

## 5.13 UTILITIES/SERVICE SYSTEMS

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### 5.13.1 OVERVIEW AND SUMMARY

*The proposed Master Plan Update is intended to update the City's existing Water System Master Plan and provides for the installation of facilities to improve water supply and reliability. The Master Plan Update indicates 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 buildout conditions.*

*As of 2011, the current number of dwelling units within the City is approximately 2,485 units with General Plan full buildout expected to equal 2,949 dwelling units. At full buildout, the City would result in a net increase of approximately 464 dwelling units, which would be an increase in water demand of approximately 289 acre-feet. Based on the City's historical water demand of 1,681 acre-feet and the future increase of 289 acre-feet at General Plan full buildout conditions, the City's total water demand at General Plan full buildout conditions would total 1,980 acre-feet per year (afy). The requested Santa Ynez River water allocation of 1,980 afy to the City would increase beyond the current baseline use of 1,053 afy as determined by the State Water Resources Control Board (SWRCB). The proposed Master Plan Update also would extend the Existing Reach of Diversion downstream of Alisal Bridge allowing the City to locate new wells away from other existing groundwater users. By shifting new wells downstream, the City would minimize adverse impacts on the other diverters along the Santa Ynez River and maintain acceptable conditions for public trust resources (i.e., steelhead). Impacts would be less than significant (Class III).*

*The proposed Master Plan Update would also provide for the replacement and upgrade of existing aging infrastructure and facilities. Impacts would be less than significant (Class III). The proposed Master Plan Update would not result in an appreciable increase in water supply shortages to South Coast communities. Impacts would be less than significant (Class III).*

### 5.13.2 DATA SOURCES AND BACKGROUND

#### 5.13.2.1 Data Sources

The data sources used to analyze potential impacts as a result of implementation of the proposed project include the City's General Plan and other sources of information used to analyze the proposed project as a whole (e.g., cultural resource study).

### 5.13.2.2 Water Right Permit Background

In 1969, the SWRCB approved Solvang Municipal Improvement District's (SMID) application and issued Permit No. 15878 subject to Application 22423 (see **Appendix 1.0**) 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. Permit 15878 was subsequently assigned to the City of Solvang in 1986.

The City's water right Permit 15878 specifies a 3.75-mile-long reach of the river (Existing Reach of Diversion as shown on **Figure 2.0-4**) where diversions are allowed. Alisal Ranch owns the river bottom and adjoining land in Solvang's 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 right. The City currently has easements for its existing wells and pipelines within this stretch of the Santa Ynez River. The Existing Reach of Diversion also includes the authorized points of diversions for ID No. 1's 6.0 cfs well field which is permitted by the SWRCB (Permit 17734) and would be junior to the City's appropriate water right.

The original permit provided that the maximum amount of diversion may be reduced by the SWRCB, after inspection to determine the amount of water that had been placed to beneficial use and that the City, as the applicant, had until December 1, 1974 to complete an application of the water put to beneficial use. The original permit identified the Existing Reach of Diversion to include Well No. 5 and Well No. 6. Since that time, the City has been granted various amendments to change the Existing Reach of Diversion and places of use. The most recently approved petition was granted in 1981 subject to the Diversion Agreement with ID No. 1 and changed the Existing Reach of Diversion to that shown on **Figure 2.0-4**.

The proposed Master Plan Update proposes a change to the City's water right permit (Permit 15878) to increase its Existing Reach of Diversion to include an Additional Reach of Diversion approximately 1.5 miles downstream of Alisal Bridge (see **Figure 2.0-4**). This extension to the Existing Reach of Diversion is intended to minimize adverse impacts on the other diverters along the Santa Ynez River and maintain acceptable conditions for public trust resources (i.e., steelhead).

In 2001, the SWRCB staff verified 1,053 afy of water was diverted from the City's river wells in operation at that time for beneficial use which is considered the baseline condition for the proposed Master Plan Update analysis.

### 5.13.3 APPLICABLE REGULATIONS

#### 5.13.3.1 Federal Regulations

##### *Safe Drinking Water Act*

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply.<sup>1</sup> The law was amended in 1986 and 1996 and requires a variety of actions to protect drinking water and its sources. SDWA authorizes the U.S. Environmental Protection Agency (U.S. EPA) to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. The U.S. EPA, state agencies, and water purveyors work together to ensure that SDWA standards are met.

