APPENDIX A

Urban Water Management Plan Public Hearing Notice and Resolution

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Rohnert Park will be holding a PUBLIC HEARING.

WHERE: Council Chambers at the City Offices
6750 Commerce Boulevard
Rohnert Park, California

WHEN: Tuesday, August 28, 2007, at the hour of 6:00 p.m.
or as soon thereafter as the matter is reached on the agenda.

PURPOSE: To solicit input regarding the City of Rohnert Park's 2005 Urban Water Management Plan

Representatives of this proposal will be available to respond to questions. The draft 2005 Urban Water Management Plan is available for review at:

Rohnert Park City Hall
6750 Commerce Blvd, Rohnert Park, California

Rohnert Park Library
6250 Lynne Conde Way, Rohnert Park, California

On the Rohnert Park City Web Page at
http://www/rpcity.org

All persons interested in this matter should appear at the August 28, 2007 City Council meeting. Written statements may be submitted in advance for presentation to the Council as part of the public hearing.

NOTE: If you challenge this matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Rohnert Park at, or prior to, the public hearing.

The referenced document is available for public review during normal business hours at the City Clerk's Office, 6750 Commerce Blvd., Rohnert Park, CA, (707) 588-2227.
Questions regarding this matter should be directed to Darrin Jenkins, Public Works Director/City Engineer, (707) 588-2243.

Dated: August 14, 2007 Judy Hauff, City Clerk

RESOLUTION NO. 2007-143

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROHNERT PARK ADOPTING THE CITY OF ROHNERT PARK 2005 URBAN WATER MANAGEMENT PLAN AND AUTHORIZING FILING THEREOF WITH THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

WHEREAS, the Urban Water Management Planning Act (the Act, California Water Code Section 10610 et. seq.) requires that every urban water supplier that supplies water for municipal purposes to more than 3,000 customers prepare an Urban Water Management Plan (UWMP) every five years, the primary objectives of which are to plan for the efficient management and use of the water supply; and

WHEREAS, the City of Rohnert Park (City) is an urban water supplier within the meaning of the Act and must prepare an UWMP; and

WHEREAS, the City of Rohnert Park staff and its consultants in cooperation with the Sonoma County Water Agency and its consultants have prepared an UWMP (the City of Rohnert Park 2005 Urban Water Management Plan) to meet the requirements of the Act, in accordance with the guidelines developed by the California Department of Water Resources; and

WHEREAS, the City staff, Agency staff, and the respective consultants who prepared the City of Rohnert Park 2005 Urban Water Management Plan have the training, experience and expertise necessary to prepare an UWMP meeting the requirements of the Act; and

WHEREAS, the City Council must provide for public review and conduct a public hearing prior to adopting any UWMP and must file the UWMP with the California Department of Water Resources upon adoption; and

WHEREAS, the City of Rohnert Park 2005 Urban Water Management Plan has been available for public review since August 14, 2007, in compliance with the requirements of the Act; and

WHEREAS, the City Council conducted a duly noticed public hearing on August 28, 2007 to receive oral and written comments upon the City of Rohnert Park 2005 Urban Water Management Plan; and

WHEREAS, the City Council has reviewed the City of Rohnert Park 2005 Urban Water Management Plan, City staff reports and presentations and the oral and written comments received; and

WHEREAS, the City of Rohnert Park 2005 Urban Water Management Plan was prepared in accordance with and meets the requirements of the Act, and the facts, assumptions and analyses in the City of Rohnert Park 2005 Urban Water Management Plan are reasonable and supported by substantial evidence; and

WHEREAS, in accordance with CEQA Guidelines Section 15282(v), the preparation and adoption of an Urban Water Management Plan pursuant to the provisions of Section 10652 of the Water Code is exempt from the California Environmental Quality Act.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Rohnert Park that it does hereby find, determine and declare as follows:

1. All of the above recitals are true and correct.

2. The City of Rohnert Park 2005 Urban Water Management Plan is adopted.

BE IT FURTHER RESOLVED that the City Manager is hereby authorized and directed to make the appropriate filings with the California Department of Water Resources in accordance with the requirements of the Act.

DULY AND REGULARLY ADOPTED this 28th day of August, 2007.

CITY OF ROHNERT PARK

Vicki Vidak-Martinez
Mayor

ATTEST:

Jeri Higgins, Deputy
City Clerk

APPROVED AS TO FORM:

Gabrielle P. Whelan, Asst.
City Attorney

BREEZE: AYE	**MACKENZIE:** AYE	**SMITH:** ABSENT	**STAFFORD:** AYE	**VIDAK-MARTINEZ:** AYE
AYES: (4)	**NOES: (0)**	**ABSENT: (1)**	**ABSTAIN: (0)**	

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APPENDIX B

Water Shortage Allocation Methodology

Description of Model that Calculates the Allocation of Water Available to Sonoma County Water Agency for its Customers* During a Water Supply Deficiency Taking Demand Hardening into Account

April 4, 2006 Version

This EXCEL workbook (040406 Allocation Model.xls) presents two models that calculate allocations to Sonoma County Water Agency (SCWA) Customers during a shortage of water supply in the Russian River. The calculations meet all of the requirements of the Restructured Agreement for Water Supply (Agreement). See **Contents** sheet for layout of sheets in the workbook. Another EXCEL workbook (040406 Customer Water Use.xls) supports this workbook and contains data compiled for the 2005 Urban Water Management Plan.

* "SCWA Customers" or "Customer" is defined as any of the following:

Regular Customers

Water Contractors (sometimes referred to as "Primes"): Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Windsor (Airport Service Area), North Marin Water District, Valley of the Moon Water District

Other Agency Customers: SCWA, County of Sonoma, Larkfield Water District, Forestville Water District, Lawndale Mutual Water Co., Kenwood Village Water Co., Penngrove Water Co., City of Sebastopol, State of California, and Santa Rosa Jr. College)

Marin Municipal Water District (MMWD)

Russian River Customers (Customers of SCWA that divert water directly from the Russian River or via wells adjacent to the River).

Where to Find Results:

Results for allocating water during a shortage given varying assumed amounts of water available to SCWA in the Russian River are modeled for two cases.

- The **Current Model** is to be employed during a real drought. Inputs to this model must be updated to then current conditions. For current conditions, results are shown on the **Current Recap** sheet.

- The **Future Model** is a "planning" model whose purpose is to predict allocations for various levels of deficiency in the future when all Customers are assumed to have reached there entitlement limits – generally about 20 years from now for most Customers. (Note: This was the type of model prepared by West, Yost & Associates for the City of Santa Rosa and is also the type prepared by Petaluma.) Results are shown on the **Future Recap** sheet.

Required Allocation Methodology:

Section 3.5(a)(3) of the Agreement provides for allocation of water in the event of a water supply deficiency as follows:

- **"First"**, Allocation of quantities of water required by each Customer* for human consumption, sanitation and fire protection (HC, S & FP) after taking into consideration all other sources of potable water then available to said customer. (Section 3.5(a)(3)(i)) (Often referred to as Tier 1.)

- **"Second"**, Allocation of any additional water available to the SCWA proportionately to its Customers* as follows (Section 3.5(a)(3)(ii)) (Often referred to as Tier 2 allocation.):

  Regular Customers (Water Contractors and Other Agency Customers): Deliveries from aqueduct based on respective average daily rate of flow during any month entitlements. These entitlements are set forth as million gallon per day (mgd) rates in Sections 3.1(a) and 3.2 of the Agreement.

  Russian River Customers: Authorized diversions or rediversions of water based on delivery limits set forth in agreements with the SCWA.

  Marin Municipal Water District (MMWD): Deliveries based on Third Amended Offpeak Agreement and Agreement for Sale of Water (as amended on Jan 25, 1996), and amendments or subsequent agreements between the SCWA and MMWD that have been approved by the Water Advisory Committee.

- **Sum of Two:** The Agreement further requires that the sum of the "First" plus "Second" allocation for a given SCWA Customer not exceed the Reasonable Requirement or entitlement limit/contracted amount, whichever is less (Section 3.5(a)(3)(iii).

"Human Consumption, Sanitation and Fire Protection" Definition:

In determining HC, S & FP amounts, the Agreement provides that SCWA shall take into account the level of water conservation achieved by the Customer and the resulting decrease in end user ability to reduce water use (the hardening of demand) resulting from such conservation. The allocation shall be determined using a methodology which rewards and encourages water conservation; avoids cutbacks based upon a percentage of historic consumption, and, among other things, bases the amounts necessary for HC, S & FP upon no greater than average indoor per capita water use determined from recent retail billing records for winter water use by all of the Water Contractors; and, if necessary or appropriate for equitable purposes, considers commercial, industrial and institutional water uses separately and determines that element of the allocation based on winter water use from recent retail billing records for commercial, industrial and institutional uses. (Section 3.5(c)(1))

"Reasonable Requirements" Definition:

The Agreement states that the fundamental purpose of the Reasonable Requirements limitation is to ensure that no Customer receives more water during a shortage than that Customer reasonably needs. In determining reasonable requirements, the SCWA may take into account the hardening of demand resulting from the level of conservation achieved by the Customer; the extent to which the Customer has developed recycled water projects and local supply projects, and the extent to which the Customer has implemented water conservation programs. The Agreement further states that it is the intention of the

parties that the SCWA make its Reasonable Requirements determinations so as to encourage Customers to implement water conservation, recycled water, and local supply projects. (Section 3.5(c)(2))

Description of Models:

Two models are presented.

- **Current Model:** The Current Allocation Model determines annual allocations based on the assumption the water supply deficiency occurs now and impacts current conditions and levels of use. This is the model that would be used in the event of an actual deficiency in water supply available from the Russian River. It employs estimates of HC, S & FP needs, Reasonable Requirements, and Local supply. In the event of a real perceived water supply deficiency, inputs to the model must be updated to then currently available data. If the shortage persists longer than one year the inputs must again be updated – particularly local supply estimates which should be updated every year of the drought. Customers relying on surface water for local supply, such as North Main Water District, and MMWD, can be expected to have reduced local supply available.

- **Future Model:** The second model is hypothetical and predicts future allocations at a point in time that assumes that all customers of the SCWA have reached their annual entitlement limits. It sets the Reasonable Requirement for each SCWA Customer to that customer's annual entitlement limit (cap). The Future Allocation Model is useful for planning purposes to predict allocations from the SCWA for various assumed water supply deficiencies.

Model Assumptions and Inputs:

1. **Entitlements:** Entitlements (Regular Customers) and contracted amounts (MMWD and Russian River Customers) for both models are as set forth in the Agreement and existing agreements between the SCWA and MMWD and its Russian River Customers. (See **Entitlements** and **RR Cust** sheets.)

2. **Local Supplies:** The estimates of safe yield of local supplies are the same for both models and are based on estimates reported by Water Contractors to West, Yost & Associates in a September 23, 2004 Tech. Memo to the City of Santa Rosa and are generally average local supply that was available for the period 2000 through 2003. A contingency factor is applied by John Olaf Nelson Water Resources Management (JONWRM) to each local supply to account for equipment/maintenance issues or other potential problems. This factor was assumed to be 10% for each Waster Contractor for lack of better data. The safe yield value for MMWD was supplied by MMWD. Local supply estimates for Other Agency Customers were not available and was assumed to be "0". Information on Local supplies needs to be accurately determined and updated by the SCWA. (See **Local** and **TM Data** sheets.)

3. **Water for Human Consumption, Sanitation and Fire Protection:** Water needed to meet HC, S & FP needs for both models is assumed to be equal to total winter level demand of customers served by Customers of the SCWA and is based on metered water sales (billings) for calendar 2004, the base year analyzed in the 2005 Urban Water Management Plan. Winter level demands are then extrapolated to a full year to determine the annual HC, S & FP need. Water available

from local supplies is then determined and net HC, S & FP needs determined in order to calculate the "First" allocation. In determining the "First" allocation, demand hardening is accounted for using winter level per capita demand. (See **GPCD** and **Human** sheets and the footnotes on the Current Model for details.)

4. **Reasonable Requirements:**

- For the Current Model, Reasonable Requirements were assumed to equal average annual aqueduct deliveries to SCWA's Regular Customers and MMWD for FY 2003-04 and FY 2004-05. For Russian River Customers, the average for Water Years 2004 and 2005 was used, as that was the format the data was available in. (Use of a three or four year average would normally be a better choice for calculating Reasonable Requirements, however, this was not done as at least one SCWA customer made a significant policy change in aqueduct usage which would not have been fairly reflected if years prior to FY 2003-04 were used. Also in subsequent analyses, the data should be normalized to common annual periods.) (See **Reasonable** sheet.) Pursuant to Section 3.5(c)(2), Reasonable Requirements were adjusted with a demand hardening factor to account for differing levels of conservation achieved by Customers. The demand hardening factor is derived from total per capita demand (residential, non-residential and unaccounted for water) as determined for the base year (cal. 2004) of the 2005 Urban Water Management Plan. (See **DH Factor** sheet.)

- In the Future Model, Reasonable Requirements are set equal to annual entitlement limits (caps) or contract limits as applicable, it being assumed that each Customer has reached its annual entitlement limit (the same approach taken in the Santa Rosa and Petaluma models). THIS IS THE ONLY INPUT DIFFERENCE BETWEEN THE "CURRENT" AND "FUTURE" MODEL.

Model Design and Workbook Layout:

The two model sheets are totally independent and are designed to automatically calculate water shortage allocations for any SCWA available supply bounded by a low value equal to the sum of water required for HC, S & FP and an upper value equal to the sum of Reasonable Requirements or sum of annual entitlement limits, whichever is less. Cells in both models are linked to the various supporting data sheets.

To operate a model, simply input the assumed available supply in Cell H:4 of the model you are working with. The results – the sum of the "First" (Tier 1) plus "Second" (Tier 2) allocation appear to the far right (Column 42 of the Current Model and Column 39 of the Future Model).

The Current Model sheet is followed by a sheet entitled "Current Recap" that shows the resulting allocations (both in tabular and graph form) for each Customer for various assumed levels of available supply. This recap and the graphs are automatically populated by running the Macro entitled "CurRecap".

Likewise, following the Future Model sheet is a sheet entitled "Future Recap" which shows the tabular and graph results for the Future Model. This recap and the graphs are automatically populated by running the Macro entitled "FutRecap".

Caution Concerning Data Collection and Maintenance:

With the allocation methodology introduced in the Agreement, it is essential that the SCWA develop and maintain a data base containing information collected from all of its Customers based on application of uniform standards, and containing data on water service area population, portion of population served by private wells (none of the models correct for private well water use by service area population), winter level water consumption, annual consumption, local supplies, unaccounted for water, conservation, recycled water use, etc. Good regional data on evapotranspiration differences may also be needed to modify the Reasonable Requirement demand hardening adjustment factor. A fair and uniform way to determine the safe yield of local supply capacity is especially important. It may be useful to categorize local supply into: (1) normally available and used capacity, and (2) strictly standby capacity that is more expensive to use than aqueduct water or has some non-threatening quality issues, i.e. taste and odor that make it undesirable to use under normal water supply conditions.

John Olaf Nelson Water Resources Management (JONWRM)
1833 Castle Dr, Petaluma, CA 94954
Ph: (707) 778-8620 Email: jonolaf@comcast.net

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Contents of this EXCEL Workbook
Water Shortage Allocation Model w. Demand Hardening Factor (a)
April 4, 2006 Version

Models (Current and Future)

Input Data for Models

* Same data used in both Current and Future Model.

** Based on aqueduct sales and Russian River diversions in recent non-drought years. In the Future Model, reasonable requirements are set equal to annual entitlement limits (caps) or contract delivery limits as applicable in order to estimate allocations at that time in the future when demand has grown to equal the annual entitlement limits.

For questions, contact:
John Olaf Nelson Water Resources Mgt
Ph: (707) 778-8620
Email: jonolaf@comcast.net

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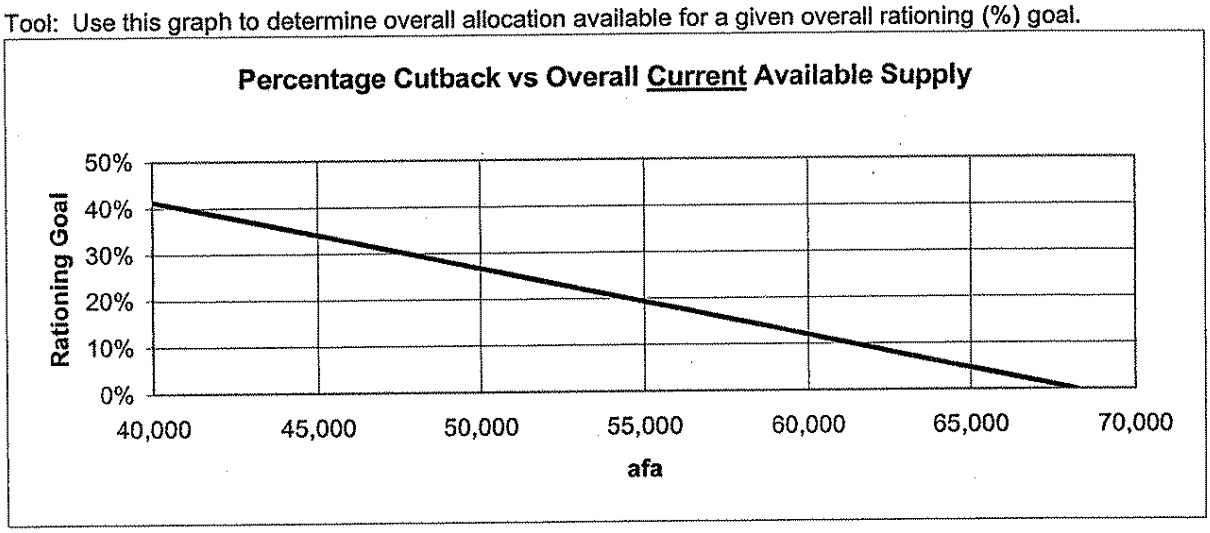
Results for Current Allocation Model vs. Assumed Available Supply

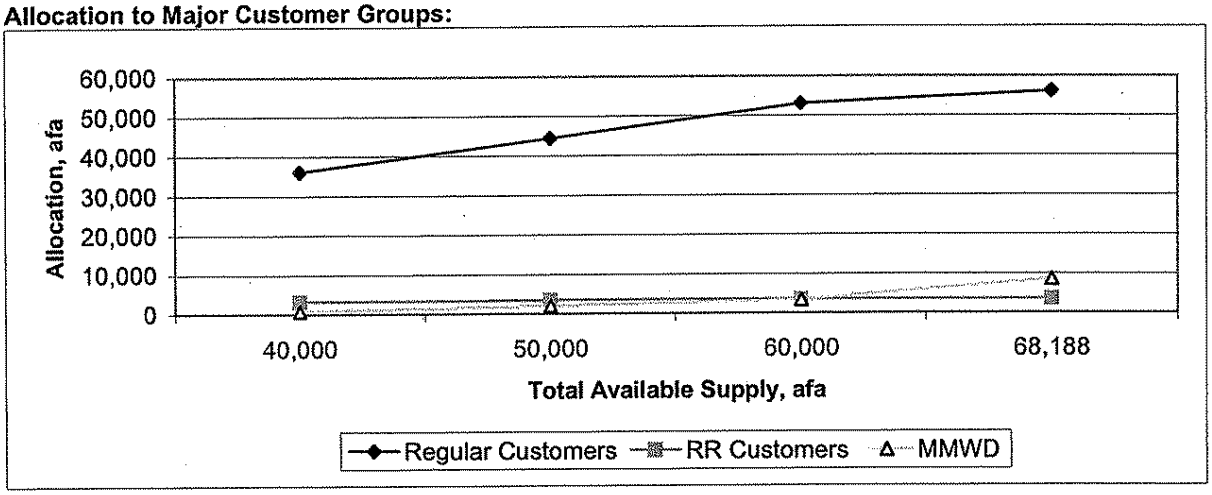
Available RR SCWA Supply, afa >	**40,000**	**50,000**	**60,000**	**68,188 ***
Equivalent Cutback in Deliveries >	**41.3%**	**26.7%**	**12.0%**	**0.0%**
Regular Customers				
Cotati	694	928	1,095	1,095
Petaluma	6,155	7,501	8,952	9,735
Rohnert Park	2,924	3,850	4,849	5,246
Sonoma	1,261	1,650	2,069	2,200
Windsor	317	409	410	410
NMWD	4,775	6,004	7,328	8,459
Santa Rosa	16,856	20,351	24,118	24,737
VOM	2,157	2,682	3,086	3,086
Other Agency	949	1,116	1,207	1,207
Sub-Total	36,088	44,491	53,114	56,173
MMWD	737	2,014	3,391	8,520
Russian River Cust's	3,175	3,495	3,495	3,495
Total	**40,000**	**50,000**	**60,000**	**68,188**

* Note: Max. Value is capped at 68,188 afa as this satisfies sum of Reasonable Requirements.

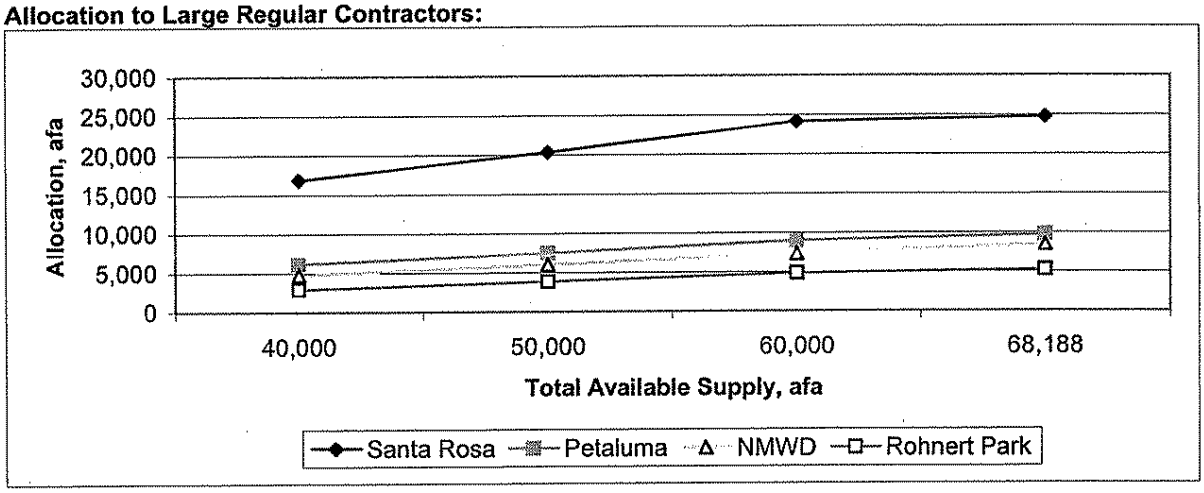
Tool: Use this graph to determine overall allocation available for a given overall rationing (%) goal.



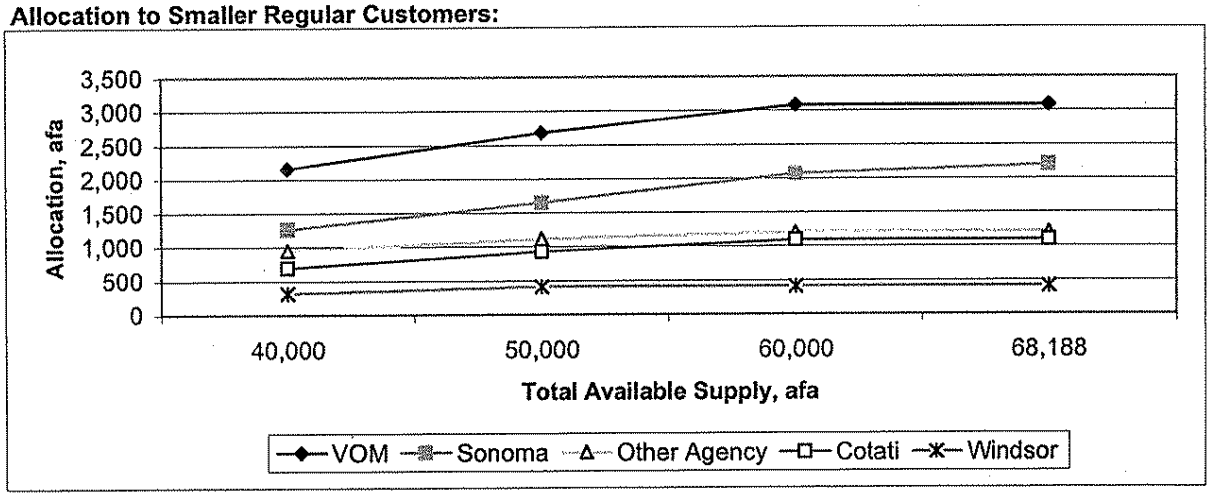
Allocation to Major Customer Groups:



Allocation to Large Regular Contractors:

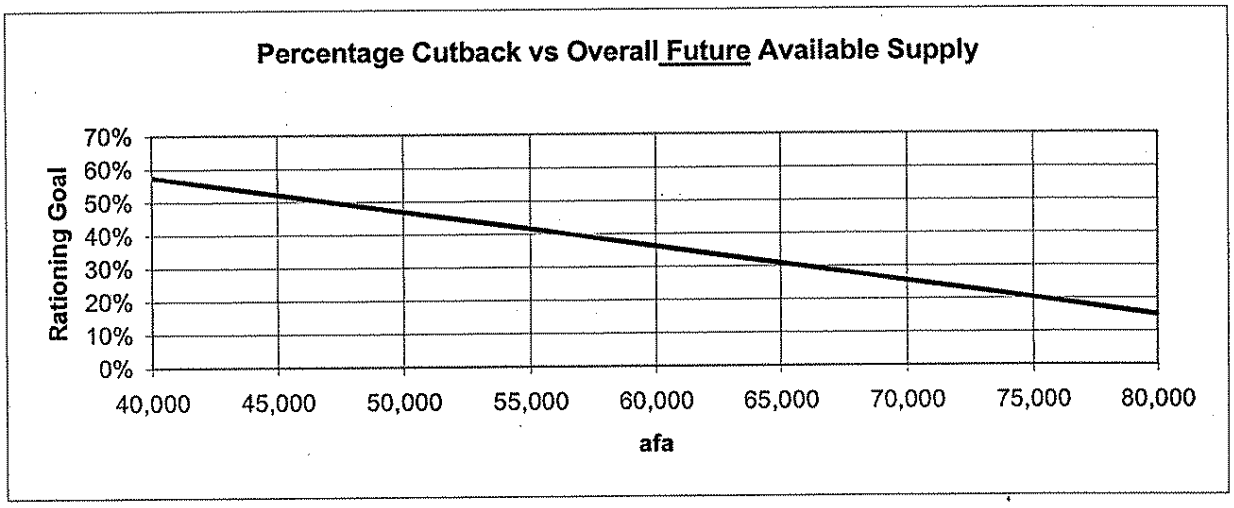


Allocation to Smaller Regular Customers:

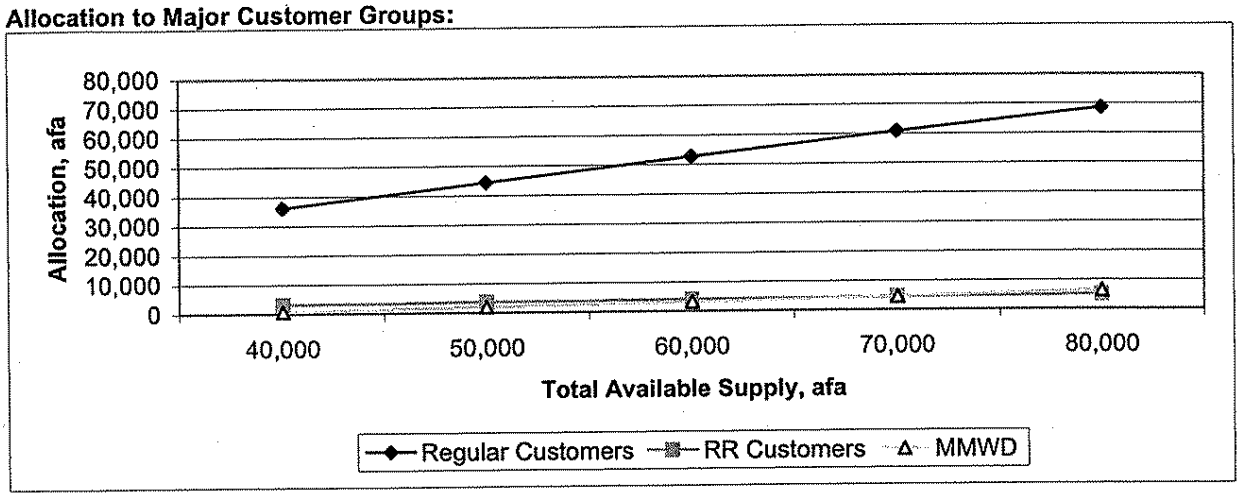


Results for Future Allocation Model vs. Assumed Available Supply

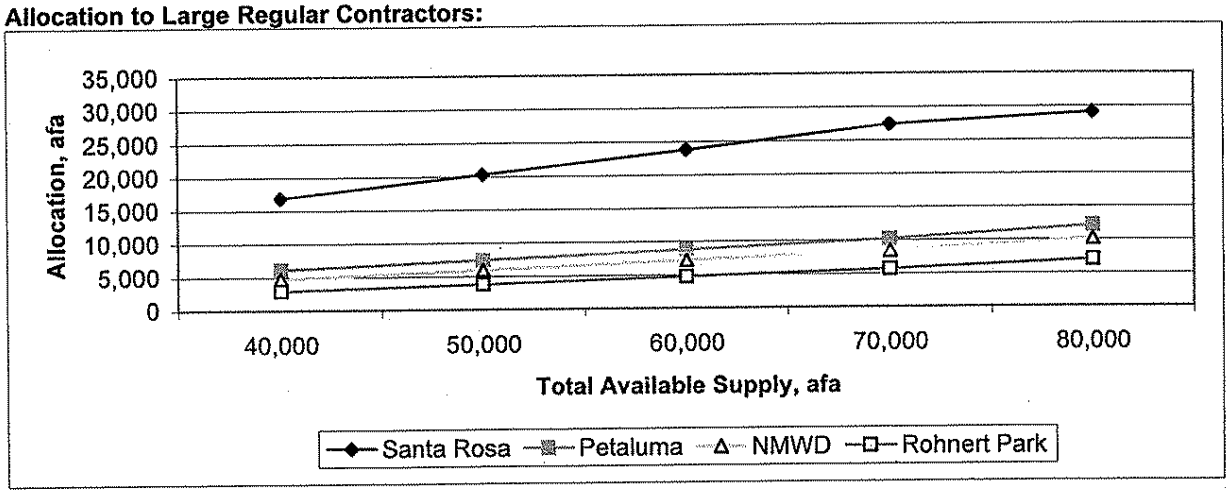
Available RR SCWA Supply, afa >	**40,000**	**50,000**	**60,000**	**70,000**	**80,000**
Equivalent Cutback in Deliveries >	**57.5%**	**46.9%**	**36.2%**	**25.6%**	**15.0%**
Regular Customers					
Cotati	694	925	1,157	1,401	1,520
Petaluma	6,155	7,484	8,813	10,214	12,118
Rohnert Park	2,924	3,838	4,753	5,716	7,027
Sonoma	1,261	1,645	2,029	2,433	2,984
Windsor	317	408	500	596	727
NMWD	4,775	5,988	7,201	8,480	10,218
Santa Rosa	16,856	20,306	23,756	27,393	29,100
VOM	2,157	2,675	3,193	3,200	3,200
Other Agency	949	1,113	1,278	1,451	1,687
Sub-Total	36,088	44,384	52,680	60,884	68,581
MMWD	737	1,998	3,259	4,587	6,394
Russian River Cust's	3,175	3,618	4,061	4,528	5,025
Total	**40,000**	**50,000**	**60,000**	**70,000**	**80,000**



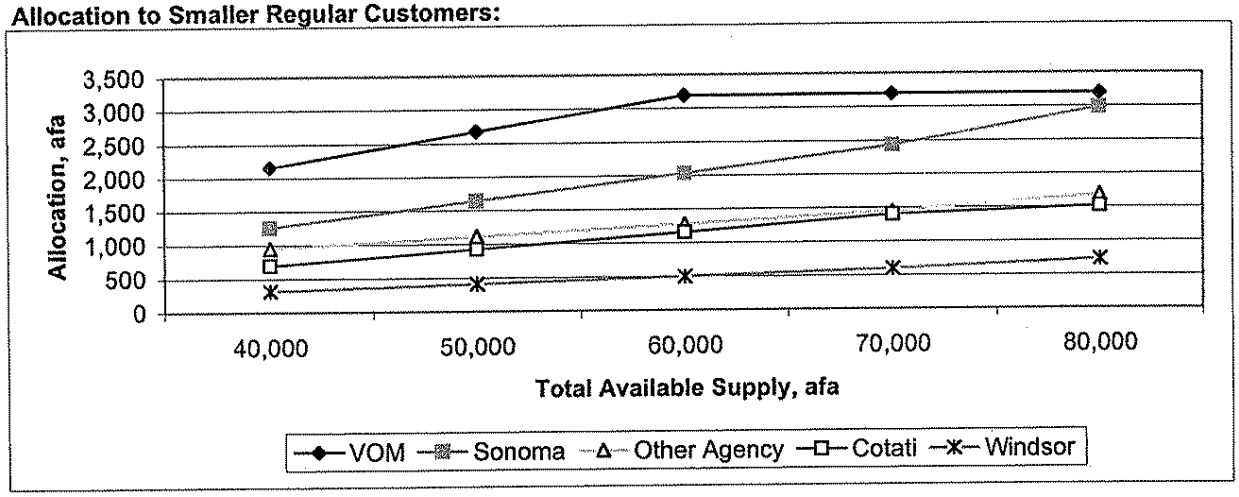
Allocation to Major Customer Groups:



Allocation to Large Regular Contractors:



Allocation to Smaller Regular Customers:



Entitlements of SCWA Customers

	Source	Entitlement mgd (any month)	Annual Limit afa
SCWA Customer:			
Regular Customers			
Cotati	a	3.8	1,520
Petaluma	a	21.8	13,400
Rohnert Park	a	15	7,500
Sonoma	a	6.3	3,000
Windsor (Airport Service Area)	b	1.5	900
North Marin WD	a	19.9	14,100
Santa Rosa	a	56.6	29,100
Valley of the Moon WD	a	8.5	3,200
Other Agency Cust (Includes FWD)	c	2.7	2,048
Sub-Total		136.1	74,768
Marin Muni. WD	d	0	14,300
Russian River Customers	e	0	5,025
Total		136.1	94,093

Notes:

a Eleventh Amended WS Agree. (Proposed Restructured WS Agree is same)

b Proposed Restructured WS Agree. Applies only to Airport Service Area served from SCWA Aqueduct. Windsor's direct diversions from the RR are covered by an Agreement with the SCWA and potentially via its pending application to the State for Water Rights

c "mgd any month" limit is per Eleventh Amended WS Agree. (Proposed Restructured WS Agree is same). Annual limit is estimated based on avg. annual Other Agency Customer demand (as defined in Restructured Agree) for FY's 2003 and 2004 (1,356 af) projected through 2020 assuming a 2% per year increase for anticipated growth plus a 10% contingency.

d Second Amended WS Agree and Agree for Sale of Water as Amended by The Supplemental WS Agree dated Jan 25, 1996. Note: Annual deliveries are subject to certain prior year minimum purchase provisions. Deliveries are subordinate to Regular Customer Entitlements.

e Various Agreements between SCWA and each of its RR Customers (refer "RR Cust" sheet)

Russian River Customers of SCWA

Entitlements of RR Customers

Source: Chris Murray, SCWA, 3/3/05

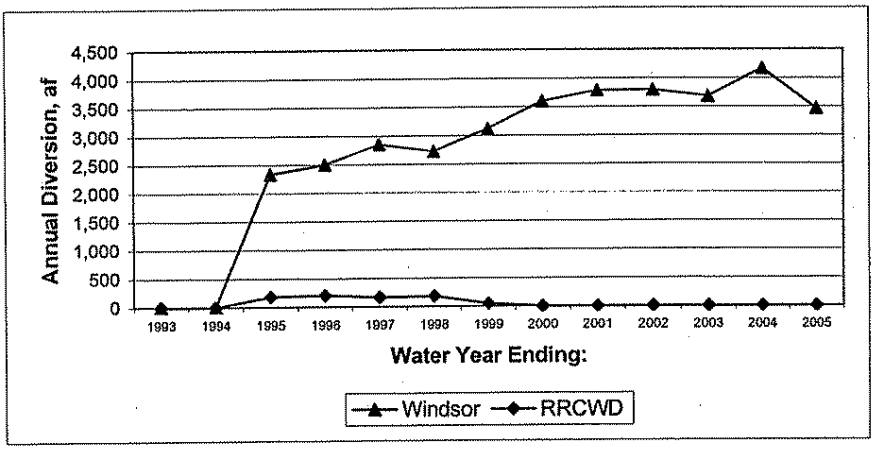
Contractor	Date	Max Diversion Limit, afa	Comments
Currently Approved Points of Diversion *:			
Town of Windsor **	1/8/1991	4,725	Windsor has application pending for its own water rights
Russian River Co. WD	3/14/1991	300	
Sub-total		5,025	
No Points of Diversion Approved*			
City of Healdsburg	11/17/1992	4,440	Healdsburg holds own water rights for other points of diversion
Camp Meeker Parks & Rec. Dist.	7/9/1996	90	
Occidental CSD	4/23/2002	65	
Redwood Valley Co. WD	Pending	?	Agreement pending
Sub-total		4,595	
Potential Total		9,620	

* As pertains to SCWA's water rights.
** Direct diversions via wells situated near the Russian River.

Historic Diversions from the RR, af

Source: Chris Murray, SCWA, 2/15/06 (SCWANTS.xls)

W Yr	RRCWD	Windsor	Total
1993	0	0	0
1994	0	0	0
1995	182	2,337	2,519
1996	203	2,496	2,699
1997	166	2,848	3,013
1998	183	2,728	2,911
1999	47	3,124	3,171
2000	0	3,596	3,596
2001	0	3,786	3,786
2002	0	3,789	3,789
2003	0	3,684	3,684
2004	0	4,173	4,173
2005	0	3,465	3,465
Avg of W Yr's 2004 & 05			3,819
Avg of last 3 W Yrs			3,882



Note: Water Yr extends from Oct 1 through Sept 30 of subsequent yr.

Water Needed for Human Consumption, Sanitation and Fire Protection (a)

	TM Data (b)	6/15/05 Model	2005 UWMP (c)	4/4/06 Model
SCWA Customer:				
Regular Customers				
Cotati	0.62	0.62		0.64 f
Petaluma	5.83	5.83	6.15	6.15
Rohnert Park	4.23	4.23	3.74	3.74
Sonoma	1.45	1.45	0.92	0.92
Windsor (Airport Service Area)		0.13 d		0.24 g
North Marin WD	5.80	5.80	6.04	6.04
Santa Rosa	13.74	13.74	13.48	13.48
Valley of the Moon WD	2.01	2.01	2.14	2.14
Other Agency Cust (Includes FWD)		0.45 d		0.48 g
Sub-Total				
Marin Muni. WD		17.1 e		18.4 h
Russian River Customers		unknown		unknown
Total				

Notes:

a Water needed for HC, S & FP is assumed to be equal to "inside" use for all retail customers. Inside use in turn is estimated by examining retail sales in the Winter months (generally Jan. and

b Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

c Total demand including UFW as determined by Maddaus for base year (Cal. 2004) of the 2005 UWMP. Indoor use is based on average of 2 lowest consecutive months in the winter if meters read bimonthly, or single lowest month if meters read monthly. Winter level use for Cotati supplied by Toni Bertolero (see Note f).

d

Avg Jan and Feb Aqueduct Sales* as	Windsor	Other Ag Cust
Avg af/mo (2000->03, SCWA, Kiergan Peg	11.5	40.6
Avg mgd	0.13	0.45

* In the case of Windsor (ASA only) and Other Agency Customers, winter level demand is unknown and is therefore estimated from Aqueduct sales, it being assumed that all Winter demand is met from the Aqueduct.

e MMWD customer Avg per capita use in Jan and Feb for (2000 - 03), mgd, Dana Roxon,

f Avg. Jan and Feb Aq plus Local use FY 2003 -> FY 2005, Tony Bertolero via Matthew Damos

g Avg. Jan and Feb Aq Sales w. Billing Days for FY 2003 -> FY 2005 from Kiergan Pegg,

h From MMWD Water Watch Reports, avg demand for period noted, mgd

Week Ending:	For period noted to left	For same week one yr earlier
2/26/2006	17.6	17.6
2/19/2006	18.4	18.3
2/12/2006	18.8	19.1
2/5/2006	18.2	18.6
1/29/2006	18.4	18.5
1/22/2006	18.5	18.7
1/15/2006	17.9	18.6
1/8/2006	18.5	18.8
1/1/2006	18.1	18.5
Avg Winter	18.3	18.5
Avg for both yrs	18.4	

Reasonable Annual Need, afa (a)
(Avg. Aq. Sales or RR Diversions for FY's Indicated)

	6/15/05 Model	4/4/06 Model
		Avg for FY 03-04 and
Regular Customers	FY 03-04	FY 04-05
Cotati	1,071	1,045
Petaluma	11,294	10,636
Rohnert Park	4,710	4,835
Sonoma	2,611	2,403
Windsor (Airport Service Area)	474	448
North Marin WD	9,498	9,242
Santa Rosa	24,421	23,584
Valley of the Moon WD	3,157	3,036
Other Agency Cust (Includes FWD) (b)	1,326	1,318
Sub-Total	58,561	56,547
Marin Muni. WD	7,792	7,823
Russian River Customers (c)	3,928	3,819
Total	70,281	68,188

Notes:

a SCWA Aqueduct Sales Records, Kiergan Pegg, SCWA. Note that Surplus sales are not included.

b SCWA Aq. Sales Records. Excludes Windsor and includes FWD as proposed in Restructured WS Agree.

c Average of Water Yr Diversions for 2003 and 2004 was used for 6/15/05 Model and avg. of 2004 and 2005 was used for 4/4/06 Model. (see RR Cust sheet).

Local Potable Water Supply Available to SCWA Customers, afa

	Local Supply (a)	Contingency Factor (b)	Est'd Safe Yield (c)
Regular Customers			
Cotati	240	10%	216
Petaluma	831	10%	748
Rohnert Park	2308	10%	2,077
Sonoma	80	10%	72
Windsor (Airport Service Area)	0	10%	0
North Marin WD	2000	10%	1,800
Santa Rosa	1700	10%	1,530
Valley of the Moon WD	595	10%	536
Other Agency Cust (Includes FWD) (d)	0		0
Sub-Total	7754		6,979
Marin Muni. WD Local Sys. Safe Yield (e)			20,500
Russian River Customers (d)	0		0
Total			27,479

Notes:

a Based on 4-yr avg: 2000-2003 as reported in Sept 33, 2004 Tech. Memo to Santa Rosa

b To account for well equipment problems/maintenance down-time, etc. Estimated by JONWRM

c It is recognized that the quality of Local Supply varies. Presented here is the yield (safe yield) that is expected to be available in the first year of a water supply deficiency based on Local Water Supply capacities..

d Unknown and therefore assumed to be "0" for the purposes of this model. Needs to be determined by SCWA.

e Safe Yield of Local Supply System provided by MMWD. Source: Dana Roxon, 5/31/05.

Most Recent Service Area Population

SCWA Customer:	TM Data for Yr 2003	6/15/05 Model	2005 UWMP	4/4/06 Model
Regular Customers				
Cotati	6,825	6,825		7,337 e
Petaluma	57,050	57,050	58,057	58,057
Rohnert Park	42,300	42,300	42,329	42,329
Sonoma	10,252	10,252	10,502	10,502
Windsor (Airport Service Area)		1,338 d		2,495 f
North Marin WD	56,000	56,000	55,587	55,587
Santa Rosa	153,400	153,400	155,121	155,121
Valley of the Moon WD	23,000	23,000	22,646	22,646
Other Agency Cust (Includes FWD)	8,000 a	8,000		8,080 g
Sub-Total		358,165		362,154
Marin Muni. WD	184,999 b	184,999		189,945 h
Russian River Customers	27360 c	27,360		27,634 g
Total		570,524		579,733

Notes:

a Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

b Estimate provided by MMWD to West/Yost and contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

c Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo). Includes 24,350 I(2003 Department of Finance estimate for the Town of Windsor) and an estimate of 3,000 for the RRCWD service area.

d Windsor Airport Service Area is primarily Commercial and Institutional use. An equivalent population is estimated by dividing avg Winter use by 95 gpcd, the wt'd avg. per capita use determined by West/Yost.

e Cotati pop. per Dept of Finance data as of 1/1/2005, Cristina Goulart, Winzler & Kelly

f Windsor Airport Service Area is primarily Commercial and Institutional use. An equivalent population is estimated by dividing avg Winter use by 94 gpcd, the wt'd avg. per capita use determined in the 2005 UWMP.

g Population estimated for 6/15/05 Model increased by an assumed growth rate of 1%.

h MMWD 2004 Pop., provided by Dana Roxon, MMWD, Mar. 2006.

Other Data:

From 2005 UWMP, population for 2004:

FWD population	2,201
Windsor RR Service Area	24,899

Winter Level Per Capita Demand, gpcd

	TM Data (a)	6/15/05 Model	2005 UWMP (b)	4/4/06 Model	
Regular Customers					
Cotati	89	89		88	c
Petaluma	101	101	106	106	
Rohnert Park	96	96	88	88	
Sonoma	136	136	88	88	
Windsor (Airport Service Area)		95		94	
North Marin Water Dist.	99	99	109	109	
Santa Rosa	87	87	87	87	
Valley of the Moon Water Dist.	87	87	94	94	
Other Agency Cust (Includes FWD)		unknown		94	
Sub-Total					
Marin Muni. Water Dist.		92		97	c
Russian River Customers					
Wt'd Avg	95			94	d

Notes:

a Source: TM Data sheet by West Yost and Assoc. Winter level use is based on avg. use in Jan, and Feb. of 2000 through and including 2003.

b Source: Bill Maddaus Tech. Memos - Includes Unaccounted For Water (UFW). Inside use is calculated from calendar 2004 retail sales records and is based on average of 2 lowest consecutive months in the winter if meters are read bimonthly, or single lowest month if meters read monthly.

c Calc'd from Winter level demand (See Human sheet) and est'd pop. (See Pop Sheet)

d Data for 11th Amend. Agree. Primes:

	gpcd	pop
Cotati	88	7,337
Petaluma	106	58,057
Rohnert Park	88	42,329
Sonoma	88	10,502
NMWD	109	55,587
Santa Rosa	87	155,121
VOM	94	22,646
FWD	99	2,201
Wt'd Avg. (using pop. as weighting factor)	94	

Other Data:

From 2005 UWMP, Winter Level Use, gpcd:

FWD	99

Demand Hardening Factor - Used for Adjusting Reasonable Need in Current Allocation

	Total Demand mgd 1	Total gpcd 2	Use in 3/27/06 Model 3	Lesser of Col. 3 or Average 4	Demand Hardening Adj Factor (Avg / Col. 4) 5
Regular Customers					
Cotati	1.07 b	146 d	146	146	1.14
Petaluma	10.19 c	176 d	176	167	1.00
Rohnert Park	5.95 c	141 d	141	141	1.19
Sonoma	2.25 c	214 d	214	167	1.00
Windsor (Airport Service Area)		172 e	172	167	1.00
North Marin Water Dist.	10.58 c	190 d	190	167	1.00
Santa Rosa	22.57 c	146 d	146	146	1.15
Valley of the Moon Water Dist.	3.40 c	150 d	150	150	1.11
Other Agency Cust (Includes FWD)			167 f	167	1.00
Sub-Total					
Marin Muni. Water Dist.			140 g	140	1.19
Russian River Customers			167 f	167	1.00
Average for Water Contractors (h)		167			

Notes:

a Sec 3.5(c)(2) provides that in determining "reasonable requirements" the SCWA may take into account hardening of demand resulting from the level of conservation achieved by a given customer of the SCWA.

b From Toni Bertolero. Avg of RR Purchases and Ground Water Production for FY 2003->05, mgc

c Total demand including UFW as determined by Maddaus for base year (2004) 2005 UWMP.

d Col 1 divided by population. See Pop sheet.

e There are no residents in Windsor ASA therefore per capita demand set equal to Windsor RR Service Area average value as determined for base year (2004) of 2005 UWMP.

f No data available so assumed equal to average value for Water Contractors.

g From MMWD 2005 Fact Sheet - avg demand for 10 yrs ending 2005, m 26.6 divided by population (See Pop sheet).

Other Data from 2005 UWMP for Base Yr 2004:

	mgd	gpcd
Forestville Water Dist.	0.48	219
Windsor RR Service Area	4.29	172

SUPPORT TABLES
For Tech Memo

Table A-1. Average Monthly Retail Sales (acre-feet) for SCWA Water Contractors in January & February[a]

Contractor	2000	2001	2002	2003	4-Year Average[b]
Santa Rosa	1,263	1,316	1,265	1,154	1,249
Petaluma	553	538	515	514	530
North Marin	563	554	525	468	528
City of Rohnert Park	406	406	356	373	385
Cotati	45	73	58	50	57
Forestville [c]	22	23	24	21	22
City of Sonoma	136	135	133	122	131
Valley of the Moon	182	189	187	174	183

Table A-2. Historical Population[d]

Contractor	2000	2001	2002	2003
Santa Rosa	147,595	149,300	151,700	153,400
Petaluma	53,710	54,510	55,850	57,050
North Marin	55,000	56,000	56,000	56,000
Rohnert Park	42,236	42,200	42,150	42,300
Cotati	6,471	6,600	6,861	6,825
Forestville [e]	1,973	Not Available	Not Available	Not Available
Sonoma	10,091	10,131	10,172	10,252
Valley of the Moon	20,512	21,996	22,923	23,000

Table A-3. Per Capita Demand (gpcd) for SCWA Water Prime Contractor in Winter (January & February) [a,f]

Contractor	2000	2001	2002	2003	4-Year Average [b]
Santa Rosa	90	93	88	79	87
Petaluma	108	104	97	95	101
North Marin	108	104	99	88	99
Rohnert Park	101	101	89	93	96
Cotati [g]	72	116	89	78	89
Forestville	115	123	126	113	119
Sonoma	142	140	138	125	136
Valley of the Moon	93	90	86	80	87
Simple Average [h]	104	109	101	94	102
Weighted Average [i]	99	100	93	87	95

[a] Data obtained from water sales data from the Prime Contractor

[b] Simple average of the last 4 years. Using Santa Rosa in Table A-1: (1,263+...+1,154)/4 = 1,249 acre-feet

[c] Data for Forestville obtained from the SCWA

[d] Data obtained from the Prime Contractor, California Department of Finance Website, or the 2000 UWMP for Sonoma County unless specified otherwise

[e] Population for Forestville obtained from the 2000 SCWA UWMP

[f] Based on populations from Table A-2, if population for particular year was not available, then population for year 2000 was used

[g] For 2001 & 2002, based on Dec/Jan instead of Jan/Feb because Cotati did not provide Feb; 2003 is based on Jan/Feb

[h] Simple average of the eight individual gpcds. Using 2000 of Table A-3: (90+...+93)/8 = 102 gpcd

[i] Weighted average for population. Using 2000 of Table A-3: (90*147,595+...+93*20,512)/(147,595+...+20,512) = 98 gpcd

Current Allocation Model
Allocation of Water During a Period of Deficiency Pursuant to Sec. 3.5 (a) of the Restructured Agreement for Water Supply
Based on CURRENT Level Demands and Water Available from the SCWA of 60,000 afa
This equates to an overall cutback in Russian River water supply of: 12.0%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	23	41	42	43
		Entitlement Limits		Minimum Needs		Reasonable Requirement					Local Supply		HC, S & FP Per Capita Demand				First Allocation & Test		Second Allocation		Results	
SCWA Customers	Assumed Available Supply afa	Entitlement (Maximum Daily Rate of Flow During any Month) mgd	Annual Entitlement Limit (Cap) afa	Water Needed for Human Consumption, Sanitation and Fire Protection **** mgd	afa	Apparent Reasonable Requirement afa	Demand Hardening (DH) Adjust. Factor	Adjust'd Reason. Req't	Final Reason. Req't	Lesser of Reason. Req't vs Annual Cap afa	Safe Yield of Local Supply afa	Pop. persons	Avg. Winter Level Per Capita Demand gpcd	Weighted Avg Per Capita Demand of Water Contractors gpcd	Portion of Per Capita Demand that can be served by Local Supply gpcd	Per Capita Demand that is not met by Local Supply ("First" Allocation Parameter) gpcd	"First" Allocation (Water req'd for HC, S & FP) afa	TEST Less Than Annual Entitlement Limit?	Normalized Entitlements ("Second" Allocation Parameter) %	"Second" Allocation afa	"First" plus "Second" Allocations afa	TEST Less Than Reasonable Req't ?
Regular Customers																						
Cotati*		3.8	1,520	0.64	720	1,045	1.14	1,196	1,095	1,095	216	7,337	88	94	26	68	558	Yes	2%	536	1,095	Yes
Petaluma*		21.8	13,400	6.15	6,893	10,636	1.00	10,636	9,735	9,735	748	58,057	106	94	11	83	5,379	Yes	13%	3,574	8,952	Yes
Rohnert Park*		15	7,500	3.74	4,186	4,835	1.19	5,731	5,246	5,246	2,077	42,329	88	94	44	50	2,390	Yes	9%	2,459	4,849	Yes
Sonoma*		6.3	3,000	0.92	1,029	2,403	1.00	2,403	2,200	2,200	72	10,502	88	94	6	88	1,036	Yes	4%	1,033	2,069	Yes
Windsor (Airport Service Area) (ASA)*		1.5	900	0.24	263	448	1.00	448	410	410	0	2,495	94	94	-	94	263	Yes	1%	146	410	Yes
North Marin Water Dist. (NMWD)*		19.9	14,100	6.04	6,767	9,242	1.00	9,242	8,459	8,459	1,800	55,587	109	94	29	65	4,066	Yes	12%	3,262	7,328	Yes
Santa Rosa*		56.6	29,100	13.48	15,094	23,584	1.15	27,027	24,737	24,737	1,530	155,121	87	94	9	85	14,840	Yes	35%	9,279	24,118	Yes
Valley of the Moon Water Dist.*		8.5	3,200	2.14	2,397	3,036	1.11	3,372	3,086	3,086	536	22,646	94	94	21	73	1,854	Yes	5%	1,232	3,086	Yes
Other Agency Cust (Includes FWD)		2.7	2,048	0.48	534	1,318	1.00	1,318	1,207	1,207	-	8,080	94	94	-	94	853	Yes	2%	354	1,207	Yes
Sub-Total		136.1	74,768	33.82	37,884	56,547		61,374	56,173	56,173	6,979	362,154					31,239				53,114	
Marin Muni. Water Dist.		0	14,300	18.39	20,605	7,823	1.19	9,309	8,520	8,520	20,500	189,945	97	94	96	0	0	Yes	13%	3,391	3,391	Yes
Russian River Customers***		0	5,025	unknown	2,916	3,819	1.00	3,819	3,495	3,495	-	27,634	unknown	94	-	94	2,916	Yes	4%	579	3,495	Yes
Total		136.1	94,093		61,404	68,188		74,501	68,188	68,188	27,479	579,733					34,155		100%	25,845	60,000	
Reasonable Need Remaining Unmet																	25,845					
Water Available for Allocation	60,000																					

Definitions:
- * Defined in Restructured Water Supply Agreement as "Water Contractors"
- ** FWD = Forestville Water Dist.
- *** SCWA Russian River Contractors whose direct diversions and points of diversion have been approved and come under the auspices of the SCWA's Water Rights (Town of Windsor and Russian River County Water Dist.)
- **** HC, S & FP = Human Consumption, Sanitation and Fire Protection
- TM Data = information set forth in Tech Memo prepared by West, Yost & Associates (West/Yost) dated Sept 23, 2004, "Methodology for Implementation of Water Shortage Provisions in Eleventh Amended Agreement for Water Supply"
- UWMP = Urban Water Management Plan
- UFW = unaccounted for water (ie water due to losses, leakage, theft and unmetered deliveries, meter inaccuracies, fire hydrant flows, pipeline flushing, etc.)
- af = ac-ft — mgd = millions of gallons per day
- afa = ac-ft per annum (year) — gpcd = gallons per capita per day

Column Explanations:
1. All Customers of the SCWA except customers served Surplus Water. Surplus Water users are not allowed an allocation during periods of water deficiency.
2. Water supply assumed to be available to SCWA for delivery to or diversion by its Customers. In the event of a real drought, this value is predicted by SCWA using its Russian River models and including estimated yield from the SCWA's wells and deducting losses from the Aqueduct
3 & 4. Entitlement limits pursuant to Restructured Agreement. Note that agreement does not specify an Annual Entitlement Limit (cap) for Other Agency Customers so this have been estimated by escalating the avg of FY 2003 and FY 2004 demand by 2% per year growth and then adding a 10% contingency. MMWD "annual entitlements" are set forth in agreements between SCWA and MMWD. Russian River Customers entitlements are based on agreements the SCWA has with these respective customers taking into account points of diversion authorized to be covered under SCWA's water rights. See Entitlement sheet and RR Cust sheet for details.
5. Water for HC, S & FP is assumed to be fairly represented by "inside demand" for all metered uses and including an adjustment factor for UFW. Inside demand is in turn estimated by examining winter level demand, a requirement of the Restructured Agreement. Values used in this model are from the base year (cal. yr 2004) compiled for the 2005 UWMP. See "Human" sheet for details.
6. Prior column extended over the entire year and converted to afa.
7. Reasonable Requirement is assumed to be equal to annual deliveries made to Customers in a recent non-drought year. For the purposes of this analysis, The avg. for FY 2003-04 and 2004-05 deliveries were used. In future analyses, an average of the immediate past 3 years is recommended. In the case of this analysis, going back further in time was not done due to significant changes in aqueduct demand by the City of Rohnert Park.

8 Sec 3.5(c)(2) provides that in determining "reasonable requirements" the SCWA may take into account hardening of demand resulting from the level of conservation achieved by a given customer of the SCWA. This column contains a Demand Hardening adjustment factor derived from annual per capita demand taking into account all uses and including UFW. Information compiled for the base year (2004) for the 2005 UWMP was used. See DH Factor sheet for details.

9 Col 8 x Col 7.

10 Col 10 "normalizes" Col 9 such that sum of all adjusted reasonable requirements is equal to original sum of Reasonable Requirements. Col 9 x (sum of Col 7 / sum of Col 9). This column is then used to define the "Reasonable Requirement" that is referred to in Sec. 3.5(a)(3)(iii) of the Restructured Agreement.

11 Lesser value comparing Reasonable Requirement to Annual Entitlement Limit as stipulated in Section 3.5 (2) (3) (iii). This is the value used for testing to see that the total of the "First" and "Second" allocation of water to a given customer is reasonable.

12 Local supplies are based on an estimate by JONWRM of "safe yield" of same. For Water Contractors, the data reported to West/Yost is the basis for the estimate. See Local sheet for details. The "safe yield" used for MMWD was provided by MMWD. It is noted that data is missing fc Other Agency Customers and Russian River Customers. It is important that SCWA develop an on-going data collection system to at all times know potential local supply yield in order to achieve accuracy necessary for the allocation calculatio

13 Detailed population estimates from Census tract data compiled by Maddaus for the base year (cal. 2004) used in the 2005 UWMP. See Pop sheet for details and explanation of exceptions.

14 Winter level per capita demand determined by Maddaus for the base year (cal. 2004) used in the 2005 UWMP. See GPCD sheet for detailed explanation.

15 Weighted avg. of per capita winter level demand for existing Prime contractors. See GPCD sheet.

16 Safe yield of Local Supply expressed as a per capita value using population data shown i.e. Col 12 * 7.48 * 43,560 / (365 * Col 13).

17 HC, S & FP demand not met by Local Supplies and calculated as follows: If Wt'd average per capita demand (Col 15) is greater than the portion of per capita demand met by Local Supply (Col 16), the difference of the two is entered in this column, if not, "0" is entered.

18 "First" allocation calculated as follows: If Local Supply safe yield (Col 12) is greater than Winter level demand extrapolated for the full year (Col 6), then "0" is allotted, if not the portion of per capita demand not met by Local Supply (Col 17) is calculated for the year for the entire population, expressed in afa and entered here. In the case of consecutive drought years, it is important that Col 12 values (safe yield of local supplies) be updated in order for this calculation to be accurate. This is especially true for contractors relying on surface water supplies such as NMWD and MMWD whose surface supplies drop sharply when faced with consecutive drought years.

19 Test to see that "First" allocation does not exceed respective Entitlement Limits as required by Section 3.5 (a)(3)(i).

20-22 These three columns combine the entitlements of the Regular Customers (which pursuant to Sec. 3.5(a)(3)(ii) must be derived from the avg. daily rate during any month - mgd values contained in Sec. 3.1) and the contractual entitlements of MMWD and RR Customers which are expressed in ac-ft per year values contained in their contracts. These relative entitlements are first converted to %'s, then added together.

24 This column "normalizes" the combined entitlement shares such that the sum of all entitlement shares adds to 100%. The resulting %'s are then used to distribute the "Second" allocation of water called for by Sec. 3.5(a)(3)(ii).

25-40 These cells contain the iterative trials necessary to arrive at the "Second" allocation of water. The process is iterative as the Test of whether the "Second" allocation is valid or not is set forth in Section 3.5 (b) (3) (iii) and requires that (in addition to not exceeding the Entitlement Limit) tl sum of the "First" allocation (Col 18) and the "Second" allocation not exceed the "Reasonable Requirement" (Col 10)

Future Allocation Model
Allocation of Water During a Period of Deficiency Pursuant to Sec. 3.5 (a) of the Restructured Agreement for Water Supply
Based on FUTURE Level Demands and Water Available from the SCWA of 60,000 afa
This equates to an overall cutback in Russian River water supply of: 36.2%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	38	39	40	41
		Entitlement Limits		Minimum Needs		Reasonable Requirement		Local Supply		HC, S & FP Per Capita Demand				First Allocation & Test		Second Allocation		Results		
SCWA Customers	Assumed Available Supply afa	Entitlement (Maximum Daily Rate of Flow During any Month) mgd	Annual Entitlement Limit (Cap) afa	Water Needed for Human Consumption, Sanitation and Fire Protection **** mgd	afa	Reasonable Requirement afa	Lesser of Reasonable Requirement vs Annual Cap afa	Safe Yield of Local Supply afa	Pop. persons	Avg. Winter Level Per Capita Demand gpcd	Weighted Avg Per Capita Demand of Water Contractors gpcd	Portion of Per Capita Demand that can be served by Local Supply gpcd	Per Capita Demand that is not met by Local Supply ("First" Allocation Parameter) gpcd	"First" Allocation (Water req'd for HC, S & FP) afa	TEST Less Than Annual Entitlement Limit?	Normalized Entitlements ("Second" Allocation Parameter) %	"Second" Allocation afa	"First" plus "Second" Allocations afa	TEST Less Than Reasonable Req't ?	Amount Falling Short (-) of Reasonable Req't afa
Regular Customers																				
Cotati*		3.8	1,520	0.64	720	1,520	1,520	216	7,337	88	94	26	68	558	Yes	2%	599	1,157	Yes	-363
Petaluma*		21.8	13,400	6.15	6,893	13,400	13,400	748	58,057	106	94	11	83	5,379	Yes	13%	3,434	8,813	Yes	-4,587
Rohnert Park*		15	7,500	3.74	4,186	7,500	7,500	2,077	42,329	88	94	44	50	2,390	Yes	9%	2,363	4,753	Yes	-2,747
Sonoma*		6.3	3,000	0.92	1,029	3,000	3,000	72	10,502	88	94	6	88	1,036	Yes	4%	992	2,029	Yes	-971
Windsor (Airport Service Area) (ASA)*		1.5	900	0.24	263	900	900	0	2,495	94	94	-	94	263	Yes	1%	236	500	Yes	-400
North Marin Water Dist. (MMWD)*		19.9	14,100	6.04	6,767	14,100	14,100	1,800	55,587	109	94	29	65	4,066	Yes	12%	3,135	7,201	Yes	-6,899
Santa Rosa*		56.6	29,100	13.48	15,094	29,100	29,100	1,530	155,121	87	94	9	85	14,840	Yes	35%	8,917	23,756	Yes	-5,344
Valley of the Moon Water Dist.*		8.5	3,200	2.14	2,397	3,200	3,200	536	22,646	94	94	21	73	1,854	Yes	5%	1,339	3,193	Yes	-7
Other Agency Cust (Includes FWD)**		2.7	2,048	0.48	534	2,048	2,048	-	8,080	94	94	-	94	853	Yes	2%	425	1,278	Yes	-770
Sub-Total		136.1	74,768	33.82	37,884	74,768	74,768	6,979	362,154					31,239				52,680		-22,087
Marin Muni. Water Dist.		0	14,300	18.39	20,605	14,300	14,300	20,500	189,945	97	94	96	0	0	Yes	13%	3,259	3,259	Yes	-11,041
Russian River Customers***		0	5,025	unknown	2,916	5,025	5,025	-	27,634	unknown	94	-	94	2,916	Yes	4%	1,145	4,061	Yes	-964
Total		136.1	94,093		61,404	94,093	94,093	27,479	579,733					34,155		100%	25,845	60,000		-34,093
Reasonable Need Remaining Unmet														25,845						
Water Available for Allocation	60,000																			

Definitions:
- * Defined in Restructured Water Supply Agreement as "Water Contractors" and often referred to as "Primes"
- ** FWD = Forestville Water Dist.
- *** SCWA Russian River Contractors whose direct diversions and points of diversion have been approved and come under the auspices of the SCWA's Water Rights (Town of Windsor and Russian River County Water Dist.)
- **** HC, S & FP = Human Consumption, Sanitation and Fire Protection
- TM Data = information set forth in Tech Memo prepared by West, Yost & Associates (West/Yost) dated Sept 23, 2004, "Methodology for Implementation of Water Shortage Provisions in Eleventh Amended Agreement for Water Supply"
- UWMP = Urban Water Management Plan
- UFW = unaccounted for water (ie water due to losses, leakage, theft and unmetered deliveries, meter inaccuracies, fire hydrant flows, pipeline flushing, etc.)
- af = ac-ft mgd = millions of gallons per day
- afa = ac-ft per annum (year) gpcd = gallons per capita per day

Column Explanations:
All are same as shown on Current Model sheet except for below:
7 Reasonable Requirement is set equal to the Annual Entitlement limit (cap) in order to estimate the allocation in the future when SCWA Customers reach (or exceed) their Annual Entitlement (or contract) Limits.

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APPENDIX C

City of Rohnert Park Water Policy Resolution

Resolution No. 2004-95

A Resolution of the City Council of the City of Rohnert Park Implementing Requirements Imposed on Specific Plan Areas Outside the City's 1999 Boundaries

WHEREAS, a Judgment was entered on September 5, 2002 by the Sonoma County Superior Court in *South County Resource Preservation Committee and John King v. City of Rohnert Park* (Case No. 224976) (hereinafter "Judgment"), which directed that certain General Plan policies be interpreted and applied consistent with language included in the Judgment, and that the language in the Judgment be treated as part of the General Plan; and

WHEREAS, the General Plan of the City of Rohnert Park requires that all development outside the City's 1999 boundaries be included within one of the specific plan areas identified in the General Plan; and

WHEREAS, the purpose of this resolution is to implement language included in the Judgment by describing the way in which certain interpretations of the General Plan will be applied to new developments in specific plan areas outside the City's 1999 boundaries; and

WHEREAS, nothing in this Resolution shall be construed to impair the City's ability to deliver water to its customers or respond to the needs of its water customers.

NOW, THEREFORE, the City Council of the City of Rohnert Park does hereby resolve as follows:

1. This Resolution applies to the Specific Plan Areas outside the City's 1999 boundaries that are identified in the General Plan and development projects within those Areas for which the City determines a negative declaration, mitigated negative declaration or environmental impact report is required ("Projects"). The City's 1999 boundaries are depicted on Exhibit A to this Resolution.

2. A negative declaration, mitigated negative declaration, or environmental impact report for a Project shall include the following information:

   a. Projected water demand for the Project before and after water supply reduction measures are implemented and an explanation of how these measures are planned to reduce consumption.

   b. 20-year projection of water supplies available to the City during normal, single-dry, and multiple-dry years. These terms shall have the same meaning as set forth in the most recent Urban Water Management Plan for the City of Rohnert Park.

   c. Analysis of whether the total projected water supplies will meet the projected water demand associated with the Project.

3. The approval of any tentative map for a Project shall be conditioned upon identification, before final map approval, of the water supply that is projected to serve the Project. Groundwater pumped from new or existing private wells within the Penngrove community (with zip code 94951 as of September 2002) will not be permitted as a water supply source.

4. Net Consumptive Water Use Impact Determinations. The information required by this section shall be submitted as part of the application for the first discretionary approval for a Project.

a. Definitions for Net Consumptive Water Use Impact Determinations: The following definitions shall be used to make the Net Consumptive Water Use Impact Determinations required by this section:

- *Net Consumptive Water Use Impact* is the amount of potable water demand of a Project less reductions for (1) Potable Water Conservation Practices and (2) Potable Water Use Offsets. Only those Potable Water Use Conservation Practices and Potable Water Use Offsets that the City Engineer determines will be acceptable, feasible and consistent with the City's water conservation program may be used in determining a project's Net Consumptive Water Use Impact.

- *Potable Water Conservation Practices* are on-site water conservation equipment and practices, including use of recycled water that reduces the projected potable water consumption of a Project and that can be implemented and completed with the Project.

- *Potable Water Use Offsets* are water conservation equipment, practices or programs that are funded, constructed, installed or implemented by a Project and that offset the amount of potable water consumed by that Project, including use of recycled water, that are applied outside of the project area ("off-site"), but which reduce demand on the City's water system for potable water, or, the funding, construction or implementation of facilities or practices in any location that increase recharge to the groundwater supplies available to the City's municipal wells; all of which can be implemented and completed with the Project.

- *Average Annual Groundwater Pumping Rate of 2.3 mgd* is the projected pumping rate from the City's municipal wells for the year estimated to be the Project's buildout year

b. The following calculations shall be included in the application for the first discretionary approval for a Project and shall be reviewed by the City Engineer.

1. Determine a Project's potable water demand (before any proposed Potable Water Conservation Practices or Water Use Offsets) using information and a methodology approved by the City Engineer.

2. Identify Potable Water Conservation Practices and estimated water savings. Potable water conservation practices selected for use in a Project requires concurrence from the City Engineer that the practices are acceptable and consistent with the City's Water Conservation Program. Water savings shall be determined using information and a methodology approved by the City Engineer.

3. Identify onsite and/or offsite recycled water use that is included in the Potable Water conservation Practices or Water Use Offsets proposed for the Project. Offsite use is limited to areas of use in the City's water service area.

4. Identify Water Use Offsets. Said offsets must identify a projected reduction in potable water use in the City's water service area and/or increase in recharge of groundwater supplies available to the City's municipal wells. In calculating the projected reduction in potable water use savings from Potable Water Conservation Practices and Water Use Offsets, estimates shall comply with guidelines established by the California Urban Water Conservation Council or other recognized professional water industry organizations such as the American Water Works Association.

5. Estimate the Project's Net Consumptive Water Use Impact taking into consideration the Potable Water Conservation Practices, and Water Use Offsets.

6. Provide an estimated year of when buildout of all commercial and residential development for the Project will occur. For purposes of this document, the "buildout year" is estimated as the year when 80 percent of the commercial and residential development have been constructed and occupied. For the percentage calculation, commercial development will be based on square footage and residential development will be based on number of dwelling units.

c. The City Engineer shall determine whether the Project's Net Consumptive Water Use Impact is projected to contribute to the City exceeding an Average Annual Groundwater Pumping Rate of 2.3 mgd. Said determination will consider the City's water supply sources, based on best reasonable information available at the time the determination is made. Such determination is without prejudice to the applicant submitting new or additional information and seeking a different determination.

d. The Project cannot be approved if its Net Consumptive Water Use Impact is determined to contribute to the City exceeding an Average Groundwater Pumping Rate of 2.3 mgd.

e. If a Project's Potable Water Conservation Practices and/or Recycled Water Use and/or Water Use Offsets include ongoing activities, the Developer will identify how these ongoing activities will remain in place and identify long-term operation and maintenance of the practices and water systems.

5. This Resolution implements General Plan policy by determining the reasonableness, legality and validity of decisions relating to Specific Plans. As such this Resolution is subject to the 90-day statute of limitations of Government Code section 65009(c).

DULY AND REGULARLY ADOPTED by the Rohnert Park City Council this 27th day of April, 2004.

