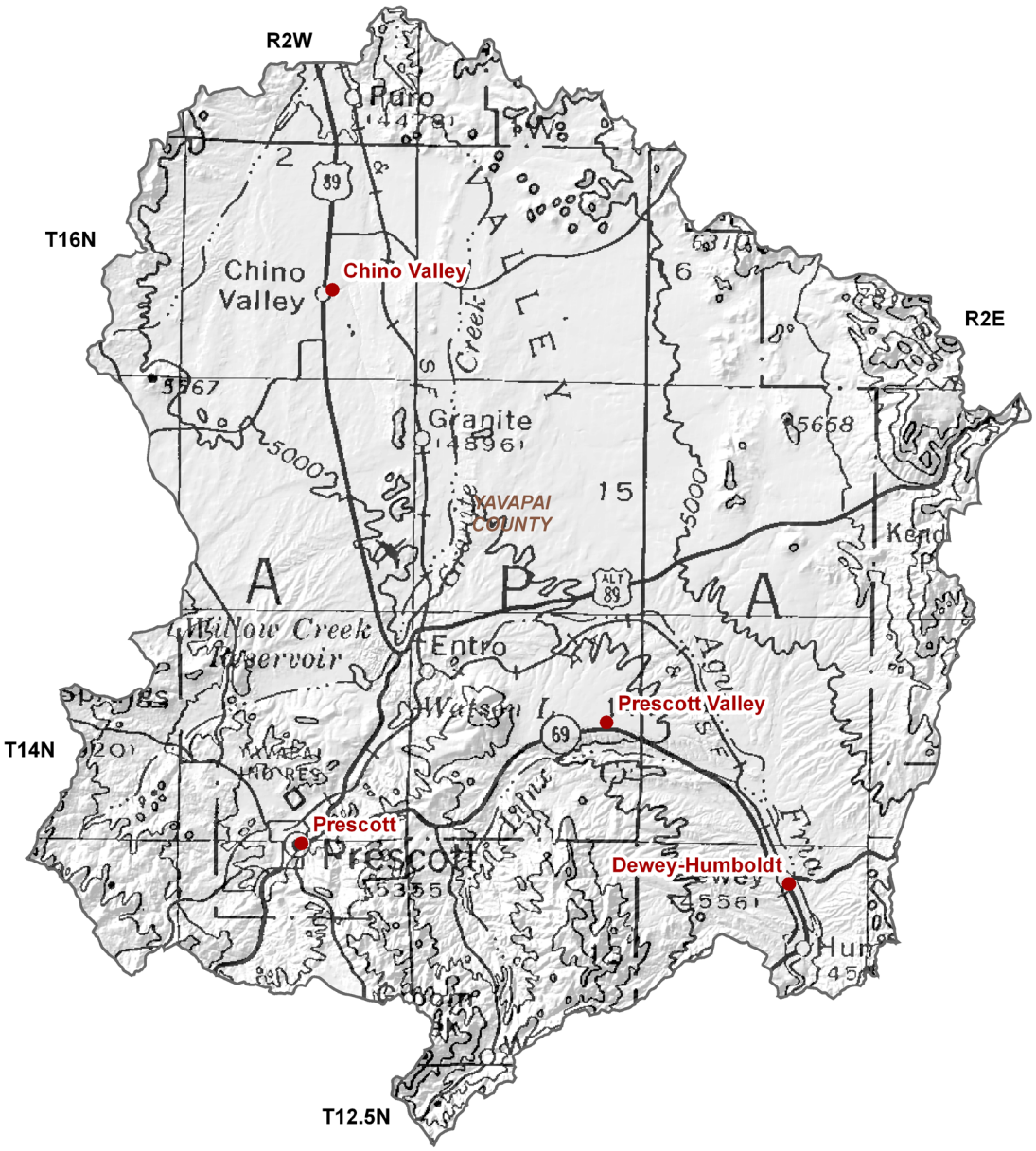
Section 8.3
Prescott AMA

8.3.1 Geography of the Prescott AMA

The Prescott AMA is 485 square miles in area, the smallest AMA in the planning area. Geographic features and principal communities are shown on Figure 8.3-1. Prescott is the only AMA in the planning area in the Central Highlands physiographic province and is characterized by rolling hills and broad valleys. Vegetation types include plains and Great Basin grassland, southwestern interior chaparral, Great Basin conifer woodland and petran montane conifer forest. (See Figure 8.0-10)

- Principal geographic features shown on Figure 8.3-1 are:
    - The Agua Fria River running southeast from near the AMA center to Dewey -Humboldt.
    - Lynx Creek joining the Agua Fria southeast of Prescott Valley.
    - Granite Creek running south to north and Willow Creek running west to east in the center of the AMA.
    - The Bradshaw Mountains on the south, Granite Mountain and Sullivan Buttes to the west, and the Black Hills along the northeast AMA boundary (not well shown on the map).
    - Chino Valley in the north central part of the AMA.
    - The lowest point in the AMA at 4,280 feet where Granite Creek exits the AMA.
    - The highest point in the AMA, Mount Davis at 7,882 feet in the Bradshaw Mountains in the southernmost part of the AMA.



Base Map: USGS 1:500,000, 1981

0 3 6 Miles

Figure 8.3-1
Prescott AMA
Geographic Features

City, Town or Place

8.3.2 Land Ownership in the Prescott AMA

Land ownership, including the percentage of ownership by category, for the Prescott AMA is shown in Figure 8.3-2. The principal feature of land ownership in the AMA is the relatively large amount of private land dispersed in a checkerboard pattern with state trust land. A description of land ownership data sources and methods is found in Volume 1, Section 1.3.8. Land ownership categories are discussed below in the order of percentage from largest to smallest in the AMA.

Private

- 55.0% of the land is private; the largest percentage of any of the AMA basins.
- Land uses include domestic, commercial, agriculture and grazing.

National Forest

- 21.9% of the land is federally owned and managed as the Prescott National Forest.
- The AMA contains 1,411 acres of the 5,553-acre Woodchute Wilderness along the east central border of the AMA north of Highway 89A (See Figure 8.0-13).
- Land uses include recreation, grazing and timber production.

State Trust Land

- 21.2% of the land is held in trust for the public schools and other beneficiaries under the State Trust Land system.
- Primary land use is grazing.

U.S. Bureau of Land Management (BLM)

- 1.1% of the land is federally owned and managed by the Hassayampa Field Office of the U.S. Bureau of Land Management.
- Primary land use is grazing.