##### *Clean Water Act*

The federal Clean Water Act (CWA) Section 401 regulates the discharges of pollutants into “waters of the US” from any point or non-point source.<sup>2</sup> Individual permits are issued for certain defined sources of discharge, while non-point source runoff from construction sites and urban development is regulated under a series of general permits. Construction that disturbs 1 acre or more is regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater program. In the State of California, the program is administered by the local Regional Water Quality Control Board (RWQCB).

#### 5.13.3.2 State Regulations

##### *Interim Enhanced Surface Water Treatment Rule*

In 1998, the U.S. EPA promulgated the Interim Enhanced Surface Water Treatment Rule,<sup>3</sup> with a revision published in 2001, as required by the SDWA Amendments of 1996, which provides increased public health protection against microbial pathogens, specifically the protozoan *Cryptosporidium*. Additionally, in 2001 the U.S. EPA promulgated the Filter Backwash Recycling Rule,<sup>4</sup> also as required by the SDWA.

California currently requires water suppliers to filter and disinfect surface water and ground water under the influence of surface water pursuant to State regulations.<sup>5</sup> Since California must adopt federal

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<sup>1</sup> US Code, Title 42, Section 300f.

<sup>2</sup> US Code, Title 33, Section 404.

<sup>3</sup> Federal Register 63 (241), 69478-69521, December 16, 1998.

<sup>4</sup> Federal Register 66 (111), 31086-31105, June 8, 2001.

<sup>5</sup> California Code of Regulations, Chapter 17 [commencing with section 64650 of Title 22, Division 4].

regulations to maintain primacy for the Drinking Water Program, the regulation package incorporates all the federal revisions. The regulation package also includes provisions that are in addition to the federal revisions.<sup>6</sup>

On July 1, 2007, the California Department of Public Health (CDPH) was created and took over the duties, powers, purposes, functions, responsibilities, and jurisdiction of the California Department of Health Services.<sup>7</sup>

### ***Disinfectants/Disinfection By-Products Rule***

Community water systems and non-transient, non-community (community water system that regularly serves at least the same 25 persons over six months per year) water systems that treat their water with a chemical disinfectant in any part of the treatment process or which provide water that contains a chemical disinfectant shall comply with the requirements of the Disinfection Rule. Systems using approved surface water and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply beginning January 1, 2004.<sup>8</sup>

### ***California Code of Regulations***

The California Code of Regulations Title 20 establishes water efficiency standards (i.e., maximum flow rates) for specific appliances including all new showerheads (2.5 gallons per minute at 80 pounds per square inch), lavatory and kitchen sink faucets (2.2 gallons per minute at 60 pounds per square inch), and commercial pre-rinse spray valves (1.2 gallons per minute at 60 pounds per square inch).<sup>9</sup> Title 20 also establishes maximum water consumption standards for urinals and water closets (1.6 gallons per flush per unit for most units). Title 24 prohibits the sale of fixtures that do not comply with the current regulations; prohibits the installation of fixtures unless the manufacturer has certified compliance with the flow rate standards; and addresses pipe insulation requirements that can reduce water used before hot water reaches fixtures.<sup>10</sup>

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<sup>6</sup> California Code of Regulations, Title 22, Division 4, Chapter 17, "Surface Water Treatment."

<sup>7</sup> Health and Safety Code Section 131051, et seq.

<sup>8</sup> California Code of Regulations, Title 22, Division 4, Chapter 15.5, "Disinfectant residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors."

<sup>9</sup> California Code of Regulations (CCR), Title 20 (Public Utilities and Energy, Sections 1605.1(h) and (i) and 1605.3(h)).

<sup>10</sup> Ibid, Title 24 (California Building Standards, Sections 2-5307 and 2-5352).

## *Recent Legislation*

Legislation adopted in 2010 includes a comprehensive package of bills aimed at ensuring a reliable water supply in the future, as well as restoring the Sacramento–San Joaquin River Delta and other ecologically sensitive areas. This comprehensive legislation places water supply and the delta environment on an equal footing, establishing those principles as the State of California's fundamental and co-equal goals for the delta.

