4.14 Water Supply

4.14.1 Issues

Implementation of the Downtown Specific Plan (DSP) will increase the demand for water as compared to the existing demand in the Downtown Specific Plan area. Improvements to water supply and conveyance infrastructure may be required to support buildout of the project and the surrounding area.

According to the Downtown Specific Plan Water Supply Assessment (WSA), the City will have sufficient water supply for the project. The WSA considers water supply and demand requirements during normal, single dry, and multiple dry years. This section is largely derived from the WSA, which is incorporated by reference and included in this EIR as Appendix 4.14.

4.14.2 Setting

Planning Area

For the purpose of assessing direct impacts, the planning area is the DSP area. The cumulative analysis includes the Sonoma County Water Agency (SCWA) service area (see Figure 4.14-1). The City of Cotati serves the planning area with a 6- to 14-inch waterline distribution system.

Water System

Water supply to the planning area is provided by the City of Cotati through three city wells and the SCWA aqueduct. The planning area is also served by a 1.0 million gallon (mg) storage tank located on West Sierra Avenue outside the City limits. Cotati receives most of its water supply from the SCWA, using its city wells for supplemental supply.

Water Sources

Sonoma County Water Agency. The SCWA receives groundwater from wells and surface water from the Russian River, with rights to divert up to 75,000 acre-feet per year (AFY) to its customers. Primary sources of surface water include Coyote Valley Dam (Lake Mendocino) and Warm Springs Dam (Lake Sonoma). The SCWA provides water to over 570,000 people through its contractors in Marin and Sonoma counties. Various cities and districts throughout these two counties act as contractors to provide water from the SCWA to their customers. Primary contractors consist of the cities of Santa Rosa, Rohnert Park, Petaluma, Cotati, Sonoma, Windsor, and the North Marin and Valley of the Moon water districts.[1]

The SCWA has indicated that its pumping capacity for groundwater sources will remain at 100% during normal or multiple-dry years, while surface diversion permits will be reduced to 70%, giving a total of 85% capacity in single-dry years.[2]

[1] Sonoma County Water Agency, Notice of Preparation of Environmental Impact Report: Water Supply, Transmission, and Reliability Project, February 18, 2005.
[2] Sonoma County Water Agency, 2005 Urban Water Management Plan.