Indian Reservation

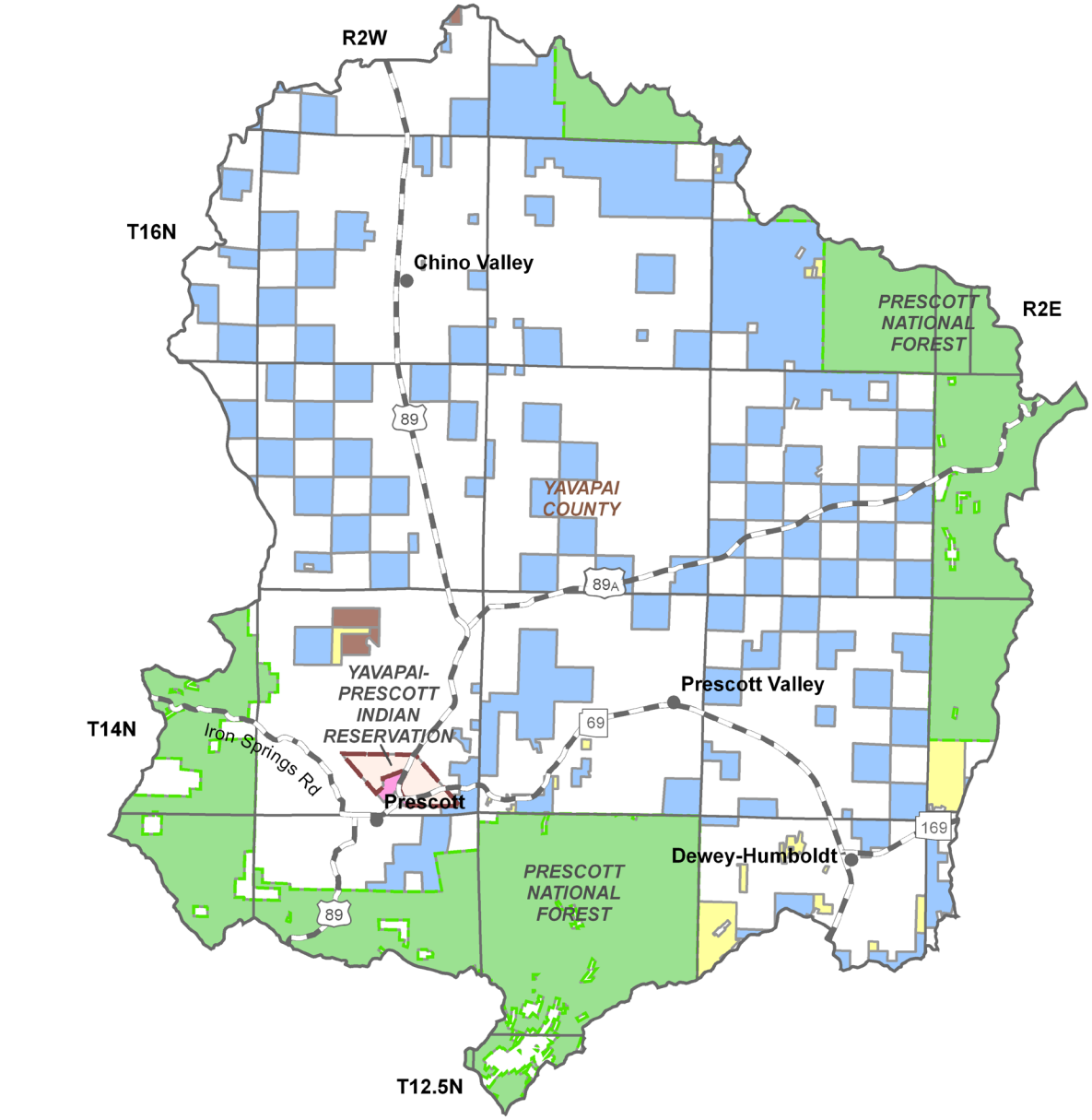
- 0.4% of the land is under ownership of the Yavapai-Prescott Tribe.
- Land uses include domestic and commercial.

Other

- 0.2% of the land is owned and managed by local or regional governments, principally Pioneer Park.
- Primary land use is recreation.

U.S. Military

- 0.1% of the land is federally owned by the U.S. Military
- Originally the site of Fort Whipple, these lands are now the location of Yavapai Community College and Veterans Administration Medical Center.



Source: ALRIS, 2004

0 3 6 Miles

Figure 8.3-2
Prescott AMA
Land Ownership

Private (55.0%)
National Forest (21.9%)
State Trust (21.2%)
BLM (1.1%)
Indian Reservation (0.4%)
Other (0.2%)
Military (0.1%)
National Forest Boundary
Indian Reservation Boundary
Major Road
City, Town or Place

8.3.3 Climate of the Prescott AMA

Climate data from NOAA/NWS Co-op Network stations are complied in Table 8.3-1 and the locations are shown on Figure 8.3-3. Figure 8.3-3 also shows precipitation contour data from the Spatial Climate Analysis Service (SCAS) at Oregon State University. The Prescott AMA does not contain Evaporation Pan, AZMET or SNOTEL/Snowcourse stations. A description of the climate data sources and methods is found in Volume 1, Section 1.3.3.

NOAA/NWS Co-op Network

- Refer to Table 8.3-1A
- There are three NOAA/NWS Co-op Network stations in the AMA. The average monthly maximum temperature occurs in July and is between 73.4°F and 75.6°F. The average monthly minimum temperature occurs in December or January and is between 36.9°F and 37.9°F.
- Highest average seasonal rainfall occurs in the summer (July-September). For the period of record used, the highest average annual rainfall is 19.19 inches at the Prescott station and the lowest is 12.82 inches at the Chino Valley station.

SCAS Precipitation Data

- See Figure 8.3-3
- Additional precipitation data shows average annual rainfall as high as 30 inches on the eastern AMA boundary and as low as 12 inches in the northern portion of the AMA.

Table 8.3-1 Climate Data for the Prescott AMA

A. NOAA/NWS Co-op Network:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Monthly Average Temperature Range (in F)		Average Precipitation (in inches)				
			Max/Month	Min/Month	Winter	Spring	Summer	Fall	Annual
Chino Valley	4,750	1971-2000	75.6/Jul	37.9/Dec,Jan	3.55	1.36	5.30	2.61	12.82
Prescott	5,205	1971-2000	73.4/Jul	37.1/Jan	5.36	1.80	8.22	3.81	19.19
Prescott Municipal	5,020	1948-2001[1]	75.3/Jul	36.9/Jan	2.04	1.31	8.09	2.50	13.94

Source: WRCC
Notes:
[1]Average temperature data from period of record shown; average precipitation data from 1971 - 2000

B. Evaporation Pan:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Avg. Annual Evap (in inches)
None			

Source: WRCC

C. AZMET:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Average Annual Reference Evaportranspiration, in inches *(Number of years to calculate averages)*
None			

Source: Arizona Meteorological Network, 2004

D. SNOTEL/Snowcourse:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Average Snowpack, at Beginning of the Month, as Inches Snow Water Content *(Number of measurements to calculate average)*					
			Jan.	Feb.	March	April	May	June
None								

