

## APPENDIX A.1: WATER SUPPLY

Water Agency	Water Supply	Existing Condition	Assumptions	Original Cite (Reviewer Edit)
SCWA	Eel River	Negotiations for the acquisition of PG&E's Potter Valley Project still ongoing		25
		Additional water transfer agreements may be necessary to ensure supply reliability	* Current water transfer agreements: * MMWD and NMWD * NMWD and City of Petaluma	25
	Russian River (RR)	Surface water supply projected to adequately meet all supply agreements through 2020	* Based on 1990-1992 drought conditions  * No significant increase in Russian River agriculture diversions  * SCWA appropriation applications are approved, leaving only 787 AFY of RR allocations open for outside users  * Alternative 5 is chosen for the Potter Valley Project FERC license  * No delivery deficiencies	25 35
		Delivery to water contractors is currently classified as impaired due to transmission pipelines running at 100% capacity in non-drought conditions (June - September through 2005)	* Supply cannot be transferred at maximum (gpd) entitlement for all contracting agencies	25
		SCWA RR allocations and therefore supply could be reduced if there are deficiencies in overall river flows	* Potential for droughts and water rights issues	25
		Summertime demand is expected to increase 2 (mgd)/year for several years	* Based on population growth predictions	25
		All contractors needed to prepare "Water Shortage Contingency Plans"	* Anticipated transmission impairment  * Potential for drought conditions	25
		All contractors must reduce demand up to 15% in summer months during time of shortage and impairment		25
		All contractors must reduce demand 25% - 65% through rationing in summer months during time of emergency conditions		25
		Recycled	Increased recycled water production viewed as feasible solution to transmission impairment situation	* Recycled water production at 6 area WWTPs could potentially offset a total of 4,200 AFY of SCWA potable demand
	Provide funding for further recycled water facilities and transmission of 10,000 AFY of potable offset		* 15 year program * \$4 Million a year available for years 4-15	25
	Recycled water produced also to be used for Napa/Sonoma Salt Marsh Restoration Project			25

Water Agency	Water Supply	Existing Condition	Assumptions	Original Cite (Reviewer Edit)
SCWA	Conservation	Wholesale and regional Best Management Plans developed for conservation to be implemented by SCWA and contractors		25 (Thompson)
		Standard Water System Maintenance Program implemented		25
		Washing machine efficiency rebate program implemented		25
		Public information programs implemented		25
		School education programs implemented		25
		Wholesale agency assistance programs for public education implemented		25
		No water conservation pricing	* Cannot change existing rate structure	25
		Water conservation coordinators hired		25
		Funding for SCVSD audit and Ultra Low Flow Toilet (ULFT) incentive programs		25
MMWD	MMWD	Currently there is a water supply deficit of -1,650 AF and expected to grow to -8,800 by 2025		13 15
		Potential deficit of -2,600 AF in 2025 without a new pipeline	* Demand = 40,000 * Recycling reduction = 2,000 * Supply (reservoirs) = 27,500 * Supply (SCWA) = 8,800	15
		Potential surplus of +3,700 AF in 2025 with a new pipeline	* Demand = 40,000 * Recycling reduction = 2,000 * Supply (reservoirs) = 27,500 * Supply (SCWA) = 14,300	15
		30,000 AF is considered safe yield for MMWD		11
		40,000 AF is safe yield for 2025 with additional SCWA water and conservation		11
		NMWD	Water transfer agreement with NMWD	
	SCWA	Supply agreement for "Off-Peak" is 4,300 AF		(Thompson) (Poggio)
		Supply agreement for "As-Available" is 10,000 AF		13
		MMWD could receive up to 14,300 AF of RR water, but has yet to receive more than 8,000 AF		(Poggio)
		Pipeline transmission is considered impaired and is causing capacity restraints on supply until 2005		13
		Construction of new pipeline from SCWA to MMWD has been approved as Measure V in 1991	* Current system is SCWA to Petaluma to NMWD to MMWD  * Expected increases in other users will cut back on capacity available to MMWD	13 15 (Poggio)