### **Summary of the Four Bills**

**SB 1 - Delta Governance/Delta Plan:** Senate Bill (SB) 1 establishes the framework to achieve the co-equal goals of providing a more reliable water supply to California and restoring and enhancing the Sacramento–San Joaquin River Delta ecosystem. These goals will be achieved in a manner that protects the unique cultural, recreational, natural resource, and agricultural values of the delta.

**SB 6 - Groundwater Monitoring:** SB 6 requires that local agencies monitor the elevation of their groundwater basins to help better manage the resource during both normal water years and drought conditions.

**SB 7 - Statewide Water Conservation:** SB 7 creates a framework for future planning and actions by urban and agricultural water suppliers to reduce California's water use. This bill requires the development of agricultural water management plans and requires urban water agencies to reduce statewide per capita water consumption 20 percent by 2020.

**SB 8 - Water Diversion and Use/Funding:** SB 8 improves accounting of the location and amounts of water being diverted by recasting and revising exemptions from the water diversion reporting requirements under current law. Additionally, this bill appropriates existing bond funds for various activities to benefit the delta ecosystem and secure the reliability of the state's water supply, and to increase staffing at the SWRCB to manage the duties of this statute.

### **5.13.3.3 Local Regulations**

#### *City of Solvang*

##### **General Plan Land Use Element**

The purpose of the Land Use Element is to provide for balanced development that is responsive to the City's unique opportunities and constraints and that respects the values of the community. The Land Use Element is a tool with which to maintain and enhance the unique character of the Village Area, the City's

economic health, and the community's desirability as a residential and recreational area. The following policies and actions are applicable to the proposed project:

Policy 1.6                      Ensure that the demand for public facilities and services does not exceed the City government's ability to provide these facilities and services.

Action Item (A)              The City shall periodically review projected municipal service and public facilities demands to ensure adequate levels of service are maintained.

#### 5.13.4      EXISTING CONDITIONS

The City provides water and wastewater services to the residents within the City's water service area (see **Figure 2.0-3**). The City contains multiple sources of water supply including City wells, both upland wells and river wells, interconnects with the ID No. 1, and a connection with the State Water Project (SWP). The City has four pressure zones and two interconnects with 1.24 million gallons (mg) of gross water storage.

As of 2011, the current number of existing dwelling units is approximately 2,485 units. The 2010 water demand for the City was 1,395 acre-feet.<sup>11</sup>

Future water demands have been projected based on current development projects and potential future development within the City as described below.<sup>12</sup>

**Current Development.** The Solvang (Skytt) Mesa Residential Subdivision has been approved for development of open land bordered on the east by Hans Christian Andersen Park, on the south by Highway 246, and on the north by Chalk Hill Road. This development will contain 169 residential homes with lot sizes ranging from 0.25 to 1.25 acres. In the Solvang Mesa Residential Subdivision Project EIR, an estimated water demand factor of 0.84 afy/unit was used to determine the cumulative demand for this development and is used for the purposes of this report. Based on the estimated water demand factor mentioned above, the Solvang Mesa Development will demand approximately 142 afy. The Solvang Mesa is located within Zone 1. Construction began in 2005 and is anticipated to be built in four phases over 15 years. Construction of Phase 1 has been completed and nearly all of the 38 lots in this phase are occupied.

**Potential Development (Growth) within the City.** The City's General Plan shows that there will be very little developable space remaining in the City after development of the Solvang Mesa Residential Subdivision. The General Plan Housing Element shows a net increase of housing units of

<sup>11</sup> City of Solvang, *Water Master Plan*, April 2011, Table 2.3.

<sup>12</sup> Ibid, 2011 Water System Master Plan Update, April 2011, pp. 16-17.

approximately 497 units at buildout. Of that total, 169 are within the Solvang Mesa Development, leaving a remainder of approximately 328 units. Locations of the growth will be primarily infill, that is, new housing units located throughout the City on present undeveloped or under-developed lots. The prospect of substantial redevelopment at higher densities is possible, but unlikely to occur within the next 20 or so years, and is therefore outside the planning horizon of the Master Plan Update. Although the Master Plan Update acknowledges that it is prudent to plan for future conditions, excessive conservatism in planning has the impact of imposing costs on present users for facilities that may never be fully used.

