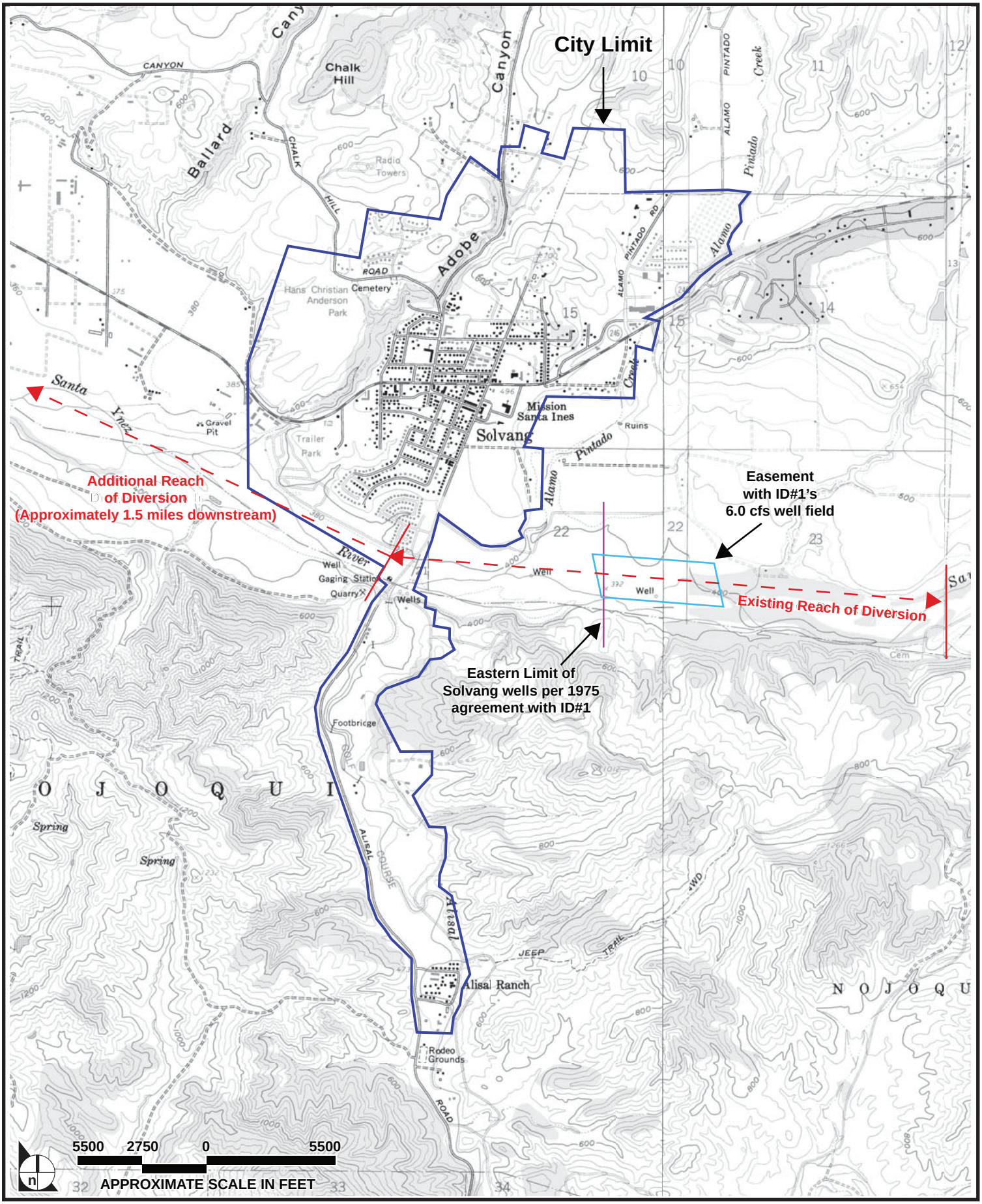
2 State Water Resources Control Board, Letter to Mr. Craig Martin, City of Solvang, Permit 15878 (Application 22423) Santa Ynez River Underflow in Santa Barbara County, dated December 15, 1999.



SOURCE: City of Solvang - September 2011

FIGURE **2.0-4**

Meridian Consultants

Existing and Proposed Diversion Reaches

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extension. Solvang chose to prepare this environmental impact report (EIR) to study the effects of the entire Water Master Plan Update at the programmatic level, and to study the impacts of the new wells located along the Santa Ynez River and the accompanying infrastructure, including pipelines, pumps and the treatment plant that will be allowed by the time extension and expansion of the reach of diversion under Permit 15878, at the more detailed project level.

Initially, the City's intent was to demonstrate the capability to extract and beneficially use up to the 5 cfs maximum rate and up to the 3,620 acre-feet maximum permitted annual diversion. The SWRCB would consider the new extractions and beneficial uses in the City's annual production reports as the basis for the future license. Between 2001 and 2005, the City and the SWRCB continued discussions regarding the appropriate procedure under water right Permit 15878 to license the City's necessary rate of diversion and the full annual amount needed by the City at buildout.

The City has continued to appropriate water from the underflow of the Santa Ynez River under Permit 15878 and file all appropriate reports with the SWRCB. Permit 15878 authorizes the City to divert and use water extracted from the Santa Ynez River underflow by wells located within a specified area of diversion. The water is permitted for municipal use within the boundaries of the City's service area and adjacent areas within the place of use designated in the Permit, as amended. A copy of water right Permit 15878 is provided in **Appendix 1.0**.

In 2005, the City circulated a Notice of Preparation (NOP) of an EIR for the Master Plan Update. The City pursued the preparation of its EIR concurrently with the processing of the EIR by the SWRCB for the Cachuma Project. The City intended to have its EIR certified and delivered to the SWRCB after the Cachuma Project EIR was finalized because the City's EIR was initially intended to rely on the Cachuma Project EIR. Due to circumstances beyond the City's control, the Cachuma Project EIR was delayed until this past spring and the Final EIR for the Cachuma Project was recently entered into the SWRCB's record in March 2012. The City's completion of its EIR for the Master Plan Update also was delayed due to additional studies, groundwater modeling, a hydraulic analysis of the proposed Santa Ynez River management system and the update of the City's projected water demand at buildout.