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MMWD	SCWA (continued)	Further development of imported supplies - as given in the Integrated Water Resource Management Program		13
	Local Surface	Seven storage reservoirs from local watershed collection	* includes watersheds outside of NBWA	13
		Net safe yield is 30,000 AF	* includes watersheds outside of NBWA	13
	Groundwater	No reliable groundwater aquifers in the area	* No major geologic changes since 1970	13
	Recycled	Las Gallinas Sanitary District delivers 2 (mgd)		13
		Recycled water used for irrigation and some County buildings		13
		Further recycled use encouraged	* Marketing reliability	13
			* less expensive (56% of potable cost) * conversion is free	11
	Current CMSA WWTP has a high amount of salt water intrusion which makes it unsuitable for irrigation reuse		13	
	Desalinization	Currently developing an EIR for a bay water desalinization plant		(Adamson)
	Conservation	Current demand is 3% below 1970 demand	* Due to conservation measures implemented during the drought of 1972 - 1976	13
		Voluntary rationing program implemented at onset of dry season		13
		Mandatory 25% rationing program during droughts		13
		Water Waste Prohibition: No washing down of outdoor hard surface areas	* Non-compliance charges enforced	13 (Poggio)
		Water Waste Prohibition: All leaking/broken pipelines must be repaired within 48 hours of detection	* Non-compliance charges enforced	13 (Poggio)
		Water Waste Prohibition: Irrigation systems that allow ponding of water, over-water or overspray are not allowed	* Non-compliance charges enforced	13 (Poggio)
		Water banking is not allowed		(Poggio)
		Water Conservation Coordinator hired		13
		Ongoing Time of Sale Program for low flow devices		(Poggio)
		Focusing on retrofit rebate and direct install programs		(Poggio)
		Conservation Assistance Program: Onsite water use consultations for residential, non-residential, and large landscape customers	* Annual water use savings of 432 AF	13
		Large Landscape Irrigation Management Program temporarily suspended for two-year pilot ET Controller Pilot Program		13 (Poggio)
		Landscape Plan Review Program	* Estimated 25% - 50% water savings	13
	Central Irrigation Controller System - Share-ware Program	* Estimated 20% water savings	13	
	Public Outreach including: landscaper training workshops, landowner landscape seminars, newsletter "Word to the Water Wise", telephone tip line, webpage, and community event participation		13	

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MMWD	Marin County	Moratorium on new building development during periods of insufficient supply		11
NMWD	MMWD	Intertie agreement with MMWD	* Agreement runs through 2014	25
	City of Petaluma	Water transfer agreement with City of Petaluma		25
	SCWA	Water supply is 80% from SCWA (RR)		25
		Can receive 14,100 AFY from SCWA		15
		Temporary impairment of transmission pipelines will cause a peak flow deficit		15
		Supply will meet demand by 2025	* Impairment will be fixed by 2005	15
	Stafford Lake	Water supply is 20% from Stafford Lake		25
		No guarantee of total yearly lake re-fill		25
		Water treatment plant is old and in need of repair	* Plant will go off line for rehabilitation	25
		Eutrophic lake conditions	* Treat to minimize eutrophic conditions	25
		Maximizing water production during favorable conditions		25
		Safe annual yield is 1,750 AF		15
	Groundwater	No groundwater supply available for droughts		15
	Recycled	Novato Sanitary District (NSD) could supply about 650 AFY of recycled water	* Recycled Water Plan projected use for NMWD demand	25
		NSD - Ignacio WWTP is secondary		(Selfridge)
		NSD - Novato WWTP is secondary (1.84K AF combined w/ Ignacio)		25
	Conservation	Water surveys for residential users		25
		Water conservation webpage		(De Gabriele)
		Direct mail of water conservation newsletters		(De Gabriele)
		Water conservation certification available		(De Gabriele)
		Drip irrigation seminars		(De Gabriele)
		Residential Plumbing Low Flow retrofit requirement (all homes sold prior to 1977)		25
		Leak Detection Program	* Test for water losses every year (under 10%)	25
All connections metered and billed by volume of use			25	
Large Landscape Conservation Program			25	
Public programs and washing machine rebates coordinated with SCWA			25	
School tours of WTP facilities for education programs			25	

Water Agency	Water Supply	Existing Condition	Assumptions	Original Cite (Reviewer Edit)
<b>NMWD</b>	Conservation (continued)	Residential and non-resident ULFT replacement program in place	* Only 20% of total demand	(Thompson) (DeGabriele)
		Water Conservation Coordinator hired		25
		Water Waste Prohibition Ordinances implemented		25
		Replacement of polybutylene service lines		25
<b>City of Petaluma</b>	City of Petaluma	Concerned about long-term reliability for agriculture		30
		Promoting recycled water for agriculture		30
		Supporting of ranch and vineyard conservation efforts		30
	SCWA	Peak month delivery inconsistent to meet demand		25
	Recycled	Increasing use of recycled water to meet non-potable demand		25
		Petaluma WWTP produces 2.4K AFY		25
		Petaluma WWTP going to tertiary treatment and could offset potable demand by 640 AFY	* Expecting year-round zero-discharge requirements	25
	Groundwater	Groundwater pumping was virtually eliminated	* Potential for aquifer contamination	25 30
		Potential for new wells to be drilled		25
		Looking into Aquifer Storage and Recovery		25
		Groundwater levels have been steady for 20 years		30
		Aquifer capacity is 1.7 MAF, but can retain only 84% of capacity	* Recharge rejection will occur if over 84%	30
	Conservation	Water surveys for residential users		25
		Low flow devices given away at community events		25
		Petaluma Leak Detection Program		25
		All users metered and billed by volume of use		25
		Large Landscape Conservation Program		25
		Public programs and washing machine rebates coordinated with SCWA		25
		School tours of WTP facilities for education programs		25
		Non-resident ULFT replacement		25
		Commercial/Industrial Water Supply Incentive Program		25
Conservation water pricing scheme			25 (Thompson)	
Water Conservation Coordinator hired			25	
Beginning Residential ULFT Program		25		
<b>City of Sonoma</b>	SCWA	Sonoma Aqueduct connects RR supply with City of Sonoma		25

