

## APPENDIX A

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### California Department of Water Resources Review Sheets

**2005 Urban Water Management Plan "Review for Completeness" Form**  
**For DWR Review Staff Use**

**Coordination with Appropriate Agencies (Water Code § 10620 (d)(1)(2))**

- Yes  
 Participated in area, regional, watershed or basin wide plan \_\_\_\_\_ Reference & Page Number  
 Name of plan \_\_\_\_\_ Lead Agency \_\_\_\_\_ \_\_\_\_\_ Reference & Page Number  
 Describe the coordination of the plan preparation and anticipated benefits. \_\_\_\_\_ Reference & Page Number

Table 1 Coordination with Appropriate Agencies							
Check at least one box on each row	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not Involved / No Information
DWR					x	x	
Ukiah Wastewater Treatment Plant (WWTP)				x	x		
General Public Civic Center Lobby Utilities Building Lobby City's Website Public Library		x	x		x		
Mendocino County Planning Department				x	x		
Ukiah Utilities	x	x	x		x		
Bartel Wells		x			x		
Wagner and Bonsignore		x	x		x	x	
Local Agency Formation Commission					x		
Redwood Valley County Water District					x		
Willow County Water District					x		
Millview County Water District					x		
Calpella County Water District					x		
Rogina Water Company					x		
Ukiah Chamber of Commerce					x		
Mendocino Environmental Center					x		
Mendocino County Russian River Flood Control and Water Conservation Improvement District		x	x		x	x	

<b>Mendocino County Water Agency</b>					x		
<b>Sonoma County Water Agency</b>		x			x	x	
<b>California Water Impact Network</b>					x	x	
<b>Smart Growth Coalition</b>					x		
<b>Employers' Council of Mendocino</b>					x		

**Describe resource maximization / import minimization plan (Water Code §10620 (f))**  
 Describe how water management tools / options maximize resources & minimize need to import water \_\_\_\_\_ Reference & Page Number

**Plan Updated in Years Ending in Five and Zero (Water Code § 10621(a))**  
 Date updated and adopted plan received \_\_\_\_\_ (enter date) \_\_\_\_\_ Reference & Page Number

**City and County Notification and Participation (Water Code § 10621(b))**  
 Notify any city or county within service area of UWMP of plan review & revision \_\_\_\_\_ Reference & Page Number  
 Consult and obtain comments from cities and counties within service area \_\_\_\_\_ Reference & Page Number

**Service Area Information (Water Code § 10631 (a))**  
 Include current and projected population \_\_\_\_\_ Reference & Page Number  
 Population projections were based on data from state, regional or local agency \_\_\_\_\_ Reference & Page Number

<b>Table 2</b>							
<b>Population - Current and Projected</b>							
	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Service Area Population</b>	15,497	16,288	17,118	18,618	19,244	19,869	20,495

Describe climate characteristics that affect water management \_\_\_\_\_ Reference & Page Number  
 Describe other demographic factors affecting water management \_\_\_\_\_ Reference & Page Number

Table 3 Climate						
	January	February	March	April	May	June
Standard Average ETo	1.1	1.7	3.3	4.6	6.2	7.2
Average Rainfall	6.7	6.8	4.7	2.3	1.7	0.8
Average Temperature	45.6	47.2	50.8	52.9	59.4	65.2

Table 3 (continued) Climate							
	July	August	September	October	November	December	Annual
Average ETo	8.0	7.1	5.3	3.5	1.5	1.0	50.5
Average Rainfall	0.1	0.2	0.3	1.1	3.8	7.3	35.8
Average Temperature	70.6	69.8	68.0	59.3	50.0	45.7	60.8

**Water Sources**

**(Water Code § 10631 (b))**

<input checked="" type="checkbox"/>	Identify existing and planned water supply sour	_____	Reference & Page Number
<input checked="" type="checkbox"/>	Provide current water supply quantities	_____	Reference & Page Number
<input checked="" type="checkbox"/>	Provide planned water supply quantities	_____	Reference & Page Number

Table 4 Current and Planned Water Supplies - AFY						
Water Supply Sources	2005	2010	2015	2020	2025	2030
Supplier surface diversions (Water Right 12952)	14,480	14,480	14,480	14,480	14,480	14,480
Project Water	800	800	800	800	800	800
Supplier produced groundwater	1,290	1,895	1,895	1,895	1,895	1,895
Transfers in or out	0	0	0	0	0	0
Exchanges in or out	0	0	0	0	0	0
Recycled water (projected use)	0	0	tbd	tbd	tbd	tbd
Desalination	0	0	0	0	0	0
<b>Total</b>	<b>16,570</b>	<b>17,175</b>	<b>17,175</b>	<b>17,175</b>	<b>17,175</b>	<b>17,175</b>

**If Groundwater identified as existing or planned source**

**(Water Code §10631 (b)(1-4))**

- Has management plan \_\_\_\_\_ Reference & Page Number
- Attached management plan (b)(1) \_\_\_\_\_ Reference & Page Number
- Description of basin(s) (b)(2) Chapter 3.2.1 Reference & Page Number
- Basin is adjudicated \_\_\_\_\_ Reference & Page Number
- If adjudicated, attached order or decree (b)(2) \_\_\_\_\_ Reference & Page Number
- Quantified amount of legal pumping right (b)(2) \_\_\_\_\_ Reference & Page Number

Table 5 Groundwater Pumping Rights - AFY	
Basin Name	Pumping Right - AFY
Ukiah Valley	not adjudicated
<b>Total</b>	n/a

- DWR identified, or projected to be, in overdraft (b)(2) \_\_\_\_\_ Reference & Page Number
- Plan to eliminate overdraft (b)(2) \_\_\_\_\_ Reference & Page Number
- Analysis of location, amount & sufficiency, last five years (b)(3) \_\_\_\_\_ Reference & Page Number
- Analysis of location & amount projected, 20 years (b)(4) \_\_\_\_\_ Reference & Page Number

Table 6 Amount of Groundwater Pumped - AFY							
Basin Name (s)	2000	2001	2002	2003	2004	2005	2006
<b>Total Water Use</b>	4,108	4,070	4,165	3,874	4,131	3,755	3,831
<b>Percolating Groundwater (Well 4)</b>	340	810	906	1,030	976	1048	1075
<b>% of Total Water Supply</b>	8.3	19.9	21.8	26.6	23.6	27.9	28.1

Table 7 Amount of Groundwater Projected to be Pumped - AFY					
Basin Name(s)	2010	2015	2020	2025	2030 - opt
<b>Total Water Supply</b>	17,175	17,175	17,175	17,175	17,175
<b>Percolating Groundwater (Well 4 and two new wells)</b>	1,895	1,895	1,895	1,895	1,895
<b>% of Total Water Supply</b>	11	11	11	11	11

**Reliability of Supply**

**(Water Code §10631 (c) (1-3)**

Describes the reliability of the water supply and vulnerability to seasonal or climatic shortage

Chapter 3.7.1 Reference & Page Number

Table 8 Supply Reliability - AFY					
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
16,490	8,400	8,400	8,400	8,400	8,400
% of Normal	51	51	51	51	51

Table 9 Basis of Water Year Data			
Water Year Type	Year	Source name	Source name
Average Water Year	1962		
Single-Dry Water Year	1967-1977		
Multiple-Dry Water Years	1990 through 1992		

Chapter 3.7.1 Reference & Page Number

Chapter 3.7.1 Reference & Page Number

Chapter 3.7.1 Reference & Page Number

**Water Sources Not Available on a Consistent Basis**

**(Water Code §10631 (c))**

Describe the reliability of the water supply due to seasonal or climatic shortages

Section 3.7.1 Reference & Page Number

Describe the vulnerability of the water supply to seasonal or climatic shortages

Section 3.7.1 Reference & Page Number

No unreliable sources

Reference & Page Number

Table 10 Factors Resulting in Inconsistency of Supply				
Name of supply	Legal	Environmental	Water Quality	Climatic
Surface Water	Change in rights to Russian River water	none	none	Drought that reduces the flow in the Russian and Eel River significantly
Groundwater	Change in pumping rights	none	none	Multiple dry years that lower groundwater table
Recycled Water	none	none	none	none

Describe plans to supplement or replace inconsistent sources with alternative sources or

Section 3.7.1 Reference & Page Number

No inconsistent sources

Reference & Page Number

**Transfer or Exchange Opportunities****(Water Code §10631 (d))** Describe short term and long term exchange or transfer opportunities

Reference &amp; Page Number

 No transfer opportunitiesSection 3.4 Reference & Page Number

<b>Table 11</b>					
<b>Transfer and Exchange Opportunities - AF Year</b>					
<b>Transfer Agency</b>	<b>Transfer or Exchange</b>	<b>Short term</b>	<b>Proposed Quantities</b>	<b>Long term</b>	<b>Proposed Quantities</b>
Millview County Water District	0	0	0	0	0
Willow County Water District	0	0	0	0	0
Rogina Water Company	0	0	0	0	0
<b>Total</b>	0	0	0	0	0

**Water Use Provisions**

Quantify past water use by sector  
Quantify current water use by sector  
Project future water use by sector

(Water Code §10631 (e)(1)(2))

n/a Reference & Page Number  
n/a Reference & Page Number  
n/a Reference & Page Number

Table 12 Past, Current and Projected Water Deliveries												
Water Use Sectors	2000				2005				2010			
	metered		unmetered		metered		unmetered		metered		unmetered	
	# of accounts	Deliveries AFY										
Single family												
Multi-family												
Commercial												
Industrial												
Institutional/gov												
Landscape												
Agriculture												
other	5,511	4,224			5,718	3,756			5,985	4,369		
<b>Total</b>	<b>5,511</b>	<b>4,224</b>	<b>0</b>	<b>0</b>	<b>5,718</b>	<b>3,756</b>	<b>0</b>	<b>0</b>	<b>5,985</b>	<b>4,369</b>	<b>0</b>	<b>0</b>

Table12 (continued) Past, Current and Projected Water Deliveries																
Water Use Sectors	2015				2020				2025				2030 - opt			
	metered		unmetered		metered		unmetered		metered		unmetered		metered		unmetered	
	# of accounts	Deliveries AFY														
Single family																
Multi-family																
Commercial																
Industrial																
Institutional/gov																
Landscape																
Agriculture																
other	6,510	4,752			6,728	4,912			6,947	5,072			7,166	5,231		
<b>Total</b>	<b>6,510</b>	<b>4,752</b>	<b>0</b>	<b>0</b>	<b>6,728</b>	<b>4,912</b>	<b>0</b>	<b>0</b>	<b>6,947</b>	<b>5,072</b>	<b>0</b>	<b>0</b>	<b>7,166</b>	<b>5,231</b>	<b>0</b>	<b>0</b>

- Identify and quantify sales to other agencies
- No sales to other agencies

Reference & Page Number  
Sections 3.4,  
5.2.3 Reference & Page Number

Table 13 Sales to Other Agencies - AF Year							
Water Distributed	2000	2005	2010	2015	2020	2025	2030
Millview County Water District	0	0	0	0	0	0	0
Willow County Water District	0	0	0	0	0	0	0
Rogina Water Company	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0

- Identify and quantify additional water uses

Section 5.2.4 Reference & Page Number

Table 14 Additional Water Uses and Losses - AF Year							
Water Use	2000	2005	2010	2015	2020	2025	2030
Saline barriers							
Groundwater recharge							
Conjunctive use							
raw water							
recycled							
other (define)							
<b>Unaccounted-for system losses</b>	127	113	131	143	147	152	157
<b>Total</b>	127	113	131	143	147	152	157

Table 15 Total Water Use - AF Year							
Water Use	2000	2005	2010	2015	2020	2025	2030
<b>Total of Tables 12, 13, 14</b>	4,351	3,869	4,500	4,895	5,059	5,224	5,388

**2005 Urban Water Management Plan "Review of DMMs for Completeness" Form (Water Code §10631 (f))**

(Water Code §10631 (f) & (g), the 2005 Urban Water Management Plan "Review of DMMs for Completeness" Form is found on Sheet 2

**Planned Water Supply Projects and Programs, including non-implemented DMMs (Water Code §10631 (g))**

- No non-implemented / not scheduled DMMs Reference & Page Number
- Cost-Benefit includes economic and non-economic factors (environmental, social, health, customer impact, and technological factors) Reference & Page Number
- Cost-Benefit analysis includes total benefits and total costs Section 7.4 Reference & Page Number
- Identifies funding available for Projects with higher per-unit-cost than DMMs Reference & Page Number
- Identifies Suppliers' legal authority to implement DMMs, efforts to implement the measures and efforts to identify cost share partners Section 7.0 Reference & Page Number