According to the Solvang General Plan, the number of existing dwelling units at the time of General Plan adoption was approximately 2,452 units. These existing dwelling units plus the approximately 497 additional units at buildout total 2,949 units. The current number of existing dwelling units as of January 2011 is approximately 2,485 units. The difference between the buildout total of 2,949 units and the current existing units of 2,485 is 464 future units. Per the California Department of Finance housing estimates for January 1, 2010, the estimated persons per household (unit) is 2.353.<sup>13</sup>

Using these numbers for planning purposes, and an average water demand of approximated at 236 gallons per capita per day, an estimated additional 289 afy will be required at General Plan buildout. The historic long-term average demand for Solvang is 1,691 afy. Therefore, the projected future water demand at buildout is 1,980 afy. **Table 5.13-1 Current, Historic Long-Term Average and Projected Water Demands**, presents current and historic long-term average production (demand), as well as projected annual demand at buildout.

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**Table 5.13-1  
Current, Historic Long-Term Average and Projected Water Demands**

| Condition                                  | Annual Water Demand<br>(acre-feet per year) |
|--|---|
| Current (2010) production (demand)         | 1,395                                       |
| Long-term average production (demand)      | 1,691                                       |
| Additional production required at buildout | 289   |
| Future buildout demand                     | 1,980                                       |

*Source: 2011 Master Plan Update, Table 3.1.*

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<sup>13</sup> California Department of Finance, Reports and Research Papers, Historical County and City Estimates, Table E-4 Population Estimates for Cities, Counties and the State, 2001–2010, with 2000 & 2010 Census Counts.

#### 5.13.4.1 City of Solvang Water Operations

The City currently receives water from two primary sources, SWP water and via wells from the Santa Ynez River groundwater underflow. As shown on **Figure 2.0-3**, the City has two active river wells (Wells 3 and 7A) that supply domestic water to its customers located on the banks of the Santa Ynez River upstream and downstream of Alisal Bridge. The City also has an operational well (Well 4) located near City hall. External sources of water are supplied from ID No. 1 and SWP.

Portions of the existing water distribution system including piping within the City's municipal water system are also substandard (as described in **Section 2.0, Project Description**); existing 2-inch diameter water lines are considered substandard. The City has a total of approximately 1.24 million gallons (mg) of gross water storage in above-ground water tanks. The Master Plan Update indicates that of these, the roof of Reservoir 1 has been experiencing problems and has become deteriorated.

The levels of the City's reservoirs determine the run time of the wells. The wells operate on set points (level of water in the reservoir). The movement or level of the reservoirs is determined by the demand in the system and the demand is driven by the weather.

The City uses the existing operational wells as make-up or back-up water supply to their SWP water allotment. In years that the SWP allotment was high, the City would use less river water and in years that the SWP allotment was low, the City would use more river water.

Depending on time of year, the weather, and the SWP allotment daily well run times could be from a minimum of zero hours per day up to a maximum of 20 or more hours per day. The average well run time is approximately 11 hours. Operation of the wells usually occurs early in the morning until demand relaxes, depending on the climatic conditions. Wells usually operate every day during the summer months and often do not operate during the winter months. The City's existing river wells (3 and 7A) currently operate with a combined capacity of approximately 450 gallons per minute (gpm) and Well 4 located near City Hall operates at a maximum of 320 gpm. The City currently extracts 1,053 afy of Santa Ynez River underflow for beneficial use (used as the baseline for potential impacts).

Well 5 located in the river channel is inactive, although its casing remains intact. This well has not been used since recent floods due to damage of the well head. Additionally, because the location remains within 150 feet of the Santa Ynez River, water pumped from this well would require treatment.

The City drilled two upland wells (Wells 21 [inactive] and 22 [no current pump capability]) to determine if water quality in the Santa Ynez Uplands Groundwater Basin is acceptable for municipal use. Both wells are currently inactive due to water quality concerns.

The City purchases water from ID No. 1) on an as-needed basis. The delivered water represents a mixture of SWP water purchased by ID No. 1 from its SWP entitlement or obtained in exchange for ID No. 1 Cachuma Project entitlements, and water from ID No. 1 wells that extract water from Santa Ynez River underflow and from the Santa Ynez Upland Groundwater Basin. Water from ID No. 1 can also include Cachuma Project water in unusual circumstances.