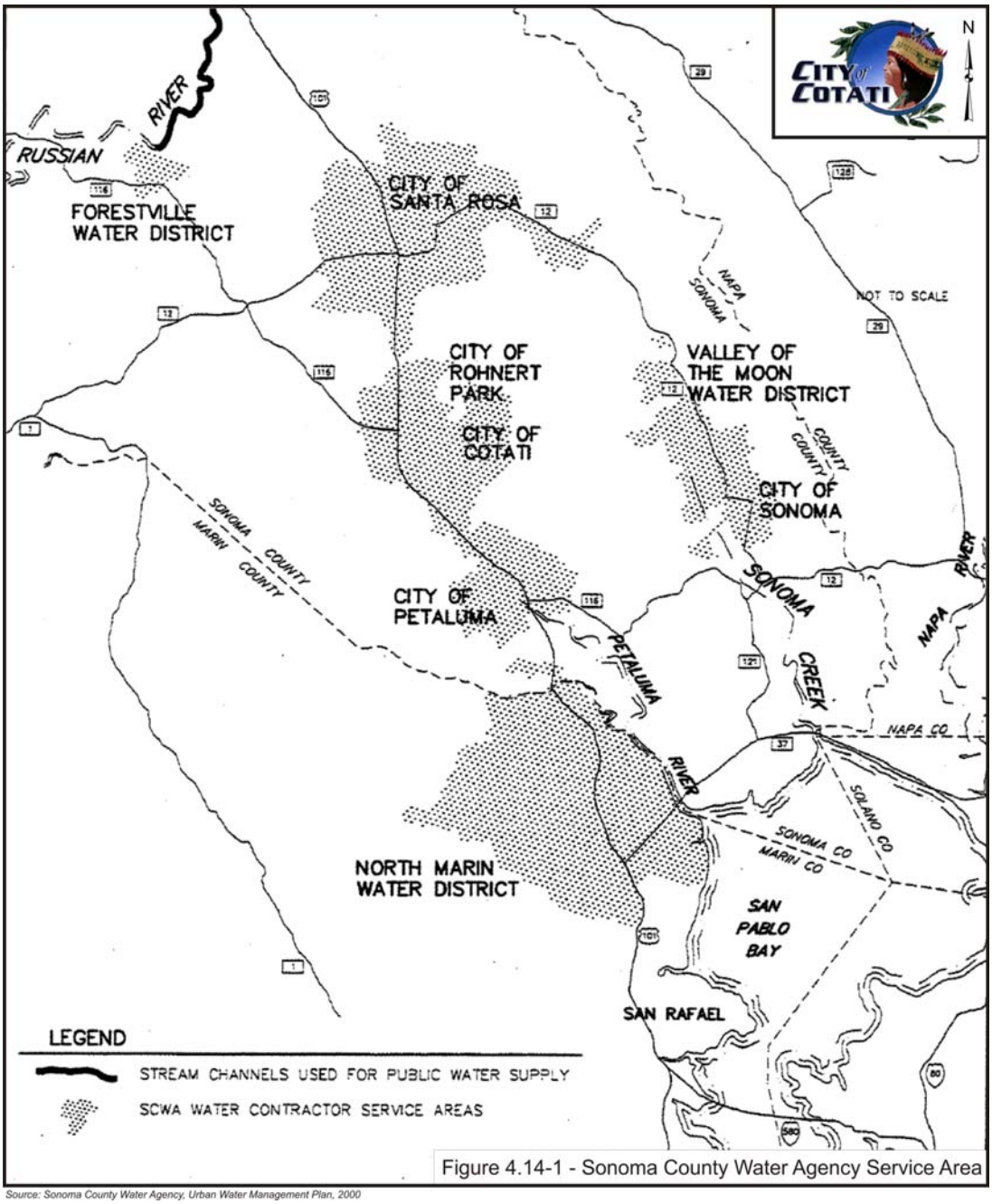

Figure 4.14-1 - Sonoma County Water Agency Service Area

Source: Sonoma County Water Agency, Urban Water Management Plan, 2000

SCWA Water Supply Entitlement. Table 4.14-1 shows water supply projections for the SCWA through the year 2030. The City of Cotati is entitled to receive 1,520 AFY from the SCWA.[3] The SCWA has filed an application for a surface water diversion entitlement increase from 75,000 AFY to 101,000 AFY in order to meet its contractual commitments to the water contractors under the "Restructured Water Supply Agreement."

Table 4.14-1. SCWA Projected Water Supplies (AFY)

	2010	2015	2020	2025	2030
Surface diversion	75,000	75,000	101,000	101,000	101,000
Groundwater	3,870	3,870	3,870	3,870	3,870
Total Water Supply	78,870	78,870	104,870	104,870	104,870

Source: Sonoma County Water Agency, 2005 Urban Water Management Plan, p. 4-22. Available at http://www.scwa.ca.gov/_pdf/2005_uwmp_report.pdf.

Groundwater Sources. Groundwater used in the planning area originates from both the SCWA's sources and the three city wells in Cotati. This discussion is based on SCWA's analysis of its own groundwater sources, which can be found in the SCWA Urban Water Management Plan (UWMP). A detailed assessment of the City's groundwater supply can be found in the DSP WSA (Appendix 4.14).

Hydrogeology. Groundwater used in the planning area, aside from that provided by the SCWA, originates from the Santa Rosa Valley (SRV) Groundwater Basin (see Figure 4.14-2). The City is located in the southern portion of the Santa Rosa Plain (SRP) Subbasin, which is one of three subbasins that comprise the SRV Groundwater Basin. The SRV Groundwater Basin drains to the northwest toward the Russian River and then to the Pacific Ocean. The SRP Subbasin extends from just south of the City limits to the Russian River plain (south of Healdsburg). The City uses groundwater pumped from the SRP Subbasin for a portion of its water supply; the remainder of the City's water supply is imported surface and ground water delivered by the SCWA.