ATTEST:

City Clerk Judy Hauff

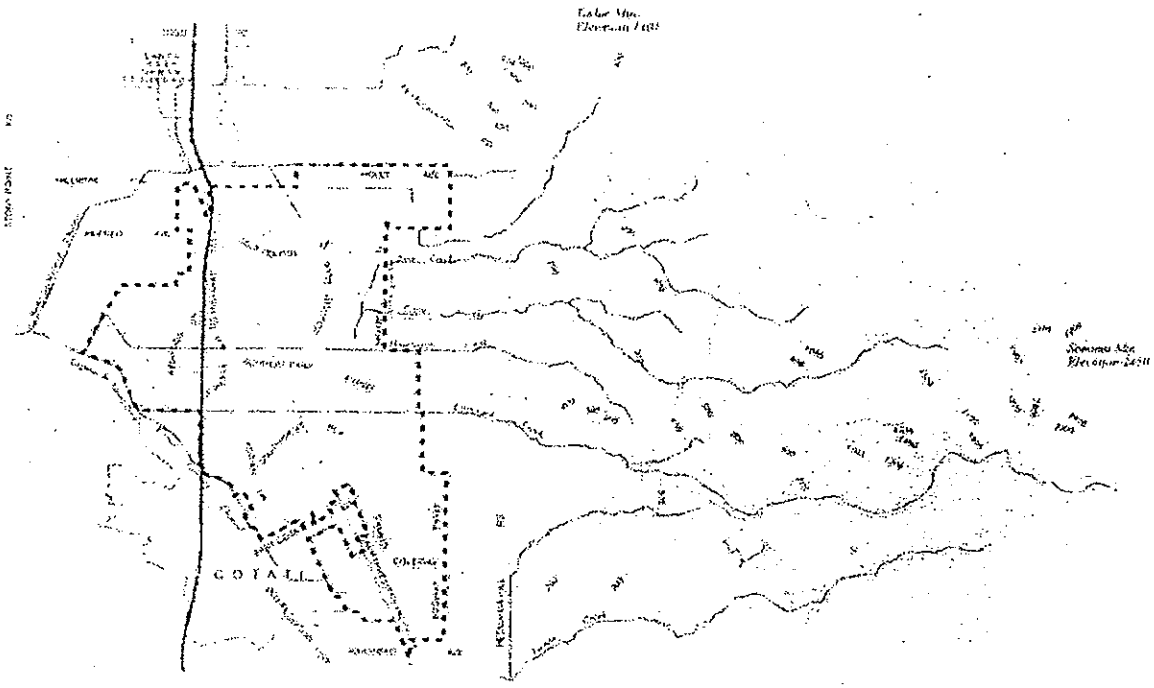
CITY OF ROHNERT PARK

Mayor Gregory A. Nordin

FLORES: AYE MACKENZIE: AYE SPRADLIN: AYE
VIDAK-MARTINEZ: AYE NORDIN: AYE
AYES: (5) NOES: (0) ABSENT: (0) ABSTAIN: (0)

710162v1 0001/0001

Exhibit A for Reso. No. 2004-95 adopted 4/27/04



City Limits (1999)

Rohnert Park City Limits (1999)

APPENDIX D

DWR Groundwater Basin/Subbasin Descriptions

Santa Rosa Valley, Santa Rosa Plain Subbasin

- Groundwater Basin Number: 1-55.01
- County: Sonoma
- Surface Area: 80,000 acres (125 square miles)

Basin Boundaries and Hydrology

The Santa Rosa Valley occupies a northwest-trending structural depression in the southern part of the Coast Ranges of northern California. This depression divides the Mendocino Range on the west from the Mayacmas and Sonoma Mountains on the east. The Santa Rosa Plain sub basin is approximately 22 miles long and 0.2 miles wide at the northern end; approximately 9 miles wide through the Santa Rosa area; and about 6 miles wide at the south end of the valley near the City of Cotati. The Santa Rosa Plain Sub Basin is bounded on the northwest by the Russian River plain approximately one mile south of the City of Healdsburg and the Healdsburg sub basin; mountains of the Mendocino Range flank the remaining western boundary. The southern end of the sub basin is marked by a series of low hills, which form a drainage divide that separates the Santa Rosa Valley from the Petaluma Valley basin south of Cotati. The eastern sub basin boundary is flanked by the Sonoma Mountains south of Santa Rosa and the Mayacmas Mountains north of Santa Rosa. The Rincon Valley sub basin is situated east of the City of Santa Rosa and is separated from the Santa Rosa Plain sub basin by a narrow constriction formed in rocks of the Sonoma Volcanics.

The Santa Rosa Plain Sub basin is drained principally by the Santa Rosa and Mark West Creeks that flow westward and collect into the Laguna de Santa Rosa. The Laguna de Santa Rosa flows northward and discharges into the Russian River. Precipitation in the Santa Rosa Plain ranges from approximately 28 inches in the south to about 40 inches in the north.

Hydrogeologic Information

Water Bearing Formations

The Santa Rosa Plain sub-basin has one main water-bearing unit (Merced Formation) and several units with lower water-bearing capacities (Glen Ellen Formation and Alluvium). The groundwater is not everywhere continuous because many of the units only have lenses of water-bearing material, and the valley is cut by northwest trending faults.

Alluvium. Alluvial deposits blanket most of the Santa Rosa Valley. The deposits consist of poorly sorted coarse sand and gravel, and moderately sorted fine sand, silt, and clay, and have a specific yield of 8 to 17 percent (DWR 1982). The source of the fine sand may be the Merced Formation. The older alluvial deposits are Late Pleistocene in age, are sometimes dissected, and have a maximum exposed thickness of 100 feet (Cardwell 1958). The younger alluvium is a thin veneer over the old, ranging from 30 to 100 feet thick, and is Late Pleistocene to Holocene in age. The deposits are not perennially saturated, have low permeability, and are generally unconfined or slightly confined (Cardwell 1958). Although the water quality

is generally good for most uses, there are few wells screened adjacent to the deposits (Cardwell 1958).

Glen Ellen Formation. The Glen Ellen Formation crops out extensively in the center of the Santa Rosa Plain, and extends beneath the eastern hills (Cardwell 1958). In most places it overlies the Merced Formation and some places the two formations are continuous, together housing the principal water body in the basin (Cardwell 1958). The Glen Ellen consists of partially cemented beds and lenses of poorly sorted gravel, sand, silt, and clay that vary widely in thickness and extent (Cardwell 1958; DWR 1982). This continental deposit is Pliocene (?) to Pleistocene in age, and was deposited in structural troughs so it varies in thickness from 3,000 feet to less than 1,500 feet on the west side of the valley (Cardwell 1958). It is reported that some wells sourced from the Glen Ellen produce more than 500 gal/min, but for most wells the specific capacities are less than 10 gpm/ft (Cardwell 1958). Most of the water under the Santa Rosa Valley is at water table conditions, but locally the water can be confined in areas of folding and faulting. Since the unit crops out in favorable areas and has moderate permeability (HLA 1978), recharge may occur fairly quickly, but it can be inhibited in areas of well-developed soils with hardpan (Cardwell 1958). Average specific yield for the Glen Ellen Formation is 3 to 7 percent (DWR 1982). It is tapped for domestic and some irrigation use.

Merced Formation. The Merced Formation is the major water-bearing unit in the basin. It extends beneath the western hills, crops out along the western side of the valley from the Russian River (Wilson Grove) south towards Petaluma, and dips beneath the center of the valley (Cardwell 1958). It is Pliocene in age, and its thickness is estimated to range from 300 to greater than 1,500 feet. The Merced Formation is a marine deposit of fine sand and sandstone, but has thin interbeds of clay and silty-clay, some lenses of gravel, and localized fossils (Cardwell 1958). Aquifer continuity and water quality are generally very good, with well yields from 100 to 1,500 gpm (Cardwell 1958) and specific yields from 10 to 20 percent (DWR 1982). Semi-confined to confined conditions may exist locally where clay lenses occur. Recharge occurs in the southwest portion of the basin, but is not at the maximum because much of the permeable soil is on slopes too steep for good recharge (DWR 1982). Some recharge may occur from the overlying Glen Ellen Formation (HLA 1978).

Groundwater Level Trends

The Santa Rosa Plain ground water basin as a whole is about in balance, with increased ground water levels in the northeast contrasting with decreased ground water levels in the south (DWR 1982).

Groundwater Storage

Groundwater Storage Capacity. The USGS estimated the gross groundwater storage capacity for this basin to be about 948,000 af based on an average specific yield of 7.8 percent for aquifer materials at depths of 10 to 200 feet (Cardwell 1958). The DWR performed a study of the area and calculated a groundwater storage capacity for this basin to be approximately 4,313,000 af (DWR 1982). This calculation was made by dividing the

approximate basin area into a grid of 193 cells ranging in size from 320 to 640 acres. Specific yield values were calculated for each cell using lithologic and aquifer thickness data processed by the TRANSCAP computer program. In the DWR study, aquifer thicknesses ranged from 50 to over 1,000 feet with an average thickness of approximately 400 feet.

Groundwater in Storage. Using water level information for the spring of 1980 and the product of the TRANSCAP program, the volume of groundwater in storage was estimated to be 3,910,000 af (DWR 1982).

Groundwater Budget (Type A)

A groundwater model for the Santa Rosa Plain Subbasin was prepared by the DWR (DWR 1982). The 15-year period from 1960-61 through 1974-75 was selected as the study period for the Santa Rosa Plain basin because it contained a mixture of wet and dry years approximating long-term climatic conditions. Average annual natural recharge for the period 1960 to 1975 was estimated to be about 29,300 af. Average annual pumping during the same time period was estimated to be approximately 29,700 af.

Water Quality

Characterization. On the western side of the basin, sodium and bicarbonate are the dominant cation and anion in water from all depths (DWR 1982). Moving south along the western boundary, the shallow waters have magnesium and calcium as the dominant cation and in the deep zone (below 150 feet) sodium dominates. In the vicinity of Windsor, magnesium chloride water is present in the shallow aquifer to a depth of about 100 feet. In the Santa Rosa area, groundwater at all depths is characterized primarily by sodium and magnesium bicarbonate types. In the Rohnert Park vicinity, groundwater in the deep zone (below 150 feet) is characterized by sodium and calcium bicarbonate types (DWR 1982).

Impairments. According to a DWR study of the basin, few wells tested for water quality contained constituents over the recommended concentration for drinking water (DWR 1982). Many wells produced water with aesthetic problems such as high concentrations of iron, manganese, or high hardness. Private well owners questioned about groundwater quality reported many complaints about the color and/or taste of the water. Although high iron, manganese, and hardness have been reported in groundwater from some portions of the Santa Rosa Plain basin, the overall quality of groundwater in the Santa Rosa Plain is good.

With respect to agriculture, areas with elevated boron concentrations in groundwater (greater than 2.0 mg/L) have been reported south of Windsor and north of the City of Rohnert Park (DWR 1982).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	150	3
Radiological	120	5

Nitrates	155	1
Pesticides	139	0
VOCs and SVOCs	126	2
Inorganics – Secondary	150	86

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)

Merced Formation wells have reported yields ranging from 100 to 1,500 gpm;
Glenn Ellen Formation wells have reported yields of 500+ gpm;
Alluvial wells are not significant water producers in the Santa Rosa Plain sub basin although alluvial wells in Petaluma Valley reportedly yield up to about 150 gpm.
(Well-yield data reported from Cardwell 1958)

Total depths (ft)

Domestic	Range: 30 to 840	Average: 197 (based on 1,280 wells)
Municipal/Irrigation	Range: 35 to 971	Average: 359 (based on 111 wells)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR (incl. Cooperators)	Groundwater levels	37 wells/semi-annually and 6 wells/monthly
DWR (incl. Cooperators)	Mineral, nutrient, & minor element.	14 wells/biennially
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	155 wells as required in Title 22, Calif. Code of Regulations

Basin Management

Groundwater management:	No groundwater management plans identified
Water agencies	
Public	Sonoma County Water Agency, City of Sebastopol WSA, Town of Windsor WSA, City of Santa Rosa, City of Cotati, City of Rohnert Park
Private	

References Cited

Cardwell, G.T.. 1958. Geology and Ground Water in the Santa Rosa and Petaluma Valley Areas, Sonoma County, California. USGS Water Supply Paper 1427.

California Department of Water Resources (DWR). 1982. Evaluation of Ground Water Resources in Sonoma County Volume 2: Santa Rosa Plain. DWR Bulletin 118-4.

Harding-Lawson Associates. 1978. Evaluation of Alternatives for Recharge of the Santa Rosa Plain Ground-Water Basin.

Errata

Changes made to the basin description will be noted here.

Santa Rosa Valley, Healdsburg Area Subbasin

- Groundwater Basin Number: 1-55.02
- County: Sonoma
- Surface Area: 15,400 acres (24 square miles)

Basin Boundaries and Hydrology

The Healdsburg Area subbasin includes the floodplain of the Russian River. To the north it is bounded by the confluence of School House Creek and Dry Creek, and to the south by Lafayette School and the U.S. Government Reservation (Healdsburg). The boundaries are generally defined by alluvium and river channel deposits (DWR 1983). Precipitation in the Healdsburg area subbasin ranges from about 36 inches in the south to about 44 inches in the north (USDA 1999).

Hydrogeologic Information

Water Bearing Formations

The principal water source in the Healdsburg area is alluvium, with secondary sources being the Glen Ellen Formation, alluvial fan and terrace deposits, and the Merced Formation in the south. The Sonoma Volcanics contribute a very limited amount of water (DWR 1983).

Quaternary Alluvium. Holocene-age Alluvium and River Channel deposits underlie the Russian River, Dry Creek, and other tributaries. The deposits are unconsolidated, permeable gravel and sand. Increasing amounts of silt and poorer sorting away from the river causes lower permeability. Alluvium produces high yields, and provides most of the groundwater supply to the City of Healdsburg. The specific yield is high -- between 8 to 20 percent -- and near the river 25 to 50 foot wells can yield 200 to 500 gpm (DWR 1983).

Terrace Deposits. Terrace deposits, Pleistocene in age, outcrop discontinuously along the Russian River and Dry Creek. The deposits are unconsolidated, cross-bedded sands with some silt and clay, with a thickness of up to 200 feet. These were originally alluvial fan, floodplain and stream deposits until the streams downgraded and left the terraces exposed. Yields from the Terrace Deposits are adequate for domestic use, stock watering, commercial, and limited industrial use. Yields range from 10 to 50 gpm, higher where the terraces are less dissected, and the specific yield is moderate (8 to 15 percent). The specific capacity is about 5 gpm/ft (DWR 1983).

Glen Ellen Formation. The Glen Ellen consists of partially cemented beds and lenses of poorly sorted gravel, sand, silt, and clay that vary widely in thickness and extent (Cardwell 1958; DWR 1983). This continental, alluvial fan and floodplain deposit is Pliocene (?) to Pleistocene age, and is about 1,500 feet thick east of the Russian River and along the east side of Dry Creek (DWR 1983). Water yield is highly variable because the unit is very heterogeneous, but permeability is generally low (DWR 1983). Average specific yield for the Glen Ellen Formation is 3 to 7 percent (DWR 1982;

DWR 1983). It is tapped for domestic use, and wells yield from 1 to 140 gpm, with a specific capacity of about 2 gpm/ft (DWR 1983).

Merced Formation. The Merced Formation occurs only in the extreme southern part of the basin. It is a marine deposit of fine sand and sandstone, but has thin interbeds of clay and silty clay, some lenses of gravel, and localized fossils (Cardwell 1958). It is Pliocene in age, and it's thickness is estimated from 300 to greater than 1,500 feet. Further south in the Santa Rosa Plain, the Merced Formation is a major producer, but in the Healdsburg Area yields are only small to moderate (8 to 15 percent) with local exceptions (DWR 1983).

Groundwater Level Trends

DWR measures groundwater levels in eight (8) wells in the Healdsburg area. Data from the last 10 years show that the groundwater level has remained relatively constant, although one well (09N10W12C01M) that has been measured since 1965 shows a gradual decrease in the water table, from 110 to 100 ft above sea level (DWR unpublished data).

Groundwater Storage

Groundwater Storage Capacity. The groundwater storage capacity has been estimated at 489,000 af (DWR 1983). This estimate is based on a TRANSCAP calculation for an area slightly larger than the one defined by this bulletin (includes parts of Santa Rosa Plain).

Groundwater in Storage. The estimated total volume of groundwater in storage for the year 1980 was 390,000 af (DWR 1983). This estimate is based on a TRANSCAP calculation for an area slightly larger than the one defined by this bulletin (includes parts of Santa Rosa Plain).

Groundwater Budget (Type C)

There is insufficient data available in order to provide a water budget for this sub basin.

Groundwater Quality

Characterization. The water in this area can be characterized as moderately hard to hard bicarbonate type and generally suitable for all uses (Cardwell 1965). TDS ranges from 90 to 500 mg/L but generally is less than 200 mg/L. EC ranges from 178 to 672 µmhos/cm based on 16 wells from Alexander Valley and two wells from Healdsburg (DWR 1983).

Impairments. No major impairments identified (DWR 1983). In areas where wells tap the alluvial deposits, the quality of the river water may affect water in those wells. Water quality in both Dry Creek and the Russian River is considered good (DWR 1983; Cardwell 1965).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	25	0
Radiological	11	0
Nitrates	26	0
Pesticides	13	0
VOCs and SVOCs	14	0
Inorganics – Secondary	25	11

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

Well yields (gal/min)

Alluvial wells near the river generally yield 200 to 500 gal/min
Terrace deposit wells generally yield 10 to 50 gal/min
Glen Ellen Formation wells yield 1 to 140 gal/min
(Well-yield data obtained from Cardwell 1965)

Total depths (ft)

Domestic	Range: 30 - 600	Average: 176 (based on 206 wells)
Municipal/Irrigation	Range: 32 - 673	Average: 141 (based on 58 wells)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR (incl. Cooperators)	Groundwater levels	8 wells/semi-annually
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	28 wells as required in Title 22, Calif. Code of Regulations

Basin Management

Groundwater management:	No groundwater management plans were identified.
Water agencies	
Public	City of Healdsburg Public Works Department
Private	

References Cited

California Department of Water Resources. 1982. Evaluation of Ground Water Resources, Sonoma County. Volume 2: Santa Rosa Plain. Bulletin 118-4.

_____. 1983. Evaluation of Ground Water Resources, Sonoma County. Volume 5: Alexander Valley and Healdsburg Area. Bulletin 118-4.

Cardwell, G.T., 1958. Geology and Ground Water in the Santa Rosa and Petaluma Valley Areas, Sonoma County, California. USGS Water Supply Paper 1427.

_____. 1965. Geology and Ground Water in Russian River Valley Areas and in Round, Laytonville and Little Lake Valleys, Sonoma and Mendocino Counties, California. USGS Water Supply Paper 1548.

Errata

Changes made to the basin description will be noted here.

Santa Rosa Valley, Rincon Valley Subbasin

- Groundwater Basin Number: 1-55.03
- County: Sonoma
- Surface Area: 5,600 acres (9 square miles)

Basin Boundaries and Hydrology

The Santa Rosa Valley occupies a northwest-trending structural depression in the southern part of the Coast Ranges of northern California, which divides the Mendocino Range on the west from the Mayacmas and Sonoma Mountains on the east. Rincon Valley occupies a portion of a small north to northwest-trending structural trough located east of the larger Santa Rosa Valley and the City of Santa Rosa. This valley is approximately 7 miles long along its eastern edge and varies in width from about 0.5 miles to 2.5 miles.

The majority of the valley is bounded by the Napa-Sonoma Volcanic Highlands with two exceptions. On the southeast side, Rincon valley is separated from Kenwood Valley subbasin by Santa Rosa Creek and on the southwest side, Rincon Valley is separated from the Santa Rosa Plain by a narrow constriction formed in bedrock of the Sonoma Volcanics.

Rincon Valley drains to the south through Brush Creek, a small intermittent stream, which is a tributary of Santa Rosa Creek. Precipitation in Rincon Valley ranges from about 32 inches in the south to over 40 inches in the north-northeast.

Hydrogeologic Information

Water Bearing Formations

The primary water-bearing units in the Rincon Valley are Alluvium and the Glen Ellen Formation.

Alluvium. Alluvial deposits are present over a significant proportion of Rincon Valley. These deposits consist of poorly sorted coarse sand and gravel, and moderately sorted fine sand, silt, and clay, and have a specific yield of 8 to 17 percent (DWR 1982). The older alluvial deposits are Late Pleistocene in age, are sometimes disected, and have a maximum exposed thickness of 100 feet in the Santa Rosa Valley (Cardwell 1958). The younger alluvium is a thin veneer over the old, ranging from 30 to 100 feet thick, and is Late Pleistocene to Holocene in age. The deposits are not perennially saturated, have low permeability, and are generally unconfined or slightly confined (Cardwell 1958). The water quality is generally good for most uses, and the unit yields water to some wells in the downstream part of the Rincon Valley (Cardwell 1958).

Glen Ellen Formation. The Glen Ellen Formation provides the major water source in the Rincon Valley subbasin, and is connected to the principal groundwater body in the Santa Rosa Valley (Cardwell 1958). The Glen Ellen consists of partially cemented beds and lenses of poorly sorted gravel, sand, silt, and clay that vary widely in thickness and extent (Cardwell 1958; DWR 1982). This continental deposit is Pliocene (?) to Pleistocene age, and

was deposited in structural troughs so it varies in thickness from 3,000 feet to less than 1,500 feet on the west side of the Santa Rosa Valley (Cardwell 1958). In the southeast part of the Rincon valley, confined conditions exist and some wells are flowing (Cardwell 1958). Since the unit crops out in favorable areas and has moderate permeability (HLA 1978), recharge may occur fairly quickly, but it can be inhibited in areas of well-developed soils with hardpan (Cardwell 1958). Average specific yield for the Glen Ellen Formation is 3 to 7 percent (DWR 1982). This formation is tapped for domestic use (Cardwell 1958).

Groundwater Level Trends

Review of water level data from representative wells within Rincon Valley indicate that water levels have remained relatively stable during the period of 1951 to 2000 and that the subbasin is nearly full (DWR 1975; DWR unpublished data). One well located in the southeast part of the subbasin near Santa Rosa Creek has shown a gradual increase in water level of over 20 feet between 1990 and 2000 (DWR unpublished data).

Groundwater Storage

Groundwater Storage Capacity. An estimate of the gross groundwater storage capacity for the Rincon Valley of 21,000 af was obtained by the USGS using an average specific yield of 5.5 percent for an estimated 190 feet of primary water-bearing materials (Cardwell 1958). An estimate of the total groundwater storage capacity of 45,000 af was calculated for a large portion of the Rincon Valley subbasin and a smaller portion of the Kenwood Valley subbasin (DWR 1965). This estimate was based on the alluvium from a depth of 10 to 200 feet and an average specific yield of 5.5 percent. The depth range used for this estimate probably includes a portion of the Glen Ellen Formation. Bulletin 118-4 provided an estimate of the gross storage capacity for the Rincon Valley subbasin of 290,000 af (DWR 1975). This estimate was obtained using the GEOLOG program and an average specific yield of 6.83 percent; however, this value cannot be construed to be the usable groundwater storage capacity.

Groundwater in Storage. An estimate of the groundwater in storage during the spring of 1980 of approximately 43,000 af was obtained using data from Bulletin 118-4 Volume 2 (DWR 1982). This estimate was obtained for an area less than that of the currently defined Rincon Valley subbasin.

Groundwater Budget (Type C)

There is not enough data available in order to estimate a groundwater budget.

Groundwater Quality

Characterization. The Rincon Valley subbasin is generally characterized by a calcium-bicarbonate water type (DWR 1975). A localized area of sodium and/or magnesium chloride water is present in the southwest portion of the subbasin. In the southern portions of the subbasin, groundwater hardness ranges from about 100 to 200 mg/L (DWR 1975).

Impairments. In the southwest portion of the subbasin near the boundary with the Santa Rosa Plain, an area of elevated iron, manganese, and boron was reported (DWR 1975).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	12	0
Radiological	9	0
Nitrates	14	0
Pesticides	11	0
VOCs and SVOCs	10	0
Inorganics – Secondary	12	5

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: –	Average: (based on ___wells)
	Total depths (ft)	
Domestic	Range: 85 to 500	Average: 231 (based on 8 wells)
Municipal/Irrigation	N/A	

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR (incl. Cooperators)	Groundwater levels	2 wells/semi-annually
DWR (incl. Cooperators)	Mineral, nutrient, & minor element.	None known
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	12 wells as required in Title 22, Calif. Code of Regulations

Basin Management

Groundwater management:	No groundwater management plans identified.
Water agencies	
Public	Sonoma County Water Agency
Private	

References Cited

Cardwell, G.T., 1958. Geology and Ground Water in the Santa Rosa and Petaluma Valley Areas, Sonoma County, California. USGS Water Supply Paper 1427.

California Department of Water Resources (DWR). 1965. Water Resources and Future Water Requirements. North Coast Hydrographic Region. Volume 1: Southern Region. DWR Bulletin 142-1.

_____. 1975. Evaluation of Ground Water Resources: Sonoma County. Volume 1: Geologic and Hydrologic Data. DWR Bulletin 118-4.

_____. 1982. Evaluation of Ground Water Resources - Sonoma County. Volume 2: Santa Rosa Plain. DWR Bulletin 118-4.

Additional References

Harding-Lawson Associates 1978. Evaluation of Alternatives for Recharge of the Santa Rosa Plain Ground-Water Basin. March 1978.

Errata

Changes made to the basin description will be noted here.

APPENDIX E

Groundwater Level Hydrographs

Wells with Groundwater Level Data in the Santa Rosa Valley Groundwater Basin and Adjacent Areas

DWR Basin: SANTA ROSA VALLEY

Subbasin Name (if available): HEALDSBURG AREA

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
08N09W22E001M	22E001	S	11/30/1989 - 4/17/2006	29	45	-
09N09W20E002M	20E002	Unknown	4/5/1976 - 4/17/2006	40		-
09N09W20K004M	20K004	Unknown	11/30/1989 - 4/17/2006	34		-
09N09W28N001M	28N001	Unknown	11/15/1990 - 4/17/2006	30		-
09N10W12C001M	12C001	Unknown	8/18/1964 - 4/17/2006	130		-
10N10W22D001M	22D001	Unknown	4/5/1976 - 10/29/1991	12		-
10N10W22D002M	22D002	Unknown	4/27/1994 - 4/17/2006	24		-
10N10W26M001M	26M001	Unknown	4/5/1976 - 4/17/2006	41		-

Subbasin Name (if available): RINCON VALLEY

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
07N07W06H002M	06H002	S	11/8/1989 - 4/17/2006	30	100	60 - 80
07N07W09P001M	09P001	I	11/8/1989 - 4/18/2006	33	296	286 - 296

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
06N07W17G001M	17G001	SI	11/9/1989 - 4/6/2004	20	370	120 - 370
06N07W19E001M	19E001	SI	1/18/1990 - 8/20/1991	10	303	160 - 303
06N07W30C001M	30C001	WD_ONLY	3/15/1976 - 4/18/2006	33	465	-
06N07W30L001	30L001	Unknown	9/29/1949 - 4/1/1952	23		-
06N07W30M001	30M001	Unknown	1/1/1947 - 3/15/1957	23		-
06N07W30R001M	30R001	S	12/1/1966 - 4/18/2006	34	150	35 - 150
06N08W02E001M	02E001	S	12/1/1963 - 12/9/1996	11	172	167 - 172
06N08W02E002M	02E002	S	3/21/1990 - 10/20/1992	4	60	52 - 60
06N08W04Q001M	04Q001	S	11/3/1989 - 4/18/2006	34	80	10 - 80
06N08W08R002M	08R002	S	11/2/1989 - 4/6/2004	13	92	52 - 92

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
06N08W09J002M	09J002	D	11/2/1989 - 4/26/1996	2	745	719 - 739
06N08W11D001M	11D001	SI	11/3/1989 - 4/6/2004	22	251	104 - 251
06N08W11F001M	11F001	S	3/17/1976 - 12/9/1996	21	110	70 - 90
06N08W11P001M	11P001	S	11/9/1989 - 4/18/2006	33	120	-
06N08W12F001M	12F001	SI	11/2/1989 - 9/26/2000	105	252	76 - 252
06N08W12M001M	12M001	S	10/3/1989 - 4/18/2006	31	90	80 - 90
06N08W15A002M	15A002	S	11/2/1989 - 10/19/2005	28	72	50 - 72
06N08W15J003M	15J003	S	3/1/1950 - 4/6/2005	306	166	65 - 166
06N08W16K003M	16K003	S	11/2/1989 - 4/6/2004	14	79	59 - 79
06N08W22R001M	22R001	I	11/3/1989 - 4/6/2004	19	407	387 - 407
06N08W26L001M	26L001	S	4/15/1972 - 7/8/2004	301	94	54 - 94
06N08W26M001M	26M001	I	11/3/1989 - 12/11/1996	8	224	205 - 224
06N08W26N001	26N001	Unknown	12/19/1949 - 4/4/1952	15		-
06N08W27H001M	27H001	S	11/3/1989 - 6/7/2006	47	82	62 - 82
07N07W19B001M	19B001	S	11/8/1989 - 4/18/2006	22	85	45 - 85
07N07W19F002M	19F002	S	11/8/1989 - 4/18/2006	30	68	48 - 68
07N08W03L001M	03L001	S	5/1/1946 - 4/16/2003	18	150	17 - 95
07N08W07D001M	07D001	SI	11/1/1989 - 4/5/2004	18	232	74 - 232
07N08W07Q001M	07Q001	S	11/1/1989 - 4/6/2004	18	82	72 - 82
07N08W08M001M	08M001	SI	11/1/1989 - 4/18/2006	33	220	180 - 220
07N08W09N001M	09N001	S	5/24/1974 - 4/16/2003	18	63	35 - 65
07N08W17K003M	17K003	S	3/22/1990 - 4/11/1991	2	90	70 - 90
07N08W21J001M	21J001	SI	12/20/1989 - 4/18/2006	34	360	148 - 360
07N08W23H001M	23H001	S	3/21/1990 - 4/27/1993	6	128	104 - 128
07N08W24L001M	24L001	SI	11/8/1989 - 4/5/2004	23	330	160 - 200
07N08W26L002M	26L002	I	11/9/1989 - 4/5/2004	24	258	209 - 249
07N08W27N002M	27N002	S	6/27/1973 - 4/5/2004	23	65	45 - 65

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
07N08W29K001M	29K001	S	5/1/1972 - 11/9/1993	3	67	47 - 67
07N08W29M002M	29M002	S	10/1/1966 - 4/5/2004	19	98	78 - 98
07N08W30K001M	30K001	SI	10/31/1973 - 6/7/2006	313	290	105 - 291
07N08W35K001M	35K001	SI	11/9/1989 - 4/18/2006	34	205	185 - 205
07N09W01C001M	01C001	S	11/1/1989 - 4/18/2006	33	110	-
07N09W02L001M	02L001	S	11/1/1989 - 4/5/2004	20	141	132 - 141
07N09W13M001M	13M001	WD_ONLY	11/1/1989 - 3/1/1996	3	316	-
07N09W14H005M	14H005	S	11/1/1989 - 4/5/2004	19	94	-
07N09W26P001M	26P001	S	11/2/1989 - 4/18/2006	33	110	-
08N08W20Q001M	20Q001	SI	11/8/1989 - 10/16/2002	16	312	55 - 310
08N08W29B001M	29B001	S	11/8/1989 - 4/17/2006	31	64	52 - 64
08N08W29C003M	29C003	S	11/8/1989 - 4/17/2006	35	95	82 - 95
08N08W32M001M	32M001	I	11/1/1989 - 10/16/2002	17	332	310 - 331
08N09W12P001M	12P001	S	3/16/1976 - 10/16/2002	23	187	67 - 187
08N09W12P002M	12P002	S	3/16/1976 - 11/15/1990	8	100	85 - 100
08N09W13A002M	13A002	S	11/29/1989 - 5/10/1999	102	109	87 - 109
08N09W13A003M	13A003	S	11/1/1989 - 10/16/2002	22	192	176 - 188
08N09W14L002M	14L002	S	11/1/1989 - 6/27/1995	10	132	122 - 132
08N09W15B001M	15B001	I	11/1/1989 - 4/24/1997	6	235	215 - 235
08N09W22R001M	22R001	S	11/1/1989 - 11/3/2004	26	145	122 - 142
08N09W26L001M	26L001	I	1/18/1990 - 4/17/1991	14	265	246 - 265
08N09W36N001M	36N001	S	3/16/1976 - 4/18/2006	35	89	-
08N09W36P001M	36P001	WD_ONLY	10/5/1949 - 6/7/2006	136	1048	-
COT_02	COT_02	I	1/29/1977 - 6/7/2006	133	500	220 - 485
COT_03	COT_03	ID	1/10/1990 - 6/7/2006	61	685	295 - 670
COT_1A	COT_1A	ID	1/24/1990 - 7/12/2006	66	650	290 - 630
PWC_01	PWC_01	SI	9/16/2000 - 10/25/2003	41		188 - 380

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
RP_01	RP_01	I	1/1/1955 - 4/1/2006	288		265 - 458
RP_02	RP_02	I	1/1/1956 - 4/1/2006	294		288 - 462
RP_03	RP_03	IDL	1/1/1960 - 3/1/2006	262		272 - 805
RP_04	RP_04	SI	1/1/1961 - 4/1/2006	293		60 - 425
RP_05	RP_05	SI	8/1/1976 - 4/1/2006	292		160 - 463
RP_06	RP_06	SI	1/1/1970 - 4/1/2006	280		120 - 380
RP_07	RP_07	SI	1/1/1971 - 4/1/2006	282		128 - 460
RP_08	RP_08	SI	1/1/1972 - 4/1/2006	289		125 - 490
RP_08A	RP_08A	SI	5/1/1987 - 4/1/2006	199		80 - 594
RP_09	RP_09	SI	7/1/1974 - 2/1/2006	278		144 - 490
RP_10	RP_10	SI	1/1/1976 - 4/1/2006	286		200 - 450
RP_11	RP_11	I	12/1/1975 - 3/1/2006	285		224 - 494
RP_12	RP_12	I	1/1/1976 - 4/1/2006	275		224 - 565
RP_13	RP_13	SI	1/1/1976 - 4/1/2006	284		118 - 478
RP_14	RP_14	IDL	1/1/1977 - 3/1/2006	259		275 - 819
RP_15	RP_15	IDL	1/1/1977 - 4/1/2006	262		351 - 1491
RP_16	RP_16	IDL	1/1/1977 - 4/1/2006	264		300 - 1500
RP_17	RP_17	I	9/1/1980 - 4/1/2006	253		302 - 462
RP_18	RP_18	I	9/1/1980 - 4/1/2006	251		298 - 522
RP_19	RP_19	SI	3/1/1982 - 4/1/2006	241		120 - 420
RP_20	RP_20	SI	3/1/1982 - 4/1/2006	183		100 - 470
RP_21	RP_21	SI	3/1/1982 - 4/1/2006	241		190 - 395
RP_22	RP_22	I	3/1/1982 - 4/1/2006	242		242 - 344
RP_23	RP_23	SI	3/1/1982 - 12/1/2001	193		190 - 580
RP_24	RP_24	I	3/1/1982 - 11/1/2005	233		258 - 582
RP_25	RP_25	I	11/1/1985 - 12/1/2001	155		323 - 580
RP_26	RP_26	I	1/1/1986 - 4/1/2006	199		297 - 540

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
RP_27	RP_27	I	9/1/1985 - 4/1/2006	204		260 - 594
RP_28	RP_28	I	11/1/1985 - 12/1/2001	152		395 - 595
RP_29	RP_29	SI	2/1/1987 - 4/1/2006	197		130 - 450
RP_30	RP_30	SI	4/1/1989 - 4/1/2006	176		161 - 421
RP_31	RP_31	SI	8/1/1987 - 4/1/2006	190		110 - 510
RP_32	RP_32	SI	3/1/1986 - 7/1/1998	110		38 - 411
RP_33	RP_33	SID	7/1/1989 - 4/1/2006	176		156 - 666
RP_34	RP_34	SID	8/1/1990 - 4/1/2006	164		170 - 680
RP_35	RP_35	SI	4/1/1990 - 4/1/2006	164		160 - 590
RP_36	RP_36	ID	4/1/1991 - 12/1/2001	104		210 - 695
RP_37	RP_37	SI	5/1/1991 - 4/1/2006	153		130 - 380
RP_38	RP_38	SI	11/1/1991 - 4/1/2006	133		165 - 280
RP_39	RP_39	I	9/1/1991 - 4/1/2006	151		238 - 398
RP_40	RP_40	I	6/1/1991 - 4/1/2006	154		220 - 480
RP_41	RP_41	SID	3/1/1993 - 4/1/2006	133		175 - 675
RP_42	RP_42	I	8/1/1998 - 4/1/2006	77		300 - 440
SCWA_01	SCWA_01	S	6/15/1977 - 3/20/2003	114	80	60 - 80
SCWA_02	SCWA_02	WD_ONLY	6/15/1977 - 3/20/2003	115	257	-
SCWA_03	SCWA_03	WD_ONLY	6/15/1977 - 3/20/2003	115	570	-
SCWA_04	Todd Rd	D	10/15/1977 - 3/25/1997	93	808	650 - 800
SCWA_05	Sebastopol Rd	IDL	9/15/1977 - 3/22/1999	93	1040	400 - 1040
SCWA_06	Occidental Rd	ID	10/15/1977 - 6/20/2001	102	600	400 - 600
T0609700002MW-7	L002	S	8/26/2002 - 7/22/2005	13	21	-
T0609700005MW-2	L005	S	1/18/2002 - 11/10/2005	60	20	-
T0609700006MW-7	L006	S	6/20/2002 - 2/1/2006	26	19	-
T0609700090LP-1	L090	S	9/25/2001 - 3/26/2004	11		-
T0609700126MW-3	L126	S	5/30/2002 - 7/21/2005	28	28	-

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

Subbasin Name (if available): SANTA ROSA PLAIN

State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
T0609700189MW-18	L189	S	12/27/2002 - 11/9/2006	12		-
T0609700248MW-3	L248	S	5/17/2002 - 11/9/2005	15		-
T0609700386MW-6	L386	S	11/19/2001 - 11/9/2005	17	20	-
T0609700424MW-1	L424	S	9/27/2001 - 6/18/2004	12		-

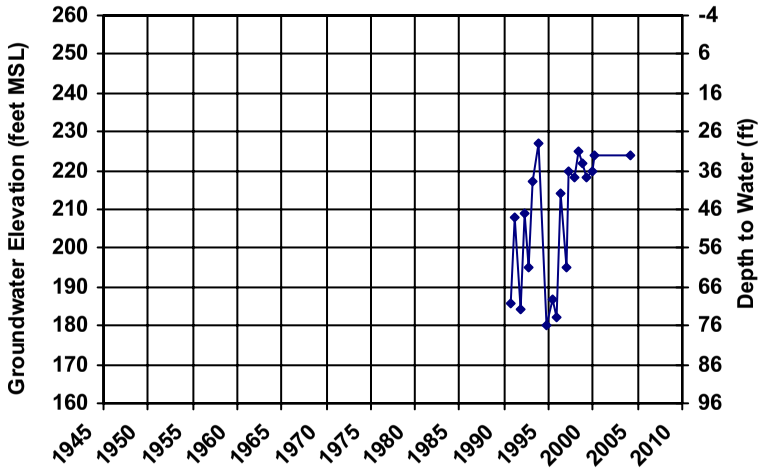
DWR Basin: PETALUMA VALLEY

Subbasin Name (if available):

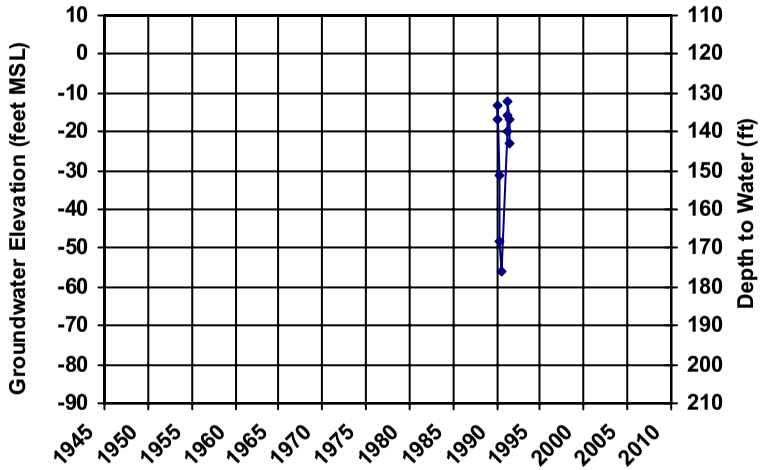
State Well Number	Well Name	Aquifer Designation*	Period of WL Data	No. of Meas.	Depth	Perforation Interval
05N07W07A001M	07A001	S	11/9/1989 - 11/6/2002	21	62	35 - 60
05N07W11F001M	11F001	I	10/8/1980 - 4/18/2006	41	480	300 - 450
05N07W11N001M	11N001	S	10/8/1980 - 4/18/2006	40	100	60 - 100
05N07W15K002M	15K002	S	12/1/1989 - 4/18/2006	32	177	158 - 177
05N07W15Q001M	15Q001	SI	12/1/1989 - 6/7/2006	132	200	180 - 200
05N07W18B001M	18B001	S	11/10/1989 - 4/6/2004	25	82	58 - 78
05N07W19N001M	19N001	S	1/19/1990 - 6/7/2006	175	180	-
05N07W20B002M	20B002	S	4/19/1953 - 4/18/2006	201	158	-
05N07W34L001M	34L001	S	11/10/1989 - 3/20/2000	21	196	123 - 163
05N07W36R001M	36R001	S	12/1/1989 - 10/20/2005	89	34	20 - 34
05N08W01L002M	01L002	S	1/21/1976 - 4/18/2006	56	185	165 - 185
05N08W02H001M	02H001	S	8/1/1975 - 4/18/2006	56	155	30 - 150
06N07W31J001M	31J001	SI	11/9/1989 - 4/6/2004	24	280	45 - 228
06N07W31J002	31J002	Unknown	6/14/1950 - 4/1/1952	10		-
T0609700828MW-1	L828	S	1/1/1994 - 1/1/2004	3		-

*** "S" indicates Shallow, "I" indicates Intermediate, "D" indicates Deep, "L" indicates Lower, and "WD Only" indicates well depth but no perforation data is available.**

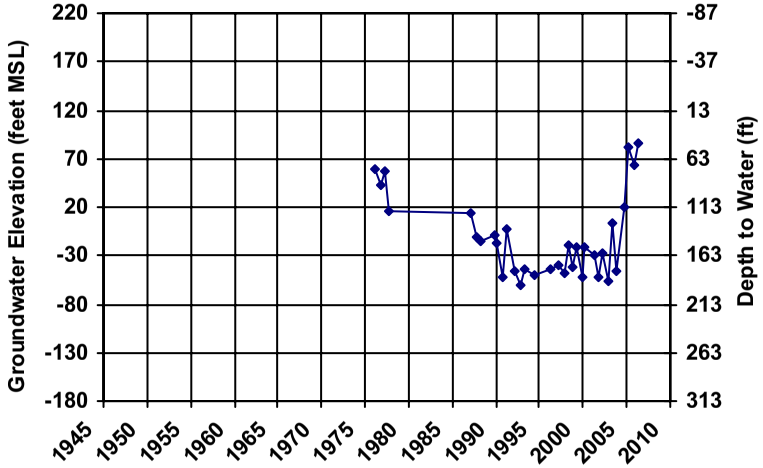
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W17G001M (17G001)
Aquifer: SI
Depth if available: 370
RPE: 256



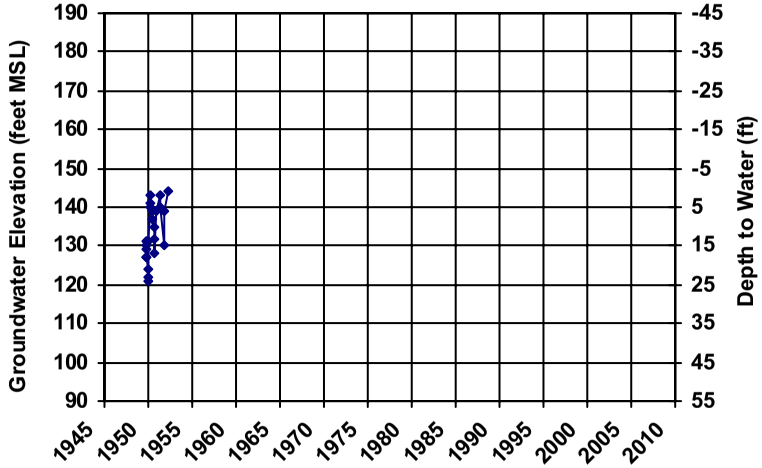
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W19E001M (19E001)
Aquifer: SI
Depth if available: 303
RPE: 120



SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W30C001M (30C001)
Aquifer: WD_ONLY
Depth if available: 465
RPE: 133

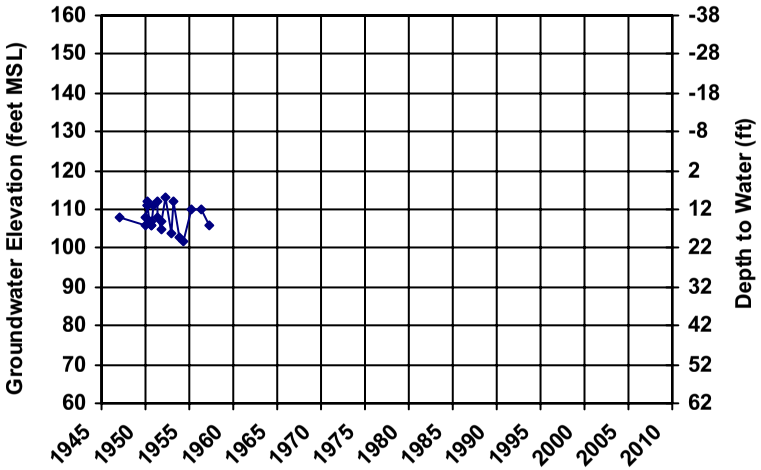


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W30L001 (30L001)
Aquifer: Unknown
Depth if available:
RPE: 145



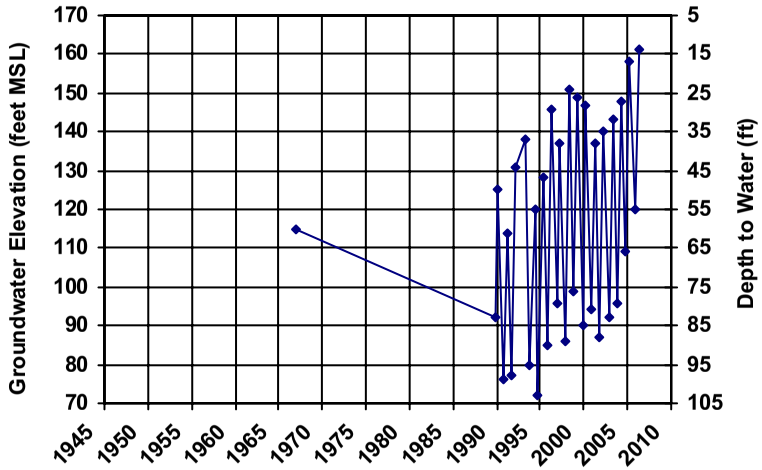
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W30M001 (30M001)

Aquifer: Unknown
Depth if available:
RPE: 122



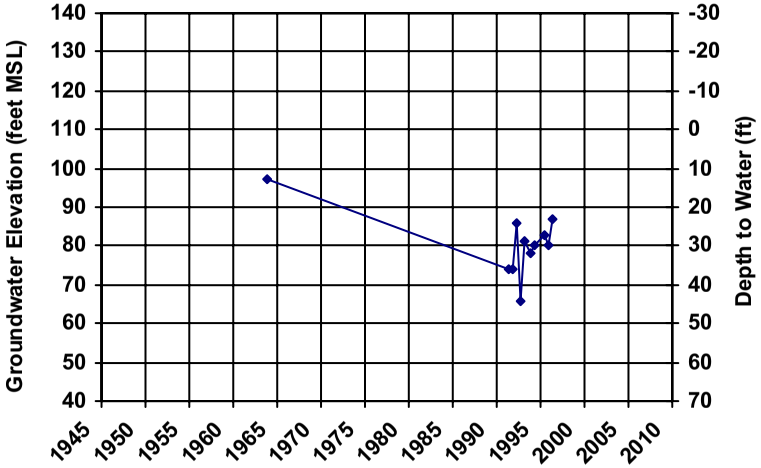
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N07W30R001M (30R001)

Aquifer: S
Depth if available: 150
RPE: 175



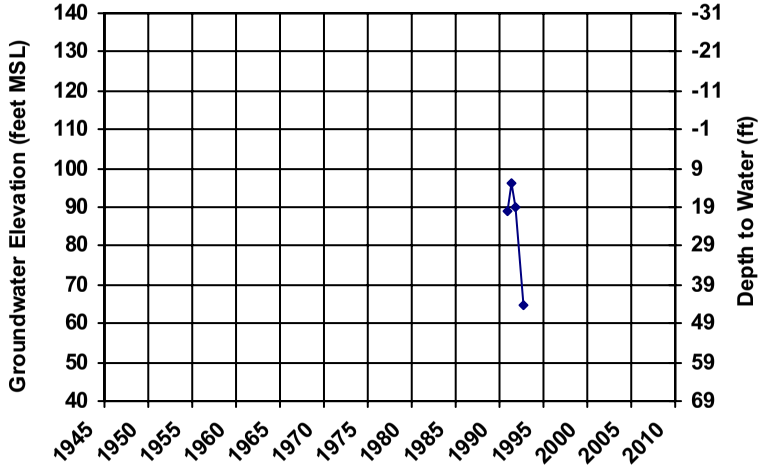
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W02E001M (02E001)

Aquifer: S
Depth if available: 172
RPE: 110



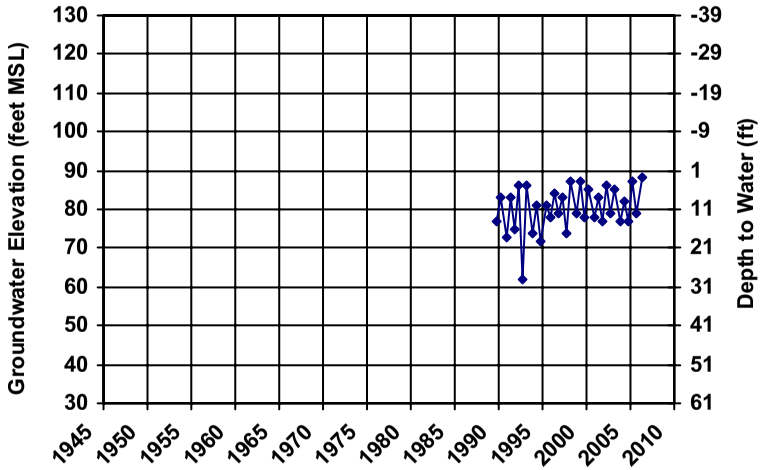
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W02E002M (02E002)

Aquifer: S
Depth if available: 60
RPE: 109



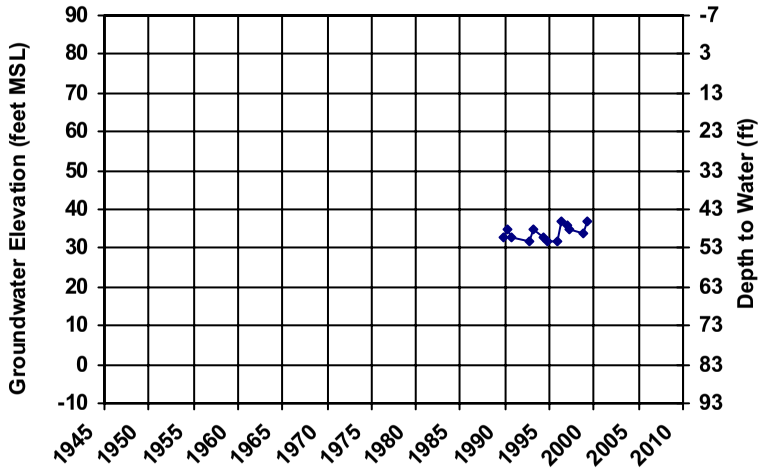
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W04Q001M (04Q001)

Aquifer: S
Depth if available: 80
RPE: 91



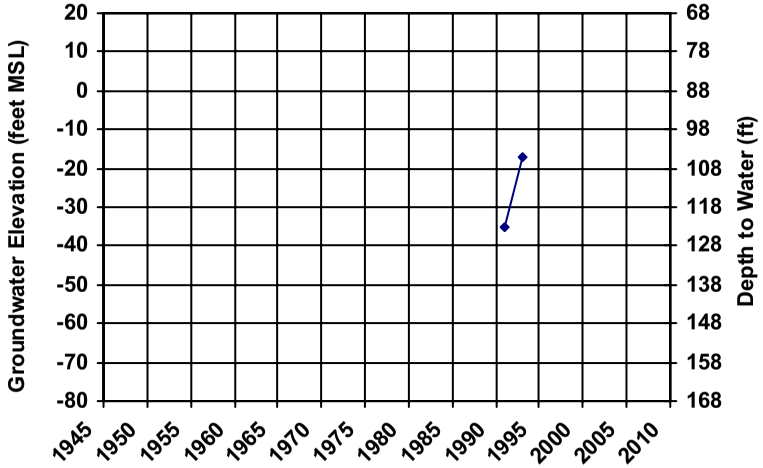
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W08R002M (08R002)

Aquifer: S
Depth if available: 92
RPE: 83



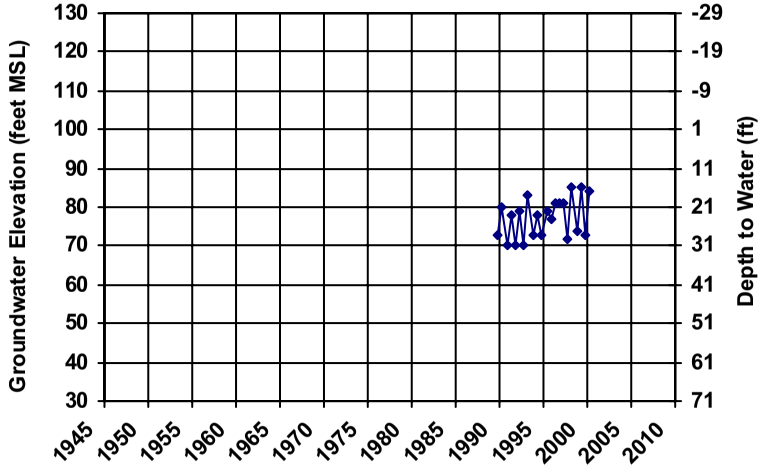
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W09J002M (09J002)

Aquifer: D
Depth if available: 745
RPE: 88



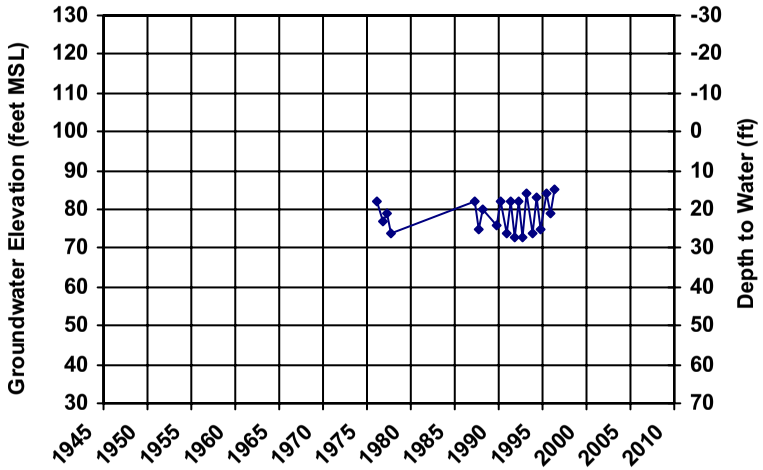
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W11D001M (11D001)

Aquifer: SI
Depth if available: 251
RPE: 101



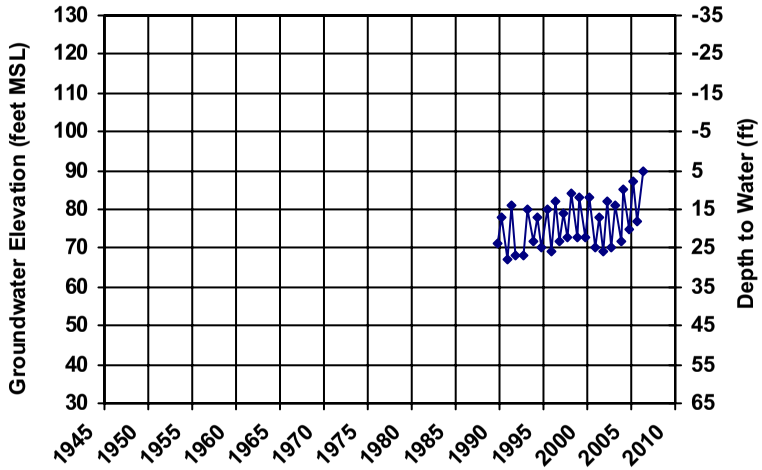
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W11F001M (11F001)

Aquifer: S
Depth if available: 110
RPE: 100



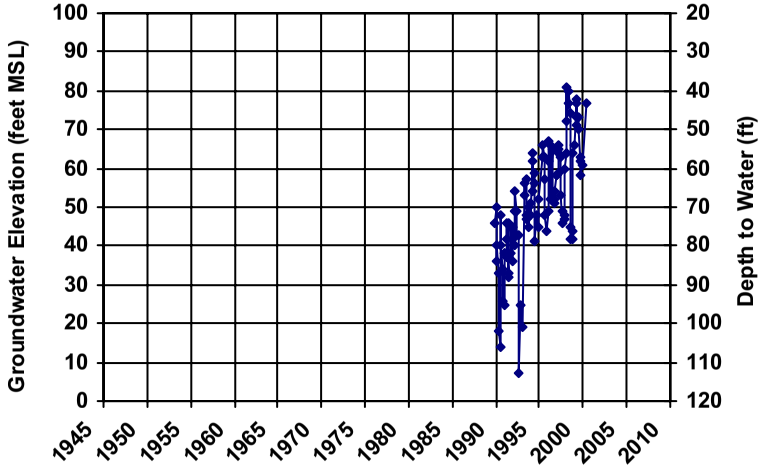
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W11P001M (11P001)

Aquifer: S
Depth if available: 120
RPE: 95



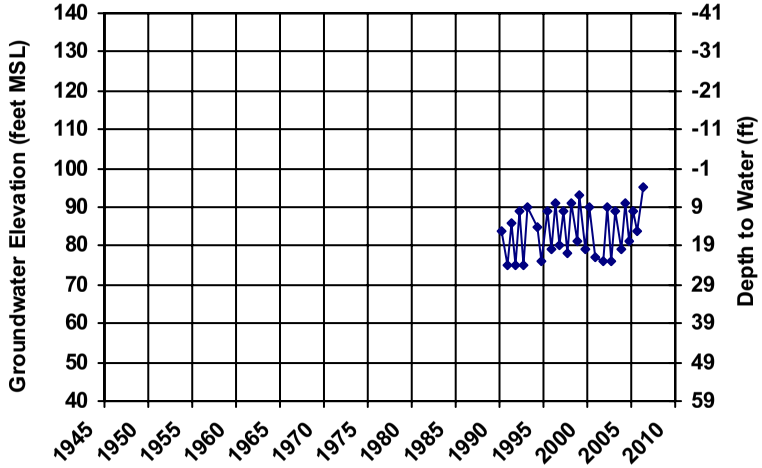
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W12F001M (12F001)

Aquifer: SI
Depth if available: 252
RPE: 120



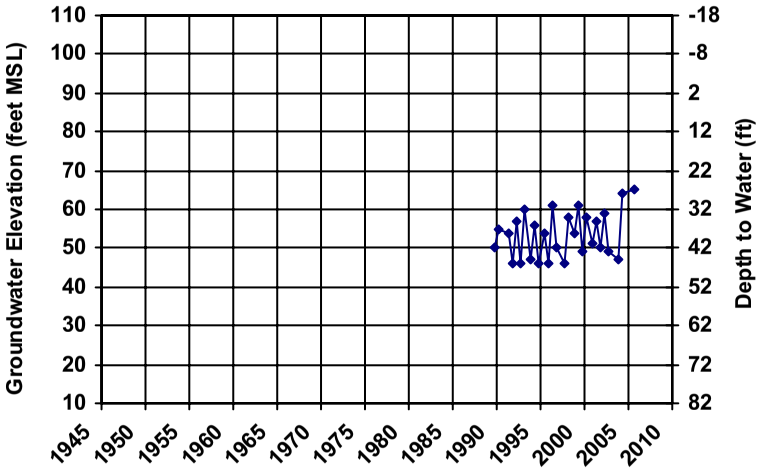
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W12M001M (12M001)

Aquifer: S
Depth if available: 90
RPE: 99



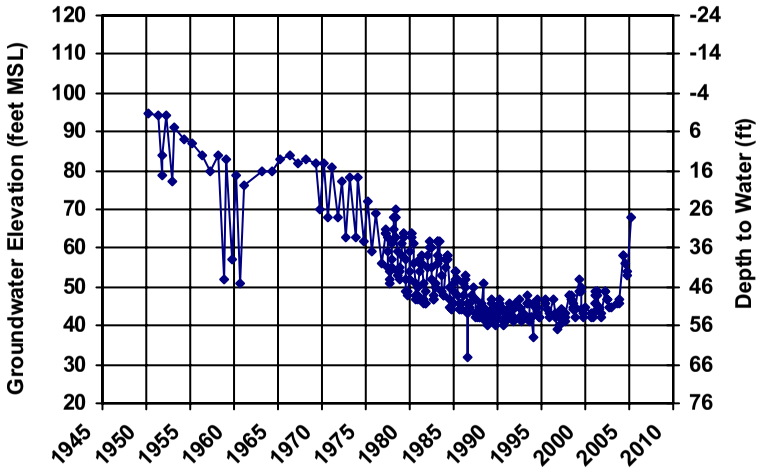
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W15A002M (15A002)

Aquifer: S
Depth if available: 72
RPE: 92



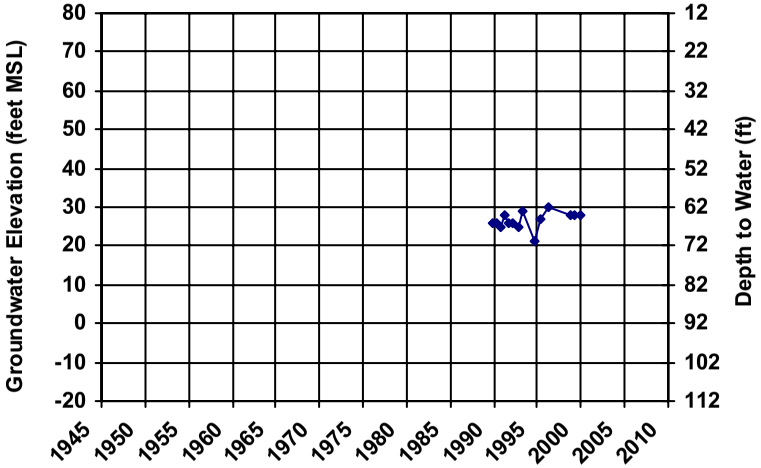
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W15J003M (15J003)

Aquifer: S
Depth if available: 166
RPE: 96



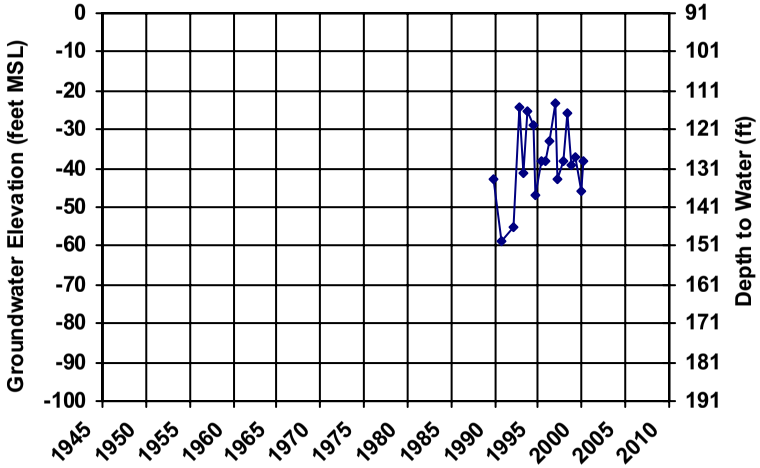
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W16K003M (16K003)

Aquifer: S
Depth if available: 79
RPE: 92

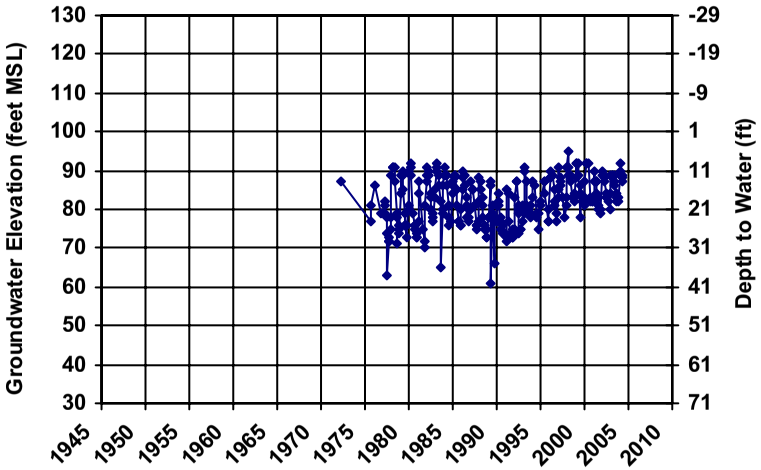


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W22R001M (22R001)

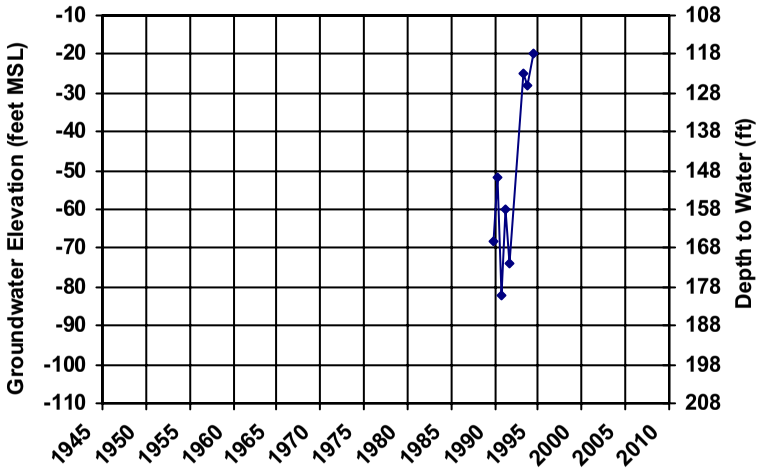
Aquifer: I
Depth if available: 407
RPE: 91



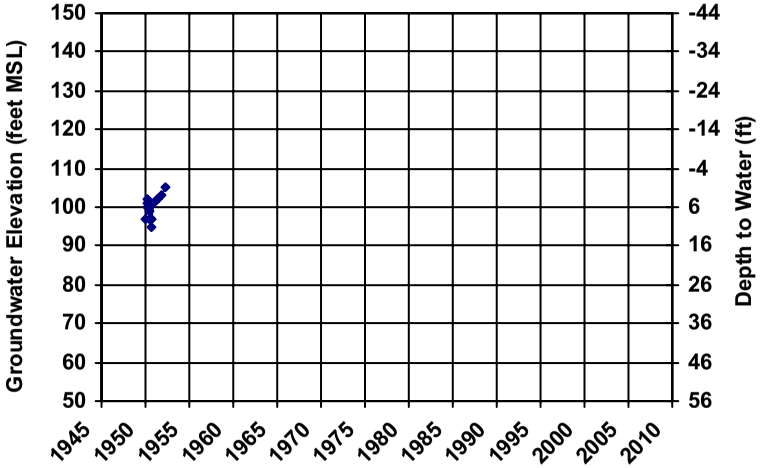
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W26L001M (26L001)
Aquifer: S
Depth if available: 94
RPE: 101



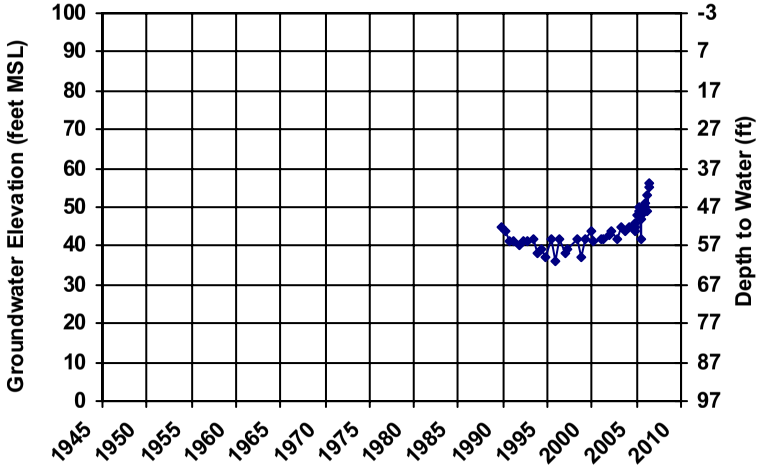
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W26M001M (26M001)
Aquifer: I
Depth if available: 224
RPE: 98



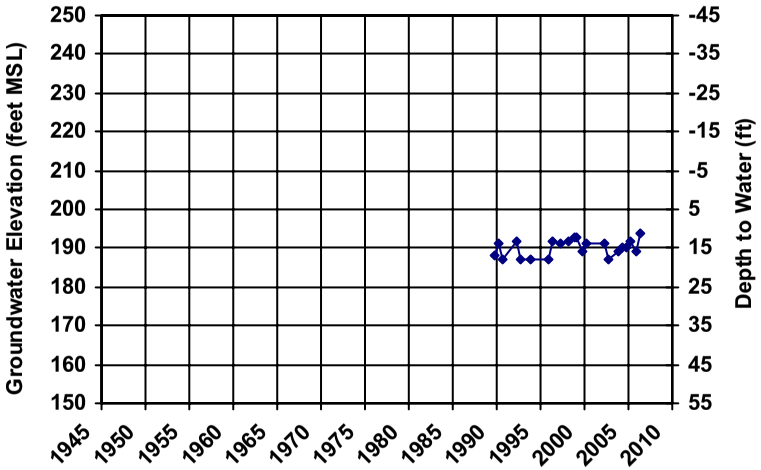
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W26N001 (26N001)
Aquifer: Unknown
Depth if available:
RPE: 106



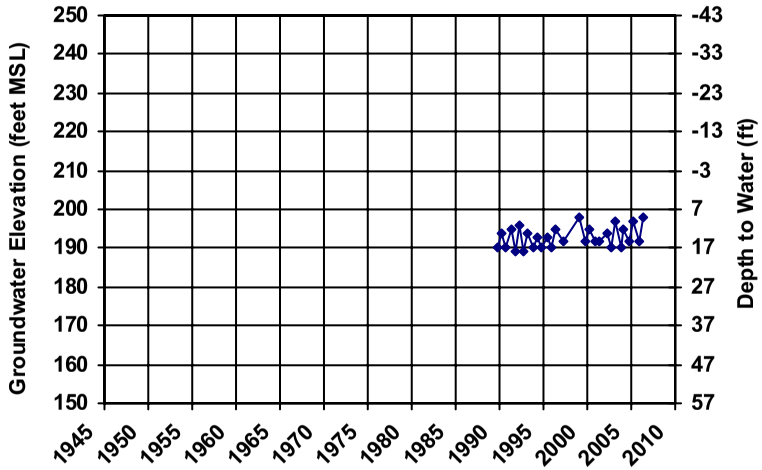
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 06N08W27H001M (27H001)
Aquifer: S
Depth if available: 82
RPE: 97



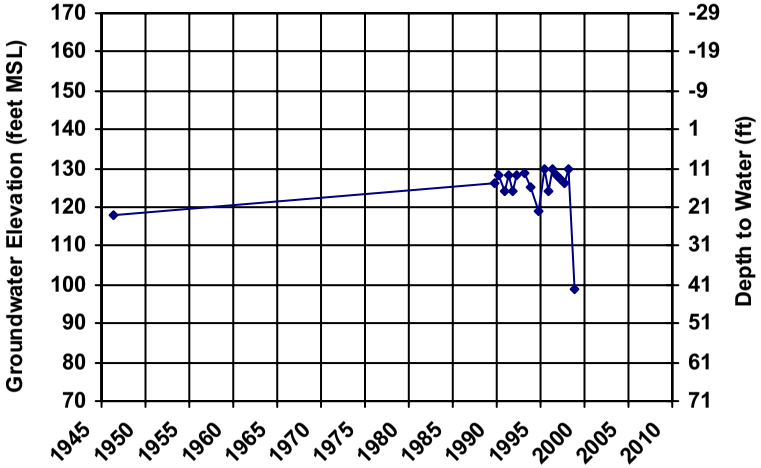
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N07W19B001M (19B001)
Aquifer: S
Depth if available: 85
RPE: 205