Table 16 Evaluation of Unit Cost of Water Resulting from Non-implemented / Non-scheduled DMMs and Planned Water Supply Project and Programs	
Non-implemented & Not Scheduled DMM / Planned Water Supply Projects (Name)	Per-AF Cost (\$)
1-Water Survey Programs for Single-family Residential and Multi-family Residential Customers	268
2-Residential Plumbing Retrofit	209
6-High-efficiency Washing Machine Rebate Programs	1,356
14-Residential ULFT Replacement Programs	212

**Planned Water Supply Projects and Programs (Water Code §10631 (h))**

<input type="checkbox"/>	No future water supply projects or programs	
<input checked="" type="checkbox"/>	Detailed description of expected future supply projects & programs	Section 3.0 Reference & Page Number
<input checked="" type="checkbox"/>	Timeline for each proposed project	Section 3.6 Reference & Page Number
<input checked="" type="checkbox"/>	Quantification of each projects normal yield (AFY)	Section 3.6 Reference & Page Number
<input checked="" type="checkbox"/>	Quantification of each projects single dry-year yield (AFY)	Section 3.6 Reference & Page Number
<input checked="" type="checkbox"/>	Quantification of each projects multiple dry-year yield (AFY)	Section 3.6 Reference & Page Number

Table 17 Future Water Supply Projects							
Project Name	Projected Start Date	Projected Completion Date	Normal-year AF to agency	Single-dry year yield AF	Multiple-Dry-Year 1 AF	Multiple-Dry-Year 2 AF	Multiple-Dry-Year 3 AF
Two New Wells	5/06	2008	605	605	605	605	605
WTP Improvements		9/06	Treatment Improvements	n/a	n/a	n/a	n/a
High Service Pump Station		3/06	Increased reliability	n/a	n/a	n/a	n/a
<b>Total</b>			605	605	605	605	605

**Opportunities for development of desalinated water (Water Code §10631 (i))**

<input type="checkbox"/>	Describes opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply
<input checked="" type="checkbox"/>	No opportunities for development of desalinated water

Table 18 Opportunities for Desalinated Water	
Sources of Water	Check if yes
Ocean Water	
Brackish ocean water	
Brackish groundwater	
other	
other	

**City is not a CUWCC signatory**

**(Water Code § 10631 (j))**

Urban suppliers that are California Urban Water Conservation Council members may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

The supplier's CUWCC Best Management Practices Report should be attached to the UWMP.

- Agency is a CUWCC member \_\_\_\_\_ Reference & Page Number
- 2003-04 annual updates are attached to plan \_\_\_\_\_ Reference & Page Number
- Both annual updates are considered completed by CUWCC website \_\_\_\_\_ Reference & Page Number

**If Supplier receives or projects receiving water from a wholesale supplier**

**(Water Code §10631 (k))**

- <sup>No</sup> Agency receives, or projects receiving, wholesale water \_\_\_\_\_ Reference & Page Number
- Agency provided written demand projections to wholesaler, 20 years \_\_\_\_\_ Reference & Page Number

Table 19 Agency Demand Projections Provided to Wholesale Suppliers - AFY					
Wholesaler	2010	2015	2020	2025	2030
n/a	0	0	0	0	0

- Wholesaler provided written water availability projections, by source, to agency, 20 years \_\_\_\_\_ Reference & Page Number  
(if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 20 Wholesaler Identified & Quantified the Existing and Planned Sources of Water- AFY					
Wholesaler sources	2010	2015	2020	2025	2030
n/a	0	0	0	0	0

Reliability of wholesale supply provided in writing by wholesale agency \_\_\_\_\_ Reference & Page Number  
 (if agency served by more than one wholesaler, duplicate this table and provide the source availability for each wholesaler)

Table 21 Wholesale Supply Reliability - % of normal AFY					
Wholesaler sources	Multiple Dry Water Years				
	Single Dry	Year 1	Year 2	Year 3	Year 4
Surface Water	0	0	0	0	0
Groundwater wells	0	0	0	0	0
Recycled water	0	0	0	0	0
% of Normal	0	0	0	0	0

Table 22 Factors Resulting in Inconsistency of Wholesaler's Supply				
Name of supply	Legal	Environment	Water Quality	Climatic
n/a	0	0	0	0
n/a	0	0	0	0

Water Shortage Contingency Plan Section		(Water Code § 10632)
Stages of Action		(Water Code § 10632 (a))
<input checked="" type="checkbox"/>	Provide stages of action	<u>Section 3.9.2</u> Reference & Page Number
<input checked="" type="checkbox"/>	Provide the water supply conditions for each stage	<u>Section 3.9.2</u> Reference & Page Number
<input checked="" type="checkbox"/>	Includes plan for 50 percent supply shortage	<u>Section 3.9</u> Reference & Page Number

Table 23 Water Supply Shortage Stages and Conditions RATIONING STAGES		
Stage No.	Water Supply Conditions	% Shortage
I	Initiated when 15 percent water conservation needs to be met	Voluntary
II	For further conservation and/or stage I is not being met	Mandatory
III	Implemented if stage II is not achieving sufficient reduction	Mandatory

**Three-Year Minimum Water Supply****(Water Code §10632 (b))**

- Identifies driest 3-year period
- Minimum water supply available by source for the next three years

Section 3.9.1 Reference & Page Number  
Section 3.9.1 Reference & Page Number

<b>Table 24</b>				
<b>Three-Year Estimated Minimum Water Supply - AF Year</b>				
<b>Source*</b>	<b>Normal</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Surface Water	14,480	7,355	7,355	7,355
Project Water	800	400	400	400
Groundwater	1,290	645	645	645
Recycled	0	0	0	0
<b>Total</b>	<b>16,570</b>	<b>8,400</b>	<b>8,400</b>	<b>8,400</b>

\*Note: If reporting after 2005, please change the column headers (Year 1, 2, & 3) to the appropriate years

**Preparation for catastrophic water supply interruption****(Water Code §10632 (c))**

- Provided catastrophic supply interruption plan

Section 3.9.6 Reference & Page Number

<b>Table 25</b>	
<b>Preparation Actions for a Catastrophe</b>	
<b>Possible Catastrophe</b>	<b>Check if Discussed</b>
Air pollution	✓
Fire	✓
Flood	✓
Storm	✓
Epidemic	✓
Earthquake	✓
Power Outages	
War	✓
Hazardous materials	✓
Environmental disaster	✓

**Prohibitions****(Water Code § 10632 (d))**

List the mandatory prohibitions against specific water use practices during water shortages

Section 3.9.3 Reference & Page Number

<b>Table 26 Mandatory Prohibitions</b>	
<b>Examples of Prohibitions</b>	<b>Stage When Prohibition Becomes Mandatory</b>
Use of water from public hydrants for any other purpose than fire protection/prevention	II, III
Use of water through any meter when the consumer has been given 2 days notice to repair any leaks and has failed to complete repairs	II, III
Use of water by golf course to irrigate any grounds except those designated as tees and greens	II, III
Use of water to irrigate grass, lawns, ground cover, shrubbery, vegetable gardens, trees, or other outdoor vegetation	II, III
Use of water for the construction of any structure including such use in dust control	II, III
Use of water to wash sidewalk, driveway, street, parking lot, tennis court, or other hard surfaced area by hosing or by otherwise direct use of water from faucets or other outlets	II, III
Use of water to fill or refill any swimming pool	II, III
Use of water to add to any swimming pool not equipped with and using a pool cover	II, III
Use of water in excess of the daily usage allotment set forth as: Single family or duplex – 50 gallons per permanent resident Multi-residential units – 45 gallons per permanent resident	III
All other uses not expressed above shall be limited to 50 percent of prior use for a similar period as determined by the City from its records	III
Water to irrigate	III
Use of water for hand-watering	III

**Consumption Reduction Methods****(Water Code § 10632 (e))**

- List the consumption reduction methods the water supplier will use to reduce water use in the most restrictive stages with up to a 50% reduction. Section 3.9.2 Reference & Page Number

Table 27 Consumption Reduction Methods		
Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Voluntary Reductions	I	10
Prohibition of non-essential uses	II	15
Mandatory Allotments	III	25

**Penalties****(Water Code § 10632 (f))**

- List excessive use penalties or charges for excessive use Section 3.9.3 Reference & Page Number

Table 28 Penalties and Charges	
Penalties or Charges	Stage When Penalty Takes Effect
Penalty for use beyond restrictions as described in Stages II and III	II, III
Penalty for use of water for prohibited uses described in Table 3-18	II, III

**Revenue and Expenditure Impacts**

**(Water Code § 10632 (g))**

- Describe how actions and conditions impact revenues Reference & Page Number
- Describe how actions and conditions impact expenditures Reference & Page Number
- Describe measures to overcome the revenue and expenditure impacts Section 3.9.5 Reference & Page Number

Table 29 Proposed Measures to Overcome Revenue Impacts	
Names of measures	Check if Discussed
Rate adjustment	✓
Development of reserves	✓

Table 30 Proposed Measures to Overcome Expenditure Impacts	
Names of measures	Check if Discussed
Reserve Fund	✓

**Water Shortage Contingency Ordinance/Resolution**

**(Water Code § 10632 (h))**

- Attach a copy of the draft water shortage contingency resolution or ordinance. Appendix E Reference & Page Number

**Reduction Measuring Mechanism**

**(Water Code § 10632 (i))**

- Provided mechanisms for determining actual reductions Section 3.9.4 Reference & Page Number

Table 31 Water Use Monitoring Mechanisms	
Mechanisms for determining actual reductions	Type data expected (pop-up?)
Water meter readings	Frequent meter readings

**Recycling Plan Agency Coordination**

**Water Code § 10633**

- Describe the coordination of the recycling plan preparation information to the extent available..

Section 4.1 Reference & Page Number

Table 32 Participating Agencies	
	Role in Development
City of Ukiah	to be determined
Ukiah Valley Sanitation District	to be determined

**Wastewater System Description**

**(Water Code § 10633 (a))**

- Describe the wastewater collection and treatment systems in the supplier's service area
- Quantify the volume of wastewater collected and treated

Section 4.2 Reference & Page Number

Section 4.2 Reference & Page Number

Table 33 Wastewater Collection and Treatment - AFY							
Type of Wastewater	2000	2005	2010	2015	2020	2025	2030
Wastewater collected & treated in service area	3,710	4,483	4,762	5,295	5,829	6,362	6,895
Volume that meets recycled water standard	876	441	1,016	1,129	1,244	1,357	1,471

**Wastewater Disposal and Recycled Water Uses**

**(Water Code § 10633 (a - d))**

- Describes methods of wastewater disposal Section 4.2 Reference & Page Number
- Describe the current type, place and use of recycled water Section 4.3 Reference & Page Number
- None \_\_\_\_\_ Reference & Page Number
- Describe and quantify potential uses of recycled water Section 4.3 Reference & Page Number

<b>Table 34</b>							
<b>Disposal of Wastewater (Non-recycled) AFY</b>							
Method of disposal	Treatment Level	2005	2010	2015	2020	2025	2030
Discharge to River	Tertiary	441	1,016	1,129	1,244	1,357	1,471
Percolation Ponds	Secondary	4,034	3,423	3,843	4,262	4,682	5,101
Reuse within Plant	Secondary	8	323	323	323	323	323
<b>Total</b>		4,488	4,762	5,295	5,829	6,362	6,895

<b>Table 35</b>							
<b>Recycled Water Uses - Actual and Potential (AFY)</b>							
User type	Treatment Level	2005	2010	2015	2020	2025	2030
Agriculture	Tertiary	0	0	tbd	tbd	tbd	tbd
Landscape	Tertiary	0	0	tbd	tbd	tbd	tbd
Wildlife Habitat		0	0	0	0	0	0
Wetlands		0	0	0	0	0	0
Industrial		0	0	0	0	0	0
Groundwater Recharge		0	0	0	0	0	0
Consumptive Reuse within Plant	Tertiary	8	323	323	323	323	323
Golf Course Irrigation		0	0	tbd	tbd	tbd	tbd
<b>Total</b>		8	323	3,843	4,262	4,682	5,101