The City has completed an estimate of its future water demand and needs, and has determined that at buildout of the General Plan the City will require a total annual water supply of 1,980 afy as demonstrated in the Water System Master Plan Update, **Table 2.0-1, Current, Historic Long-Term Average and Projected Annual Water Demands**. Future water demands have been projected based on current ongoing development and potential future development within the City. The historic long-term average demand for Solvang is 1,691 afy. Based on population estimates and future development capacity within the General Plan and an average water demand approximated at 236 gallons per capita per day,

Table 2.0-1
Current, Historic Long-Term Average and Projected Annual Water Demands

Condition	Annual Water Demand (afy)
Long-term Average Production (Demand)	1,691
Additional Production Required at Buildout	289
Future General Plan Buildout Demand	1,980

Source: City of Solvang, Water System Master Plan Update, April 2011, Table 3.1.

an estimated additional 289 afy will be required at Buildout. Therefore, the projected future water demand at General Plan buildout is 1,980 afy.

The City desires to develop the capacity to divert its entire water demand via groundwater wells from the underflow of the Santa Ynez River. Further, the City has determined that the most advantageous place to divert the water would be from the existing Wells 3 and 7A, and from new wells to be installed both adjacent to and downstream from the existing City wells including downstream from the currently permitted reach of diversion.

The City proposes to install up to six new wells located along the Santa Ynez River and extract up to the permitted maximum diversion rate of 5 cfs and up to a total diversion of 1,980 afy needed to satisfy the City's demand at full buildout. The City proposes to continue developing its system until such time that the SWRCB and the City have determined that the City has demonstrated the maximum amount it can divert and put to beneficial use and the maximum rate of diversion the City requires. Additionally, as discussed below, the City is requesting that the SWRCB consider an amendment to its point of diversion to minimize potential adverse impacts on other diverters in the river and of fishery resources. Once the City has demonstrated its full diversion and beneficial use of Santa Ynez River water, the City will request that the SWRCB grant the City a license for the proven annual amount of diversion and peak diversion rate.

2.4.4 Proposed Additional River 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 reliability and flexibility in the City's water supplies.

The City's water right permit 15878 specifies a 3.75-mile-long reach of the river where diversions are allowed (the "Existing Reach of Diversion"), as shown on **Figure 2.0-4**. Alisal Ranch owns the river bottom and adjoining land in the Existing Reach of Diversion and currently utilizes underflow wells

within this reach to extract irrigation water for Alisal's own use 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 Existing Reach of Diversion also overlaps the authorized reach of diversion for ID No. 1's 6.0 cfs well field. In 1975, SMID executed an agreement with ID No. 1 in which SMID 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 2.0-4**. The City is bound by this agreement so the available portion of the Existing Reach of Diversion is limited to approximately 12,000 feet of the river as shown on **Figure 2.0-4**. That reach is already crowded with existing City and Alisal (Palmer Jackson Trust) wells.

In 2002, the City completed a hydrogeologic investigation of the river in the City's Existing Reach of Diversion to assess the optimal placement and design of new wells that would meet the City's annual and daily production goals.[3] That investigation recommended that six new wells be installed in the river floodplain. 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. The 2002 study has indicated that the maximum number of wells required would be six wells.

Subsequent river modeling by Stetson Engineers[4] 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 No. 1 wells. In a significant percentage of year types, this interference will likely prevent full utilization of both the City and the ID No. 1 wells during the summer months when water demand is at its peak. Additional pumping in the area just upstream of the Alisal Bridge may also result in potential impacts to steelhead trout if present in that reach. The river modeling indicates that the most effective way to mitigate the interference and potential environmental impacts is to reduce the number of City wells upstream of Alisal Bridge by constructing some of the proposed new City wells downstream of the Alisal Bridge.

Therefore, the City of Solvang is proposing a change to its Existing Reach of Diversion by adding approximately 1.5 miles downstream of Alisal Bridge and the downstream boundary of the Existing Reach of Diversion (hereafter referred to as the "Additional Reach of Diversion") (see **Figure 2.0-4**). When the Existing Reach of Diversion and the Additional Reach of Diversion are combined they comprise the "Expanded Reach of Diversion" which is intended to provide the City the ability to locate future

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3 Hopkins Groundwater Consultants, Inc., Preliminary Hydrogeology Study, City of Solvang, Santa Ynez River Well Field, Well Site Evaluation Project, Solvang, California. April 2003. (**Appendix 5.1**)

4 Stetson Engineers, Inc., Technical Memorandum No. 3, Solvang EIR Groundwater Modflow Simulations, July 19, 2004. (**Appendix 5.1**)

groundwater wells away from other permitted water rights diverters and critical habitat areas to minimize adverse impacts on the other diverters in the river, the riparian environment, and the fish.

The City has not determined how many of the wells and what percentage of its total diversions from the Santa Ynez River can occur downstream of the Alisal Bridge. The City cannot make that determination until it begins drilling wells in that reach and tests the actual amount of water available. Therefore, for the purposes of project analysis, the City of Solvang has modeled three alternative scenarios.

1. All six new wells upstream of Alisal Bridge;
2. All six new wells downstream of Alisal Bridge; or
3. Three new wells upstream and three new wells downstream of Alisal Bridge.

Wells upstream of Alisal Bridge extract groundwater from the Santa Ynez River riparian aquifer. The alluvial basin extends from Bradbury Dam to Lompoc Narrows. 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 riverbank inflow from the underlying bedrock. The groundwater in the alluvial aquifer is in direct hydraulic communication with the river's surface flow. The sub-basin upstream of Alisal Bridge is relatively narrow and for the most part shallow with limited storage. Therefore, it fills during the wet season and is 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 30 to 55 feet in the Alisal area.