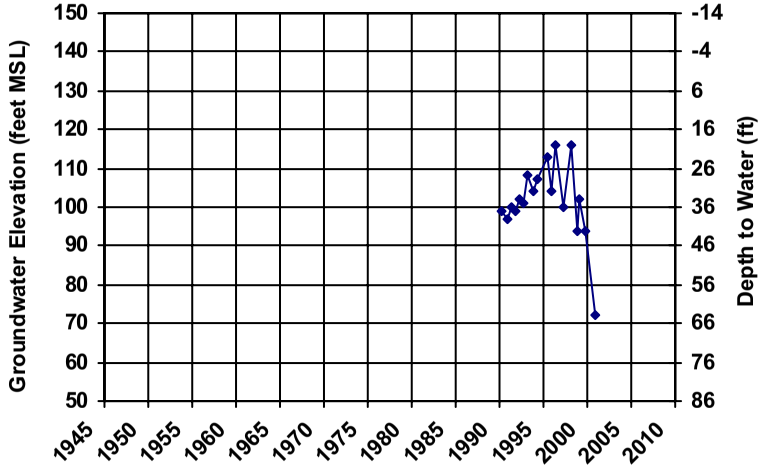
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N07W19F002M (19F002)
Aquifer: S
Depth if available: 68
RPE: 207



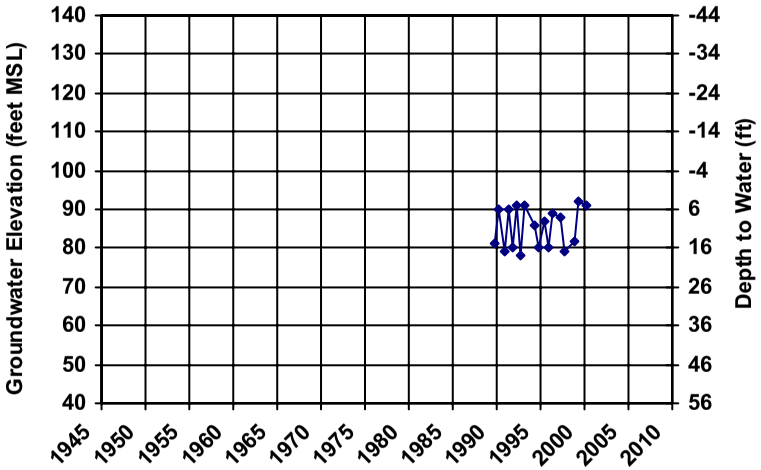
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W03L001M (03L001)
Aquifer: S
Depth if available: 150
RPE: 141



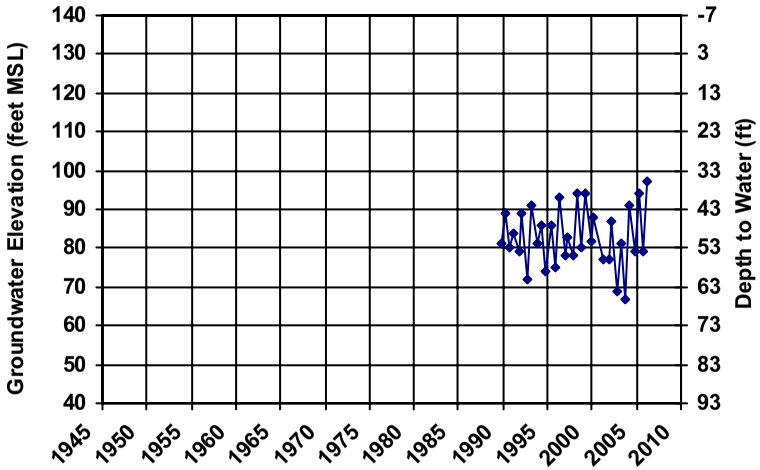
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W07D001M (07D001)
Aquifer: SI
Depth if available: 232
RPE: 136



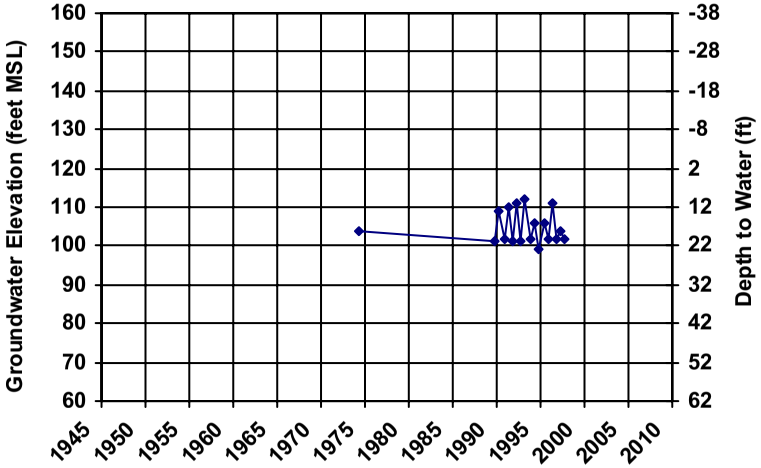
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W07Q001M (07Q001)
Aquifer: S
Depth if available: 82
RPE: 96



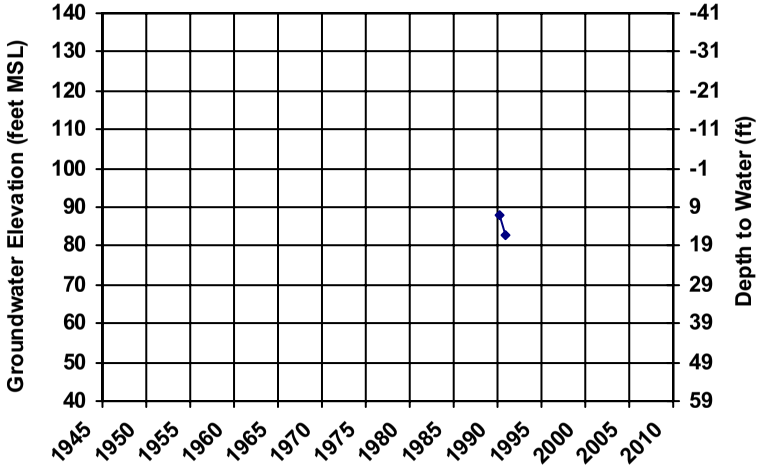
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W08M001M (08M001)
Aquifer: SI
Depth if available: 220
RPE: 133



SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W09N001M (09N001)
Aquifer: S
Depth if available: 63
RPE: 122

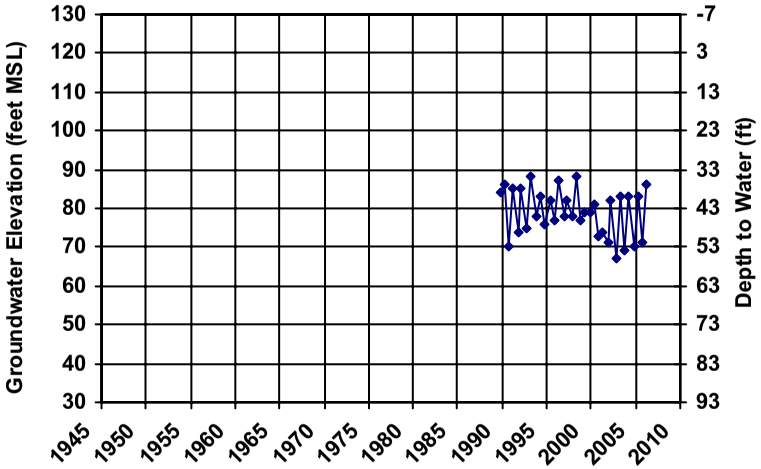


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W17K003M (17K003)
Aquifer: S
Depth if available: 90
RPE: 99



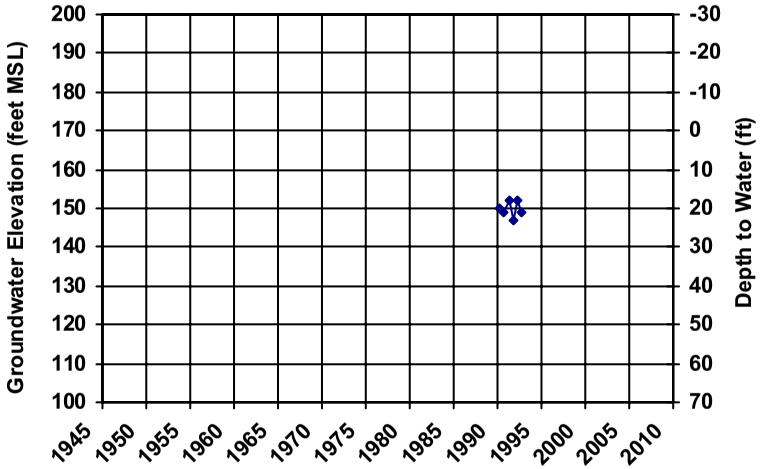
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W21J001M (21J001)

Aquifer: SI
Depth if available: 360
RPE: 123



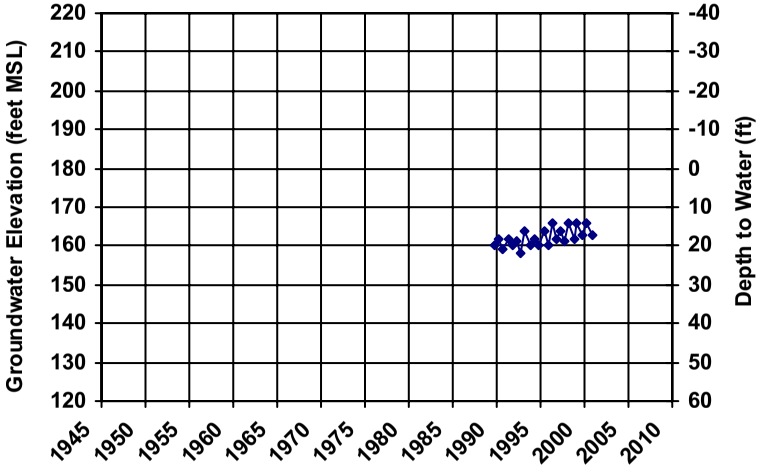
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W23H001M (23H001)

Aquifer: S
Depth if available: 128
RPE: 170



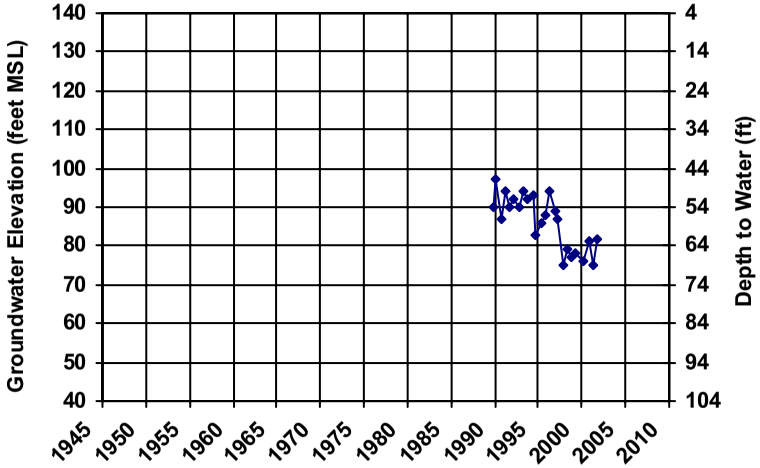
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W24L001M (24L001)

Aquifer: SI
Depth if available: 330
RPE: 180

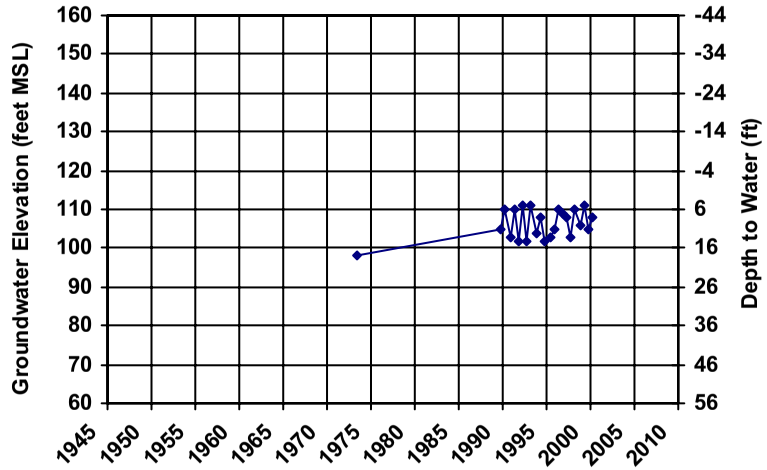


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W26L002M (26L002)

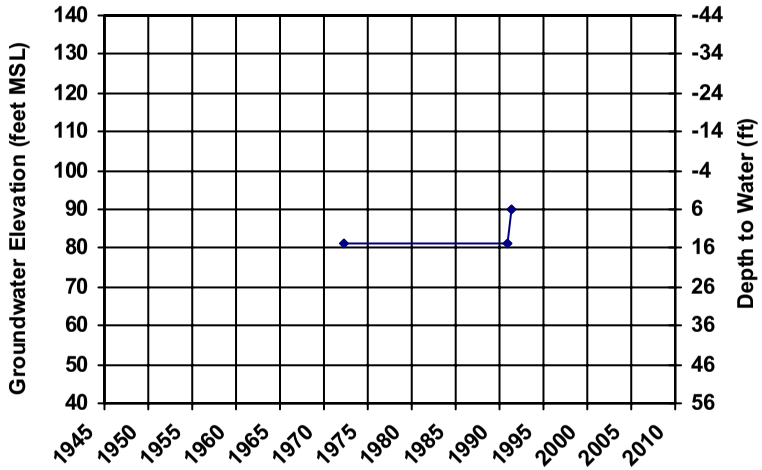
Aquifer: I
Depth if available: 258
RPE: 144



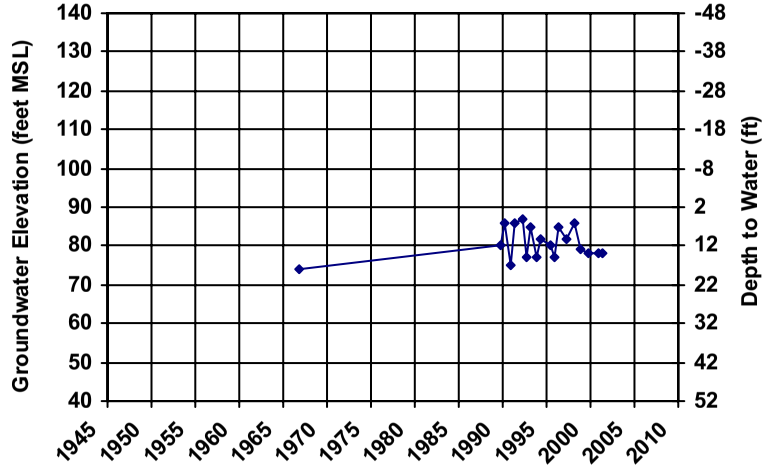
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W27N002M (27N002)
Aquifer: S
Depth if available: 65
RPE: 116



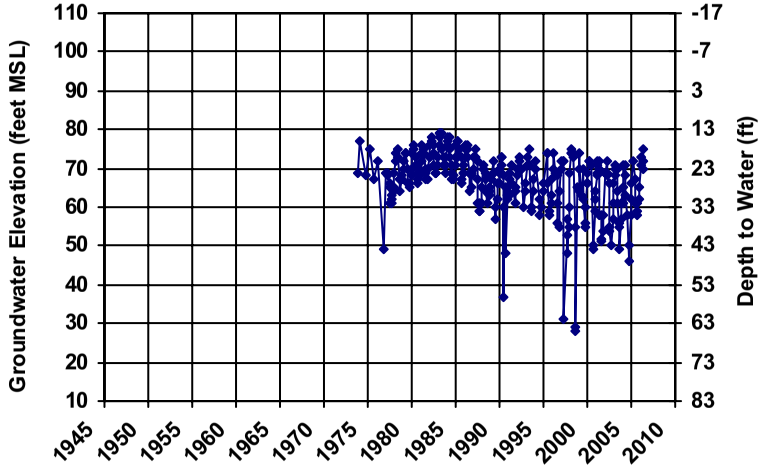
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W29K001M (29K001)
Aquifer: S
Depth if available: 67
RPE: 96



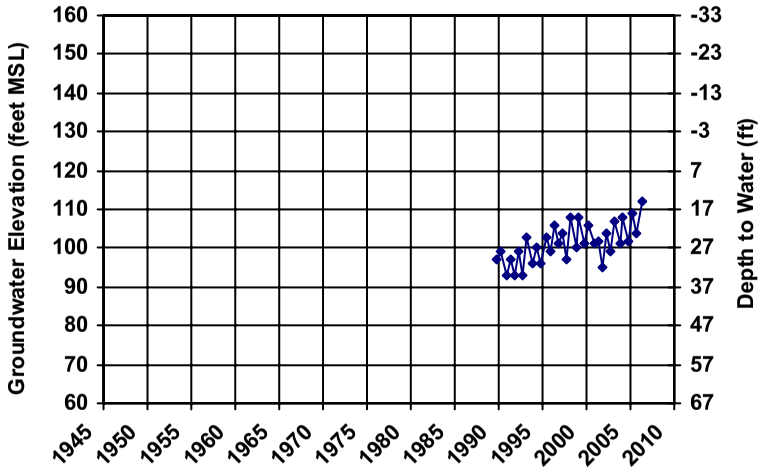
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W29M002M (29M002)
Aquifer: S
Depth if available: 98
RPE: 92



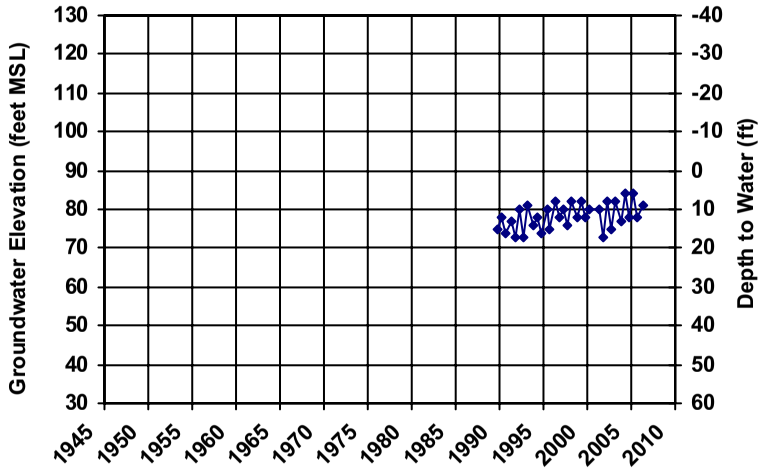
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W30K001M (30K001)
Aquifer: SI
Depth if available: 290
RPE: 93



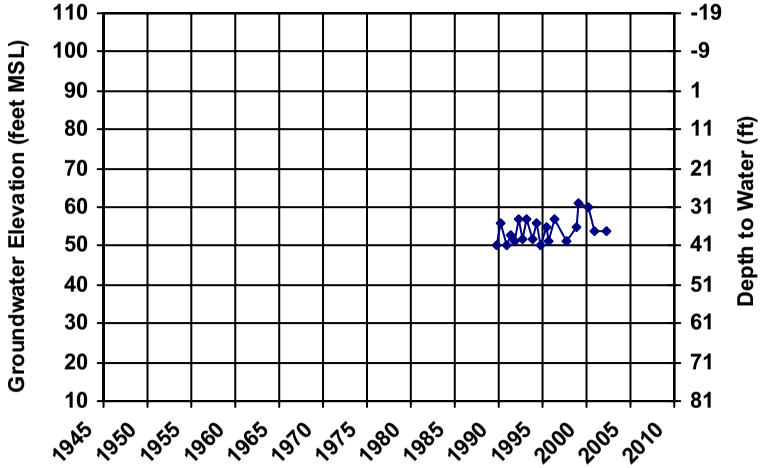
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N08W35K001M (35K001)
Aquifer: SI
Depth if available: 205
RPE: 127



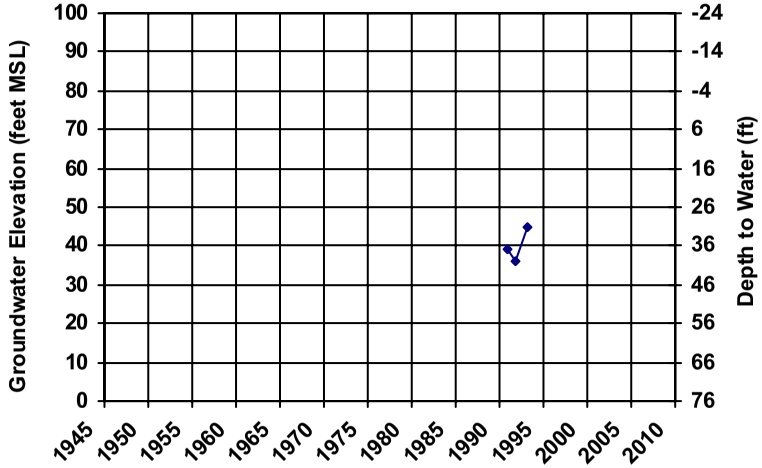
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N09W01C001M (01C001)
Aquifer: S
Depth if available: 110
RPE: 90



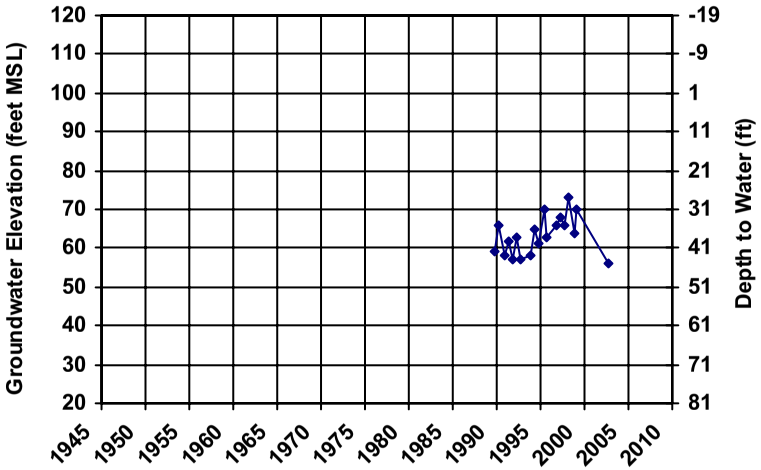
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N09W02L001M (02L001)
Aquifer: S
Depth if available: 141
RPE: 91



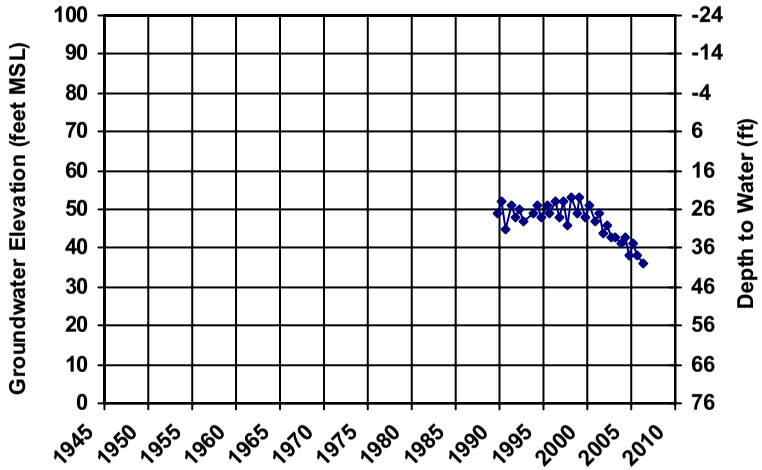
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N09W13M001M (13M001)
Aquifer: WD_ONLY
Depth if available: 316
RPE: 76



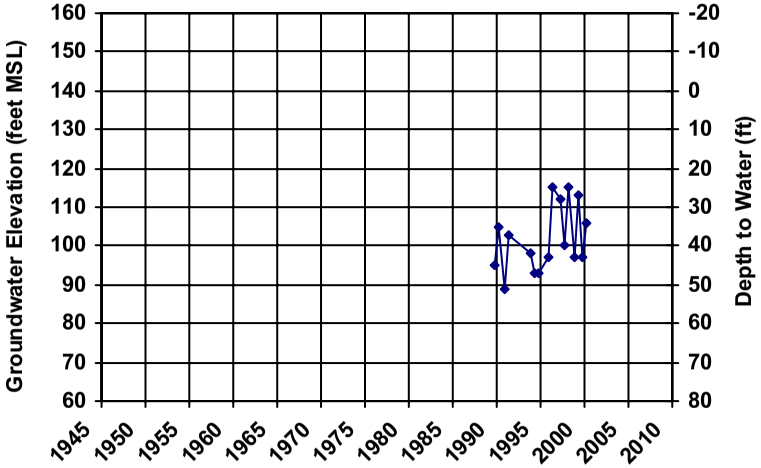
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N09W14H005M (14H005)
Aquifer: S
Depth if available: 94
RPE: 101



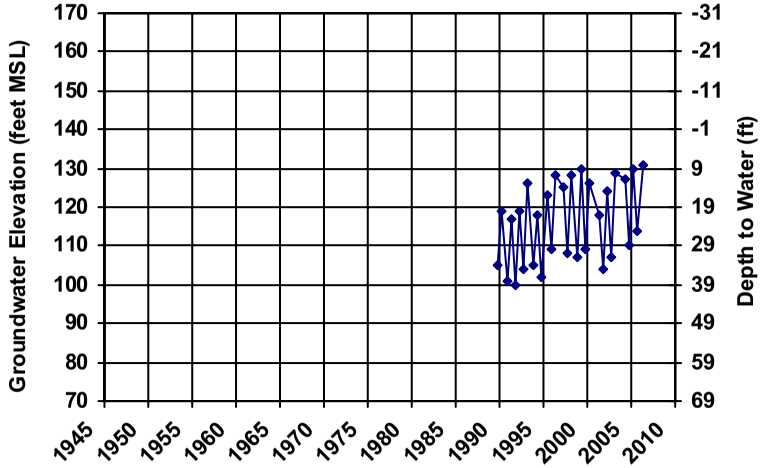
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 07N09W26P001M (26P001)
Aquifer: S
Depth if available: 110
RPE: 76



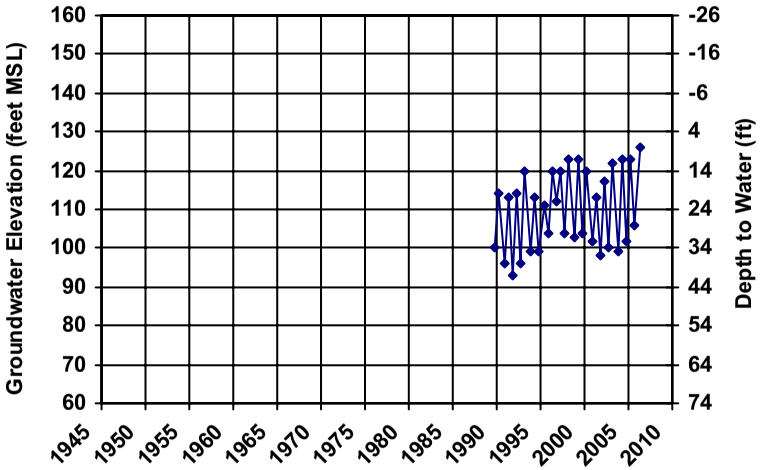
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N08W20Q001M (20Q001)
Aquifer: SI
Depth if available: 312
RPE: 140



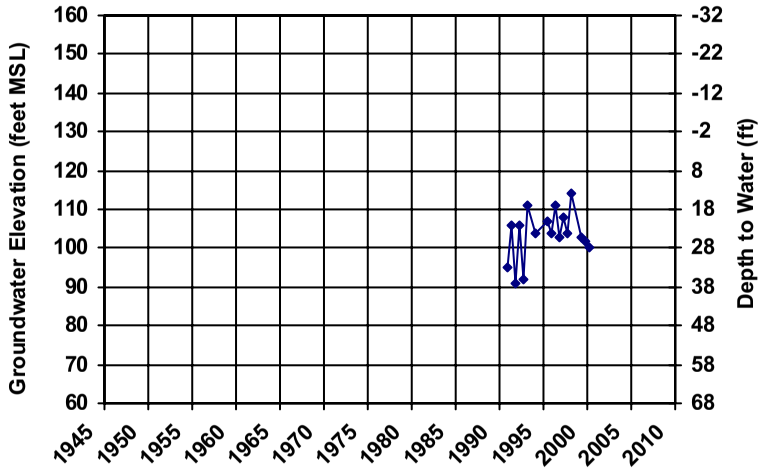
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N08W29B001M (29B001)
Aquifer: S
Depth if available: 64
RPE: 139



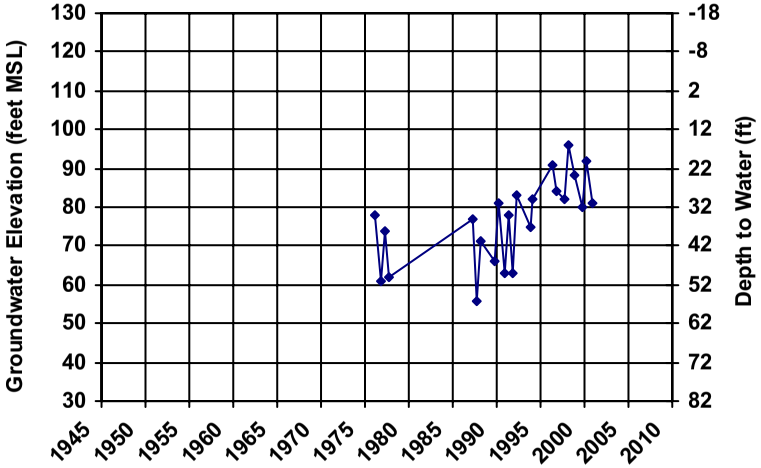
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N08W29C003M (29C003)
Aquifer: S
Depth if available: 95
RPE: 134



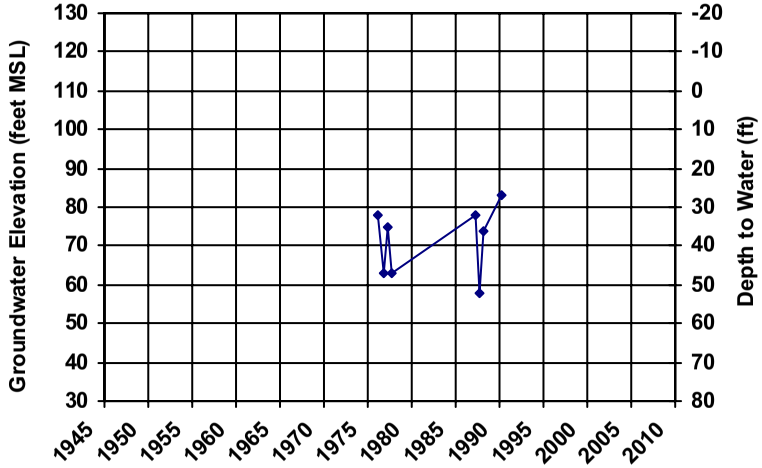
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N08W32M001M (32M001)
Aquifer: I
Depth if available: 332
RPE: 128



SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W12P001M (12P001)
Aquifer: S
Depth if available: 187
RPE: 112

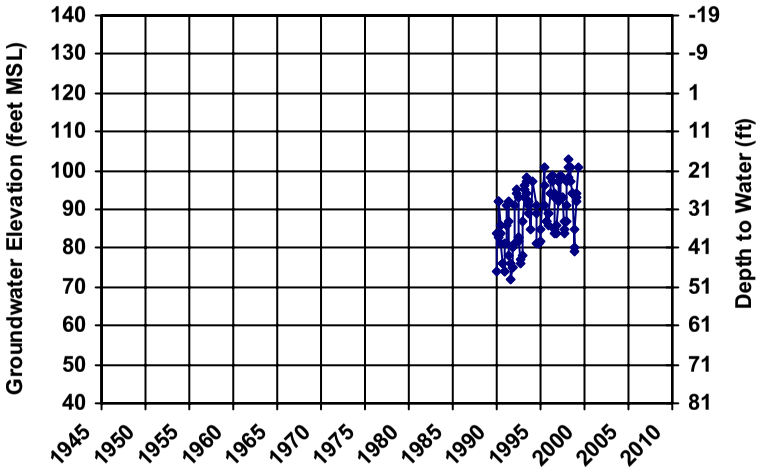


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W12P002M (12P002)
Aquifer: S
Depth if available: 100
RPE: 110



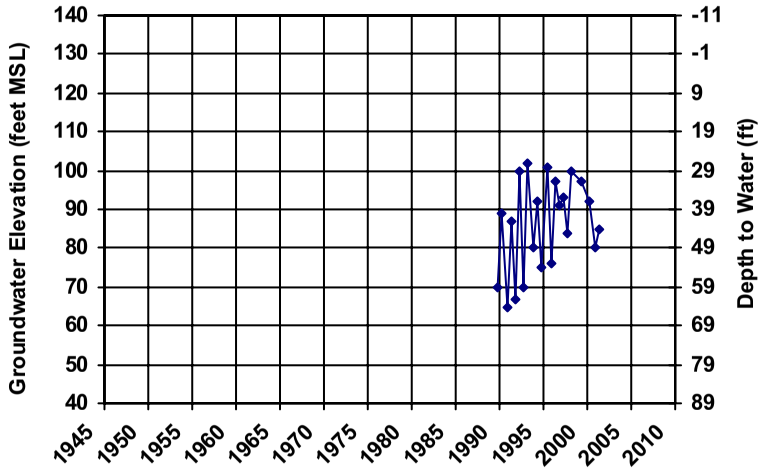
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W13A002M (13A002)

Aquifer: S
Depth if available: 109
RPE: 121



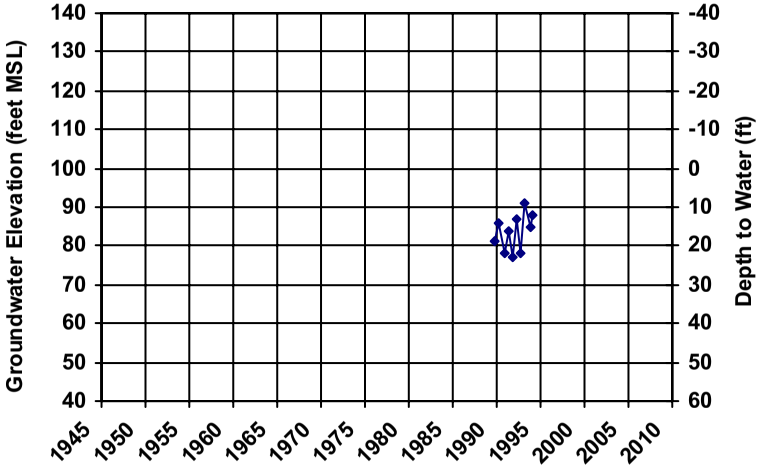
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W13A003M (13A003)

Aquifer: S
Depth if available: 192
RPE: 129



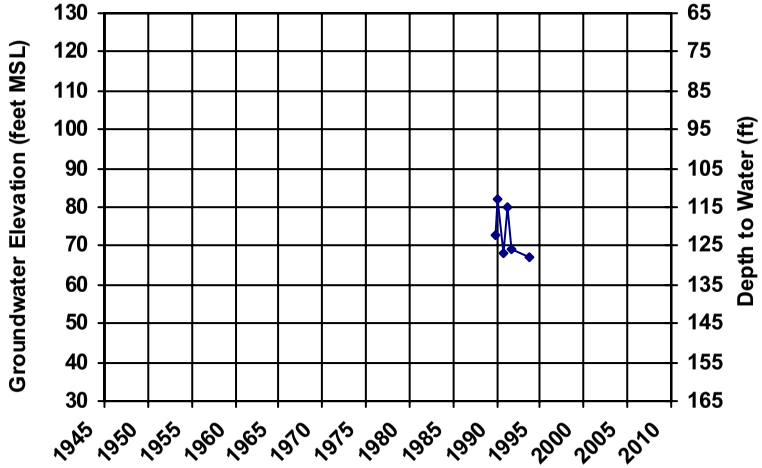
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W14L002M (14L002)

Aquifer: S
Depth if available: 132
RPE: 100

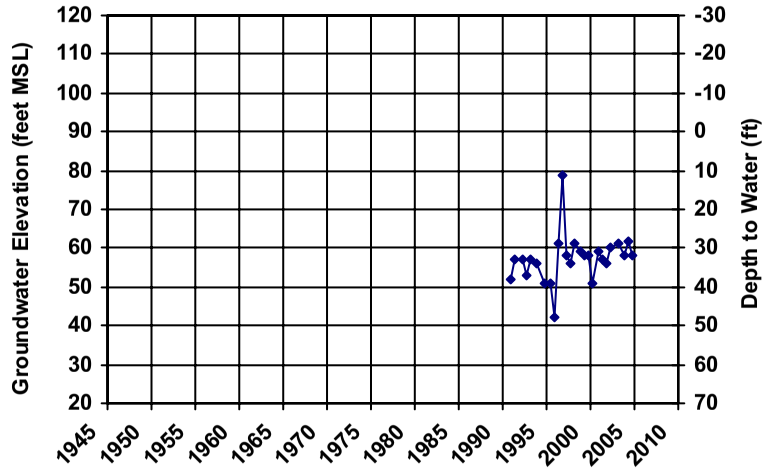


SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W15B001M (15B001)

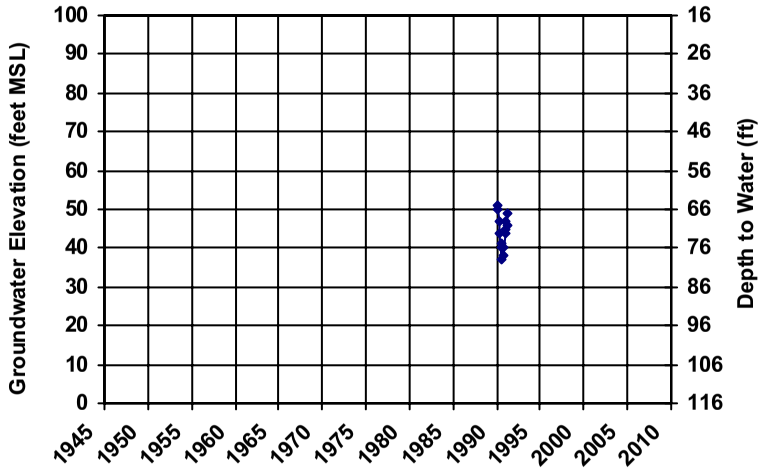
Aquifer: I
Depth if available: 235
RPE: 195



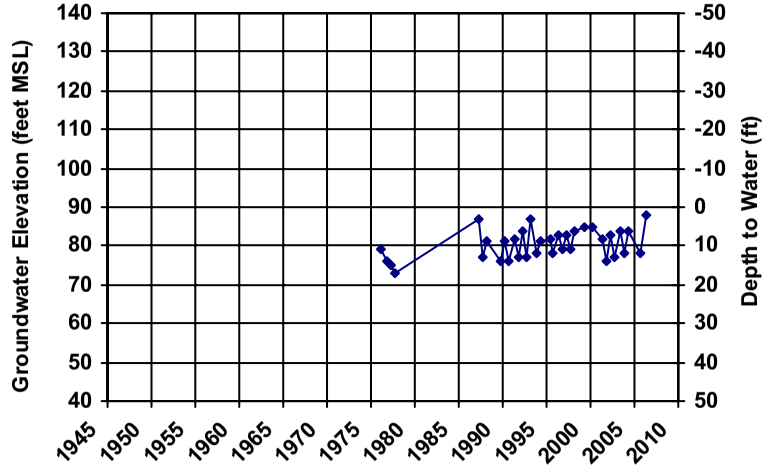
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W22R001M (22R001)
Aquifer: S
Depth if available: 145
RPE: 90



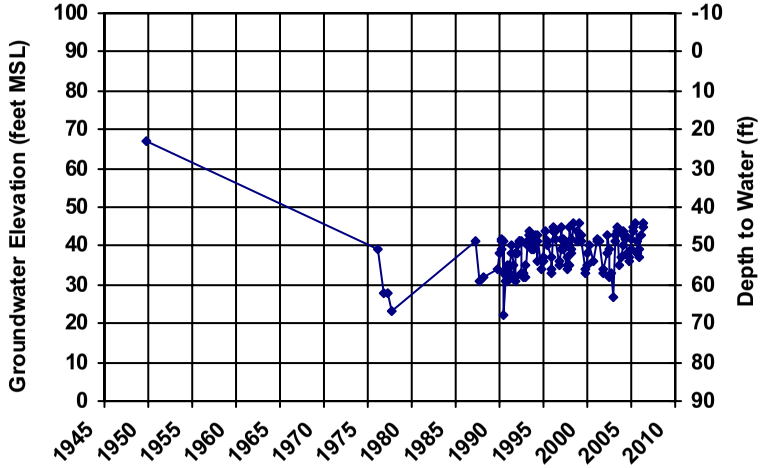
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W26L001M (26L001)
Aquifer: I
Depth if available: 265
RPE: 116



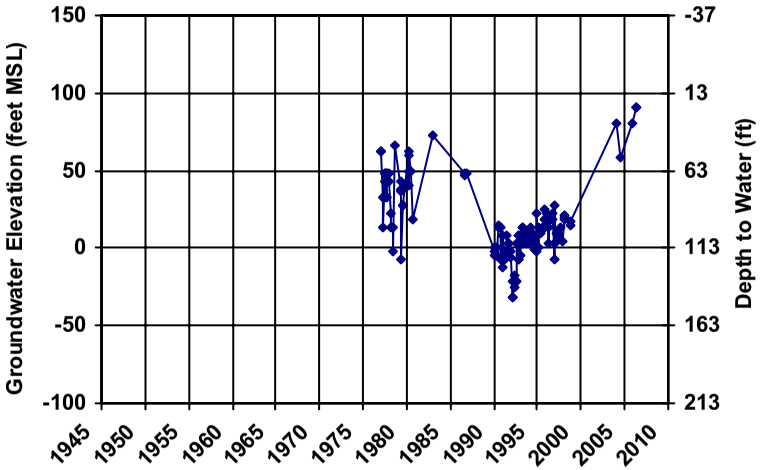
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W36N001M (36N001)
Aquifer: S
Depth if available: 89
RPE: 90



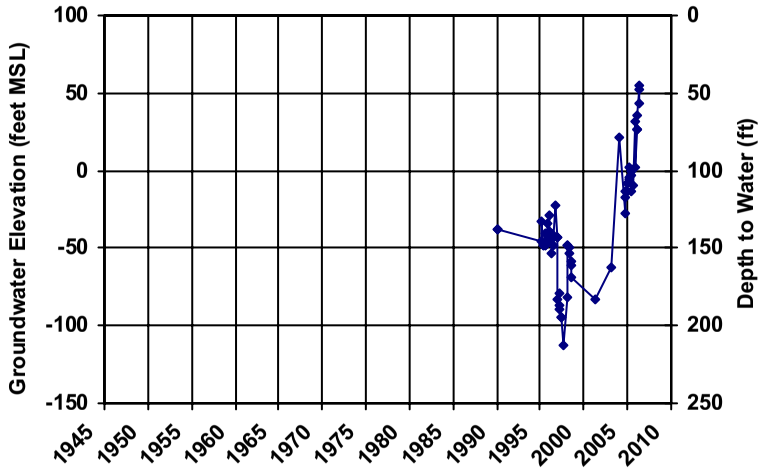
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: 08N09W36P001M (36P001)
Aquifer: WD_ONLY
Depth if available: 1048
RPE: 90



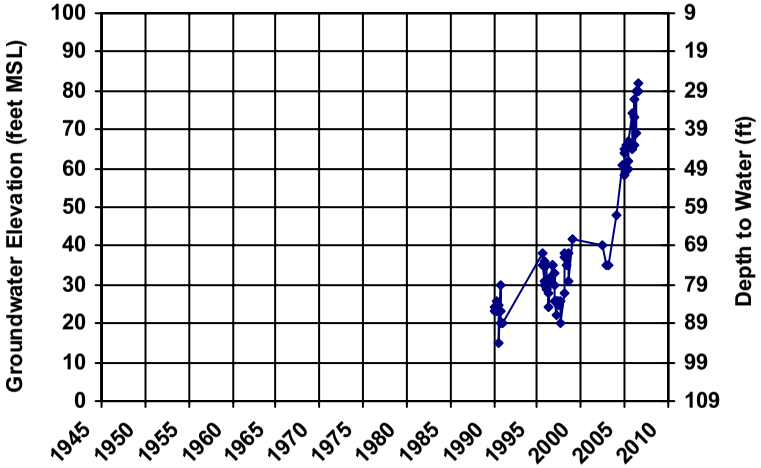
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: COT_02 (COT_02)
Aquifer: I
Depth if available: 500
RPE: 113



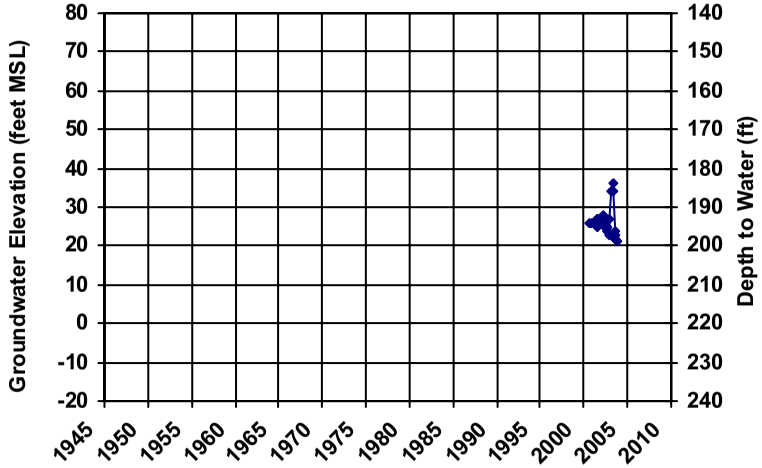
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: COT_03 (COT_03)
Aquifer: ID
Depth if available: 685
RPE: 100



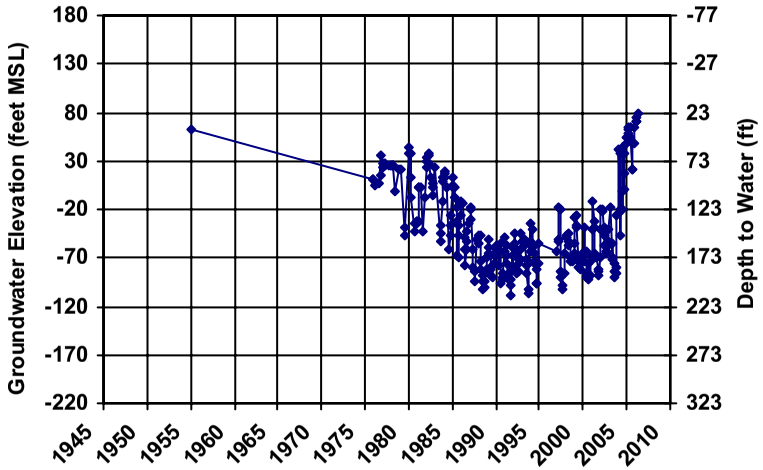
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: COT_1A (COT_1A)
Aquifer: ID
Depth if available: 650
RPE: 109



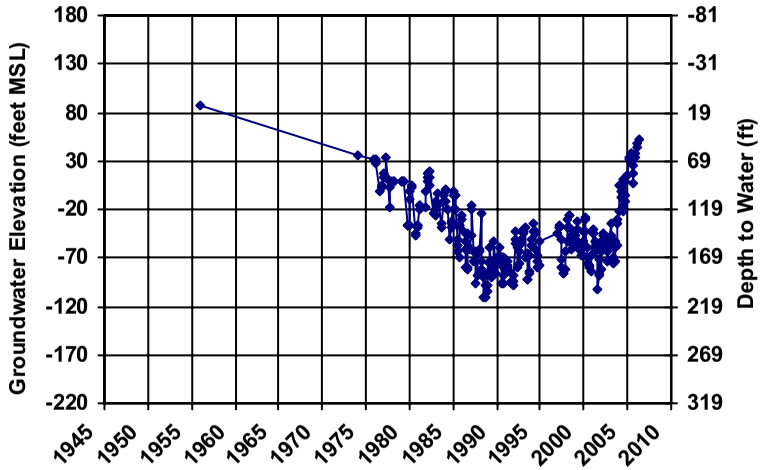
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: PWC_01 (PWC_01)
Aquifer: SI
Depth if available:
RPE: 220



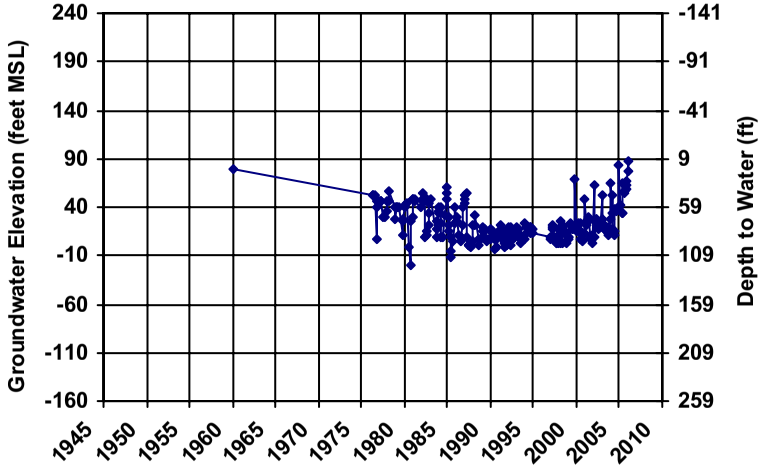
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_01 (RP_01) RPE: 103



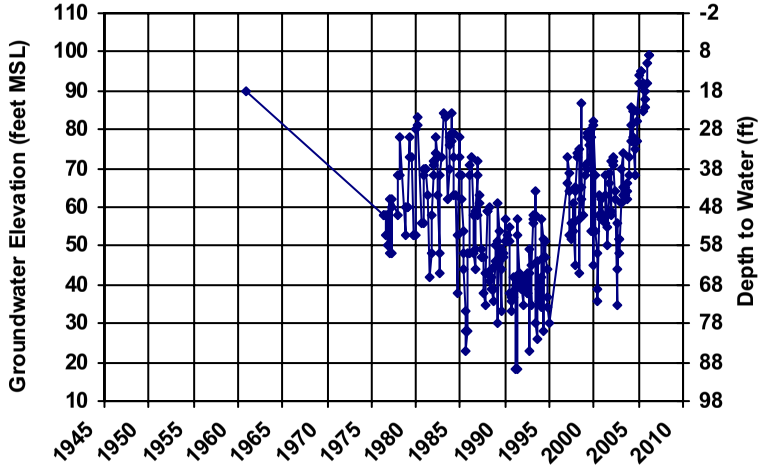
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_02 (RP_02) RPE: 99



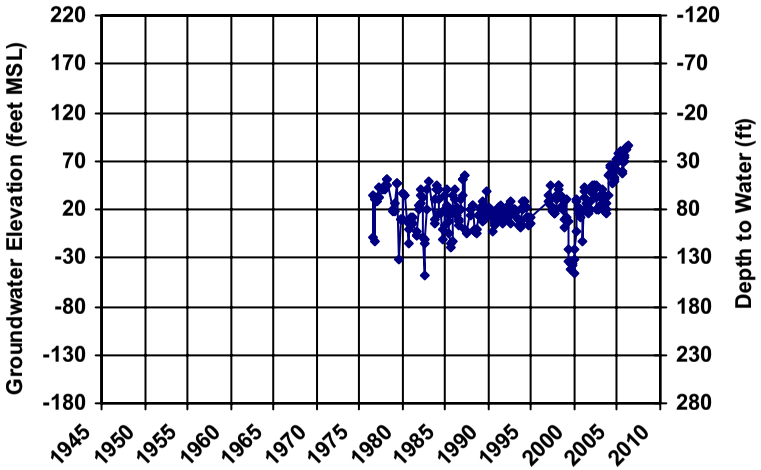
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: IDL
Depth if available:
State Well Number: RP_03 (RP_03) RPE: 99



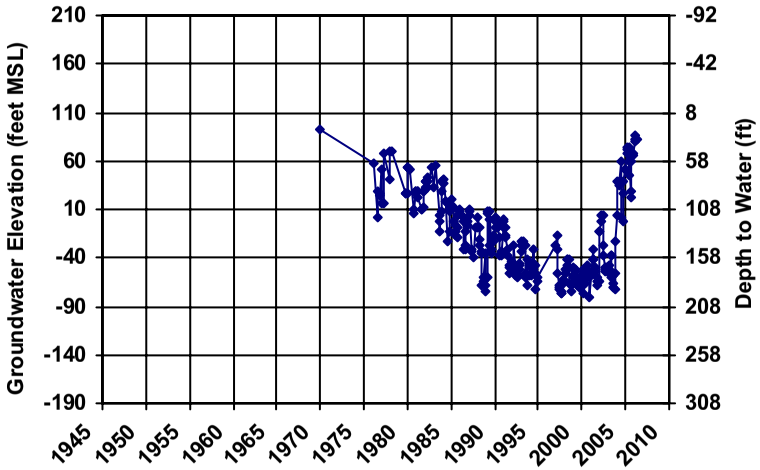
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_04 (RP_04) RPE: 108



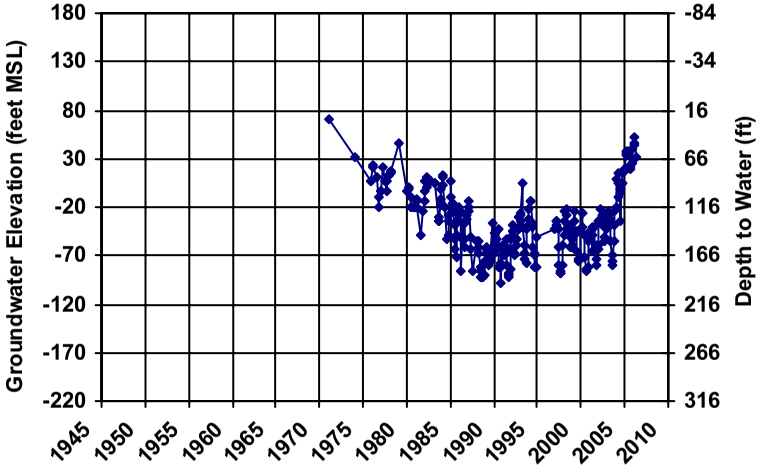
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_05 (RP_05) RPE: 100



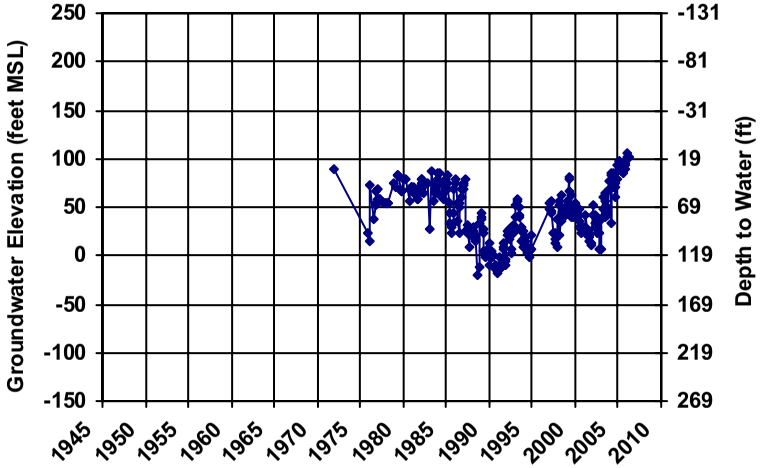
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_06 (RP_06) RPE: 118



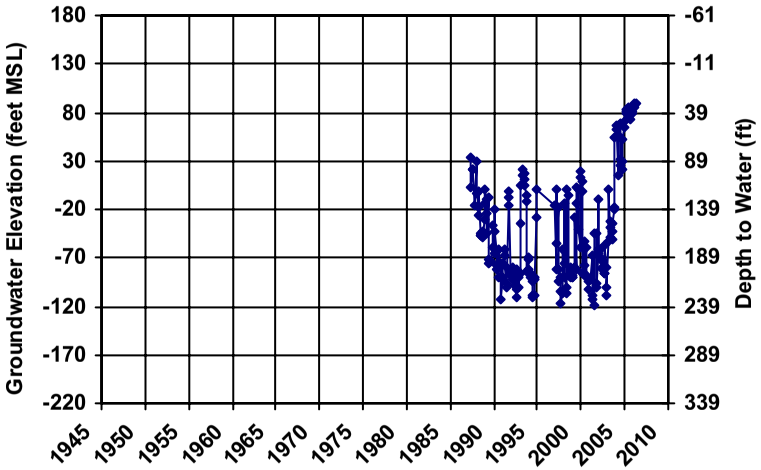
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_07 (RP_07) RPE: 96



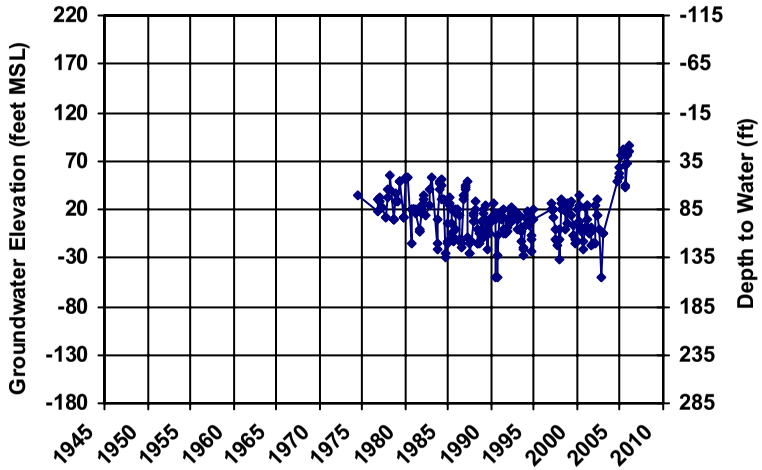
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_08 (RP_08) RPE: 119



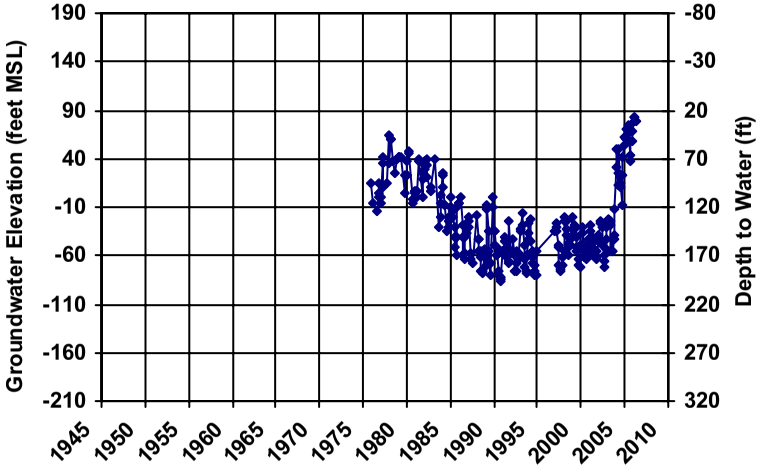
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_08A (RP_08A) RPE: 119



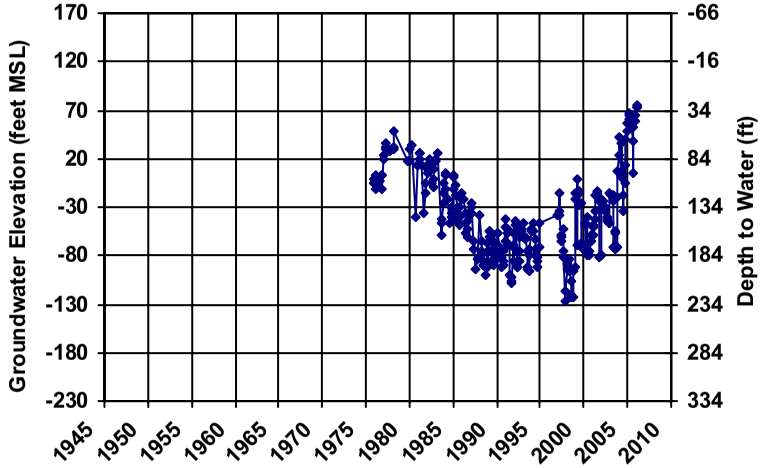
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_09 (RP_09) RPE: 105



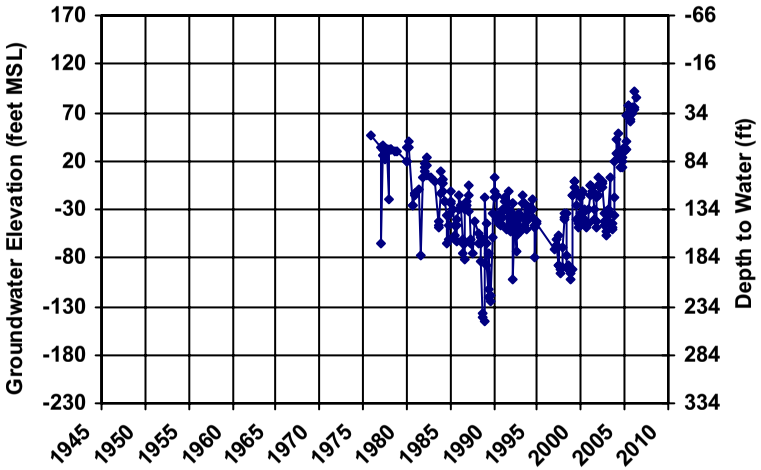
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_10 (RP_10) RPE: 110



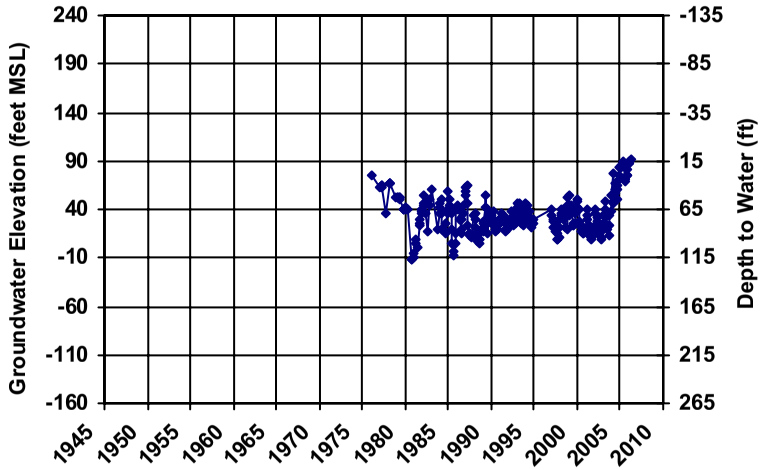
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_11 (RP_11) RPE: 104



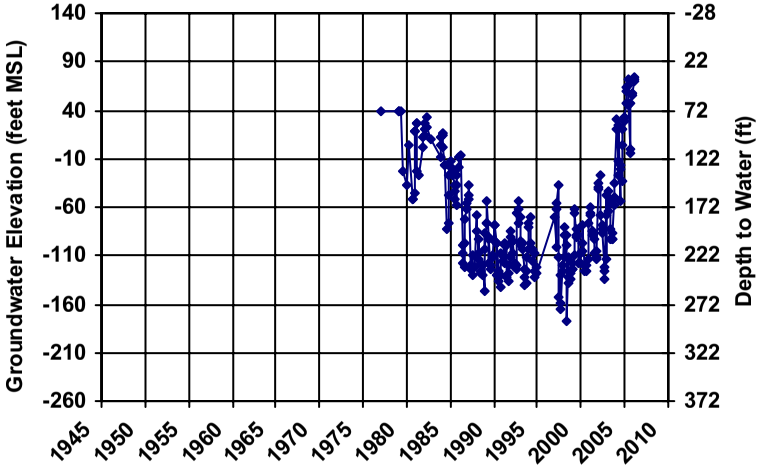
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_12 (RP_12) RPE: 104



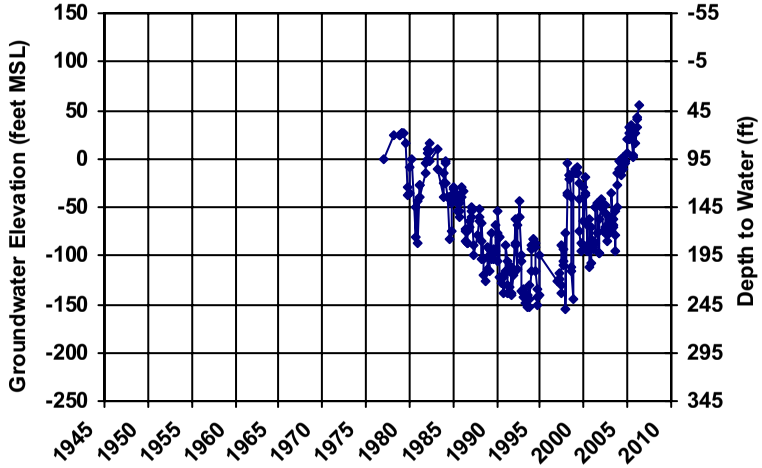
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_13 (RP_13) RPE: 105



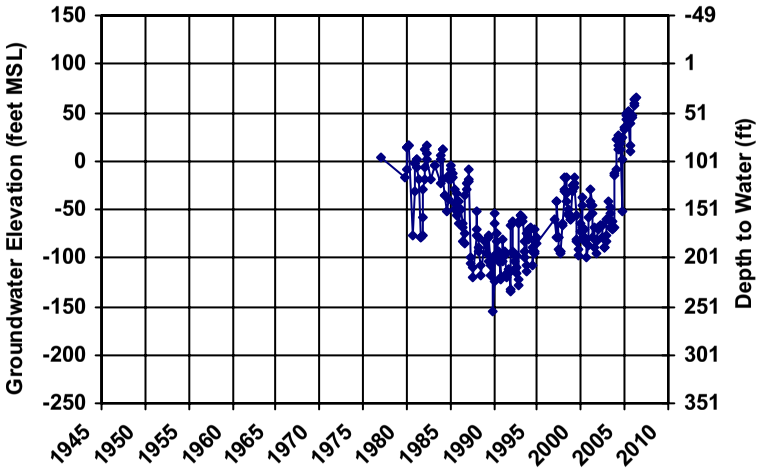
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: IDL
Depth if available:
State Well Number: RP_14 (RP_14) RPE: 112



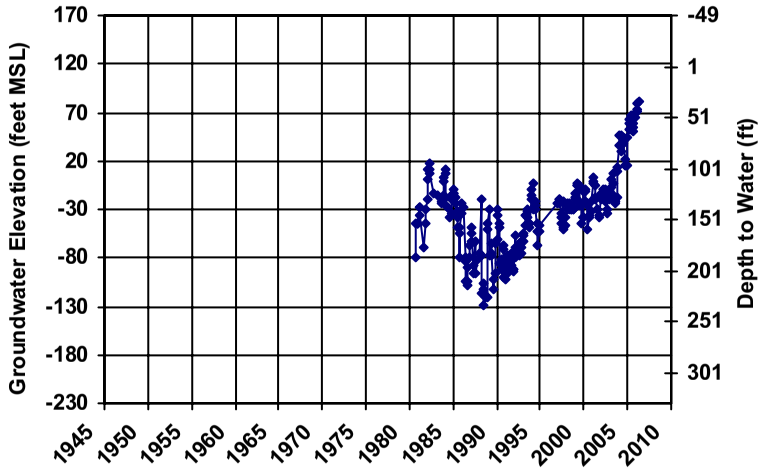
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: IDL
Depth if available:
State Well Number: RP_15 (RP_15) RPE: 95



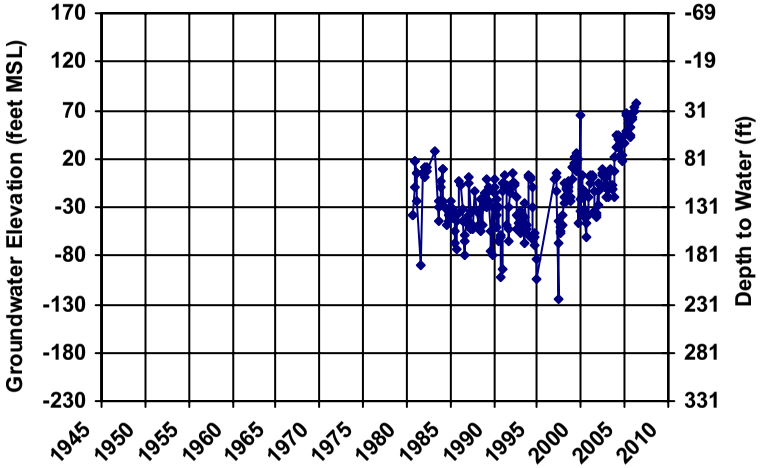
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: IDL
Depth if available:
State Well Number: RP_16 (RP_16) RPE: 101



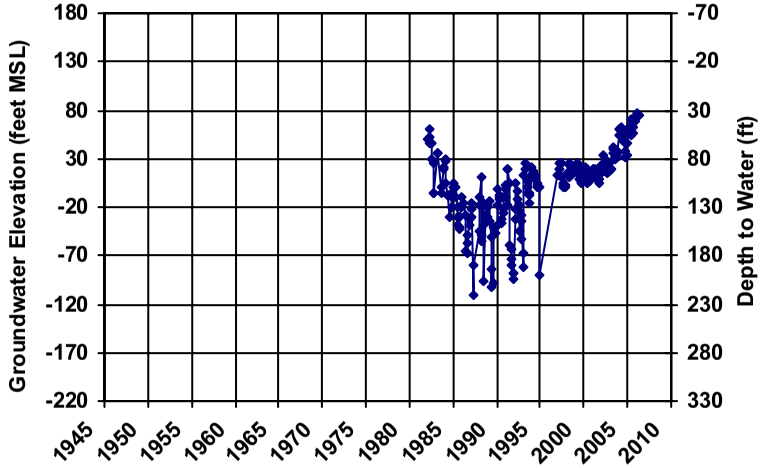
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_17 (RP_17) RPE: 101



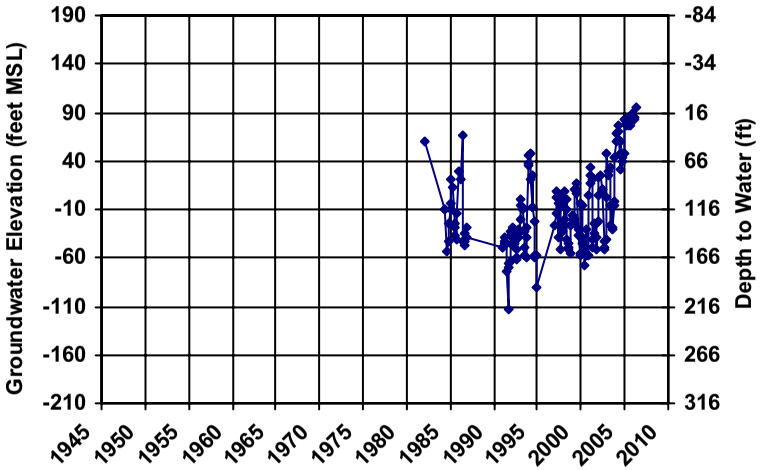
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_18 (RP_18) RPE: 101



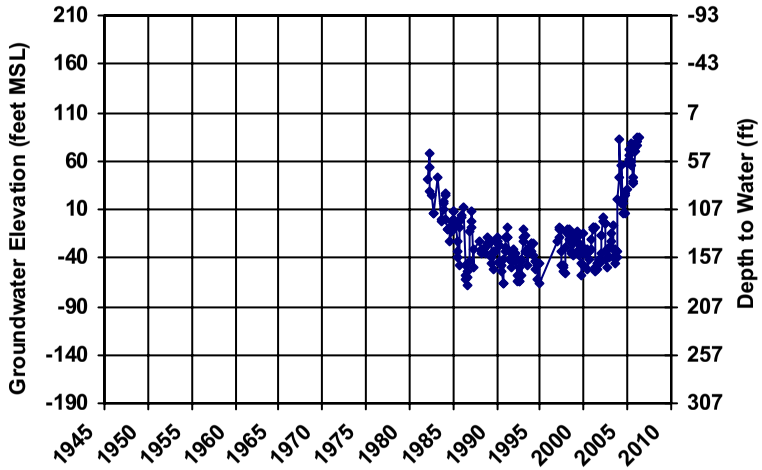
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_19 (RP_19) RPE: 110