Source: NRCS, 2005

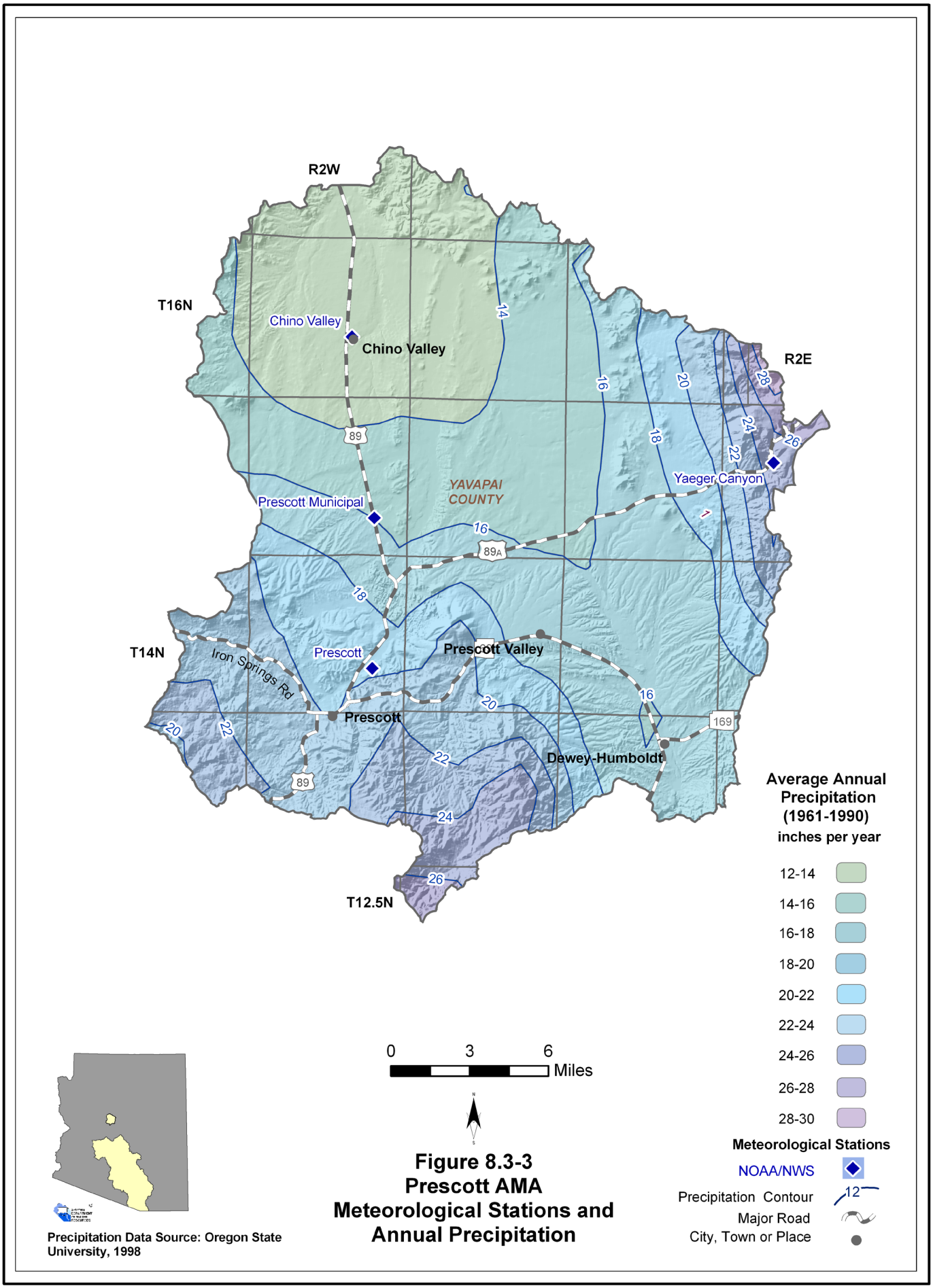


Figure 8.3-3
Prescott AMA
Meteorological Stations and Annual Precipitation

8.3.4 Surface Water Conditions in the Prescott AMA

Streamflow data, including average seasonal flow, annual flow and other information are shown in Table 8.3-2. Flood ALERT equipment in the AMA is shown in Table 8.3-3. Flood ALERT equipment information is current up to October 2005. New flood warning gages are routinely added to the ALERT network so the current number of stations may be greater. Reservoir and stockpond data, including maximum storage or maximum surface area, are shown in Table 8.3-4. The location of streamflow gages identified by USGS number, flood ALERT equipment, USGS runoff contours and large reservoirs are shown on Figure 8.3-4. A description of stream data sources and methods is found in Volume 1, Section 1.3.16. A description of reservoir data sources and methods is found in Volume 1, Section 1.3.11. A description of stockpond data sources and methods is found in Volume 1, Section 1.3.15.

Streamflow Data

- Refer to Table 8.3-2.
- Data from six stations located at four watercourses are shown in the table and on Figure 8.3-4.
- Average seasonal flow is highest at all stations in the winter season (January-March).
- The largest annual flow recorded in the AMA is 18,757 acre-feet in 2005 at the Granite Creek near Prescott gage with a contributing drainage area of 36 square miles.

Flood ALERT Equipment

- Refer to Table 8.3-3.
- There are 21 ALERT gages in the AMA, primarily precipitation or precipitation/stage gages.

Reservoirs and Stockponds

- Refer to Table 8.3-4.
- The AMA contains four large reservoirs. The largest, Willow Creek, has a maximum storage of 7,800 acre-feet.
- Reservoir uses include recreation and water supply.
- Surface water is stored or could be stored in 13 small reservoirs.
- There are 216 registered stockponds in the AMA.

Runoff Contour

- Refer to Figure 8.3-4.
- Average annual runoff is one inch or 53.33 acre feet per square mile.

Table 8.3-2 Streamflow Data for the Prescott AMA

Station Number	USGS Station Name	Drainage Area (in mi^2)	Mean Basin Elevation (in feet)	Period of Record	Average Seasonal Flow (% of annual flow)				Annual Flow/Year (in acre-feet)				Years of Record
					Winter	Spring	Summer	Fall	Minimum	Median	Mean	Maximum	
9502900	Del Rio Springs near Chino Valley	41	4,430	1996-2004 (real time)	29	23	22	27	1,056 (2003)	1,313	1,300	1,490 (1997)	7
9502960	Granite Creek at Prescott	30	5,285	1994-current (real-time)	61	7	19	12	600 (2002)	3,052	5,059	16,842 (2005)	12
9503000	Granite Creek near Prescott	36	5,204	1932-current (real-time)	65	11	14	10	273 (1935)	3,133	5,036	18,757 (2005)	26
9503300	Granite Creek Blw Watson Lake near Prescott	NA	5,020	1999-current (real time)	81	4	4	11	82 (2002)	737	3,574	17,327 (2005)	6
9503500	Willow Creek near Prescott	25	5,031	1932-1937 (discontinued)	51	12	27	10	211 (1936)	422	631	1,471 (1935)	4
9512450	Agua Fria River near Humboldt	NA	4,400	2000-current (real-time)	43	8	26	23	1,335 (2003)	3,386	4,431	10,911 (2005)	5

Sources: USGS NWIS, USGS 1998 and USGS 2005.