Wells downstream of Alisal Bridge will pump from a sub-basin with similar characteristics. Downstream of Alisal Bridge, however, the alluvial aquifer is relatively thicker and wider so it has significantly more storage relative to the upstream area where the majority of the Existing Reach of Diversion lies. Therefore, much more water can be diverted downstream of Alisal Bridge.

Well Number and Locations

All proposed well sites are located along the north side of the river between points approximately 1.5 miles west of the Alisal Bridge and upstream to the confluence of Alamo Pintado Creek. The locations were selected to maximize water production, minimize well interference, provide ease of access, maximize use of existing water lines for conveyance piping, and minimize potential flood damage.

The proposed well sites located downstream of Alisal Bridge are designated Well Sites A and Well Sites B (see **Figure 2.0-5, Proposed Future Wells Site Areas)**, and these sites, while within the 100-year floodplain, 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 DPH requirements for extraction without additional monitoring and filtration treatment. The two locations (see **Figure 2.0-6, Wells Site A**, and **Figure 2.0-7, Wells Site B**) are proposed for future wells (Wells Sites A and B); these locations were selected as a result of additional technical studies completed by Stetson Engineers.[5] Depending on the City's ability to obtain access agreements, either or both locations may be utilized for the installation of the proposed six new wells. The City would be required to acquire additional easements along the Santa Ynez River for the new wells and associated water lines from Alisal Ranch and other owners downstream of Alisal Bridge.

The proposed well 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 than the rest of the Existing Reach of Diversion, allowing higher well production rates.

The proposed six new wells would provide the City with 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). The City is proposing a large number of small wells because: (1) the shallow aquifer will limit the possible production of each well; (2) as the active river channel migrates, water from wells within 150 feet of surface water cannot be used without treatment; therefore shutting off affected wells is less expensive than treatment; and (3) the multiple wells provide flexibility to avoid interference with the Alisal Ranch wells.

Well Design

Each proposed well will be designed to produce up to 400 gpm (.89 cfs) on a long-term continuous basis. It is anticipated that both slant (directionally) drilled and vertical drilled wells will be utilized. The proposed well design for the vertically drilled wells is shown on **Figure 2.0-8, Proposed Well Design**. Wells that penetrate aquifers on an angle have the potential to be more productive than vertical wells having well screens that are limited in length to the vertical thickness of the aquifer. Design of the slant-

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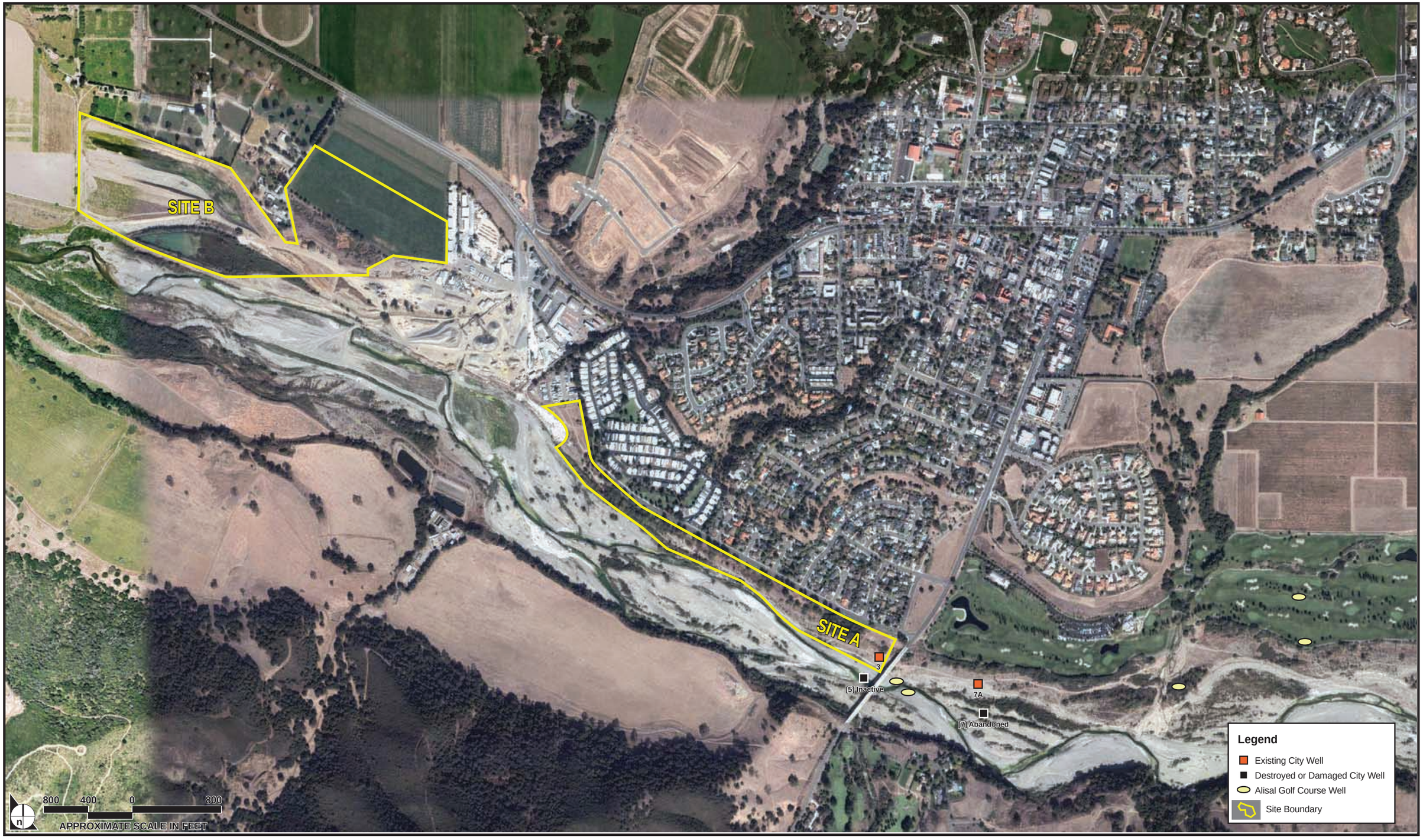
55 Stetson Engineers, Inc., Technical Memorandum No. 6, Additional Alternative Analyses for City of Solvang's CEQA Environmental Document for Time Extension for Water Rights Permit 15878 – New Wells Downstream of Alisal Bridge, January 24, 2011. (**Appendix 5.1**)