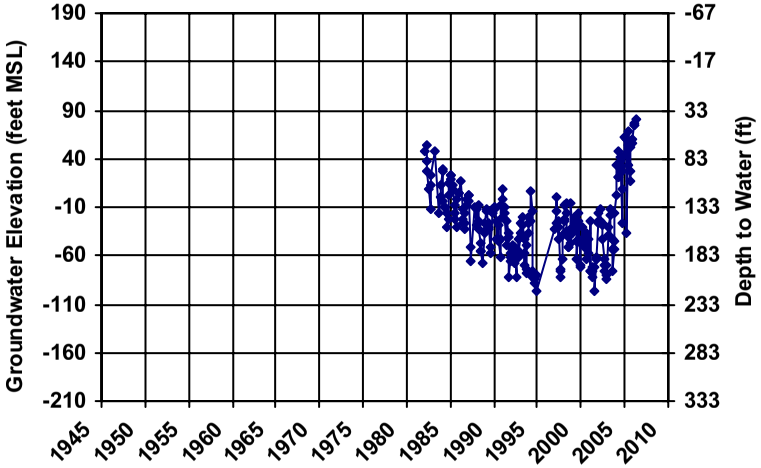
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_20 (RP_20) RPE: 106



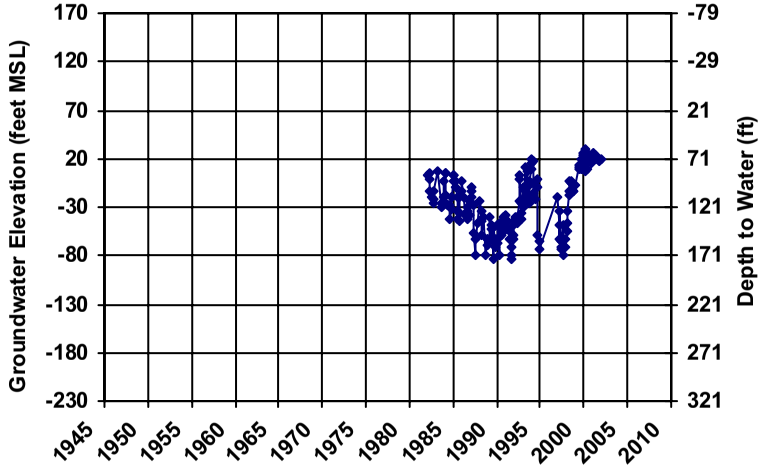
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_21 (RP_21) RPE: 117



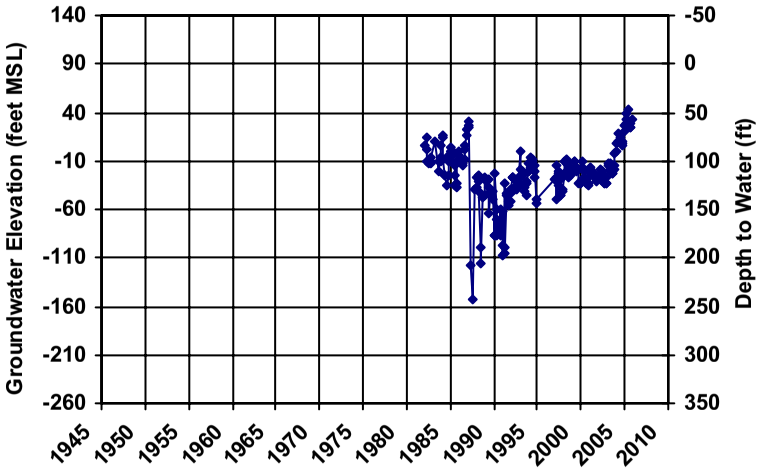
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_22 (RP_22) RPE: 123



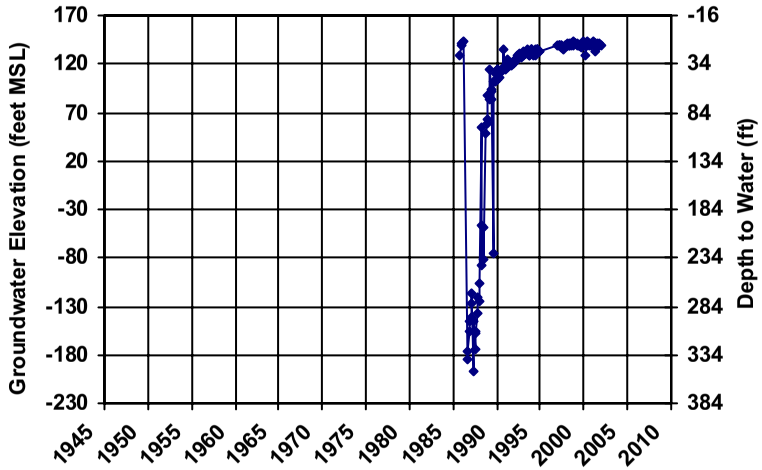
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_23 (RP_23) RPE: 91



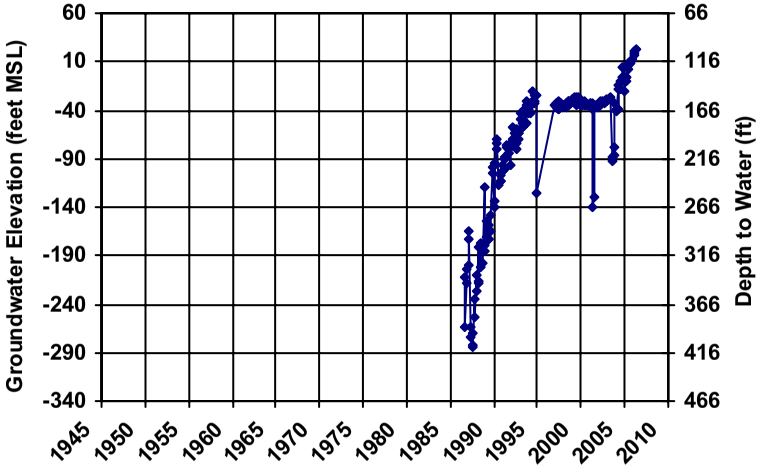
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_24 (RP_24) RPE: 90



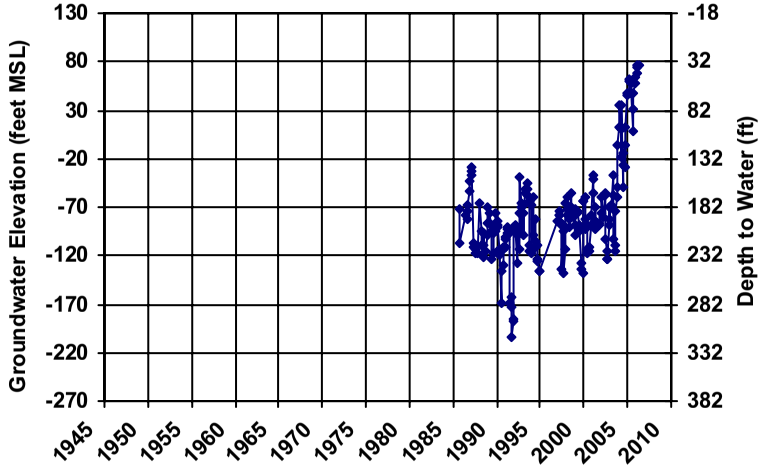
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_25 (RP_25) RPE: 154



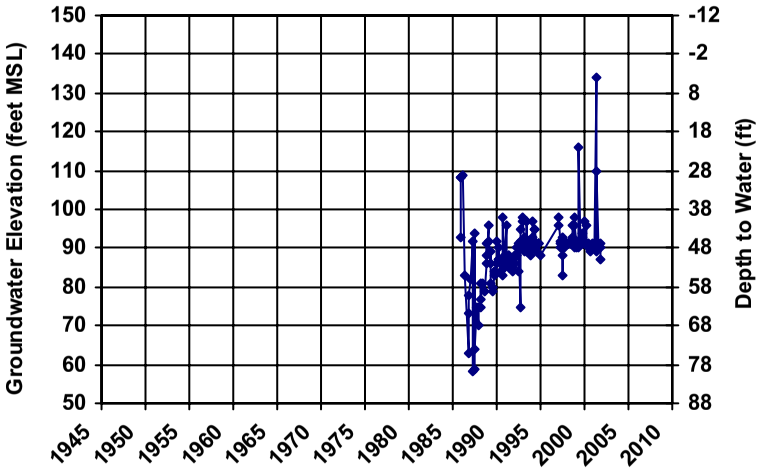
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_26 (RP_26) RPE: 126



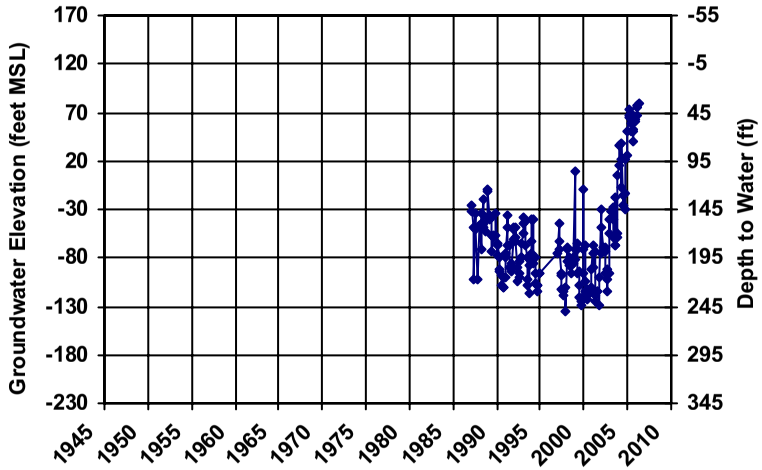
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_27 (RP_27) RPE: 112



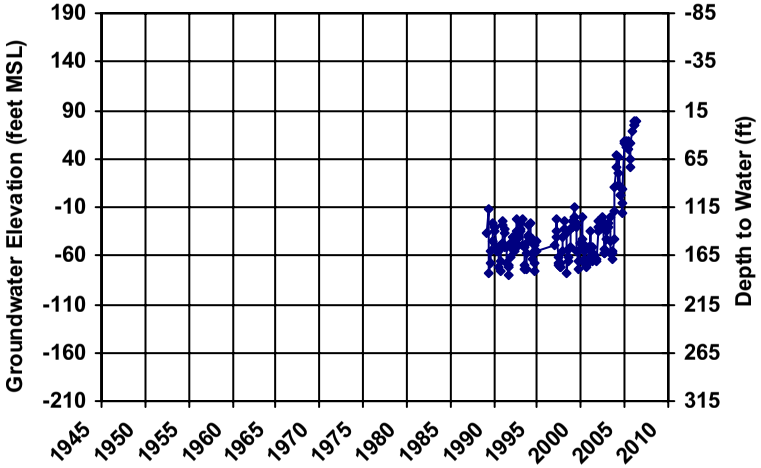
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_28 (RP_28) RPE: 138



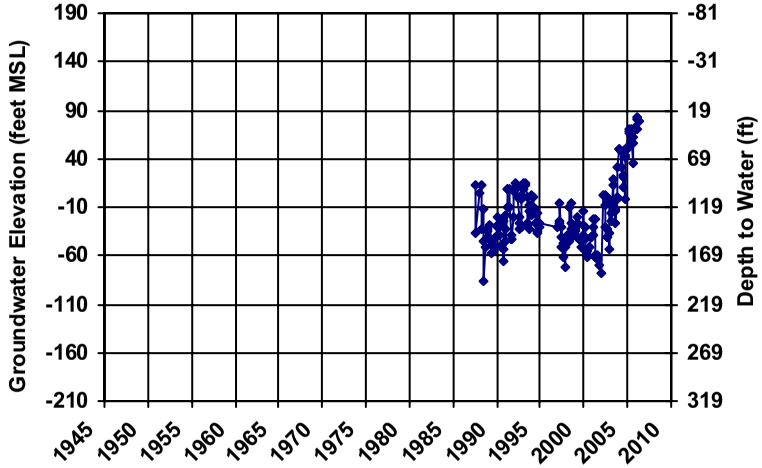
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_29 (RP_29) RPE: 115



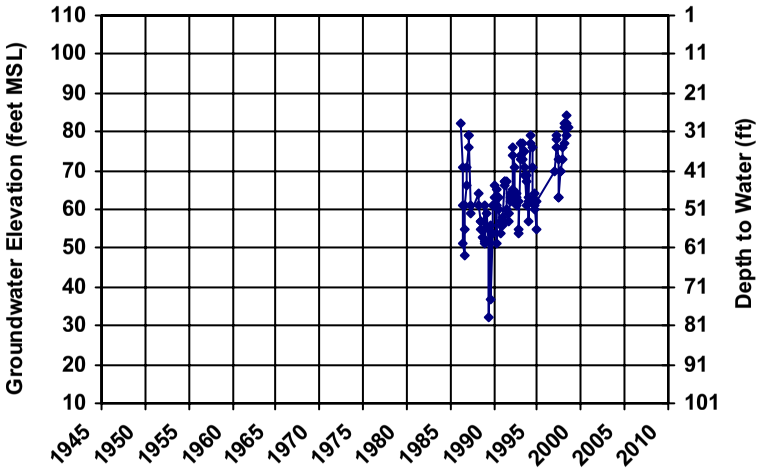
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_30 (RP_30) RPE: 105



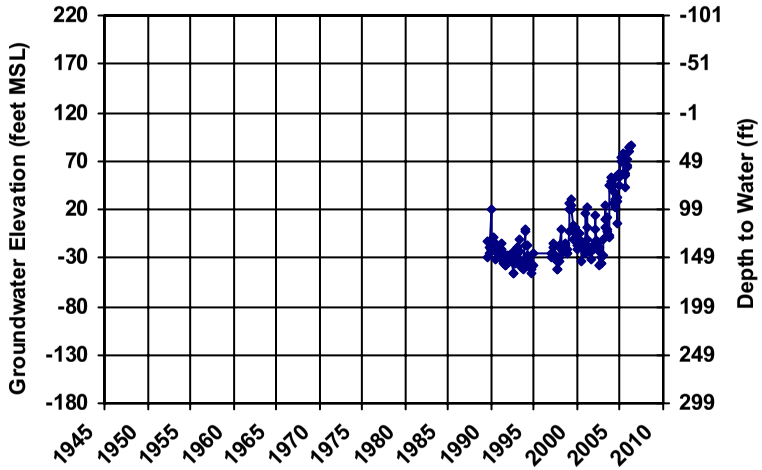
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_31 (RP_31) RPE: 109



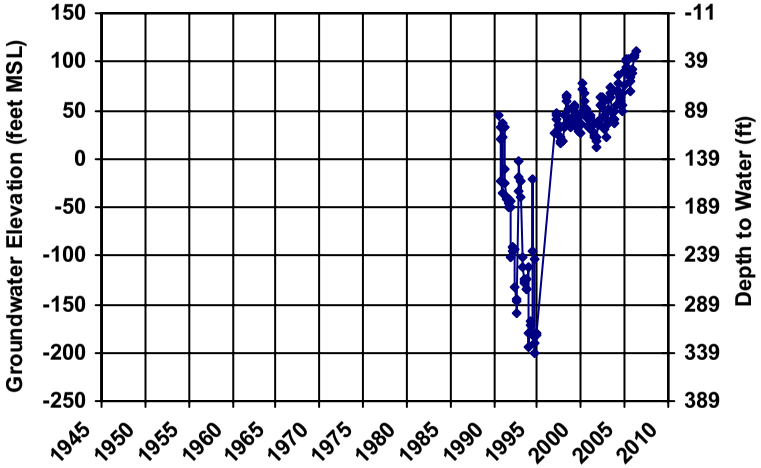
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_32 (RP_32) RPE: 111



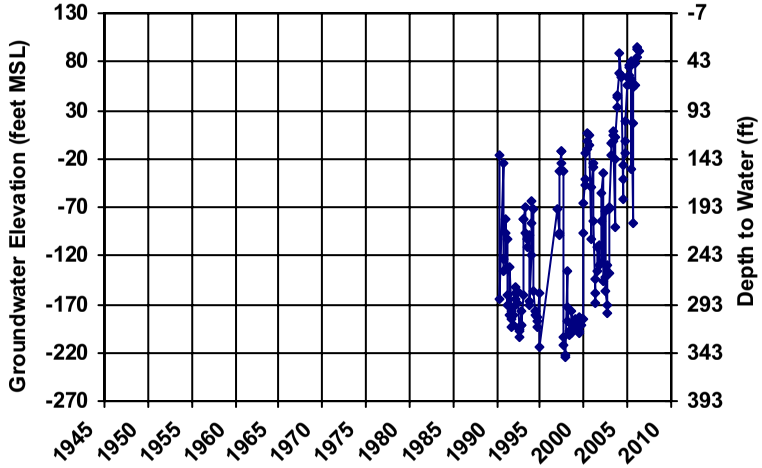
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SID
Depth if available:
State Well Number: RP_33 (RP_33) RPE: 119



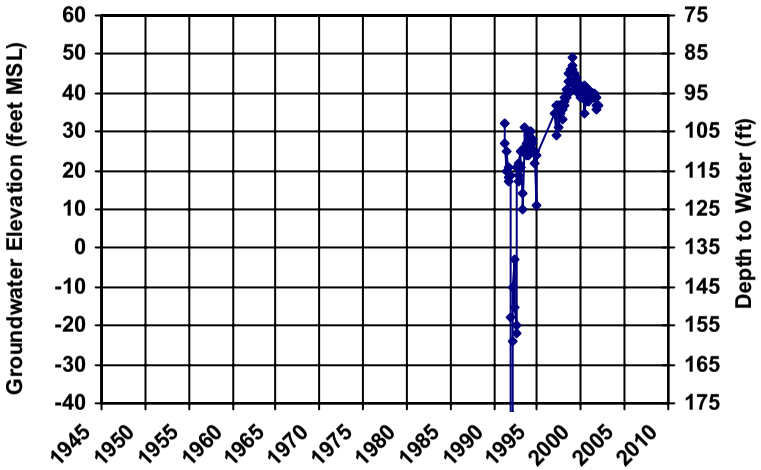
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SID
Depth if available:
State Well Number: RP_34 (RP_34) RPE: 139



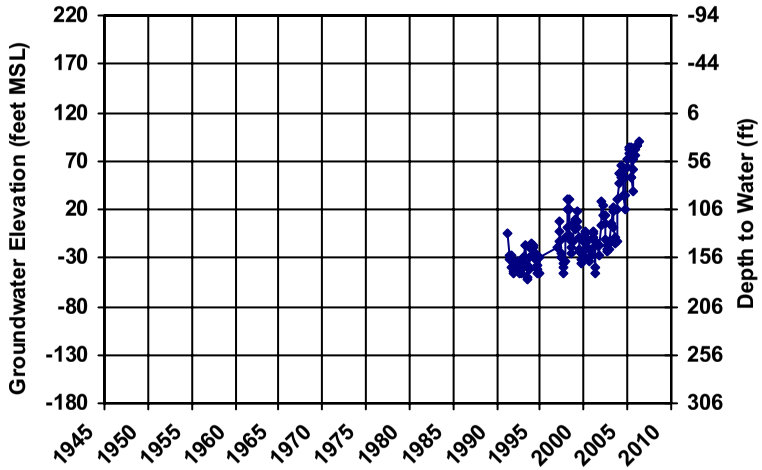
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_35 (RP_35) RPE: 123



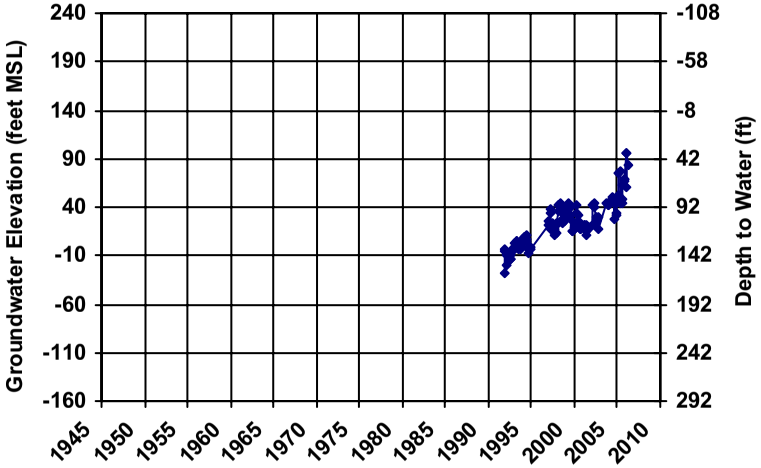
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: ID
Depth if available:
State Well Number: RP_36 (RP_36) RPE: 135



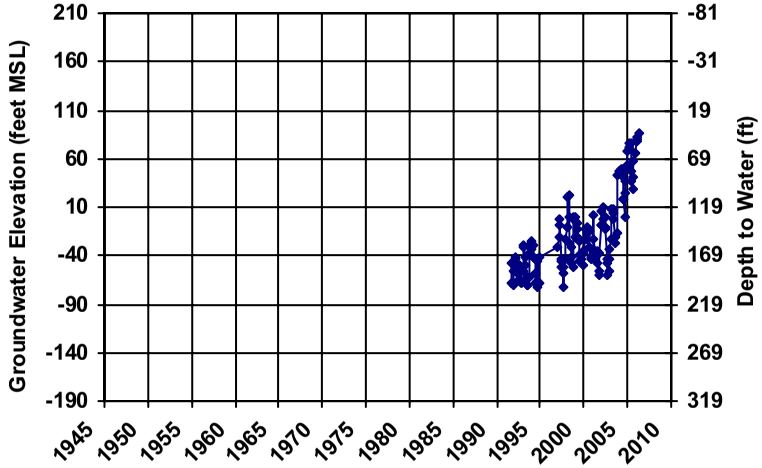
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_37 (RP_37) RPE: 126



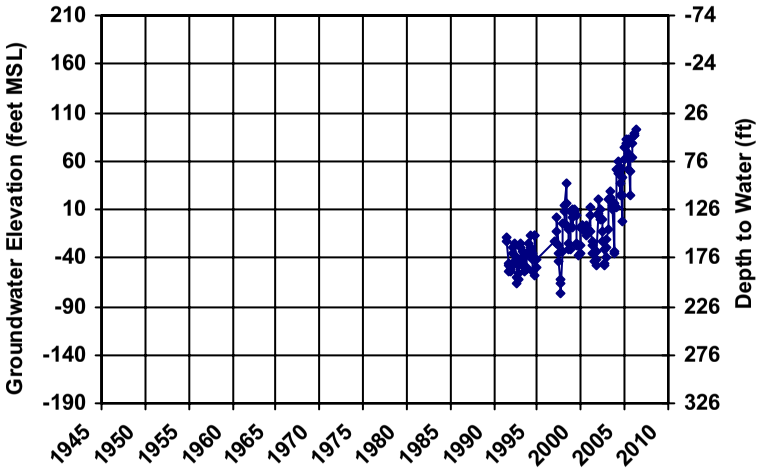
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: SI
Depth if available:
State Well Number: RP_38 (RP_38) RPE: 132



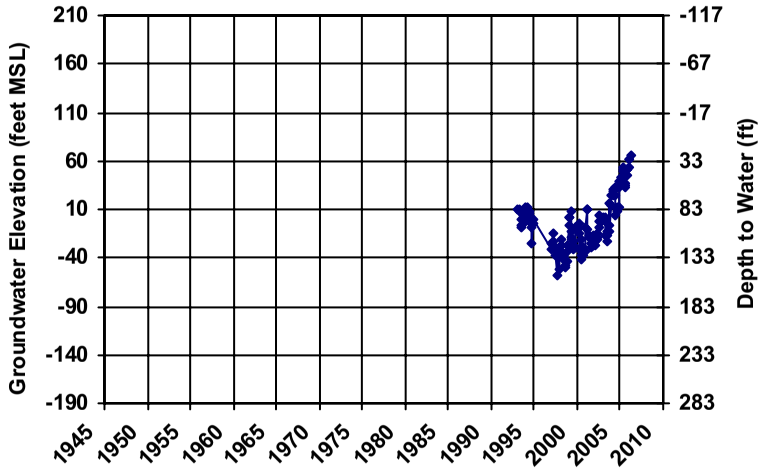
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: I
Depth if available:
State Well Number: RP_39 (RP_39) RPE: 129



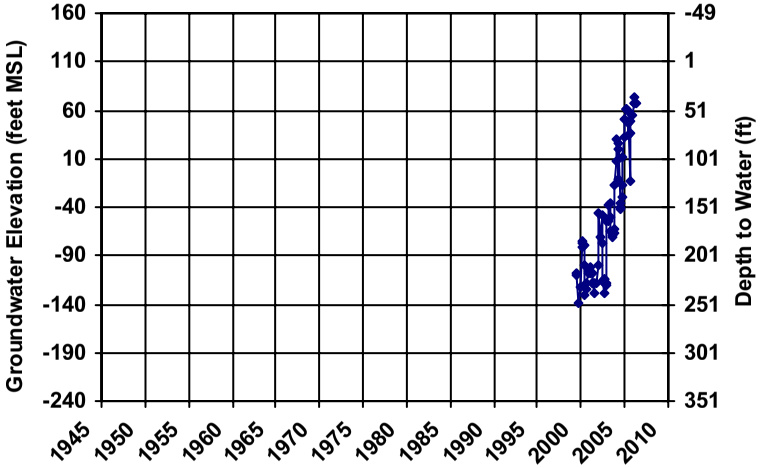
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: RP_40 (RP_40)
Aquifer: I
Depth if available:
RPE: 136



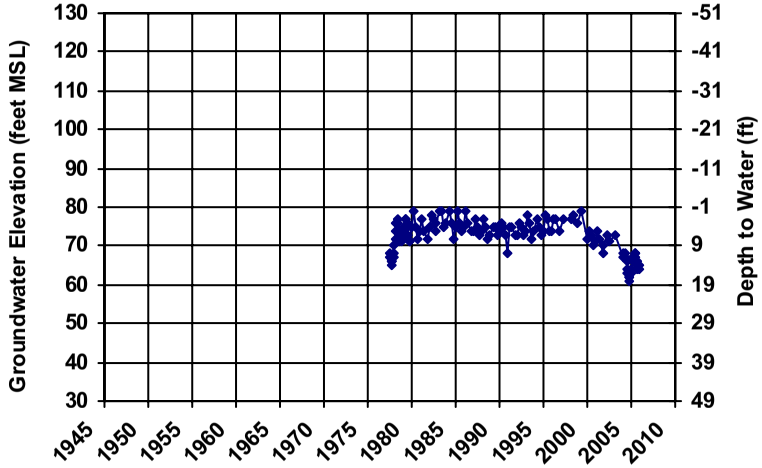
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: RP_41 (RP_41)
Aquifer: SID
Depth if available:
RPE: 93



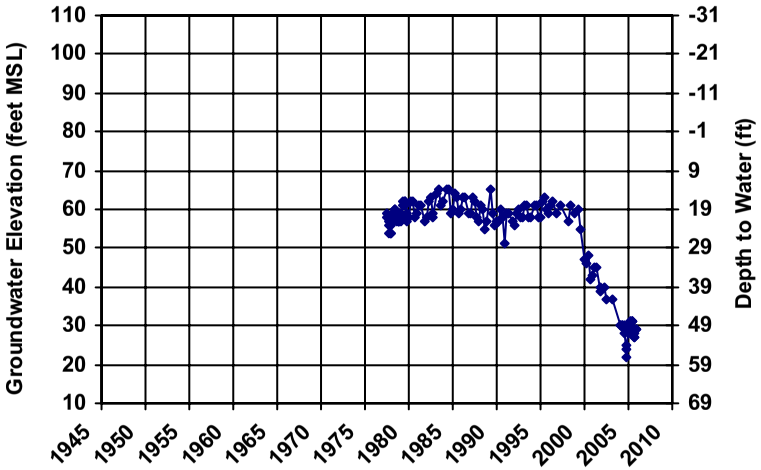
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: RP_42 (RP_42)
Aquifer: I
Depth if available:
RPE: 111



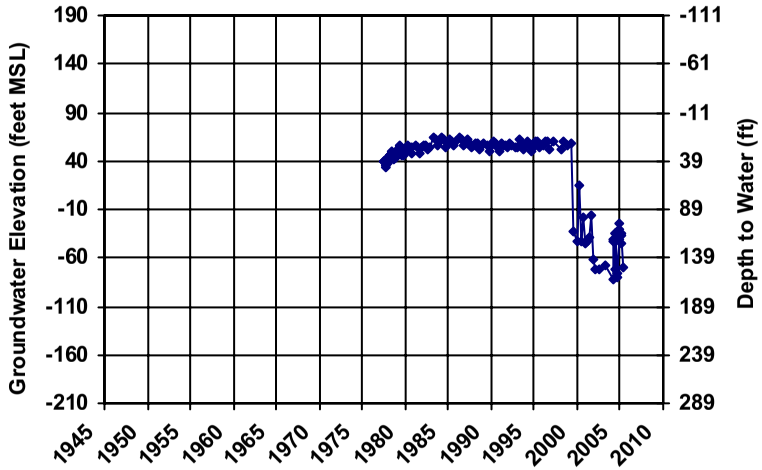
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: SCWA_01 (SCWA_01)
Aquifer: S
Depth if available: 80
RPE: 79



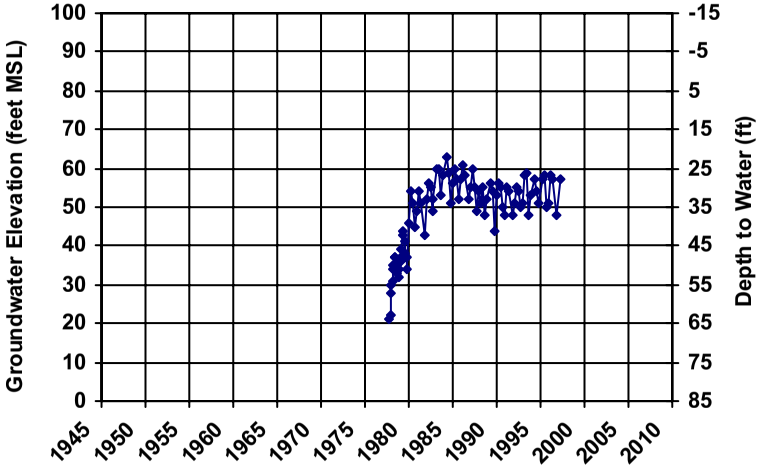
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: WD_ONLY
Depth if available: 257
State Well Number: SCWA_02 (SCWA_02) RPE: 79



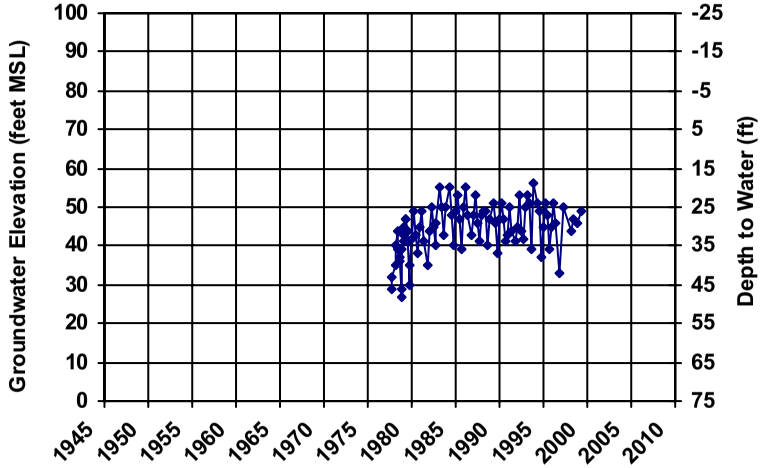
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: WD_ONLY
Depth if available: 570
State Well Number: SCWA_03 (SCWA_03) RPE: 79



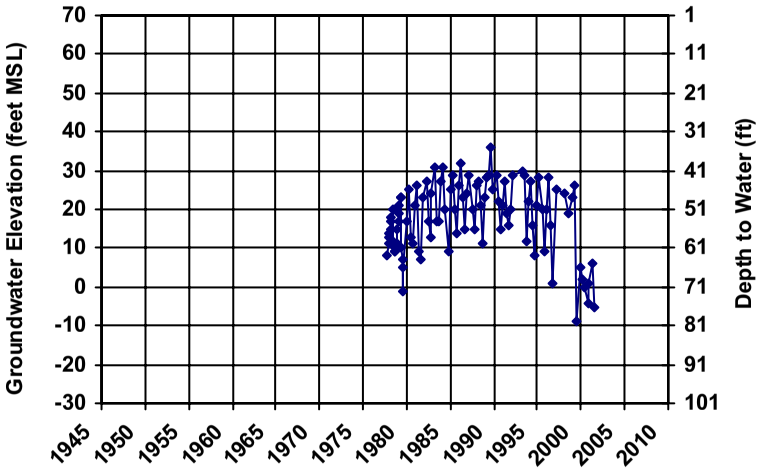
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: D
Depth if available: 808
State Well Number: SCWA_04 (Todd Rd) RPE: 85



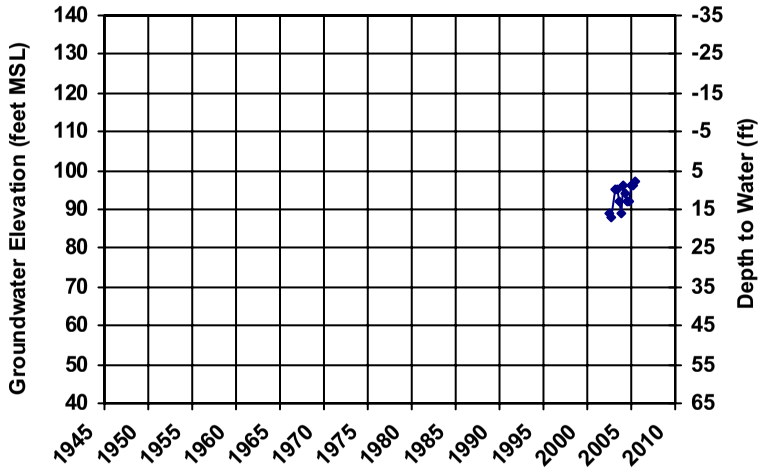
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: IDL
Depth if available: 1040
State Well Number: SCWA_05 (Sebastopol Rd) RPE: 75



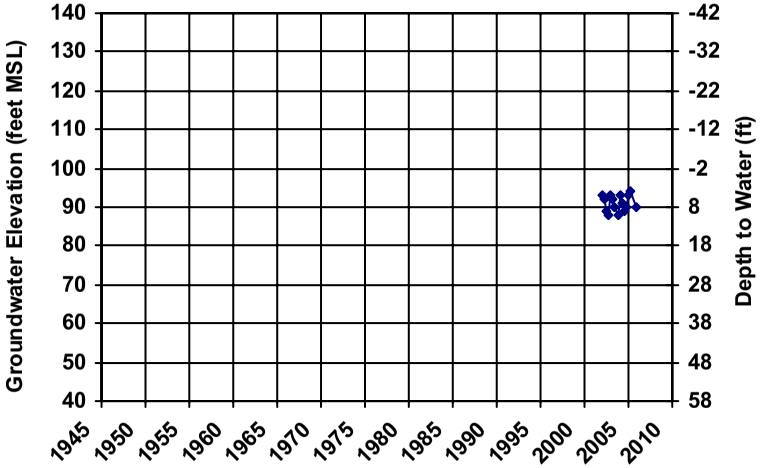
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: SCWA_06 (Occidental Rd)
Aquifer: ID
Depth if available: 600
RPE: 71



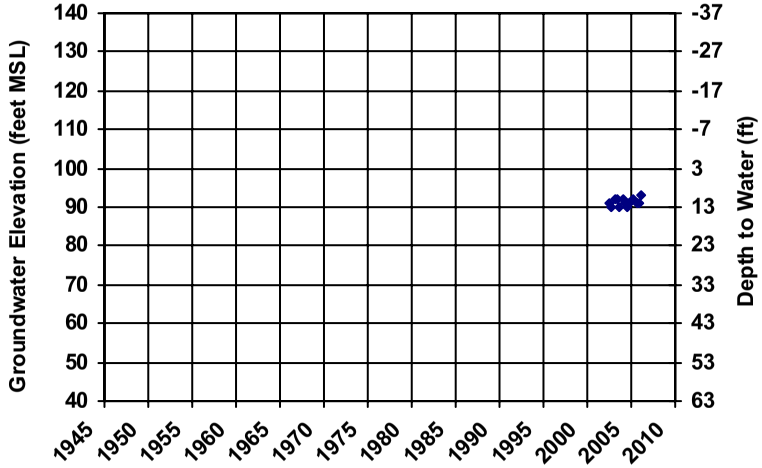
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: T0609700002MW-7 (L002)
Aquifer: S
Depth if available: 21
RPE: 105



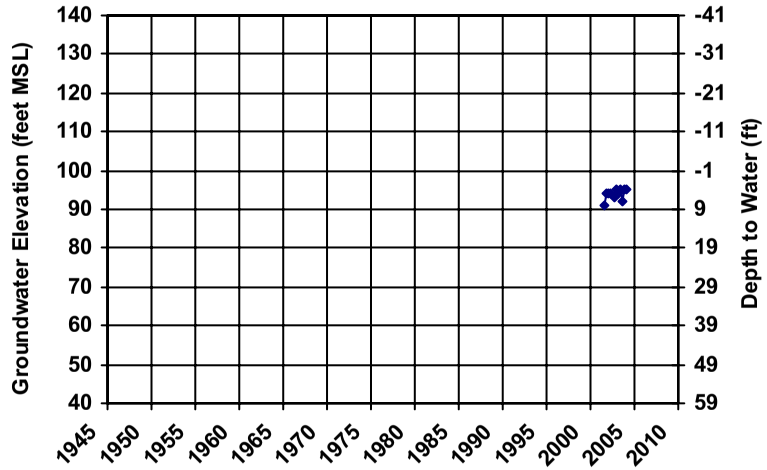
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: T0609700005MW-2 (L005)
Aquifer: S
Depth if available: 20
RPE: 98



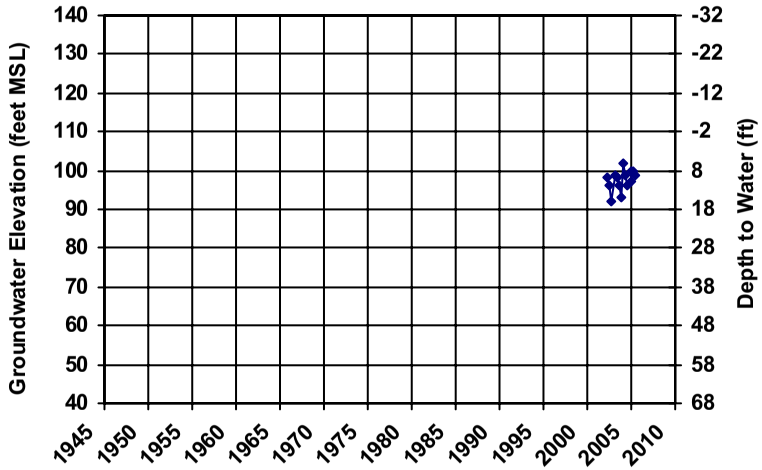
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: T0609700006MW-7 (L006)
Aquifer: S
Depth if available: 19
RPE: 103



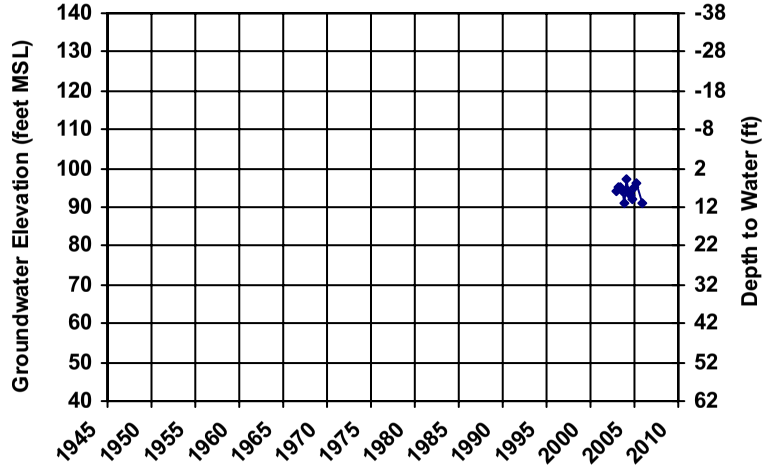
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: S
Depth if available:
State Well Number: T0609700090LP-1 (L090)
RPE: 99



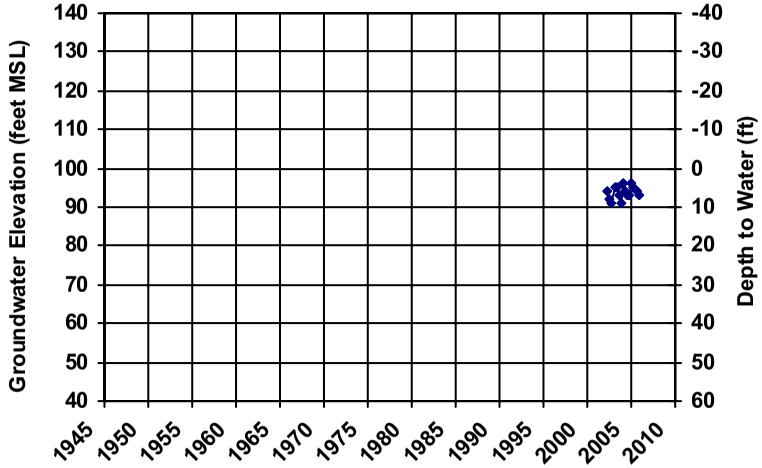
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: S
Depth if available: 28
State Well Number: T0609700126MW-3 (L126)
RPE: 108



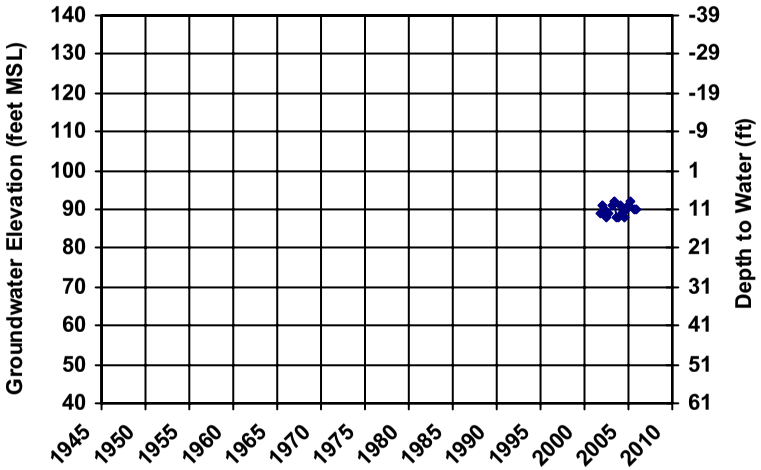
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: S
Depth if available:
State Well Number: T0609700189MW-1 (L189)
RPE: 102



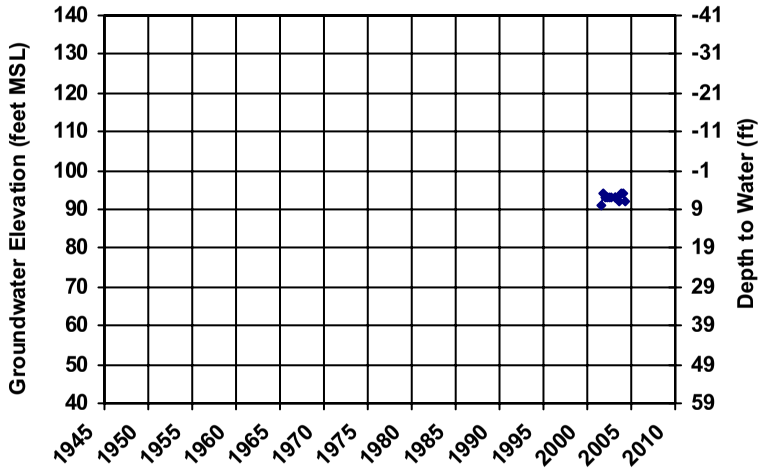
SANTA ROSA VALLEY
SANTA ROSA PLAIN
Aquifer: S
Depth if available:
State Well Number: T0609700248MW-3 (L248)
RPE: 100



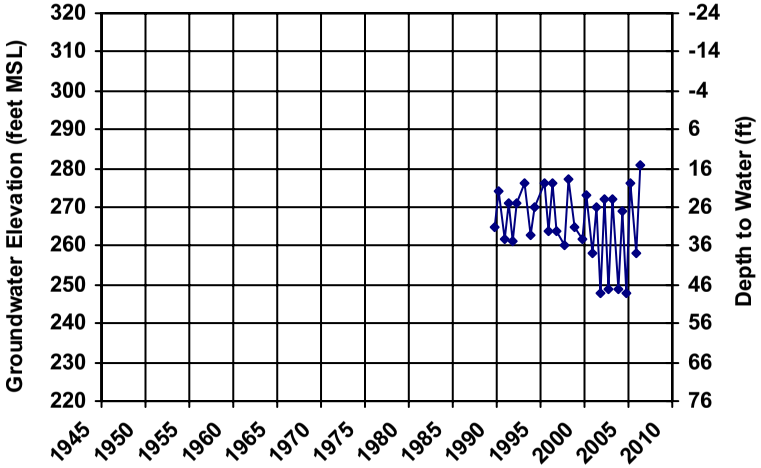
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: T0609700386MW-6 (L386)
Aquifer: S
Depth if available: 20
RPE: 101



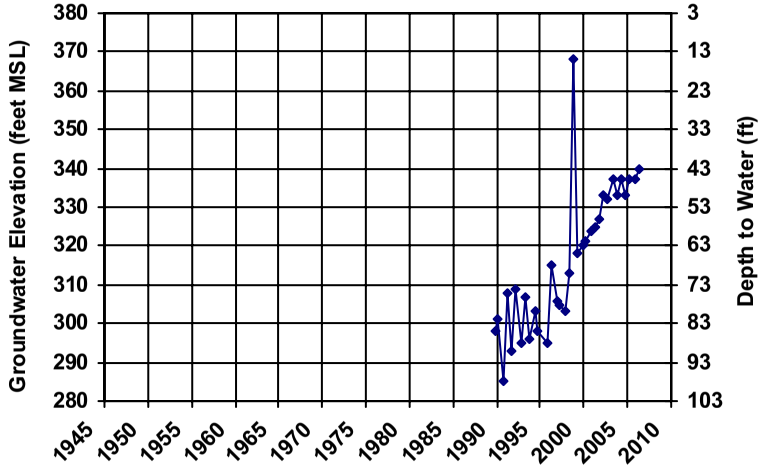
SANTA ROSA VALLEY
SANTA ROSA PLAIN
State Well Number: T0609700424MW-1 (L424)
Aquifer: S
Depth if available:
RPE: 99



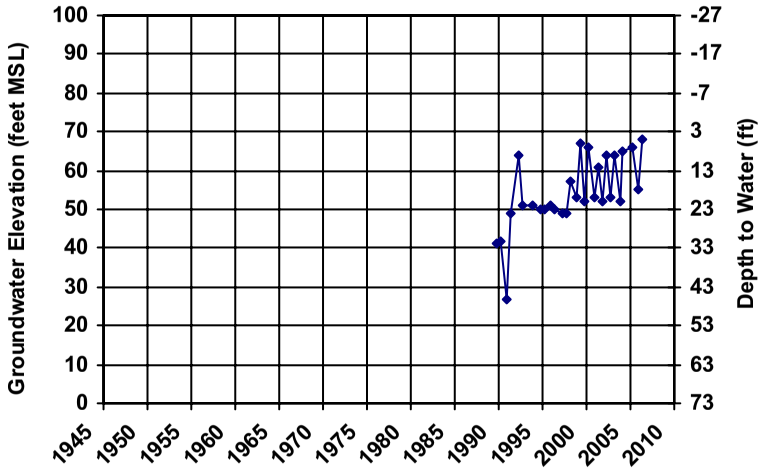
SANTA ROSA VALLEY
RINCON VALLEY
State Well Number: 07N07W06H002M (06H002)
Aquifer: S
Depth if available: 100
RPE: 296



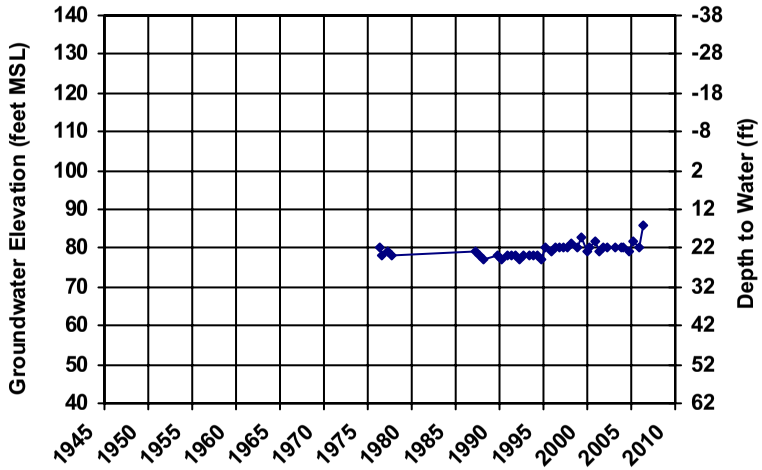
SANTA ROSA VALLEY
RINCON VALLEY
State Well Number: 07N07W09P001M (09P001)
Aquifer: I
Depth if available: 296
RPE: 383



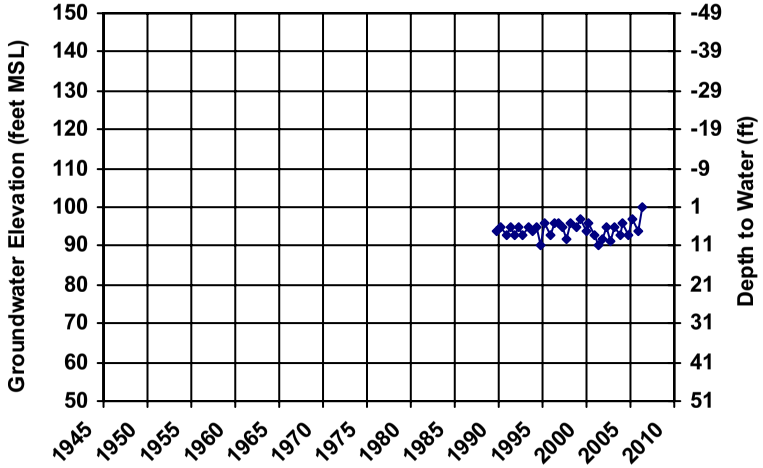
SANTA ROSA VALLEY
HEALDSBURG AREA
State Well Number: 08N09W22E001M (22E001)
Aquifer: S
Depth if available: 45
RPE: 73



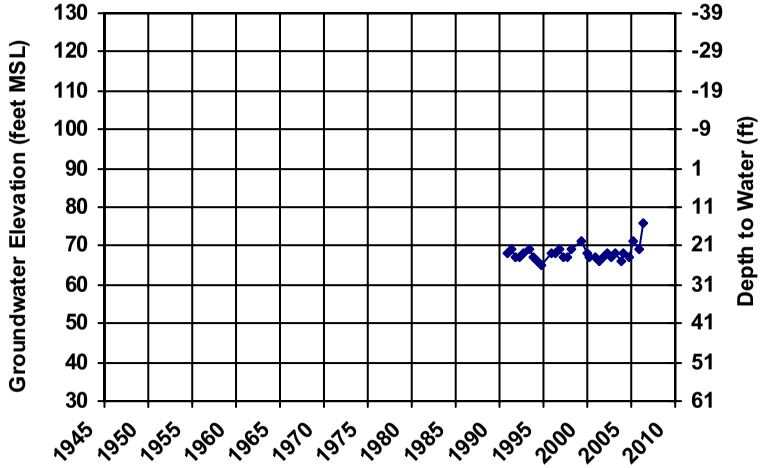
SANTA ROSA VALLEY
HEALDSBURG AREA
State Well Number: 09N09W20E002M (20E002)
Aquifer: Unknown
Depth if available:
RPE: 102



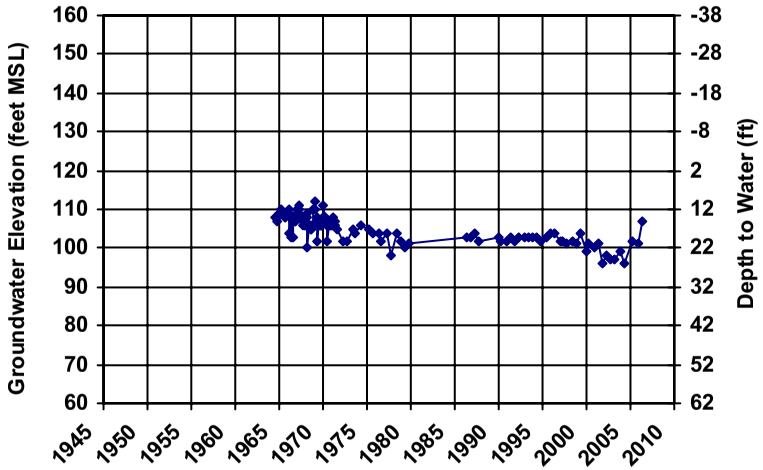
SANTA ROSA VALLEY
HEALDSBURG AREA
State Well Number: 09N09W20K004M (20K004)
Aquifer: Unknown
Depth if available:
RPE: 101



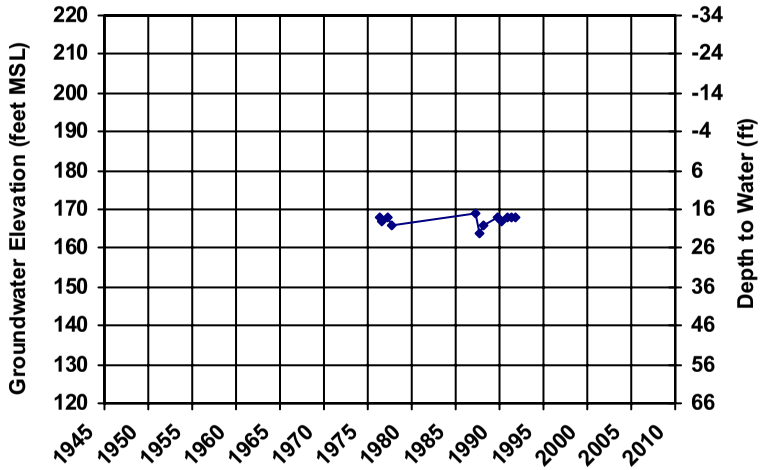
SANTA ROSA VALLEY
HEALDSBURG AREA
State Well Number: 09N09W28N001M (28N001)
Aquifer: Unknown
Depth if available:
RPE: 91



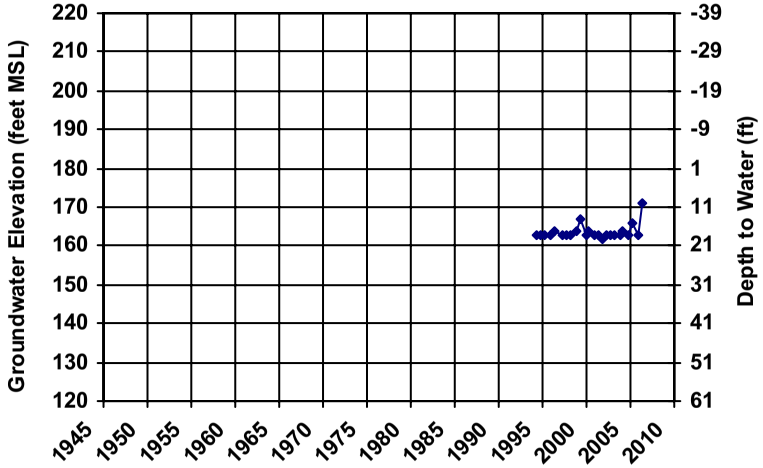
SANTA ROSA VALLEY
HEALDSBURG AREA
Aquifer: Unknown
Depth if available:
State Well Number: 09N10W12C001M (12C001)
RPE: 122



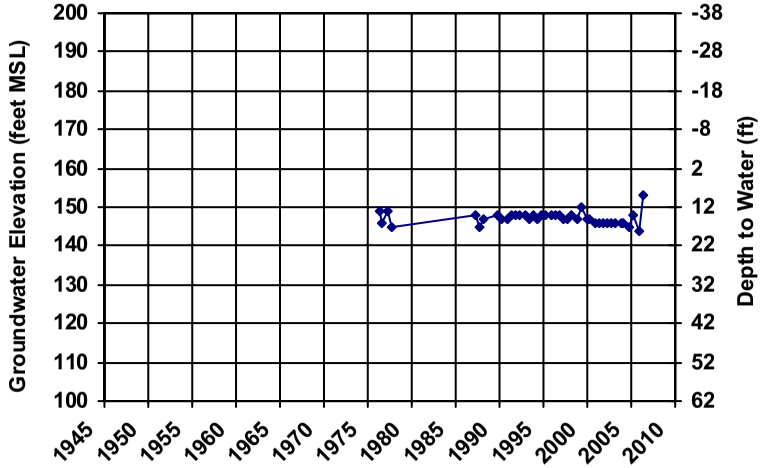
SANTA ROSA VALLEY
HEALDSBURG AREA
Aquifer: Unknown
Depth if available:
State Well Number: 10N10W22D001M (22D001)
RPE: 186



SANTA ROSA VALLEY
HEALDSBURG AREA
Aquifer: Unknown
Depth if available:
State Well Number: 10N10W22D002M (22D002)
RPE: 181



SANTA ROSA VALLEY
HEALDSBURG AREA
Aquifer: Unknown
Depth if available:
State Well Number: 10N10W26M001M (26M001)
RPE: 162



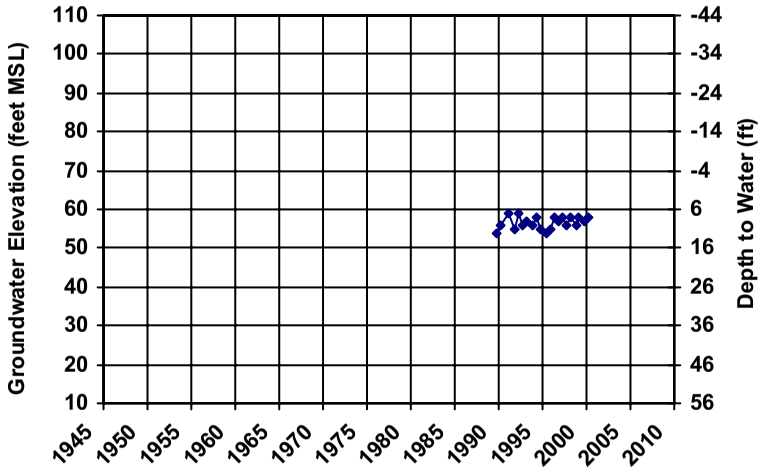
PETALUMA VALLEY

Aquifer: S

Depth if available: 62

State Well Number: 05N07W07A001M (07A001)

RPE: 66



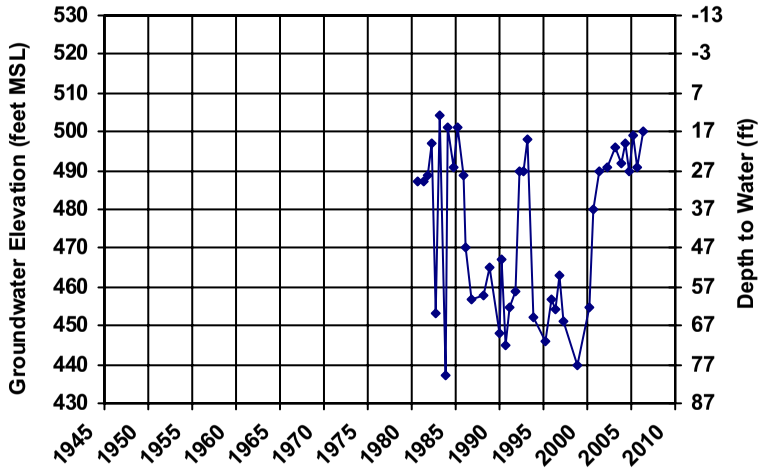
PETALUMA VALLEY

Aquifer: I

Depth if available: 480

State Well Number: 05N07W11F001M (11F001)

RPE: 517



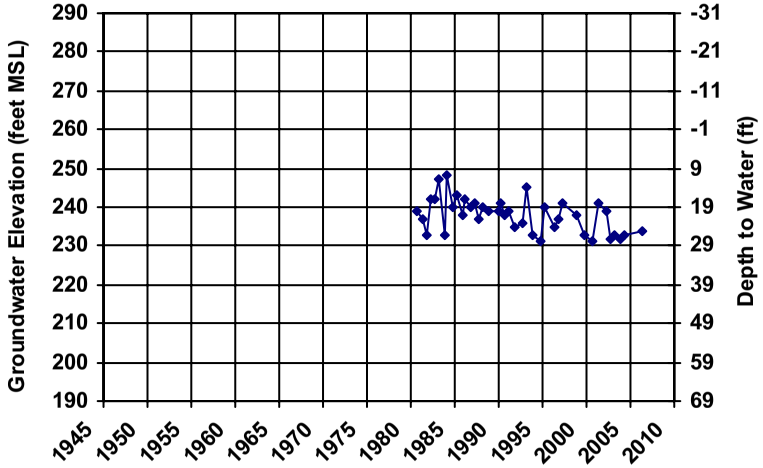
PETALUMA VALLEY

Aquifer: S

Depth if available: 100

State Well Number: 05N07W11N001M (11N001)

RPE: 259



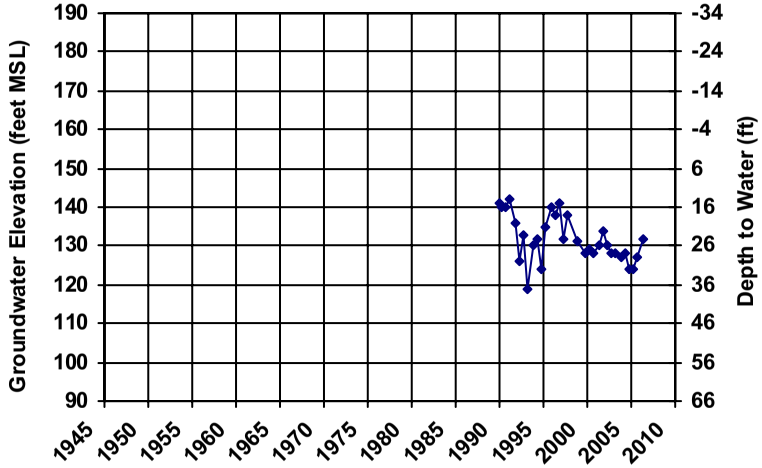
PETALUMA VALLEY

Aquifer: S

Depth if available: 177

State Well Number: 05N07W15K002M (15K002)

RPE: 156



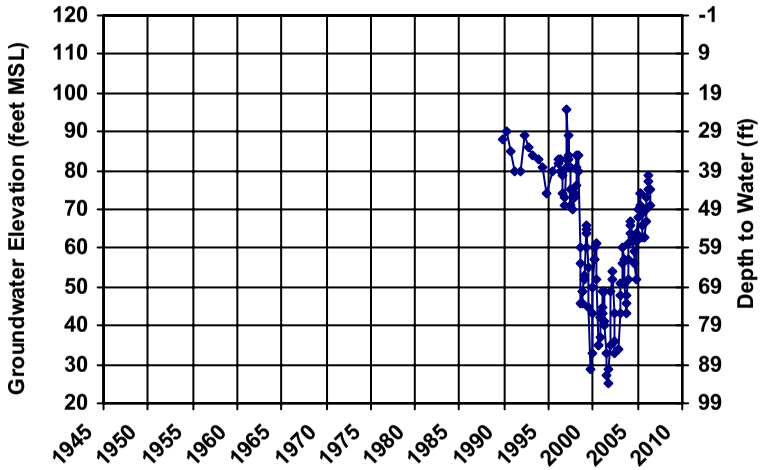
PETALUMA VALLEY

Aquifer: SI

Depth if available: 200

State Well Number: 05N07W15Q001M (15Q001)

RPE: 119



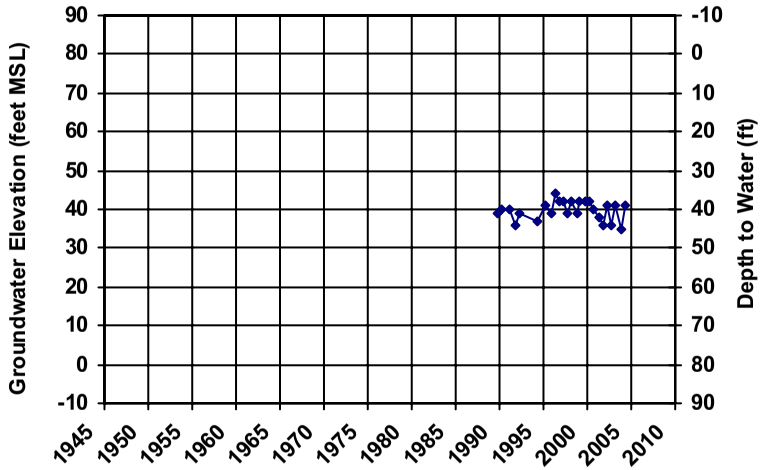
PETALUMA VALLEY

Aquifer: S

Depth if available: 82

State Well Number: 05N07W18B001M (18B001)

RPE: 80



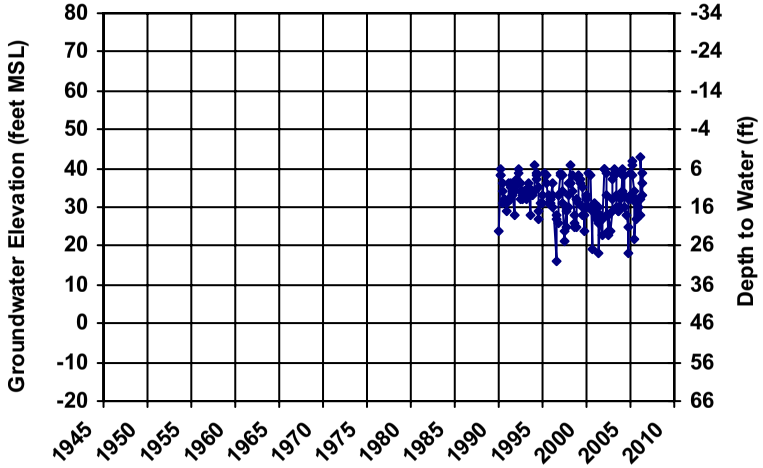
PETALUMA VALLEY

Aquifer: S

Depth if available: 180

State Well Number: 05N07W19N001M (19N001)

RPE: 46



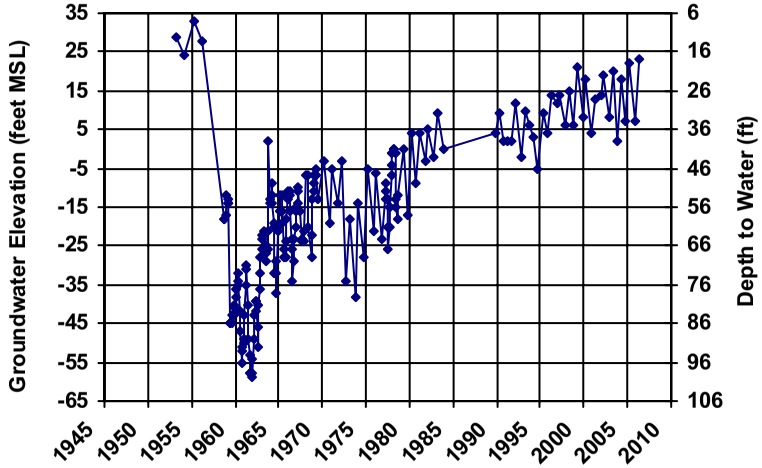
PETALUMA VALLEY

Aquifer: S

Depth if available: 158

State Well Number: 05N07W20B002M (20B002)

RPE: 41



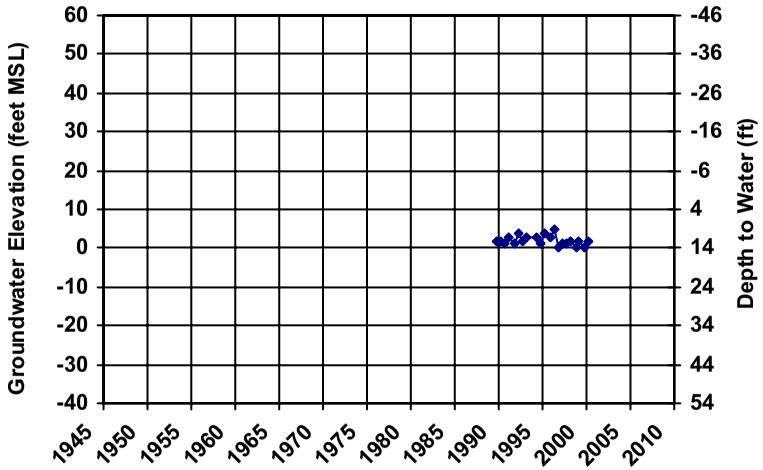
PETALUMA VALLEY

Aquifer: S

Depth if available: 196

State Well Number: 05N07W34L001M (34L001)

RPE: 14



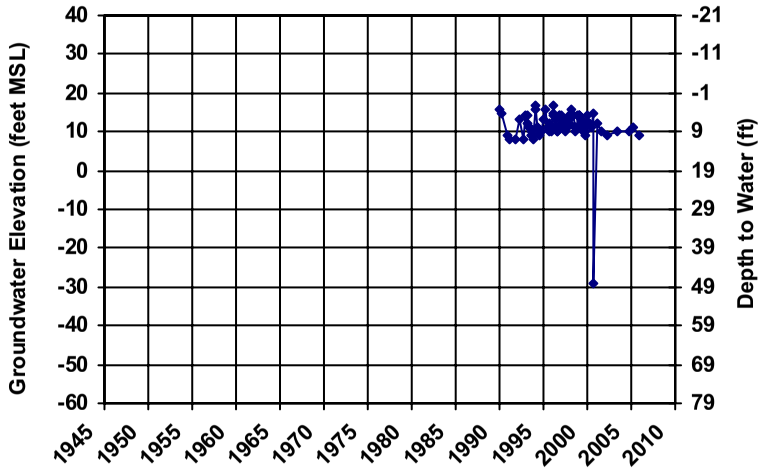
PETALUMA VALLEY

Aquifer: S

Depth if available: 34

State Well Number: 05N07W36R001M (36R001)

RPE: 19



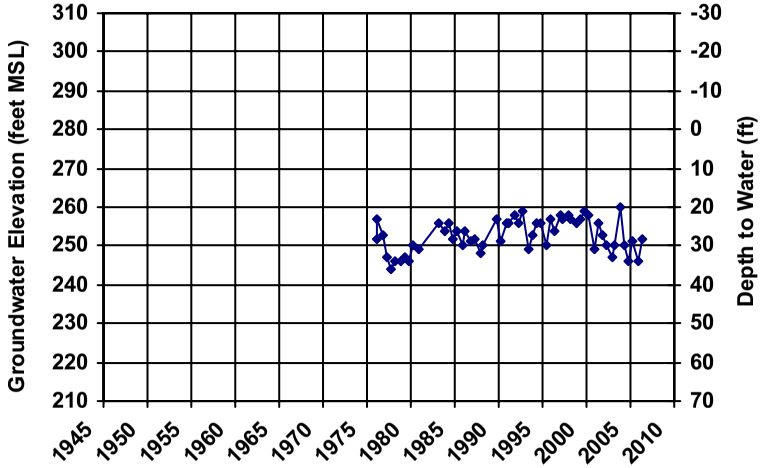
PETALUMA VALLEY

Aquifer: S

Depth if available: 185

State Well Number: 05N08W01L002M (01L002)

RPE: 280



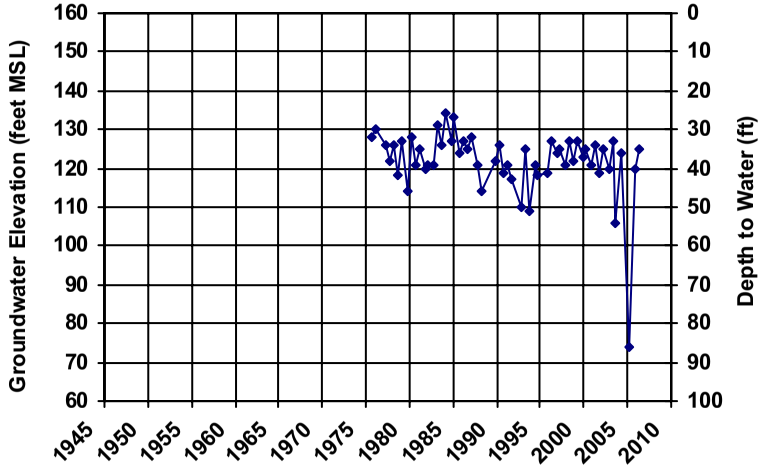
PETALUMA VALLEY

Aquifer: S

Depth if available: 155

State Well Number: 05N08W02H001M (02H001)

RPE: 160



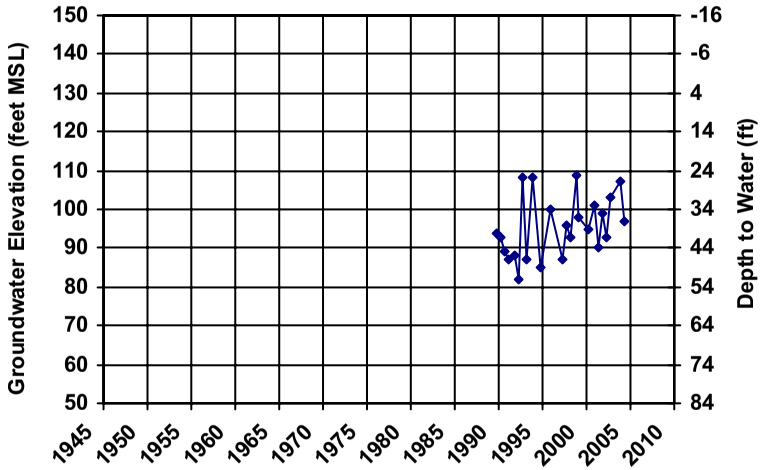
PETALUMA VALLEY

Aquifer: SI

Depth if available: 280

State Well Number: 06N07W31J001M (31J001)

RPE: 134



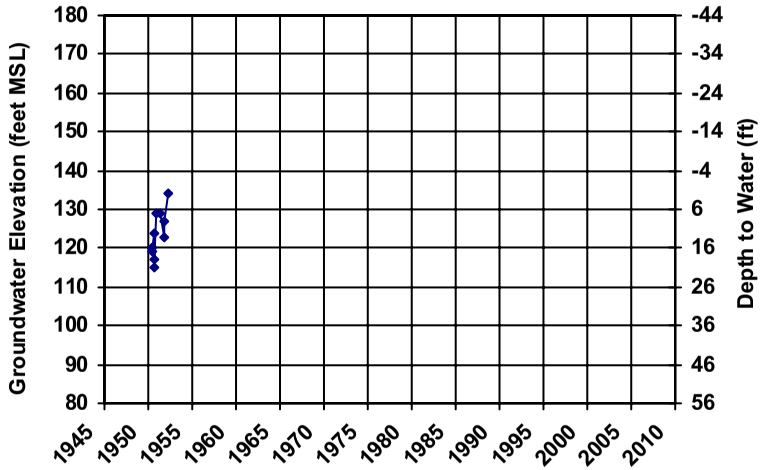
PETALUMA VALLEY

Aquifer: Unknown

Depth if available:

State Well Number: 06N07W31J002 (31J002)

RPE: 136



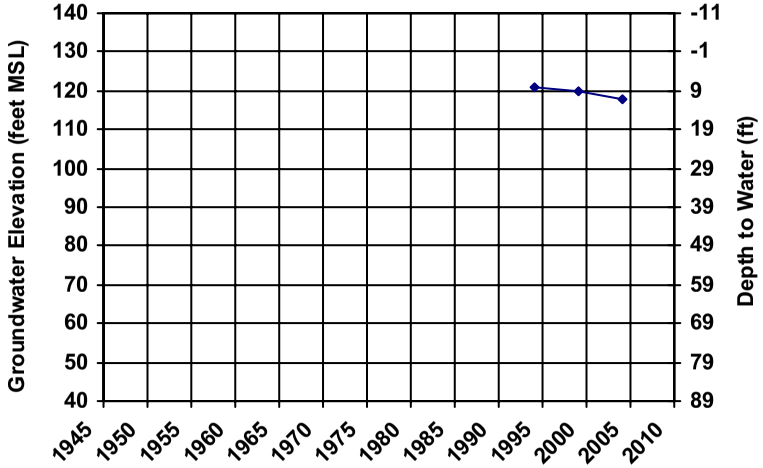
PETALUMA VALLEY

Aquifer: S

Depth if available:

State Well Number: T0609700828MW-1 (L828)

RPE: 129



APPENDIX F

Water Waste Ordinance

Chapter 13.62 WATER WASTE REGULATIONS*

13.62.010 Purpose.

The purpose of this chapter is to promote the efficient use of the entire water supply provided by the city; to eliminate the intentional or unintentional waste of water when a reasonable alternative solution is available; and to prohibit the use of equipment that is wasteful.