Notes:
NA = Not available
Statistics based on Calendar Year
Annual Flow statistics based on monthly values
Summation of Average Seasonal Flows may not equal 100 due to rounding
Period of record may not equal Year of Record used for annual Flow/Year statistics due to only using years with a 12 month recor

Table 8.3-3 Flood ALERT Equipment in the Prescott AMA

Station ID	Station Name	Station Type	Install Date	Responsibility
300	Upper Goldwater Dam	Precip/Stage	8/28/2001	Yavapai Co FCD
305	Turtle People	Precipitation	11/7/1990	Yavapai Co FCD
310	Lower Goldwater Dam	Precip/Stage	1/9/1991	Yavapai Co FCD
315	Bannon Creek	Precip/Stage	4/8/1992	Yavapai Co FCD
320	Saw Mountain	Precipitation	11/8/1990	Yavapai Co FCD
325	Granite Creek @ White Spar Campground	Precip/Stage	2/26/1991	Yavapai Co FCD
330	Wolverton Mountain	Precipitation	2/26/1991	Yavapai Co FCD
335	Yavapai Co FCD Office	Base Station/Weather	11/16/1998	Yavapai Co FCD
340	Thumb Butte Tank	Precipitation	9/10/1991	Yavapai Co FCD
345	Sierra Prieta	Precipitation	9/10/1991	Yavapai Co FCD
350	Williams Peak	Precipitation	9/9/1991	Yavapai Co FCD
355	Prescott Heights	Precipitation	8/28/2001	Yavapai Co FCD
360	Haisley Water Tank Repeater	Repeater/Precip	5/5/1997	Yavapai Co FCD
365	YC Public Works Yard	Precipitation	10/23/1997	Yavapai Co FCD
380	Granite Basin	Precipitation	12/30/1998	Yavapai Co FCD
385	Watson Lake	Precipitation	3/19/2001	Yavapai Co FCD
400	Prescott Valley PD Yard	Weather Station	9/21/2001	Yavapai Co FCD
405	Chino Valley	Precipitation	10/23/1997	Yavapai Co FCD
440	Lynx Creek Levee	Precip/Stage	8/27/2001	Yavapai Co FCD
450	Clipper Wash @ Prescott Country Club	Precip/Stage	7/8/1998	Yavapai Co FCD
5820	Prescott Valley	Precipitation	12/7/1982	FCD Maricopa Co

FCD = Flood Control District

Table 8.3-4 Reservoirs and Stockponds in the Prescott AMA

A. Large Reservoirs (500 acre-feet capacity and greater)

MAP KEY	RESERVOIR/LAKE NAME *(Name of dam, if different)*	OWNER/OPERATOR	MAXIMUM STORAGE (AF)	USE[1]	JURISDICTION
1	Willow Creek	City of Prescott	7,800	R,S	Local
2	Watson *(Granite Creek)*	City of Prescott	4,900	R,S	Local
3	Lynx	AZ Game and Fish	2,763	R	State
4	Upper Goldwater	City of Prescott	700	R	Local

Source: U.S. Army Corps of Engineers 2005

B. Other Large Reservoirs (50 acre surface area or greater)[2]

MAP KEY	RESERVOIR/LAKE NAME *(Name of dam, if different)*	OWNER/OPERATOR	MAXIMUM SURFACE AREA (acres)	USE	JURISDICTION
None identified by ADWR at this time					

C. Small Reservoirs (greater than 15 acre-feet and less than 500 acre-feet capacity)

Total number: 5
Total maximum storage: 888 acre-feet

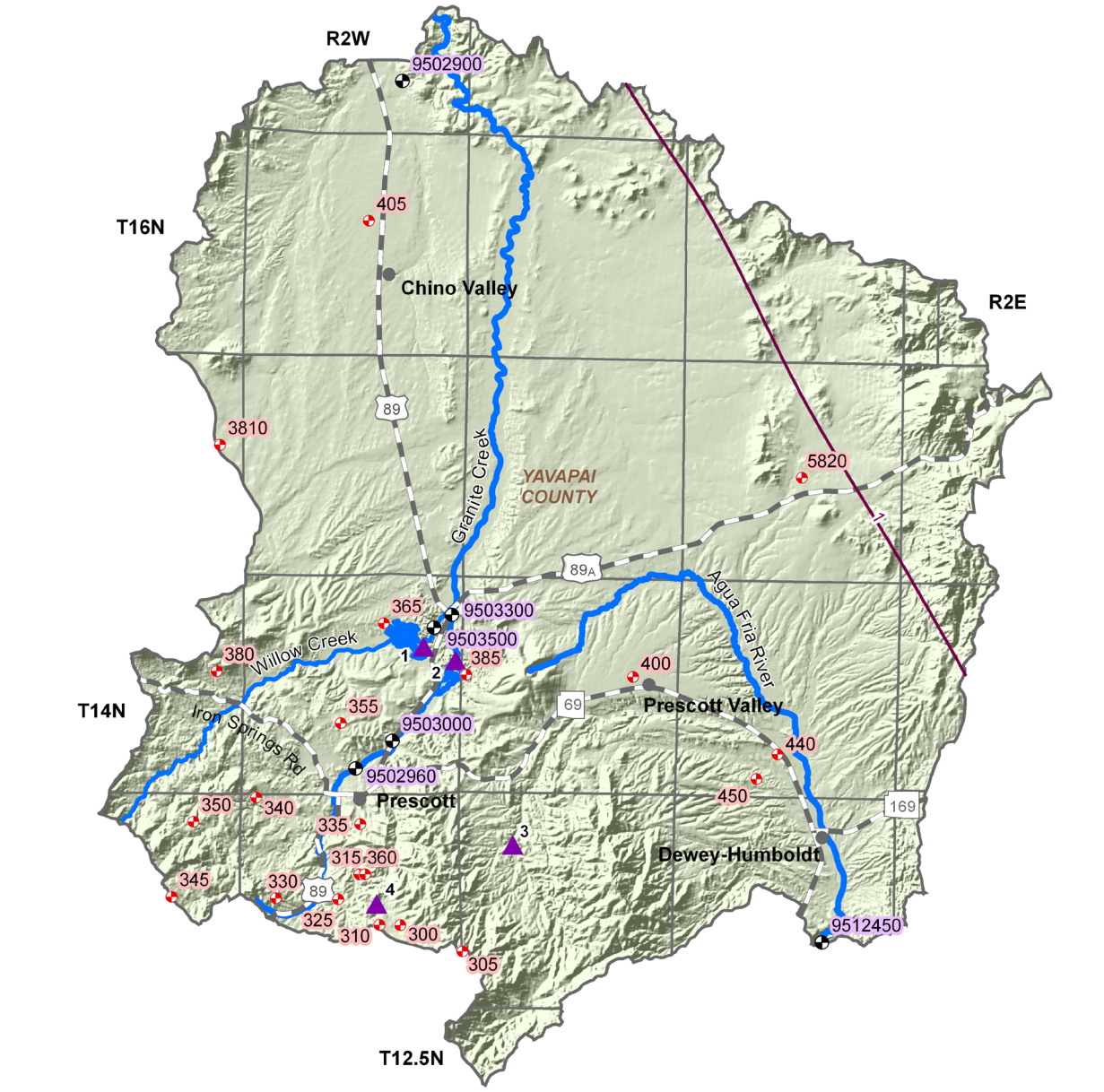
D. Other Small Reservoirs (between 5 and 50 acres surface area)[2]