ID No. 1 has two well fields along the Santa Ynez that provides 4.0 cubic-feet per second (cfs) and 6.0 cfs, respectively. The 4 cfs field is located approximately 2 miles upstream of the Refugio Bridge, while the 6 cfs field is located 1 mile upstream of the Alisal Bridge.

The City of Solvang has four pressure zones and two interconnects as shown on **Figure 2.0-3**. These include:

- Zone 1 lies in the lowest and largest part of the City, and receives water from the Santa Ynez River Wells, Well 4, the State Water Project turnout and one connection to ID No. 1.
- Zone 2 lies in the higher parts of the City, generally north of Eucalyptus Avenue, and receives water from one connection to ID No. 1, and a pump station located at the Reservoir 1 site that pumps directly into Zone 2 with a capacity of up to 1,000 gpm.
- Zone 3 is the highest pressure zone and is a small zone located entirely within Zone 2. Water for Zone 3 is supplied by two 335-gpm booster pumps and a 5,000-gallon hydro-pneumatic tank located at the Reservoir 1 site.
- Zone 4 is a small zone which receives water from Zone 1 and is located on the Alisal Ranch. A small booster pump feeds two 20,000-gallon cisterns in this zone.

The City maintains 1.237 million gallons of gross water storage which is divided among 5 reservoirs, tanks and cisterns as shown on **Table 5.13-2, Current Water Storage Facilities**. As shown on **Figure 2.0-3**, Reservoir No. 1 is located in the northern portion of the City on Alisal Road, Reservoir No. 2 is located north to northwest of the City atop a hill just east of Chalk Road, Reservoir No. 3 is located south of the City above Rancho Alisal Drive. A 4,000-gallon hydro pneumatic tank located just south of Reservoir 1 on Alisal Road and there are two 20,000-gallon cisterns located on Riley Road south of the City. The total Zone 1 storage is 770,000 gallons, and total Zone 2 storage is 423,000 gallons.

Storage is used for three primary purposes: (1) operational storage, (2) fire protection storage, and (3) emergency storage as discussed below.

**Table 5.13-2  
Current Water Storage Facilities**

| Reservoir/Tank/Cistern       | Gross Storage Volume<br>(gallons) |
|------------------------------|-----------------------------------|
| Reservoir 1, Zone 1          | 576,000                           |
| Reservoir 2, Zone 2          | 423,000                           |
| Reservoir 3, Zone 1          | 194,000                           |
| Hydro-pneumatic tank, Zone 3 | 4,000                             |
| Riley Road Cisterns, Zone 4  | <u>40,000</u>                     |
| Total Storage                | 1,237,000                         |

*Source: 2011 Master Plan Update, Table 2.4*

**Operational Storage.** This component of the reservoir storage is required to equalize (or balance) the difference between system supply and demand based on the maximum day demand. Operational storage is commonly calculated as the maximum day demand, in gallons per minute, over a 6-hour duration (or 25 percent of the maximum day demand, in gallons per day). Currently, the maximum day demand is approximately 2,700,000 gallons day (gpd) or 1,860 gpm. This equates to approximately 450,000 gallons of required operational storage for the City.

**Fire Protection Storage.** Depending on local fire codes and interpretations, most cities maintain the ability to satisfy a sustained fire flow for several hours on the maximum usage day of the year. A common fire flow requirement used for commercial areas might include a sustained flow of 2,500 gpm for a 4-hour duration. This equates to a stored volume of 600,000 gallons dedicated for fire protection exclusively. This is over and above the volume required for operational storage. The volume of water stored for fire protection must be available to all pressure zones. If storage is not provided in each zone, then piping, valves, and pumping are required to assure that the water can be moved from storage to a fire. The City also has two interconnects to the ID No. 1 distribution system, one in each primary zone. The ability to draw flows from either or both of these two connections provides additional fire flow capability. For this reason, storage for fire protection is considered adequate.

**Emergency Storage.** The American Water Works Association (AWWA) recommends a target of 8 hours of water storage based on the maximum day demand. This assumption implies that all water sources are out of service for that interval. In Solvang, the availability of redundant water supplies reduces the risk to users of supply shortage caused by power outages. The existing emergency generators at Well 4 and at the State Water Project Pumping Station further reduce the risk. However, the projection that the future long-term average SWP deliveries will be 40 percent of the allocation indicates that the City cannot

afford the loss of any well in the system. Additional provision for standby power will be needed to assure the maximum-day supply, and more emergency standby power.