SOURCE: City of Solvang - September 2011

FIGURE **2.0-5**

Meridian Consultants

Proposed Future Wells Site Areas

001-001-12

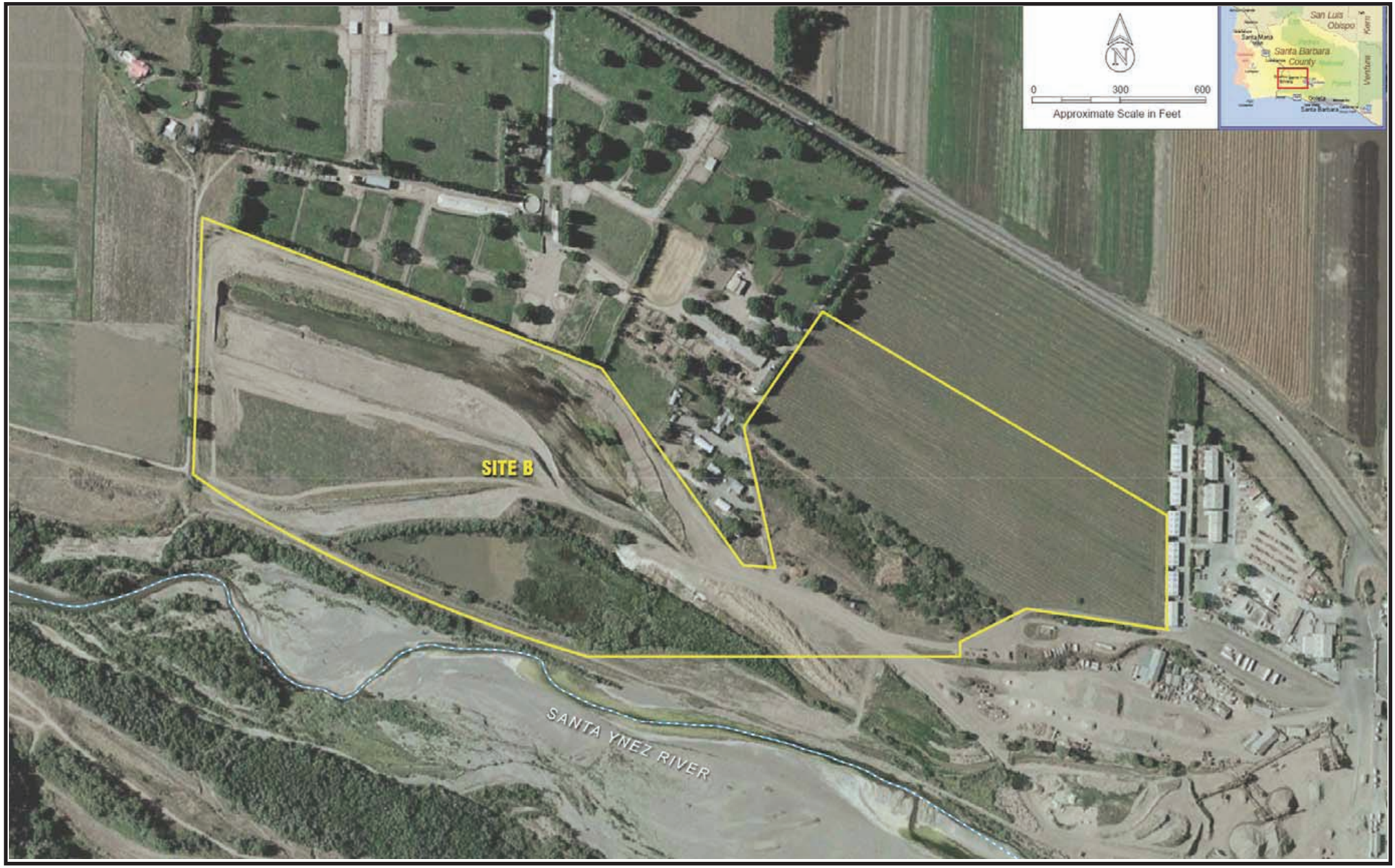
SOURCE: City of Solvang - September 2011