Total number: 8
Total surface area: 91 acres

E. Stockponds (up to 15 acre-feet capacity)

Total number: 216

Notes:
[1]R = Recreation, S= Water Supply
[2]Capacity data is not available to ADWR



Stream Data Source: ALRIS, 2005

0 3 6 Miles

USGS Annual Runoff Contour for 1951-1980 (in inches)
Stream Channel (width of line reflects stream order)
Large Reservoir
USGS Gage and Station ID
Flood ALERT Equip. & Station ID
Major Road
City, Town or Place

Figure 8.3-4
Prescott AMA
Surface Water Conditions

8.3.5 Perennial/Intermittent Streams and Springs in the Prescott AMA

Major and minor springs with discharge rates and date of measurement, and the total number of springs in the AMA are shown in Table 8.3-5. The locations of major springs and perennial and intermittent streams are shown on Figure 8.3-5. A description of data sources and methods for intermittent and perennial reaches is found in Volume 1, Section 1.3.16. A description of spring data sources and methods is found in Volume 1, Section 1.3.14.

- A portion of the Agua Fria is the only perennial stream in the AMA.
- Intermittent streams are found on the eastern AMA boundary and in the south central part of the AMA.
- There is one major spring, Del Rio, with a measured discharge of 874 gallons per minute (gpm).
- Springs with measured discharge of 1 to 10 gpm are not mapped but coordinates are given in Table 8.3-5B. There are 10 minor springs.
- Listed discharge rates may not be indicative of current conditions. Most spring measurements were taken during or prior to 1981.
- The total number of springs, regardless of discharge, identified by the USGS or ALRIS varies from 57 to 65, depending on the database reference.

Table 8.3-5 Springs in the Prescott AMA

A. Major Springs (10 gpm or greater):

Map Key	Name	Location[1]		Discharge (in gpm)	Date Discharge Measured
		Latitude	Longitude		
1	Del Rio	344914	1122643	874	1999[2]

B. Minor Springs (1 to 10 gpm):

Name	Location[1]		Discharge (in gpm)	Date Discharge Measured
	Latitude	Longitude		
Coyote	344233	1121159	9	2/24/1981
Unnamed on Lower Granite Creek	345103	1122542	5	5/2/1977
Unnamed	343458	1123325	4	3/12/1981
Cowell No 2	343504	1123129	4	3/12/1981
Unnamed	343118	1121736	2	6/18/1979
Spence Creek	343420	1123249	2	3/12/1981
Unnamed	343003	1123208	2	3/10/1981
Aspen Creek HW-1	342934	1123222	2	4/16/2001
Unnamed	343302	1122632	1	2/28/2001
Unnamed	344252	1121227	1	2/24/1981

C. Total number of springs, regardless of discharge, identified by USGS (see ALRIS, 2005 and USGS, 2006): 57-65

Notes:
[1] Location datum is NAD 27
[2] Exact date unavailable

0 3 6 Miles

Stream Data Source: AZGF, 1993 & 1997

Figure 8.3-5
Prescott AMA
Perennial/Intermittent Streams and Major (>10 gpm) Springs

Major (>10 gpm) Springs
Intermittent Stream
Perennial Stream
Major Road
City, Town or Place

8.3.6 Groundwater Conditions of the Prescott AMA

Major aquifers, well yields, estimated natural recharge, number of index wells and date of last water-level sweep are shown in Table 8.3-6. Figure 8.3-6 shows aquifer flow direction and water-level change between 1993-1994 and 2004. Figure 8.3-7 contains hydrographs for selected wells shown on Figure 8.3-6. Figure 8.3-8 shows well yields in five yield categories. Underground Storage Facilities (USF) are shown on Table 8.5-7 with facility name, facility permit number and type, permittee name, permitted acre-feet per year and water source. Locations of USFs are shown on Figure 8.5-9. There are no Groundwater Savings Facilities (GSF) in the AMA. A description of aquifer data sources and methods is found in Volume 1, Section 1.3.2. A description of well data sources and methods, including water-level changes and well yields, is found in Volume 1, Section 1.3.19.

Major Aquifers

- Refer to Table 8.3-6 and Figure 8.3-6
- The major aquifers in this AMA are basin fill and igneous and metamorphic rock.
- Groundwater flow is generally from the mountains on the AMA boundary toward the center of the AMA. Groundwater flows north from the Little Chino Sub-basin and south from the Upper Agua Fria Sub-basin.

Well Yields

- Refer to Table 8.3-6 and Figure 8.3-8
- One source of well yield information, based on 137 reported wells, indicates that the median well yield is 644 gpm.

Natural Recharge

- Refer to Table 8.3-6
- Natural recharge in the Prescott AMA is approximately 7,000 acre-feet per year.
- Primary source of natural recharge is from infiltration of runoff into stream channels and mountain front recharge.

Water Level

- Refer to Figure 8.3-6. Water levels are shown for wells measured in 2004.
- The Department annually measures 93 index wells in this AMA; hydrographs for six index wells are shown on Figure 8.3-7.
- The deepest water level shown is 428 feet west of the junction of Highway 89 and Highway 89A in the center of the AMA and the shallowest is 16 feet in the northern portion of the AMA west of Highway 89.

Recharge Sites

- Refer to Table 8.3-7 and Figure 8.3-9.
- There are three active USFs with a total permitted storage capacity of almost 13,000 acre-feet per year.

Table 8.3-6 Groundwater Data for the Prescott AMA

Basin Area, in square miles:	485	
Major Aquifer(s):	**Name and/or Geologic Units**	
	Basin Fill	
	Igneous and Metamorphic Rock	
Well Yields, in gal/min:	Range 2-4,590 Median 644 (137 wells measured)	ADWR GWSI
	Range 2-3,600 Median 763 (78 wells reported)	ADWR Wells55 (>10-inch diameter)
Estimated Natural Recharge, in acre-feet/year:	7,000	Timmons and Springer 2006
Current Number of Index Wells:	93	
Date of Last Water-level Sweep:	1999 (189 wells measured)	