13.62.020 Definitions.

A. “City” means the City of Rohnert Park acting by and through the city public works department as operator of the city water system.
B. “City council” means the city council of the City of Rohnert Park.
C. “City manager” means the city manager of the city or his or her designee.
D “Customer” means any person, within or outside of the geographic boundaries of the city, who uses water supplied by the city.
E. “Person” means any person, firm, partnership, association, corporation, company, organization, or governmental entity.
F. “Recycled water” means water treated in accordance with Title 22, Section 60301 et. seq. of the California Code of Regulations and suitable for reuse under the circumstances outlined.
G. “State health standards” means Title 22 Section 60301 et. seq. as it may be amended from time to time.
H. “Subregional system” means the City of Santa Rosa’s Subregional Water Reclamation System, which is the current supplier of recycled water in the City.

13.62.030 Nonessential uses.

No customer of the city shall use or permit the use of potable water from the city for residential, commercial, institutional, industrial, agricultural, or other purposes for the following nonessential uses:
A. The washing of sidewalks, walkways, driveways, parking lots and other hard-surfaced areas by direct hosing, except as may be necessary to properly dispose of flammable or other dangerous liquids or substances, wash away spills that present a trip and fall hazard, or to reduce or eliminate materials dangerous to the public health and safety;
B. The escape of water through breaks or leaks within the customer’s plumbing or private distribution system for a period of time greater than seventy-two hours after discovery of the break or leak or receipt

of notice from the city.
C. Irrigation in a manner or to an extent which allows excessive runoff of water or unreasonable over-spray of the areas being watered.
D. Washing cars, boats, trailers or other vehicles and machinery directly with a hose not equipped with a shutoff nozzle;
E. Water for non-recycling decorative water fountains;
F. Water for single pass evaporative cooling systems for air conditioning in all connections installed after the effective date of this chapter, unless required for health or safety reasons;
G. Water for new non-recirculating conveyor car wash systems; and
H. Water for new non-recirculating industrial clothes washing systems.

13.62.040 Recycled water service required.

Upon written notification from the city, new applicants for water service whose properties may be served by recycled water, shall connect their property to recycled water service for those uses for which the use of potable domestic water would be deemed a waste or unreasonable use of water as specified in Division 7, Chapter 7, of the California Water Code (Section 13550 et. seq.) and the state and local regulations promulgated pursuant thereto. Failure of a new customer to accept service of recycled water when it is made available, where use of potable water would otherwise be deemed a waste or unreasonable use of water, shall be grounds for termination of the customer's potable water service. Failure of a recycled water customer to comply with the conditions specified for its use shall be deemed a violation and shall be subject to enforcement as outlined in Section 13.64.050.

13.62.041 Recycled water service connection fees.

Recycled water connection fees for new customers shall be in accordance with the schedule adopted by resolution by the city or the subregional system.
All customers are liable for the cost of connecting plumbing at the point of connection as determined by the city and any costs of making private plumbing and irrigation systems conform to state health standards.

13.62.042 Recycled water service charges.

Recycled water service charges shall be established by resolution of the city and/or the subregional system.

13.62.050 Violation--Enforcement.

The violation of each provision of this chapter, and each separate violation thereof, shall be deemed a separate offense, and shall be enforced as an infraction in accordance with Chapter 1.24 of this Code. Fees and charges for the activities below shall be established by resolution of the city council.
A. Personal contact with the customer at the address of the water service.
B. Written notice, sent by certified mail, to the customer of the water waste violation including a specified period of time to correct the violation or request a hearing.
C. The city may levy a water waste penalty to the customer.
D. After notice and a hearing provided in accordance with Section 13.64.051 below, the city may authorize termination of water service and the charge for same shall be billed to the customer. Except in cases of extreme emergency as solely determined by the city manager, service shall not be reinstated until verified by the city manager that the violation has been corrected and all charges and fees have been paid.

13.62.051 Notice and hearing.

Before terminating water service, the city manager shall give written notice to the customer. The customer shall have five business days from the date of service of the notice to request a hearing before the city manager or his or her designee in order to present any and all evidence they may have as to why a restrictor should not be installed or service terminated. If a hearing is requested, the city manager or his or her designee shall schedule a date and time for said hearing as soon as possible after the request is filed, but not later than five business days after the filing of such request for hearing. At the hearing, the customer and the city may offer evidence. The city manager shall make a final determination as to whether service should be restricted or terminated and under what conditions.

13.62.052 Violation--Additional remedy.

As an additional remedy, the violation of any provision of this chapter by any person who has received more than one written warning pursuant to Section 13.64.040 to refrain from the same or any other violation under this chapter in one calendar year shall be deemed and is declared to be a public nuisance and may be subject to abatement in accordance with Chapter 1.24 of this Code. 2004)

13.62.060 Exempt water uses.

All water use associated with the operation and maintenance of fire suppression equipment or employed by the city for water quality flushing and sanitation purposes shall be exempt from the provisions of this chapter.

13.62.070 Special exemptions.

Any customer of the city may make written application for a special exemption from the provisions of this chapter. This application shall describe in detail why the applicant believes a special exemption is justified.

A. The city manager may grant variances for use of water otherwise prohibited by this section upon finding and determining that failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public; or cause an unnecessary and undue hardship on applicant or public, including, but not limited to, adverse economic impacts, such as loss of production or jobs.

B. The decision of the city manager may be appealed to the city council by submitting a written appeal to the city clerk within fifteen calendar days of the date of the decision. Upon granting any appeal, the city council may impose any conditions it determines to be just or proper. Special exemptions granted by the city council shall be documented in writing.

APPENDIX G

Demand Forecast Modeling

APPENDIX G -1

Historical Water Use

June 24, 2005

ROHNERT PARK HISTORICAL WATER USE

Water Production Data

We developed one monthly water use tracking models from the historical water production data using the monthly data provided by the City of Rohnert Park. We performed a regression analysis the time series of per person water use versus month that considered which weather variables best would account for variation in use due to the weather (weather normalization). The purpose of the model is to determine the average water use per person per day to forecast additional future water use as population served grows.

The City has reviewed an early draft of this material and what follows includes their interpretation of trends.

First we will provide a little background. As you know from our data requests, we prefer to evaluate water demand by customer group using monthly billing data so that we can address the different patterns of use and customer growth in each group. The monthly data also assists in the evaluation of peak demands and indoor water use by customer groups. We understand the fact that the City cannot provide monthly data by customer group and have worked around this issue. The annual information that you have provided on accounts and revenues by customer group, coupled with census data on housing mix, will be of great value in our making projections of total demand and integrating conservation measures into the projections.

From a monthly water use pattern, we used your Total Production data and we converted it to a per capita basis to neutralize or separate the impacts of growth. The historical population data that we are using is from the Historical State, County, and City report for Rohnert Park. The April 1, 2000 population from this report is identical to the population reported in the Bay Area Census for Rohnert Park. In addition the Department of Finance provided annual population estimates for the years 2001-2005.

It is useful to look at the pattern of per capita water production in the context described above. We have provided a graph of the pattern of water production per capita with a few interpretive comments that the City can either accept or provide a more knowledgeable interpretation. This graph has four lines.

1. Weather normalized actual water use expressed in terms of gallons per capita per day. The weather normalization statistically derives the impact of weather on water use and restates actual production to the level it would be with normal weather. (Normal weather is based on long term average weather for each month.)
2. A 13 month weighted moving average is calculated that runs through the center of the data, giving an easy-to-visualize picture of the pattern of use.
3. An average of the last three years is given as a potential base point for demand projections and as a reference for viewing the stability or volatility of recent years.

4. A regression model forecast is given for the last three years of actual data by month and for 2005 just as a reference forecast. This forecast simply projects the pattern of the prior three years without any consideration given to any conservation or other measures that the City of Rohnert Park might take that would change the water use pattern.

Interpretation of the Graph of GPCD Production

There is a clear declining pattern of water production. The regression coefficient is actually -0.37 gpcd per month. This could be caused by conservation savings, changes in housing mix to more MFR which use less water than SFR, or the departure of large business customers from the city. We would appreciate the City's local insight in this matter. Most likely due to conservation efforts, combined with water meters and water and sewer bills based on consumption. There is a clear trend in all areas – annual water use, peak month water use, per capita water use. They are all consistently trending downward. The city stated they have gone to great lengths and expense to change the water use culture in Rohnert Park.

The population we used is given in Table 1. It was updated after correspondence in April 2005 with the City

Table 1: Population Used to Derive GPCD Water Use (Production per capita)

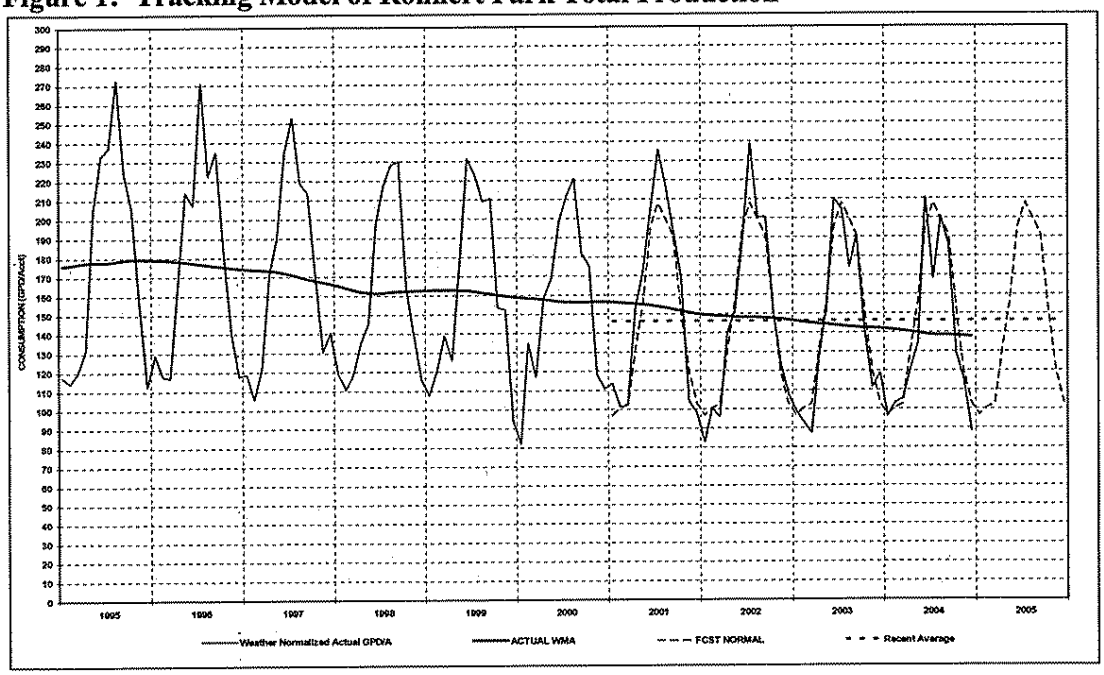
Year (12/31)	Cal Dept Finance Population
1994	
1995	39,100
1996	39,900
1997	40,550
1998	41,350
1999	42,050
2000	42,236
2001	42,200
2002	42,198
2003	42,281
2004	42,127

We understand recycled water increased after 1995 and this caused the potable water use to go down. We understand Rohnert Park uses about 1,000 afy of recycled water. Although some of this is on the golf course and was implemented prior to 1990, the rest of it would reduce production of potable water.

Another pattern that is apparent in Figure 1 is the decreasing amplitude of the swings from trough to peak. For example in 1995-96, the range from winter use to peak summer use is about 155 gpcd. The range in 2003-04 is about 110 gpcd. This reflects both savings in winter (indoor) water use of about 25 gpcd and a reduction in peak month demand of about 45 gpcd. The overall reduction is from 175 gpcd to about 140 gpcd, a 35 gpcd or 20% savings. It is important to isolate the source of this savings or reduction in water use. The City has suggested that the lower indoor use

could be due in part to the over 9,000 low flow toilets installed during this time period. The overall use is declining also due to metering and increasing use of recycled water.

Figure 1: Tracking Model of Rohnert Park Total Production



From inspection of the graph, it may be said that the drop between 1996 and 1999 is from recycled water and the drop between 1998 and 2004 is water conservation, metering, toilet replacements, etc. The current recent average water use is about 146 gpcd. We also expect, as we proceed with the water demand projections on an end-use basis that further understanding will unfold from the process of breaking down the housing composition, and the residential versus non-residential water demand on an annual basis.

One of the issues Rohnert Park is going to have is the demand hardening. People have reduced their water use 20% plus already. There may be some question as to how much more can be accomplished.

MADDAUS WATER MANAGEMENT

MEMORANDUM

Date: October 26, 2005

To: Sonoma County Water Agency Contractors

From: William Maddaus, Maddaus Water Management

Subject: ***Commercial Water Demand Factors for Water Demand Projections***

COMMERCIAL VACANCY

The purpose of memorandum is to document the increase in commercial water use factors for all Sonoma County Water contractors to account for the current recession which started to show effects on commercial water use around 2002.

The following seven resources have been reviewed and considered in our analysis:

1. Commercial, Industrial, Retail vacancy estimates created by Keegan & Copping Company for Quarter 1 to 4 for both 2000 and 2004 (Provided by the City of Rohnert Park)

2. Commercial, Industrial, Retail vacancy rates provided by Sonoma County Water Agency Contractors

3. Billing records for SCWA contractors for 2000 to 2004

4. Annual DWR reports "Public Water System Statistics" for SCWA contractors for 2000 to 2004 (when available)

5. Sonoma County 2005 Economic & Demographic prepared by Sonoma County Economic Development Board for the Center for Economic Development. (This is a comprehensive 157 page report provided to contractors which provides various economic indicators such as employment, unemployment, retail sales, job sector growth, and population).

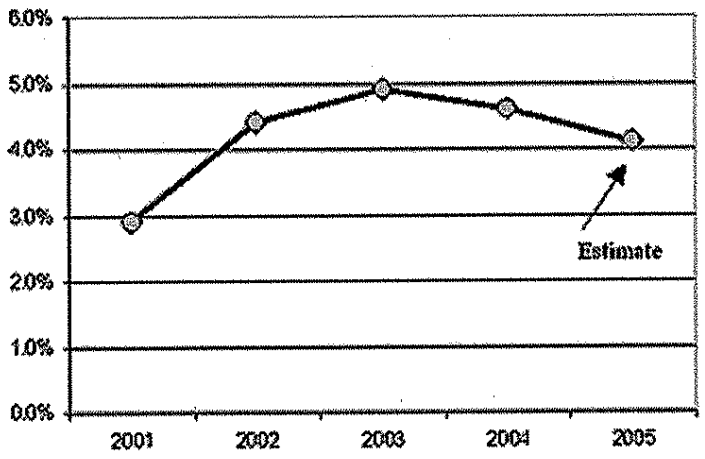
6. Local Economic Report Series, Fall 2005 Economic Development Board, Volume 4, Issue 1, Fall 2005

7. Citizens Report for Fiscal Year 2003-2004 by the Sonoma County Auditor Controller

The last report listed above has a good summary of the economic conditions in Sonoma County, as of June 30, 2004 (which is our base year for forecasting), and we quote:

> *Sonoma County is in the process of climbing out of a 26-month-long recession, which was both deeper and more prolonged than the national recession. The good news is that the housing market has been strong, retail sales are improving, technology is recovering, and we expect good things from agriculture, wine sales and tourism. On the other hand, we have experienced slow job growth and flat incomes.*
>
> *In the three years since hitting a peak in employment in 2001, Sonoma County shed 13,300 jobs. There were 3,800 fewer jobs this past April than one year ago. We anticipate adding 4,300 jobs next year.*
>
> *Sonoma County unemployment started to decline this year hitting 4.6 percent in April. Local economists predict it will continue to decline to 4.1 percent next year. Sonoma County unemployment continues to be less than both the State-wide rate and the national average.*

Sonoma County Unemployment Rate 2001-2005



Based on the above listed resources, requests from SCWA contractors, and Maddaus Water Management analysis, it has been found that the 2004 commercial water use is currently suppressed due to a business cycle recession. For future planning purposes and water demand forecasts, this lowered commercial water use value would not allow enough water to meet demands during economic prosperous times such as was witnessed in 1999-2002. Therefore, it is recommended that commercial water use data be used that is representative of a healthy economy. Thus we recommend not using 2004 commercial water use factors in gallons per account per day but rather factors from the period 2000-2002.

The tables shown below contain the range in values from the highest in the 2000-2004 period compared with the values previously used in the DSS model, which was often an average of several years. The tables also show the proposed new value and the percentage change from what was used previously. In all cases the commercial water use for the base year and the projected water use will rise. The amount of the increase depends on how significant commercial water use is for each agency and how quickly it is projected to rise in the future.

Sonoma County Water Agency
COMMERCIAL WATER USE

Agency	Weather Normalized Highest 2000 to 2004 Consumption Gallons per day per account	Weather Normalized 2004 Consumption Gallons per day per account	2000 to 2004 % Difference
Forestville	1278.9	1492.9	16.7%
North Marin	1185.5	1035.3	-12.7%
Petaluma*	1362.4	1267.7	-7.0%
Rohnert Park**		1741.0	
Santa Rosa	1299.2	1137.9	-12.4%
Sonoma***	1014.6	880.4	-13.2%
Valley of the Moon	1577.4	1290.2	-18.2%
Windsor	1167.6	805.8	-31.0%

*Data for 2000 not available for Petaluma due to billing system change. Data in table for year 2000 is based on 1999 consumption. Data for 2004 was not provided. Data in table for 2004 column is based on 2003 consumption.
**Data for 2000 not available as Rohnert Park is not a metered system
***Data for 2000 not available for Sonoma due to billing system change.
Data for year 2000 is based on 2002 consumption which is the highest consumption between 2001 and 2004.

Agency	NEW PROPOSED Value proposed for use in Water Demand Forecast	PREVIOUS Value used in Water Demand Forecast	Proposed % Increase in Commercial Demand Factors
Forestville	1492.9	1395.0	7.0%
North Marin	1185.5	1049.1	13.0%
Petaluma	1362.4	1292.4	5.4%
Rohnert Park	1979.5	1741.0	13.7%
Santa Rosa	1299.2	1156.5	12.3%
Sonoma	1014.6	932.0	8.9%
Valley of the Moon	1577.4	1282.3	23.0%
Windsor	1167.6	925.9	26.1%
		Average of all agencies	13.7%

Agency	Comment
Forestville	Previous Value in model was 2001 to 2004 average. New Value is 2004 weather normalized usage.
North Marin	Previous Value in model was 2002 to 2004 average. New Value is 2000 weather normalized usage.
Petaluma	Previous Value in model was 1998 to 2003 average. New Value is 1999 weather normalized usage
Rohnert Park	Previous Value in model was based on 2003-04 Revenue data. New Value is average of all agencies.
Santa Rosa	Previous Value in model was 2002 to 2004 average. New Value is 2000 weather normalized usage.
Sonoma	Previous Value in model was 2002 to 2004 average. New Value is 2002 weather normalized usage.
Valley of the Moon	Previous Value in model was 2002 to 2004 average. New Value is 2000 weather normalized usage.
Windsor	Previous Value in model was 2002 to 2004 average. New Value is 2001 weather normalized usage.

A similar process was considered for industrial water use. However, all but three contractors do not have an industrial water use category. For the three contractors that have an industrial water use category (Forestville, Rohnert Park, and Petaluma) the use in this category is less than 3% of the total water usage. Because the recession had a very minor effect on total water use through this category, it will not be addressed as a separate issue.

APPENDIX G -2

Customer Water Demand Projections

MADDAUS WATER MANAGEMENT

MEMORANDUM

Date: November 7, 2005

To: Darrin Jenkins, City of Rohnert Park

From: William Maddaus, Maddaus Water Management

Subject: ***Customer Water Demand Projections City of Rohnert Park***
Summary of Data Inputs, Assumptions and Results

LIST OF CHANGES SINCE SEPTEMBER 7, 2005 MEMO

The following changes have been made to the demand projections.

1. Used future dwelling unit according to specific plan data provided by Mr. Darin Jenkins at the City of Rohnert.
2. Changed the multifamily household size to 2.10.
3. Used employment growth rates from 2000 General Plan.
4. The commercial water use factor, in gallons/account/day was increased 13.7 percent to the 2000 value of 1,980 gpd/a from the prior value of 1,741 gpd/a. A detailed explanation for these new commercial water use value is provided in MWM memo dated October 26, 2005 titled ***Commercial Water Demand Factors for Water Demand Projections.***
5. Changed the installed ultra low flush toilets as per the Tier one data compiled by the Sonoma County Water Agency for the Rohnert Park Service area. This caused the baseline future water needs to increase a small amount.
6. Computed a peak day factor based on the ratio of average day in the maximum month to average day (from water production data). The resulting value is 1.50 and is used to generate the peak day forecast from the average day forecast.
7. Added statement about average versus dry year demands on page 5.
8. Made word changes in memo for additional clarification and in response to comments on the September 7 memo.

As a result the demand projection for 2030 has increased 4.1 percent to 7.45 mgd (8,350 AF/year). (The new demand values are shown in Table 4-1 with the plumbing code included).

LIST OF CONTENTS

The following five pieces of information are included in this packet:

1. Future Population and Employment Projections (Attachment 1)
2. Historical Water Use and Demographic Data Inputs to the Model (Attachment 2)
3. Key Assumptions for the Model (Attachment 3)
4. Alternative Water Demand Projections (Attachment 4)
5. Demand Tables for Urban Water Management Plan (Attachment 5)

Each of these will be discussed in individual sections below. As this information has not been concurred with by local agencies, all of the provided information is subject to change.

1. FUTURE POPULATION AND EMPLOYMENT PROJECTIONS

Description of Population and Employment Forecasts (Attachment 1)

There are generally two main sources of population and employment projections that can be used in this model. Below is a list of the two data sources that can be used to generate future water demands.

Available Demographic Projections

- *Local General Plan (population and employment)* – Typically these plans, depending upon when they were published, have a population and jobs forecast for 2020 and build out. The City provided a copy of their General Plan dated 2000 (updated in 2002). The plan contains buildout population and a buildout employment within the City.
- *ABAG (population and employment)* - As mentioned above, ABAG recently published a report in 2005 that includes population and employment estimates for each city in the Bay Area. This report also provides projections for 2005, 2010, 2015, 2020, and 2025.

At the City of Rohnert Park's request the current projections in the above referenced General Plan were used as the source of population and employment forecasts. These were in turned used for the demand projections.

2. WATER USE AND DEMOGRAPHIC DATA INPUTS TO MODEL

Description of "Water Use Data Input Sheet" (Attachment 2)

Attachment 2 is a two-page print out of an Excel spreadsheet. The purpose of this "Water Use Data Input Sheet" is to gather and document basic information about the individual service area. The data shown on the "Water Use Data Input Sheet" can be broken into two main categories, (a) current water use data and (b) demographic data. Each area is broken out below and helps to provide some basic definitions and assumptions.

(a) Water Use Data

- <u>*Base Year*</u> – This is the starting year for the analysis. For this project, the recent average weather normalized data was selected as the base year for two reasons:

1. 2004 shows less of an effect of the recession.

   (The year 2002-3 shows a dip in water demand in many areas due to reduction in economic activity)

2. 2004 had relatively "normal" climate conditions – i.e. not a drought or excessively wet year, so weather adjustments were minor

- *Average gal/day/acct*- This is the amount of water in gallons that is used per day, per account.
- *Indoor/outdoor water use* – This is the amount of water per account split into the percent that is used indoors. The corresponding remaining percent of water is used outdoors.
- *Consumption by customer class*- This shows the annual amount of water used for an entire calendar year, broken down by customer class (Single Family, Multi Family, Commercial, Irrigation, etc)
- *Provision for New Single Family Account Use*– For selected agencies, and upon their specific request, a new category can be created to model water use of new single family homes. This value is held constant in the baseline projection and not subject to plumbing codes. It is assumed that all new homes are built to the current plumbing code with low flow showerheads and low flush (1.6 gallon per flush) toilets. The plumbing codes continue to work on the existing accounts. The new home single family account use for Rohnert Park is 395 gallons/day/account is held constant in the baseline projection and not subject to plumbing codes. The plumbing codes continue to work on the existing accounts. This value was provided by Mr. Darin Jenkins (9/29/05 email) and is based on projected water use in specific plan areas.
- *Unaccounted for water (UFW)* - The difference between the amount of water purchased and the amount of water that was sold. Data provided by the agency was used, if provided, unless UFW was less than 7 percent, in which case 7 percent was used. For the City of Rohnert Park an estimate of the billed water was made from revenue records. The difference between this estimate and what was produced was used for the estimate of UFW, it was 12.3 percent. This value includes water provided to some unmetered accounts.
- *Water Produced*– This is the total amount of potable water produced by Forestville Water District. The water can come from multiple sources including amount purchased from SCWA, purchased from other agencies, local surface water, or obtained from groundwater. This does not include recycled water.
- *Peak day factor* – The ratio of water produced on the maximum day of the year to that produced on the average day. As Rohnert Park was unable to provide daily production data, and at the City's request, the peak day ratio was set equal to the ratio of the average day in the maximum month to the average day for the year.

(b) Demographic Data

- *Census 2000* – The 2000 Census data was used as a general reference when determining population and household sizes for each individual city (and/or unincorporated area) serviced by the water agencies.
- *Department of Finance 2004 estimate and Relationship to 2004 City of Rohnert Park Service Area Population-* The State of California Department of Finance provides official estimates between censuses. The 2004 total population for the City of Rohnert Park of 42,329 was taken directly from the 2004 Department of Finance data and used for 2004 population. To obtain household population, the Group Quarters population of 1,101 was subtracted from total service area population. Base Year 2004 Residential Population = 42,329 – 1,101 = 41,228.
- *Single and multi family dwelling units-* The 2004 single family dwelling units is equal to the number single family accounts for 2004. The 2004 multi family dwelling unit estimate was calculated by applying a growth factor to the 2000 data as noted on the water use data sheet in Attachment 2.
- *Procedure for service areas not contiguous with city boundaries* – When a service area serves outside a city boundary, estimates were generated either from census data when available for the unincorporated areas, Department of Finance data, ABAG Projections, DWR reported data, General Plan or by the local water district if known. If none of the six sources were available, then the modeling team worked with the local water district to make reasonable estimates.
- *Employment data*– The employment figures were obtained from the 2000 General Plan. A projected value for 2004 was used as an estimate of employment in the base year. The General Plan provides a buildout value of 31,600 jobs in 2030 and a value of 27,308 for 2020. Buildout was reached in 2028, assuming a jobs growth rate of 1.9 percent after 2020.

In summary, the key features of this sheet include the existing 2004 (baseline) level of water use, 2004 baseline accounts in each customer category, and 2004 baseline forecasts for population.

3. KEY ASSUMPTIONS FOR THE MODEL

Key Assumptions for the Model (Attachment 3)

The one page table shown in Attachment 3 shows some of the key assumptions used in the model. The assumptions having the most dramatic effect on the results are the natural replacement rate of fixtures, how residential or commercial future use is projected, and finally the percent of unaccounted for water.

4. WATER DEMAND PROJECTIONS

Development of the Water Demand Projections Table and Graph (Attachment 4)

Water demand projections were developed out to the year 2034 using the Demand Side Management Least Cost Planning Decision Support System (DSS) model. This model incorporates information from the:

- "Water Use Data Sheet" and the "Key Assumptions" shown in Attachments 2 and 3
- Questions asked of agencies
- Agency provided data
- 2000 Census data
- 2000 to 2004 Department of Finance population data
- Local General Plans
- Association of Bay Area Governments Projections

Attachment 4 shows the projected demands with and without plumbing codes and appliance standards. This page includes both a table and a graph. Each will be described below.

California law requires that for new construction after January 1, 1992 only fixtures meeting the following standards can be installed in new buildings:

- Toilet – 1.6 gal/flush maximum
- Urinals – 1.0 gal/flush maximum
- Showerhead and Faucets – 2.5 gal/min at 80 psi

Replacement of fixtures in existing buildings is governed by the Federal Energy Policy Act that requires only the above can be sold after January 1, 1994 for residential use and January 1, 1997 for commercial toilets. This law governs natural replacement.

New clothes washers are required to meet increased energy efficiency standards in 2004 and 2007. It is expected that this will lead to water efficiency improvements (efficient washers use at least 33% less water) by no later than 2007. We have assumed that by 2007, 30 percent of washers purchased will be efficient, by 2010, 50 percent purchased will be efficient, by 2015, 75 percent will be efficient, and by 2020, 100 percent purchased will be efficient.

Graph of projected demands (Figure 4-1)

Figure 4 shows the projection at five-year increments. The graph shows projections through 2034.

Table of water demand projections (Table 4-1)

The table of water demands projections includes:

1. The water demand projections are based on the future population and employment projections shown and described above in Attachment 4.
2. Table 1-1 shows the population and employment projections used to prepare the demand projections.
3. Projections were made *with and without* the plumbing codes.
4. Projections are for potable water only. It does not include recycled water use. Recycled water use and projections are included in Chapter 5 of UWMP.

Dry Year Demands

The demand projections reflect average weather conditions and **do not** reflect drier, hotter, non-drought conditions.

5. WATER DEMAND PROJECTIONS – 2005 URBAN WATER MANAGEMENT PLAN (UWMP) FORMAT

Conversion of the Water Demand Projections Table and Graph to 2005 UWMP Format (Attachment 5)

The 2005 Urban Water Management Plan Guidance Document from the California Department of Water Resources (Ca DWR) requests that future demand information be in a specific format. Provided in Attachment 5 are the five tables relating to future average day demands they requested. The demand projection shown is the "with Plumbing Code" demands and is otherwise the same as appeared in the above table and graph. The demand projections in the Urban Water Management Plan will be included in Chapter 3.

NEXT STEPS

The following five steps remain to finalize the demand projections and evaluate conservation measures.

1. Contractor to concur with baseline projection
2. Evaluate Tier One conservation measures with the model
3. Develop projections with alternative levels of conservation
4. Provide information on the cost-effectiveness of water conservation
5. Identify individual agency projections with planned conservation

ATTACHMENTS

Attachment 1	Future Population and Employment Projections (Figure 1-1 and Table 1-1)
Attachment 2	Water Use Data Input Sheet
Attachment 3	Key Model Assumptions (Table 3-1)
Attachment 4	Alternative Water Demand Projections (Figure 4-1, Table 4-1)
Attachment 5	UWMP Tables for Chapter 3 (Ca DWR format)

Attachment 1 – Population and Employment Projections

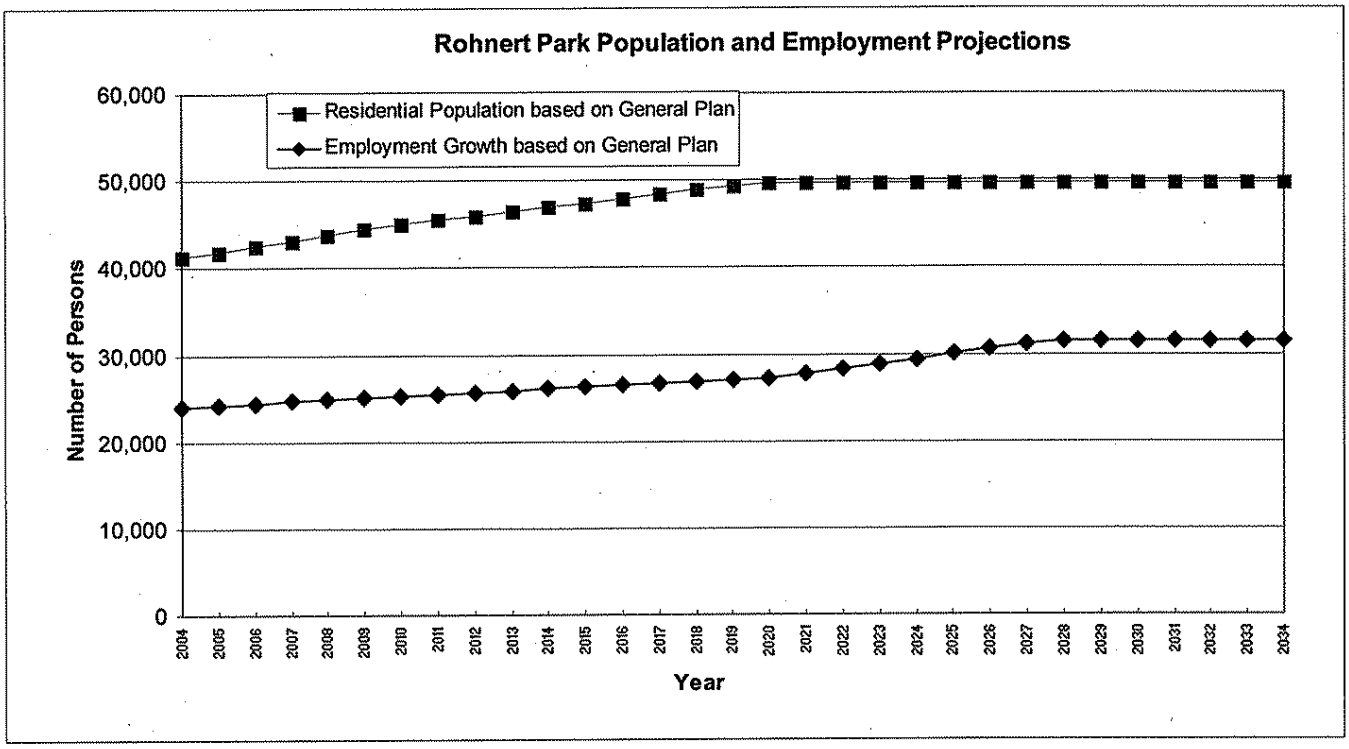


FIGURE 1-1
Population and Employment Projections for City of Rohnert Park

TABLE 1-1
Population and Employment Results for City of Rohnert Park

Projection	Residential Population						
	2004	2005	2010	2015	2020	2025	2030
Residential Population*	41,228	41,870	45,082	47,416	49,740	49,740	49,740
Employment	24,061	24,264	25,279	26,293	27,308	30,003	31,600

* Excludes institutionalized persons

Attachment 2 – Water Use Data Input Sheet (Page 1)

City of Rohnert Park Service Area[1]

DSS Input Sheet

November 6, 2005

Base Year Average Use and Indoor Percentages by Billing Category for DSS Model[2]

	Single family*		Multifamily**		Commercial**		Institutional/Ind**	
Year	Average, gpd/a	Indoor	Average, gpd/a	Indoor	Average, gpd/a	Indoor	Average, gpd/a	Indoor
2004	380	60%	2740	85%	1980	70%	2520	50%

*Provided by Darin Jenkins 6/28/05 using meter reads from June 2003 to May 2004. COM water use increased 13.7% over 2004 values, see 10/26/05 memo

**Multifamily, commercial, Institutional/Ind per account water use based on revenue distribution for 03-04 provided by the City.

New Single family***	
Average, gpd/a	Indoor
395	60%

*** Value provided by Mr. Darin Jenkins 9/29/05 email

Data for DSS Model -- Base Year 2004

Category	Number of Accounts 2004[3]	Water Use 2004 gpd/a[2]	Water Use, MGD 2004	Use Profile Percent	Water Use gcd	Indoor Water Use gcd	Revenue Data, %
Single family*	7,655	380	2.909	54.16%	120	72	55.68%
Multifamily**	430	2,740	1.178	21.94%	69	59	22.53%
Commercial**	618	1,980	1.223	22.78%	51	36	20.60%
Institutional/Ind**	24	2,520	0.060	1.13%	Commercial, per employee		0.76%
New Single Family	1	395	0.000	0.0074%			
Total[9]	8,727	7,620	5.371	100%			

2004 Total Water Produced Non weather normalized[4] =	5.95	MGD	
2004 Unaccounted For Water (UFW)[5 and 9] =	9.8%	Percent	Based on Note 5, expressed as a percentage of production
Estimated UFW for DSS Model =	9.8%	Percent	7% if actual is < 7%, otherwise = agreed upon % by agency for 30 year forecast
Water Produced for use in DSS Model =	5.95	MGD	Add UFW % to Total Billed Water Use
Peaking Factor	1.5		Ratio of average day in peak month to average day water produced
Peaking Factor for DSS Model=	1.5		Ratio of average day in peak month to average day water produced

- Blue cells are entered by modeler

- Yellow cells are input to DSS Model

NOTES

1. - The City of Rohnert Park, located in the southern Santa Rosa plain of Sonoma County, depends upon ground water and Sonoma County Water Agency (SCWA) aqueduct water to meet the demands of its 42,000 residents. Water is obtained during peak demand periods from 12 turnout connections to the SCWA. The principal source of water is the SCWA (80 percent) and local groundwater makes up the remaining 20 percent of supply. The City does not deliver water outside the city limits. The water distribution system consists of approximately 90 miles of water mains. Rohnert Park has seven reservoirs with 4.2 million gallons of storage.

2 - Average gpd/a is based on the distribution of annual revenues from these classes.

3 - Number of accounts is from data provided by water agency for this project (see Production Data Analysis worksheet with account data in this file)

4 - Total water Purchased (produced) provided by the City of Rohnert Park, see Production Data Analysis worksheet.

5 - Unaccounted for Water (UFW) is the percent difference between the total water produced and the total billed water use. UFW includes water provided to City Parks, none of

6 - For reference see additional population estimates provided in population and employment estimates corresponding to service area table.

7 - Initial estimate based on census data for renter occupied units. For reference see table with 2000 census data for corresponding water service area.

8 - Group Quarters Population includes Institutionalized and non-Institutionalized and assumes their water use is in the Commercial sector.

9 - The city has five swimming pools; 4 community centers; one sports and fitness center with spas, showers, saunas; numerous landscaped and irrigated street medians; three large parks (21 acres turf includes Community Center lawn, G Park, G School (no meter), H Park, L Park) not connected to recycled water for irrigation; 180 employees in 4 buildings with landscaping not on recycled water. Since there are no meters and since these are city accounts, there is no revenue for these uses. All unmetered city accounts are included in unaccounted for water. The 21 acres of turf could use 0.1 mgd, on average. That's about 1.7% of the total production. The unaccounted for water is about 0.76 mgd out of 5.96 mgd total production. So that would be part of it. If the rest of your city uses adds up to a bit more than 3% then we could account for about 5%, lowering the rest to of the unaccounted for water to 7%. Based on these calculations, this would make Rohnert Park have an UFW less than 10% as required by the CUWCC.

Definitions / Abbreviations

ABAG	Association of Bay Area Governments	HHS	household size
DOF	Department of Finance	NA	not available
DSS	Decision Support System Model	MF	multi family
du	dwelling unit	MGD	million gallons per day
DWR	Department of Water Resources	No.	number
FY	Fiscal Year	Pop	population
gcd	gallons per capita / per day	Res	residential
gpd/a	gallons per day / per account	SF	single family
gpd	gallons per day	UFW	unaccounted for water

Data Prepared : June 26, 2005 By: W. Maddaus

Revised: November 6, 2005 By: W. Maddaus

Attachment 2 – Water Use Data Input Sheet (Page 2)

City of Rohnert Park Service Area[1]

Reconcile agency account billing data and census data

Total Dwelling Units in Census 2000 for Rohnert Park by Census Track

Single family	2000 Units	No. Buildings	Service Area Billing Accounts - Year 2000[3]	Difference between billing and census data	Data Sources / Notes
1-detached	7,662	7,662			
1-attached	1,699	850			
Subtotal	9,361	8,512	7,655	-857	*When negative value some of the attached units classified by City as Multifamily*
Multi family					
2-units	106	53			*Assumes average of 2 units per account*
3-4 units	824	235			*Assumes average of 3.5 units per account*
5 to 9 units	615	88			*Assumes average of 7 units per account*
10 to 19 units	562	37			*Assumes average of 15 units per account*
20 or more units	2,938	84			*Assumes average of 50 units per account*
mobile homes	1,362	27			*Assumes average of 50 mobile home units per master meter*
Subtotal	6,407	525	430	-95	*Must be more than one building on an MF meter.*
MF Average =	12.2	units/building	14.9	units/account	This is a typical value of DUs/account
MF for Billing =	8,106	1,374	18.85	units/account	Water use at 150 gpd/unit 2827.7
Total SF + MF units =	15,768				150 say 2800 gpd/account

2000 Census Group Quarters Data	
Institutionalized	0
Non-Institutionalized	1,101
Total	1,101

	2000 Census Data
Average household size	2.65
Average household size of owner-occupied unit	2.83
Average household size of renter-occupied unit	2.40
Homeowner vacancy rate (percent)	0.5%
Rental vacancy rate (percent)	2.2%

Population and Household Size in Census 2000 for Rohnert Park

		Census Data Service Area 2000	Department of Finance Estimated Population 2004	Estimated Service Area Residential Population 2004		Data Sources / Notes
						Estimated growth from 2000 to 2004 (ABAG Subregional Projections): 0.28%
Total Population from Census data[6] =		42,236	42,329			*Estimated employment growth from 2000 to 2004 (ABAG Employment Projections):* 4.70%
Subtract Group Quarter Population =		1,101	1,101			*Water use for the institutionalized population is accounted for in nonresidential billing categories*
Residential Population =		41,135	41,228			*Residential population shown corresponds to the city or cities represented by Census data*
Avg. HHS[7] =		2.61	2.61			
MF Pop @ MF HHS[7] =	2.10	17,023	17,071	17,071	41.4%	*Percent of Population that is MF*
SF Pop =		24,112	24,157	24,157	58.6%	*Percent of Population that is SF*
SF HHS[7] =		3.15	3.16			
			Total	41,228	100.0%	

Estimate Service Area Dwelling Units for 2004

SF Res	7,655	*Equals No. of 2004 single family accounts*
MF Res	8,106	*Equals billing accounts in 2004 from cell B18 times average units per account in cell)21*

Population and Employment Estimates Corresponding to City of Novato (smaller than service area)

	Population	Employment	
2000 Census data for jurisdiction	42,236	NA	
2000 ABAG (jurisdictional)	42,236	16,690	*Based on ABAG 2005 Projections*
2005 ABAG Projection (jurisdictional)	42,400	17,670	*Based on ABAG 2005 Projections*
2000 ABAG (subregional)	43,148	17,940	*Based on ABAG 2005 Projections*
2005 ABAG Projection (subregional)	43,300	18,940	*Based on ABAG 2005 Projections*
2003 Department of Finance Benchmark	42,478	*From State of California Department of Finance (DOF) table E-4 as of 1-1-2003. Website www.dof.ca.gov*	
2004 Department of Finance Estimate	42,329	*From State of California Department of Finance table E-4 as of 1-1-2004. Website www.dof.ca.gov*	
2000 General Plan, 2004 projection	43,091	24,061	
2005 Department of Finance Estimate	42,445		
2004 Employment in Service Area (input to DSS Model) =		24,061	*From 2000 General Plan projection for year 2004*

Attachment 3 – Key Model Assumptions

TABLE 3-1
List of SCWA Baseline Demand Projection Assumptions for DSS Model

Parameter	Model Input Value, Assumptions, and References
Base Year	2004
Peak Day Factor	1.5
Unaccounted for Water, % of Water Production	Calculated from purchase and sales data or 7%, whichever is greater; constant over time
Population Projection, 2005 to 2034	City of Rohnert Park 2000 General Plan updated 2002
Employment (Jobs) Projection 2005-2034	City of Rohnert Park 2000 General Plan updated 2002
Number of Water Accounts for Base Year	Data submitted by customers for 2004
Distribution of Water Use Among Categories	Data submitted by customers for most recent year
Indoor/Outdoor Water Use Split by Category, % of Total	Monthly data submitted by customers for 2003-4
Residential End Uses, %	AWWARF Report "Residential End Uses of Water" 1999
Non-Residential End Uses, %	Professional judgment and AWWARF Report "Commercial and Institutional End Uses of Water" 1999
Residential Fixture Efficiency Current Installation Rates	Census 2000, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Reference "High Efficiency Plumbing Fixtures - Toilets and Urinals" Koeller & Company July 23, 2005. Reference Consortium for Efficient Energy (www.cee1.org)
Water Savings for Fixtures, gal/capita/day	AWWARF Report "Residential End Uses of Water" 1999
Non-Residential Fixture Efficiency Current Installation Rates	Census 2000, assume commercial establishments built at same rate as housing, plus natural replacement
Residential Frequency of Use Data, Toilets, Showers, Washers, Uses/user/day	Falls within ranges in AWWARF Report "Residential End Uses of Water" 1999
Non-Residential Frequency of Use Data, Toilets and Urinals, Uses/user/day	Estimated based using AWWARF Report "Commercial and Institutional End Uses of Water" 1999
Natural Replacement Rate of Fixtures	Residential Toilets 3% (newer toilets), 4% (older toilets) Commercial Toilets 4% Residential Showers 4% Residential Clothes washers 6.7% A 4% replacement rate corresponds to 25 year life of a new fixture based on data published in "High Efficiency Plumbing Fixtures - Toilets and Urinals" Koeller & Company July 23, 2005. A 4% replacement rate is also the CUWCC recommended value. A 6.67% replacement rate corresponds to 15 year washer life based on "Bern Clothes Washer Study, Final Report:, Energy Division, Oak Ridge National Laboratory, for U.S. Department of Energy, March 1998, Internet address: www.energystar.gov
Project Future Residential Water Use	Based on Projected Population Growth
Project Future Commercial, Industrial, Institutional Water Use	Based on Projected Employment Growth

Attachment 4 –Projected Potable Water Demands

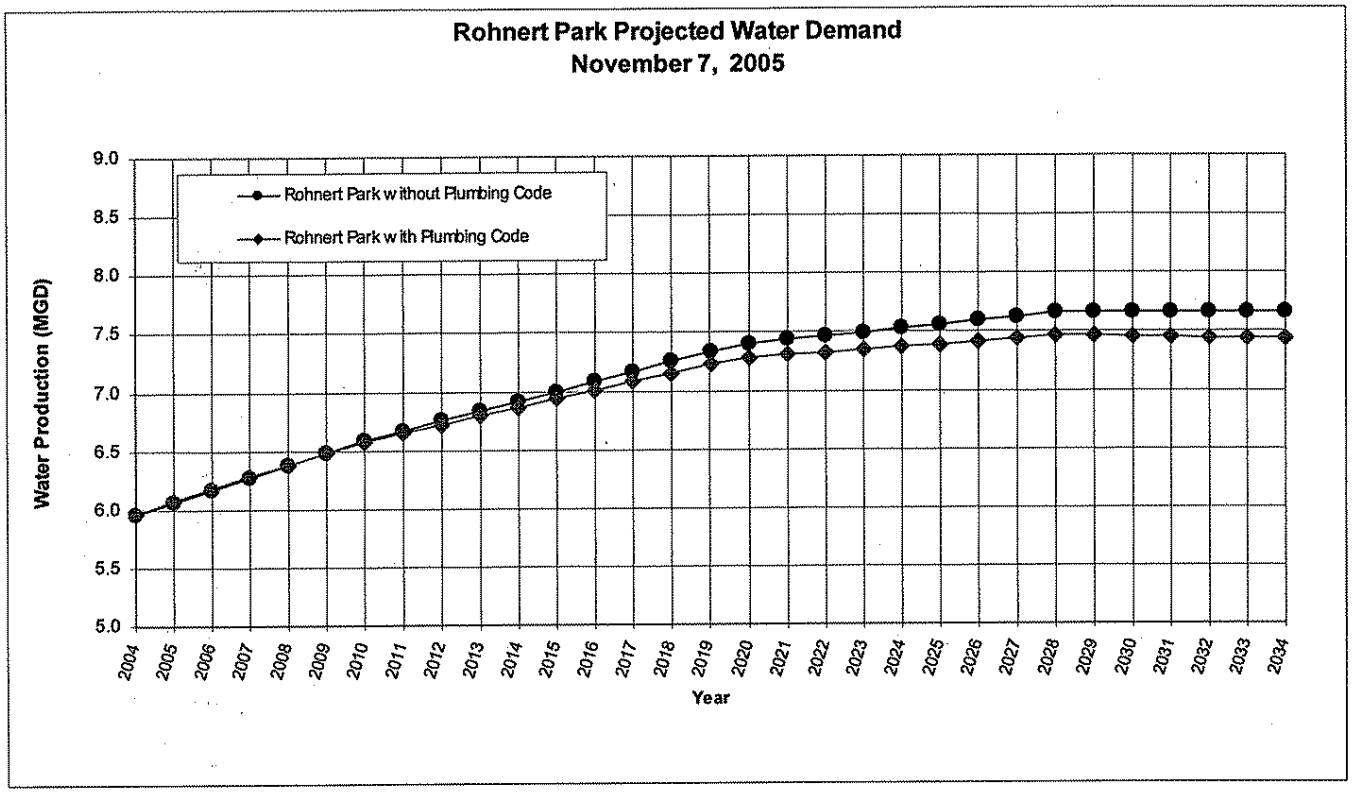


FIGURE 4-1
Baseline Potable Water Use Projections for City of Rohnert Park

TABLE 4-1
Baseline Potable Water Use Projections for City of Rohnert Park

Data Source for Projection		Plumbing Code	Total Potable Water Production, Average Day (MGD)						
Residential	Non-Residential		2004*	2005	2010	2015	2020	2025	2030
General Plan	General Plan	Included	5.95	6.08	6.58	6.94	7.29	7.39	7.45
General Plan	General Plan	Not Included	5.95	6.06	6.59	7.00	7.40	7.56	7.66

*Weather normalized. Total Water use is potable only. Does not include recycled water use. Recycled water use and projection is in Chapter 5 of UWMP.

Attachment 5 –Urban Water Management Plan Tables for Chapter 3 of 2005 UWMP

Table 3-1 below provides population projections for City of Rohnert Park service area.

Table 3-1. (DWR Table 2). Population – Current and Projected

Year	Population
2005	41,640
2010	43,764
2015	45,997
2020	48,343
2025	49,740

3.2 Past, Current, and Future Water Use

3.2.1 Water Use By Customer Type

The historical and projected number of connections and deliveries to the City's water distribution system, by sector is identified below on Table 3-2.

Table 3-2. (DWR Table 12). Past, Current and Projected Water Deliveries

			Water Use Sectors							
Year			Single Family	Multifamily	Commercial	Institutional-Industrial	New Single Family			Total
2000	metered	# of accounts	To be completed by Brown and Caldwell							
		Deliveries AF/Y	To be completed by Brown and Caldwell							
2005	metered	# of accounts	7,655	438	623	24	166	0	0	8,907
		Deliveries AF/Y	3,256	1,368	1,380	68	74	0	0	6,146
2010	metered	# of accounts	7,655	479	649	25	999	0	0	9,807
		Deliveries AF/Y	3,242	1,463	1,431	71	442	0	0	6,649
2015	metered	# of accounts	7,655	511	675	26	1,604	0	0	10,471
		Deliveries AF/Y	3,219	1,524	1,482	74	710	0	0	7,008
2020	metered	# of accounts	7,655	544	701	27	2,206	0	0	11,134
		Deliveries AF/Y	3,192	1,582	1,535	77	976	0	0	7,362
2025	metered	# of accounts	7,655	544	771	30	2,206	0	0	11,206
		Deliveries AF/Y	3,166	1,564	1,681	84	976	0	0	7,473
2030	metered	# of accounts	7,655	544	812	32	2,206	0	0	11,248
		Deliveries AF/Y	3,148	1,551	1,768	89	976	0	0	7,532

3.2.2 Water Sales to Other Agencies

The City of Rohnert Park does not currently sell water to any other agency. According to City of Rohnert Park, all "outside sales" are local businesses and residents, and not to another agency.

Table 3-3. (DWR Table 13). Sales to Other Agencies

Water Distributed	2000	2005	2010	2015	2020	2025	2030
N/A	0	0	0	0	0	0	0

3.2.3 Unaccounted-for Water and Additional Water Use

For this project unaccounted for water is defined to be the difference between water produced and water sold to customers. Unaccounted-for water use normally includes unmetered water use such as for fire protection and training, system and street flushing, sewer cleaning, construction, system leaks, and unauthorized connections. Unaccounted-for water can also result from meter inaccuracies.

Table 3-4. (DWR Table 14). Additional Water Uses and Losses, AF/yr

Water Use	2000	2005	2010	2015	2020	2025	2030
Saline barriers	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Groundwater recharge	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conjunctive use							
raw water	N/A	N/A	N/A	N/A	N/A	N/A	N/A
recycled	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unaccounted-for system losses*	N/A	663	721	761	799	808	818
Total	N/A	663	721	761	799	808	818

*According to City of Rohnert Park, unaccounted for water includes City owned accounts for landscaping and buildings.

3.2.4 Total Water Use

The total past, present and future water use for the system is shown in the table below.

Table 3-5. (DWR Table 15). Total Potable Water Use, AF/yr*

Water Use	2000	2005	2010	2015	2020	2025	2030
(Total of Tables 3-2, 3-3, 3-4)	NA	6,810	7,370	7,769	8,161	8,281	8,350

*Total Water use is potable only. Does not include recycled water use. Recycled water use and projection is in Chapter 5 of UWMP.

DSS Model Output in Graphical Form

Specified Growth Scenarios

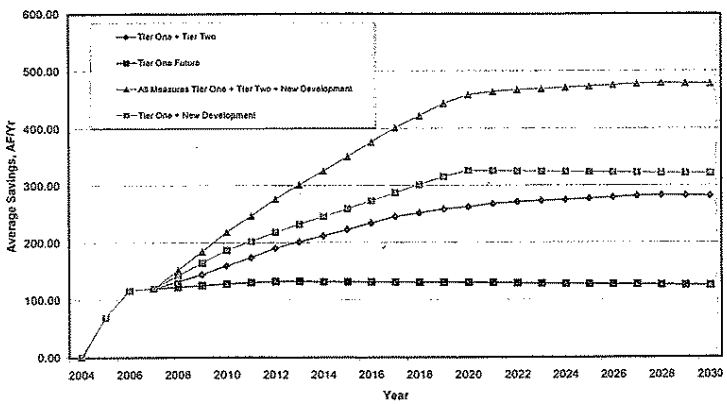
Rohnert Park

Prepared by: [illegible]
Last Revised: 5/29/2008

Rohnert Park Program	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Average Water Savings, (MGD)																															
Tier One To-Date	187.38	345.02	323.31	316.54	310.03	303.77	297.75	291.63	286.37	281.02	275.87	270.92	266.16	261.58	257.18	252.95	248.88	245.18	241.63	238.22	234.98	231.82	228.82	225.94	223.18	220.53	217.99	0.19	0.19	0.19	0.17
Tier One Future	0.00	69.19	116.58	119.85	122.90	125.71	128.31	130.61	132.62	132.28	131.98	131.70	131.45	131.22	131.03	130.85	130.63	130.21	129.60	129.03	128.49	127.96	127.46	126.99	126.53	126.10	125.69	0.09	0.08	0.06	0.04
Tier One + New Development	0.00	69.19	116.58	119.85	142.78	165.03	188.84	202.72	218.41	231.87	245.47	259.21	273.10	287.15	301.35	315.72	326.41	325.94	325.34	324.76	324.21	323.69	323.19	322.72	322.26	321.83	321.42				
Tier One + Tier Two	0.00	69.19	116.58	119.85	132.83	145.51	160.22	174.58	190.89	201.73	212.61	223.52	234.45	245.42	252.04	258.70	262.93	268.64	271.65	273.77	275.75	277.79	279.90	282.06	283.59	283.02	282.49				
All Measures Tier One + Tier Two + New De	0.00	69.19	116.58	119.85	152.72	184.83	218.75	248.69	278.89	301.32	326.10	351.03	376.11	401.33	422.37	443.57	458.71	464.37	467.58	469.59	471.49	473.53	475.83	477.79	479.33	478.76	478.21				
Demand w/o Plumbing Code, MGD	5.95	6.06	6.17	6.27	6.38	6.48	6.59	6.67	6.75	6.83	6.91	7.00	7.08	7.16	7.25	7.33	7.40	7.43	7.46	7.49	7.53	7.56	7.59	7.63	7.65	7.68	7.66				
Demand w/ Plumbing Code, MGD	5.95	6.05	6.15	6.25	6.35	6.45	6.55	6.62	6.69	6.76	6.83	6.90	6.97	7.05	7.12	7.19	7.25	7.27	7.29	7.31	7.33	7.36	7.38	7.41	7.43	7.42	7.42				
Conversion MGD to AF/Yr	1120.1439																														

	2005	2010	2015	2020	2025	2030				
Tier 1	345.02	297.75	276.92	248.88	231.82	217.99				
Tier 1 Future	69.19	128.31	131.70	130.63	127.96	125.69				
Tier 2	0.00	31.91	91.82	132.30	149.83	156.79				
New Development	0.00	58.53	127.51	195.77	195.73	195.73	351.03	458.71	473.53	478.21
Demand w/o Plumbing Code AF/YR	6,787.1	7,364.5	7,837.8	8,267.0	8,487.7	8,577.5	7380	7662	7767	7831
Demand W/ Plumbing Code AF/YR	6,781.2	7,335.0	7,731.3	8,120.6	8,240.7	8,309.5				
Plumbing Code Savings	6.0	48.5	106.6	171.2	227.0	268.0				

Program Water Savings vs. Time



City of Rohnert Park
2005 Urban Water Management Plan
Reconcile Rounding Adjustment to Customer Classes

Winzler & Kelly 2007

	2005	2010	2015	2020	2025	2030	Source
Customer Class with Plumbing Code							Maddaus November 7, 2005
Single Family	3256.0	3242.0	3219.0	3192.0	3166.0	3148.0	Maddaus November 7, 2005
Multi-family	1368.0	1463.0	1524.0	1582.0	1564.0	1551.0	Maddaus November 7, 2005
Commercial	1380.0	1431.0	1482.0	1535.0	1681.0	1768.0	Maddaus November 7, 2005
Institutional/Industrial	68.0	71.0	74.0	77.0	84.0	89.0	Maddaus November 7, 2005
New Single Family	74.0	442.0	710.0	976.0	976.0	976.0	Maddaus November 7, 2005
Totals	6146.0	6649.0	7009.0	7362.0	7471.0	7532.0	Maddaus November 7, 2005
Unaccounted For Water	633.0	721.0	761.0	799.0	808.0	818.0	
Totals with Unaccounted For Water	**6779.0**	**7370.0**	**7770.0**	**8161.0**	**8279.0**	**8350.0**	Maddaus 5/26/05 Spreadsheet
Corrections for Rounding		**7335.0**	**7731.3**	**8120.5**	**8240.7**	**8309.5**	
Difference		-35.0	-38.7	-40.5	-38.3	-40.5	
Percentage		-0.47%	-0.50%	-0.50%	-0.46%	-0.49%	

Adjusted Customer Class with Plumbing Code						
Single Family		3226.6	3203.0	3176.2	3151.4	3132.7
Multi-family		1456.1	1516.4	1574.1	1556.8	1543.5
Commercial		1424.2	1474.6	1527.4	1673.2	1759.4
Institutional/Industrial		70.7	73.6	76.6	83.6	88.6
New Single Family		439.9	706.5	971.2	971.5	971.3
Totals		**6617.4**	**6974.1**	**7325.5**	**7436.4**	**7495.5**
Unaccounted For Water		717.6	757.2	795.0	804.3	814.0
Totals with Unaccounted For Water		**7335.0**	**7731.3**	**8120.5**	**8240.7**	**8309.5**

Tier 1 Savings		128.3	131.7	130.6	128.0	125.7
Subtotal with Tier 1	0.0	7206.7	7599.6	7989.9	8112.7	8183.8
Tier 2 Savings		31.9	91.8	132.3	149.8	156.8
Subtotal with Tier 1 + Tier 2	0.0	7174.8	7507.8	7857.6	7962.9	8027.0
New Development Savings		58.5	127.5	195.7	195.7	195.7
Subotal with Tier 1 + Tier 2 + New Development	0.0	7116.3	7380.3	7661.9	7767.2	7831.3

APPENDIX G -3

Demand Management Projections

MADDAUS WATER MANAGEMENT

MEMORANDUM

Date:	November 2, 2006
To:	Darin Jenkins, City of Rohnert Park
From:	William Maddaus, Maddaus Water Management
Subject:	***FINAL Tier Two and New Development Conservation Measure Evaluation Summary of Data Inputs, Assumptions and Results***

INTRODUCTION AND PURPOSE

This final memorandum on the conservation evaluation process for your agency has been revised to better reflect the true avoided costs and benefits of saving water. The analysis has been changed by using a future cost of water from the Sonoma County Water Agency plus a value that represents the approximate cost of distributing this water to your customers. All other measure costs and water savings for all Tier Two and New Development measures remain unchanged from the Draft memorandum.

The purpose of this memorandum is to present an overview of the conservation evaluation process which has been completed for your agency. The evaluation was performed on the Tier Two measures and potential New Development measures to make new single family homes more water efficient. The conservation measures were analyzed using the Least Cost Planning Decision Support System (DSS) Model. These conservation measures were then organized into three programs showing benefits, costs, and water savings for Tier One plus Tier Two measures, Tier One plus New Development measures, and finally Tier One plus Tier Two plus New Development measures for your agency. Each of these programs will be discussed in detail in this memorandum.

CONTENTS

This technical memorandum provides a general overview for the methodology, assumptions, and results for the conservation analysis.

The following four pieces of information are included in this packet:

1. Overview of Evaluation Process
2. Comparison of Individual Conservation Measures
3. Results of Tier Two and New Development Conservation Analysis
4. Conclusions

Each of these will be discussed in individual sections below.

1. OVERVIEW OF EVALUATION PROCESS

Selecting Conservation Measures to be Evaluated (Conservation Measure Screening):

A list of 75 potential conservation measures considered appropriate for this region was developed by Maddaus Water Management from known technology that included devices or programs (e.g., such as a new dual flush toilet) that would save water if installed by a water retailer, contractor, or customer. These measures are considered to be beyond the Tier One measures. A description of the potential conservation measure was developed that addressed the methods through which the device or program will be implemented, including the distribution method, or mechanism, that would be used to activate the device or program.

A screening process was undertaken to reduce the number of measures to a more manageable number and to eliminate those measures that are not as well suited to the Marin-Sonoma County area as other potential measures. Each potential measure was screened based on four qualitative criteria (below), scored on a scale of 1 to 5, with 5 being the most acceptable, and 20 being the maximum possible number of points for all criteria. The screening was completed by local conservation professionals, in a one day meeting in July 2005, facilitated by Maddaus Water Management.

Qualitative Criteria

The rating group used the following criteria to evaluate the measures:

- **Technology/Market Maturity** – Refers to whether the technology needed to implement the conservation measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure was scored low if the technology was not commercially available or high if the technology was widely available in the service area. A device may be screened out if it is not yet commercially available in the region.
- **Service Area Match** – Refers to whether the measure or related technology is appropriate for the area's climate, building stock, or lifestyle. For example, promoting Xeriscape gardens for multi-family or commercial sites may not be appropriate where water use analysis indicates little outdoor irrigation. Thus, a measure scored low in this category if it was not well suited for the area's characteristics and could not save water. A measure scored high in this criterion if it was well suited for the area and could save water.
- **Customer Acceptance/Equity** – Refers to whether retail customers within the wholesale customer service area would be willing to implement and accept the conservation measures. For example, would retail customers attend homeowner irrigation classes and implement lessons learned from these classes? If not, then the water savings associated with this measure would not be achieved and a measure with this characteristic would score low for this criterion. This criterion also refers to retail customer equitability (i.e., one category of retail customers receives benefit while another pays the costs without receiving benefits). Retail customer acceptance may be also based on convenience, economics, perceived fairness, or aesthetics.
- **Relative Effectiveness of Measure Available** – Refers to the selection of the most effective measure if alternate conservation measures address the same end use. If the

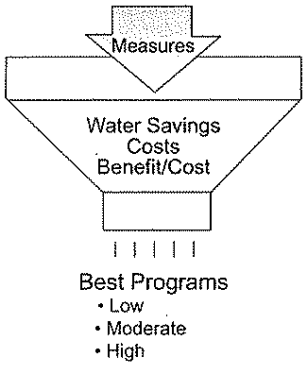
measures are equally effective the most appropriate was selected (e.g., the measure that was easier or less expensive to implement).

Measures with low scores were eliminated from further consideration, while those with high scores passed into the next evaluation phase (cost-effectiveness analysis using the DSS Model). To reduce the list to a more manageable number, normally a score of 17 or more was necessary to pass. The process reduced the measures to be evaluated further down to 22 new measures in addition to the 10 Tier One measures. Table 4 lists all 32 measures evaluated in the DSS Model.

Evaluation Process

During the evaluation process, water savings were estimated and costs for the measures were developed. Benefits and costs were compared in a formal present value analysis and conclusions were drawn about which measures produce cost-effective water savings. This process can be thought of as an economic screening process, shown in Figure 1. Packaging the best measures into alternative programs is how we are helping you to consider what level of conservation is appropriate for your agency.

Figure 1
Evaluation Process



Benefit-cost analysis has been used by many water agencies to evaluate and help select a water conservation measure best suited to local conditions. This analysis requires a locale-specific set of data, such as historical water consumption patterns by customer class, population and employment projections, age of housing stock, and prior conservation efforts.

The following nine steps were used to implement the methodology by expanding upon the same DSS model used to prepare the demand projections.

1. *Develop baseline water use projections without additional conservation.* Projections cover each key customer category and are broken down into indoor end uses and outdoor end uses. These were presented in previous memoranda. Note, the plumbing code refers to savings from the Energy Act; it is not the same as savings from BMP conservation.
2. *Identify possible water conservation measures* and screen the measures qualitatively to identify those that are applicable to the service area. Develop appropriate unit water savings and cost factors for each measure.
3. *Estimate the affected customers (or number of accounts) for each conservation measure* by dividing the measure's projected *customers* (or accounts) that implements the measure

by the total service area customers (accounts). This factor is called the market penetration or installation rate.

4. *Estimate total annual average and peak day water savings.* The water savings are computed by multiplying unit water savings, per measure, by the market penetration or installation rate, and then multiplying by the number of units in a particular service area (such as dwelling units) targeted by a particular measure.
5. *Identify benefits to the water agency* including potential reduced water purchases (SCWA wholesale water rate and delivery cost for each agency).
6. *Quantify total benefits for each year* in the planning period by multiplying average water savings for each measure by the computed value of the benefits.
7. *Determine initial and annual costs to implement the measures* based upon pilot projects, local experience, and the costs of goods, services, and labor in the community. This is multiplied by the number of units participating each year and then added to overall administration and promotion costs to arrive at a total measure cost, which may be spread over a number of years.
8. *Compare benefits and costs of measures* by computing the present value of costs and benefits over the planning period.
9. *Compile and compare packages containing various new measures.*

2. COMPARISON OF INDIVIDUAL CONSERVATION MEASURES

Perspectives on Benefits and Costs

The determination of the economic feasibility of water conservation programs depends on comparing the costs of the programs to the benefits provided. The analysis was performed using the DSS model. The DSS model calculates savings at the end-use level; for example, the model determines the amount of water a toilet rebate program saves in daily toilet use for each single family account. For this evaluation, benefits are based on reduced water purchases from SCWA at the forecasted 2020 Petaluma Aqueduct rate of $759.20 per acre-foot[1] plus a value of $437.09 per acre-foot[2] to represent water distribution costs ($3,673 per million gallons total avoided cost).

Present value analysis is used to discount costs and benefits to the base year. From this analysis benefit-cost ratios of each measure are computed. When measures are put together in programs the interactions are accounted for by multiplying water use reduction factors together at the end use level. A water use reduction factor is 1.0 minus the water savings, expressed as a decimal. This avoids double counting when more than one measure acts to reduce the same end use of water.

Benefit-cost analysis can be performed from several different perspectives, based on who is affected. For planning water conservation programs for utilities, the perspectives most commonly used for benefit-cost analyses include the utility and the community. The "utility" benefit-cost analysis is based on the benefits and costs to the water provider. The "community" benefit-cost analysis includes the utility benefit and costs together with account owner/customer

[1] SCWA Future Water Supply Projects Financial Plan, 2004
[2] Appendix J, City of Petaluma Water Supply and Demand Analysis Report, Dodson Engineers, June 2006.

benefits and costs. These include customer energy benefits and costs of implementing the measure, beyond what the utility pays.

The utility perspective offers two advantages for this analysis. First, it considers only the program costs that will be directly borne by the utility. This enables the utility to fairly compare potential investments for saving and supplying water. Second, because revenue shifts are treated as transfer payments, the analysis is not complicated with uncertainties associated with long-term rate projections and retail rate design assumptions. Because it is the water provider's role in developing a conservation plan that is paramount in this study, the utility perspective was primarily used to evaluate elements of the plan.

No evaluation perspectives are without shortcomings. The principal weakness of the utility perspective is that it does not count the benefits accrued or costs incurred outside of the utility. Therefore another perspective is also used – the community perspective. The community perspective is defined to include the utility costs and benefits and the customer costs and benefits. Costs incurred by customers striving to save water while participating in conservation programs are considered, as well as the benefits received in terms of reduced energy bills (from water heating costs). Other factors external to the utility, such as environmental effects, are not included in the benefit-cost analysis. Because these external factors are often difficult to quantify, they are frequently excluded from economic analyses, including this one.