- Determination of technical and economic feasibility of serving the potential uses \_\_\_\_\_ Reference & Page Number

**Projected Uses of Recycled Water**

**(Water Code § 10633 (e))**

Projected use of recycled water, 20 years

Section 4.3 Reference & Page Number

<b>Table 36</b>					
<b>Projected Future Use of Recycled Water in Service Area - AFY</b>					
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Projected use of Recycled Water</b>	0	tbd	tbd	tbd	tbd

Compare UWMP 2000 projections with UWMP 2005 actual (§ 10633 (e))

Section 4.3 Reference & Page Number

None

                     Reference & Page Number

<b>Table 37</b>		
<b>Recycled Water Uses - 2000 Projection Compared with 2005 Actual - AFY</b>		
<b>User type</b>	<b>2000 Projection for 2005</b>	<b>2005 actual use</b>
<b>Agriculture</b>	0	0
<b>Landscape</b>	0	0
<b>Wildlife Habitat</b>	0	0
<b>Wetlands</b>	0	0
<b>Industrial</b>	0	0
<b>Groundwater Recharge</b>	0	0
<b>Other (user type)</b>	0	0
<b>Other (user type)</b>	0	0
<b>Total</b>	0	0

**Plan to Optimize Use of Recycled Water**

**(Water Code § 10633 (f))**

- Describe actions that might be taken to encourage recycled water uses Section 4.5 Reference & Page Number
- Describe projected results of these actions in terms of acre-feet of recycled water used per \_\_\_\_\_ Reference & Page Number

Table 38 Methods to Encourage Recycled Water Use					
Actions	AF of use projected to result from this action				
	2010	2015	2020	2025	2030
To Be Determined	tbd	tbd	tbd	tbd	tbd
<b>Total</b>	tbd	tbd	tbd	tbd	tbd

- Provide a recycled water use optimization plan which includes actions to facilitate the use of \_\_\_\_\_ Reference & Page Number recycled water (dual distribution systems, promote recirculating uses)

**Water quality impacts on availability of supply**

**(Water Code §10634)**

- Discusses water quality impacts (by source) upon water management strategies and supply reliability Section 3.8 Reference & Page Number
- No water quality impacts projected Section 3.8

Table 39 Current & Projected Water Supply Changes Due to Water Quality - Percentage						
water source	2005	2010	2015	2020	2025	2030
Russian River	0	0	0	0	0	0
Project Water	0	0	0	0	0	0
Groundwater	0	0	0	0	0	0
Recycled water	0	0	0	0	0	0

**Supply and Demand Comparison to 20 Years**

**(Water Code § 10635 (a))**

Compare the projected normal water supply to projected normal water use over the next 20 years, in 5-year increments.

Section 6.1 Reference & Page Number

<b>Table 40</b>					
<b>Projected Normal Water Supply - AFY</b>					
(from table 4)	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Supply</b>	17,175	17,175	17,175	17,175	17,175
% of year 2005	104	104	104	104	104

<b>Table 41</b>					
<b>Projected Normal Water Demand - AFY</b>					
(from table 15)	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Demand</b>	4,500	4,895	5,059	5,224	5,388
% of year 2005	116	127	131	135	139

<b>Table 42</b>					
<b>Projected Supply and Demand Comparison - AFY</b>					
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Supply totals</b>	17,175	17,175	17,175	17,175	17,175
<b>Demand totals</b>	4,500	4,895	5,059	5,224	5,388
<b>Difference</b>	12,675	12,280	12,116	11,951	11,787
Difference as % of Supply	74	71	71	70	69
Difference as % of Demand	282	251	239	229	219

**Supply and Demand Comparison: Single-dry Year Scenario****(Water Code § 10635 (a))**

Compare the projected single-dry year water supply to projected single-dry year water use over the next 20 years, in 5-year increments.

Section 6.2 Reference & Page Number

<b>Table 43</b>					
<b>Projected Single Dry Year Water Supply - AFY</b>					
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of year 2005	51	51	51	51	51

<b>Table 44</b>					
<b>Projected Single Dry Year Water Demand - AFY</b>					
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Demand</b>	4,500	4,895	5,059	5,224	5,388
% of year 2005	116	127	131	135	139

<b>Table 45</b>					
<b>Projected Single Dry Year Supply and Demand Comparison - AFY</b>					
	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	4,500	4,895	5,059	5,224	5,388
<b>Difference</b>	3,900	3,505	3,341	3,176	3,012
Difference as % of Supply	46	42	40	38	36
Difference as % of Demand	87	72	66	61	56

**Supply and Demand Comparison: Multiple-dry Year Scenario****(Water Code § 10635 (a))**

Project a multiple-dry year period (as identified in Table 9) occurring between 2006-2010 and compare projected supply and demand during those years

Section 6.2 Reference & Page Number

<b>Table 46</b>					
<b>Projected Supply During Multiple Dry Year Period Ending in 2010 - AFY</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of projected normal	51	51	51	51	51

<b>Table 47</b>					
<b>Projected Demand Multiple Dry Year Period Ending in 2010 - AFY</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Demand</b>	3,946	3,822	3,684	3,342	3,375
% of projected normal	100	88	84	75	75

<b>Table 48</b>					
<b>Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2010 - AFY</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	3,946	3,822	3,684	3,342	3,375
<b>Difference</b>	4,454	4,578	4,716	5,058	5,025
<b>Difference as % of Supply</b>	53	55	56	60	60
<b>Difference as % of Demand</b>	113	120	128	151	149

Project a multiple-dry year period (as identified in Table 9) occurring between 2011-2015 and compare projected supply and demand during those years

Section 6.2 Reference & Page Number

<b>Table 49</b>					
<b>Projected Supply During Multiple Dry Year Period Ending in 2015 - AFY</b>					
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of projected normal	49	49	49	49	49

<b>Table 50</b>					
<b>Projected Demand During Multiple Dry Year Period Ending in 2015 - AFY</b>					
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Demand</b>	4,578	4,075	3,954	3,611	3,671
% of projected normal	100	88	84	75	75

<b>Table 51</b>					
<b>Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2015 - AFY</b>					
	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	4,578	4,075	3,954	3,611	3,671
<b>Difference</b>	3,822	4,325	4,446	4,789	4,729
<b>Difference as % of Supply</b>	46	51	53	57	56
<b>Difference as % of Demand</b>	83	106	112	133	129

Project a multiple-dry year period (as identified in Table 9) occurring between 2016-2020 Section 6.2 Reference & Page Number and compare projected supply and demand during those years

<b>Table 52</b>					
<b>Projected Supply During Multiple Dry Year Period Ending in 2020 - AFY</b>					
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of projected normal	49	49	49	49	49

<b>Table 53</b>					
<b>Projected Demand Multiple Dry Year Period Ending in 2020 - AFY</b>					
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Demand</b>	4,928	4,340	4,169	3,770	3,794
% of projected normal	100	88	84	75	75

<b>Table 54</b>					
<b>Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2020 - AFY</b>					
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	4,928	4,340	4,169	3,770	3,794
<b>Difference</b>	3,472	4,060	4,231	4,630	4,606
<b>Difference as % of Supply</b>	41	48	50	55	55
<b>Difference as % of Demand</b>	70	94	101	123	121

X Project a multiple-dry year period (as identified in Table 9) occurring between 2021-2025 Section 6.2 Reference & Page Number and compare projected supply and demand during those years

<b>Table 55</b>					
<b>Projected Supply During Multiple Dry Year Period Ending in 2025 - AFY</b>					
	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of projected normal	49	49	49	49	49

<b>Table 56</b>					
<b>Projected Demand Multiple Dry Year Period Ending in 2025 - AFY</b>					
	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Demand</b>	5,092	4,484	4,307	3,893	3,918
% of projected normal	100	88	84	75	75

<b>Table 57</b>					
<b>Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2025- AFY</b>					
	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	5,092	4,484	4,307	3,893	3,918
<b>Difference</b>	3,308	3,916	4,093	4,507	4,482
<b>Difference as % of Supply</b>	39	47	49	54	53
<b>Difference as % of Demand</b>	65	87	95	116	114

Table 58 Projected Supply During Multiple Dry Year Period Ending in 2030 - AFY					
	2026	2027	2028	2029	2030
<b>Supply</b>	8,400	8,400	8,400	8,400	8,400
% of projected normal	49	49	49	49	49

Table 59 Projected Demand Multiple Dry Year Period Ending in 2030 - AFY					
	2026	2027	2028	2029	2030
<b>Demand</b>	5,257	4,628	4,444	4,016	4,041
% of projected normal	100	88	84	75	75

Table 60 Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2030 - AFY					
	2026	2027	2028	2029	2030
<b>Supply totals</b>	8,400	8,400	8,400	8,400	8,400
<b>Demand totals</b>	5,257	4,628	4,444	4,016	4,041
<b>Difference</b>	3,143	3,772	3,956	4,384	4,359
<b>Difference as % of Supply</b>	37	45	47	52	52
<b>Difference as % of Demand</b>	60	82	89	109	108

**Provision of Water Service Reliability section to cities/counties within service area (Water Code § 10635(b))**

Provided Water Service Reliability section of UWMP to cities and counties within which it provides water supplies within 60 days of UWMP submission to DWR \_\_\_\_\_ Reference & Page Number

**Does the Plan Include Public Participation and Plan Adoption (Water Code § 10642)**

- Attach a copy of adoption resolution \_\_\_\_\_ Reference & Page Number
- Encourage involvement of social, cultural & economic community groups \_\_\_\_\_ Reference & Page Number
- Plan available for public inspection \_\_\_\_\_ Reference & Page Number
- Provide proof of public hearing \_\_\_\_\_ Reference & Page Number
- Provided meeting notice to local governments \_\_\_\_\_ Reference & Page Number

**Review of implementation of 2000 UWMP (Water Code § 10643)**

- Reviewed implementation plan and schedule of 2000 UWMP \_\_\_\_\_ Reference & Page Number
- Implemented in accordance with the schedule set forth in plan \_\_\_\_\_ Reference & Page Number
- 2000 UWMP not required \_\_\_\_\_ Reference & Page Number

**Provision of 2005 UWMP to local governments (Water Code § 10644 (a))**

- Provide 2005 UWMP to DWR, and cities and counties within 30 days of adoption \_\_\_\_\_ Reference & Page Number

**Does the plan or correspondence accompanying it show where it is available for public review (Water Code § 10645)**

- Does UWMP or correspondence accompanying it show where it is available for public review \_\_\_\_\_ Reference & Page Number

## APPENDIX B

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### Public Hearing Notices

**NOTICE OF HEARING ON CITY OF UKIAH  
URBAN WATER MANAGEMENT PLAN UPDATE**

PLEASE TAKE **NOTICE** that the City Council of the City of Ukiah will hold a public hearing on a proposed update of its Urban Water Management Plan. The hearing will be held on October 17, 2007, beginning at 6:15 p.m. or as soon thereafter as the matter may be heard. The hearing will be held at the City Council Chambers, Ukiah Civic Center, 300 Seminary Avenue, Ukiah.

Copies of the proposed updated plan are available for public inspection in the Civic Center foyer and in the Civic Center Annex, located at 411 W. Clay Street, Ukiah. The plan is also available at the Mendocino County Public Library and on the City's website: <http://www.cityofukiah.com>.

Please let anyone you know who may be interested in the update of the City's Urban Water Management Plan know about this hearing. If you have any comments about or objections to the proposed plan, you must make those comments or objections known to the City Council by submitting them in writing before the hearing or making them orally at the public hearing. Please be advised that if you challenge the plan in court, you may be prevented from raising issues or presenting evidence that was not presented to the City Council by you or someone else at or prior to the hearing.

Dated: September 27, 2007

Linda Brown, Acting City Clerk

**Publish: 10/3/07; 10/9/07**

## APPENDIX C

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### Emergency Interconnection Agreement (July 1, 2002)

## EMERGENCY INTERCONNECTION AGREEMENT

This Agreement is made and entered in Ukiah, California, on July 1 2002, by and between the City of Ukiah ("Ukiah"), a general law municipal corporation and Millview County Water District ("Millview"), a county water district formed under the provisions of Water Code sections 30000 et seq.

### RECITALS:

1. Millview and Ukiah operate water systems that serve contiguous territory. Water mains belonging to the two agencies lie in close proximity to each other.