The City's water right Permit 15878 specifies a 3.75-mile-long reach of the river where diversions are allowed, Existing Reach of Diversion, as shown on **Figure 2.0-4**. Alisal Ranch owns the river bottom and adjoining land in City's 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 within this stretch of the Santa Ynez River. The Existing Reach of Diversion also includes the authorized points of diversions for ID No. 1's 6.0 cfs well field which is also permitted by the SWRCB (Permit 17734).

The City has completed an estimate of its future water demand and needs that it will require at buildout. Currently the City uses approximately 1,500 afy of water and anticipates that at buildout of the General Plan it will require a total of 1,980 afy. To improve reliability and reduce the need for imported water from the SWP, the City would prefer to obtain water diverted via groundwater wells from the underflow of the Santa Ynez River.

The City is expected to maintain a level of service that would continue to deliver water of adequate quality and pressure, continuously, without interruption. The City's water infrastructure is aging, particularly waterlines. For example, the existing 2-inch diameter piping has been identified as substandard for a municipal water system. As described in **Section 2.0**, waterlines and storage are needed to meet the General Plan buildout water supply demand and to add redundancy to the existing municipal water system.

### 5.13.5 THRESHOLDS OF SIGNIFICANCE

In order to assist in determining whether a project would have a significant effect on the environment, the *California Environmental Quality Act (CEQA) Guidelines* identify criteria for conditions that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions.

Specifically, Appendix G of the *State CEQA Guidelines* (Environmental Checklist Form) lists the following thresholds, under which a project may be deemed to have a significant impact on utilities and service systems if it would:

- 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; or
- Have sufficient water supplies available to serve the project from existing entitlements and resources, with no new or expanded entitlements needed.

### 5.13.6 ENVIRONMENTAL IMPACTS

The environmental impact analysis presented below is based on determinations made in the Notice of Preparation (NOP) for issues that were determined to be potentially significant with mitigation incorporated, or for issues identified by reviewing agencies, organizations, or individuals commenting on the NOP that made a reasonable argument that the issue was potentially significant (see Responses to NOP, **Appendix 1.0**).

#### 5.13.6.1 **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?**

##### *Impacts*

The proposed Master Plan Update would result in the replacement of existing waterline infrastructure and the construction of new storage facilities, an increase in water rights and extend the Existing Reach of Diversion, new river wells and a water treatment facility for the City's water distribution system. Implementation of the proposed Master Plan Update would:

- evaluate present and future water supply and demand conditions;
- analyze and identify water system supply and distribution deficiencies; and
- develop recommendations on prioritizing water sources, develop new and expanded water production and treatment facilities, upgrade various distribution and storage facilities, and develop a capital improvement program to address deficiencies.

The construction and/or replacement of the proposed improvements would potentially result in impacts to the immediate area of concern.

##### **Water Supply Improvements**

Recommendations in the proposed Master Plan Update include installation of new wells west of Alisal Bridge to replace the pumping capacity lost to flood damage. This will allow the City to extract Santa Ynez River underflow at the rate (up to 5 cfs) allowed under water right Permit 15878. The added pumping capacity would allow the City to make the new wells its priority water source and would be used in conjunction with other supplies (such as SWP or exchanges with ID No. 1) for the purpose of providing a reliable source to the water users within the City's water service area. The City would install new wells downstream of Alisal Bridge 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.

Further, the City has determined that in addition to existing Wells 3 and 7A, the most advantageous location to divert the water from a hydro geologic standpoint would be downstream from the existing City wells and the Existing Reach of Diversion to an area identified as the “Additional Reach of Diversion” as shown in **Figure 2.0-5, Proposed Future Wells Site Areas**.

### **Distribution System Improvements**

The proposed Master Plan Update would recommend that the City implement an annual waterline, fire hydrant, and valve replacement program to replace aging infrastructure and undersized waterlines. Portions of the City's distribution piping contain cast iron and ductile iron portions and are susceptible to corrosion. The proposed Master Plan Update would replace existing 2-inch diameter waterlines with 6-inch waterlines; replace or abandon a section of 4-inch galvanized steel piping in First Street, and replace the existing 8-inch waterline in Kronborg Drive from Elsinore Drive to Reservoir 2 inlet/outlet pipe with 12-inch waterline. There would be temporary impacts associated with construction such as air quality, noise and traffic while work proceeded; these are discussed in other sections of this EIR. There would be no interruption of water service during the repair and replacement construction. Impacts would be less than significant.