The SRV Groundwater Basin is in the northwest trending structural province of the Coast Ranges and contains a number of mapped folds and faults. The valley is formed by the Windsor syncline and is bounded by the Rodgers Creek fault on the east and the Meacham Hill and Tolay faults on the west. Several buried faults have been mapped within the valley, most notably the Sebastopol fault, which extends from the City of Cotati northwest to the City of Sebastopol, and the Petaluma Valley fault, which is mapped by some geologists as extending as far north as Cotati. The SRP Subbasin contains three primary water bearing units: the Wilson Grove Formation, Quaternary alluvial fan deposits, and Quaternary alluvium. City wells located east of the Sebastopol fault appear to be completed in the Quaternary alluvial fan deposits, and wells located west of the fault may be completed in older Petaluma Formation deposits.

[3] City of Cotati Urban Water Management Plan 2006.

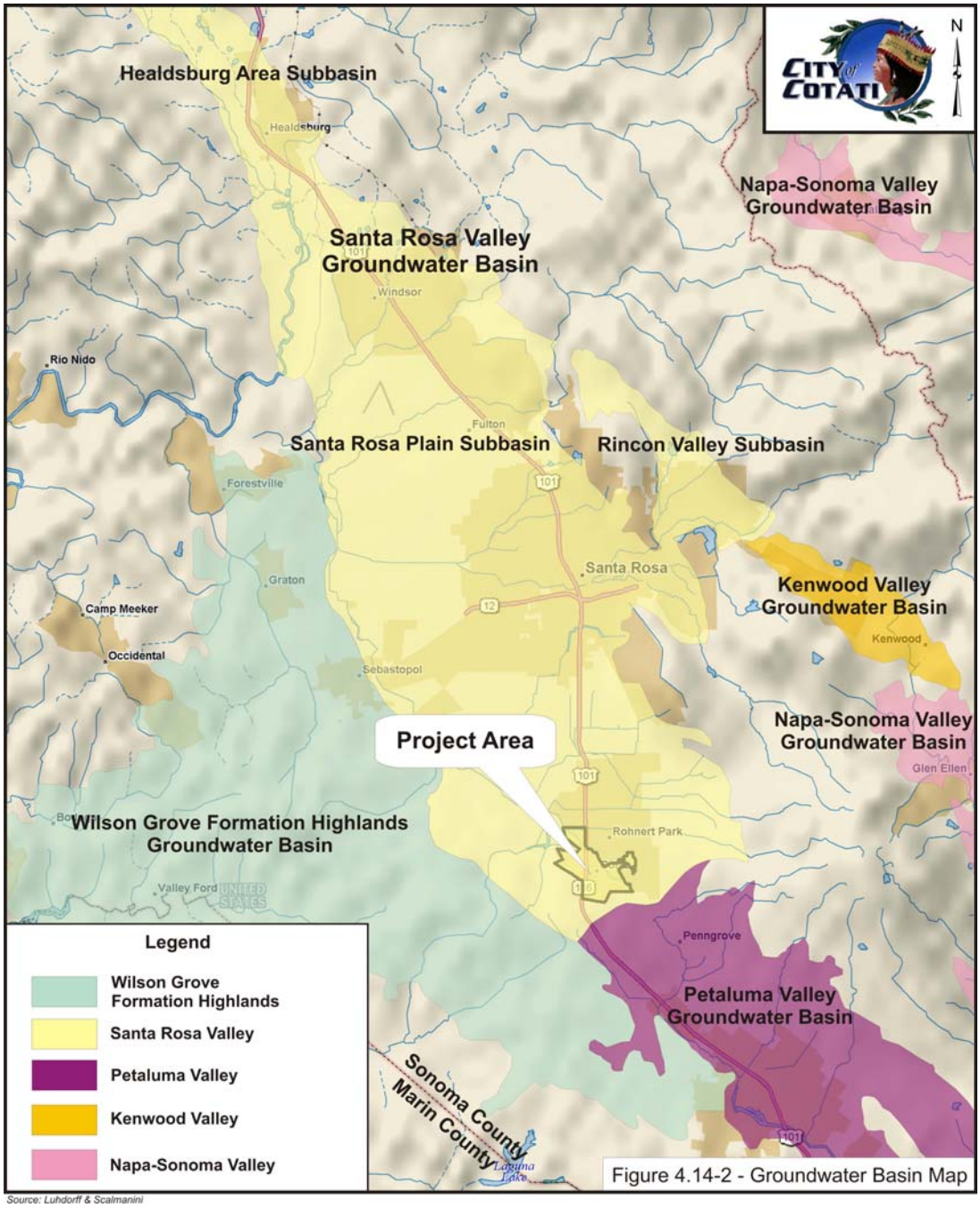

Figure 4.14-2 - Groundwater Basin Map

Source: Luhdorff & Scalmanini

The California Department of Water Resources (DWR, 1982a and 1987) investigated the hydraulic properties of the Sebastopol fault but was unable to find clear evidence that the fault acts as a barrier to groundwater flow. An independent analysis done to support the groundwater supply assessment found some evidence to the contrary since water level hydrographs of the three City wells show similar trends to nearby Rohnert Park wells even though some of these are on opposite sides of the mapped location of the fault. Water levels in all of the City wells are influenced by Rohnert Park pumpage, which also suggests that the Sebastopol fault does not act as a significant barrier to groundwater flow in the Cotati area.

In the southern SRP Subbasin, groundwater is produced largely from the upper 800 feet of the sedimentary deposits. Geologic cross-sections and well profiles provide a generalized depiction of the subsurface geologic conditions that was used to divide the aquifer into depth zones to facilitate the analysis of groundwater levels. These zones do not represent laterally extensive aquifers, but are strictly depth-based for purposes of evaluating Hydrogeologic conditions. These designations are based on an approximate correlation to the geologic units and on water well completion depths. The vertical zones of the aquifer system were designated:

- Shallow (0 to 200 foot depth),
- Intermediate (200 to 600 foot depth),
- Deep (600 to 800 foot depth), and
- Lower (depths greater than 800 feet).

Most municipal and agricultural wells in the southern SRP Subbasin are completed primarily in the intermediate zone. This includes the City's three municipal wells, although two City wells (1A and 3) are also completed partially in the deep zone.