FIGURE **2.0-6**

Meridian Consultants

Wells Site A

001-001-12



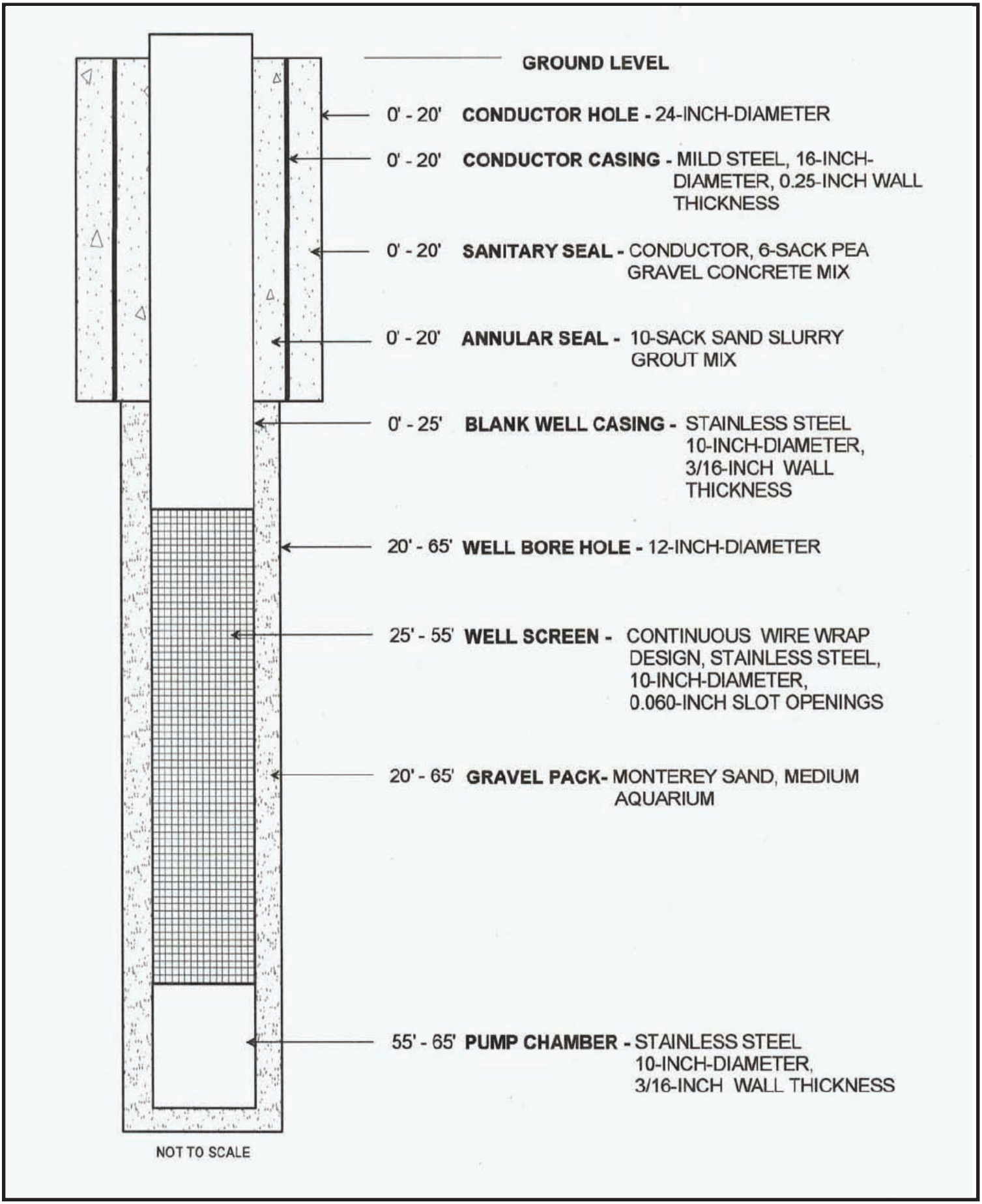
SOURCE: City of Solvang - September 2011

FIGURE **2.0-7**

Meridian Consultants

Wells Site B

001-001-12



SOURCE: City of Solvang - September 2011

FIGURE **2.0-8**

Meridian Consultants

Proposed Well Design

001-001-12

drilled wells will be very similar with the exception that the slant wells will be drilled at an angle of 15 to 30 degrees from horizontal and to a depth (length) as great as 400 feet.

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 that 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.

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 placed 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 placed 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.

Well Installation

Construction of the wells will require access by construction equipment, trucks, and a drilling rig. Access to the new wells would be provided by existing roadways along the north side of the river channel. Existing informal dirt roads on the floodplain would also be used to access wells.

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 for both vertical and slant drilling 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. The direct rotary method of drilling uses air to lift the cuttings along with a relatively small amount of fresh water to cool the drill bit.

Construction of slant wells using the dual rotary drilling method requires the mast of drilling rig to be detached from the power unit and mounted on an angled cradle or platform at the required angle.[6] A slant well can be constructed at any shallow angle dictated by the platform angle, theoretically even horizontal—as long as the rig is lowered into an excavated and shored pit or is otherwise positioned to target a horizontal zone.

Dual rotary drilling method is also advantageous because of its relatively small footprint (requiring a site that is approximately 60 feet by 130 feet), which minimizes environmental and visual impacts during construction. Because the dual rotary drilling method does not use drilling fluids, there is no need for large onsite mud circulation and cleaning systems that are typically required by other drilling methods. Additionally, the risk of accidental release of drilling mud to the site and surrounding environment is removed.

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 (or greater for slant drilled wells). 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 concreted into place to provide stabilization for the well.

Subsequently a 12-inch diameter borehole will be drilled to a depth of approximately 65 feet (or greater for slant-drilled wells) 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 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.

Limitations to the dual rotary drilling method for constructing slant wells include limited well length and the difficulty of fully ensuring proper filter pack placement around the well screen. The length of a dual rotary-drilled well is limited by the ability of the rig's lower drive to pull back the outer drill casing from around the well at total depth. Because dual rotary construction requires the outer drill casing to be extracted from around the installed well, the rig's pullback capacity limits the length of the wells constructed by limiting the frictional drag on the outer casing; currently, a 12-inch diameter dual rotary

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6 U.S. Department of the Interior, Bureau of Reclamation, Research and Development for Horizontal/Angle Well Technology, Desalination and Water Purification Research and Development Program Report No. 151, October 2008, p. 16.

slant drilled well is limited to a length of approximately 500 feet.[7] The production potential of a slant well drilled using the dual rotary method depends upon geohydrologic conditions, well diameter, and length of well screen. Assuming favorable geohydrologic conditions (permeable sand and gravel aquifer materials and successful well development); the production potential of a dual rotary-drilled slant well is limited by the size of the submersible pump that can fit within the well's diameter.