TMP = Third Management Plan

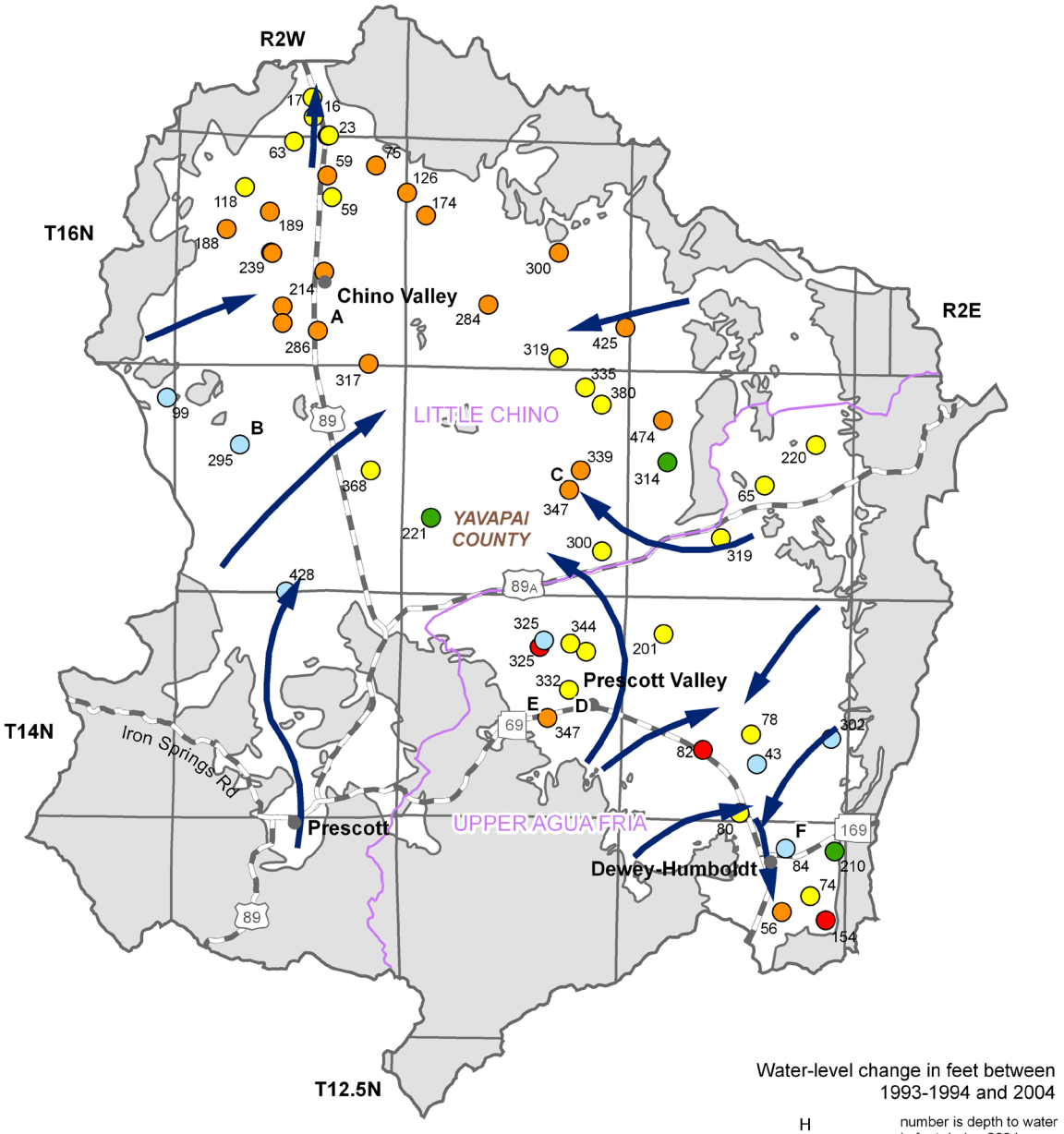


Figure 8.3-6
Prescott AMA
Groundwater Conditions

Figure 8.3-7
Prescott Active Management Area
Hydrographs Showing Depth to Water in Selected Wells