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City of Sonoma	SCWA (continued)	Sonoma Aqueduct supply is considered reliable		25
		Current distribution lines are functioning but will be inadequate to support future entitlements	Alternative 1: Construct a parallel 24" pipeline to increase flow capacity to Sonoma Valley	37
	SCWA/Groundwater	Aquifer Storage and Recovery has limiting factors, that could make it not feasible for excess flow storage. Although it appears favorable, further site specific testing is required	Alternative 2: Use existing pipeline at peak capacity year-round and collect excess flows during low demand season for storage (ASR) and distribution during high demand seasons	37
	Groundwater	17% of water supply is from reliable local wells		25
		Owens 5 wells, but 4 need rehabilitation to meet demand	* Well production is 1.4 mgd	41
		2 new wells being constructed to produce 2.6 mgd		41
	Recycling	Sonoma Valley WWTP produces 4,500 AFY		(Thompson)
		Potential potable offset of 610 AFY	* Includes VOMWD demand	25
	Conservation	Water surveys for residential users 2003/04		25 (Thompson)
		Low flow devices given away at community events and target top 10% of residential water users		25
		All water users are metered		25
		2-tier conservation pricing scheme		25
		Large Landscape Conservation Program includes audits for City parks		25
		Satellite Irrigation Controller pilot study program		25
		Public programs and washing machine rebates coordinated with SCWA		25
		School tours of WTP facilities for education programs		25
		Residential ULFT replacement using Three Special Event Fundraiser Program		25
		Enforcement of Water Waste Prohibition Ordinances		25
		Water Conservation Coordinator hired		25
	Sonoma County	Coordination to minimize groundwater pumping		34
VOMWD	VOMWD	VOMWD demand is 4.2 mgd and supply is 4.7 mgd		(Thompson)
		Growth limit ordinance imposed based on water supply		41
		Demand forecasted at 8.5 mgd (maximum) and 6.4 mgd (with conservation)		41
		Ongoing storage tank construction and replacement		39

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VOMWD	SCWA	Sonoma Aqueduct shares RR supply with City of Sonoma		25
		Sonoma Aqueduct supply is considered reliable		25
		SCWA entitlement cannot be expanded until 2013	* Second aqueduct is completed from SCWA to VOMWD	40
		Within 6% of using entire entitlement of current SCWA aqueduct		41
		New SCWA entitlement will allow for 8.5 mgd, which meets demand, but with a 3,000 AFY limit which is too low to meet demand		41
	Groundwater	Several wells in the district are considered reliable		25
		Full annual aquifer recharge		25
		Two new wells expected by 2003	* Proper well monitoring for contamination	25
		Out of 6 wells, only 4 are used to produce 665 gpm		40
		Existing wells must supply back up water supply until new SCWA aqueduct is complete		40
		Groundwater is 75% of the cost of SCWA water		40
		Groundwater should be developed to a 1,565 gpm capacity level to meet water demand requirements		40
		Existing wells must be rehabilitated to meet required 2.57 mgd		41
	Recycling	Currently there is no recycled water use, but is encouraging SVCSD to continue to produce recycled water for potential future use		41
	Conservation	Commercial and industrial/institutional users are eligible expanded Low Flow Toilet rebate/replacement program		25 (Thompson)
		All users metered		25
		Tiered conservation pricing scheme		25 (Thompson)
		Large Landscape Conservation Program includes audits for City parks		25
		Installed Satellite Irrigation Controller at golf course for data collection and testing, considering an incentive program		25
		Public programs and washing machine rebates coordinated with SCWA		25
		School tours of WTP facilities for education programs		25
		Residential ULFT replacement and \$100 rebate using Three Special		25
		Enforcement of Water Waste Prohibition Ordinance		25
		Water Conservation Coordinator hired		25
		Conservation plan to save 200 AFY		(Thompson)
		Leak control measures to save 190 AFY		41
		Replacement of polybutylene pipelines to lower 12% unmetered losses	*Greatest unmetered losses due to leaking pipeline	41