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 15-foot chain link enclosure, about six 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; however, the potential routes have not yet been identified. However, it is anticipated that the following would be required for each of the well sites:

Well Site A - Consist of connector pipes and a transmission pipe, with a total pipe length of approximately 0.7 miles. The connector pipes would connect the proposed wells to a transmission pipe that runs from west to east. The diameter of the transmission pipes would range from 8- to 18-inches; the size of the pipe segments depends on the flow. The east end of the transmission pipe would connect to an existing pipe cross-located approximately 200 feet west of Alisal Road.

Well Site B - Consist of connector pipes, a transmission pipe, and looping pipes, with a total pipe length of approximately 1.7 miles. The connector pipes would connect the proposed wells to the transmission pipe that runs from west to east and along Highway 246 to the intersection on 5th Street. The transmission pipe would range in diameter 10- to 18-inches; the size of the pipe segment depends on the flow. The east end of the transmission pipe will connect to an existing tee on Highway 246.

Although the maximum allowable velocities are four feet per second (fps), the proposed pipelines sizes, for the most part, were to have flow velocities ranging from about 2.5 fps to 3.5 fps to provide allowances for carrying larger flow rates should there be future system expansion**. Table 2.0-2, Summary of Required Piping**, summarizes the sizing for the proposed main pipe segments, connector pipes and looping pipes for Sites A and B.

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7 U.S. Department of the Interior, Bureau of Reclamation, Research and Development for Horizontal/Angle Well Technology, Desalination and Water Purification Research and Development Program Report No. 151, October 2008.

Table 2.0-2
Summary of Required Piping

Pipe	Site A Length (feet)	Site B Length (feet)
8-inch Connector Pipes	240	0
8-inch Looping Pipes	0	140
8-inch Main	310	0
10-inch Connector Pipes	0	560
10-inch Main	0	1,440
12-inch Main	910	1,320
14-inch Main	1,230	660
16-inch Main	1,070	2,780
18-nch Main	170	1,980
Total (feet)	**3,930**	**8,880**
Total (miles	**0.74**	**1.68**

Source: Stetson Engineer, Technical Memorandum, May 14, 2010, Table 5 (see ***Appendix 5.1****)*

Pipes will consist of 6-inch-diameter high-density polyethylene (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.

Where water lines will be installed beneath the paved service roads, the asphalt surface will be saw cut, and an excavator will be used to excavate a trench for the pipe. The road will be restored to preconstruction conditions after installing the pipe and backfilling the trench.

The lateral pipes will be installed as needed. Installing the pipes in a trench will require clearing vegetation and possibly several large trees in a 25- to 30-foot-wide corridor. After installing the pipes, the slopes may 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 production. The resulting 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-foot) per well.

Well drilling, completion, development, and testing will require about seven 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 will be installed after well testing. The proposed well installation will be completed in a phased approach.

Well Operation

New wells will be incorporated into the City's supervisory control and data acquisition (SCADA) system and run off of set points tied to reservoirs levels. System production will be dictated by demand on the system.[8] The combined total production rate from the new wells and the existing river wells needs to be at least 2,244 gpm to achieve the full 5 cfs desired peak extraction rate.

The proposed six new wells would provide the City with eight potentially active wells that are capable of providing an average of 300 gpm each (for a total of 2,400 gpm or 5.0 cfs). The City is proposing a large number of small wells because: (1) the shallow aquifer will limit the possible production of each well; (2) as the active river channel migrates, water from wells within 150 feet of surface water cannot be used without treatment, therefore shutting off affected wells is less expensive than treatment; and (3) the multiple wells provide flexibility to avoid interference with the Alisal Ranch wells.

The preliminary specifications for the wells and pumps for both sites are summarized in **Table 2.0-3, Estimated Well and Pump Specifications**. The pumping capacity from each field will be designed to provide a desired peak extraction rate of 5 cfs.

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8 Correspondence with Mr. Craig Martin, City of Solvang Water Services Division, October 14, 2011.

Table 2.0-3
Estimated Well and Pump Specifications

Well No.	Ground Elevation[1] (feet, msl)	Standing Water Surface Elevation[2] (feet, msl)	Drawdown[3] (feet)	Operating . Water Surface Elevation[4] (feet, msl)	Model Shutoff Heads (feet}	Model Shutoff Flows (gpm}	Model Design Head[6] (feet)	Design Head[7] (feet)	Model Design Discharges (gpm}	Model Maximum Discharge[4] (gpm)
Site A										
Proposed Well 1A	373	347	16	331	430	0	322	338	450	900
Proposed Well 2A	377	350	16	334	424	0	318	334	450	900
Proposed Well 3A	390	354	16	338	417	0	313	329	450	900
Proposed Well 4A	390	360	16	344	407	0	305	341	450	900
Proposed Well 5A	378	363	16	347	401	0	301	317	450	900
Site B										
Proposed Well 1B	358	329	21	308	459	0	344	365	600	1,200
Proposed Well 2B	361	334	21	313	449	0	337	358	600	1,200
Proposed Well 3B	381	339	21	318	439	0	329	350	600	1,200
Proposed Well 4B	385	344	21	323	430	0	322	343	600	1,200

Source: Stetson Engineers, Technical Memorandum – New City of Solvang Well Field, May 14, 2010, Table 6.

Notes:
1. *Obtained from a 5 foot contour topographical map provided by ID No. l, and 5 foot contour topographical data obtained from the County of Santa Barbara.*
2. *Estimated based on streambed elevations of Santa Ynez River*
3. *Estimated based on Well 3 pump test*
4. *Operating water surface elevation = Standing water surface elevation - Draw Down.*
5. *Generated by the model*
6. *Determined by the Solvang WaterCAD model under the average day demand condition.ID1 and Solvang systems may be connected with booster pumps in the future at the interconnection valve location*
7. *Design Head = Model Design Head + Draw Down.*
8. *Assume each well provides the same amount of flow, with a total flow of approximately 5 cfs.*

As part of the preliminary analysis in evaluating Well Sites A and B,[9] it was assumed that each of the proposed wells would provide approximately the same amount of flow. Hence, at Site A each of the five wells has an assumed flow rate of one cfs or 450 gpm. At Site B, each of four wells has an assumed flow rate of 1.25 cfs or 600 gpm. The differences in the number of wells and flow rates are based upon expected subsurface conditions. For analysis purposes, the well depth was based on the estimated depth to bedrock. Depth to bedrock for each of the five new wells at Site A was estimated to be 60 feet. Depth to bedrock at each of the four wells at Site B was estimated to be 75 feet.