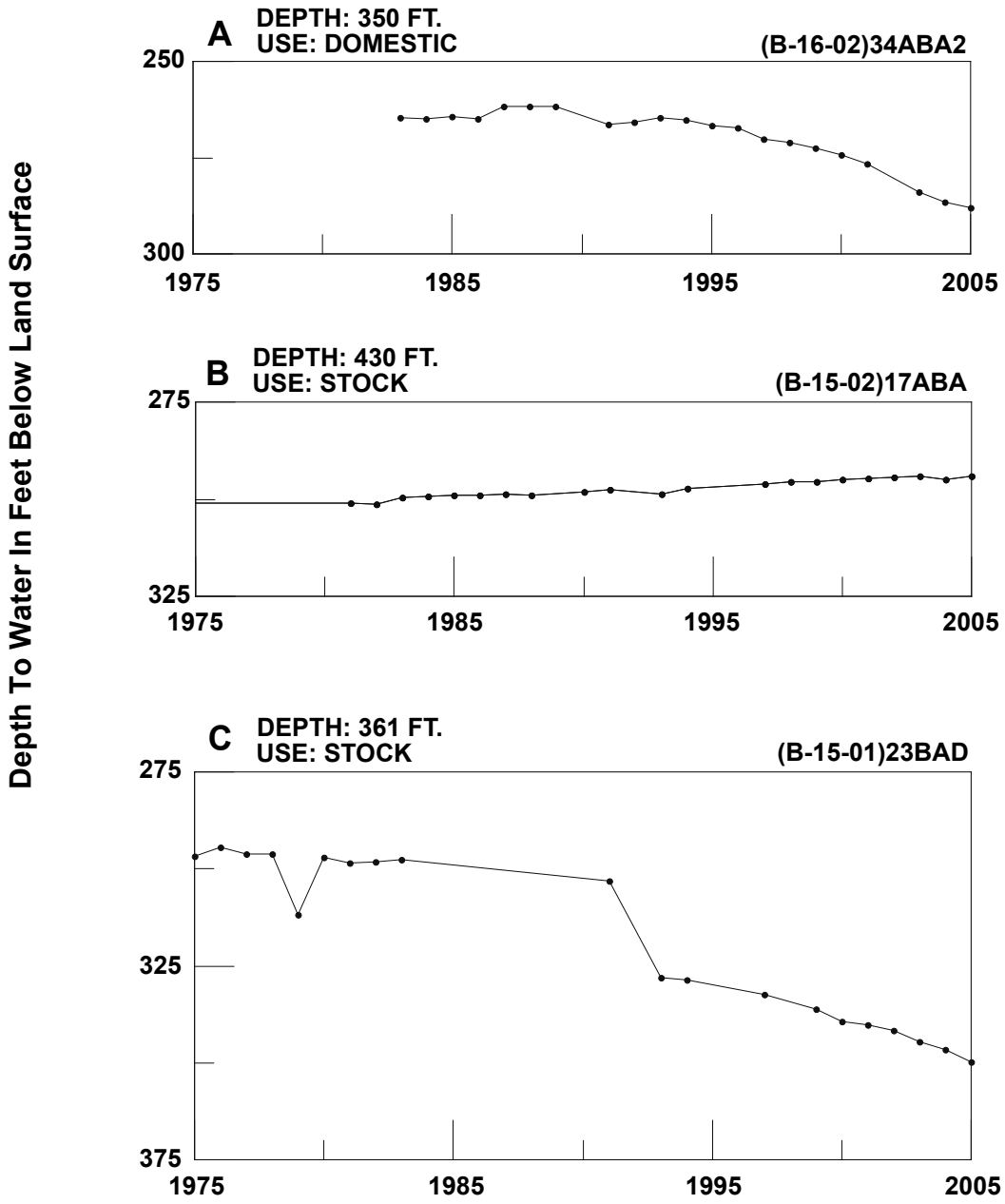
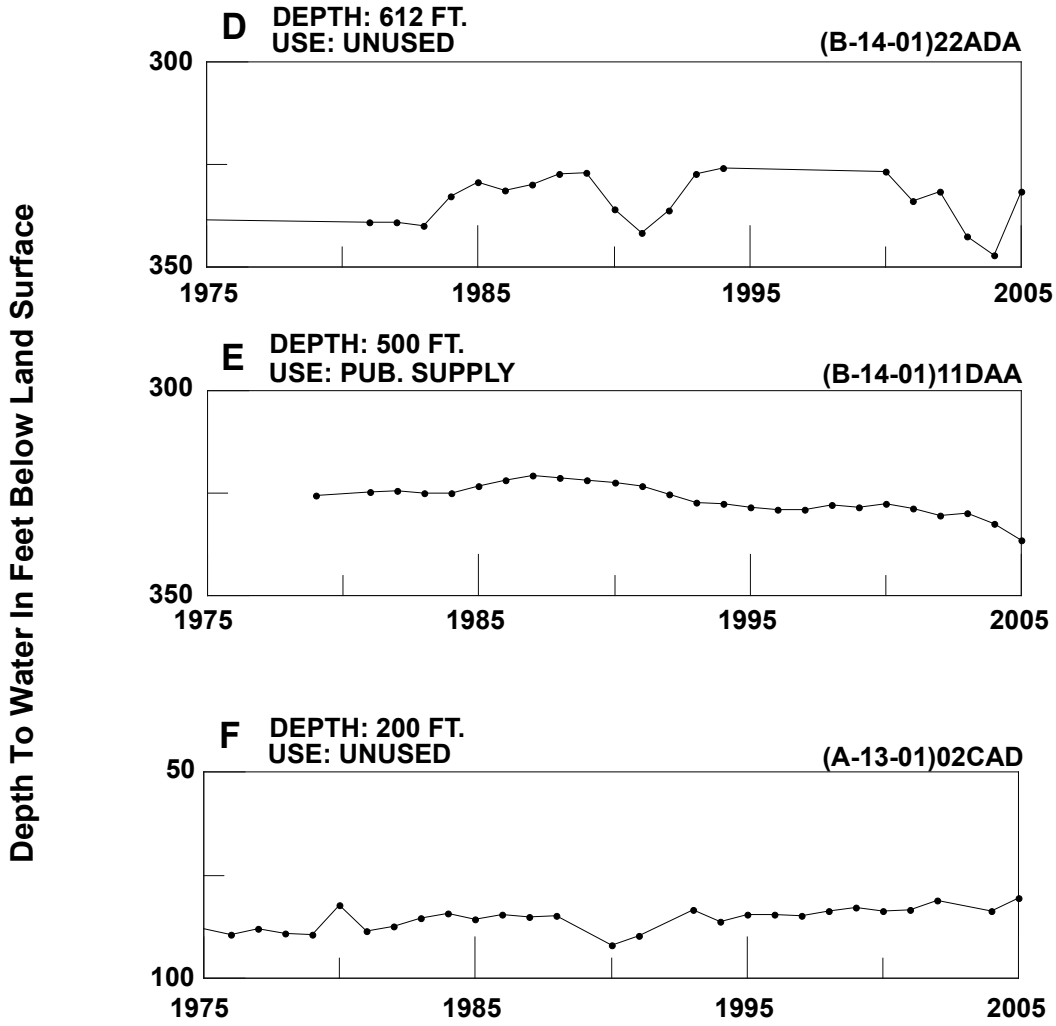


Figure 8.3-7 (cont)
Prescott Active Management Area
Hydrographs Showing Depth to Water in Selected Wells