2. Urgent or emergency conditions can from time to time interrupt the water service Millview and Ukiah provide their customers. "Urgent or emergency conditions" in this Agreement means a sudden or unexpected occurrence or combination of occurrences causing the domestic water supply to be temporarily interrupted or lessened, and does not include inadequate water rights to meet peak demand.

3. It would improve the reliability of water service Millview and Ukiah provide to their customers, if the water mains of both systems were physically connected but separated by valves that could be opened during urgent or emergency conditions.

4. The purpose of this agreement is to establish the terms and conditions under which the systems can be physically connected and the water made available to the neighboring system during urgent or emergency conditions; *provided, however, that none of the quantity of water provided by Ukiah to Millview under the agreement is to be delivered by Millview to the Calpella County Water District.*

### AGREEMENT:

Wherefore, in consideration of the above-recited facts and on the terms and conditions as further stated herein the parties hereby agree as follows.

1. **Interconnection.** On and after the effective date of this Agreement the Ukiah and Millview water systems interconnections are in operation using lockable valves that can only be operated by Millview and Ukiah and a water meter of sufficient capacity for the connection size.

2. **Ukiah's Provision of water service to Millview.** Upon written or verbal request from Millview's General Manager or his duly authorized delegate, including a representation that urgent or emergency conditions exist, Ukiah's City Manager or his duly authorized delegate shall open the valve allowing water to flow from Ukiah's water system to Millview's water system under the following terms and conditions:

a. If practicable, Millview shall give Ukiah at least 24 hours advance notice to open the valve. In its request for service Millview shall indicate the time when it wants the temporary service to begin and the time when it wants that service to end. Unless earlier notified of a different termination date, Ukiah shall end service on the date

indicated in the notice from Millview. In any event, Ukiah may, but need not, end service when the limits of service imposed by subparagraph b have been reached.

b. Ukiah shall not be required to furnish water service for longer than fourteen continuous calendar days or for more than twenty total calendar days in any calendar quarter (Jan. 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31).

c. Ukiah shall only be required to furnish water service to Millview for the following reasons:

(1) An emergency and/or equipment failure affecting Millview's capacity to deliver water to its customers;

(2) To combat a fire within or without the Millview service area;

(3) To allow for necessary maintenance or repair of Millview equipment not practicably achievable without that water service; or

(4) Contamination of Millview's water source.

**3. Payment for service provided by Ukiah.** Millview shall pay Ukiah \$1.00 per 1000 gallons for water furnished under this Agreement. Ukiah shall bill Millview for requested service within fifteen days after said service ends, or within 30 days of beginning service, whichever comes first, and each 30 days thereafter until the charges for service have been paid in full. Payment of each bill shall be due no later than thirty days from the billing date. The parties shall confer in good faith at least once every two years after the effective date of this Agreement to negotiate rate adjustments, taking into consideration changes in the cost of operations and other factors affecting the cost of supplying water under the terms of this Agreement. In the event of future mutually agreed upon changes in the rate, Millview understands that Ukiah may charge a higher rate for water service outside city limits than it charges for water service within city limits. If it agrees to such higher charges, it shall also release and waive any legal or other objections it might otherwise have to paying such higher rates and agrees to fully defend, indemnify and hold Ukiah harmless from and against any claim by any Millview customer against Ukiah or its officers, agents or employees arising out of such rate differences, if any.

**4. Provision of water service to Ukiah from Millview.** Upon written or verbal request from Ukiah's City Manager or his duly authorized delegate, including a representation that urgent or emergency conditions exist, Millview's General Manager or his duly authorized delegate shall open the valve allowing water to flow from Millview water system to Ukiah's water system under the following terms and conditions:

a. If practicable, Ukiah shall give Millview at least 24 hours advance notice to open the valve. In its request for service Ukiah shall indicate the time when it wants the

temporary service to begin and the time it wants that service to end. Unless earlier notified of a different end date, Millview shall end service on the date indicated in the notice from Ukiah. In any event, Millview may, but need not, end service when the limits of service imposed by subparagraph b have been reached.

b. Millview shall not be required to furnish water service for longer than fourteen continuous calendar days or for more than twenty total calendar days in any calendar quarter (Jan. 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31).

c. Millview shall only be required to furnish water service to Ukiah for the following reasons:

(1) An emergency and/or equipment failure affecting Ukiah's capacity to deliver water to its customers;

(2) To combat a fire within or without the Ukiah service area;

(3) To allow for necessary maintenance or repair of Ukiah equipment not practicably achievable without that water service; or

(4) Contamination of Ukiah's water source.

5. **Payment for service provided by Millview.** Ukiah shall pay Millview \$1.00 per 1000 gallons for water furnished under this Agreement. Millview shall bill Ukiah for each requested service within fifteen days after said service ends, or within 30 days of beginning service whichever occurs first, and each 30 days thereafter until all charges are paid in full. Payment of each bill shall be due no later than thirty days from the billing date. The parties shall confer in good faith at least once every two years after the effective date of this Agreement to negotiate rate adjustments, taking into consideration changes in the cost of operations and other factors affecting the cost of supplying water under the terms of this Agreement. In the event of future mutually agreed upon changes in the rate for water service under this Agreement, Ukiah understands that Millview may charge a higher rate for water service outside its district boundaries than it charges for water service within those boundaries. If it agrees to such higher charges, it shall release and waive any legal or other objections it might otherwise have to paying such higher rates and agrees to fully defend, indemnify and hold Millview harmless from and against any claim by any Ukiah customer against Millview or its officers, agents or employees arising out of such rate differences, if any.

6. **Waiver.** Failure to enforce any breach of a provision of this Agreement shall not be deemed a waiver of any subsequent breach of the same or a different provision of the Agreement.

7. **Compliance with law.** This Agreement shall not obligate either party to furnish water to the other, if the provision of such water would violate any provision of state or federal law or any term or condition of any permit, license or other approval

held by either party in connection with its public water system. As of the date this Agreement was executed Ukiah and Millview had each been informed by the State Water Resources Control Board that relevant places of use would have to have been approved by the Board before interconnected water service could be provided under this Agreement.

8. **Limits on flow.** Ukiah and Millview mutually agree to limit the transfer of water under this Agreement to a rate of flow that will not adversely affect the distribution system or customer service levels of either system. If the City Manager of Ukiah or the General Manager of Millview determines that such an adverse impact will occur, the manager or authorized representative of the affected system may without prior notice discontinue or reduce flow to the other system.

10. **Entire agreement.** This Agreement contains the entire agreement between the parties concerning its subject matter and supersedes any prior statements, agreements or understandings between the parties concerning the same subject matter. Any such prior statements, agreements or understandings are hereby declared null and void and of no further force or effect. The parties may amend this Agreement or enter new or additional agreements to, among other things, transfer or sell water to each other, provided any such amendments or agreements are contained in a writing approved by the legislative bodies and executed by duly authorized officials of both parties.

11. **Notice.** Whenever written notice is required or allowed under the terms of this Agreement it shall be deemed given when personally delivered or when received by certified mail, return receipt requested, and addressed as follows:

City Manager  
City of Ukiah  
300 Seminary Avenue  
Ukiah, California 95482

General Manager  
Millview Water District  
3081 North State Street  
Ukiah, California 95482

13. **Term.** The term of this Agreement shall be five (5) years from its effective date. The term may be extended on such terms as the parties shall agree. No such extension shall be binding unless contained in a writing signed by both parties.

14. **Third party beneficiaries.** This Agreement is for the exclusive benefit of Ukiah and Millview and confers no rights or benefits on any persons or entities not a signatory to this Agreement. No third party beneficiaries are intended or established by this Agreement.

15. **Duplicate originals.** This Agreement may be executed in one or more duplicate originals and when so executed each duplicate original bearing the original

signatures of the parties shall be admissible in any administrative or legal proceeding as evidence of the terms of this Agreement.

WHEREFORE, the parties have entered this Agreement on the date first written above.

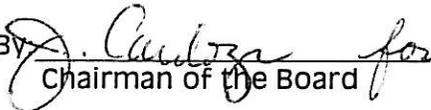
CITY OF UKIAH

BY:   
Mayor

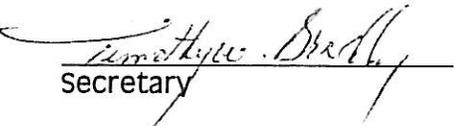
ATTEST:

  
City Clerk

MILLVIEW COUNTY WATER DISTRICT

BY:  for  
Chairman of the Board

ATTEST:

  
Secretary

## EMERGENCY INTERCONNECTION AGREEMENT

This Agreement is made and entered in Ukiah, California, on 6/27, 2002, by and between the City of Ukiah ("Ukiah"), a general law municipal corporation and Willow County Water District ("Willow"), a county water district formed under the provisions of Water Code sections 30000 et seq.

### RECITALS:

1. Willow and Ukiah operate water systems that serve contiguous territory. Water mains belonging to the two agencies lie in close proximity to each other.
2. Urgent or emergency conditions can from time to time interrupt the water service Willow and Ukiah provide their customers. "Urgent or emergency conditions" in this Agreement means a sudden or unexpected occurrence or combination of occurrences causing the domestic water supply to be temporarily interrupted or lessened, and does not include inadequate water rights to meet peak demand.
3. It would improve the reliability of water service Willow and Ukiah provide to their customers, if the water mains of both systems were physically connected but separated by valves that could be opened during urgent or emergency conditions.
4. The purpose of this agreement is to establish the terms and conditions under which the systems can be physically connected and the water made available to the neighboring system during urgent or emergency conditions.

### AGREEMENT:

Wherefore, in consideration of the above-recited facts and on the terms and conditions as further stated herein the parties hereby agree as follows.

1. **Interconnection.** On and after the effective date of this Agreement the Ukiah and Willow water systems interconnections are in operation using lockable valves that can only be operated by Willow and Ukiah and a water meter of sufficient capacity for the connection size.
2. **Ukiah's Provision of water service to Willow.** Upon written or verbal request from Willow's General Manager or his duly authorized delegate, including a representation that urgent or emergency conditions exist, Ukiah's City Manager or his duly authorized delegate shall open the valve allowing water to flow from Ukiah's water system to Willow's water system under the following terms and conditions:
  - a. If practicable, Willow shall give Ukiah at least 24 hours advance notice to open the valve. In its request for service Willow shall indicate the time when it wants the temporary service to begin and the time when it wants that service to end. Unless earlier notified of a different termination date, Ukiah shall end service on the date indicated in the notice from Willow. In any event, Ukiah may, but need not, end service when the limits of service imposed by subparagraph b have been reached.

b. Ukiah shall not be required to furnish water service for longer than fourteen continuous calendar days or for more than twenty total calendar days in any calendar quarter (Jan. 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31).

c. Ukiah shall only be required to furnish water service to Willow for the following reasons:

(1) An emergency and/or equipment failure affecting Willow's capacity to deliver water to its customers;

(2) To combat a fire within or without the Willow service area;

(3) To allow for necessary maintenance or repair of Willow equipment not practicably achievable without that water service; or

(4) Contamination of Willow's water source.

**3. Payment for service provided by Ukiah.** Willow shall pay Ukiah \$1.00 per 1000 gallons for water furnished under this Agreement. Ukiah shall bill Willow for requested service within fifteen days after said service ends, or within 30 days of beginning service, whichever comes first, and each 30 days thereafter until the charges for service have been paid in full. Payment of each bill shall be due no later than thirty days from the billing date. The parties shall confer in good faith at least once every two years after the effective date of this Agreement to negotiate rate adjustments, taking into consideration changes in the cost of operations and other factors affecting the cost of supplying water under the terms of this Agreement. In the event of future mutually agreed upon changes in the rate, Willow understands that Ukiah may charge a higher rate for water service outside city limits than it charges for water service within city limits. If it agrees to such higher charges, it shall also release and waive any legal or other objections it might otherwise have to paying such higher rates and agrees to fully defend, indemnify and hold Ukiah harmless from and against any claim by any Willow customer against Ukiah or its officers, agents or employees arising out of such rate differences, if any.