Groundwater Pumpage. The City's total annual pumpage increased from 41 acre-feet (AF) in 1974 to 684 AF in 1988, and has generally decreased since 1988 as SCWA surface water deliveries increased. The City's annual municipal pumpage averaged 412 AF during 1990-2003. Much greater decreases have occurred since 2003, and the 2004-2006 pumpage averaged only 78 AF. Decreased pumpage in recent years is the result of the City's water resources strategy, which is to rely primarily on SCWA water supplies and to utilize groundwater only as needed to supplement those supplies.

Non-municipal pumpage for the area located between the City limits and the Urban Growth Boundary (UGB) is unmetered, and current annual pumpage in this area was estimated for this analysis to be about 463 AF. This includes 162 AF for rural residential use, 35 AF for commercial use, and 266 AF for agricultural use. There is also an estimated 17 AF of non-municipal pumpage that occurs within the City limits. The total annual non-municipal pumpage (about 480 AF) is slightly more than the average municipal pumpage during 1990-2003 and considerably more than the average municipal pumpage during 2004-2006 (78AF). If historical non-municipal pumpage is assumed to be similar to current levels, the total pumpage in the City's UGB average about 892 AF for the 1990-2003 period. Divided by the area of the UGB, this represents an annual "unit" pumpage of 0.35 AF/acre.

In addition to the City, there are three other municipal pumpers in the southern portion of the SRP Subbasin. These are the City of Rohnert Park, Sonoma State University, and SCWA. Rohnert Park is the largest groundwater producer in this area, and its annual pumpage increased from 907 AF in 1970 to a high of 5,487 AF in 1995. Since 1995, Rohnert Park has decreased its reliance on groundwater due to a shift toward greater use of SCWA deliveries. As a result, Rohnert Park's annual pumpage decreased to 846 AF in 2005 and 348 AF in 2006.

Historical pumpage estimates in the SRP Subbasin were made by DWR for 1987 study, by Todd Engineers (Todd, 2004) for the Sonoma County Canon Manor West EIR, and by Winzler & Kelly (W&K, 2007) for the Rohnert Park Urban Water Management Plan. The estimated unite pumpage was 0.31 to 0.36 AF/acre based on the DWR (1987) study that used an 81,000-acre study area similar to the boundaries of the SRP Subbasin. The Todd (2004) and Winzler & Kelly (2007) reports used similar study areas of 25,000 to 25,500 acres based on the upper Laguna watershed boundaries. These study areas encompassed the southern portion of the SRP Subbasin, including the cities of Cotati and Rohnert Park. Estimated average annual pumpage for the Todd study was about 8,500 AF or 0.33 AF/acre during 1986-2001. The estimated average annual pumpage for the W&K study area during 1990-1997 was about 8,700 AF or 0.35 AF/acre. These unit pumpage values are very similar to the unit pumpage estimated for the City's UGB. These pumping rates appear to be sustainable based on review of historical groundwater levels in the SRP Subbasin as substantiated in the WSA contained in Appendix 4.14.