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. As proposed by the Master Plan Update, the City would inspect fire hydrants and valves over 50 years old, or known to be malfunctioning. Any hydrants that were determined by the City after inspection to not be able to properly function or show signs of fatigue that could lead to failure would be scheduled for replacement as needed. As with repairs and replacement of distribution pipelines, there would be temporary impacts associated with construction such as air quality, noise and traffic while work proceeded; these are discussed in other sections of this EIR. There would be no interruption of water service during the repair and replacement construction. Impacts would be less than significant.

### **Reservoir Storage Improvements**

The City has a total of approximately 1.24 mg of gross water storage (see **Table 5.13-1**). The proposed Master Plan Update identified that the City should have 1.5 million gallons of total storage to meet operational, fire protection and emergency storage needs. Based on current storage capacity as shown in **Table 5.13-2**, the City has a deficit of 263,000 gallons of storage capacity. Implementation of the proposed Master Plan Update would construct additional storage of approximately 400,000 gallons in Zone 1 within the next 10 years or prior to any significant new development. In addition to providing the needed storage, the new reservoir would improve fire protection to all customers south of the Santa Ynez River,

including the City's wastewater treatment plant. Impacts would be less than significant. Additionally, construction of this additional storage would improve conditions in the City.

### **Standby Power**

The Master Plan Update notes that additional provisions for standby power will be needed to assure the maximum-day supply, and more emergency storage will also be required. Due to the fact that the City has redundant supply sources and emergency generators at some of its supply facilities, a target of 4 hours of emergency water storage based on the maximum day demand is the minimum recommended. Installation of a permanent emergency generator at the SWP Pumping Station would improve water supply reliability by ensuring the City's ability to provide water service during power outages.

The proposed Master Plan Update provides recommendations to assist and guide the City in continuing to provide reliable and reasonably priced water service to its present and future customers. Implementation of the proposed Master Plan Update, whether it would include the replacement of old and aging infrastructure or the installation of the proposed wells and a water treatment plant has been analyzed throughout the EIR. Impacts would be less than significant.

### ***Mitigation Measures***

No mitigation is required.

### ***Residual Impacts***

Impacts would be less than significant (Class III).

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

### ***Impacts***

The proposed project is intended to update the existing Master Plan for the City and provides for facilities to implement the updated plan. As described in **Section 5.1, Hydrology, Water Supply, and Water Quality**, the Santa Ynez River flows are regulated by releases of stored Cachuma Lake water which replenish water extracted from the underflow of the Santa Ynez River.

Implementation of the proposed Master Plan Update would establish a framework to assist the City in its efforts to acquire a time extension to perfect its water right, and secure an extension to the Existing Reach

of Diversion to include the Additional Reach of Diversion downstream of Alisal Bridge for water right Permit 15878 from the SWRCB. The recommendations in the proposed Master Plan Update include installation of new wells to replace the pumping capacity lost to flood damage and to allow the City to extract Santa Ynez River underflow at the rate (5 cfs) provided by Water Right Permit No. 15878. New wells will be on 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.<sup>14</sup> The new wells would need to be able to produce at least 2,244 gpm to provide for the full 5 cfs. The added pumping capacity would allow the City to make the river wells its priority water source in conjunction with a wide range of supplies for the purpose of providing a reliable water source to water users within the City's municipal coverage area in all water year types. The City's source of water supply would consist of a combination of Santa Ynez River wells, central wells, water from ID No. 1 and SWP water.

It should be noted that the full 5 cfs capability of the proposed wells might not be available every day due to hydrologic or environmental limitations that may constrain diversion from the Santa Ynez River under certain conditions. These potential reductions combined with potential reductions in the allocation of SWP could occasionally jeopardize the City's ability to satisfy the projected maximum day demand at General Plan full buildout. Therefore, the City would proceed with efforts to assure up to 5 cfs (maximum-day) diversion capability from the river. Total diversion capability would only be needed on the high demand days each year.