Present Value Parameters

The time value of money is explicitly considered. The value of all future costs and benefits is discounted to 2004 (the base year) at the real interest rate of 3.0%. The DSS model calculates this real interest rate, adjusting the current nominal interest rate (assumed to be approximately 6.1%) by the assumed rate of inflation (3.0%). Cash flows discounted in this manner are herein referred to as "Present Value" sums.

Assumptions about Costs

Costs were determined for each of the measures based on industry knowledge and past experience. Costs may include incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; variable costs, such as the costs to staff the measures and to obtain and maintain equipment; and a one-time set-up cost. The set-up cost is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure. Measure costs were estimated for each year between 2005 and 2030. Costs were spread over the time period depending on the length of the implementation period for the measure.

Lost revenue due to reduced water sales is not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

Water Savings

Data necessary to forecast water savings of measures include specific data on water use, demographics, market penetration, and unit water savings. Savings normally develop at a measured and predetermined pace, reaching full maturity after full market penetration is achieved. This may occur three to ten years after the start of implementation, depending upon the implementation schedule.

Conservation Measures Evaluated with the DSS Model

Upon inspection of the overall list of new measures it became apparent that some measures could be combined and others could be separated into two categories as follows:

- Measures that were voluntary and incentive based
- Measures that were regulatory and applied to new development only

This division was used to create two lists of measures that could be evaluated separately. Tier Two targets various types of customers and offers a range of incentives to enhance participation. New Development measures were targeted at single family homes (including town homes and condos), as this category represents the largest category of new development with the most water savings potential.

Table 1 is a table summarizing the 13 Tier Two measures, and 8 New Development measures evaluated in the DSS Model.

Table 1
Tier Two and New Development Conservation Measures Evaluated in the DSS Model

Measure Number	Target Customer Category	Measure	Short Description
T2 - 1	Existing Customers SF	Rain-sensor (shut off device) retrofit on irrigation controllers	Agency pays for the rain sensor, homeowner pays for the optional installation ($35).
T2 - 2	Existing Customers SF, MF, CII	Cash for Grass (turf removal program)	Provide a rebate for customers who remove irrigated turf grass and replace it with low water using plants. The rebate would require that an appropriate irrigation system be installed for the replacement landscaping. Limited to $500 rebate at $1.00 per square foot.
T2 - 3	All Dedicated Irrigation Meter customers, IRR	Financial Incentives for Being Below Water Budget	For dedicated irrigation customers, link a landscape water budget to a retail water agency's rate schedule so that the dedicated irrigation meter customer pays less when their water use is at or under their water budget.
T2 - 4	Existing CII Customers with mixed water use (indoor and outdoor)	Financial Rebates for Irrigation Meters	Provide financial incentives/rebates for selected permits and equipment to convert mixed use meters to a separate dedicated irrigation meter. Model implementation program after City of Santa Rosa's Service Split program. Utility will provide a water budget for the new irrigation meter.
T2 - 5	Existing Customers SF, MF, CII, IRR	Smart Irrigation Controller Rebates	Provide an up to $450 rebate for the purchase of a SMART irrigation controller and associated signal fees (up to $150). Assume one controller for SF and two for all other customer categories. Minimum participant requirements: at least 500 sq ft of well maintained turf irrigated with an automatic irrigation control system.

T2 - 6	Existing Customers MF, CII, IRR	Financial Incentives/ Rebates for Irrigation Upgrades	For MF, CII, and IRR customers with landscape, provide rebates for selected types of irrigation equipment upgrade including rain sensors. Model program after water agencies such as EBMUD or Contra Costa Water District.
T2 - 7	Existing Customers: CII	Hotel retrofit (w/financial assistance) - CII Existing	Following a free water audit, offer the hotel a rebate for equipment identified that would save water. Provide a rebate schedule for certain efficient equipment such as air-cooled ice machines, steamers, washers, cooling towers, and spray rinse valves.
T2 - 8	New Customers: CII	Offer new accounts reduced connection fees for installing efficient process equipment for selected businesses (restaurants, laundry mat, food/groceries and hospital)	Offer reduced water and sewer connection fees to new facilities to install water efficient equipment in new facilities that goes above and beyond the building code requirements. Model program after Santa Rosa's BAT program.
T2 - 9	Existing Customers: SF (North Marin only) , IRR	Synthetic Turf Rebate	Provide a rebate for replacing existing turf with synthetic turf. Market program to all irrigation customers (and single family for North Marin only).
T2 - 10	Existing Customers: SF & MF	High Efficiency Toilet (HET)	Provide a rebate or voucher for the installation of a high efficiency toilet (HET). HET are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost.
T2 - 11	Existing Customers: SF	Dishwasher New Efficient	Provide a rebate to encourage homeowners to replace old inefficient dishwashers with new efficient dishwashers (meeting certain water efficiency standards, such as gallons/load).
T2 - 12	Existing Customers: CII	CII Rebates - replace inefficient water using equipment	Provide a rebate for a standard list of water efficient equipment. Included would be x-ray machines, icemakers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, add conductivity meters on cooling towers, etc.
T2 - 13	New Customers: CII	0.5 gal/flush urinals in new buildings	Require that new building be fitted with 0.5 gpf urinals rather than the current standard of 1.0-gal/flush models.
ND1	New Customers: SF	Rain-sensor shut off device on irrigation controllers	Require-sensor or rain shut off devices with all new automatic irrigation system installations on new homes.
ND2	New Customers: SF	Smart Irrigation Controller	Require developers to provide the latest state of the art SMART irrigation controllers. These SMART controllers have on-site temperature sensors or rely on a signal from

			a central weather station that modifies irrigation times at least weekly.
ND3	New Customers: SF	High Efficiency Toilet (HET)	Require developers to install a high efficiency toilet (HET). HET are defined as any toilet to flush 20% less than an ULFT and include dual flush technology.
ND4	New Customers: SF	Dishwasher New Efficient	Require developers to install an efficient dishwasher (meeting certain water efficiency standards, such as gallons/load).
ND5	New Customers: SF	Clothes washing machines requirement for new residential	Building departments would be responsible to ensure that an efficient washer was installed before new home occupancy.
ND6	New Customers: SF	Hot Water on Demand	Require developers to equip new homes with a hot water on demand system or tankless hot water heaters, such as those made by Metland Systems and others. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater.
ND7	New Customers: SF	High efficiency faucets and showerheads	Require developers to install lavatory faucets that flow at no more than 1.5 gpm, kitchen faucets at 2.2 gpm, and showerheads at 2.0 gpm.
ND8	New Customers: SF	Landscape and irrigation requirements	Enforce a regulation that specifies that homes be landscaped according to Xeriscape principals, with appropriate irrigation systems. (Combines with Smart Controller listed above). Goal is overall 25% in irrigation water use.

Notes: ND = New Development
T2 = Tier Two
SF = Residential Single Family
MF = Residential Multi Family
CII = Commercial/Industrial/Institutional
IRR = Dedicated irrigation meters

Measure Assumptions, Unit Costs, Market Penetration

Attachment 1 summarizes all the water savings and cost assumptions for each measure for your agency. Do note that the unit costs vary according to the type of account being addressed. For example, a measure might cost a different amount for a residential single family account, than a residential multi family account.

Comparison of Individual Measures

Tables 2 and 3 are tables summarizing the evaluation of Tier Two and New Development conservation measures for your agency. **Table 2** presents results for Tier Two and **Table 3** presents results of New Development measures going forward from 2007.

These tables show how much water the measures would save on a 30-year average basis, how much they would cost and what the benefit-cost ratios are *if the measures were run on a stand-alone basis, i.e. without interaction or overlap from other measures that might address the same end use(s).* Note that measures with benefit-cost ratios less than 1.0 are defined to be "not cost-

effective". Water savings shown are averaged over the 30-year analysis period and may be higher or lower in a particular year. Other key statistics are the cost of water saved in dollars per million gallons ($/MG), and the benefit-cost ratios. Benefits and costs are defined below:

- *Utility benefits and costs:* those benefits and costs that the utility would receive or spend.
- *Community benefits and costs:* community benefits equal utility benefits plus customer energy (cost to heat water) benefits. Community costs include utility and customer costs.
- *Water Benefits:* based on the 2020 cost of SCWA water to the agency plus distribution costs.
- *Costs for the utility:* include measure set-up, annual administration, and payment of rebates or purchase of devices or services as specified in the measure design.
- *Customer costs:* include costs of implementing the measure and maintaining its effectiveness over the life of the measure.

NOTE: Individual measure water savings are not additive in **Tables 2 and 3** due to measure overlap.

The column headings in **Tables 2 and 3** are defined as follows:

- *Water Utility Benefit-Cost Ratio = NPV of Utility of Benefits (based on reduced purchase of water from SCWA and distribution costs) divided by NPV of Utility Costs (see above)*
- *Total Community Benefit-Cost Ratio = NPV of Utility Benefits plus Customer Benefits (see above) divided by NPV of Utility plus Customer Costs (see above) where NPV = 30 year present value of annual costs discounted at 3 percent*
- *30-year Average Water Savings (MGD) = sum of annual average water savings (MGD) divided by 30 where MGD = million gallons per day*
- *Cost of Savings per Unit Volume ($/MG) = NPV of Utility Costs divided by 30-year Average Water Savings * 365 where MG = million gallons*
- *Five Years of Utility Costs (2007-2011) = sum of annual costs for period shown, undiscounted*

From **Tables 2 and 3** the following observations can be made:

- The most cost-effective Tier Two measure is the offer new accounts reduced connection fees for installing efficient process equipment for selected businesses (restaurants, laundry mat, food/groceries and hospital), from the Utility perspective.
- For Tier Two conservation the synthetic turf and new efficient dishwasher measures have a low benefit-cost ratios (which is less than one), indicating they are not cost-effective measures.
- The most cost-effective New Development measure is the Smart Irrigation Controller for new residential, from the Utility perspective.
- Ten out of 13 Tier Two measures are cost effective from the Utility perspective.

- All eight of the New Development measures are cost effective from the Utility perspective.
- Six of the Tier Two measures and three of the New Development measures are cost effective from the community perspective, indicating that all other measures have relatively high customer costs.

Table 2

Tier Two Conservation Measure Costs and Savings

Conservation Measure		Water Utility Benefit-Cost Ratio	Total Community Benefit-Cost Ratio	"30-year" Average Water Savings (MGD)	Cost of Savings per Unit Volume ($/MG)	Five Years of Utility Cost 2007-2011
T2- 1	Rain-sensor (shut off device) retrofit on irrigation controllers	4.59	1.91	0.0068	$481.20	$15,310
T2-2	Cash for Grass (turf removal program)	1.39	0.77	0.0026	$1,587.84	$44,005
T2-3	Financial Incentives for Being Below Water Budget	11.69	0.61	0.0138	$170.69	$0
T2-4	Financial Rebates for Irrigation Meters	4.24	2.36	0.0024	$519.83	$13,695
T2-5a	Smart Irrigation Controller Rebates	0.53	0.45	0.0046	$3,885.07	$44,782
T2-5b	Smart Irrigation Controller Rebates	1.12	1.03	0.0100	$1,835.93	$54,246
T2-6	Financial Incentives/ Rebates for Irrigation Upgrades	2.39	1.33	0.0033	$861.44	$11,196
T2-7	Hotel retrofit (w/financial assistance) - CII Existing	9.83	3.78	0.0052	$209.66	$4,311
T2-8	Offer new accounts reduced connection fees for installing efficient process equipment for selected businesses (restaurants, laundry mat, food/groceries and hospital)	18.27	2.03	0.0115	$106.41	$2,606
T2-9	Synthetic Turf Rebate	0.22	0.12	0.0009	$9,435.69	$33,433
T2-10	High Efficiency Toilet (HET)	0.75	0.43	0.0273	$2,857.90	$446,590
T2-11	Dishwasher New Efficient	0.28	0.04	0.0009	$7,652.50	$38,275
T2-12	CII Rebates - replace inefficient water using equipment	1.76	0.69	0.0024	$1,173.17	$11,209
T2-13	0.5 gal/flush urinals in new buildings	3.66	0.41	0.0028	$539.54	$3,171

Table 3

New Development Conservation Measure Costs and Savings

Conservation Measure		Water Utility Benefit-Cost Ratio	Total Community Benefit-Cost Ratio	"30-year" Average Water Savings (MGD)	Cost of Savings per Unit Volume ($/MG)	Five Years of Utility Cost 2007-2011
ND1	Rain-sensor shut off device on irrigation controllers	22.90	4.58	0.0171	$91.92	$8,498
ND2	Smart Irrigation Controller	38.17	1.02	0.0285	$55.15	$8,498
ND3	High Efficiency Toilet (HET)	6.63	0.29	0.0109	$317.64	$18,695
ND4	Dishwasher New Efficient	2.55	0.08	0.0019	$825.90	$8,498
ND5	Clothes washing machines requirement for new residential	27.70	0.74	0.0207	$76.00	$8,498
ND6	Hot Water on Demand	22.46	0.94	0.0168	$93.73	$8,498
ND7	High efficiency faucets and showerheads	19.53	10.18	0.0146	$107.81	$8,498
ND8	Landscape and irrigation requirements	25.45	0.12	0.0190	$82.73	$8,498

Figures 2 to 5 are graphical representations of Tier Two and New Development water savings and costs for each measure in the future (2005 to 2030). Water savings are "individual year" savings and are different from the "30-year average" savings shown in **Tables 2 and 3**.

Important Note on **Figures 2 and 3**. Total water savings shown on **Figures 2 and 3** are approximate and slightly higher than will occur if all measures are run together as a program. This is due to multiple measures addressing the same end uses. Program savings (which account for the overlap) are provided in Section 3.

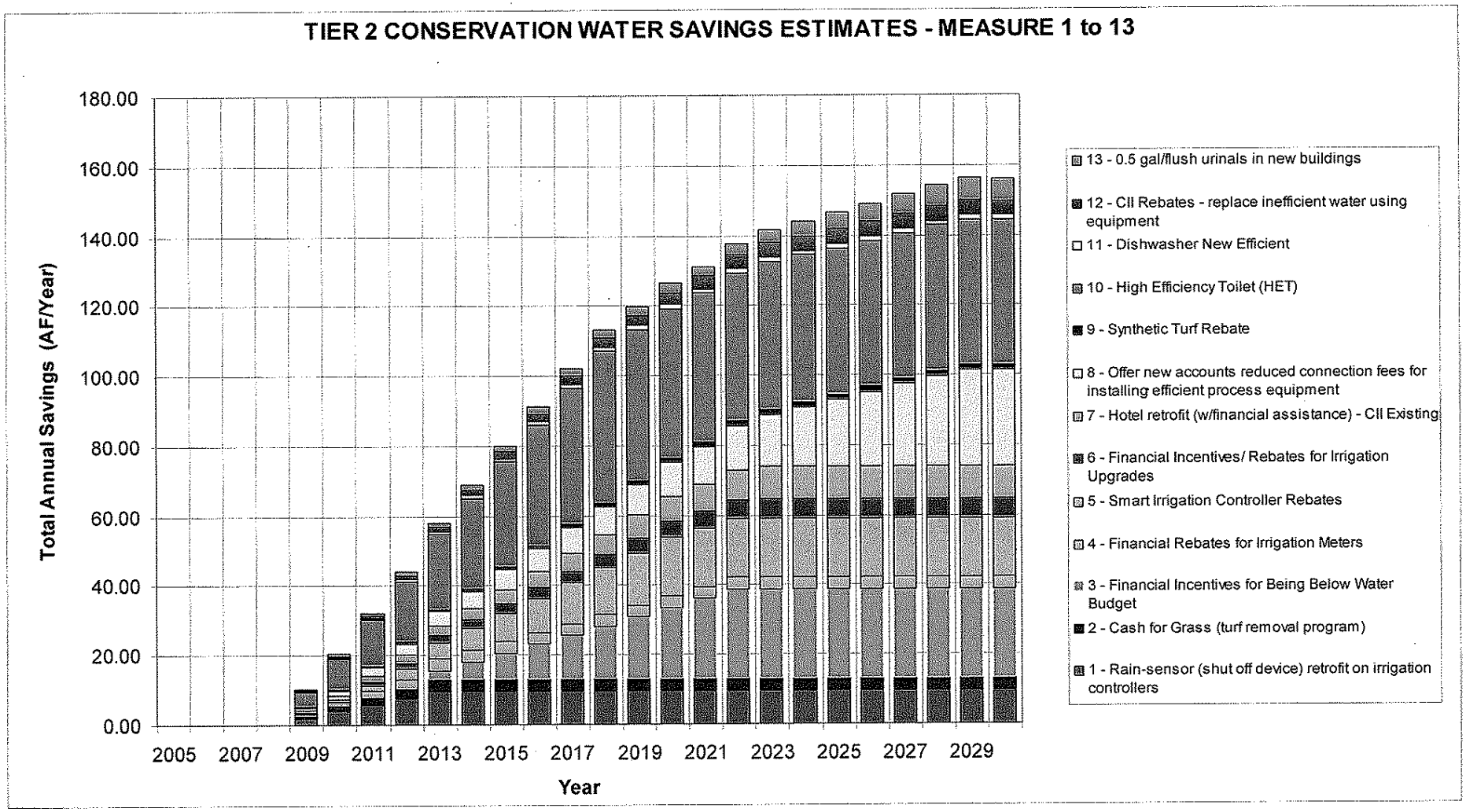


Figure 2: Conservation Savings from Tier Two Measures

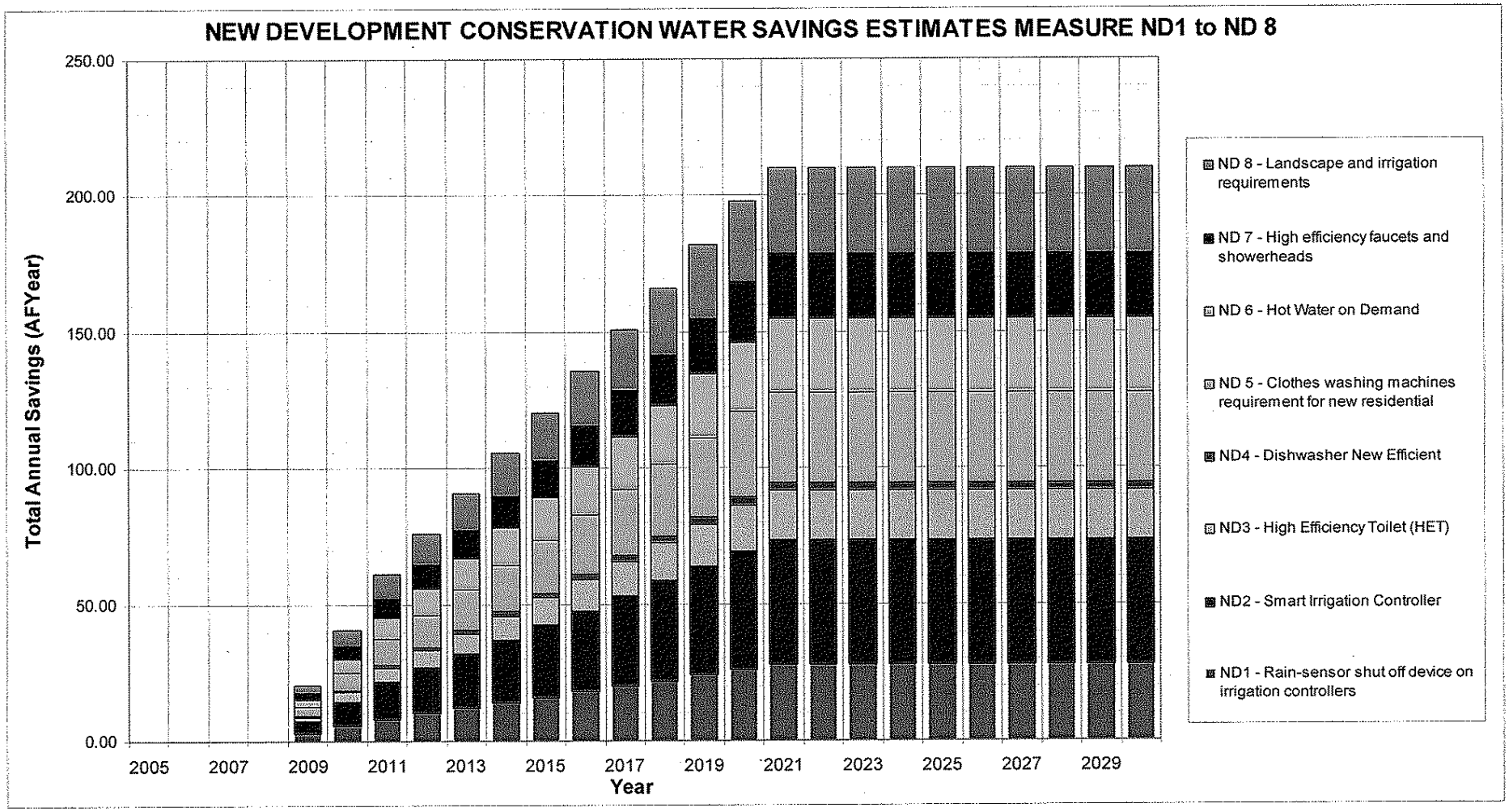


Figure 3: Conservation Savings from New Development Measures

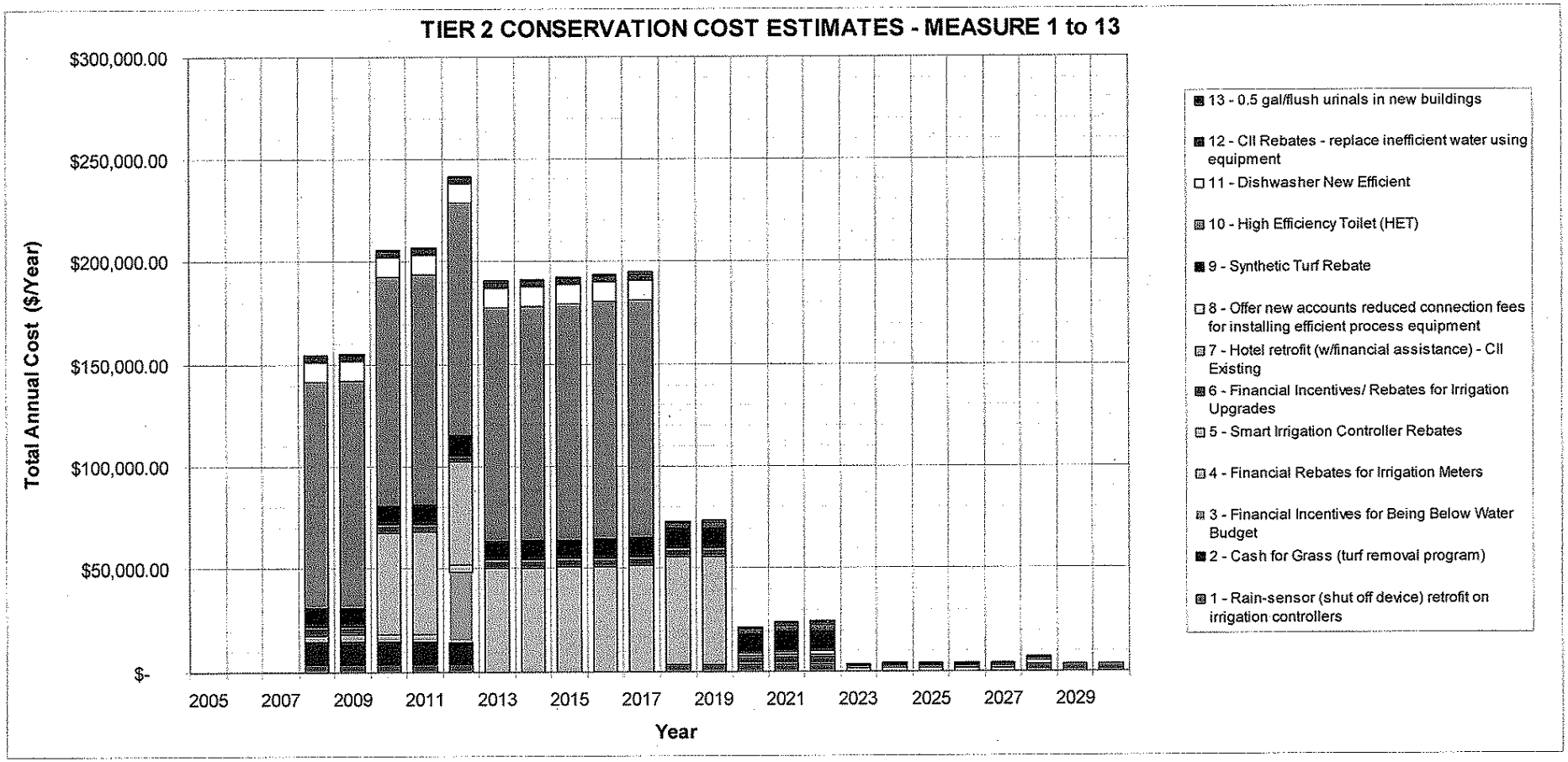
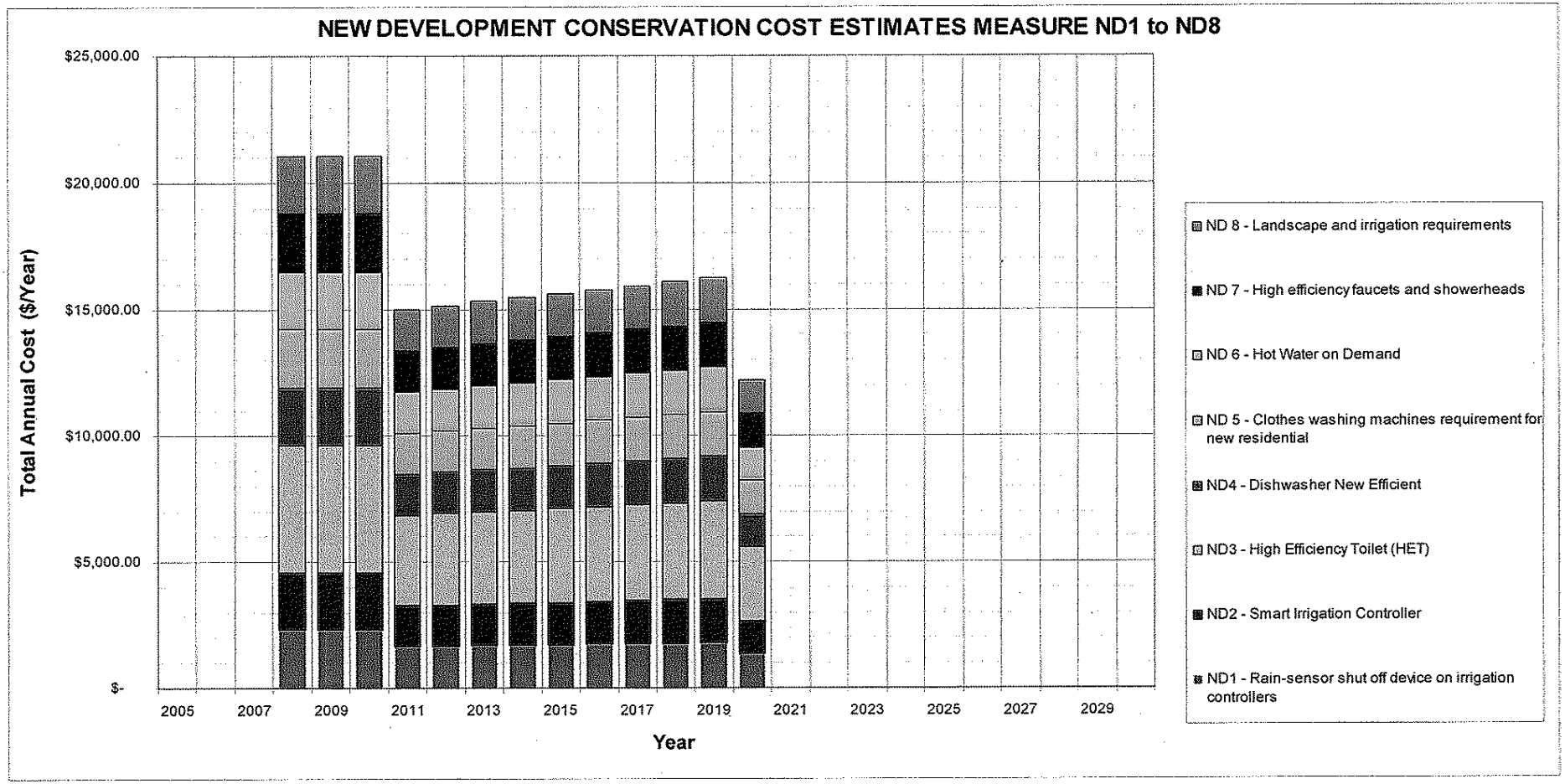


Figure 4: Conservation Costs from Tier Two Measures



Note: Utility costs depend upon the pace of new development, which depends on the projected growth in new single family accounts

Figure 5: Conservation Costs from New Development Measures

3. RESULTS OF TIER TWO AND NEW DEVELOPMENT CONSERVATION ANALYSIS

Table 4 provides a summary of which measures make up each of the three programs. The three packages are designed to illustrate an increasing level of water savings.

These programs are not intended to be rigid programs but rather to demonstrate the range in saving that could be generated if selected measures were run together. In this step we account for the overlap in water savings (and benefits) and estimate combined savings and benefits from programs or packages of measures.

A description of each program evaluated follows. Because Tier Two will commence in 2007 and some agencies will have continued to implement some Tier One measures since the base year of 2004, it is necessary to evaluate Tier Two and New Development measures in addition to the water savings generated by the completion of Tier One measures. The Tier One measure parameters have been updated based on comments received from agencies. Numerical changes to Tier One were minor with two exceptions. Both Sonoma and Valley of the Moon had an unaccounted for water reduction measure added as per the CUWCC requirements for compliance with BMP 3. For these agencies projected water savings from Tier One measures went up significantly. Other agency water savings from Tier One measures changed very little, if at all.

Program – Future Savings for Tier One + Tier Two Measures

Program Future Savings for Tier One + Tier Two Measures includes 13 additional measures beyond the CUWCC BMPs. Tier One Future was designed to be the future program with full compliance for all the CUWCC BMPs. The participation rates starting in 2004 are in accordance with those specified in the California Urban Water Conservation Council's Memorandum Of Understanding, which may be higher (or lower) than you are currently achieving. If you continue to implement these measures, your future water demands will be reduced by the amount of conservation savings. Descriptions of the Tier Two measures are in **Table 1** and cost and saving assumptions for each individual measure can be found in **Attachment 1**.

Program - Future Savings for Tier One + New Development Measures

Program Future Savings for Tier One + New Development Measures was designed to isolate the effects of the New Development measures that would be implemented as well as the completion of Tier One measures. These eight New Development measures target new single family homes only.

Program: Future Savings for All Measures Tier One, Tier Two, New Development

Program Future Savings for All Measures Tier One, Tier Two, New Development includes all 32 analyzed conservation measures. Do note that this is the theoretical maximum amount of conservation savings that are identified at this time. Also note that measures that either saved a small amount of water or were not cost-effective (Benefit-Cost ratio less than 1.0 and a high cost of water saved) were included here so as to represent the maximum water savings. Some of the Tier Two measures are small programs in that the target number of accounts is very small. So even though they appear to be relatively expensive from a measure point of view, their impact on the overall program costs and savings is relatively minor.

Table 4

Conservation Measures Selected for Programs

Description of Conservation Activity	Corresponding Measure Number	Program Tier One + New Development	Tier One + Tier Two	All Measures
BMP 1a - Residential Water Surveys-Indoor	Tier 1 - 1	X	X	X
BMP 1b - Residential Water Surveys-Outdoor	Tier 1- 2	X	X	X
BMP 2- Plumbing Retrofits	Tier 1- 3	X	X	X
BMP 5a - Landscape Water Budgets	Tier 1- 4	X	X	X
BMP 5b - Large Landscape Conservation Audits	Tier 1- 5	X	X	X
BMP 6 - Washing Machine Rebate	Tier 1 - 6	X	X	X
BMP 7 - Public Information	Tier 1- 7	X	X	X
BMP 9 - Commercial Water Audits	Tier 1 - 8	X	X	X
BMP 14 - ULF Toilet Rebate- Single Family	Tier 1- 9	X	X	X
BMP 14 - ULF Toilet Rebate- Multifamily	Tier 1- 10	X	X	X
Tier 2 - 1 Rain Sensor Retrofit	Tier 2 - 1		X	X
Tier 2 - 2 Cash for Grass	Tier 2 - 2		X	X
Tier 2 - 3 Financial Incentives for Being Below Water Budget	Tier 2 - 3		X	X
Tier 2 - 4 Irrigation Meter Rebates	Tier 2 - 4		X	X
Tier 2 - 5a Smart Irrigation Controller Rebates - RSF	Tier 2 - 5a		X	X
Tier 2 - 5b Smart Irrigation Controller Rebates - RMF, CII, IRR	Tier 2 - 5b		X	X
Tier 2 - 6 Financial Incentives/Rebates for Irrigation Upgrades	Tier 2 - 6		X	X
Tier 2 - 7 Hotel Retrofit	Tier 2 - 7		X	X
Tier 2 - 8 New CII Reduced Connection Fees for Efficient Equipment	Tier 2 - 8		X	X

Description of Conservation Activity	Corresponding Measure Number	Program Tier One + New Development	Tier One + Tier Two	All Measures
Tier 2 - 9 Synthetic Turf Rebate	Tier 2 - 9		X	X
Tier 2 - 10 High Efficiency Toilets	Tier 2 - 10		X	X
Tier 2 - 11 Dishwasher New Efficient	Tier 2 - 11		X	X
Tier 2 - 12 CII Rebates - Replace Inefficient Water Using Equipment	Tier 2 - 12		X	X
Tier 2 - 13 New Commercial Urinals	Tier 2 - 13		X	X
ND1- Rain Sensor Retrofit	ND1	X		X
ND2 - Smart Irrigation Controller	ND2	X		X
ND3 - High Efficiency Toilets	ND3	X		X
ND4 - Dishwasher New Efficient	ND4	X		X
ND5 - Clothes Washing Machine Requirement	ND5	X		X
ND6 - Hot Water on Demand	ND6	X		X
ND7 - High Efficiency Faucets and Showerheads	ND7	X		X
ND8 - Landscape and Irrigation Requirements	ND8	X		X
TOTAL NUMBER OF MEASURES*		**18**	**24**	**32**

*Measures BMP 1a, 1b, 5a, 5b, 14, and Tier 2-5a and 5b are all counted as individual measures. These measures were split for more accurate evaluation.

Figure 6 shows annual water savings for each of these programs for the year 2005 to 2030.

Figure 6

Conservation Measure Programs - Annual Water Conservation Savings

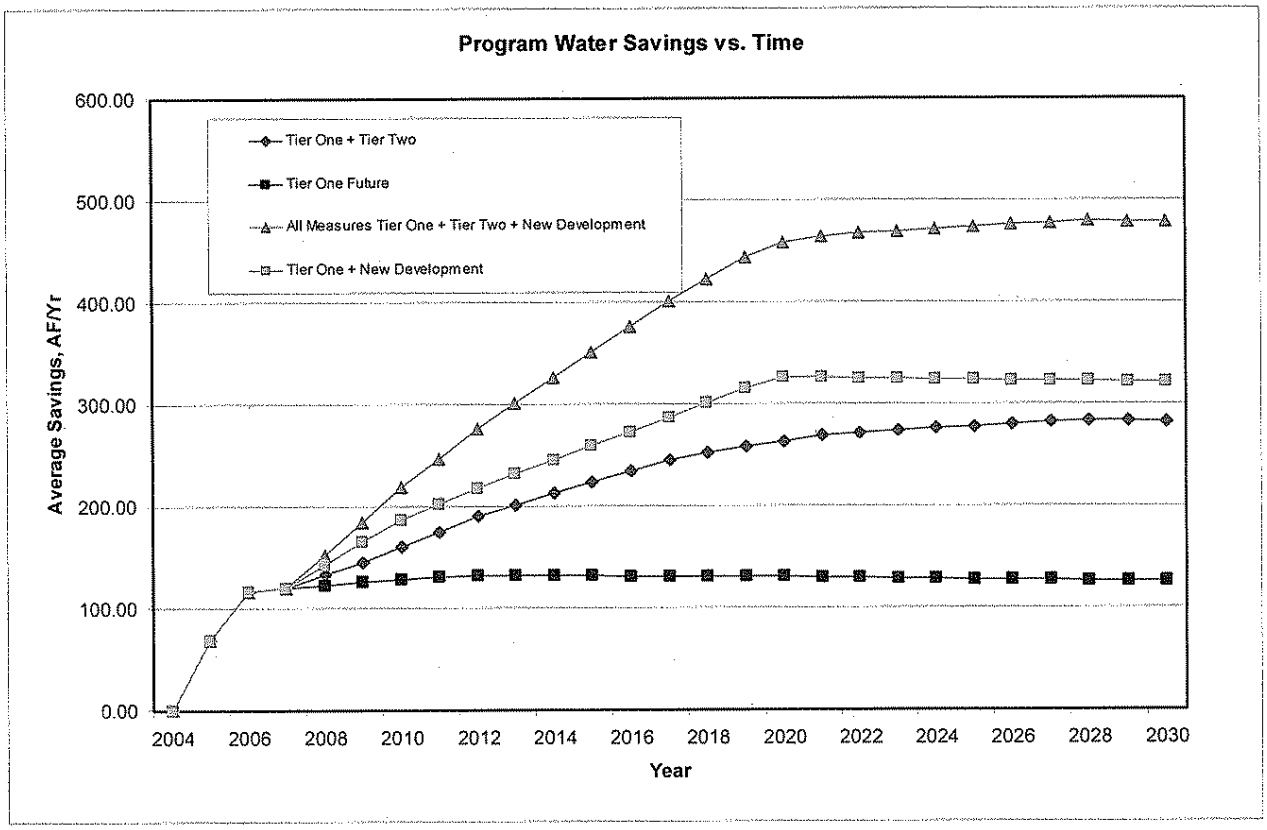


Table 5 presents key evaluation statistics compiled from the DSS model. Assuming all measures are successfully implemented, projected water savings for 2015 and 2030 in acre-feet and million gallons per day (MGD) are shown, as are the costs of achieving this reduction.

The costs are expressed three ways:

- Total present value
- The money utilities would need to budget in the first five years (2007-2011) to get new programs underway,
- The cost of water saved. These costs include costs to complete Tier One measures, as needed.

The water savings are expressed as a percentage of the projected 2030 demand. The last column indicates the percentage of the new water demand for 2030 that each program could fill. That new water needed is over the next 25 years is the difference between 2005 demand with the plumbing code (6.05 MGD) and 2030 demand (7.42 MGD) with the plumbing code. The new water needed for your agency by 2030 is 1.36 MGD.

Table 5

Conservation Measure Programs - Costs and Savings

Conservation Program	Water Utility Benefit-Cost Ratio	2015 Water Savings (Acre-Feet/Yr)	2015 Water Savings (MGD)	2030 Water Savings (Acre-Feet/Yr)	2030 Water Savings (MGD)	2030 Indoor Water Savings (MGD)	2030 Outdoor Water Savings (MGD)	Total Water Savings as a % of Total Production in 2030*	Present Value of Water Utility Costs ($1,000s)	Five Years Utility Cost 2007 to 2011 ($1,000)	Cost of Water Saved ($/AF)	% of New Water Needed from 2005 to 2030
Tier One Future	3.21	131.7	0.12	125.7	0.11	0.06	0.05	1.51%	$ 881	$ 112	$ 246	8.2%
Tier One Future + Tier Two	1.92	223.5 -131.7 = 91.8	0.20	282.5 -125.7 = 156.8	0.25	0.14	0.11	3.40%	$ 2,576	$ 835	$ 383	18.5%
Tier One Future + New Development	5.47	259.2 -131.7 = 127.5	0.23	321.4 -125.7 = 195.7	0.29	0.12	0.17	3.87%	$ 1,045	$ 190	$ 134	21.0%
Tier One Future + Tier Two + New Development	2.86	351.0	0.31	478.2	0.43	0.23	0.20	5.75%	$ 2,740	$ 913	$ 251	31.3%

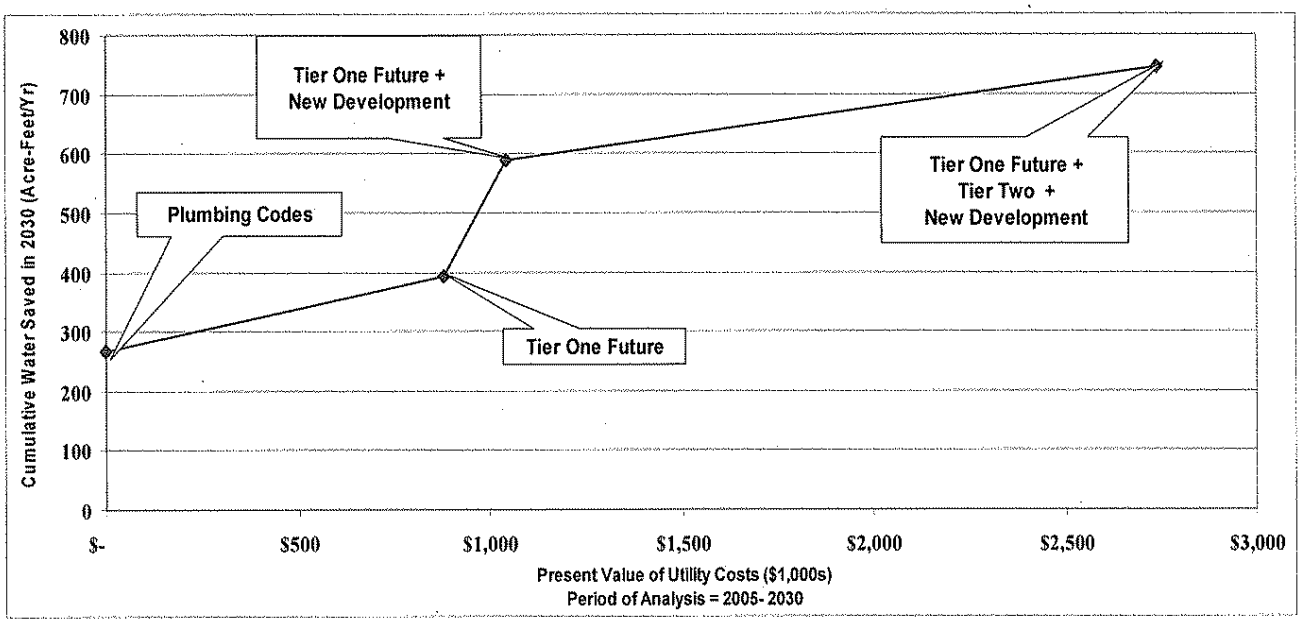
Notes:

- Present Value is determined using an interest rate of 3%
- Cost of water saved is present value of water utility cost divided by total 30-year water savings.
- Five Year Cost for all above programs is 2007 to 2011
- * % of water saved refers to the demand with the plumbing code

Figure 7 shows how marginal returns change as more money is spent to achieve savings. As the figure shows the cost versus saving curve is starting to decline after Program Tier One + New Development. This means that the added cost of going from that Program to Tier One + Tier Two will save less water per unit expenditure. In other words there are diminishing returns when the curve starts to flatten out as Tier Two measures are added to the program. It is clear that the New Development measures are more cost-effective to the utility than Tier Two measures.

Figure 7

Present Value of Utility Costs versus Cumulative Water Saved in 2030



4. CONCLUSIONS

Relative Savings and Cost-Effectiveness of Programs

Rohnert Park's service area has relatively high portion of residential water use and a significant amount of outdoor water use. Consequently, residential conservation programs produce the most savings. Water use in the commercial sector is low, offering modest conservation potential. Overall conclusions are:

- Total savings from all conservation programs would be about 5.8 percent in 2030 (478.2 AF as shown on **Table 5**). Implementation of all of the programs described in this memorandum will reduce water needs in 2030 by 5.8 percent.
- Savings contributed by Tier Two measures alone are 156.8 acre-feet in 2030 or 0.14 MGD. This equates to a 1.9 percent reduction in 2030 water demand.
- Savings contributed by the New Development measures alone are 195.7 acre-feet (0.18 MGD). This equates to a 2.4 percent reduction in 2030 water demand.
- Because of the projected relatively high growth rate in new accounts, future Tier One measures plus combinations of Tier Two and New Development conservation measures could make up about 19 to 31 percent of the total future additional water needed by 2030.
- The average cost of water saved for all of the programs from the utility standpoint (as shown on **Table 5**) is lower than the forecasted 2020 price of $759 per AF.
- The cost for the new development measures is largely funded by the builders of the new homes, which tends to reduce the overall cost to the utility for all measures.

ATTACHMENTS

Attachment 1 Assumptions for the Tier Two and New Development Measures Evaluated in the DSS Model

Attachment 1
Assumptions for Tier Two Measures Evaluated in the DSS Model

Measure	T2 - 1	T2 - 2	T2 - 3	T2 - 4	T2 - 5a	T2 - 5b	T2 - 6
Applicable Customer Classes	SF	Existing Customers SF, MF, CII	IRR	Customers with mixed water use (indoor and	SF	Existing Customers MF, CII, IRR	Existing Customers MF, CII, IRR
Applicable End Uses	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation	Irrigation
Market Penetration by End Of Program	10%	1%	100%	10%	5%	20%	10%
Water Use Reductions For Targeted End Uses	9%	30%	15%	15%	15%	15%	15%
Program Length, years	5	5	10	5	10	10	15
Measure Life, years	10	permanent	permanent	permanent	21	permanent	permanent
Utility Unit Cost for SFaccounts, $/unit	$ 20.00	$ 500.00	$ 25,000.00	$ -	$ 450.00	$ -	$ -
Utility Unit Cost for MF accounts, $/unit	--	$ 500.00	$ -	$ -	$ -	$ 900.00	$ -
Utility Unit Cost for non-Res accounts, $/unit	--	$ 500.00	$ -	$ 500.00	$ -	$ 900.00	$ 500.00
Customer Unit Cost. $/unit	$ 35.00	$ 500.00	$ 3,333.33	$ 500.00	$ 100.00	$ 100.00	$ 500.00
Annual Utility Admin & Marketing Cost	25%	25%	35%	25%	30%	30%	25%

Notes:

SF = Residential Single Family
MF = Residential Multi Family
CII = Commercial/Industrial/Institutional
COM = Commercial
IRR = Dedicated irrigation meters
INS = Public, buildings / grounds owned by the Water Utility or City
NRSF = New Residential Single Family Homes

Attachment 1
Assumptions for Tier Two Measures Evaluated in the DSS Model

Measure	T2 - 7	T2 - 8	T2 - 9	T2 - 10	T2 - 11	T2 - 12	T2 - 13
Applicable Customer Classes	Existing Customers: CII	New Customers: CII	IRR	SF, MF	SF	CII	COM New
Applicable End Uses	Indoor uses	Indoor uses	Irrigation	Toilet end use	Diswasher end use	Process end use	COM Urinal
Market Penetration by End Of Program	20%	75%	1%	20%	10%	10%	100%
Water Use Reductions For Targeted End Uses	20%	25%	90%	45 to 55%	34%	10%	65 to 75%
Program Length, years	15	30	15	10	10	15	30
Measure Life, years	permanent	permanent	permanent	permanent	permanent	permanent	permanent
Utility Unit Cost for SFaccounts, $/unit	$ -	$ -	$ -	$ 150.00	$ 100.00		$ 50.00
Utility Unit Cost for MF accounts, $/unit	$ -		$ -	$ 150.00	--		
Utility Unit Cost for non-Res accounts, $/unit	$ 100.00	$ 100.00	$ 50,000.00		--	$ 500.00	
Customer Unit Cost. $/unit	$ 200.00	$1,000.00	$ 50,000.00	$ 150.00	$ 700.00	$1,000.00	$ 500.00
Annual Utility Admin & Marketing Cost	25%	25%	25%	35%	25%	30%	25%

Notes:

SF = Residential Single Family
MF = Residential Multi Family
CII = Commercial/Industrial/Institutional
COM = Commercial
IRR = Dedicated irrigation meters
INS = Public, buildings / grounds owned by the Water Utility or City
NRSF = New Residential Single Family Homes

Attachment 1
Assumptions for New Development Measures Evaluated in the DSS Model

Measure	ND 1	ND 2	ND 3	ND 4	ND 5	ND 6	ND 7	ND 8
Applicable Customer Classes	NRSF	NRSF	NRSF	NRSF	NRSF	NRSF	NRSF	NRSF
Applicable End Uses	Irrigation	Irrigation	Toilet end use	Diswasher end use	Clothes Washer end use	Faucet and shower end use	Faucet and shower end use	Irrigation
Market Penetration by End Of Program	100%	100%	100%	100%	100%	100%	100%	100%
Water Use Reductions For Targeted End Uses	9%	15%	50 to 55%	34%	50%	14.2 gpd per house	15%	10%
Program Length, years	30	30	30	30	30	30	30	30
Measure Life, years	permanent	permanent	permanent	permanent	permanent	permanent	permanent	permanent
Utility Unit Cost for SFaccounts, $/unit	$ 12.50	$ 12.50	$ 12.50	$ 12.50	$ 12.50	$ 12.50	$ 12.50	$ 12.50
Utility Unit Cost for MF accounts, $/unit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Utility Unit Cost for non-Res accounts, $/unit	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Customer Unit Cost. $/unit	$ 55.00	$ 500.00	$ 300.00	$ 400.00	$ 500.00	$ 700.00	$ 50.00	$3,000.00
Annual Utility Admin & Marketing Cost	10%	10%	10%	10%	10%	10%	10%	10%

Notes:

SF = Residential Single Family
MF = Residential Multi Family
CII = Commercial/Industrial/Institutional
COM = Commercial
IRR = Dedicated irrigation meters
INS = Public, buildings / grounds owned by the Water Utility or City
NRSF = New Residential Single Family Homes
ND = New Development

APPENDIX H

Best Management Practice and Coverage Reports

APPENDIX H-1

2003 Best Management Practice Reports

Reported as of 7/3

Water Supply & Reuse

Reporting Unit:
City of Rohnert Park

Year:
2003

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Sonoma County Water Agency	2601	Local Watershed
Groundwater	4468	Groundwater

Total AF: 7069

Reported as of 7/3

Accounts & Water Use

Reporting Unit Name:
City of Rohnert Park

Submitted to
CUWCC
12/30/2003

Year:
2003

A. Service Area Population Information:

1. Total service area population 42236

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	0	0	7698	3952
2. Multi-Family	0	0	386	1484
3. Commercial	608	749	2	0
4. Industrial	9	538	0	0
5. Institutional	17	0	0	104
6. Dedicated Irrigation	251	0	0	126
7. Recycled Water	0	0	0	0
8. Other	0	0	0	0
9. Unaccounted	NA	0	NA	440
Total	885	1287	8086	6106
	Metered		**Unmetered**	

Reported as of 7/3

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Based on your signed MOU date, 06/12/2002, your Agency STRATEGY DUE DATE is:	06/11/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	no
a. If YES, when was it implemented?	

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	no	no
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Rohnert Park will implement a single-family and multi-family audit program in Spring 2004. Rohnert Park recently installed water meters for residential accounts. This data will be used for marketing, to target high end users for the audit program. SCWA will provide funding to implement this BMP.

Reported as of 7/3

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — Yes
3. Estimated percent of single-family households with low-flow showerheads: — 75%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — Yes
5. Estimated percent of multi-family households with low-flow showerheads: — 77%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

   Saturation was determined based on device distribution to program participants. Programs include over-the-counter distribution, CBO giveaways and through the toilet replacement program.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 3/18/1997

   b. Describe your targeting/ marketing strategy.

   Lowflow showerheads and aerators are directly installed into homes as part of the City's toilet replacement program. The devices are also available at City offices.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	326	456
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	150	372

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   All devices that are directly installed are tracked via the ULFT program database.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	5000
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	no
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	
b. Determine other system verifiable uses (AF)	
c. Determine total supply into the system (AF)	
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.00
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	no
4. Did your agency complete a full-scale audit during this report year?	no
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	no
6. Does your agency operate a system leak detection program?	no
a. If yes, describe the leak detection program:	

B. Survey Data

1. Total number of miles of distribution system line.	116
2. Number of miles of distribution system line surveyed.	0

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

A 3-person crew is dedicated full-time to the repair of leaks based on direct observation or complaints from residents.

E. Comments

Reported as of 7/3

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? — yes

2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? — yes

   a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? — 03/25/2001

   b. Describe the program:

   The City has installed meters in all previously unmetered single-family homes. In 2004, meters will be installed in multi-family homes.

3. Number of previously unmetered accounts fitted with meters during report year. — 7565

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? — no

   a. If YES, when was the feasibility study conducted? (mm/dd/yy)

   b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters. — 0

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. — 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	3000000	700000
2. Actual Expenditures	2352524	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — No

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

The number of mixed use meters is unknown because the city does not track its accounts with the same categorical divisions as the CUWCC.

Reported as of 7/3

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	251
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	0
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	0
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	0
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no

a. If YES, when did your agency begin implementing this strategy?

b. Description of marketing / targeting strategy:

The City is currently identifying dedicated meter accounts. When this is complete, marketing will begin followed by the landscape audits.

2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no

a. If YES, describe below:

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve	no

landscape water use efficiency?

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

New customers recieve an information packet which includes water use efficiency brochures.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? no

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Rohnert Park will begin implementing this BMP in Spring 2004. The program will begin with providing water budgets for dedicated meter customers. Funding is provided by the Sonoma County Water Agency. SCWA will provide funding to implement this BMP.

Reported as of 7/3

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers? — yes

   a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.

   P G & E offers a $75 rebate for high-efficiency washers installed in the City.

2. Does your agency offer rebates for high-efficiency washers? — yes
3. What is the level of the rebate? — 75
4. Number of rebates awarded. — 138

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

This program was funded and operated on a regional basis through SCWA.

Reported as of 7/3

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

The public information program is implemented to promote water conservation and related environmental benefits through conservation presentations given at community events, along with water conservation literature and hardware distribution.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	no	
c. Bill Inserts / Newsletters / Brochures	yes	1
d. Bill showing water usage in comparison to previous year's usage	no	
e. Demonstration Gardens	no	
f. Special Events, Media Events	yes	1
g. Speaker's Bureau	no	
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Water conservation literature is available at City offices year round. SCWA implements an aggressive public information program through public service announcements, special events, media events, paid advertising, ect. SCWA operates a regional program for their retail water agencies. Rohnert Park complies with this BMP partially through SCWA's program.

Reported as of 7/3

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? no

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	Yes	12	633	4
Grades 4th-6th	Yes	8	474	4
Grades 7th-8th	Yes			3
High School	Yes			2

3. Did your Agency's materials meet state education framework requirements? Yes

4. When did your Agency begin implementing this program? 09/01/1988

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	no
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	no
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	no

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	24	0	1
b. Number of New Surveys Completed	6	0	1
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	no	yes
f. Evaluation of all water-using apparatus and processes	yes	no	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	no
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	0
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

SCWA's regional Pre-Rinse Spray Valve Installation Program installed a water conserving spray valve free to restaurants, schools, etc. During the site visit/audit all water using fixtures were noted. SCWA provided funding to implement this BMP and will continue to do so in the next reporting period.

Reported as of 7/3

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. 10. — Yes

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.
   - Consumption ranking
   - Service area zones
   - Potential savings
   - CII Sector or subsector

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

   The direct install and rebate programs are available to all CII customers that do not already have ULFTs. The program did not target any particular market.

2. How does your agency advertise this program? Check all that apply.
   - Direct letter
   - Bill insert
   - Telephone
   - Web page
   - Trade shows and events

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

   All types of advertising used reached out to most businesses.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.) — Yes
2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency? — Yes
3. What is the total number of customer accounts participating in the program during the last year ? — 1

CII Subsector	Number of Toilets Replaced				
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount	Type Not Specified
a. Offices	0	0	0	0	0
b. Retail /	2	0	0	0	0

Wholesale					
c. Hotels	0	0	0	0	0
d. Health	0	0	0	0	0
e. Industrial	0	0	0	0	0
f. Schools: K to 12	0	0	0	0	0
g. Eating	0	0	0	0	0
h. Government	0	0	0	0	0
i. Churches	0	0	0	0	0
j. Other	0	0	0	0	0

5. Program design. Rebate or voucher
Direct installation

6. Does your agency use outside services to implement this program? Yes

a. If yes, check all that apply. Plumbing contractors/subcontracts

7. Participant tracking and follow-up. No follow-up

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business	3
b. Inadequate payback	1
c. Inadequate ULFT performance	4
d. Lack of funding	1
e. American's with Disabilities Act	2
f. Permitting	1
g. Other. Please describe in B. 9.	0

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

We are finding that customers accept the ULFTs more now than when the program began in 1997.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Program activity has been declining over the past few years. Marketing was reduced and participation also declined. There were no CII rebates processed this year.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual

		Expenditure
a. Labor	0	0
b. Materials	0	0
c. Marketing & Advertising	0	0
d. Administration & Overhead	0	0
e. Outside Services	0	0
f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	0
b. State agency contribution	0
c. Federal agency contribution	0
d. Other contribution	0
e. Total	0

D. Comments

Participants are invited to complete a satisfaction survey. SCWA provided funding for the direct-install and rebates for this program. SCWA will provide funding to implement this BMP.

Reported as of 7/3

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential	
a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
2. Commercial	
a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
3. Industrial	
a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
4. Institutional / Government	
a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
5. Irrigation	
a. Water Rate Structure	Service Not Provided
b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0
6. Other	
a. Water Rate Structure	Service Not Provided

b. Sewer Rate Structure	Service Not Provided
c. Total Revenue from Volumetric Rates	$0
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$0

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Conservation pricing will commence in FY 03/04.

Reported as of 7/3

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	no
4. Partner agency's name:	
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	17%
b. Coordinator's Name	Toni Bertolero
c. Coordinator's Title	City Engineer
d. Coordinator's Experience and Number of Years	Professional engineer for 20 years.
e. Date Coordinator's position was created (mm/dd/yyyy)	01/02/1997
6. Number of conservation staff, including Conservation Coordinator.	3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	32490	32000
2. Actual Expenditures	32490	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? — yes

   a. If YES, describe the ordinance:

   The ordinance prohibits outdoor water waste resulting in runoff that exceeds 30 minutes. Unrepaired leaks are also prohibited.

2. Is a copy of the most current ordinance(s) on file with CUWCC? — no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

   City of Rohnert Park — none

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding — yes

   b. Single-pass cooling systems for new connections — no

   c. Non-recirculating systems in all new conveyor or car wash systems — no

   d. Non-recirculating systems in all new commercial laundry systems — no

   e. Non-recirculating systems in all new decorative fountains — no

   f. Other, please name — no

2. Describe measures that prohibit water uses listed above:

   Violators are given written notice and a timeframe for rectifying the situation. Fines and disconnection of service could occur.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. — no

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. — no

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. — no

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply. — no

4. Does your agency include water softener checks in home water — no

audit programs?

5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models? no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

The budget is absorbed by the streets maintenance budget.

Reported as of 7/3

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2003**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	100	12
3. Direct Install	146	234
4. CBO Distribution	0	0
5. Other	0	0
Total	**246**	**246**

6. Describe your agency's ULFT program for single-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

7. Describe your agency's ULFT program for multi-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

SCWA provided funding for the direct-install and rebate payments for this program. SCWA will continue to provide funding for implementation of this BMP.

APPENDIX H-2

2004 Best Management Practice Reports

Reported as of 7/3

Water Supply & Reuse

Reporting Unit:
City of Rohnert Park

Year:
2004

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Sonoma County Water Agency	4710	Local Watershed
Groundwater	2200	Groundwater
Santa Rosa	1057	Recycled

Total AF: 7967

AUG - 1 2007

Reported as of 7/3

Accounts & Water Use

Reporting Unit Name:
City of Rohnert Park

Submitted to CUWCC
11/24/2004

Year:
2004

A. Service Area Population Information:

1. Total service area population 42127

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	7571	3110.94	0	0
2. Multi-Family	293	984.19	10	32
3. Commercial	376	781.47	0	0
4. Industrial	7	42.32	0	0
5. Institutional	11	12.53	24	250
6. Dedicated Irrigation	280	745.96	0	0
7. Recycled Water	34	1057	0	0
8. Other	0	0	5	412
9. Unaccounted	NA	0	NA	539
Total	8572	6734.41	39	1233
	Metered		**Unmetered**	

Reported as of 7/3

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Based on your signed MOU date, 06/12/2002, your Agency STRATEGY DUE DATE is:	06/11/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	0	0
2. Number of surveys completed:	0	0
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	no	no
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	no	no
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	no	no
Outdoor Survey:		
6. Check irrigation system and timers	no	no
7. Review or develop customer irrigation schedule	no	no
8. Measure landscaped area (Recommended but not required for surveys)	no	no
9. Measure total irrigable area (Recommended but not required for surveys)	no	no
10. Which measurement method is typically used (Recommended but not required for surveys)		None
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	no	no
a. If yes, in what form are surveys tracked?		None

b. Describe how your agency tracks this information.

C. Water Survey Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Rohnert Park has hired a consultant to begin the residential water audit program. High end users will be the min target for the program. SCWA will provide funding to implement this BMP.

Reported as of 7/3

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — Yes
3. Estimated percent of single-family households with low-flow showerheads: — 75%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — Yes
5. Estimated percent of multi-family households with low-flow showerheads: — 75%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

   Saturation was determined based on device distribution to program participants. Programs include over-the-counter distribution, CBO giveaways and through the toilet replacement program.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 3/18/1997

   b. Describe your targeting/ marketing strategy.

   Low flow showerheads and aerators are directly installed into homes as part of the City's toilet replacement program. The devices are also available at City offices. Bill stuffers go out annually to inform the public that low flow devices are available at City Hall.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	598	46
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	932	856

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   All devices that are directly installed are tracked via the ULFT program

database.

C. Low-Flow Device Distribution Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Has your agency completed a pre-screening system audit for this reporting year?	yes
2. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	5678.26
b. Determine other system verifiable uses (AF)	694
c. Determine total supply into the system (AF)	6910
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.92
3. Does your agency keep necessary data on file to verify the values used to calculate verifiable uses as a percent of total production?	yes
4. Did your agency complete a full-scale audit during this report year?	yes
5. Does your agency maintain in-house records of audit results or the completed AWWA audit worksheets for the completed audit?	yes
6. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

The City has staff trained and available for leak detection and system repair.

B. Survey Data

1. Total number of miles of distribution system line.	116
2. Number of miles of distribution system line surveyed.	116

C. System Audit / Leak Detection Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Does your agency require meters for all new connections and bill by volume-of-use? — yes

2. Does your agency have a program for retrofitting existing unmetered connections and bill by volume-of-use? — yes

   a. If YES, when was the plan to retrofit and bill by volume-of-use existing unmetered connections completed? — 3/25/2001

   b. Describe the program:

   The City is working towards installing meters into all unmetered mobile home parks in FY 04/05.

3. Number of previously unmetered accounts fitted with meters during report year. — 0

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? — no

   a. If YES, when was the feasibility study conducted? (mm/dd/yy)

   b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters. — 852

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. — 0

C. Meter Retrofit Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	700000	151720
2. Actual Expenditures	152000	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — yes

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	281
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	124
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF):	245
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF):	399
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	no

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	no
a. If YES, when did your agency begin implementing this strategy?	
b. Description of marketing / targeting strategy:	
2. Number of Surveys Offered.	0
3. Number of Surveys Completed.	0
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	no
b. Distribution Uniformity Analysis	no
c. Review / Develop Irrigation Schedules	no
d. Measure Landscape Area	no
e. Measure Total Irrigable Area	no
f. Provide Customer Report / Information	no
5. Do you track survey offers and results?	no
6. Does your agency provide follow-up surveys for previously completed surveys?	no
a. If YES, describe below:	

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	
3. Do you offer landscape irrigation training?	yes
4. Does your agency offer financial incentives to improve landscape water use efficiency?	no

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	0	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

New customers recieve an information packet which includes water use efficiency brochures.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? no

b. If yes, does it have dedicated irrigation metering? yes

7. Do you provide customer notices at the start of the irrigation season? no

8. Do you provide customer notices at the end of the irrigation season? no

D. Landscape Conservation Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

SCWA provided funding to implement this BMP.

Reported as of 7/3

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Do any energy service providers or waste water utilities in your service area offer rebates for high-efficiency washers?	no
a. If YES, describe the offerings and incentives as well as who the energy/waste water utility provider is.	
2. Does your agency offer rebates for high-efficiency washers?	yes
3. What is the level of the rebate?	75
4. Number of rebates awarded.	206

B. Rebate Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no
a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."	

D. Comments

This program was funded and operated on a regional basis through SCWA.

Reported as of 7/3

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Does your agency maintain an active public information program to promote and educate customers about water conservation? yes

a. If YES, describe the program and how it's organized.

The public information program is implemented to promote water conservation and related environmental benefits through conservation presentations given at community events, along with water conservation literature and hardware distribution.

2. Indicate which and how many of the following activities are included in your public information program.

Public Information Program Activity	Yes/No	Number of Events
a. Paid Advertising	no	
b. Public Service Announcement	yes	6
c. Bill Inserts / Newsletters / Brochures	yes	2
d. Bill showing water usage in comparison to previous year's usage	no	
e. Demonstration Gardens	yes	1
f. Special Events, Media Events	no	
g. Speaker's Bureau	yes	1
h. Program to coordinate with other government agencies, industry and public interest groups and media	yes	

B. Conservation Information Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	22500
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Rohnert Park has printed approximatly 6 articles about their water conservation programs in the City Pages of "The Voice", a local newspaper. SCWA operates a regional program for their retail water agencies. Rohnert Park complies with this BMP partially through SCWA's program.

Reported as of 7/3

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1.Has your agency implemented a school information program to promote water conservation? yes

2. Please provide information on your school programs (by grade level):

Grade	Are grade-appropriate materials distributed?	No. of class presentations	No. of students reached	No. of teachers' workshops
Grades K-3rd	yes	22	543	6
Grades 4th-6th	yes	8	466	6
Grades 7th-8th	no	0	8	4
High School	yes	0	0	4

3. Did your Agency's materials meet state education framework requirements? yes

4. When did your Agency begin implementing this program? 09/01/1988

B. School Education Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

These numbers are from the 03-04 school year. Nuber of students reached includes direct instruction and educationmaterials requested/supplied.

Reported as of 7/3

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option?	yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	22	1	0
b. Number of New Surveys Completed	20	1	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	0	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	no	no	no

Agency CII Customer Incentives	Budget ($/Year)	No. Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option?	Yes
6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings?	no
7. Estimated annual savings (AF/yr) from site-verified actions taken by agency since 1991.	29.15
8. Estimated annual savings (AF/yr) from non-site-verified actions taken by agency since 1991.	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

SCWA provided funding to implement this BMP and will continue to do so in the next reporting period.

Reported as of 7/3

BMP 09a: CII ULFT Water Savings

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

1. Did your agency implement a CII ULFT replacement program in the reporting year? If No, please explain why on Line B. — No

10.

A. Targeting and Marketing

1. What basis does your agency use to target customers for participation in this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

2. How does your agency advertise this program? Check all that apply.

   a. Describe which method you found to be the most effective overall, and which was the most effective per dollar expended.

B. Implementation

1. Does your agency keep and maintain customer participant information? (Read the Help information for a complete list of all the information for this BMP.)

2. Would your agency be willing to share this information if the CUWCC did a study to evaluate the program on behalf of your agency?

3. What is the total number of customer accounts participating in the program during the last year ?

CII Subsector	Number of Toilets Replaced				
4.	Standard Gravity Tank	Air Assisted	Valve Floor Mount	Valve Wall Mount	Type Not Specified
a. Offices					
b. Retail / Wholesale					
c. Hotels					
d. Health					
e. Industrial					

f. Schools:
K to 12

g. Eating

h. Government

i. Churches

j. Other

5. Program design.

6. Does your agency use outside services to implement this program?

a. If yes, check all that apply.

7. Participant tracking and follow-up.

8. Based on your program experience, please rank on a scale of 1 to 5, with 1 being the least frequent cause and 5 being the most frequent cause, the following reasons why customers refused to participate in the program.

a. Disruption to business

b. Inadequate payback

c. Inadequate ULFT performance

d. Lack of funding

e. American's with Disabilities Act

f. Permitting

g. Other. Please describe in B. 9.

9. Please describe general program acceptance/resistance by customers, obstacles to implementation, and other isues affecting program implementation or effectiveness.

10. Please provide a general assessment of the program for this reporting year. Did your program achieve its objectives? Were your targeting and marketing approaches effective? Were program costs in line with expectations and budgeting?

Our CII ULFT water savings are accounted for under BMP 9.

C. Conservation Program Expenditures for CII ULFT

1. CII ULFT Program: Annual Budget & Expenditure Data

	Budgeted	Actual Expenditure
a. Labor		
b. Materials		
c. Marketing & Advertising		
d. Administration & Overhead		
e. Outside Services		

f. Total	0	0

2. CII ULFT Program: Annual Cost Sharing

a. Wholesale agency contribution	
b. State agency contribution	
c. Federal agency contribution	
d. Other contribution	
e. Total	0

D. Comments

Reported as of 7/3

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

Rate Structure Data Volumetric Rates for Water Service by Customer Class

1. Residential

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$1774246.25
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$958488.6

2. Commercial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$445691.75
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$83400.36

3. Industrial

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$24137.75
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$19824.6

4. Institutional / Government

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$7143.5
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$18294.48

5. Irrigation

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$425439
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$75773.64

6. Other

a. Water Rate Structure	Uniform

b. Sewer Rate Structure	Uniform
c. Total Revenue from Volumetric Rates	$561309
d. Total Revenue from Non-Volumetric Charges, Fees and other Revenue Sources	$124888.92

B. Conservation Pricing Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Mobile home parks are not yet metered.

Reported as of 7/3

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is this a full-time position?	no
3. If no, is the coordinator supplied by another agency with which you cooperate in a regional conservation program ?	
4. Partner agency's name:	
5. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	5%
b. Coordinator's Name	Darrin Jenkins
c. Coordinator's Title	City Engineer
d. Coordinator's Experience and Number of Years	None, 0 years
e. Date Coordinator's position was created (mm/dd/yyyy)	1/2/1997
6. Number of conservation staff, including Conservation Coordinator.	3

B. Conservation Staff Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

   a. If YES, describe the ordinance:

   The purpose is to promote water conservation and the efficient use of potable water furnished by the City by eliminating intentional or unintentional water waste when a reasonable alternative solution is available, and by prohibiting use of equipment which is wasteful.

2. Is a copy of the most current ordinance(s) on file with CUWCC? no

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

   City of Rohnert Park none

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding yes

   b. Single-pass cooling systems for new connections yes

   c. Non-recirculating systems in all new conveyor or car wash systems yes

   d. Non-recirculating systems in all new commercial laundry systems yes

   e. Non-recirculating systems in all new decorative fountains yes

   f. Other, please name
   Washing cars, boats, trailers, or other equipment with a hose not equipped with a shut off nozzle. yes

2. Describe measures that prohibit water uses listed above:

   Violators are given written notice and a timeframe for rectifying the situation. Fines and disconnection of service could occur.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. no

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. no

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. no

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and

found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.	no
4. Does your agency include water softener checks in home water audit programs?	no
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	no

C. Water Waste Prohibition Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	0
2. Actual Expenditures	0	

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

The budget is absorbed by the streets maintenance budget.

Reported as of 7/3

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2004**

A. Implementation

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes

Number of Toilets Replaced by Agency Program During Report Year

Replacement Method	SF Accounts	MF Units
2. Rebate	114	11
3. Direct Install	306	100
4. CBO Distribution	0	0
5. Other	0	0
Total	**420**	**111**

6. Describe your agency's ULFT program for single-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

7. Describe your agency's ULFT program for multi-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

8. Is a toilet retrofit on resale ordinance in effect for your service area? no

9. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

	This Year	Next Year
1. Budgeted Expenditures	0	16759
2. Actual Expenditures	0	

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

SCWA provided funding for the direct-install and rebate payments for this program.