**4. Provision of water service to Ukiah from Willow.** Upon written or verbal request from Ukiah's City Manager or his duly authorized delegate, including a representation that urgent or emergency conditions exist, Willow's General Manager or his duly authorized delegate shall open the valve allowing water to flow from Willow water system to Ukiah's water system under the following terms and conditions:

a. If practicable, Ukiah shall give Willow at least 24 hours advance notice to open the valve. In its request for service Ukiah shall indicate the time when it wants the temporary service to begin and the time it wants that service to end. Unless earlier notified of a different end date, Willow shall end service on the date indicated in the notice from Ukiah. In any event, Willow may, but need not, end service when the limits of service imposed by subparagraph b have been reached.

b. Willow shall not be required to furnish water service for longer than fourteen continuous calendar days or for more than twenty total calendar days in any calendar quarter (Jan. 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31).

c. Willow shall only be required to furnish water service to Ukiah for the following reasons:

(1) An emergency and/or equipment failure affecting Ukiah's capacity to deliver water to its customers;

(2) To combat a fire within or without the Ukiah service area;

(3) To allow for necessary maintenance or repair of Ukiah equipment not practicably achievable without that water service; or

(4) Contamination of Ukiah's water source.

**5. Payment for service provided by Willow.** Ukiah shall pay Willow \$1.00 per 1000 gallons for water furnished under this Agreement. Willow shall bill Ukiah for each requested service within fifteen days after said service ends, or within 30 days of beginning service whichever occurs first, and each 30 days thereafter until all charges are paid in full. Payment of each bill shall be due no later than thirty days from the billing date. The parties shall confer in good faith at least once every two years after the effective date of this Agreement to negotiate rate adjustments, taking into consideration changes in the cost of operations and other factors affecting the cost of supplying water under the terms of this Agreement. In the event of future mutually agreed upon changes in the rate for water service under this Agreement, Ukiah understands that Willow may charge a higher rate for water service outside its district boundaries than it charges for water service within those boundaries. If it agrees to such higher charges, it shall release and waive any legal or other objections it might otherwise have to paying such higher rates and agrees to fully defend, indemnify and hold Willow harmless from and against any claim by any Ukiah customer against Willow or its officers, agents or employees arising out of such rate differences, if any.

**6. Waiver.** Failure to enforce any breach of a provision of this Agreement shall not be deemed a waiver of any subsequent breach of the same or a different provision of the Agreement.

**7. Compliance with law.** This Agreement shall not obligate either party to furnish water to the other, if the provision of such water would violate any provision of state or federal law or any term or condition of any permit, license or other approval held by either party in connection with its public water system. As of the date this Agreement was executed Ukiah and Willow had each been informed by the State Water Resources Control Board that relevant places of use would have to have been approved by the Board before interconnected water service could be provided under this Agreement.

**8. Limits on flow.** Ukiah and Willow mutually agree to limit the transfer of water under this Agreement to a rate of flow that will not adversely affect the distribution system or customer service levels of either system. If the City Manager of Ukiah or the General Manager of Willow determines that such an adverse impact will occur, the manager or authorized representative of the affected system may without prior notice discontinue or reduce flow to the other system.

**10. Entire agreement.** This Agreement contains the entire agreement between the parties concerning its subject matter and supersedes any prior statements, agreements or understandings between the parties concerning the same subject matter. Any such prior statements, agreements or understandings are hereby declared null and void and of no further force or effect. The parties may amend this Agreement or enter new or additional agreements to, among other things, transfer or sell water to each other, provided any such amendments or agreements are contained in a writing approved by the legislative bodies and executed by duly authorized officials of both parties.

**11. Notice.** Whenever written notice is required or allowed under the terms of this Agreement it shall be deemed given when personally delivered or when received by certified mail, return receipt requested, and addressed as follows:

City Manager  
City of Ukiah  
300 Seminary Avenue  
Ukiah, California 95482

General Manager  
Willow Water District  
151 Laws Avenue  
Ukiah, California 95482

**13. Term.** The term of this Agreement shall be five (5) years from its effective date. The term may be extended on such terms as the parties shall agree. No such extension shall be binding unless contained in a writing signed by both parties.

**14. Third party beneficiaries.** This Agreement is for the exclusive benefit of Ukiah and Willow and confers no rights or benefits on any persons or entities not a signatory to this Agreement. No third party beneficiaries are intended or established by this Agreement.

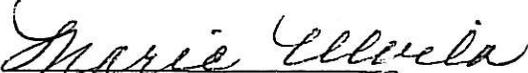
**15. Duplicate originals.** This Agreement may be executed in one or more duplicate originals and when so executed each duplicate original bearing the original signatures of the parties shall be admissible in any administrative or legal proceeding as evidence of the terms of this Agreement.

WHEREFORE, the parties have entered this Agreement on the date first written above.

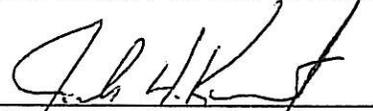
CITY OF UKIAH

BY:   
Mayor

ATTEST:

  
City Clerk

WILLOW COUNTY WATER DISTRICT

BY:   
Chairman of the Board

ATTEST:

  
Secretary

## APPENDIX D

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California Department of Water Resources Bulletin 118

## Ukiah Valley Groundwater Basin

- Groundwater Basin Number: 1-52
- County: Mendocino
- Surface Area: 37,500 acres (59 square miles)

### Basin Boundaries and Hydrology

The Ukiah Valley groundwater basin, located in southeastern Mendocino County, is approximately 22 miles long and 5 miles wide at the widest point, and is the largest of several groundwater basins along the Russian River. The basin is part of the Ukiah and the Redwood Valleys to the north, and their tributary valleys. The low-lying regions of the Ukiah and Redwood Valleys as well as those sloping areas along the valley edges that include Quaternary- and Tertiary-age sediments define the areal extent of this north-south trending basin. The basin surface elevation varies from approximately 1,000 feet in the upper portions of the Redwood Valley, to approximately 500 feet in the lower, southern areas of the Ukiah Valley.

The Russian River traverses the entire length of the Ukiah Valley groundwater basin and is met by many tributaries from both the east and west sides of Redwood and Ukiah Valleys. The main tributaries include Forsythe Creek, which joins with the Russian River north of the city of Calpella, and the East Fork of the Russian River, which joins the main branch of the Russian River north of Ukiah. Lake Mendocino, a reservoir created from the East Fork of the Russian River located between Redwood Valley and Ukiah Valley, is also an important feature of the surface hydrology of the region. Precipitation in the basin ranges from approximately 45 inches in the north to about 35 inches in the south.

Ukiah is the largest city within the valley and is located on its southwest side. Other cities include Talmage, east of Ukiah, and Calpella on the south end of Redwood Valley. Highway 101 travels the length of the Ukiah Valley from the south and veers west away from Redwood Valley, paralleling Forsythe Creek. Highway 20 enters the valley from the east and intersects with Highway 101 at Calpella.

### Hydrogeologic Information

#### ***Water Bearing Formations***

Groundwater-bearing units of primary importance within the Ukiah Valley Groundwater Basin include Recent alluvium, as well as alluvium of Pliocene and Pleistocene age. The terrace deposits and dissected alluvium of Pleistocene age are of lesser importance with regard to groundwater production. Underlying these deposits is moderately to highly fractured basement rock consisting of the Franciscan and Knoxville Formations. Even when highly fractured these formations have limited permeability, and are considered to yield only small quantities of water locally (Cardwell 1965). Information on water-bearing formations, hydrogeology, and storage capacity is available from Cardwell (1965), DWR, (1965), and Farrar (1986).

**Recent Alluvium.** Alluvium within the basin is considered a principal source of groundwater and consists of unconsolidated gravel, sand, silt, and

minor amounts of clay deposited in channels and on floodplains of the Russian River and its tributaries, on alluvial fans, and as colluvium on interfan slopes. A subdivision of Recent alluvium includes river-channel deposits defined by those areas where gravely stream channel deposits are currently being deposited. River-channel deposits are generally very high yielding loose gravels and sands; in some cases these deposits contain boulders. Recent alluvium is thickest in the central portion of the basin and extends from the surface to depths of 50 to 80 feet (Cardwell 1965). An average specific yield of 20 percent was used for the alluvium in two separate studies (Cardwell 1965, DWR 1965). Groundwater in the alluvium generally occurs under unconfined conditions.

**Pleistocene Terrace Deposits.** Terrace deposits are characterized as alluvial deposits of primarily Pleistocene age, ranging from a thin veneer of red gravelly clay soil, to deposits of sandy or silty gravel up to 200 feet thick. Terrace deposits generally overly the Pliocene- and Pleistocene-age alluvium and occur discontinuously along the flanks of the Ukiah Valley and more continuously within the Redwood Valley on both sides of the Russian River. Groundwater in the terrace deposits is unconfined to locally confined (Cardwell 1965).

Production from the terrace deposits is variable based on sediment thickness, depth to water, and percentage of fine grained material; however, these deposits generally yield enough water for domestic purposes if an appreciable thickness of the deposit occurs below the water table (Cardwell 1965).

**Pliocene/Pleistocene Alluvium.** These deposits are described as continental deposits comprised of poorly consolidated and poorly sorted clayey and sandy gravel, clayey sand, and sandy clay. In general, thick lenses of moderately indurated gravel interfinger with large bodies of blue sandy silt and clay (Cardwell 1965). Overall, this alluvium has low permeability due to the relatively high percentage of fine sediments; however, wells can produce moderate amounts of water from these sediments if long sections of perforated (or screened) intervals are used. Bed thickness is variable, with the maximum thickness considered to be about 2,000 feet. Outcrops of this formation can be seen along the entire east side of the Ukiah Valley, as well as the southeast side of the Redwood Valley (Cardwell 1965). It is possible that current groundwater use relies more heavily on Pleistocene- and Pliocene-age alluvium than reflected in this basin description due to ongoing trends in improved well construction techniques and deeper well seal requirements. Groundwater in the older alluvium deposits is generally confined (Cardwell 1965).

**Dissected Alluvium.** Dissected alluvium is gravelly sediment cemented by carbonate precipitation located along Sulfur Creek below Vichy Springs and along McNab Creek. These sediments yield only very limited quantities of water (Cardwell 1965).

### **Groundwater Level Trends**

Based on hydrographs from DWR monitored wells, groundwater levels in the past 30 years have remained relatively stable. During drought conditions there is increased drawdown during summer months and less recovery in winter months. Post-drought conditions rebound to approximately the same levels as pre-drought conditions.

### **Groundwater Storage**

**Groundwater Storage Capacity.** It is estimated that approximately 324,000 af of storage exists in the older continental deposits; however, it is probably not usable for short-term storage purposes due to the low-permeability nature of these deposits (DWR 1965).

**Groundwater in Storage.** Groundwater in storage within the alluvium and younger terrace deposits is estimated to be about 75,000 to 100,000 af (Cardwell 1965). Groundwater in storage within the river-channel deposits between 10 and 50 foot depths is estimated to be 35,000 af based on an average specific yield of 20 percent (Cardwell 1965, DWR 1965). Farrar (1986) estimated that the quantity of groundwater stored in the upper 100 feet of the most productive area of valley fill (Type I) to be about 90,000 af using an average specific yield of 8 percent and an area of 20 square miles. Farrar (1986) also estimated the quantity of groundwater stored along the margins of the valley (Type II area) and underlain by terrace deposits or thin alluvium at 45,000 af. This estimate is based on the upper 100 feet of Type II aquifer materials, an area of 19 square miles, and an average specific yield of 5 percent.

### **Groundwater Budget (Type C)**

There is not enough data available to provide an estimate of the basin's water budget.

### **Groundwater Quality**

**Characterization.** Water quality is good in general, especially water derived from Recent alluvium deposits; however, locally the content of chemical constituents varies widely. Overall, water is moderately hard to hard bicarbonate. Based on limited data, calcium-bicarbonate groundwater occurs in the southern portion of the basin and magnesium-bicarbonate water occurs in the east-central portion of the basin (Cardwell 1965). Quality in the Recent formations is similar to Russian River water, with slightly higher TDS and chloride levels. Pliocene- and Pleistocene-age formations yield water with higher TDS and sodium than Recent-age formations. Water from springs ranges from highly mineralized to good in quality (Cardwell 1965). TDS values range from 108 to 401 mg/L and average 224 mg/L based on four wells (Cardwell 1965). Electrical conductivity ranges from 450 to 759  $\mu\text{mhos/cm}$  and average 605  $\mu\text{mhos/cm}$  based on two wells (Cardwell 1965). Based on analyses of 22 water supply wells in the Ukiah Valley, TDS ranges from 87 to 301 mg/L and averages about 166 mg/L.