Groundwater Quality. Groundwater quality in the City's water supply wells is generally good, but two wells have elevated iron and manganese concentrations. The City's wells are sampled triennially for complete general minerals and trace elements as required by the California Department of Public Health (DPH) for all public water systems, and Wells 1A and 3 are also sampled weekly for iron and manganese. Raw groundwater produced from the three City wells meets primary state drinking water standards, and treated groundwater from these wells also meets secondary drinking water standards.

Groundwater Conditions. Groundwater conditions are generally good in the SRV Groundwater Basin, including the City's UGB. Groundwater levels have remained high and relatively stable at most shallow wells in the SRP Subbasin. Groundwater levels in intermediate zone wells in the southern SRP Subbasin declined during the 1980s, were stable to increasing during the 1990s, and have increased significantly since 2003. Recent water level increases are due primarily to decreased municipal pumpage in the southern portion of the SRP Subbasin in recent years. There is no evidence of overdraft conditions occurring anywhere in the groundwater basin. Future pumpage in the southern SRP Subbasin is projected to be less than historical pumpage during the 1990s. The data indicate that the historical pumping rate was sustainable, and projected future pumpage is also expected to be sustainable. Future groundwater supplies will be sufficient to meet the demands of the DSP project and other projected groundwater demands in the City's UGB and the remainder of the southern SRP Subbasin.

Recycled Water. Recycled water has recently been added by other municipalities as a source to supplement overall demand. Various public agencies in the region produce a certain amount of wastewater that meets recycled water standards, which is then treated and redistributed to receiving customers. Cotati is not currently supplementing its water supply with recycled water, but is projecting its use in the long term (see Appendix 4.14)

Previous and Ongoing Water Management Efforts

Issues such as distribution, funding, and contamination have generated several efforts to better manage water supply, from the State down to the municipality level.

Cotati Urban Water Management Plan 2006. Because of the size of its water system, the City is not required by State law to prepare an Urban Water Management Plan (UWMP). Nevertheless, the City prepared a UWMP in 2006 for its use as a planning tool. The City's UWMP also described demand management measures (i.e., water conservation) and a water shortage emergency plan that can be implemented when demand exceeds supply during certain hydrologic water conditions. A copy of the City's UWMP can be found on the City's website at www.ci.cotati.ca.us.

SCWA Urban Water Management Plan 2005. The SCWA has developed a plan to address the issues of projected water demand and supply, water recycling, and conservation, among others. Based on demand, supply, and conservation, the overall conclusion of the plan is that the SCWA has adequate water supply through the 2030 planning horizon except for single dry years starting in 2020. At that time, the SCWA will engage its water contractors to reduce their demands based on the Water Contingency Analysis included in the plan. The projected total water demand in SCWA's service area in the year 2030 is approximately 104,869 AFY. In normal years, supply is projected to be approximately 104,870 AFY. In multiple dry years, supply is expected to drop to 78,870 AFY.[4]

SCWA Agreements. Through the SCWA, there have been numerous agreements by the water contractors to manage the water supply, two of which remain in effect at the time of this writing.

The first contractual document, the Restructured Water Supply Agreement, in effect June 23, 2006, allocates up to 1,520 AFY and a maximum delivery of 3.8 million gallons per day (mgd) to the City of Cotati. This agreement provides a substantive foundation for water usage in the region, and specifically outlines water conservation objectives. Highlights include funding for conservation efforts and recycled water, as well as regional urban water management planning and coordination to be provided for by the SCWA.