The well pumps will be designed to lift the water to the storage facility. The design considers the total lift or dynamic head which is the sum of: 1) the elevation difference between the pumping water level and Zone 1 reservoir; 2) the pressure requirement at the reservoir; 3) the head loss due to friction along the length of the distribution pipeline and treatment plant, if required. Electricity to power the pumps will be provided by an electrical distribution line leading to each pump. There will be one transformer to serve each pump, plus the additional distribution lines are necessary to connect the well pumps to the nearest power source.

Booster Pumps

Two interconnected booster pumps were designed to deliver 3.8 cfs and provide the pressure required to deliver water to Zone 2 or Zone 1 reservoirs. The design and cost of the Zone 1 booster pump is based on a 15 horsepower (hp) pump with a flow of 2.3 cfs and a pressure of 16 pounds per square inch (psi) (suction pressure 84 psi, discharge pressure 100 psi). The Zone 2 booster pump is based on a 15 hp pump with a flow of 1.5 cfs and a pressure of 26 psi (suction pressure 106 psi, discharge pressure 132 psi).

2.4.5 Proposed Water Treatment Facilities

Water produced from existing Wells 3 and 7A and from the proposed new wells located along the Santa Ynez River 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 DPH. 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 a well while surface water is within 150 feet unless the water is filtered and meets the standards of the Surface Water

9 Stetson Engineers, Inc., Technical Memorandum – New City of Solvang Well Field, May 14, 2010.

Treatment Rule. Since water in the River Channel will frequently be within 150 feet of the City's existing and proposed wells, for reliability purposes, a water treatment plant is proposed with the installation of the new river wells. The City has determined that the most cost effective and reliable treatment technology is a conventional surface water treatment plant.

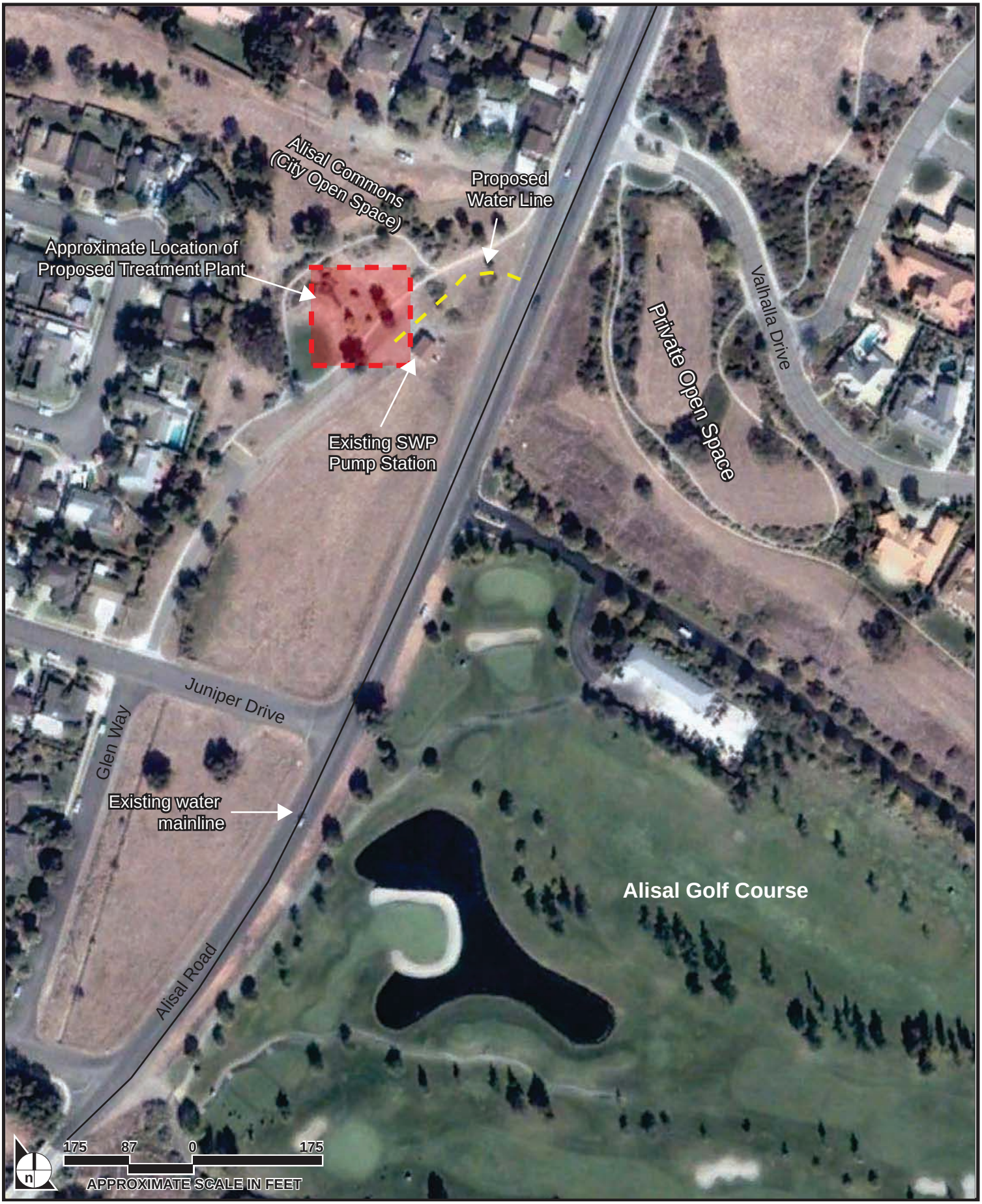
Chlorination for disinfection will be utilized to supplement filtration for virus removal, up to 2-log virus inactivation. DPH requires disinfection inactivation of Giardia (0.5-log) and virus (2-log) independent of filtration membranes for surface water treatment plants.