**Impairments.** Wells with high boron concentrations are located in several areas along the Ukiah Valley edges and in the north end of the Redwood

Valley. Verbal reports indicate that (in general) poor quality water occurs on the west side of the basin. Flammable gas was reported in at least one well. Pressurized carbon dioxide gas was detected in two wells which probably penetrate bedrock (Cardwell 1965). Most poor quality water is believed to migrate into basin sediments from basement rock through fractures or faults.

### Water Quality in Public Supply Wells

Constituent Group <sup>1</sup>	Number of wells sampled <sup>2</sup>	Number of wells with a concentration above an MCL <sup>3</sup>
Inorganics – Primary	23	0
Radiological	21	0
Nitrates	28	0
Pesticides	23	0
VOCs and SVOCs	22	0
Inorganics – Secondary	23	6

<sup>1</sup> 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).

<sup>2</sup> Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.

<sup>3</sup> 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)		
Up to 1,200 gal/min from Recent Alluvium and less than 50 gal/min from undifferentiated older formations (DWR 1965)		
Total depths (ft)		
Domestic	Range: 15 - 600	Average: 220 (155 Well Completion Reports)
Municipal/Irrigation	Range: 36 - 115	Average: 115 (36 Well Completion Reports)

### Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
DWR	Groundwater levels	5 wells/semi-annually
Mendocino County Water Agency	Groundwater levels	23 well/annually
DWR	Mineral, nutrient, & minor element.	7 wells/ biennially
Department of Health Services	Coliform, nitrates, mineral, organic chemicals, and radiological.	25 wells as required in Title 22, Calif. Code of Regulations

## Basin Management

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Groundwater management:	No groundwater management plans were identified
Water agencies	
Public	Mendocino County Water Agency, Hopland PUD, Millview County WD, Redwood County WD, Willow County WD.
Private	

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## References Cited

- California Department of Water Resources (DWR). 1965. Water Resources and Future Water Requirements – North Coastal Hydrographic Area, Volume 1: Southern Portion (Preliminary Edition) – Bulletin No. 142-1.
- Cardwell, G.T. 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.
- Farrar, C.D. 1986. Ground-Water Resources in Mendocino County, California. USGS Water-Resources Investigations Report 85-4258.

## Errata

Changes made to the basin description will be noted here.

## North Coast Hydrologic Region

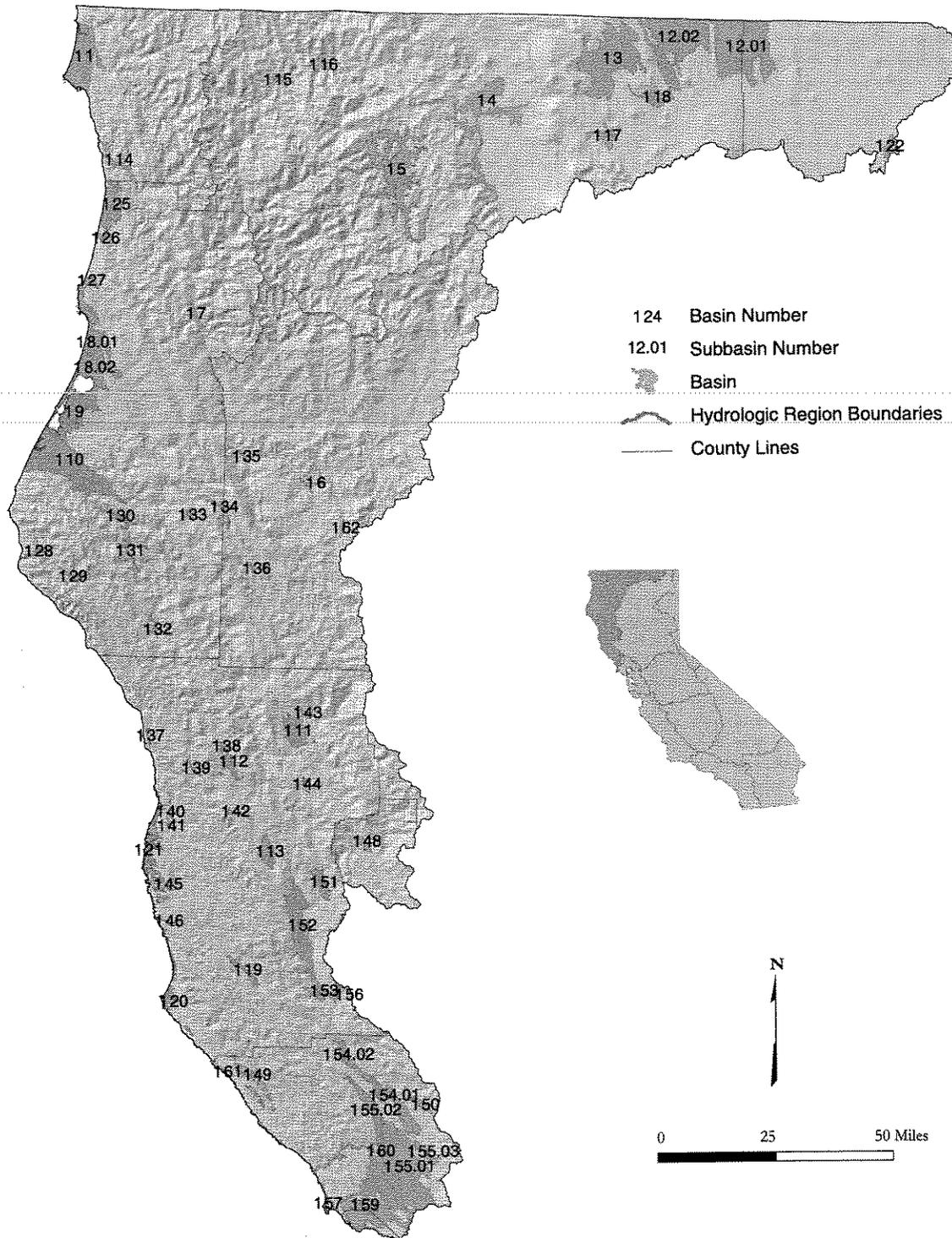


Figure 25 North Coast Hydrologic Region

## Basins and Subbasins of the North Coast Hydrologic Region

Basin/subbasin	Basin name	Basin/subbasin	Basin name
1-1	Smith River Plain	1-42	Sherwood Valley
1-2	Klamath River Valley	1-43	Williams Valley
1-2.01	Tule Lake	1-44	Eden Valley
1-2.02	Lower Klamath	1-45	Big River Valley
1-3	Butte Valley	1-46	Navarro River Valley
1-4	Shasta Valley	1-48	Gravelley Valley
1-5	Scott River Valley	1-49	Annapolis Ohlson Ranch Formation Highlands
1-6	Hayfork Valley	1-50	Knights Valley
1-7	Hoopla Valley	1-51	Potter Valley
1-8	Mad River Valley	1-52	Ukiah Valley
1-8.01	Mad River Lowland	1-53	Sanel Valley
1-8.02	Dows Prairie School Area	1-54	Alexander Valley
1-9	Eureka Plain	1-54.01	Alexander Area
1-10	Eel River Valley	1-54.02	Cloverdale Area
1-11	Covelo Round Valley	1-55	Santa Rosa Valley
1-12	Laytonville Valley	1-55.01	Santa Rosa Plain
1-13	Little Lake Valley	1-55.02	Healdsburg Area
1-14	Lower Klamath River Valley	1-55.03	Rincon Valley
1-15	Happy Camp Town Area	1-56	McDowell Valley
1-16	Seiad Valley	1-57	Bodega Bay Area
1-17	Bray Town Area	1-59	Wilson Grove Formation Highlands
1-18	Red Rock Valley	1-60	Lower Russian River Valley
1-19	Anderson Valley	1-61	Fort Ross Terrace Deposits
1-20	Garcia River Valley	1-62	Wilson Point Area
1-21	Fort Bragg Terrace Area		
1-22	Fairchild Swamp Valley		
1-25	Prairie Creek Area		
1-26	Redwood Creek Area		
1-27	Big Lagoon Area		
1-28	Mattole River Valley		
1-29	Honeydew Town Area		
1-30	Pepperwood Town Area		
1-31	Weott Town Area		
1-32	Garberville Town Area		
1-33	Larabee Valley		
1-34	Dinsmores Town Area		
1-35	Hyampom Valley		
1-36	Hettenshaw Valley		
1-37	Cottoneva Creek Valley		
1-38	Lower Laytonville Valley		
1-39	Branscomb Town Area		
1-40	Ten Mile River Valley		
1-41	Little Valley		

## Description of the Region

The North Coast HR covers approximately 12.46 million acres (19,470 square miles) and includes all or portions of Modoc, Siskiyou, Del Norte, Trinity, Humboldt, Mendocino, Lake, and Sonoma counties (Figure 25). Small areas of Shasta, Tehama, Glenn, Colusa, and Marin counties are also within the region. Extending from the Oregon border south to Tomales Bay, the region includes portions of four geomorphic provinces. The northern Coast Range forms the portion of the region extending from the southern boundary north to the Mad River drainage and the fault contact with the metamorphic rocks of the Klamath Mountains, which continue north into Oregon. East of the Klamath terrane along the State border are the volcanic terranes of the Cascades and the Modoc Plateau. In the coastal mountains, most of the basins are along the narrow coastal strip between the Pacific Ocean and the rugged Coast Range and Klamath Mountains and along inland river valleys; alluviated basin areas are very sparse in the steep Klamath Mountains. In the volcanic terrane to the east, most of the basins are in block faulted valleys that once held Pleistocene-age lakes. The North Coast HR corresponds to the boundary of RWQCB 1. Significant geographic features include basin areas such as the Klamath River Basin, the Eureka/Arcata area, Hoopa Valley, Anderson Valley, and the Santa Rosa Plain. Other significant features include Mount Shasta, forming the southern border of Shasta Valley, and the rugged north coastal shoreline. The 1995 population of the entire region was about 606,000, with most being centered along the Pacific Coast and in the inland valleys north of the San Francisco Bay Area.

The northern mountainous portion of the region is rural and sparsely populated, primarily because of the rugged terrain. Most of the area is heavily forested. Some irrigated agriculture occurs in the narrow river valleys, but most occurs in the broader valleys on the Modoc Plateau where pasture, grain and alfalfa predominate. In the southern portion of the region, closer to urban centers, crops like wine grapes, nursery stock, orchards, and truck crops are common.

A majority of the surface water in the North Coast HR goes to environmental uses because of the “wild and scenic” designation of most of the region’s rivers. Average annual precipitation ranges from 100 inches in the Smith River drainage to 29 inches in the Santa Rosa area and about 10 inches in the Klamath drainage; as a result, drought is likely to affect the Klamath Basin more than other portions of the region. Communities that are not served by the area’s surface water projects also tend to experience shortages. Surface water development in the region includes the U.S. Bureau of Reclamation (USBR) Klamath Project, Humboldt Bay Municipal Water District’s Ruth Lake, and U.S. Army Corps of Engineer’s Russian River Project. An important factor concerning water demand in the Klamath Project area is water allocation for endangered fish species in the upper and lower basin. Surface water deliveries for agriculture in 2001, a severe drought year, were only about 20 percent of normal.

## Groundwater Development

Groundwater development in the North Coast HR occurs along the coast, near the mouths of some of the region’s major rivers, on the adjacent narrow marine terraces, or in the inland river valleys and basins. Reliability of these supplies varies significantly from area to area. There are 63 groundwater basins/subbasins delineated in the region, two of which are shared with Oregon. These basins underlie approximately 1.022 million acres (1,600 square miles).

Along the coast, most groundwater is developed from shallow wells installed in the sand and gravel beds of several of the region’s rivers. Under California law, the water produced in these areas is considered surface water underflow. Water from Ranney collectors installed in the Klamath River, Rowdy Creek, the Smith

River, and the Mad River supply the towns of Klamath, Smith River and Crescent City in Del Norte County and most of the Humboldt Bay area in Humboldt County. Except on the Mad River, which has continuous supply via releases from Ruth Reservoir, these supplies are dependent on adequate precipitation and flows throughout the season. In drought years when streamflows are low, seawater intrusion can occur causing brackish or saline water to enter these systems. This has been a problem in the town of Klamath, which in 1995 had to obtain community water from a private well source. Toward the southern portion of the region, along the Mendocino coast, the Town of Mendocino typifies the problems related to groundwater development in the shallow marine terrace aquifers. Groundwater supply is limited by the aquifer storage capacity, and surveys done in the Town of Mendocino in the mid-1980s indicate that about 10 percent of wells go dry every year and up to 40 percent go dry during drought years.