The second agreement is the Temporary Impairment Memorandum of Understanding (MOU), in order to temporarily mitigate for system infrastructure constraints. A current MOU is in effect until September 30, 2008, which limits Cotati's average day, peak month delivery flow to 1.9 mgd. It is presumed that the MOU will need to be extended beyond 2008 because the SCWA will not be able to complete the necessary infrastructure improvements until 2010. After this date, the SCWA is expected to have new transmission facilities online to increase system capacity. According to the City's UWMP, Cotati has consistently stayed within this temporary limitation.[5]

Water Supply, Transmission, and Reliability Project. The SCWA's service area demands are approaching the limits of what the Agency can offer through its current water right permits and infrastructure capacity. In order to alleviate these constraints and retain service provision ability for the future, the SCWA has undertaken the Water Supply, Transmission, and Reliability Project (Water Project). The Project, both program- and project-level, is divided into three separate components:

- Water Conservation Component. This component includes the expansion of water conservation programs. Best Management Practices (BMPs) are implemented to reduce demand of water. One part of this component is the development of an educational program that will include new facilities.

- Russian River Component. Currently, the SCWA has rights to divert up to 75,000 AFY. The Agency has applied for an increase of this amount to 101,000 AFY. As a means of providing this additional amount, releases from Lake Sonoma would be increased to approximately 26,000 AFY.

- Transmission and Reliability Component. In order to meet anticipated peak month demand, transmission system capacity would need to be increased by approximately 57 mgd. This would bring total system capacity to approximately 149 mgd, including 20 mgd of standby capacity.

[4] Sonoma County Water Agency, 2005 Urban Water Management Plan.
[5] City of Cotati Urban Water Management Plan 2006.

4.14.3 Regulatory Setting

Groundwater Rights

Extraction and distribution of groundwater resources is governed by common law and the California constitution rather than a particular agency such as the State Water Resources Control Board (SWRCB), which exercises control only over surface water. The City's municipal wells are based on the appropriative right to take water from its source and use it elsewhere. No water right is needed for extraction of groundwater from its municipal wells.

Water Quality

The State Department of Public Health enforces safe drinking water standards as provided in the California Code of Regulations, Title 22, Division 4, Chapter 15 "Domestic Water Quality and Monitoring." Primary standards are those established to protect public health, while secondary standards are based on consumer acceptability, as the secondary constituents may adversely affect taste, odor or appearance of drinking water.

Water Supply Assessment

Public Resources Code §21151.9 and CEQA Guidelines §15083.5 (formerly expressed in Senate Bill 610 or SB 610) establish provisions for the evaluation of the impacts of certain sized projects on public water systems. These provisions apply to residential projects of 500 or more dwellings, or projects having an equivalent water demand to a 500-unit residential project. In such cases, the Lead Agency must notify the water agency of the project (usually through the Notice of Preparation for an EIR) and the water agency must prepare and submit an assessment of their ability to meet the projected water demand from the project, in addition to other anticipated future demand. The WSA for the DSP is included in this EIR as Appendix 4.14.

Urban Water Management Planning

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610 - 10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet of water annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act describes the contents of the Urban Water Management Plans as well as how urban water suppliers should adopt and implement the plans. It was the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied. As described above, an Urban Water Management Plan (UWMP) was adopted for the City in November 2006. According to California Water Code §10910(c)(2), EIRs may rely on a municipality's UWMP "if the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan."

Prior to action by a legislative body to adopt or substantially amend a general plan, the planning agency must send a copy of the proposed plan or amendment to any public water system, as defined in Health and Safety Code §4010.1, with 3,000 or more service connections and that serves water to customers within the area covered by the proposal. The public water system has at least 45 days to comment on the proposed plan in accordance with §4010.1(b) and to provide the planning agency with the information set forth in §65958.1. Additionally, upon adoption or amendment of the general plan, the same referral must be made (§65357[a]).

Vineyard v. City of Rancho Cordova

In February 2007, the California State Supreme Court rendered an opinion on an EIR that was prepared for a Specific Plan covering over 6,000 acres. In *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, "the principle disputed issue [was] how firmly future water

supplies for a proposed project must be identified or, […] what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR for a land use plan."

The Court applied and refined various CEQA principles to the findings of their decision and found the City of Rancho Cordova's EIR to be inadequate, partly based on the failure to properly analyze long-term water supply. The EIR must: identify water sources for the Project; identify and quantify demand from buildout and the Project; analyze the reasonable likelihood that identified water supply would be available to meet buildout and Project demand. If an adequate water supply is not "reasonably likely", the EIR needs to analyze alternative water sources and Project contingencies. The Court found that mitigation cannot consist of simply requiring new development to not occur if water sources are not available. Of course, absolute certainty is not feasible, and CEQA does not require it. However, uncertainty in any water supply analysis must not be ignored. Reiterating Water Code §10910(c)(2), the *Vineyard* opinion makes it clear that an EIR may rely on the UWMP of the jurisdiction if the projected water demand if the project was factored into the UWMP's own analysis.