The City presently plans to design and construct a package treatment plant with an initial capacity of 2 million gallons per day (3.09 cfs) consisting of two parallel treatment trains each with a capacity of 1 MGD. The treatment plant would be designed to allow for addition of a third parallel treatment train of 1 MGD capacity to bring the total treatment plant capacity to 3 MGD (4.64 cfs) in the future, if necessary. The treatment plant would also be designed to allow for the future addition of a lime softening facility if desired by the City.

The plant would be constructed in the City's Alisal Commons open space, between Alisal Road and the Alisal Glen housing subdivision (see **Figure 2.0-9, Proposed Water Treatment Plant Location**). The treatment plant site would be approximately 150 feet by 200 feet, and surrounded by a 7-foot-high decorative block wall. The treatment plant site would include:

1. Existing SWP Booster Pumping Station building,
2. Two proposed and one future 1 MGD package treatment plants,
3. Electrical/instrumentation and booster station building,
4. Chemical feed and chemical storage area,
5. Emergency generator,
6. Vehicle parking and work area, and
7. Future lime softening area.

Each package treatment unit would have dimensions of approximately 32 feet long, 12 feet wide, and 10 feet high. The dimensions of the electrical/instrumentation and booster station building would be about 48 feet long, 24 feet wide, and 16 feet high. The building would be designed with architecture and color scheme to match the existing SWP Booster Pumping Station building. The building would be a conventional concrete slab on grade structure that would be cut into the side of a small slope to reduce its visibility. The building would have security lights at the entrance doors. The existing pedestrian walkway



SOURCE: City of Solvang - September 2011

FIGURE **2.0-9**

Meridian Consultants

Proposed Water Treatment Plant Location

001-001-12

that currently runs through the proposed treatment plant site would be re-routed around the westerly side of the treatment plant site. Site improvements would include minor low profile landscaping with native and drought tolerant plant species.

The treatment plant would not normally be occupied, but would be visited a few hours each day by City operations personnel. Primary operation of the treatment plant would be monitored and controlled from the City's Water Division office at City Hall by incorporating the treatment plant into the City's existing radio telemetry and SCADA system.

An existing 12-inch diameter waterline, located in Glen Way and the driveway to the City's Alisal Commons open space area, would deliver water to the treatment plant. A small extension to the line would then traverse the existing open area to the treatment plant. The treatment plant filters would be designed to utilize automated backwashing.

Chemicals anticipated to be utilized at the treatment plant include a coagulant, such as aluminum sulfate, and liquid sodium hypochlorite for disinfection. The liquid sodium hypochlorite would be stored at the water treatment plant in an unpressurized 1,000-gallon tank of double-wall high-density polyethylene (HDPE). There is also a possibility that sodium hypochlorite may be used as an up-front oxidizing agent, and that a filter aid polymer may be used.

Electrical power will be provided from Pacific Gas and Electric (PG&E) lines that will run underground to the treatment plant.

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 wells located along the Santa Ynez River; and
4. installation of the treatment modules.

Construction activities are expected to be completed in a nine-month period. A construction staging area would be established adjacent to the treatment plant site in the open area south of the existing SWP Booster Pumping Station building.

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.

2.4.6 Proposed Sale of SWP Water

As previously noted, the City receives 1,500 afy SWP water via an agreement with ID No. 1 as part of ID No. 1's Table A Allocation. Currently the 2009 SWP Reliability Report notes that future SWP deliveries are projected to have a 60 percent average long-term reliability; this would allow the City to expect to have 900 afy of SWP water available on average. For planning purposes to ensure greater reliability during single and multiple dry year periods, the City has chosen to assume that as little as 40 percent of the Table A allocation may be available in a given year; this would result in SWP delivery of 600 afy.

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 wells located along the Santa Ynez River are completed. As a result, the City may consider, with ID No. 1's approval, selling any unused portions of its allocation to willing buyers within the Central Coast Water Authority (CCWA) service area.

All sales will also require CCWA approval. Any such actions by the City to consider SWP allocation sales would be made after the new wells located along the Santa Ynez River are operable and the actual yield from the wells is more certain. Therefore, any sale of SWP allocation will be subject to future CEQA review and is not part of this EIR.

2.5 REQUIRED PERMITS AND APPROVALS

2.5.1 Lead Agency Approvals

The City of Solvang, as Lead Agency, will require the following approvals, permits, and actions to implement the proposed project:

- Approval of expenditures for the new wells and treatment plant, and
- Approval of Water Master Plan Update.

2.5.2 Other Required Permits and Approvals

In addition to the City, the proposed project may require review and approval by other agencies. State and local public agencies that may have the responsibility to carry out or approve aspects of the project are considered Responsible and Trustee agencies under CEQA.[10] These include:

- California Department of Fish and Game – Streambed Alteration Agreement for the new wells located along the Santa Ynez River;
- California Department of Public Health – permit for new wells for municipal supply and permit to operate a water treatment facility;
- County of Santa Barbara Air Pollution Control District – potential permit for operation of generator and/or diesel-fired engines for use with the proposed water treatment plant.
- County of Santa Barbara Department of Environmental Health Services – well construction permit (for wells outside the City limits).
- Regional Water Quality Control Board – NPDES permit for temporary well testing discharges and Clean Water Act Section 401 certification for new wells along the Santa Ynez River;
- State Water Resources Control Board – extension of time and change in point of diversion for water right Permit No. 15878; and
- U.S. Army Corps of Engineers - Section 404 Permit for the construction of new wells along the Santa Ynez River pursuant to the Clean Water Act.

10 CEQA, Sections 21069 and 21070.