APPENDIX H-3

2003/04 Coverage Reports

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BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 1 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

Condition 1: Adopt survey targeting and marketing strategy on time

Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

These will have to be fixed until R.P. decides what the base year data should be... CARDS

Test for Condition 1

Latest City of Rohnert Park to Implement Targeting/Marketing Program: 2004

	Single-Family	Multi-Family
Year City of Rohnert Park Reported Implementing Targeting/Marketing Program:		
City of Rohnert Park Met Targeting/Marketing Coverage Requirement:	NO	NO YES

Test for Condition 2

			Single-Family	Multi-Family
Latest Year Survey Program to Start:	2003	Residential Survey Offers (%)		
Reporting Period:	03-04	Survey Offers ≥ 20%	NO	NO

Test for Condition 3

AUG - 1 2007

	Completed Residential Surveys	
	Single Family	Multi-Family
Total Completed Surveys through 2004		

Credit for Surveys Completed Prior to Implementation of Reporting Database		
Total + Credit		
Residential Accounts in Base Year	10,392	6,449
City of Rohnert Park Survey Coverage as % of Base Year Residential Accounts		
Coverage Requirement by Year 2 of Implementation per Exhibit 1	1.50%	1.50%
City of Rohnert Park on Schedule to Meet 10-Year Coverage Requirement	NO	NO

CUWCC

Best Management Practices Report Filing

BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 2 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

Test for Condition 1

		Single-Family		Multi-Family	
Report Year	Report Period	Reported Saturation	Saturation ≥ 75%?	Reported Saturation	Saturation ≥ 75%?
1999	99-00	10.00%	NO	6.00%	NO
2000	99-00	14.00%	NO	10.00%	NO
2001	01-02		NO		NO
2002	01-02		NO		NO
2003	03-04	26.00%	NO	23.00%	NO
2004	03-04	26.00%	NO	24.00%	NO

Test for Condition 2

Report Year	Report Period	City of Rohnert Park has ordinance requiring showerhead retrofit?
1999	99-00	NO
2000	99-00	NO
2001	01-02	NO
2002	01-02	NO
2003	03-04	NO
2004	03-04	NO

Test for Condition 3

Reporting Period: 03-04

1992 SF Accounts	Num. Showerheads Distributed to SF Accounts	Single-Family Coverage Ratio	SF Coverage Ratio > 10%
8,366	174	2.1%	NO

1992 MF Accounts	Num. Showerheads Distributed to MF Accounts	Multi-Family Coverage Ratio	MF Coverage Ratio > 10%
4,306	252	5.9%	NO

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BMP 03 Coverage: System Water Audits, Leak Detection and Repair

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 3 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one of two conditions to be in compliance with BMP 3:

Condition 1: Perform a prescreening audit. If the result is equal to or greater than 0.9 nothing more needs be done.

Condition 2: Perform a prescreening audit. If the result is less than 0.9, perform a full audit in accordance with AWWA's Manual of Water Supply Practices, Water Audits, and Leak Detection.

Test for Conditions 1 and 2

Report Year	Report Period	Pre-Screen Completed	Pre-Screen Result	Full Audit Indicated	Full Audit Completed
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04	NO			NO
2004	03-04	YES			YES

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BMP 04 Coverage: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	Yes

Warning: The BMP 4 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must be on track to retrofit 100% of its unmetered accounts within 10 years to be in compliance with BMP 4.

Test for Compliance

Total Meter Retrofits Reported through 2004	7,565
No. of Unmetered Accounts in Base Year	7,717
Meter Retrofit Coverage as % of Base Year Unmetered Accounts	98.0%
Coverage Requirement by Year 1 of Implementation per Exhibit 1	4.5%
RU on Schedule to meet 10 Year Coverage Requirement	YES

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BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 5 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

Test for Condition 1

Year	Report Period	BMP 5 Implementation Year	No. of Irrigation Meter Accounts	No. of Irrigation Accounts with Budgets	Budget Coverage Ratio	90% Coverage Met by Year 4
1999	99-00	-4				NA
2000	99-00	-3				NA
2001	01-02	-2				NA
2002	01-02	-1				NA
2003	03-04		251			NA
2004	03-04	1	300	124	41.3%	NA

Test for Condition 2a (survey offers)

Select Reporting Period: 03-04

Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts

Survey Offers Equal or Exceed 20% Coverage Requirement: NO

Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through

Credit for Surveys Completed Prior to Implementation of Reporting Database

Total + Credit	
CII Accounts in Base Year	1,101
RU Survey Coverage as a % of Base Year CII Accounts	
Coverage Requirement by Year of Implementation per Exhibit 1	0.7%
RU on Schedule to Meet 10 Year Coverage Requirement	NO

Test for Condition 2b (mixed use budget or meter retrofit program)

Report Year	Report Period	BMP 5 Implementation Year	Agency has mix-use budget program	No. of mixed-use budgets
1999	99-00	-4		
2000	99-00	-3		
2001	01-02	-2		
2002	01-02	-1	NO	
2003	03-04		NO	
2004	03-04	1	NO	

Report Year	Report Period	BMP 4 Implementation Year	No. of mixed use CII accounts	No. of mixed use CII accounts fitted with irrig. meters
1999	99-00	-4		
2000	99-00	-3		
2001	01-02	-2		
2002	01-02	-1		
2003	03-04			
2004	03-04	1		

Test for Condition 3

Report Year	Report Period	BMP 5 Implementation Year	RU offers financial incentives?	No. of Loans	Total Amt. Loans
1999	99-00	-4			
2000	99-00	-3			
2001	01-02	-2			
2002	01-02	-1	NO		
2003	03-04		NO		
2004	03-04	1	NO		

Report Year	Report Period	No. of Grants	Total Amt. Grants	No. of rebates	Total Amt. Rebates
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04				

2004 03-04

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BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive for high-efficiency washers if one or more energy service providers in service area offer financial incentives for high-efficiency washers.

Test for Condition 1

Year	Report Period	BMP 6 Implementation Year	Rebate Offered by ESP?	Rebate Offered by RU?	Rebate Amount
1999	99-00	-4	YES	YES	75.00
2000	99-00	-3	YES	YES	75.00
2001	01-02	-2	YES	YES	75.00
2002	01-02	-1	YES	NO	
2003	03-04		YES	YES	75.00
2004	03-04	1	NO	YES	75.00

Year	Report Period	BMP 6 Implementation Year	No. Rebates Awarded	Coverage Met?
1999	99-00	-4	176	YES
2000	99-00	-3	47	YES
2001	01-02	-2	96	YES
2002	01-02	-1		NO
2003	03-04		138	YES
2004	03-04	1	206	YES

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BMP 07 Coverage: Public Information Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 7 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

Test for Condition 1

Year	Report Period	BMP 7 Implementation Year	RU Has Public Information Program?
1999	99-00	-3	
2000	99-00	-2	
2001	01-02	-1	
2002	01-02		YES
2003	03-04	1	YES
2004	03-04	2	YES

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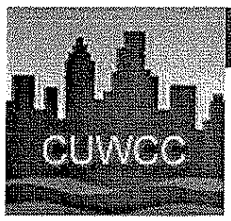

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BMP 08 Coverage: School Education Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? Yes

Warning: The BMP 8 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

Test for Condition 1

Year	Report Period	BMP 8 Implementation Year	RU Has School Education Program?
1999	99-00	-3	
2000	99-00	-2	
2001	01-02	-1	
2002	01-02		NO
2003	03-04	1	NO
2004	03-04	2	YES

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BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet three conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.
OR
Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.
OR
Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

Test for Condition 1

Year	Report Period	BMP 9 Implementation Year	Ranked Com. Use	Ranked Ind. Use	Ranked Inst. Use
1999	99-00	-4	NO	NO	NO
2000	99-00	-3	NO	NO	NO
2001	01-02	-2	NO	NO	NO
2002	01-02	-1	NO	NO	NO
2003	03-04		NO	NO	NO
2004	03-04	1	YES	YES	YES

Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2004	26	1	1
Credit for Surveys Completed Prior to Implementation of Reporting Databases			
Total + Credit	26	1	1
CII Accounts in Base Year	1,071	5	25
RU Survey Coverage as % of Base Year CII Accounts	2.4%	20.0%	4.0%
Coverage Requirement by Year 1 of Implementation per Exhibit 1	0.5%	0.5%	0.5%

RU on Schedule to Meet 10 Year Coverage Requirement	YES	YES	YES

Test for Condition 2a

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met
1999	99-00	-4	21	0.9%		YES
2000	99-00	-3	23	1.0%		YES
2001	01-02	-2	23	1.0%		YES
2002	01-02	-1	23	1.0%		YES
2003	03-04					YES
2004	03-04	1	29	1.3%	0.5%	NO

Test for Condition 2c

Total BMP 9 Surveys + Credit	28	
BMP 9 Survey Coverage	2.5%	
BMP 9 Performance Target Coverage		
BMP 9 Survey + Performance Target Coverage	~~2.5%~~	10% 3.8% = 6.2
Combined Coverage Equals or Exceeds Coverage Requirement?	YES	

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BMP 11

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Memorandum of Understanding

BMP 11 Coverage: Conservation Pricing

Reporting Unit:

City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Warning: The BMP 11 form is not 100% complete for one or more report years. This may produce inaccurate results for this report.

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates);rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

Test for Condition 1

Year	Report Period	RU Employed Non Conserving Rate Structure	RU Meets BMP 11 Coverage Requirement
1999	99-00	NO	YES
2000	99-00	NO	YES
2001	01-02	NO	YES
2002	01-02	NO	YES
2003	03-04	NO	YES
2004	03-04	NO	YES

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BMP 14
03-04

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.

An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Report Year 2002 **Reporting Unit In Compliance**

Click to view BMP 14 Detail Report

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filed with CUWCC	ROR Ordinance in Effect	Exhibit 6 Coverage Req'mt (AF)	Toilet Replacement Program Water Savings (AF)
2003	Yes	No	No	44.25	
2004	No	No	No	125.07	913 AF
2005	No	No	No	235.89	
2006	No	No	No	371.09	
2007	No	No	No	525.84	
2008	No	No	No	696.04	
2009	No	No	No	878.18	
2010	No	No	No	1069.30	
2011	No	No	No	1266.87	
2012	No	No	No	1468.75	

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BMP 14
03-04

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Memorandum of Understanding

BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.

An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Click to view Exhibit 6 Cvrg Detail Report

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filed with CUWCC	ROR Ordinance in Effect	Exhibit 6 Coverage Req'mt (AF)	Toilet Replacement Program Water Savings* (AF)
2003	Yes	No	No	44.25	726.90
2004	Yes	No	No	125.07	913.00
2005	No	No	No	235.89	
2006	No	No	No	371.09	
2007	No	No	No	525.84	
2008	No	No	No	696.04	
2009	No	No	No	878.18	
2010	No	No	No	1069.30	
2011	No	No	No	1266.87	
2012	No	No	No	1468.75	

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

BMP 14 COVERAGE STATUS SUMMARY as of 2004:
Water supplier is meeting coverage requirements for this BMP.

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APPENDIX H-4

2005 Best Management Practice Reports

Reported as of 7/3

Water Supply & Reuse

Reporting Unit:
City of Rohnert Park

Year:
2005

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Sonoma County Water Agency		Local Watershed

Total AF:

Reported as of 7/3

Accounts & Water Use

Reporting Unit Name:
City of Rohnert Park

Submitted to CUWCC
12/12/2006

Year:
2005

A. Service Area Population Information:

1. Total service area population 42650

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	7590	2675	0	0
2. Multi-Family	402	800	0	0
3. Commercial	462	600	0	0
4. Industrial	2	40	0	0
5. Institutional	11	10	24	300
6. Dedicated Irrigation	250	551	0	0
7. Recycled Water	0	0	0	0
8. Other	0	0	5	500
9. Unaccounted	NA	0	NA	590
Total	8717	4676	29	1390
	Metered		**Unmetered**	

Reported as of 7/3

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Based on your signed MOU date, 06/12/2002, your Agency STRATEGY DUE DATE is:	06/11/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	7590	2065
2. Number of surveys completed:	167	94
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer	Wheel
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?		database

b. Describe how your agency tracks this information.

Information is tracked through Excel, Access and accounting databases.

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — yes
3. Estimated percent of single-family households with low-flow showerheads: — 75%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — yes
5. Estimated percent of multi-family households with low-flow showerheads: — 75%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

   Saturation was determined based on device distribution to program participants. Programs include over-the-counter distribution, CBO giveaways and through the toilet replacement program.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 3/18/1997

   b. Describe your targeting/ marketing strategy.

   Low flow showerheads and aerators are distributed into homes as part of the City's residential water audit program. The devices are also available at City offices. Bill stuffers go out annually to inform the public that low flow devices are available at City Hall.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	1000	14
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	750	750

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   Devices that are distributed through the City's residential audiit program

are tracked through a Access database. Thedevices that are given away over the counter are tracked based on the total number purchased.

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Does your agency own or operate a water distribution system?	yes
2. Has your agency completed a pre-screening system audit for this reporting year?	yes
3. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	4675.6
b. Determine other system verifiable uses (AF)	800
c. Determine total supply into the system (AF)	6066
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	0.90
4. Does your agency keep necessary data on file to verify the values entered in question 3?	yes
5. Did your agency complete a full-scale audit during this report year?	no
6. Does your agency maintain in-house records of audit results or completed AWWA M36 audit worksheets for the completed audit which could be forwarded to CUWCC?	yes
7. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

The City has staff trained and available for leak detection and system repair.

B. Survey Data

1. Total number of miles of distribution system line.	116
2. Number of miles of distribution system line surveyed.	0

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Voluntary Questions (Not used to calculate compliance)

E. Volumes

	Estimated	Verified
1. Volume of raw water supplied to the system:		
2. Volume treated water supplied into the		

system:

3. Volume of water exported from the system:

4. Volume of billed authorized metered consumption:

5. Volume of billed authorized unmetered consumption:

6. Volume of unbilled authorized metered consumption:

7. Volume of unbilled authorized unmetered consumption:

F. Infrastructure and Hydraulics

1. System input (source or master meter) volumes metered at the entry to the:

2. How frequently are they tested and calibrated?

3. Length of mains:

4. What % of distribution mains are rigid pipes (metal, ac, concrete)?

5. Number of service connections:

6. What % of service connections are rigid pipes (metal)?

7. Are residential properties fully metered?

8. Are non-residential properties fully metered?

9. Provide an estimate of customer meter under-registration:

10. Average length of customer service line from the main to the point of the meter:

11. Average system pressure:

12. Range of system pressures: From to

13. What percentage of the system is fed from gravity feed?

14. What percentage of the system is fed by pumping and re-pumping?

G. Maintenance Questions

1. Who is responsible for providing, testing, repairing and replacing customer meters?

2. Does your agency test, repair and replace your meters on a regular timed schedule?

a. If yes, does your agency test by meter size or customer category?:

b. If yes to meter size, please provide the frequency of testing by meter size:

Less than or equal to 1"

1.5" to 2"

3" and Larger

c. If yes to customer category, provide the frequency of testing by customer category:

SF residential

MF residential

Commercial

Industrial & Institutional

3. Who is responsible for repairs to the customer lateral or customer service line?

4. Who is responsible for service line repairs downstream of the customer meter?

5. Does your agency proactively search for leaks using leak survey techniques or does your utility reactively repair leaks which are called in, or both?

6. What is the utility budget breakdown for:

Leak Detection	$
Leak Repair	$
Auditing and Water Loss Evaluation	$
Meter Testing	$

H. Comments

Reported as of 7/3

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Please fill out the following matrix:

Types of Billed Accounts	% Accounts Metered	% Accounts Measured (Not Metered)	% Accounts Volumetric Billing
Treated Water SF Residential Accounts	100		100
Treated Water MF Residential Accounts	100		100
Treated Water Commercial Accounts	100		100
Treated Water Industrial Accounts	100		100
Treated Water Institutional Accounts	0		0
Raw Water Residential Deliveries	0	0	0
Raw Water Non-Residential Deliveries	0	0	0

2. If your agency does not meter 100% of all treated water accounts:

a. Does your agency have a plan or program for retrofitting existing unmetered treated water connections?	Yes
b. By what date would 100% of all treated water accounts be metered?	6/30/2005
c. Number of previously unmetered accounts fitted with meters during report year:	19

3. If your agency does bill 100% of all treated water accounts by volume of use:

a. By what date (Year must be four digit mm/dd/yyyy) will all customers with meters be billed by volume of use?

4. If your agency does not meter or measure 100% of all raw water delivery fields (as listed in quesiton 1f & 1g), does your agency intend to develop a program for measuring all raw water deliveries?	No
5. If your agency does not volumetrically bill 100% of all raw water delivery, does your agency intend to develop a	No

program for billing all raw water deliveries by volume of use?

6. Does your agency meter by volume of use all municipal or governmental accounts?: No

a. If no, which types of accounts are not included:

Landscape Irrigation
Municipal Facilities
Utility Owned Services
Fire Flows or Hydrant Uses

7. Does your agency bill by volume of use all municipal or governmental accounts? No

a. If no, which types of accounts are not included:

Landscape Irrigation
Municipal Facilities
Utility Owned Services
Fire Flows or Hydrant Uses

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no

a. If YES, when was the feasibility study conducted? (mm/dd/yy)

b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters: 275

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period 12

D. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

19 meters were fitted during this FY through the Commercial Meter Retrofit Project.

Reported as of 7/3

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	250
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	192
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF) during reporting year:	249
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF) during reporting year:	322
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	yes

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	7/1/2004

b. Description of marketing / targeting strategy:

Water surveys will be offered to businesses through the Sonoma County Economic Development Board Business Water Project.

2. Number of Surveys Offered during reporting year.	642
3. Number of Surveys Completed during reporting year.	27
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	yes
b. Distribution Uniformity Analysis	yes
c. Review / Develop Irrigation Schedules	yes
d. Measure Landscape Area	yes
e. Measure Total Irrigable Area	yes
f. Provide Customer Report / Information	yes
5. Do you track survey offers and results?	yes
6. Does your agency provide follow-up surveys for previously completed surveys?	yes

a. If YES, describe below:

Follow-up generally consists of a phone call to remind the customer that incentives are available for implementing recommendations in the customer report.

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	

Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. (From BMP 4 report) 12

Total number of change-outs from mixed-use to dedicated irrigation meters since Base Year.

3. Do you offer landscape irrigation training? yes

4. Does your agency offer financial incentives to improve landscape water use efficiency? Yes

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	5000	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

New customers recieve an information packet which includes water use efficiency brochures.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? no

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **City of Rohnert Park**

BMP Form Status: **100% Complete**

Year: **2005**

A. Coverage Goal

	Single Family	Multi-Family
1. Number of **residential** dwelling units in the agency service area.	7,655	6,461
2. Coverage Goal = Total Dwelling Units x 0.048	= 678 Points	

B. Implementation

1. Does your agency offer rebates for **residential** high-efficiency washers? yes

HEW Water Factor	Number of Financial Incentives Issued	Total Value of Financial Incentives: Retail Water Agency	Wholesaler/ Grants (if applicable)	Energy Utility (if applicable)	TOTAL	POINTS AWARDED
2. **Greater than 8.5 but not exceeding 9.5** (1 point)	10	$ 500	$ 500	$ 0	$ 1,000	10
3. **Greater than 6.0 but not exceeding 8.5** (2 points)	43	$ 2,150	$ 2,150	$ 0	$ 4,300	86
4. **Less than or equal to 6.0** (3 points)	151	$ 11,325	$ 11,325	$ 0	$ 22,650	453
TOTALS:	**204**	**$ 13,975**	**$ 13,975**	**$ 0**	**$ 27,950**	**549**

C. Past Credit Points

For HEW incentives issued before July 1, 2004, select ONE of the following TWO options:

- Method One: Points based on HEW Water Factor
- Method Two: Agency earns 1 point for each HEW.

NOTE: Agency shall not receive credit for any HEW incentives where the agency did not provide a financial incentive of $25 or more.

Method One: Points based on HEW Water Factor

HEW Water Factor	Number of Financial Incentives Issued	Total Value of Financial Incentives: Retail Water Agency	Wholesaler/ Grants (if applicable)	Energy Utility (if applicable)	TOTAL	POINTS AWARDED
1. **Greater than 8.5 but not exceeding 9.5**	0	$ 0	$ 0	$ 0	$ 0	0

(1 point each)						
2. **Greater than 6.0 but not exceeding 8.5** (2 points each)	0	$ 0	$ 0	$ 0	$ 0	0
3. **Less than or equal to 6.0** (3 points each)	0	$ 0	$ 0	$ 0	$ 0	0

Method Two: Agency earns 1 point for each HEW

	Number of Financial Incentives Issued	Total Value of Water Agency Financial Incentives	POINTS AWARDED
4. **Total HEWs installed**	663	$ 49,725	663

PAST CREDIT TOTALS:	**663**	**$0**	**$0**	**$0**	**$ 49,725**	**663**

D. Rebate Program Expenditures

1. Average or Estimated Administration and Overhead $ 500

2. Is the financial incentive offered per HEW at least equal to the marginal benefits of the water savings per HEW? yes

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 7/3

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. How is your public information program implemented?
   Wholesaler implements program (none or minimal retailer participation)

Which wholesaler(s)?
Sonoma County Water Agency

Public Information Program Activity Reported By Wholesaler

Reported as of 7/3

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. How is your public information program implemented?
   Wholesaler implements program (none or minimal retailer participation)

Which wholesaler(s)?
Sonoma County Water Agency

Public Information Program Activity Reported By Wholesaler

Reported as of 7/3

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? If so, please describe activity during reporting period:	yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	462	2	0
b. Number of New Surveys Completed	1	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	22	1	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget ($/Year)	# Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option? yes

6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? yes

7. **System Calculated** annual savings (AF/yr):

CII Programs	# Device Installations
a. Ultra Low Flush Toilets	3
b. Dual Flush Toilets	0
c. High Efficiency Toilets	0
d. High Efficiency Urinals	0
e. Non-Water Urinals	0
f. Commercial Clothes Washers (coin-op only; not industrial)	19
g. Cooling Tower Controllers	0
h. Food Steamers	0
i. Ice Machines	0
j. Pre-Rinse Spray Valves	24
k. Steam Sterilizer Retrofits	0
l. X-ray Film Processors	0

8. **Estimated** annual savings (AF/yr) from agency programs not including the devices listed in Option B. 7., above:

CII Programs	Annual Savings (AF/yr)
a. Site-verified actions taken by agency:	
Direct install toilet replacement program where consultant confirmed high using toilets were replaced.	29.24
b. Non-site-verified actions taken by agency:	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	22500	20000
2. Actual Expenditures	16500	

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

Water Service Rate Structure Data by Customer Class

Number of schedules: For the following accounts, how many rate schedules does agency offer/use?		**Use of classification:** This agency:
1. **Single-family residential**	1	Uses classification in its billing system
2. **Multi-family residential**	0	Includes customers in another class
3. **Commercial**	0	Includes customers in another class
4. **Industrial**	0	Includes customers in another class
5. **Institutional/ government**	0	Includes customers in another class
6. **Dedicated irrigation** (potable water)	0	Includes customers in another class
7. **Other**	1	Uses classification in its billing system
8. **Recycled-reclaimed water**	0	Does not offer this type of water
9. **Raw water** (urban use)	0	Does not offer this type of water
10. **Wholesale** (urban use)	0	Does not offer this type of water

Sewer Service

11. Does your agency provide sewer service to your water customers?	yes
12. If yes, does sewer service use conservation rate structures?	yes
13. Has your agency made the required efforts (as prescribed in BMP 11) to have sewer services billed on conservation rates?	yes
14. What water agency activities have been undertaken during the reporting period to achieve waste water agency volumetric billing in your water agency service area?	Ordinances

B. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

C. Comments

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

1.A. Single-Family Residential Rate Schedule A

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	2259620
d. Total Revenue from Non-Volumetric Charges (Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	227093
e. Total Revenue from this category	2486713

1.A. Rate Schedule - Volumetric

Title: SF 3/4" - 1"

f. Billing Cycles/year	6
g. Service Charges/Cycle	29.92
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0
j. Non-billed Units (included in monthly service charge)	0

	$/Bill Unit	Starting At (unit qty.)
k. Tier 1	2.45	1
l. Tier 2		
m. Tier 3		
n. Tier 4		
o. Tier 5		
p. Tier 6		

q. Approximate quantity of meters/accounts on this rate schedule	7590
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	2830.42

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

7.A. Other Rate Schedule A

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	166867.27
d. Total Revenue from Non-Volumetric Charges (Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	53581.4
e. Total Revenue from this category	220448.67

7.A. Rate Schedule - Volumetric

Title: W2 - 1 inch meter

f. Billing Cycles/year	6
g. Service Charges/Cycle	21.1
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0
j. Non-billed Units (included in monthly service charge)	0

	$/Bill Unit	Starting At (unit qty.)
k. Tier 1	1.75	1
l. Tier 2		
m. Tier 3		
n. Tier 4		
o. Tier 5		
p. Tier 6		

q. Approximate quantity of meters/accounts on this rate schedule	2374
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	.278381837

Reported as of 7/3

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is a coordinator position supplied by another agency with which you cooperate in a regional conservation program ?	no
a. Partner agency's name:	
3. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	5%
b. Coordinator's Name	Darrin Jenkins
c. Coordinator's Title	City Engineer
d. Coordinator's Experience in Number of Years	1 years
e. Date Coordinator's position was created (mm/dd/yyyy)	1/2/1997
4. Number of conservation staff (FTEs), including Conservation Coordinator.	1

B. Conservation Staff Program Expenditures

1. Staffing Expenditures (In-house Only)	55000
2. BMP Program Implementation Expenditures	118000

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

   a. If YES, describe the ordinance:

   The purpose is to promote water conservation and the efficient use of potable water furnished by the City by eliminating intentional or unintentional water waste when a reasonable alternative solution is available, and by prohibiting use of equipment which is wasteful.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

   City of Rohnert Park none

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding yes

   b. Single-pass cooling systems for new connections yes

   c. Non-recirculating systems in all new conveyor or car wash systems yes

   d. Non-recirculating systems in all new commercial laundry systems yes

   e. Non-recirculating systems in all new decorative fountains yes

   f. Other, please name
   Washing cars, boats, trailers, or other equipment with a hose not equipped with a shut off nozzle. yes

2. Describe measures that prohibit water uses listed above:

   Violators are given written notice and a timeframe for rectifying the situation. Fines and disconnection of service could occur.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. yes

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. yes

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. yes

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and

found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.	yes
4. Does your agency include water softener checks in home water audit programs?	yes
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	yes

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2005**

A. Implementation

Number of Non-Efficient Toilets Replaced With 1.6 gpf Toilets During Report Year

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes
Replacement Method	**SF Accounts**	**MF Units**
2. Rebate	100	0
3. Direct Install	115	9
4. CBO Distribution	0	0
5. Other	0	0
Total	**215**	**9**

Number of Non-Efficient Toilets Replaced With 1.28 gpf High-Efficiency Toilets (HETs) During Report Year

	Single-Family Accounts	Multi-Family Units
6. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no
Replacement Method	**SF Accounts**	**MF Units**
7. Rebate	0	0
8. Direct Install	0	0
9. CBO Distribution	0	0
10. Other	0	0
Total	**0**	**0**

Number of Non-Efficient Toilets Replaced With 1.2 gpf HETs (Dual-Flush) During Report Year

	Single-Family Accounts	Multi-Family Units
11. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	no	no
Replacement Method	**SF Accounts**	**MF Units**
12. Rebate	0	0
13. Direct Install	0	0
14. CBO Distribution	0	0
15. Other	0	0

Total	**0**	**0**

16. Describe your agency's ULFT, HET, and/or Dual-Flush Toilet programs for single-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

17. Describe your agency's ULFT, HET, and/or Dual-Flush Toilet programs for multi-family residences.

Rohnert Park offers two ULFT Programs. One is a rebate of $100 for gravity flush toilets and $150 for pressure assisted toilets. The second program is a direct install program through a City-hired, licenced plumber. The City's program covers the cost of the white tank and round bowl, the customers have the option to upgraded the toilet.

18. Is a toilet retrofit on resale ordinance in effect for your service area? no

19. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

1. Estimated cost per replacement: $ 150

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

APPENDIX H-5

2006 Best Management Practice Reports

Reported as of 7/3

Water Supply & Reuse

Reporting Unit:
City of Rohnert Park

Year:
2006

Water Supply Source Information

Supply Source Name	Quantity (AF) Supplied	Supply Type
Wells	664	Groundwater
SCWA	4969	Imported

Total AF: 5633

Reported as of 7/3

Accounts & Water Use

Reporting Unit Name:
City of Rohnert Park

Submitted to
CUWCC
12/08/2006

Year:
2006

A. Service Area Population Information:

1. Total service area population 43027

B. Number of Accounts and Water Deliveries (AF)

Type	Metered		Unmetered	
	No. of Accounts	Water Deliveries (AF)	No. of Accounts	Water Deliveries (AF)
1. Single-Family	7589	2309	0	0
2. Multi-Family	405	1633	0	0
3. Commercial	447	1241	0	0
4. Industrial	2	1	0	0
5. Institutional	25	20	0	0
6. Dedicated Irrigation	273	289	0	0
7. Recycled Water	0	0	0	0
8. Other	7	142.52	0	0
9. Unaccounted	NA	0	NA	0
Total	8748	5635.52	0	0
	Metered		**Unmetered**	

Reported as of 7/3

BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Based on your signed MOU date, 06/12/2002, your Agency STRATEGY DUE DATE is:	06/11/2004
2. Has your agency developed and implemented a targeting/ marketing strategy for SINGLE-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003
3. Has your agency developed and implemented a targeting/ marketing strategy for MULTI-FAMILY residential water use surveys?	yes
a. If YES, when was it implemented?	6/13/2003

B. Water Survey Data

Survey Counts:	Single Family Accounts	Multi-Family Units
1. Number of surveys offered:	7589	2065
2. Number of surveys completed:	499	109
Indoor Survey:		
3. Check for leaks, including toilets, faucets and meter checks	yes	yes
4. Check showerhead flow rates, aerator flow rates, and offer to replace or recommend replacement, if necessary	yes	yes
5. Check toilet flow rates and offer to install or recommend installation of displacement device or direct customer to ULFT replacement program, as neccesary; replace leaking toilet flapper, as necessary	yes	yes
Outdoor Survey:		
6. Check irrigation system and timers	yes	yes
7. Review or develop customer irrigation schedule	yes	yes
8. Measure landscaped area (Recommended but not required for surveys)	yes	yes
9. Measure total irrigable area (Recommended but not required for surveys)	yes	yes
10. Which measurement method is typically used (Recommended but not required for surveys)	Odometer Wheel	
11. Were customers provided with information packets that included evaluation results and water savings recommendations?	yes	yes
12. Have the number of surveys offered and completed, survey results, and survey costs been tracked?	yes	yes
a. If yes, in what form are surveys tracked?	database	

b. Describe how your agency tracks this information.

Information is tracked through Excel, Access and accounting databases.

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 02: Residential Plumbing Retrofit

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Is there an enforceable ordinance in effect in your service area requiring replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts? — no

   a. If YES, list local jurisdictions in your service area and code or ordinance in each:

2. Has your agency satisfied the 75% saturation requirement for single-family housing units? — yes
3. Estimated percent of single-family households with low-flow showerheads: — 75%
4. Has your agency satisfied the 75% saturation requirement for multi-family housing units? — yes
5. Estimated percent of multi-family households with low-flow showerheads: — 75%
6. If YES to 2 OR 4 above, please describe how saturation was determined, including the dates and results of any survey research.

   Saturation was determined based on device distribution to program participants. Programs include over-the-counter distribution, CBO giveaways and through the toilet replacement program.

B. Low-Flow Device Distribution Information

1. Has your agency developed a targeting/ marketing strategy for distributing low-flow devices? — yes

   a. If YES, when did your agency begin implementing this strategy? — 3/18/1997

   b. Describe your targeting/ marketing strategy.

   Low flow showerheads and aerators are distributed into homes as part of the City's residential water audit program. The devices are also available at City offices. Bill stuffers go out annually to inform the public that low flow devices are available at City Hall.

Low-Flow Devices Distributed/ Installed	SF Accounts	MF Units
2. Number of low-flow showerheads distributed:	750	250
3. Number of toilet-displacement devices distributed:	0	0
4. Number of toilet flappers distributed:	0	0
5. Number of faucet aerators distributed:	500	500

6. Does your agency track the distribution and cost of low-flow devices? — yes

   a. If YES, in what format are low-flow devices tracked? — Database

   b. If yes, describe your tracking and distribution system :

   Devices that are distributed through the City's residential audiit program

are tracked through a Access database. Thedevices that are given away over the counter are tracked based on the total number purchased.

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

BMP 03: System Water Audits, Leak Detection and Repair

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Does your agency own or operate a water distribution system?	yes
2. Has your agency completed a pre-screening system audit for this reporting year?	yes
3. If YES, enter the values (AF/Year) used to calculate verifiable use as a percent of total production:	
a. Determine metered sales (AF)	~~5635~~ 5159
b. Determine other system verifiable uses (AF)	~~0~~ 307
c. Determine total supply into the system (AF)	~~5633~~ 5512
d. Using the numbers above, if (Metered Sales + Other Verifiable Uses) / Total Supply is < 0.9 then a full-scale system audit is required.	1.00
4. Does your agency keep necessary data on file to verify the values entered in question 3?	yes
5. Did your agency complete a full-scale audit during this report year?	no
6. Does your agency maintain in-house records of audit results or completed AWWA M36 audit worksheets for the completed audit which could be forwarded to CUWCC?	yes
7. Does your agency operate a system leak detection program?	yes

a. If yes, describe the leak detection program:

City hires NetSurvey to complete a leak survey within the City service area every other year.

B. Survey Data

1. Total number of miles of distribution system line.	116
2. Number of miles of distribution system line surveyed.	116

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Voluntary Questions (Not used to calculate compliance)

E. Volumes

	Estimated	Verified
1. Volume of raw water supplied to the system:		
2. Volume treated water supplied into the system:		
3. Volume of water exported from the system:		
4. Volume of billed authorized metered consumption:		
5. Volume of billed authorized unmetered consumption:		
6. Volume of unbilled authorized metered consumption:		
7. Volume of unbilled authorized unmetered consumption:		

F. Infrastructure and Hydraulics

1. System input (source or master meter) volumes metered at the entry to the:
2. How frequently are they tested and calibrated?
3. Length of mains:
4. What % of distribution mains are rigid pipes (metal, ac, concrete)?
5. Number of service connections:
6. What % of service connections are rigid pipes (metal)?
7. Are residential properties fully metered?
8. Are non-residential properties fully metered?
9. Provide an estimate of customer meter under-registration:
10. Average length of customer service line from the main to the point of the meter:
11. Average system pressure:
12. Range of system pressures: From to
13. What percentage of the system is fed from gravity feed?
14. What percentage of the system is fed by pumping and re-pumping?

G. Maintenance Questions

1. Who is responsible for providing, testing, repairing and replacing customer meters?
2. Does your agency test, repair and replace your meters on a regular timed schedule?
    a. If yes, does your agency test by meter size or customer category?:
    b. If yes to meter size, please provide the frequency of testing by meter size:
        Less than or equal to 1"

1.5" to 2"

3" and Larger

c. If yes to customer category, provide the frequency of testing by customer category:

SF residential

MF residential

Commercial

Industrial & Institutional

3. Who is responsible for repairs to the customer lateral or customer service line?

4. Who is responsible for service line repairs downstream of the customer meter?

5. Does your agency proactively search for leaks using leak survey techniques or does your utility reactively repair leaks which are called in, or both?

6. What is the utility budget breakdown for:

Leak Detection	$
Leak Repair	$
Auditing and Water Loss Evaluation	$
Meter Testing	$

H. Comments

Reported as of 7/3

BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Please fill out the following matrix:

Types of Billed Accounts	% Accounts Metered	% Accounts Measured (Not Metered)	% Accounts Volumetric Billing
Treated Water SF Residential Accounts	100		100
Treated Water MF Residential Accounts	100		100
Treated Water Commercial Accounts	100		100
Treated Water Industrial Accounts	100		100
Treated Water Institutional Accounts	100		100
Raw Water Residential Deliveries	0	0	0
Raw Water Non-Residential Deliveries	0	0	0

2. If your agency does not meter 100% of all treated water accounts:

a. Does your agency have a plan or program for retrofitting existing unmetered treated water connections?	Yes
b. By what date would 100% of all treated water accounts be metered?	6/30/2005
c. Number of previously unmetered accounts fitted with meters during report year:	1

3. If your agency does bill 100% of all treated water accounts by volume of use:

a. By what date (Year must be four digit mm/dd/yyyy) will all customers with meters be billed by volume of use?

4. If your agency does not meter or measure 100% of all raw water delivery fields (as listed in quesiton 1f & 1g), does your agency intend to develop a program for measuring all raw water deliveries?	No
5. If your agency does not volumetrically bill 100% of all raw water delivery, does your agency intend to develop a	No

program for billing all raw water deliveries by volume of use?

6. Does your agency meter by volume of use all municipal or governmental accounts?: No

a. If no, which types of accounts are not included:

Landscape Irrigation
Municipal Facilities
Utility Owned Services
Fire Flows or Hydrant Uses

7. Does your agency bill by volume of use all municipal or governmental accounts? No

a. If no, which types of accounts are not included:

Landscape Irrigation
Municipal Facilities
Utility Owned Services
Fire Flows or Hydrant Uses

B. Feasibility Study

1. Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? no

a. If YES, when was the feasibility study conducted? (mm/dd/yy)

b. Describe the feasibility study:

2. Number of CII accounts with mixed-use meters: 275

3. Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period 7

D. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 05: Large Landscape Conservation Programs and Incentives

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Water Use Budgets

1. Number of Dedicated Irrigation Meter Accounts:	272
2. Number of Dedicated Irrigation Meter Accounts with Water Budgets:	245
3. Budgeted Use for Irrigation Meter Accounts with Water Budgets (AF) during reporting year:	296
4. Actual Use for Irrigation Meter Accounts with Water Budgets (AF) during reporting year:	343
5. Does your agency provide water use notices to accounts with budgets each billing cycle?	yes

B. Landscape Surveys

1. Has your agency developed a marketing / targeting strategy for landscape surveys?	yes
a. If YES, when did your agency begin implementing this strategy?	7/1/2004

b. Description of marketing / targeting strategy:

Water surveys will be offered to businesses through the Sonoma County Economic Development Board Business Water Project.

2. Number of Surveys Offered during reporting year.	747
3. Number of Surveys Completed during reporting year.	42
4. Indicate which of the following Landscape Elements are part of your survey:	
a. Irrigation System Check	yes
b. Distribution Uniformity Analysis	yes
c. Review / Develop Irrigation Schedules	yes
d. Measure Landscape Area	yes
e. Measure Total Irrigable Area	yes
f. Provide Customer Report / Information	yes
5. Do you track survey offers and results?	yes
6. Does your agency provide follow-up surveys for previously completed surveys?	yes

a. If YES, describe below:

Follow-up generally consists of a phone call to remind the customer that incentives are available for implementing recommendations in the customer report.

C. Other BMP 5 Actions

1. An agency can provide mixed-use accounts with ETo-based landscape budgets in lieu of a large landscape survey program. Does your agency provide mixed-use accounts with landscape budgets?	no
2. Number of CII mixed-use accounts with landscape budgets.	0

Number of CII accounts with mixed-use meters retrofitted with dedicated irrigation meters during reporting period. (From BMP 4 report) 7

Total number of change-outs from mixed-use to dedicated irrigation meters since Base Year.

3. Do you offer landscape irrigation training? yes

4. Does your agency offer financial incentives to improve landscape water use efficiency? yes

Type of Financial Incentive:	Budget (Dollars/ Year)	Number Awarded to Customers	Total Amount Awarded
a. Rebates	15000	0	0
b. Loans	0	0	0
c. Grants	0	0	0

5. Do you provide landscape water use efficiency information to new customers and customers changing services? yes

a. If YES, describe below:

New customers recieve an information packet which includes water use efficiency brochures.

6. Do you have irrigated landscaping at your facilities? yes

a. If yes, is it water-efficient? yes

b. If yes, does it have dedicated irrigation metering? no

7. Do you provide customer notices at the start of the irrigation season? yes

8. Do you provide customer notices at the end of the irrigation season? yes

D. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

E. Comments

Reported as of 7/3

BMP 06: High-Efficiency Washing Machine Rebate Programs

Reporting Unit: **City of Rohnert Park**

BMP Form Status: **100% Complete**

Year: **2006**

A. Coverage Goal

	Single Family	Multi-Family
1. Number of **residential** dwelling units in the agency service area.	7,655	6,461
2. Coverage Goal = Total Dwelling Units x 0.048	= 678 Points	

B. Implementation

1. Does your agency offer rebates for **residential** high-efficiency washers? yes

HEW Water Factor	Number of Financial Incentives Issued	Total Value of Financial Incentives: Retail Water Agency	Wholesaler/ Grants (if applicable)	Energy Utility (if applicable)	TOTAL	POINTS AWARDED
2. **Greater than 8.5 but not exceeding 9.5** (1 point)	17	$ 1,100	$ 600	$ 0	$ 1,700	17
3. **Greater than 6.0 but not exceeding 8.5** (2 points)	1	$ 100	$ 0	$ 0	$ 100	2
4. **Less than or equal to 6.0** (3 points)	129	$ 11,350	$ 8,000	$ 0	$ 19,350	387
TOTALS:	**147**	**$ 12,550**	**$ 8,600**	**$ 0**	**$ 21,150**	**406**

C. Past Credit Points

For HEW incentives issued before July 1, 2004, select ONE of the following TWO options:

- Method One: Points based on HEW Water Factor
- Method Two: Agency earns 1 point for each HEW.

NOTE: Agency shall not receive credit for any HEW incentives where the agency did not provide a financial incentive of $25 or more.

Method One: Points based on HEW Water Factor

HEW Water Factor	Number of Financial Incentives Issued	Total Value of Water Agency Financial Incentives	POINTS AWARDED
1. **Greater than 8.5 but not exceeding 9.5** (1 point each)	0	$ 0	0

2. **Greater than 6.0 but not exceeding 8.5** (2 points each)	0	$ 0	0
3. **Less than or equal to 6.0** (3 points each)	0	$ 0	0

Method Two: Agency earns 1 point for each HEW

	Number of Financial Incentives Issued	Total Value of Water Agency Financial Incentives	POINTS AWARDED
4. **Total HEWs installed**	663	$ 49,725	663
PAST CREDIT TOTALS:	**663**	**$ 49,725**	**663**

D. Rebate Program Expenditures

1. Average or Estimated Administration and Overhead — $ 500

2. Is the financial incentive offered per HEW at least equal to the marginal benefits of the water savings per HEW? — yes

E. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? — no

   a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

F. Comments

Reported as of 7/3

BMP 07: Public Information Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. How is your public information program implemented?
   Wholesaler implements program (none or minimal retailer participation)

Which wholesaler(s)?
Sonoma County Water Agency

Public Information Program Activity Reported By Wholesaler

Reported as of 7/3

BMP 08: School Education Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. How is your public information program implemented?
   Wholesaler implements program (none or minimal retailer participation)

Which wholesaler(s)?
Sonoma County Water Agency

Public Information Program Activity Reported By Wholesaler

Reported as of 7/3

BMP 09: Conservation Programs for CII Accounts

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Has your agency identified and ranked COMMERCIAL customers according to use?	yes
2. Has your agency identified and ranked INDUSTRIAL customers according to use?	yes
3. Has your agency identified and ranked INSTITUTIONAL customers according to use?	yes

Option A: CII Water Use Survey and Customer Incentives Program

4. Is your agency operating a CII water use survey and customer incentives program for the purpose of complying with BMP 9 under this option? If so, please describe activity during reporting period:	yes

CII Surveys	Commercial Accounts	Industrial Accounts	Institutional Accounts
a. Number of New Surveys Offered	447	2	25
b. Number of New Surveys Completed	7	0	0
c. Number of Site Follow-ups of Previous Surveys (within 1 yr)	0	0	0
d. Number of Phone Follow-ups of Previous Surveys (within 1 yr)	1	0	0

CII Survey Components	Commercial Accounts	Industrial Accounts	Institutional Accounts
e. Site Visit	yes	yes	yes
f. Evaluation of all water-using apparatus and processes	yes	yes	yes
g. Customer report identifying recommended efficiency measures, paybacks and agency incentives	yes	yes	yes

Agency CII Customer Incentives	Budget ($/Year)	# Awarded to Customers	Total $ Amount Awarded
h. Rebates	0	0	0
i. Loans	0	0	0
j. Grants	0	0	0
k. Others	0	0	0

Option B: CII Conservation Program Targets

5. Does your agency track CII program interventions and water savings for the purpose of complying with BMP 9 under this option? yes

6. Does your agency document and maintain records on how savings were realized and the method of calculation for estimated savings? yes

7. **System Calculated** annual savings (AF/yr):

CII Programs	# Device Installations
a. Ultra Low Flush Toilets	6
b. Dual Flush Toilets	0
c. High Efficiency Toilets	0
d. High Efficiency Urinals	0
e. Non-Water Urinals	0
f. Commercial Clothes Washers (coin-op only; not industrial)	18
g. Cooling Tower Controllers	0
h. Food Steamers	0
i. Ice Machines	0
j. Pre-Rinse Spray Valves	0
k. Steam Sterilizer Retrofits	0
l. X-ray Film Processors	0

8. **Estimated** annual savings (AF/yr) from agency programs not including the devices listed in Option B. 7., above:

CII Programs	Annual Savings (AF/yr)
a. Site-verified actions taken by agency:	29.24
Toilets installed by consultant.	
b. Non-site-verified actions taken by agency:	0

B. Conservation Program Expenditures for CII Accounts

	This Year	Next Year
1. Budgeted Expenditures	22500	20000
2. Actual Expenditures	22500	

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP? No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

Water Service Rate Structure Data by Customer Class

Number of schedules: For the following accounts, how many rate schedules does agency offer/use?		**Use of classification:** This agency:
1. **Single-family residential**	1	Uses classification in its billing system
2. **Multi-family residential**	0	Includes customers in another class
3. **Commercial**	0	Includes customers in another class
4. **Industrial**	0	Includes customers in another class
5. **Institutional/ government**	0	Includes customers in another class
6. **Dedicated irrigation** (potable water)	0	Includes customers in another class
7. **Other**	3	Uses classification in its billing system
8. **Recycled-reclaimed water**	0	Does not serve this type of customer
9. **Raw water** (urban use)	0	Does not serve this type of customer
10. **Wholesale** (urban use)	0	Does not serve this type of customer

Sewer Service

11. Does your agency provide sewer service to your water customers?	yes
12. If yes, does sewer service use conservation rate structures?	yes
13. Has your agency made the required efforts (as prescribed in BMP 11) to have sewer services billed on conservation rates?	yes
14. What water agency activities have been undertaken during the reporting period to achieve waste water agency volumetric billing in your water agency service area?	Ordinances

B. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	No

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

C. Comments

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

1.A. Single-Family Residential Rate Schedule A

a. Water Rate Structure	Increasing Block
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	2114208.29
d. Total Revenue from Non-Volumetric Charges (Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	1348709.36
e. Total Revenue from this category	3462917.65

1.A. Rate Schedule - Volumetric

Title: WR 3/4 - 1"

f. Billing Cycles/year	6
g. Service Charges/Cycle	29.92
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0
j. Non-billed Units (included in monthly service charge)	0

	$/Bill Unit	Starting At (unit qty.)
k. Tier 1	2.57	20
l. Tier 2	2.2	0
m. Tier 3	0	0
n. Tier 4	0	0
o. Tier 5	0	0
p. Tier 6	0	0

q. Approximate quantity of meters/accounts on this rate schedule	7547
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	887641

BMP 11: Conservation Pricing

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

7.A. Other Rate Schedule A

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	225682.1
d. Total Revenue from Non-Volumetric Charges (Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	75798.7
e. Total Revenue from this category	301480.8

7.A. Rate Schedule - Volumetric

Title: W2 - 1"

f. Billing Cycles/year	6
g. Service Charges/Cycle	49.2
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0
j. Non-billed Units (included in monthly service charge)	0

	$/Bill Unit	Starting At (unit qty.)
k. Tier 1	2.57	0
l. Tier 2	0	0
m. Tier 3	0	0
n. Tier 4	0	0
o. Tier 5	0	0
p. Tier 6	0	0

q. Approximate quantity of meters/accounts on this rate schedule	417
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	90869

7.B. Other Rate Schedule B

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	260911.37
d. Total Revenue from Non-Volumetric Charges	

(Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	64358.75
e. Total Revenue from this category	325270.12

7.B. Rate Schedule - Volumetric

Title: W3 - 1.5"

f. Billing Cycles/year	6
g. Service Charges/Cycle	72.34
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0
j. Non-billed Units (included in monthly service charge)	0

	$/Bill Unit	Starting At (unit qty.)
k. Tier 1	2.57	0
l. Tier 2	0	0
m. Tier 3	0	0
n. Tier 4	0	0
o. Tier 5	0	0
p. Tier 6	0	0

q. Approximate quantity of meters/accounts on this rate schedule	212
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	105455

7.C. Other Rate Schedule C

a. Water Rate Structure	Uniform
b. Sewer Rate Structure	Uniform
c. Total Revenue from only Volumetric Charges	645435.41
d. Total Revenue from Non-Volumetric Charges (Includes fixed fees, surcharges, minimum usage charges, monthly service charges, meter charges etc.)	88385.1
e. Total Revenue from this category	733820.51

7.C. Rate Schedule - Volumetric

Title: W4 - 2"

f. Billing Cycles/year	6
g. Service Charges/Cycle	72.34
h. Gallons/Bill Unit	1000
i. Minimum Use/Cycle	0

j. Non-billed Units (included in monthly service charge)		0
	$/Bill Unit	**Starting At (unit qty.)**
k. Tier 1	2.57	0
l. Tier 2	0	0
m. Tier 3	0	0
n. Tier 4	0	0
o. Tier 5	0	0
p. Tier 6	0	0

q. Approximate quantity of meters/accounts on this rate schedule	210
r. Are elevation charges included?	no
s. Approximate total annual water usage (AF) from customers on this rate schedule	259094

Reported as of 7/3

BMP 12: Conservation Coordinator

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

1. Does your Agency have a conservation coordinator?	yes
2. Is a coordinator position supplied by another agency with which you cooperate in a regional conservation program ?	no
a. Partner agency's name:	Sonoma County Water Agency
3. If your agency supplies the conservation coordinator:	
a. What percent is this conservation coordinator's position?	5%
b. Coordinator's Name	Darrin Jenkins
c. Coordinator's Title	City Engineer
d. Coordinator's Experience in Number of Years	2 years
e. Date Coordinator's position was created (mm/dd/yyyy)	1/2/1997
4. Number of conservation staff (FTEs), including Conservation Coordinator.	1

B. Conservation Staff Program Expenditures

1. Staffing Expenditures (In-house Only)	55000
2. BMP Program Implementation Expenditures	115000

C. "At Least As Effective As"

1. Is your agency implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 13: Water Waste Prohibition

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Requirements for Documenting BMP Implementation

1. Is a water waste prohibition ordinance in effect in your service area? yes

   a. If YES, describe the ordinance:

   The purpose is to promote water conservation and the efficient use of potable water furnished by the City by eliminating intentional or unintentional water waste when a reasonable alternative solution is available, and by prohibiting use of equipment which is wasteful.

2. Is a copy of the most current ordinance(s) on file with CUWCC? yes

   a. List local jurisdictions in your service area in the first text box and water waste ordinance citations in each jurisdiction in the second text box:

   City of Rohnert Park none

B. Implementation

1. Indicate which of the water uses listed below are prohibited by your agency or service area.

   a. Gutter flooding yes

   b. Single-pass cooling systems for new connections yes

   c. Non-recirculating systems in all new conveyor or car wash systems yes

   d. Non-recirculating systems in all new commercial laundry systems yes

   e. Non-recirculating systems in all new decorative fountains yes

   f. Other, please name
   Washing cars, boats, trailers, or other equipment with a hose not equipped with a shut off nozzle. yes

2. Describe measures that prohibit water uses listed above:

   Violators are given written notice and a timeframe for rectifying the situation. Fines and disconnection of service could occur.

Water Softeners:

3. Indicate which of the following measures your agency has supported in developing state law:

   a. Allow the sale of more efficient, demand-initiated regenerating DIR models. yes

   b. Develop minimum appliance efficiency standards that:

      i.) Increase the regeneration efficiency standard to at least 3,350 grains of hardness removed per pound of common salt used. yes

      ii.) Implement an identified maximum number of gallons discharged per gallon of soft water produced. yes

   c. Allow local agencies, including municipalities and special districts, to set more stringent standards and/or to ban on-site regeneration of water softeners if it is demonstrated and

found by the agency governing board that there is an adverse effect on the reclaimed water or groundwater supply.	yes
4. Does your agency include water softener checks in home water audit programs?	yes
5. Does your agency include information about DIR and exchange-type water softeners in educational efforts to encourage replacement of less efficient timer models?	yes

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP?	no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

Reported as of 7/3

BMP 14: Residential ULFT Replacement Programs

Reporting Unit:	BMP Form Status:	Year:
City of Rohnert Park	**100% Complete**	**2006**

A. Implementation

Number of Non-Efficient Toilets Replaced With 1.6 gpf Toilets During Report Year

	Single-Family Accounts	Multi-Family Units
1. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes
Replacement Method	**SF Accounts**	**MF Units**
2. Rebate	37	6
3. Direct Install	0	0
4. CBO Distribution	0	0
5. Other	0	0
Total	**37**	**6**

Number of Non-Efficient Toilets Replaced With 1.28 gpf High-Efficiency Toilets (HETs) During Report Year

	Single-Family Accounts	Multi-Family Units
6. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes
Replacement Method	**SF Accounts**	**MF Units**
7. Rebate	0	0
8. Direct Install	0	0
9. CBO Distribution	0	0
10. Other	0	0
Total	**0**	**0**

Number of Non-Efficient Toilets Replaced With 1.2 gpf HETs (Dual-Flush) During Report Year

	Single-Family Accounts	Multi-Family Units
11. Does your Agency have program(s) for replacing high-water-using toilets with ultra-low flush toilets?	yes	yes
Replacement Method	**SF Accounts**	**MF Units**
12. Rebate	6	0
13. Direct Install	0	0
14. CBO Distribution	0	0

15. Other	0	0
Total	**6**	**0**

16. Describe your agency's ULFT, HET, and/or Dual-Flush Toilet programs for single-family residences.

Rohnert Park offers $25 for the installation of 1.6gpf toilet and $125 for the installation of an HET.

17. Describe your agency's ULFT, HET, and/or Dual-Flush Toilet programs for multi-family residences.

Rohnert Park offers $25 for the installation of 1.6gpf toilet and $125 for the installation of an HET.

18. Is a toilet retrofit on resale ordinance in effect for your service area? no

19. List local jurisdictions in your service area in the left box and ordinance citations in each jurisdiction in the right box:

B. Residential ULFT Program Expenditures

1. Estimated cost per replacement: $ 50

C. "At Least As Effective As"

1. Is your AGENCY implementing an "at least as effective as" variant of this BMP? no

a. If YES, please explain in detail how your implementation of this BMP differs from Exhibit 1 and why you consider it to be "at least as effective as."

D. Comments

APPENDIX H-6

2005/06 Coverage Reports

CUWCC

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You are viewing coverage for:

BMP 01
05-06

YRs DN - UP

BMPs DN - UP

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Memorandum of Understanding

BMP 01 Coverage: Water Survey Programs for Single-Family and Multi-Family Residential Customers

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

A Reporting Unit (RU) must meet three conditions to satisfy strict compliance for BMP 1.

Condition 1: Adopt survey targeting and marketing strategy on time

Condition 2: Offer surveys to 20% of SF accounts and 20% of MF units during report period

Condition 3: Be on track to survey 15% of SF accounts and 15% of MF units within 10 years of implementation start date.

Test for Condition 1

		Single-Family	Multi-Family
City of Rohnert Park to Implement Targeting/Marketing Program by:		2004	
Year City of Rohnert Park Reported Implementing Targeting/Marketing Program:		2003	2003
City of Rohnert Park Met Targeting/Marketing Coverage Requirement:		YES	YES

Test for Condition 2

			Single-Family	Multi-Family
Survey Program to Start by:	2003	Residential Survey Offers (%)	198.29%	63.92%
Reporting Period:	05-06	Survey Offers ≥ 20%	YES	YES

Test for Condition 3

AUG - 1 2007

Completed Residential Surveys

	Single Family	Multi-Family
Total Completed Surveys 1999 - 2006:	666	203
Credit for Surveys Completed Prior to Implementation of Reporting Database		
Total + Credit	666	203
Residential Accounts in Base Year	7,655	6,461
City of Rohnert Park Survey Coverage as % of Base Year Residential Accounts	8.70%	3.14%
Coverage Requirement by Year 3 of Implementation per Exhibit 1	2.50%	2.50%
City of Rohnert Park on Schedule to Meet 10-Year Coverage Requirement	ON TRACK	ON TRACK

BMP 01 COVERAGE STATUS SUMMARY:
Water supplier is on track to meet the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 02
05-06

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Memorandum of Understanding

BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one of three conditions to satisfy strict compliance for BMP 2.

Condition 1: The agency has demonstrated that 75% of SF accounts and 75% of MF units constructed prior to 1992 are fitted with low-flow showerheads.

Condition 2: An enforceable ordinance requiring the replacement of high-flow showerheads and other water use fixtures with their low-flow counterparts is in place for the agency's service area.

Condition 3: The agency has distributed or directly installed low-flow showerheads and other low-flow plumbing devices to not less than 10% of single-family accounts and 10% of multi-family units constructed prior to 1992 during the reporting period.

Test for Condition 1

		Single-Family		Multi-Family	
Report Year	Report Period	Reported Saturation	Saturation ≥ 75%?	Reported Saturation	Saturation ≥ 75%?
1999	99-00	52.00%	NO	45.00%	NO
2000	99-00	61.00%	NO	55.00%	NO
2001	01-02	67.00%	NO	61.00%	NO
2002	01-02	71.00%	NO	70.00%	NO
2003	03-04	75.00%	YES	77.00%	YES
2004	03-04	75.00%	YES	75.00%	YES
2005	05-06	75.00%	YES	75.00%	YES
2006	05-06	75.00%	YES	75.00%	YES

Test for Condition 2

Report Year	Report Period	City of Rohnert Park has ordinance requiring showerhead retrofit?
1999	99-00	NO
2000	99-00	NO

2001	01-02	NO
2002	01-02	NO
2003	03-04	NO
2004	03-04	NO
2005	05-06	NO
2006	05-06	NO

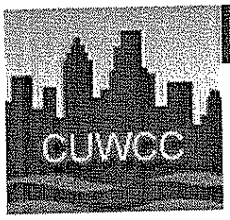
Test for Condition 3

Reporting Period: 05-06

1992 SF Accounts	Num. Showerheads Distributed to SF Accounts	Single-Family Coverage Ratio	SF Coverage Ratio > 10%
8,366	1,750	20.9%	YES

1992 MF Accounts	Num. Showerheads Distributed to MF Accounts	Multi-Family Coverage Ratio	MF Coverage Ratio > 10%
4,306	264	6.1%	NO

BMP 2 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.



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BMP 05
05-06

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Memorandum of Understanding

BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet three conditions to comply with BMP 5.

Condition 1: Develop water budgets for 90% of its dedicated landscape meter accounts within four years of the date implementation is to start.

Condition 2: (a) Offer landscape surveys to at least 20% of its CII accounts with mixed use meters each report cycle and be on track to survey at least 15% of its CII accounts with mixed use meters within 10 years of the date implementation is to start OR (b) Implement a dedicated landscape meter retrofit program for CII accounts with mixed use meters or assign landscape budgets to mixed use meters.

Condition 3: Implement and maintain customer incentive program(s) for irrigation equipment retrofits.

Test for Condition 1

Year	Report Period	BMP 5 Implementation Year	No. of Irrigation Meter Accounts	No. of Irrigation Accounts with Budgets	Budget Coverage Ratio	90% Coverage Met by Year 4
1999	99-00					NA
2000	99-00					NA
2001	01-02					NA
2002	01-02					NA
2003	03-04		251			NA
2004	03-04		281	124	44.1%	NA
2005	05-06	1	250	192	76.8%	NA
2006	05-06	2	272	245	90.1%	NA

Test for Condition 2a (survey offers)

Select Reporting Period:	05-06
Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts	214.4%

Test for Condition 3

Report Year	Report Period	BMP 5 Implementation Year	RU offers financial incentives?	No. of Loans	Total Amt. Loans
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02		NO		
2003	03-04		NO		
2004	03-04		NO		
2005	05-06	1	NO		
2006	05-06	2	YES		

Report Year	Report Period	No. of Grants	Total Amt. Grants	No. of rebates	Total Amt. Rebates
1999	99-00				
2000	99-00				
2001	01-02				
2002	01-02				
2003	03-04				
2004	03-04				
2005	05-06				
2006	05-06				

BMP 5 COVERAGE STATUS SUMMARY:
Water supplier is not currently on track to meet the coverage requirements for this BMP.

Survey Offers Equal or Exceed 20% Coverage Requirement	YES

Test for Condition 2a (surveys completed)

Total Completed Landscape Surveys Reported through	69
Credit for Surveys Completed Prior to Implementation of Reporting Database	
Total + Credit	69
CII Accounts in Base Year	648
RU Survey Coverage as a % of Base Year CII Accounts	10.6%
Coverage Requirement by Year of Implementation per Exhibit 1	1.5%
RU on Schedule to Meet 10 Year Coverage Requirement	ON TRACK

Test for Condition 2b (mixed use budget or meter retrofit program)

Report Year	Report Period	BMP 5 Implementation Year	Agency has mix-use budget program	No. of mixed-use budgets
1999	99-00			
2000	99-00			
2001	01-02			
2002	01-02		NO	
2003	03-04		NO	
2004	03-04		NO	
2005	05-06	1	NO	
2006	05-06	2	NO	

Report Year	Report Period	BMP 4 Implementation Year	No. of mixed use CII accounts	No. of mixed use CII accounts fitted with irrig. meters
1999	99-00			
2000	99-00			
2001	01-02			
2002	01-02			
2003	03-04			
2004	03-04		852	
2005	05-06	1	275	12
2006	05-06	2	275	7

BMP 06 Coverage: High-Efficiency Washing Machine Rebate Programs

You are viewing coverage for:

BMP 06
05-06

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet two conditions to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive to customers for the purchase of high-efficiency washers with water factors of 9.5 or less.

Condition 2: Meet Coverage Goal (CG=Total Dwelling Units x 0.048) by January 1, 2007.

Test for Condition 1

Agency offers rebates for residential high-efficiency washers with water factors of 9.5 or less: YES

Test for Condition 2

Coverage Goal:	678
Total Coverage Points Awarded (incl. past credit):	1,069
% of Coverage Goal:	1.58

BMP 06 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 07
05-06

BMP 07 Coverage: Public Information Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 7.

Condition 1: Implement and maintain a public information program consistent with BMP 7's definition.

Test for Condition 1

Year	Report Period	BMP 7 Implementation Year	RU Has Public Information Program?
1999	99-00		YES
2000	99-00		YES
2001	01-02		YES
2002	01-02		YES
2003	03-04		YES
2004	03-04	1	YES
2005	05-06	2	YES
2006	05-06	3	YES

BMP 7 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 08
05-06

YRs DN - UP

BMPs DN - UP

Print Report

Logout

Memorandum of Understanding

BMP 08 Coverage: School Education Programs

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 8.

Condition 1: Implement and maintain a school education program consistent with BMP 8's definition.

Test for Condition 1

Year	Report Period	BMP 8 Implementation Year	RU Has School Education Program?
1999	99-00		NO
2000	99-00		NO
2001	01-02		NO
2002	01-02		NO
2003	03-04		NO
2004	03-04	1	YES
2005	05-06	2	YES
2006	05-06	3	YES

BMP 8 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.

BMP 09 Coverage: Conservation Programs for CII Accounts

You are viewing coverage for:

BMP 09
05-06

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period?	No

An agency must meet two conditions to comply with BMP 9.

Condition 1: Agency has identified and ranked by use commercial, industrial, and institutional accounts.

Condition 2(a): Agency is on track to survey 10% of commercial accounts, 10% of industrial accounts, and 10% of institutional accounts within 10 years of date implementation to commence.
OR
Condition 2(b): Agency is on track to reduce CII water use by an amount equal to 10% of baseline use within 10 years of date implementation to commence.
OR
Condition 2(c): Agency is on track to meet the combined target as described in Exhibit 1 BMP 9 documentation.

Test for Condition 1

Year	Report Period	BMP 9 Implementation Year	Ranked Com. Use	Ranked Ind. Use	Ranked Inst. Use
1999	99-00		NO	NO	NO
2000	99-00		NO	NO	NO
2001	01-02		NO	NO	NO
2002	01-02		NO	NO	NO
2003	03-04		NO	NO	NO
2004	03-04		YES	YES	YES
2005	05-06	1	YES	YES	YES
2006	05-06	2	YES	YES	YES

Test for Condition 2a

	Commercial	Industrial	Institutional
Total Completed Surveys Reported through 2006	34	1	1

Credit for Surveys Completed Prior to Implementation of Reporting Databases			
Total + Credit	34	1	1
CII Accounts in Base Year	618	5	25
RU Survey Coverage as % of Base Year CII Accounts	5.5%	20.0%	4.0%
Coverage Requirement by Year 2 of Implementation per Exhibit 1	1.0%	1.0%	1.0%
RU on Schedule to Meet 10 Year Coverage Requirement	YES	YES	YES

Test for Condition 2b

Year	Report Period	BMP 9 Implementation Year	Performance Target Savings (AF/yr)	Performance Target Savings Coverage	Performance Target Savings Coverage Requirement	Coverage Requirement Met
1999	99-00		26	1.1%		YES
2000	99-00		28	1.2%		YES
2001	01-02		28	1.2%		YES
2002	01-02		29	1.2%		YES
2003	03-04					YES
2004	03-04		29	1.3%		YES
2005	05-06	1	29	1.3%	0.5%	YES
2006	05-06	2	29	1.3%	1.0%	YES

Test for Condition 2c

Total BMP 9 Surveys + Credit	36
BMP 9 Survey Coverage	5.6%
BMP 9 Performance Target Coverage	1.3%
BMP 9 Survey + Performance Target Coverage	6.8%
Combined Coverage Equals or Exceeds Coverage Requirement?	YES

BMP 9 COVERAGE STATUS SUMMARY:
Water supplier is on track to meet the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 11
05-06

YRs DN - UP

BMPs DN - UP

Print Report

Logout

Memorandum of Understanding

BMP 11 Coverage: Conservation Pricing

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 11.

Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing.
Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

a) Non-conserving pricing provides no incentives to customers to reduce use. Such pricing is characterized by one or more of the following components: rates in which the unit price decreases as the quantity used increases (declining block rates);rates that involve charging customers a fixed amount per billing cycle regardless of the quantity used; pricing in which the typical bill is determined by high fixed charges and low commodity charges.

b) Conservation pricing provides incentives to customers to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service; and billing for water and sewer service based on metered water use. Conservation pricing is also characterized by one or more of the following components: rates in which the unit rate is constant regardless of the quantity used (uniform rates) or increases as the quantity used increases (increasing block rates); seasonal rates or excess-use surcharges to reduce peak demands during summer months; rates based upon the longrun marginal cost or the cost of adding the next unit of capacity to the system.

Test for Condition 1

Year	Report Period	RU Employed Conserving WATER Rate Structure	RU Employed Conserving SEWER Rate Structure	RU Meets BMP 11 Coverage Requirement
1999	99-00			
2000	99-00			
2001	01-02			
2002	01-02			
2003	03-04	YES	YES	YES
2004	03-04	YES	YES	YES
2005	05-06			
2006	05-06			

All YES

BMP 11 COVERAGE STATUS SUMMARY:
Water supplier is not currently on track to meet the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 12
05-06

BMP 12 Coverage: Conservation Coordinator

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

Agency shall staff and maintain the position of conservation coordinator and provide support staff as necessary.

Test for Compliance

Report Year	Report Period	Conservation Coordinator Position Staffed?	Total Staff on Team (incl. CC)
2003	03-04	YES	3
2004	03-04	YES	3
2005	05-06	YES	1
2006	05-06	YES	1

BMP 12 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.

CUWCC

You are viewing coverage for:

BMP 13
05-06

BMP 13 Coverage: Water Waste Prohibition

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

No exemption request filed

Agency indicated "at least as effective as" implementation during report period? No

An agency must meet one condition to comply with BMP 13.

Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, single pass cooling systems in new connections, non-recirculating systems in all new conveyer car wash and commercial laundry systems, and non-recycling decorative water fountains.

Test for Condition 1

Agency or service area prohibits:

Year	Gutter Flooding	Single-Pass Cooling Systems	Single-Pass Car Wash	Single-Pass Laundry	Single-Pass Fountains	Other	RU has ordinance that meets coverage requirement
1999							
2000							
2001							
2002							
2003	YES	NO	NO	NO	NO	NO	NO
2004	YES	YES	YES	YES	YES	YES	YES
2005	YES	YES	YES	YES	YES	YES	YES
2006	YES	YES	YES	YES	YES	YES	YES

BMP 13 COVERAGE STATUS SUMMARY:
Water supplier has met the coverage requirements for this BMP.

BMP 14 Coverage: Residential ULFT Replacement Programs

You are viewing coverage for:

BMP 14
05-06

Reporting Unit:
City of Rohnert Park

MOU Exhibit 1 Coverage Requirement

A Reporting Unit (RU) must meet one of the following conditions to be in compliance with BMP 14.

Condition 1: Retrofit-on-resale (ROR) ordinance in effect in service area.

Condition 2: Water savings from toilet replacement programs equal to 90% of Exhibit 6 coverage requirement.
An agency with an exemption for BMP 14 is not required to meet one of the above conditions. This report treats an agency with missing base year data required to compute the Exhibit 6 coverage requirement as out of compliance with BMP 14.

Click to view Exhibit 6 Cvrg Detail Report

Coverage Year	BMP 14 Data Submitted to CUWCC	Exemption Filed with CUWCC	ROR Ordinance in Effect	Exhibit 6 Coverage Req'mt (AF)	Toilet Replacement Program Water Savings* (AF)
2003	YES	NO	NO	44.25	531.03
2004	YES	NO	NO	125.07	667.78
2005	NO	NO	NO	235.89	799.05
2006	NO	NO	NO	371.09	925.07
2007	NO	NO	NO	525.84	
2008	NO	NO	NO	696.04	
2009	NO	NO	NO	878.18	
2010	NO	NO	NO	1069.30	
2011	NO	NO	NO	1266.87	
2012	NO	NO	NO	1468.75	

*NOTE: Program water savings listed are net of the plumbing code. Savings are cumulative (not annual) between 1991 and the given year. Residential ULFT count data from unsubmitted forms are NOT included in the calculation.

BMP 14 COVERAGE STATUS SUMMARY as of 2006:
Water supplier is on track to meet the coverage requirements for this BMP.

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 01: Water Survey Programs for Single-Family and Multi-Family Residential Customers

As of 12/20/06

Year	Water Savings (AF)
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	0
1999	0
2000	0
2001	0
2002	0
2003	0
2004	0
2005	5
2006	17
TOTAL:	**22**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 02: Residential Plumbing Retrofit

As of 12/20/06

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0	0
1998	0	0
1999	16	16
2000	23	18
2001	27	16
2002	32	16
2003	35	15
2004	39	14
2005	44	15
2006	48	15
TOTALS:	**263**	**126**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 04: Metering with Commodity Rates for all New Connections and Retrofit of Existing

As of 12/20/06

Year	Water Savings (AF)
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	0
1999	0
2000	0
2001	0
2002	0
2003	1,116
2004	1,116
2005	1,119
2006	1,119
TOTAL:	**4,469**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 05: Large Landscape Conservation Programs and Incentives

As of 12/20/06

Year	Water Savings (AF)
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	0
1999	0
2000	0
2001	0
2002	0
2003	0
2004	118
2005	203
2006	282
TOTAL:	**603**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 06: High-Efficiency Washing Machine Rebate Programs

As of 12/20/06

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Program Freeridership Effects
1991	0	0
1992	0	0
1993	0	0
1994	0	0
1995	0	0
1996	0	0
1997	0	0
1998	0	0
1999	3	3
2000	3	3
2001	5	4
2002	5	4
2003	7	6
2004	10	9
2005	9	9
2006	9	8
TOTAL:	**51**	**46**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 09a: CII ULFT Water Savings

As of 12/20/06

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code	Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994	0	0	0
1995	0	0	0
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	0	0	0
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
2006	0	0	0
TOTALS:	**0**	**0**	**0**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for
BMP 09: Conservation Programs for CII Accounts

As of 12/20/06

Year	Water Savings (AF)
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	0
1999	26
2000	28
2001	28
2002	29
2003	0
2004	38
2005	64
2006	62
TOTAL:	**274**

California Urban Water Conservation Council

City of Rohnert Park
Water Savings (AFY) Detail Report for BMP 14: Residential ULFT Replacement Programs

As of 12/20/06

Year	Gross Water Savings (AFY)	Water Savings (AFY) Net of Plumbing Code	Water Savings (AFY) Net of Plumbing Code and Program Freeridership Effects
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994	0	0	0
1995	0	0	0
1996	0	0	0
1997	0	0	0
1998	0	0	0
1999	102	102	74
2000	141	137	100
2001	155	146	106
2002	180	165	121
2003	199	177	130
2004	215	186	137
2005	221	185	135
2006	223	179	131

TOTALS:	**1,437**	**1,276**	**934**

APPENDIX I

Water Shortage Emergency Ordinance

Chapter 13.66 WATER SHORTAGE EMERGENCY PLAN

13.66.010 Definitions.

“City” means the city of Rohnert Park acting by and through the city public works department as operator of the city water system.

“Customer” means any person, whether within or without the geographic boundaries of the city, who uses water supplied by the city.

“GPD” means gallons per day.

“Manager” is the city manager of the city of Rohnert Park.

“Person” means any person, firm, partnership, association, corporation, company, organization, or governmental entity.