Cotati General Plan

The Cotati General Plan contains the following goals and policies related to water.

Objective 8.3 Provide an adequate supply of clean, fresh water.

Policy 8.3.2 Ensure the water system is adequate to match rate of development.

4.14.4 Methodology

The methodology used for assessing impacts to water supply is described in Appendix 4.14, Water Supply Assessment.

This WSA is organized into eight sections, as outlined below:

- Introduction;
- Summary of the Project, as proposed;
- Service area description and population projections;
- Reliability of water supply;
- Citywide water demands, including projected water demands through year 2027;
- Sufficiency analysis, which includes comparisons of water supply and demands for a normal, single-dry, and multiple-dry years; and

4.14.5 Significance Thresholds

A project would result in a significant impact to water supply if it would have any of the following effects:

a. Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

b. Does not have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The EIR analyzes whether there is a reasonable likelihood that identified water supply would be available to meet buildout and Project demand.

4.14.6 Impacts and Mitigation Measures

Less than Significant Impacts

With regard to threshold a, DSP buildout will require extension of new water lines and an increase in the size of existing water lines, as determined by the City's 2002 Water System Master Plan. New water lines will need to be extended as new lots are created and as street infrastructure changes. Much of the installation work will be contemporaneous with development of individual projects within the DSP area, and the impacts of water line installation would be part of the overall construction effort. In the DSP area, all of the installation will occur in established roadways through developed areas. A typical duration for installation of water lines involves construction in a single city block for less than one week. Common construction practices are to install new lines in segments, avoiding traffic disruptions over longer distances on roadways.

Construction-related impacts from the installation of new water lines would be short-term and temporary, and include noise, equipment and dust emissions, possible discovery of cultural resources, traffic impediments, water runoff from construction activities, and disruption to biological resources. These impacts and their mitigation measures, where applicable, are discussed in their relevant sections of this chapter. The conclusion on significance of impacts and any required mitigation measures are contained in those chapters.

With regard to threshold b, the WSA prepared for the project describes water supply availability over the projected time frame through project buildout. The DSP was factored into and accounted for in the WSA. As indicated above, there would be sufficient water to accommodate the project. Based on the WSA, sufficient supply exists to serve the planning area buildout for normal, dry, and multiple-dry years. So long as infrastructure and supply-side improvements are provided concurrent with or in advance of new development, residual impacts associated with water supply are considered less than significant. In addition, the WSA shows that if the SCWA is not able to increase its Russian River water diversion permit to meet projected water demands from Cotati and its other water contractors, water demands from new development in Cotati would need to be reduced by 40% in order to match available supply.

4.14.7 Cumulative Impacts

Cotati's water supply is interconnected with and a portion of the larger water supply for the Sonoma/Marin region as discussed above. An analysis of the impacts to water supplies for the City of Cotati has been undertaken in the context of this larger water system. The SCWA UWMP reviews future supplies for the region, drought contingencies, and water shortage emergency plans. In conjunction with the SCWA, the City has numerous measures and programs outlined to address these issues. The City, as water contractor to the SCWA, intends to monitor the water supply enhancements in conjunction with the buildout of the DSP, in advance of increases in water demand. The project was considered in the context of growth in the region, reflected in the analysis prepared in the WSA which is in Appendix 4.14 and made a part of this report. Therefore, the analysis has considered cumulative impacts, and no significant cumulative water supply impacts are identified.

4.14.8 References

Department of Water Resources. *Bulletin 118, Santa Rosa Plan Subbasin*. Retrieved on June 21, 2007, from http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/1-55.01.pdf.

Sonoma County Water Agency. *Notice of Preparation of Environmental Impact Report: Water Supply, Transmission, and Reliability Project*. February 18, 2005.

City of Cotati. *Final Urban Water Management Plan*. 2006.

Sonoma County Water Agency. *Urban Water Management Plan*. 2005.

Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova. 2007.