As stated above, the 2010 water demand for the City was 1,395 af. The anticipated long-term average production (supply) is based on the assumption that droughts and other factors would periodically reduce deliveries below the actual demand existing in the City. Based on historic water use from the past 25 years (1986 through 2010), the City's historical water use averaged 1,691 afy.<sup>15</sup> The decline in the City's water demand from the historical water use may be attributed to water conservation and high water rates.

At full buildout, the City would result in a net increase of approximately 464 dwelling units, which would be an increase in water demand of approximately 289 af. Based on the City's historical water demand of 1,691 af and the future increase of 289 af at General Plan full buildout conditions, the City's total water demand at General Plan full buildout conditions would total 1,980 afy.

The City proposes to install up to six new wells in Well Sites A and B, and extract up to the permitted maximum extraction rate of up to 5 cfs to a diversion of 1,980 afy to satisfy the City's demand at full buildout. The proposed wells would be located within the Additional Reach of Diversion downstream of

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<sup>14</sup> Correspondence with Mr. Craig Martin, City of Solvang Water Services Division, October 14, 2011.

<sup>15</sup> City of Solvang, *Water Master Plan*, April 2011, Table 2.1.

Alisal Bridge. The 1,980 afy currently sought by the City is more than the baseline use of 1,053 afy. The revision to water right Permit 15878 extending the Existing Reach of Diversion would result in no new impacts to water users upstream of Alisal Bridge. Impacts would be less than significant.

As discussed in **Section 5.1, Hydrology, Water Supply, and Water Quality**, Cachuma Lake is the primary local water source for South Coast communities, and an increase in years with shortages will require greater reliance on alternative sources of supply (primarily SWP water) which is less desirable due to lower reliability and higher costs. These communities are supplied water by the Carpinteria Valley Water District (CVWD), the Montecito Water District (MWD), the City of Santa Barbara, the Goleta Water District (GWD), and ID No. 1, who are also known as Cachuma Project Members. The normal year annual draft from the Cachuma Project by the Cachuma Project Members is 25,714 acre-feet. Critical drought years or periods may result in shortages in water supply to the Cachuma Project Members with or without the proposed Master Plan Update, as shown in **Table 5.1-8** and **Table 5.1-10**. Any shortages in Cachuma Project water supplies would be shared according to each Cachuma Member's allocation. The MWD and GWD would result in shortages during both a critical drought year and drought period.

The proposed Master Plan Update would result in a withdrawal of 1,980 afy, an increase of 927 afy above baseline conditions of 1,053 afy. As discussed in **Section 5.1**, the additional increase in water use could result in a decrease in Cachuma Project supplies. As shown, the potential decrease would not be considered substantial.

Impacts would be less than significant.

### ***Mitigation Measures***

No mitigation is required.

### ***Residual Impacts***

Impacts would be less than significant (Class III).

## **5.13.7 CUMULATIVE ANALYSIS**

### **5.13.7.1 Cumulative Impacts**

As discussed above under **Impacts 5.13.6.1** and **5.13.6.2**, the proposed Master Plan Update would provide for improvements to the City's municipal water system. These improvements would replace existing infrastructure that is undersized, aged or damaged, to ensure a reliable source of water to the water users within the City's municipal coverage area.

For issues that do not involve flow associated with the Santa Ynez River (such as aesthetics, land use and noise), the cumulative analysis considers the buildout of the City of Solvang's General Plan. The Master Plan Update provides for facilities and water supply to meet the anticipated demands of the City at buildout. Therefore, those impacts related to non-flow issues were already analyzed under the thresholds for each section. For example, potential cumulative noise impacts were analyzed in **Section 5.9, Noise**.

Other water users and projects along the Santa Ynez River downstream of Bradbury Dam would be required to provide their own water supply and infrastructure to meet water user demands. As part of the proposed Master Plan Update process, the City is requesting the SWRCB to perfect its water right Permit 15878 to allow for diversion of 1,980 afy from the Santa Ynez River. The perfection of this amount of water from the Santa Ynez River would allow the remainder of the unused allocation in the existing permit to be available to other water users downstream in future years. As a result, cumulative impacts to water supply and infrastructure would be less than significant.

#### **5.13.7.2 Cumulative Mitigation Measures**

No mitigation is required.

#### **5.13.7.3 Residual Cumulative Impacts**

Cumulative impacts to water supply and infrastructure for water users along the Santa Ynez River would be less than significant (Class III).