“Water” means potable water. (Ord. 724 § 1, 2004)

13.66.020 Authorization.

The city manager, or his or her designee, is authorized and directed to implement the applicable provisions of this chapter upon adoption of a city council resolution determining that such implementation is necessary to protect the public health, safety, and welfare. (Ord. 724 § 1, 2004)

13.66.030 Application.

The provisions of this chapter shall apply to all persons, customers, and property served by the city. (Ord. 724 § 1, 2004)

13.66.040 Water waste prohibitions.

Nonessential uses and exemptions are those set forth in Chapter 13.62 of this Code and shall be adhered to notwithstanding any provision in this chapter. (Ord. 724 § 1, 2004)

13.66.050 Water conservation stages.

No customer of the city shall make, cause, use, or permit the use of water from the city for residential, commercial, industrial, agricultural, governmental, or any other purpose in a manner contrary to any provision of this chapter, or in an amount in excess of that use permitted by either Conservation Stage 2 or 3 when in effect as declared by separate resolution of the city council, in accordance with the provisions of this chapter.

A. Stage 1. Voluntary Conservation. In order to achieve an overall system-wide reduction goal of ten percent, all potable water customers of the city shall be requested to:

1. Apply irrigation water only during the evening and early morning hours to reduce evaporation losses;

2. Inspect all irrigation systems, repair leaks, and adjust spray heads to provide optimum coverage and eliminate avoidable over-spray;

3. For irrigation valves controlling water applied to lawns, vary the minutes of run-time consistent with fluctuations in weather;

4. Reduce minutes of run-time for each irrigation cycle if water begins to run-off to gutters and ditches before the irrigation cycle is completed;

5. Utilize water conservation incentive, rebate and giveaway programs to replace water guzzling plumbing fixtures and appliances with water efficient models;

6. Utilize city information regarding using water efficiently, reading water meters, repairing ordinary leaks, and water efficient landscape.

B. Stage 2. Mandatory Compliance — Water Alert. The city council may by resolution declare a Conservation Stage 2 upon recommendation by the city manager based on water supply and delivery projections by the city engineer that an overall system-wide reduction of twenty percent is necessary, taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply. In order to achieve an overall system-wide reduction of twenty percent, the following activities shall be prohibited:

1. Nonessential uses of water, including the following:

a. Refilling or initial filling of a swimming pool;

b. Noncommercial washing of privately-owned motor vehicles, trailers and boats except from a bucket and except that a hose equipped with a shut-off nozzle may be used to rinse a vehicle;

c. Any use of water from a fire hydrant except for fighting fires or essential construction needs;

d. Use of water for dust control at construction sites;

2. Water use by a vehicle washing facility in excess of twenty percent less than the amount used by it during the corresponding billing period in the prior year.

3. Water use for any non-residential use in excess of twenty percent less than the amount used by the customer during the corresponding billing period in the prior year.

C. Stage 3. Mandatory Compliance — Water Emergency. The city council may by resolution declare a Conservation Stage 3 upon recommendation by the city manager based on water supply and delivery projections by the city engineer that an overall system-wide reduction of thirty percent is necessary,

taking into consideration projections and estimates made by the Sonoma County Water Agency pertaining to the Russian River water supply. In order to achieve an overall system-wide reduction of thirty percent, the following activities shall be prohibited:

1. Any activities prohibited during a Conservation Stage 2.

2. Watering any residential lawn, or any commercial or industrial area lawn irrigated with potable water, at any time, day or night.

3. Planting any new landscaping, except for designated drought resistant landscaping prescribed by the city manager or designated representative.

4. All day and night-time irrigation sprinkling unless only a hand held nozzle is used. An exception will be made to permit drip irrigation for established perennial plants and trees using manual or automatic time-controlled water application.

5. Planting of new annual plants, vegetables, flowers or vines may not be planted until the Stage 3 emergency is over. (Ord. 724 § 1, 2004)

13.66.060 Exceptions and application procedures for exceptions.

Any customer of the city may make written application for an exception. Said application shall describe in detail why applicant believes an exception is justified.

A. The city manager may grant exceptions for use of water otherwise prohibited by this section upon finding and determining that failure to do so would cause an emergency condition affecting the health, sanitation, fire protection or safety of the applicant or public; or, cause an unnecessary and undue hardship on applicant or the public, including but not limited to, adverse economic impacts, such as loss of production or jobs.

B. The decision of the city manager may be appealed to the city council by submitting a written appeal to the city clerk within fifteen calendar days of the date of the decision. Upon granting any appeal, the city council may impose any conditions it determines to be just and proper. Exceptions granted by the city council shall be prepared in writing and the city council may require the exception be recorded at applicant's expense. (Ord. 724 § 1, 2004)

13.66.070 Violation—Enforcement.

The violation of each provision of this chapter, and each separate violation thereof, shall be deemed a separate offense, and shall be enforced as an infraction in accordance with Chapter 1.24 of this Code. The city may take some or all of the following actions. Fees and charges for the activities below may be established by resolution of the city council.

A. Personal contact with the customer at the address of the water service. If personal contact is unsuccessful, written notice of the violation including a date that the violation is to be corrected may be left on the premises, with a copy of the notice sent by certified mail to the customer.

B. Written notice to the customer of the water waste violation including a specified period of time to correct the violation.

C. After notice and a hearing provided in accordance with Section 13.66.080 below, the city council may authorize the installation of a flow-restricting device on the service line and require payment of a fee in amount set by city council resolution.

D. The city council may charge a water waste fee to the customer in an amount set by city council resolution.

E. After notice and a hearing provided in accordance with Section 13.66.080 below, the city council may authorize termination of water service and the charge for same shall be billed to the customer. Except in cases of extreme emergency as solely determined by the city manager, service shall not be reinstated until verified by the city manager that the violation has been corrected and all charges and fees have been paid. (Ord. 724 § 1, 2004)

13.66.080 Notice and hearing.

Before either installing a water restrictor or terminating water service, the city shall give written notice to the person responsible for the service connection to be either restricted or terminated of its intention to do so. The person or persons to whom notice is given shall have five business days from the date of service of the notice to request a hearing before the city manager or his or her designee in order to present any and all evidence they may have as to why a restrictor should not be installed or service terminated. If a hearing is requested, the city manager or his or her designee shall schedule a date and time for the hearing as soon as possible after the request is filed, but not later than five business days after the filing or such request for hearing. At the hearing, the person whose service connection is to be restricted or terminated and the utilities personnel may offer evidence. The city manager or his or her designee shall make a final determination as to whether service should be restricted or terminated and under what conditions. (Ord. 724 § 1, 2004)

13.66.090 Violation—Additional remedy.

As an additional remedy, the violation of any provision of this chapter by any person who has received more than one written warning pursuant to Section 13.66.070 to refrain from the same or any other violation under this chapter in one calendar year shall be deemed and is declared to be a public nuisance and may be subject to abatement in accordance with Chapter 1.24 of this Code. (Ord. 724 § 1, 2004)

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the City Council of the City of Rohnert Park will be holding a PUBLIC HEARING.

WHERE: Council Chambers at the City Offices
6750 Commerce Boulevard
Rohnert Park, California

WHEN: Tuesday, August 28, 2007, at the hour of 6:00 p.m.
or as soon thereafter as the matter is reached on the agenda.

PURPOSE: To solicit input regarding the City of Rohnert Park's 2005 Urban Water Management Plan

Representatives of this proposal will be available to respond to questions. The draft 2005 Urban Water Management Plan is available for review at:

Rohnert Park City Hall
6750 Commerce Blvd, Rohnert Park, California

Rohnert Park Library
6250 Lynne Conde Way, Rohnert Park, California

On the Rohnert Park City Web Page at
http://www/rpcity.org

All persons interested in this matter should appear at the August 28, 2007 City Council meeting. Written statements may be submitted in advance for presentation to the Council as part of the public hearing.

NOTE: If you challenge this matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City of Rohnert Park at, or prior to, the public hearing.

The referenced document is available for public review during normal business hours at the City Clerk's Office, 6750 Commerce Blvd., Rohnert Park, CA, (707) 588-2227.
Questions regarding this matter should be directed to Darrin Jenkins, Public Works Director/City Engineer, (707) 588-2243.

Dated: August 14, 2007 Judy Hauff, City Clerk

RESOLUTION NO. 2007-143

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROHNERT PARK ADOPTING THE CITY OF ROHNERT PARK 2005 URBAN WATER MANAGEMENT PLAN AND AUTHORIZING FILING THEREOF WITH THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

WHEREAS, the Urban Water Management Planning Act (the Act, California Water Code Section 10610 et. seq.) requires that every urban water supplier that supplies water for municipal purposes to more than 3,000 customers prepare an Urban Water Management Plan (UWMP) every five years, the primary objectives of which are to plan for the efficient management and use of the water supply; and

WHEREAS, the City of Rohnert Park (City) is an urban water supplier within the meaning of the Act and must prepare an UWMP; and

WHEREAS, the City of Rohnert Park staff and its consultants in cooperation with the Sonoma County Water Agency and its consultants have prepared an UWMP (the City of Rohnert Park 2005 Urban Water Management Plan) to meet the requirements of the Act, in accordance with the guidelines developed by the California Department of Water Resources; and

WHEREAS, the City staff, Agency staff, and the respective consultants who prepared the City of Rohnert Park 2005 Urban Water Management Plan have the training, experience and expertise necessary to prepare an UWMP meeting the requirements of the Act; and

WHEREAS, the City Council must provide for public review and conduct a public hearing prior to adopting any UWMP and must file the UWMP with the California Department of Water Resources upon adoption; and

WHEREAS, the City of Rohnert Park 2005 Urban Water Management Plan has been available for public review since August 14, 2007, in compliance with the requirements of the Act; and

WHEREAS, the City Council conducted a duly noticed public hearing on August 28, 2007 to receive oral and written comments upon the City of Rohnert Park 2005 Urban Water Management Plan; and

WHEREAS, the City Council has reviewed the City of Rohnert Park 2005 Urban Water Management Plan, City staff reports and presentations and the oral and written comments received; and

WHEREAS, the City of Rohnert Park 2005 Urban Water Management Plan was prepared in accordance with and meets the requirements of the Act, and the facts, assumptions and analyses in the City of Rohnert Park 2005 Urban Water Management Plan are reasonable and supported by substantial evidence; and

WHEREAS, in accordance with CEQA Guidelines Section 15282(v), the preparation and adoption of an Urban Water Management Plan pursuant to the provisions of Section 10652 of the Water Code is exempt from the California Environmental Quality Act.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Rohnert Park that it does hereby find, determine and declare as follows:

1. All of the above recitals are true and correct.

2. The City of Rohnert Park 2005 Urban Water Management Plan is adopted.

BE IT FURTHER RESOLVED that the City Manager is hereby authorized and directed to make the appropriate filings with the California Department of Water Resources in accordance with the requirements of the Act.

DULY AND REGULARLY ADOPTED this 28th day of August, 2007.

CITY OF ROHNERT PARK

Vicki Vidak-Martinez
Mayor

ATTEST:

Jeri Higgins, Deputy
City Clerk

APPROVED AS TO FORM:

Gabrielle P. Whelan, Asst.
City Attorney

BREEZE: AYE	**MACKENZIE:** AYE	**SMITH:** ABSENT	**STAFFORD:** AYE	**VIDAK-MARTINEZ:** AYE
AYES: (4)	**NOES: (0)**	**ABSENT: (1)**	**ABSTAIN: (0)**	

1034238v1 80078/0058

Description of Model that Calculates the Allocation of Water Available to Sonoma County Water Agency for its Customers* During a Water Supply Deficiency Taking Demand Hardening into Account

April 4, 2006 Version

This EXCEL workbook (040406 Allocation Model.xls) presents two models that calculate allocations to Sonoma County Water Agency (SCWA) Customers during a shortage of water supply in the Russian River. The calculations meet all of the requirements of the Restructured Agreement for Water Supply (Agreement). See **Contents** sheet for layout of sheets in the workbook. Another EXCEL workbook (040406 Customer Water Use.xls) supports this workbook and contains data compiled for the 2005 Urban Water Management Plan.

* "SCWA Customers" or "Customer" is defined as any of the following:

Regular Customers

Water Contractors (sometimes referred to as "Primes"): Cotati, Petaluma, Rohnert Park, Santa Rosa, Sonoma, Windsor (Airport Service Area), North Marin Water District, Valley of the Moon Water District

Other Agency Customers: SCWA, County of Sonoma, Larkfield Water District, Forestville Water District, Lawndale Mutual Water Co., Kenwood Village Water Co., Penngrove Water Co., City of Sebastopol, State of California, and Santa Rosa Jr. College)

Marin Municipal Water District (MMWD)

Russian River Customers (Customers of SCWA that divert water directly from the Russian River or via wells adjacent to the River).

Where to Find Results:

Results for allocating water during a shortage given varying assumed amounts of water available to SCWA in the Russian River are modeled for two cases.

- The **Current Model** is to be employed during a real drought. Inputs to this model must be updated to then current conditions. For current conditions, results are shown on the **Current Recap** sheet.

- The **Future Model** is a "planning" model whose purpose is to predict allocations for various levels of deficiency in the future when all Customers are assumed to have reached there entitlement limits – generally about 20 years from now for most Customers. (Note: This was the type of model prepared by West, Yost & Associates for the City of Santa Rosa and is also the type prepared by Petaluma.) Results are shown on the **Future Recap** sheet.

Required Allocation Methodology:

Section 3.5(a)(3) of the Agreement provides for allocation of water in the event of a water supply deficiency as follows:

- **"First"**, Allocation of quantities of water required by each Customer* for human consumption, sanitation and fire protection (HC, S & FP) after taking into consideration all other sources of potable water then available to said customer. (Section 3.5(a)(3)(i)) (Often referred to as Tier 1.)

- **"Second"**, Allocation of any additional water available to the SCWA proportionately to its Customers* as follows (Section 3.5(a)(3)(ii)) (Often referred to as Tier 2 allocation.):

  Regular Customers (Water Contractors and Other Agency Customers): Deliveries from aqueduct based on respective average daily rate of flow during any month entitlements. These entitlements are set forth as million gallon per day (mgd) rates in Sections 3.1(a) and 3.2 of the Agreement.

  Russian River Customers: Authorized diversions or rediversions of water based on delivery limits set forth in agreements with the SCWA.

  Marin Municipal Water District (MMWD): Deliveries based on Third Amended Offpeak Agreement and Agreement for Sale of Water (as amended on Jan 25, 1996), and amendments or subsequent agreements between the SCWA and MMWD that have been approved by the Water Advisory Committee.

- **Sum of Two:** The Agreement further requires that the sum of the "First" plus "Second" allocation for a given SCWA Customer not exceed the Reasonable Requirement or entitlement limit/contracted amount, whichever is less (Section 3.5(a)(3)(iii).

"Human Consumption, Sanitation and Fire Protection" Definition:

In determining HC, S & FP amounts, the Agreement provides that SCWA shall take into account the level of water conservation achieved by the Customer and the resulting decrease in end user ability to reduce water use (the hardening of demand) resulting from such conservation. The allocation shall be determined using a methodology which rewards and encourages water conservation; avoids cutbacks based upon a percentage of historic consumption, and, among other things, bases the amounts necessary for HC, S & FP upon no greater than average indoor per capita water use determined from recent retail billing records for winter water use by all of the Water Contractors; and, if necessary or appropriate for equitable purposes, considers commercial, industrial and institutional water uses separately and determines that element of the allocation based on winter water use from recent retail billing records for commercial, industrial and institutional uses. (Section 3.5(c)(1))

"Reasonable Requirements" Definition:

The Agreement states that the fundamental purpose of the Reasonable Requirements limitation is to ensure that no Customer receives more water during a shortage than that Customer reasonably needs. In determining reasonable requirements, the SCWA may take into account the hardening of demand resulting from the level of conservation achieved by the Customer; the extent to which the Customer has developed recycled water projects and local supply projects, and the extent to which the Customer has implemented water conservation programs. The Agreement further states that it is the intention of the

parties that the SCWA make its Reasonable Requirements determinations so as to encourage Customers to implement water conservation, recycled water, and local supply projects. (Section 3.5(c)(2))

Description of Models:

Two models are presented.

- **Current Model:** The Current Allocation Model determines annual allocations based on the assumption the water supply deficiency occurs now and impacts current conditions and levels of use. This is the model that would be used in the event of an actual deficiency in water supply available from the Russian River. It employs estimates of HC, S & FP needs, Reasonable Requirements, and Local supply. In the event of a real perceived water supply deficiency, inputs to the model must be updated to then currently available data. If the shortage persists longer than one year the inputs must again be updated – particularly local supply estimates which should be updated every year of the drought. Customers relying on surface water for local supply, such as North Main Water District, and MMWD, can be expected to have reduced local supply available.

- **Future Model:** The second model is hypothetical and predicts future allocations at a point in time that assumes that all customers of the SCWA have reached their annual entitlement limits. It sets the Reasonable Requirement for each SCWA Customer to that customer's annual entitlement limit (cap). The Future Allocation Model is useful for planning purposes to predict allocations from the SCWA for various assumed water supply deficiencies.

Model Assumptions and Inputs:

1. **Entitlements:** Entitlements (Regular Customers) and contracted amounts (MMWD and Russian River Customers) for both models are as set forth in the Agreement and existing agreements between the SCWA and MMWD and its Russian River Customers. (See **Entitlements** and **RR Cust** sheets.)

2. **Local Supplies:** The estimates of safe yield of local supplies are the same for both models and are based on estimates reported by Water Contractors to West, Yost & Associates in a September 23, 2004 Tech. Memo to the City of Santa Rosa and are generally average local supply that was available for the period 2000 through 2003. A contingency factor is applied by John Olaf Nelson Water Resources Management (JONWRM) to each local supply to account for equipment/maintenance issues or other potential problems. This factor was assumed to be 10% for each Waster Contractor for lack of better data. The safe yield value for MMWD was supplied by MMWD. Local supply estimates for Other Agency Customers were not available and was assumed to be "0". Information on Local supplies needs to be accurately determined and updated by the SCWA. (See **Local** and **TM Data** sheets.)

3. **Water for Human Consumption, Sanitation and Fire Protection:** Water needed to meet HC, S & FP needs for both models is assumed to be equal to total winter level demand of customers served by Customers of the SCWA and is based on metered water sales (billings) for calendar 2004, the base year analyzed in the 2005 Urban Water Management Plan. Winter level demands are then extrapolated to a full year to determine the annual HC, S & FP need. Water available

from local supplies is then determined and net HC, S & FP needs determined in order to calculate the "First" allocation. In determining the "First" allocation, demand hardening is accounted for using winter level per capita demand. (See **GPCD** and **Human** sheets and the footnotes on the Current Model for details.)

4. **Reasonable Requirements:**

- For the Current Model, Reasonable Requirements were assumed to equal average annual aqueduct deliveries to SCWA's Regular Customers and MMWD for FY 2003-04 and FY 2004-05. For Russian River Customers, the average for Water Years 2004 and 2005 was used, as that was the format the data was available in. (Use of a three or four year average would normally be a better choice for calculating Reasonable Requirements, however, this was not done as at least one SCWA customer made a significant policy change in aqueduct usage which would not have been fairly reflected if years prior to FY 2003-04 were used. Also in subsequent analyses, the data should be normalized to common annual periods.) (See **Reasonable** sheet.) Pursuant to Section 3.5(c)(2), Reasonable Requirements were adjusted with a demand hardening factor to account for differing levels of conservation achieved by Customers. The demand hardening factor is derived from total per capita demand (residential, non-residential and unaccounted for water) as determined for the base year (cal. 2004) of the 2005 Urban Water Management Plan. (See **DH Factor** sheet.)

- In the Future Model, Reasonable Requirements are set equal to annual entitlement limits (caps) or contract limits as applicable, it being assumed that each Customer has reached its annual entitlement limit (the same approach taken in the Santa Rosa and Petaluma models). THIS IS THE ONLY INPUT DIFFERENCE BETWEEN THE "CURRENT" AND "FUTURE" MODEL.

Model Design and Workbook Layout:

The two model sheets are totally independent and are designed to automatically calculate water shortage allocations for any SCWA available supply bounded by a low value equal to the sum of water required for HC, S & FP and an upper value equal to the sum of Reasonable Requirements or sum of annual entitlement limits, whichever is less. Cells in both models are linked to the various supporting data sheets.

To operate a model, simply input the assumed available supply in Cell H:4 of the model you are working with. The results – the sum of the "First" (Tier 1) plus "Second" (Tier 2) allocation appear to the far right (Column 42 of the Current Model and Column 39 of the Future Model).

The Current Model sheet is followed by a sheet entitled "Current Recap" that shows the resulting allocations (both in tabular and graph form) for each Customer for various assumed levels of available supply. This recap and the graphs are automatically populated by running the Macro entitled "CurRecap".

Likewise, following the Future Model sheet is a sheet entitled "Future Recap" which shows the tabular and graph results for the Future Model. This recap and the graphs are automatically populated by running the Macro entitled "FutRecap".

Caution Concerning Data Collection and Maintenance:

With the allocation methodology introduced in the Agreement, it is essential that the SCWA develop and maintain a data base containing information collected from all of its Customers based on application of uniform standards, and containing data on water service area population, portion of population served by private wells (none of the models correct for private well water use by service area population), winter level water consumption, annual consumption, local supplies, unaccounted for water, conservation, recycled water use, etc. Good regional data on evapotranspiration differences may also be needed to modify the Reasonable Requirement demand hardening adjustment factor. A fair and uniform way to determine the safe yield of local supply capacity is especially important. It may be useful to categorize local supply into: (1) normally available and used capacity, and (2) strictly standby capacity that is more expensive to use than aqueduct water or has some non-threatening quality issues, i.e. taste and odor that make it undesirable to use under normal water supply conditions.

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Contents of this EXCEL Workbook
Water Shortage Allocation Model w. Demand Hardening Factor (a)
April 4, 2006 Version

Models (Current and Future)

Input Data for Models

* Same data used in both Current and Future Model.

** Based on aqueduct sales and Russian River diversions in recent non-drought years. In the Future Model, reasonable requirements are set equal to annual entitlement limits (caps) or contract delivery limits as applicable in order to estimate allocations at that time in the future when demand has grown to equal the annual entitlement limits.

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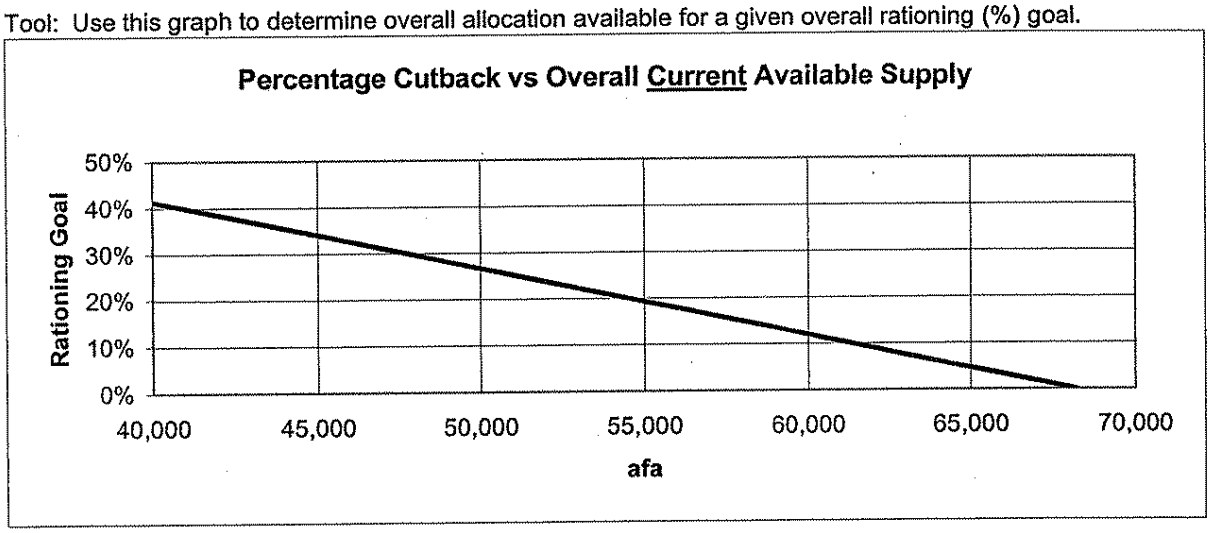
Results for Current Allocation Model vs. Assumed Available Supply

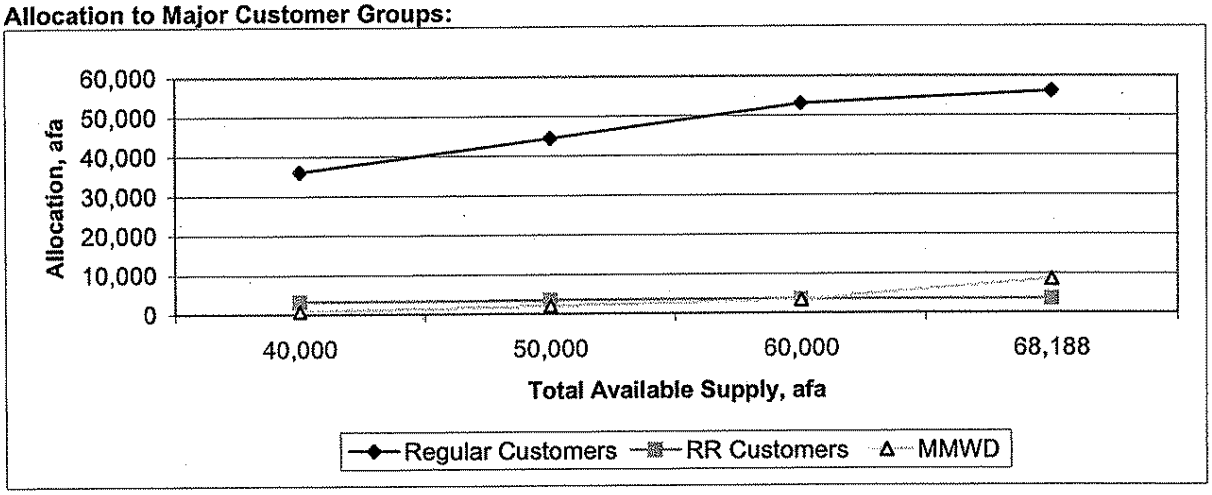
Available RR SCWA Supply, afa >	**40,000**	**50,000**	**60,000**	**68,188 ***
Equivalent Cutback in Deliveries >	**41.3%**	**26.7%**	**12.0%**	**0.0%**
Regular Customers				
Cotati	694	928	1,095	1,095
Petaluma	6,155	7,501	8,952	9,735
Rohnert Park	2,924	3,850	4,849	5,246
Sonoma	1,261	1,650	2,069	2,200
Windsor	317	409	410	410
NMWD	4,775	6,004	7,328	8,459
Santa Rosa	16,856	20,351	24,118	24,737
VOM	2,157	2,682	3,086	3,086
Other Agency	949	1,116	1,207	1,207
Sub-Total	36,088	44,491	53,114	56,173
MMWD	737	2,014	3,391	8,520
Russian River Cust's	3,175	3,495	3,495	3,495
Total	**40,000**	**50,000**	**60,000**	**68,188**

* Note: Max. Value is capped at 68,188 afa as this satisfies sum of Reasonable Requirements.

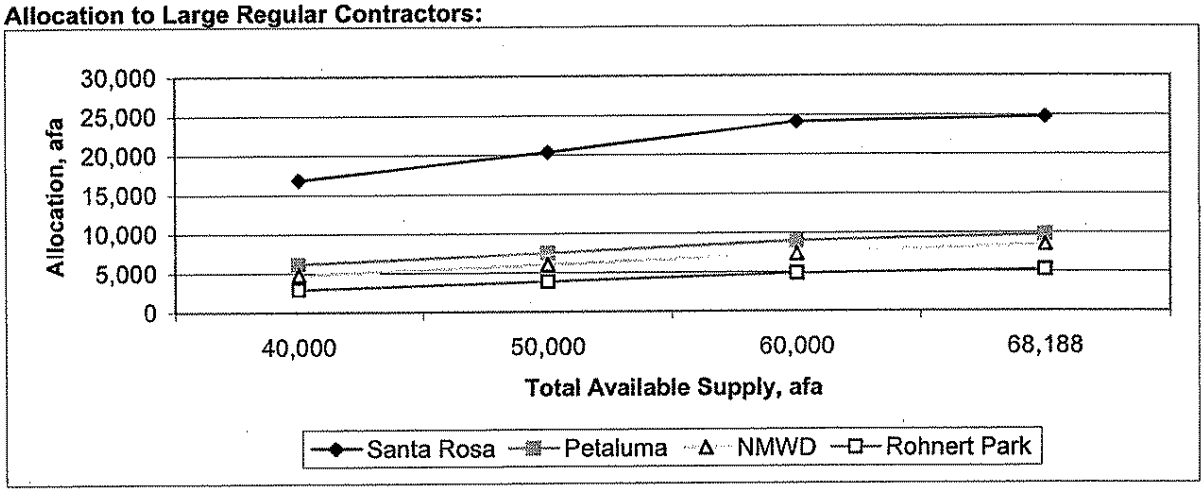
Tool: Use this graph to determine overall allocation available for a given overall rationing (%) goal.



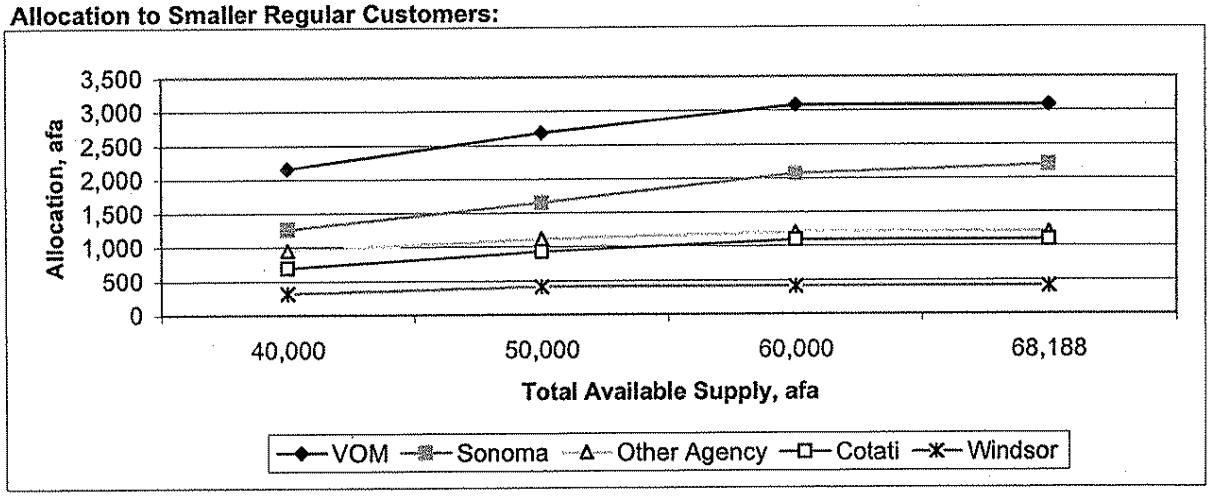
Allocation to Major Customer Groups:



Allocation to Large Regular Contractors:

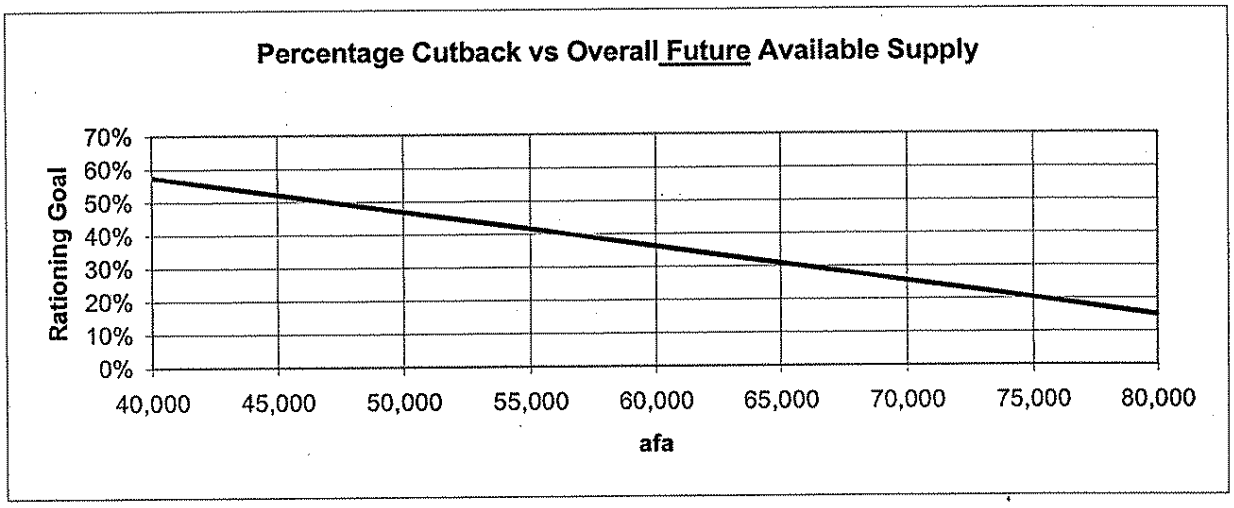


Allocation to Smaller Regular Customers:

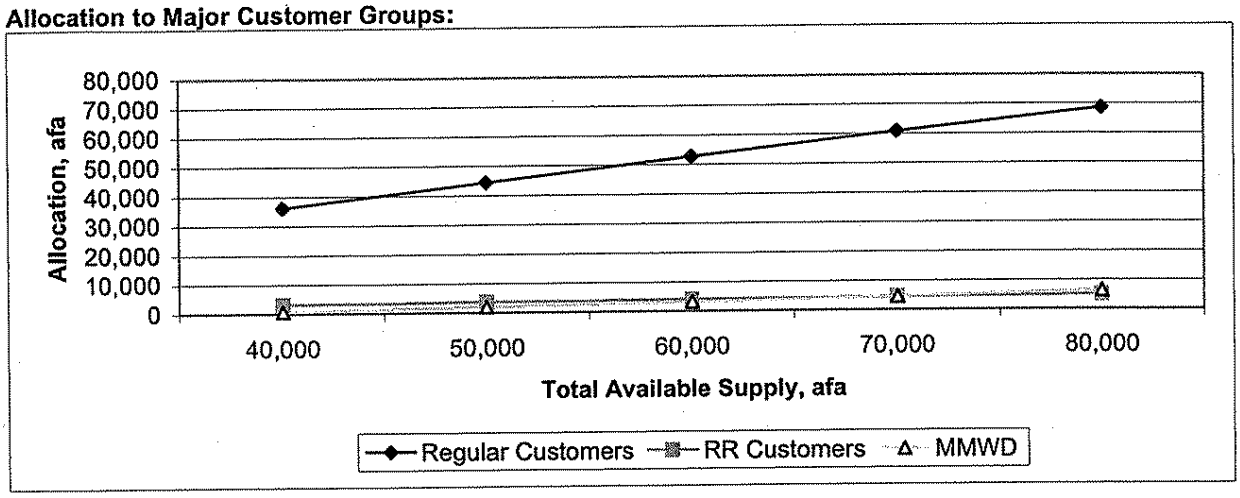


Results for Future Allocation Model vs. Assumed Available Supply

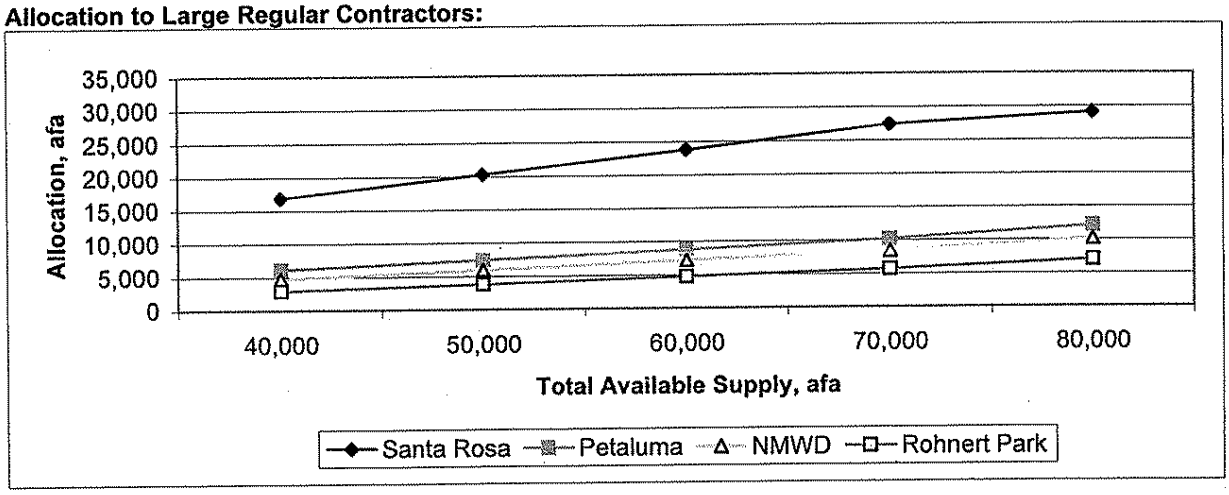
Available RR SCWA Supply, afa >	**40,000**	**50,000**	**60,000**	**70,000**	**80,000**
Equivalent Cutback in Deliveries >	**57.5%**	**46.9%**	**36.2%**	**25.6%**	**15.0%**
Regular Customers					
Cotati	694	925	1,157	1,401	1,520
Petaluma	6,155	7,484	8,813	10,214	12,118
Rohnert Park	2,924	3,838	4,753	5,716	7,027
Sonoma	1,261	1,645	2,029	2,433	2,984
Windsor	317	408	500	596	727
NMWD	4,775	5,988	7,201	8,480	10,218
Santa Rosa	16,856	20,306	23,756	27,393	29,100
VOM	2,157	2,675	3,193	3,200	3,200
Other Agency	949	1,113	1,278	1,451	1,687
Sub-Total	36,088	44,384	52,680	60,884	68,581
MMWD	737	1,998	3,259	4,587	6,394
Russian River Cust's	3,175	3,618	4,061	4,528	5,025
Total	**40,000**	**50,000**	**60,000**	**70,000**	**80,000**



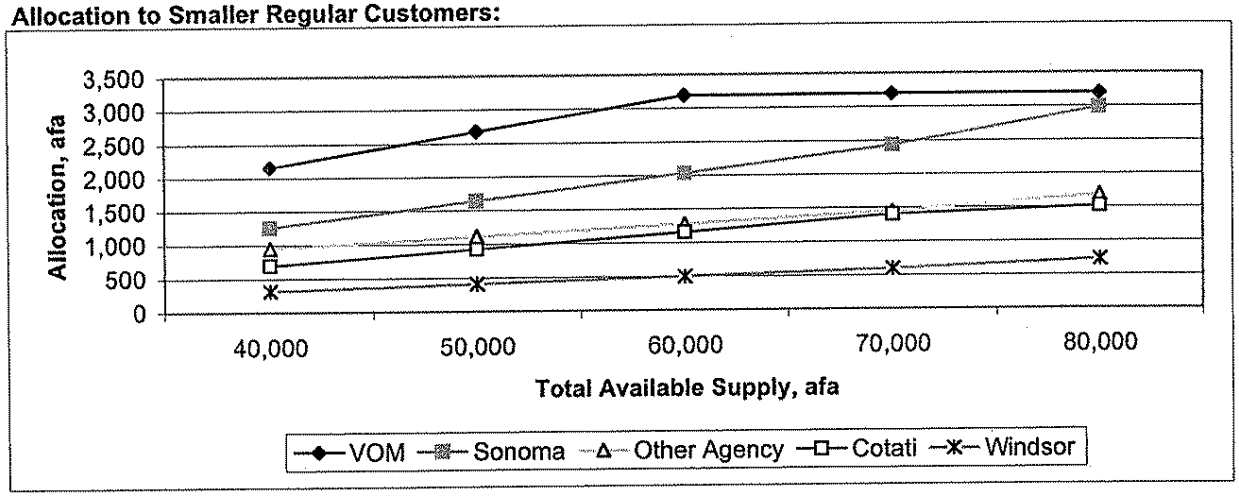
Allocation to Major Customer Groups:



Allocation to Large Regular Contractors:



Allocation to Smaller Regular Customers:



Entitlements of SCWA Customers

	Source	Entitlement mgd (any month)	Annual Limit afa
SCWA Customer:			
Regular Customers			
Cotati	a	3.8	1,520
Petaluma	a	21.8	13,400
Rohnert Park	a	15	7,500
Sonoma	a	6.3	3,000
Windsor (Airport Service Area)	b	1.5	900
North Marin WD	a	19.9	14,100
Santa Rosa	a	56.6	29,100
Valley of the Moon WD	a	8.5	3,200
Other Agency Cust (Includes FWD)	c	2.7	2,048
Sub-Total		136.1	74,768
Marin Muni. WD	d	0	14,300
Russian River Customers	e	0	5,025
Total		136.1	94,093

Notes:

a Eleventh Amended WS Agree. (Proposed Restructured WS Agree is same)

b Proposed Restructured WS Agree. Applies only to Airport Service Area served from SCWA Aqueduct. Windsor's direct diversions from the RR are covered by an Agreement with the SCWA and potentially via its pending application to the State for Water Rights

c "mgd any month" limit is per Eleventh Amended WS Agree. (Proposed Restructured WS Agree is same). Annual limit is estimated based on avg. annual Other Agency Customer demand (as defined in Restructured Agree) for FY's 2003 and 2004 (1,356 af) projected through 2020 assuming a 2% per year increase for anticipated growth plus a 10% contingency.

d Second Amended WS Agree and Agree for Sale of Water as Amended by The Supplemental WS Agree dated Jan 25, 1996. Note: Annual deliveries are subject to certain prior year minimum purchase provisions. Deliveries are subordinate to Regular Customer Entitlements.

e Various Agreements between SCWA and each of its RR Customers (refer "RR Cust" sheet)

Russian River Customers of SCWA

Entitlements of RR Customers

Source: Chris Murray, SCWA, 3/3/05

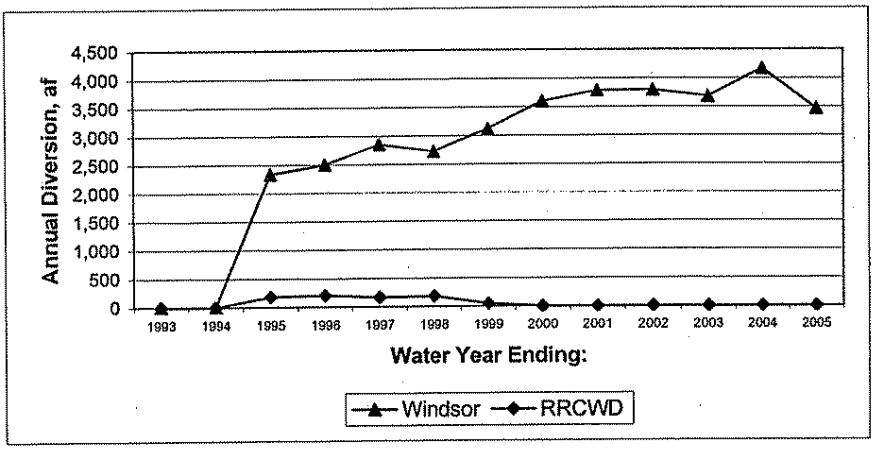
Contractor	Date	Max Diversion Limit, afa	Comments
Currently Approved Points of Diversion *:			
Town of Windsor **	1/8/1991	4,725	Windsor has application pending for its own water rights
Russian River Co. WD	3/14/1991	300	
Sub-total		5,025	
No Points of Diversion Approved*			
City of Healdsburg	11/17/1992	4,440	Healdsburg holds own water rights for other points of diversion
Camp Meeker Parks & Rec. Dist.	7/9/1996	90	
Occidental CSD	4/23/2002	65	
Redwood Valley Co. WD	Pending	?	Agreement pending
Sub-total		4,595	
Potential Total		9,620	

* As pertains to SCWA's water rights.
** Direct diversions via wells situated near the Russian River.

Historic Diversions from the RR, af

Source: Chris Murray, SCWA, 2/15/06 (SCWANTS.xls)

W Yr	RRCWD	Windsor	Total
1993	0	0	0
1994	0	0	0
1995	182	2,337	2,519
1996	203	2,496	2,699
1997	166	2,848	3,013
1998	183	2,728	2,911
1999	47	3,124	3,171
2000	0	3,596	3,596
2001	0	3,786	3,786
2002	0	3,789	3,789
2003	0	3,684	3,684
2004	0	4,173	4,173
2005	0	3,465	3,465
Avg of W Yr's 2004 & 05			3,819
Avg of last 3 W Yrs			3,882



Note: Water Yr extends from Oct 1 through Sept 30 of subsequent yr.

Water Needed for Human Consumption, Sanitation and Fire Protection (a)

	TM Data (b)	6/15/05 Model	2005 UWMP (c)	4/4/06 Model
SCWA Customer:				
Regular Customers				
Cotati	0.62	0.62		0.64 f
Petaluma	5.83	5.83	6.15	6.15
Rohnert Park	4.23	4.23	3.74	3.74
Sonoma	1.45	1.45	0.92	0.92
Windsor (Airport Service Area)		0.13 d		0.24 g
North Marin WD	5.80	5.80	6.04	6.04
Santa Rosa	13.74	13.74	13.48	13.48
Valley of the Moon WD	2.01	2.01	2.14	2.14
Other Agency Cust (Includes FWD)		0.45 d		0.48 g
Sub-Total				
Marin Muni. WD		17.1 e		18.4 h
Russian River Customers		unknown		unknown
Total				

Notes:

a Water needed for HC, S & FP is assumed to be equal to "inside" use for all retail customers. Inside use in turn is estimated by examining retail sales in the Winter months (generally Jan. and

b Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

c Total demand including UFW as determined by Maddaus for base year (Cal. 2004) of the 2005 UWMP. Indoor use is based on average of 2 lowest consecutive months in the winter if meters read bimonthly, or single lowest month if meters read monthly. Winter level use for Cotati supplied by Toni Bertolero (see Note f).

d

Avg Jan and Feb Aqueduct Sales* as	Windsor	Other Ag Cust
Avg af/mo (2000->03, SCWA, Kiergan Peg	11.5	40.6
Avg mgd	0.13	0.45

* In the case of Windsor (ASA only) and Other Agency Customers, winter level demand is unknown and is therefore estimated from Aqueduct sales, it being assumed that all Winter demand is met from the Aqueduct.

e MMWD customer Avg per capita use in Jan and Feb for (2000 - 03), mgd, Dana Roxon,

f Avg. Jan and Feb Aq plus Local use FY 2003 -> FY 2005, Tony Bertolero via Matthew Damos

g Avg. Jan and Feb Aq Sales w. Billing Days for FY 2003 -> FY 2005 from Kiergan Pegg,

h From MMWD Water Watch Reports, avg demand for period noted, mgd

Week Ending:	For period noted to left	For same week one yr earlier
2/26/2006	17.6	17.6
2/19/2006	18.4	18.3
2/12/2006	18.8	19.1
2/5/2006	18.2	18.6
1/29/2006	18.4	18.5
1/22/2006	18.5	18.7
1/15/2006	17.9	18.6
1/8/2006	18.5	18.8
1/1/2006	18.1	18.5
Avg Winter	18.3	18.5
Avg for both yrs	18.4	

Reasonable Annual Need, afa (a)
(Avg. Aq. Sales or RR Diversions for FY's Indicated)

	6/15/05 Model	4/4/06 Model
		Avg for FY 03-04 and
Regular Customers	FY 03-04	FY 04-05
Cotati	1,071	1,045
Petaluma	11,294	10,636
Rohnert Park	4,710	4,835
Sonoma	2,611	2,403
Windsor (Airport Service Area)	474	448
North Marin WD	9,498	9,242
Santa Rosa	24,421	23,584
Valley of the Moon WD	3,157	3,036
Other Agency Cust (Includes FWD) (b)	1,326	1,318
Sub-Total	58,561	56,547
Marin Muni. WD	7,792	7,823
Russian River Customers (c)	3,928	3,819
Total	70,281	68,188

Notes:

a SCWA Aqueduct Sales Records, Kiergan Pegg, SCWA. Note that Surplus sales are not included.

b SCWA Aq. Sales Records. Excludes Windsor and includes FWD as proposed in Restructured WS Agree.

c Average of Water Yr Diversions for 2003 and 2004 was used for 6/15/05 Model and avg. of 2004 and 2005 was used for 4/4/06 Model. (see RR Cust sheet).

Local Potable Water Supply Available to SCWA Customers, afa

	Local Supply (a)	Contingency Factor (b)	Est'd Safe Yield (c)
Regular Customers			
Cotati	240	10%	216
Petaluma	831	10%	748
Rohnert Park	2308	10%	2,077
Sonoma	80	10%	72
Windsor (Airport Service Area)	0	10%	0
North Marin WD	2000	10%	1,800
Santa Rosa	1700	10%	1,530
Valley of the Moon WD	595	10%	536
Other Agency Cust (Includes FWD) (d)	0		0
Sub-Total	7754		6,979
Marin Muni. WD Local Sys. Safe Yield (e)			20,500
Russian River Customers (d)	0		0
Total			27,479

Notes:

a Based on 4-yr avg: 2000-2003 as reported in Sept 33, 2004 Tech. Memo to Santa Rosa

b To account for well equipment problems/maintenance down-time, etc. Estimated by JONWRM

c It is recognized that the quality of Local Supply varies. Presented here is the yield (safe yield) that is expected to be available in the first year of a water supply deficiency based on Local Water Supply capacities..

d Unknown and therefore assumed to be "0" for the purposes of this model. Needs to be determined by SCWA.

e Safe Yield of Local Supply System provided by MMWD. Source: Dana Roxon, 5/31/05.

Most Recent Service Area Population

SCWA Customer:	TM Data for Yr 2003	6/15/05 Model	2005 UWMP	4/4/06 Model
Regular Customers				
Cotati	6,825	6,825		7,337 e
Petaluma	57,050	57,050	58,057	58,057
Rohnert Park	42,300	42,300	42,329	42,329
Sonoma	10,252	10,252	10,502	10,502
Windsor (Airport Service Area)		1,338 d		2,495 f
North Marin WD	56,000	56,000	55,587	55,587
Santa Rosa	153,400	153,400	155,121	155,121
Valley of the Moon WD	23,000	23,000	22,646	22,646
Other Agency Cust (Includes FWD)	8,000 a	8,000		8,080 g
Sub-Total		358,165		362,154
Marin Muni. WD	184,999 b	184,999		189,945 h
Russian River Customers	27360 c	27,360		27,634 g
Total		570,524		579,733

Notes:

a Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

b Estimate provided by MMWD to West/Yost and contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo).

c Estimate by West/Yost contained in Allocation Table prepared for City of Santa Rosa (Sept 23 Tech Memo). Includes 24,350 I(2003 Department of Finance estimate for the Town of Windsor) and an estimate of 3,000 for the RRCWD service area.

d Windsor Airport Service Area is primarily Commercial and Institutional use. An equivalent population is estimated by dividing avg Winter use by 95 gpcd, the wt'd avg. per capita use determined by West/Yost.

e Cotati pop. per Dept of Finance data as of 1/1/2005, Cristina Goulart, Winzler & Kelly

f Windsor Airport Service Area is primarily Commercial and Institutional use. An equivalent population is estimated by dividing avg Winter use by 94 gpcd, the wt'd avg. per capita use determined in the 2005 UWMP.

g Population estimated for 6/15/05 Model increased by an assumed growth rate of 1%.

h MMWD 2004 Pop., provided by Dana Roxon, MMWD, Mar. 2006.

Other Data:

From 2005 UWMP, population for 2004:

FWD population	2,201
Windsor RR Service Area	24,899

Winter Level Per Capita Demand, gpcd

	TM Data (a)	6/15/05 Model	2005 UWMP (b)	4/4/06 Model	
Regular Customers					
Cotati	89	89		88	c
Petaluma	101	101	106	106	
Rohnert Park	96	96	88	88	
Sonoma	136	136	88	88	
Windsor (Airport Service Area)		95		94	
North Marin Water Dist.	99	99	109	109	
Santa Rosa	87	87	87	87	
Valley of the Moon Water Dist.	87	87	94	94	
Other Agency Cust (Includes FWD)		unknown		94	
Sub-Total					
Marin Muni. Water Dist.		92		97	c
Russian River Customers					
Wt'd Avg	95			94	d

Notes:

a Source: TM Data sheet by West Yost and Assoc. Winter level use is based on avg. use in Jan, and Feb. of 2000 through and including 2003.

b Source: Bill Maddaus Tech. Memos - Includes Unaccounted For Water (UFW). Inside use is calculated from calendar 2004 retail sales records and is based on average of 2 lowest consecutive months in the winter if meters are read bimonthly, or single lowest month if meters read monthly.

c Calc'd from Winter level demand (See Human sheet) and est'd pop. (See Pop Sheet)

d Data for 11th Amend. Agree. Primes:

	gpcd	pop
Cotati	88	7,337
Petaluma	106	58,057
Rohnert Park	88	42,329
Sonoma	88	10,502
NMWD	109	55,587
Santa Rosa	87	155,121
VOM	94	22,646
FWD	99	2,201
Wt'd Avg. (using pop. as weighting factor)	94	

Other Data:

From 2005 UWMP, Winter Level Use, gpcd:

FWD	99

Demand Hardening Factor - Used for Adjusting Reasonable Need in Current Allocation

	Total Demand mgd 1	Total gpcd 2	Use in 3/27/06 Model 3	Lesser of Col. 3 or Average 4	Demand Hardening Adj Factor (Avg / Col. 4) 5
Regular Customers					
Cotati	1.07 b	146 d	146	146	1.14
Petaluma	10.19 c	176 d	176	167	1.00
Rohnert Park	5.95 c	141 d	141	141	1.19
Sonoma	2.25 c	214 d	214	167	1.00
Windsor (Airport Service Area)		172 e	172	167	1.00
North Marin Water Dist.	10.58 c	190 d	190	167	1.00
Santa Rosa	22.57 c	146 d	146	146	1.15
Valley of the Moon Water Dist.	3.40 c	150 d	150	150	1.11
Other Agency Cust (Includes FWD)			167 f	167	1.00
Sub-Total					
Marin Muni. Water Dist.			140 g	140	1.19
Russian River Customers			167 f	167	1.00
Average for Water Contractors (h)		167			

Notes:

a Sec 3.5(c)(2) provides that in determining "reasonable requirements" the SCWA may take into account hardening of demand resulting from the level of conservation achieved by a given customer of the SCWA.

b From Toni Bertolero. Avg of RR Purchases and Ground Water Production for FY 2003->05, mgc

c Total demand including UFW as determined by Maddaus for base year (2004) 2005 UWMP.

d Col 1 divided by population. See Pop sheet.

e There are no residents in Windsor ASA therefore per capita demand set equal to Windsor RR Service Area average value as determined for base year (2004) of 2005 UWMP.

f No data available so assumed equal to average value for Water Contractors.

g From MMWD 2005 Fact Sheet - avg demand for 10 yrs ending 2005, m 26.6 divided by population (See Pop sheet).

Other Data from 2005 UWMP for Base Yr 2004:

	mgd	gpcd
Forestville Water Dist.	0.48	219
Windsor RR Service Area	4.29	172

SUPPORT TABLES
For Tech Memo

Table A-1. Average Monthly Retail Sales (acre-feet) for SCWA Water Contractors in January & February[a]

Contractor	2000	2001	2002	2003	4-Year Average[b]
Santa Rosa	1,263	1,316	1,265	1,154	1,249
Petaluma	553	538	515	514	530
North Marin	563	554	525	468	528
City of Rohnert Park	406	406	356	373	385
Cotati	45	73	58	50	57
Forestville [c]	22	23	24	21	22
City of Sonoma	136	135	133	122	131
Valley of the Moon	182	189	187	174	183

Table A-2. Historical Population[d]

Contractor	2000	2001	2002	2003
Santa Rosa	147,595	149,300	151,700	153,400
Petaluma	53,710	54,510	55,850	57,050
North Marin	55,000	56,000	56,000	56,000
Rohnert Park	42,236	42,200	42,150	42,300
Cotati	6,471	6,600	6,861	6,825
Forestville [e]	1,973	Not Available	Not Available	Not Available
Sonoma	10,091	10,131	10,172	10,252
Valley of the Moon	20,512	21,996	22,923	23,000

Table A-3. Per Capita Demand (gpcd) for SCWA Water Prime Contractor in Winter (January & February) [a,f]

Contractor	2000	2001	2002	2003	4-Year Average [b]
Santa Rosa	90	93	88	79	87
Petaluma	108	104	97	95	101
North Marin	108	104	99	88	99
Rohnert Park	101	101	89	93	96
Cotati [g]	72	116	89	78	89
Forestville	115	123	126	113	119
Sonoma	142	140	138	125	136
Valley of the Moon	93	90	86	80	87
Simple Average [h]	104	109	101	94	102
Weighted Average [i]	99	100	93	87	95

[a] Data obtained from water sales data from the Prime Contractor

[b] Simple average of the last 4 years. Using Santa Rosa in Table A-1: (1,263+...+1,154)/4 = 1,249 acre-feet

[c] Data for Forestville obtained from the SCWA

[d] Data obtained from the Prime Contractor, California Department of Finance Website, or the 2000 UWMP for Sonoma County unless specified otherwise

[e] Population for Forestville obtained from the 2000 SCWA UWMP

[f] Based on populations from Table A-2, if population for particular year was not available, then population for year 2000 was used

[g] For 2001 & 2002, based on Dec/Jan instead of Jan/Feb because Cotati did not provide Feb; 2003 is based on Jan/Feb

[h] Simple average of the eight individual gpcds. Using 2000 of Table A-3: (90+...+93)/8 = 102 gpcd

[i] Weighted average for population. Using 2000 of Table A-3: (90*147,595+...+93*20,512)/(147,595+...+20,512) = 98 gpcd

Current Allocation Model
Allocation of Water During a Period of Deficiency Pursuant to Sec. 3.5 (a) of the Restructured Agreement for Water Supply
Based on CURRENT Level Demands and Water Available from the SCWA of 60,000 afa
This equates to an overall cutback in Russian River water supply of: 12.0%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	23	41	42	43
		Entitlement Limits		Minimum Needs		Reasonable Requirement					Local Supply		HC, S & FP Per Capita Demand				First Allocation & Test		Second Allocation		Results	
SCWA Customers	Assumed Available Supply afa	Entitlement (Maximum Daily Rate of Flow During any Month) mgd	Annual Entitlement Limit (Cap) afa	Water Needed for Human Consumption, Sanitation and Fire Protection **** mgd	afa	Apparent Reasonable Requirement afa	Demand Hardening (DH) Adjust. Factor	Adjust'd Reason. Req't	Final Reason. Req't	Lesser of Reason. Req't vs Annual Cap afa	Safe Yield of Local Supply afa	Pop. persons	Avg. Winter Level Per Capita Demand gpcd	Weighted Avg Per Capita Demand of Water Contractors gpcd	Portion of Per Capita Demand that can be served by Local Supply gpcd	Per Capita Demand that is not met by Local Supply ("First" Allocation Parameter) gpcd	"First" Allocation (Water req'd for HC, S & FP) afa	TEST Less Than Annual Entitlement Limit?	Normalized Entitlements ("Second" Allocation Parameter) %	"Second" Allocation afa	"First" plus "Second" Allocations afa	TEST Less Than Reasonable Req't ?
Regular Customers																						
Cotati*		3.8	1,520	0.64	720	1,045	1.14	1,196	1,095	1,095	216	7,337	88	94	26	68	558	Yes	2%	536	1,095	Yes
Petaluma*		21.8	13,400	6.15	6,893	10,636	1.00	10,636	9,735	9,735	748	58,057	106	94	11	83	5,379	Yes	13%	3,574	8,952	Yes
Rohnert Park*		15	7,500	3.74	4,186	4,835	1.19	5,731	5,246	5,246	2,077	42,329	88	94	44	50	2,390	Yes	9%	2,459	4,849	Yes
Sonoma*		6.3	3,000	0.92	1,029	2,403	1.00	2,403	2,200	2,200	72	10,502	88	94	6	88	1,036	Yes	4%	1,033	2,069	Yes
Windsor (Airport Service Area) (ASA)*		1.5	900	0.24	263	448	1.00	448	410	410	0	2,495	94	94	-	94	263	Yes	1%	146	410	Yes
North Marin Water Dist. (NMWD)*		19.9	14,100	6.04	6,767	9,242	1.00	9,242	8,459	8,459	1,800	55,587	109	94	29	65	4,066	Yes	12%	3,262	7,328	Yes
Santa Rosa*		56.6	29,100	13.48	15,094	23,584	1.15	27,027	24,737	24,737	1,530	155,121	87	94	9	85	14,840	Yes	35%	9,279	24,118	Yes
Valley of the Moon Water Dist.*		8.5	3,200	2.14	2,397	3,036	1.11	3,372	3,086	3,086	536	22,646	94	94	21	73	1,854	Yes	5%	1,232	3,086	Yes
Other Agency Cust (Includes FWD)		2.7	2,048	0.48	534	1,318	1.00	1,318	1,207	1,207	-	8,080	94	94	-	94	853	Yes	2%	354	1,207	Yes
Sub-Total		136.1	74,768	33.82	37,884	56,547		61,374	56,173	56,173	6,979	362,154					31,239				53,114	
Marin Muni. Water Dist.		0	14,300	18.39	20,605	7,823	1.19	9,309	8,520	8,520	20,500	189,945	97	94	96	0	0	Yes	13%	3,391	3,391	Yes
Russian River Customers***		0	5,025	unknown	2,916	3,819	1.00	3,819	3,495	3,495	-	27,634	unknown	94	-	94	2,916	Yes	4%	579	3,495	Yes
Total		136.1	94,093		61,404	68,188		74,501	68,188	68,188	27,479	579,733					34,155		100%	25,845	60,000	
Reasonable Need Remaining Unmet																	25,845					
Water Available for Allocation	60,000																					

Definitions:
- * Defined in Restructured Water Supply Agreement as "Water Contractors"
- ** FWD = Forestville Water Dist.
- *** SCWA Russian River Contractors whose direct diversions and points of diversion have been approved and come under the auspices of the SCWA's Water Rights (Town of Windsor and Russian River County Water Dist.)
- **** HC, S & FP = Human Consumption, Sanitation and Fire Protection
- TM Data = information set forth in Tech Memo prepared by West, Yost & Associates (West/Yost) dated Sept 23, 2004, "Methodology for Implementation of Water Shortage Provisions in Eleventh Amended Agreement for Water Supply"
- UWMP = Urban Water Management Plan
- UFW = unaccounted for water (ie water due to losses, leakage, theft and unmetered deliveries, meter inaccuracies, fire hydrant flows, pipeline flushing, etc.)
- af = ac-ft — mgd = millions of gallons per day
- afa = ac-ft per annum (year) — gpcd = gallons per capita per day

Column Explanations:
1. All Customers of the SCWA except customers served Surplus Water. Surplus Water users are not allowed an allocation during periods of water deficiency.
2. Water supply assumed to be available to SCWA for delivery to or diversion by its Customers. In the event of a real drought, this value is predicted by SCWA using its Russian River models and including estimated yield from the SCWA's wells and deducting losses from the Aqueduct
3 & 4. Entitlement limits pursuant to Restructured Agreement. Note that agreement does not specify an Annual Entitlement Limit (cap) for Other Agency Customers so this have been estimated by escalating the avg of FY 2003 and FY 2004 demand by 2% per year growth and then adding a 10% contingency. MMWD "annual entitlements" are set forth in agreements between SCWA and MMWD. Russian River Customers entitlements are based on agreements the SCWA has with these respective customers taking into account points of diversion authorized to be covered under SCWA's water rights. See Entitlement sheet and RR Cust sheet for details.
5. Water for HC, S & FP is assumed to be fairly represented by "inside demand" for all metered uses and including an adjustment factor for UFW. Inside demand is in turn estimated by examining winter level demand, a requirement of the Restructured Agreement. Values used in this model are from the base year (cal. yr 2004) compiled for the 2005 UWMP. See "Human" sheet for details.
6. Prior column extended over the entire year and converted to afa.
7. Reasonable Requirement is assumed to be equal to annual deliveries made to Customers in a recent non-drought year. For the purposes of this analysis, The avg. for FY 2003-04 and 2004-05 deliveries were used. In future analyses, an average of the immediate past 3 years is recommended. In the case of this analysis, going back further in time was not done due to significant changes in aqueduct demand by the City of Rohnert Park.

8 Sec 3.5(c)(2) provides that in determining "reasonable requirements" the SCWA may take into account hardening of demand resulting from the level of conservation achieved by a given customer of the SCWA. This column contains a Demand Hardening adjustment factor derived from annual per capita demand taking into account all uses and including UFW. Information compiled for the base year (2004) for the 2005 UWMP was used. See DH Factor sheet for details.

9 Col 8 x Col 7.

10 Col 10 "normalizes" Col 9 such that sum of all adjusted reasonable requirements is equal to original sum of Reasonable Requirements. Col 9 x (sum of Col 7 / sum of Col 9). This column is then used to define the "Reasonable Requirement" that is referred to in Sec. 3.5(a)(3)(iii) of the Restructured Agreement.

11 Lesser value comparing Reasonable Requirement to Annual Entitlement Limit as stipulated in Section 3.5 (2) (3) (iii). This is the value used for testing to see that the total of the "First" and "Second" allocation of water to a given customer is reasonable.

12 Local supplies are based on an estimate by JONWRM of "safe yield" of same. For Water Contractors, the data reported to West/Yost is the basis for the estimate. See Local sheet for details. The "safe yield" used for MMWD was provided by MMWD. It is noted that data is missing fc Other Agency Customers and Russian River Customers. It is important that SCWA develop an on-going data collection system to at all times know potential local supply yield in order to achieve accuracy necessary for the allocation calculatio

13 Detailed population estimates from Census tract data compiled by Maddaus for the base year (cal. 2004) used in the 2005 UWMP. See Pop sheet for details and explanation of exceptions.

14 Winter level per capita demand determined by Maddaus for the base year (cal. 2004) used in the 2005 UWMP. See GPCD sheet for detailed explanation.

15 Weighted avg. of per capita winter level demand for existing Prime contractors. See GPCD sheet.

16 Safe yield of Local Supply expressed as a per capita value using population data shown i.e. Col 12 * 7.48 * 43,560 / (365 * Col 13).

17 HC, S & FP demand not met by Local Supplies and calculated as follows: If Wt'd average per capita demand (Col 15) is greater than the portion of per capita demand met by Local Supply (Col 16), the difference of the two is entered in this column, if not, "0" is entered.

18 "First" allocation calculated as follows: If Local Supply safe yield (Col 12) is greater than Winter level demand extrapolated for the full year (Col 6), then "0" is allotted, if not the portion of per capita demand not met by Local Supply (Col 17) is calculated for the year for the entire population, expressed in afa and entered here. In the case of consecutive drought years, it is important that Col 12 values (safe yield of local supplies) be updated in order for this calculation to be accurate. This is especially true for contractors relying on surface water supplies such as NMWD and MMWD whose surface supplies drop sharply when faced with consecutive drought years.

19 Test to see that "First" allocation does not exceed respective Entitlement Limits as required by Section 3.5 (a)(3)(i).

20-22 These three columns combine the entitlements of the Regular Customers (which pursuant to Sec. 3.5(a)(3)(ii) must be derived from the avg. daily rate during any month - mgd values contained in Sec. 3.1) and the contractual entitlements of MMWD and RR Customers which are expressed in ac-ft per year values contained in their contracts. These relative entitlements are first converted to %'s, then added together.

24 This column "normalizes" the combined entitlement shares such that the sum of all entitlement shares adds to 100%. The resulting %'s are then used to distribute the "Second" allocation of water called for by Sec. 3.5(a)(3)(ii).

25-40 These cells contain the iterative trials necessary to arrive at the "Second" allocation of water. The process is iterative as the Test of whether the "Second" allocation is valid or not is set forth in Section 3.5 (b) (3) (iii) and requires that (in addition to not exceeding the Entitlement Limit) tl sum of the "First" allocation (Col 18) and the "Second" allocation not exceed the "Reasonable Requirement" (Col 10)

Future Allocation Model
Allocation of Water During a Period of Deficiency Pursuant to Sec. 3.5 (a) of the Restructured Agreement for Water Supply
Based on FUTURE Level Demands and Water Available from the SCWA of 60,000 afa
This equates to an overall cutback in Russian River water supply of: 36.2%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	38	39	40	41
		Entitlement Limits		Minimum Needs		Reasonable Requirement		Local Supply		HC, S & FP Per Capita Demand				First Allocation & Test		Second Allocation		Results		
SCWA Customers	Assumed Available Supply afa	Entitlement (Maximum Daily Rate of Flow During any Month) mgd	Annual Entitlement Limit (Cap) afa	Water Needed for Human Consumption, Sanitation and Fire Protection **** mgd	afa	Reasonable Requirement afa	Lesser of Reasonable Requirement vs Annual Cap afa	Safe Yield of Local Supply afa	Pop. persons	Avg. Winter Level Per Capita Demand gpcd	Weighted Avg Per Capita Demand of Water Contractors gpcd	Portion of Per Capita Demand that can be served by Local Supply gpcd	Per Capita Demand that is not met by Local Supply ("First" Allocation Parameter) gpcd	"First" Allocation (Water req'd for HC, S & FP) afa	TEST Less Than Annual Entitlement Limit?	Normalized Entitlements ("Second" Allocation Parameter) %	"Second" Allocation afa	"First" plus "Second" Allocations afa	TEST Less Than Reasonable Req't ?	Amount Falling Short (-) of Reasonable Req't afa
Regular Customers																				
Cotati*		3.8	1,520	0.64	720	1,520	1,520	216	7,337	88	94	26	68	558	Yes	2%	599	1,157	Yes	-363
Petaluma*		21.8	13,400	6.15	6,893	13,400	13,400	748	58,057	106	94	11	83	5,379	Yes	13%	3,434	8,813	Yes	-4,587
Rohnert Park*		15	7,500	3.74	4,186	7,500	7,500	2,077	42,329	88	94	44	50	2,390	Yes	9%	2,363	4,753	Yes	-2,747
Sonoma*		6.3	3,000	0.92	1,029	3,000	3,000	72	10,502	88	94	6	88	1,036	Yes	4%	992	2,029	Yes	-971
Windsor (Airport Service Area) (ASA)*		1.5	900	0.24	263	900	900	0	2,495	94	94	-	94	263	Yes	1%	236	500	Yes	-400
North Marin Water Dist. (MMWD)*		19.9	14,100	6.04	6,767	14,100	14,100	1,800	55,587	109	94	29	65	4,066	Yes	12%	3,135	7,201	Yes	-6,899
Santa Rosa*		56.6	29,100	13.48	15,094	29,100	29,100	1,530	155,121	87	94	9	85	14,840	Yes	35%	8,917	23,756	Yes	-5,344
Valley of the Moon Water Dist.*		8.5	3,200	2.14	2,397	3,200	3,200	536	22,646	94	94	21	73	1,854	Yes	5%	1,339	3,193	Yes	-7
Other Agency Cust (Includes FWD)**		2.7	2,048	0.48	534	2,048	2,048	-	8,080	94	94	-	94	853	Yes	2%	425	1,278	Yes	-770
Sub-Total		136.1	74,768	33.82	37,884	74,768	74,768	6,979	362,154					31,239				52,680		-22,087
Marin Muni. Water Dist.		0	14,300	18.39	20,605	14,300	14,300	20,500	189,945	97	94	96	0	0	Yes	13%	3,259	3,259	Yes	-11,041
Russian River Customers***		0	5,025	unknown	2,916	5,025	5,025	-	27,634	unknown	94	-	94	2,916	Yes	4%	1,145	4,061	Yes	-964
Total		136.1	94,093		61,404	94,093	94,093	27,479	579,733					34,155		100%	25,845	60,000		-34,093
Reasonable Need Remaining Unmet														25,845						
Water Available for Allocation	60,000																			

Definitions:
- * Defined in Restructured Water Supply Agreement as "Water Contractors" and often referred to as "Primes"
- ** FWD = Forestville Water Dist.
- *** SCWA Russian River Contractors whose direct diversions and points of diversion have been approved and come under the auspices of the SCWA's Water Rights (Town of Windsor and Russian River County Water Dist.)
- **** HC, S & FP = Human Consumption, Sanitation and Fire Protection
- TM Data = information set forth in Tech Memo prepared by West, Yost & Associates (West/Yost) dated Sept 23, 2004, "Methodology for Implementation of Water Shortage Provisions in Eleventh Amended Agreement for Water Supply"
- UWMP = Urban Water Management Plan
- UFW = unaccounted for water (ie water due to losses, leakage, theft and unmetered deliveries, meter inaccuracies, fire hydrant flows, pipeline flushing, etc.)
- af = ac-ft mgd = millions of gallons per day
- afa = ac-ft per annum (year) gpcd = gallons per capita per day

Column Explanations:
All are same as shown on Current Model sheet except for below:
7 Reasonable Requirement is set equal to the Annual Entitlement limit (cap) in order to estimate the allocation in the future when SCWA Customers reach (or exceed) their Annual Entitlement (or contract) Limits.

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