Groundwater development in the inland coastal valleys north of the divide between the Russian and Eel Rivers is generally of limited extent. Most problems stemming from reliance on groundwater in these areas is a lack of alluvial aquifer storage capacity. Many groundwater wells rely on hydrologic connection to the rivers and streams of the valleys. The City of Rio Dell has experienced water supply problems in community wells and, as a result, recently developed plans to install a Ranney collector near the Eel River. South of the divide, in the Russian River drainage, a significant amount of groundwater development has occurred on the Santa Rosa Plain and surrounding areas. The groundwater supplies augment surface supplies from the Russian River Project.

In the north-central part of the North Coast HR, the major groundwater basins include the Klamath River Valley, Shasta Valley, Scott River Valley, and Butte Valley. The Klamath River Valley is shared with Oregon. Of these groundwater basins, Butte Valley has the most stable water supply conditions. The historical annual agricultural surface water supply has been about 20,000 acre-feet. As farming in the valley expanded from the early 1950s to the early 1990s, bringing nearly all the arable land in the valley into production, groundwater was developed to farm the additional acres. It has been estimated that current, fully developed demands are only about 80 percent of the available groundwater supply. By contrast, water supply issues in the other three basins are contingent upon pending management decisions regarding restoration of fish populations in the Klamath River and the Upper Klamath Basin system. The Endangered Species Act (ESA) fishery issues include lake level requirements for two sucker fish species and in-stream flow requirements for coho salmon and steelhead trout. Since about 1905, the Klamath Project has provided surface water to the agricultural community, which in turn has provided water to the wildlife refuges. Since the early 1990s, it has been recognized that surface water in the Klamath Project is over-allocated, but very little groundwater development had occurred. In 2001, which was a severe drought year, USBR delivered a total of about 75,000 acre-feet of water to agriculture in California, about 20 percent of normal. In the Klamath River Groundwater Basin this translated to a drought disaster, both for agriculture and the wildlife refuges. In addition, there were significant impacts for both coho salmon and sucker fisheries in the Klamath River watershed. As a result of the reduced surface water deliveries, significant groundwater development occurred, and groundwater extraction increased from an estimated 6,000 acre-feet in 1997 to roughly 60,000 acre-feet in 2001. Because of the complexity of the basin's water issues, a long-term Klamath Project Operation plan has not yet been finalized. Since 1995, USBR has issued an annual operation plan based on estimates of available supply. The Scott River Valley and Shasta Valley rely to a significant extent on surface water diversions. In most years, surface water supplies the majority of demand, and groundwater extraction supplements supply as needed depending on wet or dry conditions. Discussions are under way to develop strategies to conjunctively use surface water and groundwater to meet environmental, agricultural, and other demands.

### Groundwater Quality

Groundwater quality characteristics and specific local impairments vary with regional setting within the North Coast HR. In general, seawater intrusion and nitrates in shallow aquifers are problems in the coastal groundwater basins; high total dissolved solids (TDS) content and general alkalinity are problems in the lake sediments of the Modoc Plateau basins; and iron, boron, and manganese can be problems in the inland basins of Mendocino and Sonoma counties.

#### Water Quality in Public Supply Wells

From 1994 through 2000, 584 public supply water wells were sampled in 32 of the 63 basins and subbasins in the North Coast HR. Analyzed samples indicate that 553 wells, or 95%, met the state primary Maximum Contaminant Levels (MCL) for drinking water. Thirty-one wells, or 5%, sampled have constituents that exceed one or more MCL. Figure 26 shows the percentage of each contaminant group that exceeded MCLs in the 31 wells.

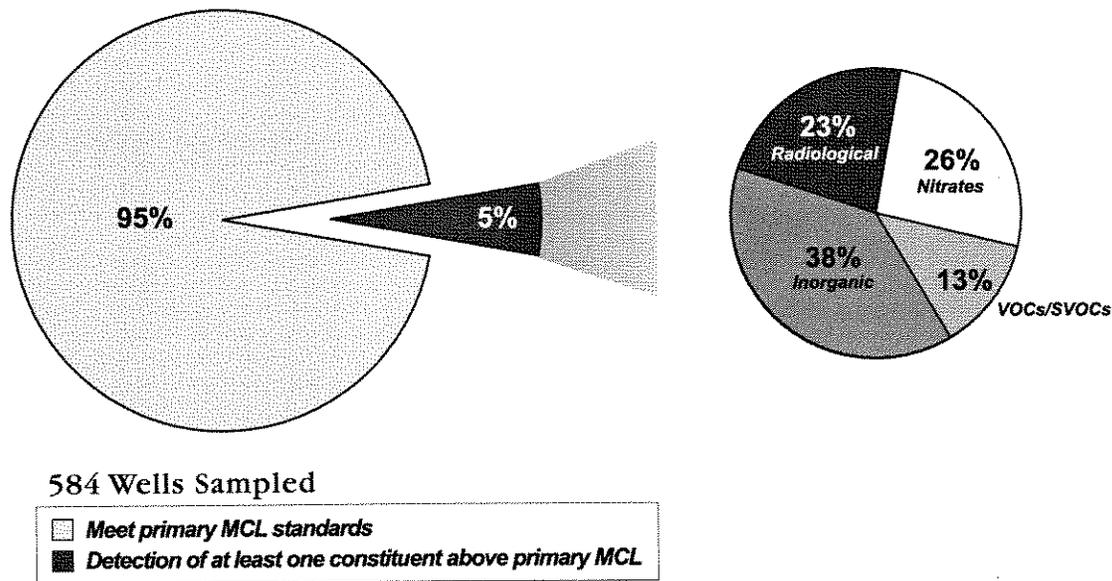


Figure 26 MCL exceedances in public supply wells in the North Coast Hydrologic Region

Table 13 lists the three most frequently occurring individual contaminants in each of the five contaminant groups and shows the number of wells in the HR that exceeded the MCL for those contaminants.

**Table 13 Most frequently occurring contaminants by contaminant group in the North Coast Hydrologic Region**

Contaminant group	Contaminant - # of wells	Contaminant - # of wells	Contaminant - # of wells
Inorganics – Primary exceedance	Aluminum – 4	Arsenic – 4	4 tied at 1
Inorganics – Secondary	Manganese – 150	Iron – 108	Copper – 2
Radiological	Radium 228 – 3	Combined RA226 + RA228 – 3	Radium 226 – 1
Nitrates	Nitrate(as NO <sub>3</sub> ) – 7	Nitrite(as N) – 1	
VOCs/SVOCs	TCE – 2	3 tied at 1 exceedance	

TCE = Trichloroethylene  
VOC = Volatile Organic Compound  
SVOC = Semivolatile Organic Compound

### Changes from Bulletin 118-80

Since Bulletin 118-80 was published, RWQCB 2 boundary has been modified. This resulted in several basins being reassigned to RWQCB 1. These are listed in Table 14, along with other modifications to North Coast HR.

**Table 14 Modifications since Bulletin 118-80 of groundwater basins in North Coast Hydrologic Region**

Basin name	New number	Old number
McDowell Valley	1-56	2-12
Knights Valley	1-50	2-13
Potter Valley	1-51	2-14
Ukiah Valley	1-52	2-15
Sanel Valley	1-53	2-16
Alexander Valley	1-54	2-17
Santa Rosa Valley	1-55	2-18
Lower Russian River Valley	1-60	2-20
Bodega Bay Area	1-57	2-21
Modoc Plateau Recent Volcanic Area	deleted	1-23
Modoc Plateau Pleistocene Volcanic Area	deleted	1-24
Gualala River Valley	deleted	1-47
Wilson Grove Formation Highlands	1-59	2-25
Fort Ross Terrace Deposits	1-61	
Wilson Point Area	1-62	

Fort Ross Terrace Deposits (1-61) and Wilson Point Area (1-62) have been defined since B118-80 and are included in this update. Mad River Valley Groundwater Basin (1-8) has been subdivided into two subbasins. Sebastopol Merced Formation (2-25) merged into Basin 1-59 and was renamed Wilson Grove Formation Highlands.

There are a couple of deletions of groundwater basins from Bulletin 118-80. The Modoc Plateau Recent Volcanic Area (1-23) and the Modoc Plateau Pleistocene Volcanic Area (1-24) are volcanic aquifers and were not assigned basin numbers in this bulletin. These are considered to be groundwater source areas as discussed in Chapter 6. Gualala River Valley (1-47) was deleted because the State Water Resources Control Board determined the water being extracted in this area as surface water within a subterranean stream.

Table 15 North Coast Hydrologic Region groundwater data

Basin/Subbasin	Basin Name	Area (acres)	Groundwater Budget Type	Well Yields (gpm)		Types of Monitoring				TDS (mg/L)	
				Maximum	Average	Levels	Quality	Title 22	Average	Range	
1-1	SMITH RIVER PLAIN	40,450	B	500	50	7	10	33	164	32 - 496	
1-2	KLAMATH RIVER VALLEY										
1-2.01	UPPER KLAMATH LAKE BASIN - Tule Lake	85,930	B	3,380	1,208	40	8	5	721	140 - 2,200	
1-2.02	UPPER KLAMATH LAKE BASIN - Lower Klamath	73,330	B	2,600	1,550	4	-	-	-	-	
1-3	BUTTE VALLEY	79,700	B	5,000	2,358	28	13	9	310	55 - 1,110	
1-4	SHASTA VALLEY	52,640	B	1,200	273	9	15	24	-	-	
1-5	SCOTT RIVER VALLEY	63,900	B	3,000	794	6	10	5	258	47 - 1,510	
1-6	HAYFORK VALLEY	3,300	B	200	-	-	5	-	-	-	
1-7	HOOPA VALLEY	3,900	B	300	-	-	4	-	125	95 - 159	
1-8	MAD RIVER VALLEY										
1-8.01	MAD RIVER VALLEY LOWLAND	25,600	B	120	72	4	9	2	184	55 - 280	
1-8.02	DOWS PRAIRIE SCHOOL AREA	14,000	B	-	-	-	3	-	-	-	
1-9	EUREKA PLAIN	37,400	B	1,200	-	4	4	6	177	97 - 460	
1-10	EEL RIVER VALLEY	73,700	B	1,200	-	8	11	29	237	110 - 340	
1-11	COVELO ROUND VALLEY	16,400	C	850	193	9	5	29	239	116 - 381	
1-12	LAYTONVILLE VALLEY	5,020	A	700	7	4	3	-	149	53 - 251	
1-13	LITTLE LAKE VALLEY	10,000	A	1,000	45	7	7	-	340	97 - 1,710	
1-14	LOWER KLAMATH RIVER VALLEY	7,030	B	-	-	-	-	-	-	43 - 150	
1-15	HAPPY CAMP TOWN AREA	2,770	B	-	-	-	-	17	-	-	
1-16	SEIAD VALLEY	2,250	B	-	-	-	2	2	-	-	
1-17	BRAY TOWN AREA	8,030	B	-	-	-	-	-	-	-	
1-18	RED ROCK VALLEY	9,000	B	-	-	-	-	-	-	-	
1-19	ANDERSON VALLEY	4,970	C	300	30	7	5	7	-	80 - 400	
1-20	GARCIA RIVER VALLEY	2,240	C	-	-	-	-	-	-	-	
1-21	FORT BRAGG TERRACE AREA	24,100	C	75	14	-	-	51	185	26 - 650	
1-22	FAIRCHILD SWAMP VALLEY	3,300	B	-	-	-	-	-	-	-	
1-25	PRAIRIE CREEK AREA	20,000	B	-	-	-	-	1	106	-	
1-26	REDWOOD CREEK AREA	2,000	B	-	-	1	0	4	-	102 - 332	
1-27	BIG LAGOON AREA	13,400	B	-	-	1	0	31	174	-	
1-28	MATTOLE RIVER VALLEY	3,150	B	-	-	-	-	2	-	-	
1-29	HONEYDEW TOWN AREA	2,370	B	-	-	-	-	1	-	-	
1-30	PEPPERWOOD TOWN AREA	6,290	B	-	-	-	-	1	-	-	
1-31	WEOTT TOWN AREA	3,650	B	-	-	-	-	2	-	-	
1-32	GARBERVILLE TOWN AREA	2,100	B	-	-	-	-	5	-	-	
1-33	LARABEE VALLEY	970	B	-	-	-	-	-	-	-	
1-34	DINSMORES TOWN AREA	2,300	B	-	-	-	-	3	-	-	
1-35	HYAMPOM VALLEY	1,350	B	-	-	-	-	1	-	-	
1-36	HETTENSHAW VALLEY	850	B	-	-	-	-	-	-	-	
1-37	COTTONEVA CREEK VALLEY	760	C	-	-	-	-	-	118	118	
1-38	LOWER LAYTONVILLE VALLEY	2,150	C	-	-	-	-	-	-	-	
1-39	BRANSCOMB TOWN AREA	1,320	C	-	-	-	-	-	130	80 - 179	
1-40	TEN MILE RIVER VALLEY	1,490	C	-	-	-	-	-	-	-	
1-41	LITTLE VALLEY	810	C	-	-	-	-	-	-	-	

Table 15 North Coast Hydrologic Region groundwater data (continued)

Basin/Subbasin	Basin Name	Area (acres)	Groundwater Budget Type	Well Yields (gpm)		Types of Monitoring			TDS (mg/L)	
				Maximum	Average	Levels	Quality	Title 22	Average	Range
1-42	SHERWOOD VALLEY	1,150	C	-	-	-	-	-	-	-
1-43	WILLIAMS VALLEY	1,640	C	-	-	-	-	-	-	-
1-44	EDEN VALLEY	1,380	C	-	-	-	-	-	140	140
1-45	BIG RIVER VALLEY	1,690	C	-	-	-	-	2	-	-
1-46	NAVARRO RIVER VALLEY	770	C	-	-	-	-	-	-	-
1-48	GRAVELLY VALLEY	3,000	C	-	-	-	-	3	-	-
1-49	ANAPOLIS OHLSON RANCH FOR. HIGHLANDS	8,650	C	36	-	-	0	1	260	260
1-50	KNIGHTS VALLEY	4,090	C	-	-	-	-	-	-	-
1-51	POTTER VALLEY	8,240	C	100	-	2	0	1	-	140 - 395
1-52	UKIAH VALLEY	-	-	-	-	-	-	-	-	-
1-53	SANEL VALLEY	5,570	C	1,250	-	5	8	6	-	174 - 306
1-54	ALEXANDER VALLEY	-	-	-	-	-	-	-	-	-
1-54.01	ALEXANDER AREA	-	-	-	-	-	-	-	-	-
1-54.02	CLOVERDALE AREA	6,500	C	-	500	3	-	13	-	130 - 304
1-55	SANTA ROSA VALLEY	-	-	-	-	-	-	-	-	-
1-55.01	SANTA ROSA PLAIN	80,000	A	1,500	-	43	-	155	-	-
1-55.02	HEALDSBURG AREA	15,400	C	500	-	8	-	28	-	90 - 500
1-55.03	RINCON VALLEY	5,600	C	-	-	2	-	12	-	-
1-56	MCDOWELL VALLEY	1,500	C	1,200	-	-	-	-	145	143 - 146
1-57	BODEGA BAY AREA	2,680	A	150	-	-	-	6	-	-
1-59	WILSON GROVE FORMATION HIGHLANDS	81,500	C	-	-	14	-	68	-	-
1-60	LOWER RUSSIAN RIVER VALLEY	6,600	C	500 +	-	1	-	32	-	120 - 210
1-61	FORT ROSS TERRACE DEPOSITS	8,490	C	75	27	-	-	13	320	230 - 380
1-62	WILSON POINT AREA	700	B	-	-	-	-	-	-	-

gpm - gallons per minute  
 mg/L - milligram per liter  
 TDS = total dissolved solids

## APPENDIX E

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### Water Shortage Emergency Plan

# Ukiah, California City Code

This code was last updated by ordinance 1080 passed June 14, 2006.

## **ARTICLE 11. WATER SHORTAGE EMERGENCY**

### **3600: FINDINGS:**

The City Council hereby finds and determines that the ordinary demands and requirements for water customers of the City may not, from time to time, be satisfied without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection. This ordinance is intended to prohibit any additional demands on the existing water supply, to prohibit all nonessential uses as defined herein, and to allocate the available water supply during any water shortage emergency to the end that sufficient water will be and remain available for human consumption, sanitation, and fire protection. (Ord. 691, §1, adopted 1977)

### **3601: DEFINITIONS:**

For the purpose of this Article the following terms, phrases, words, and their derivations shall have the meaning given herein: The word "shall" is always mandatory and never directory.

- A. Customer: The person using water supplied by the City.
- B. Director: The Director of Public Works of the City or his designated representative.
- C. Department: The Water Utilities Division of the Department of Public Works.
- D. Hand-Watering: Water supplied to a customer through a hose connected to the customer's piping system while such hose is hand held and such water used for exterior purposes.
- E. Irrigate: To water land, whether by channels, by flooding, by sprinkling, or any other means whatsoever except hand-watering.
- F. Water: Only water supplied by the City unless expressly provided otherwise or required by the context. (Ord. 691, §1, adopted 1977)

### **3602: DECLARATION OF WATER EMERGENCY:**

When it appears that the City may be unable to supply the normal demands and requirements of water customers, the City Council may, by resolution declare a water emergency. The resolution shall specify the degree of emergency existing and shall place into effect the appropriate provisions of this ordinance. (Ord. 691, §1, adopted 1977)

### **3603: REQUESTS FOR VOLUNTARY RESTRICTIONS OF WATER USE STAGE I:**

Whenever the City Council, by resolution, declares Stage I water emergency to exist, the Mayor shall issue a proclamation urging citizens to institute such water conservation measures on a voluntary basis as may be required to reduce water demand to coincide with available supply. (Ord. 691, §1, adopted 1977)

### **3604: PROHIBITION OF NONESSENTIAL WATER USE STAGE II:**

It is unlawful for any person to use water for any nonessential use as hereinafter defined, whenever the City Council determines by resolution that a Stage II water emergency exists. (Ord. 691, §1, adopted 1977)

### **3605: NONESSENTIAL USES DEFINED:**

The following uses of water are nonessential:

- A. Use of water from public hydrants for any purpose other than fire protection and/or prevention.
- B. Use of water through any meter when the consumer had been given two (2) days notice to repair one or more leaks and has failed to complete such repairs.
- C. Use of water by a golf course to irrigate any portion of its grounds except those areas designated as tees and greens; except where the Director shall have determined that any such use is nonessential and written notice of such determination shall have been provided.
- D. Use of water to irrigate grass, lawns, ground cover, shrubbery, vegetable gardens, trees, or other outdoor vegetation.
- E. Use of water for the construction of any structure, including such use in dust control.

- F. Use of water to wash any sidewalk, walkways, driveway, street, parking lot, tennis court, or other hard surfaced area by hosing or by otherwise direct use of water from faucets or other outlets.
- G. Use of water to wash any motor vehicle, trailer, airplane, or boat by hosing or otherwise using water directly from a faucet or other outlet.
- H. Use of water to fill or refill any swimming pool.
- I. Use of water to add to any swimming pool not equipped with and using a pool cover. (Ord. 691, §1, adopted 1977)

**3606: FURTHER NONESSENTIAL USES DEFINED STAGE III:**

In addition to the nonessential uses set forth in §3605, the following additional uses are determined to be nonessential when the Council has, by resolution declared a State III emergency.

- A. Use of water in excess of the daily usage allotment hereinafter set forth:

Single family or duplex (100 cu. ft. per month)	50 gallons - per permanent resident
Multi-residential units (180 cu. ft. per month)	45 gallons - per permanent resident

- B. All other uses not expressly set forth in §3605 shall be limited to fifty percent (50%) of the prior water use for a similar period as determined by the Department from its records. Where no such records exist, prior water use shall be deemed to be the average prior water use of similar existing services as shall be determined by the Department from its records.
- C. Use of water to irrigate, the provisions of §3605 above to the contrary, notwithstanding.
- D. Use of water for hand-watering. (Ord. 691, §1, adopted 1977)

**3607: NUMBER OF PERMANENT RESIDENTS:**

Each customer in whose name water is supplied to a residence shall upon request of the Director advise him under penalty of perjury the number of permanent residents using water supplied to that residence. If such a residential customer shall fail to so advise the Director, such residence shall be permitted the water allocation herein provided for one permanent resident. (Ord. 691, §1, adopted 1977)

**3608: TAMPERING WITH WATER METERS PROHIBITED:**

It is unlawful for any person to remove, replace, alter, damage, or otherwise tamper with any water meter or components thereof, including but not limited to the meter face, dials, or other water usage indicators, and any flow-restricting device installed thereon. (Ord. 691, §1, adopted 1977)

**3609: VARIANCES:**

The Director may:

- A. Grant temporary variances for uses of water otherwise prohibited; or
- B. Adjust temporarily any or all consumer's allotment if he finds and determines that due to unusual circumstances to fail to grant such a variance would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public; further, he may grant such adjustment in the case of a mixed residential/nonresidential use if he finds that such adjustment is necessary to place an equivalent allotment burden on said applicant. The City Council shall ratify or revoke any such variance or adjustment at its next scheduled meeting.

No such variance or adjustment shall be retroactive or otherwise justify any violations of this ordinance occurring prior to issuance of said temporary variance or adjustment. (Ord. 691, §1, adopted 1977)

**3610: VIOLATION OF WATER USE RESTRICTIONS;  
PUNISHMENT:**

It is a misdemeanor for any person to use or apply water received from the City contrary to or in violation of any restriction or prohibition specified in the Article, except both the first and second violations of this ordinance within any one year period shall be infractions. Said punishment may be in lieu of or in addition to any other penalty or method of enforcement provided by law. Any violation of this ordinance permitted to continue after notice, shall be a separate offense and shall be punishable as such hereunder; further, each day such violation continues shall be considered a separate offense. (Ord. 691, §1, adopted 1977)

**3611: PURPOSE AND INTENT; STATUTORY CONSTRUCTION:**

It is the purpose and intent of this ordinance to prohibit an increase in the water demand on the City's water supply, to eliminate all nonessential water usage, and to provide for allocation of existing water resources to insure sufficient water for human consumption, sanitation, and fire protection. This ordinance shall be

liberally construed to effectuate such purpose and intent. (Ord. 691, §1, adopted 1977)

**3612: REPAIR; REPLACEMENT:**

Notwithstanding any other provisions of this ordinance, no restriction or prohibition is imposed upon the repair or replacement of existing water service facilities in a manner which the Director determines will not materially increase the consumption of water. (Ord. 691, §1, adopted 1977)

**3613: ORDINANCE CONTROLLING:**

The provisions of this ordinance shall prevail and control in the event of any inconsistency between this ordinance and any other rule, regulation, ordinance, or code of the City. (Ord. 691, §1, adopted 1977)

**3614: WATER SERVICES TO BE DISCONNECTED:**

Water may be shut off by the Department with appropriate notice whenever the Director determines there has been a willful failure to comply with the provisions of this ordinance, any other provisions of this code to the contrary, notwithstanding. Charges for reconnection or restoration of service which has been terminated pursuant to this Section shall be at the rates and on the conditions set by resolution. (Ord. 691, §1, adopted 1977)

**3615: ENFORCEMENT; DESIGNATED PERSONS:**

- A. Each police officer of the City shall in connection with his duties imposed by law diligently enforce the provisions of this ordinance.
- B. The Director and his designated employees shall have the duty and are hereby authorized to enforce the provisions of this ordinance. (Ord. 691, §1, adopted 1977)

**3616: SEVERABILITY CLAUSE:**

If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the remaining portions of this ordinance. The City Council declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof irrespective of the fact that any one or more such provisions be declared unconstitutional. (Ord. 691, §1, adopted 1977)

## Urgency Ordinance

This ordinance is hereby declared to be necessary for the immediate preservation of the public peace, health, and safety and will take effect and be in force upon its adoption by a fourth-fifths (4/5) vote of the members of the Ukiah City Council. Due to severe drought conditions existing in the area from which the City draws its water supply, it is imperative that this ordinance become effective immediately to protect existing water supplies for human consumption, sanitation, and fire protection. The City Council of the City further declares that if normal water usage were permitted to continue, the available water supply would be depleted below the safe level for human consumption, sanitation, and fire protection. This ordinance shall be published in accordance with law within ten days after its adoption. (Ord. 691, §2, adopted 1977)