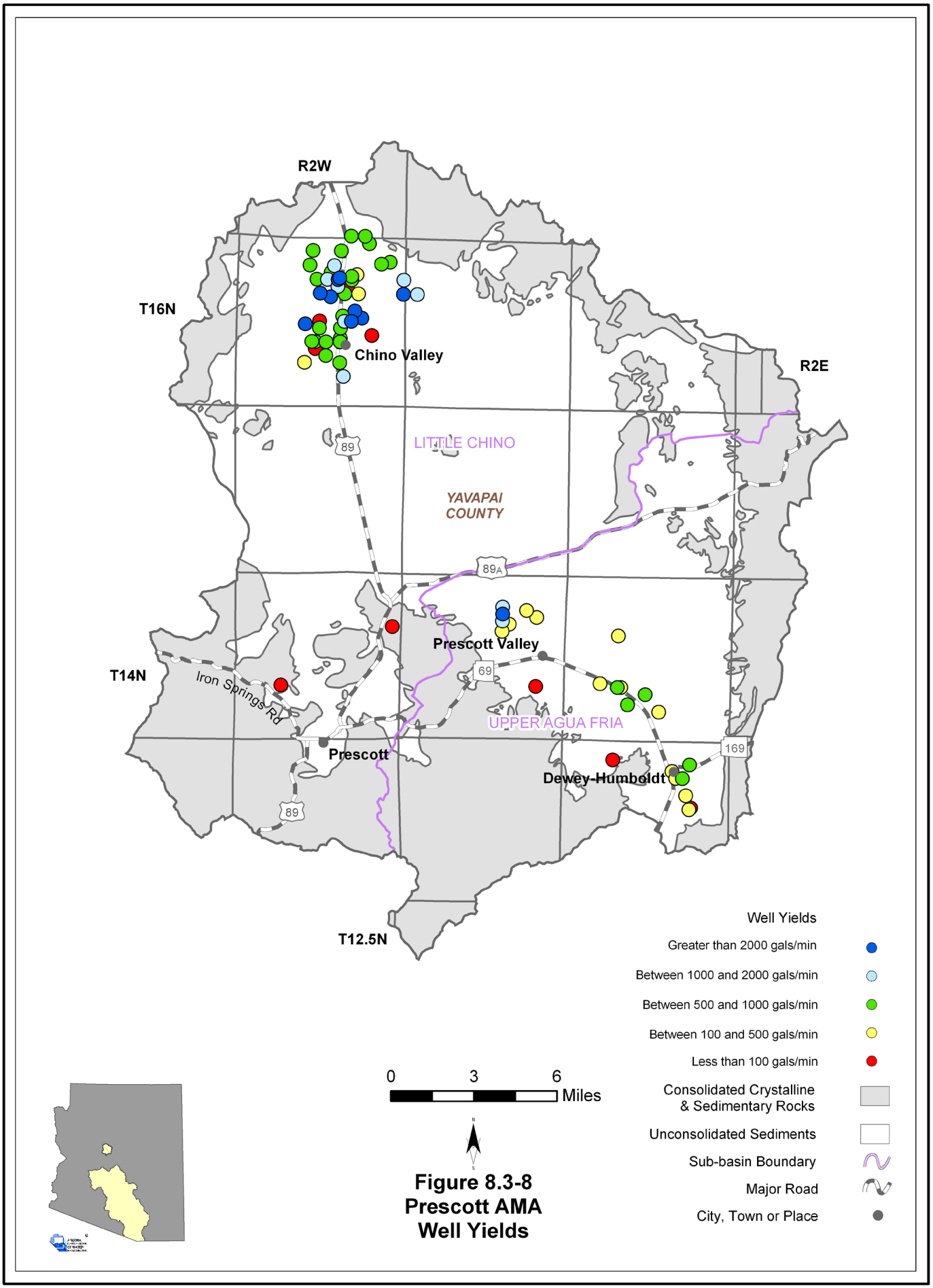


Figure 8.3-8
Prescott AMA
Well Yields

Table 8.3-7 Recharge Sites in the Prescott AMA

FACILITY NAME	FACILITY NUMBER	PERMITTEE NAME	FACILITY TYPE	PERMITTED AF/YEAR	WATER SOURCE
OLD HOME MANOR RECHARGE PROJECT	71-595206.0001	TOWN OF CHINO VALLEY	CONSTRUCTED	1,120	E
SUNDOG WWTP RECHARGE FACILITY	71-519567.0000	CITY OF PRESCOTT	CONSTRUCTED	6,721	ES
TOWN OF PRESCOTT VALLEY CONSTRUCTED	71-205386.0000	TOWN OF PRESCOTT VALLEY	CONSTRUCTED	5,150	E

Notes:
WWTP = Wastewater Treatment Plant
E - Effluent
S - Surface Water

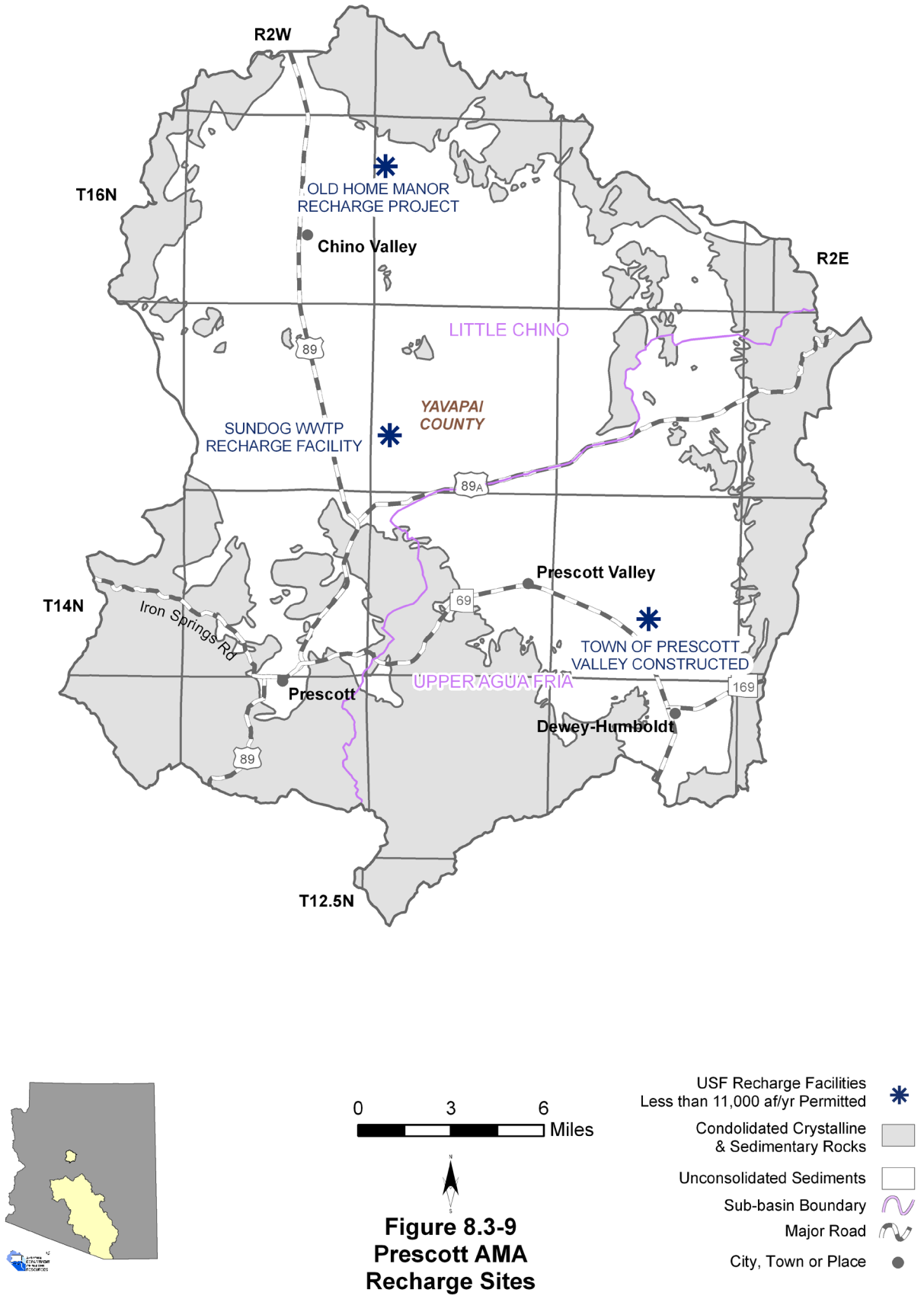


Figure 8.3-9
Prescott AMA
Recharge Sites

8.3.7 Water Quality Exceedences and Contamination Sites in the Prescott AMA

Sites with parameter concentrations that have equaled or exceeded drinking water standard(s), (DWS) including location and parameter(s) are shown in Table 8.3-8A. Impaired lakes and streams with site type, name, length of impaired reach, area of impaired lake, designated use standard and parameter(s) exceeded is shown in Table 8.3-8B. Figure 8.3-10 shows the location of water quality occurrences keyed to Table 8.3-8. Figure 8.3-11 shows the located of contamination sites with site information in Table 8.3-9. A description of water quality data sources and methods is found in Volume 1, Section 1.3.18. All community water systems are regulated under the Safe Drinking Water Act and treat water supplies to meet drinking water standards. Not all parameters were measured at all sites; selective sampling for particular constituents is common.

Well, spring and mine sites that have equaled or exceeded drinking water standards (DWS)

- Refer to Table 8.3-8A.
- Sixty-eight sites have parameter concentrations that have equaled or exceeded DWS.
- The most frequently equaled or exceeded the parameter is arsenic.
- Other parameters equaled or exceeded include manganese, fluoride, barium, cadmium, lead, radionuclides and nitrates.

Lakes and Streams with impaired waters

- Refer to Table 8.3-8B.
- Water quality standards were equaled or exceeded in one stream reach and two lakes. The most common parameter equaled or exceeded was dissolved oxygen.
- One lake, Watson Lak,e is part of the ADEQ water quality improvement effort called the Total Maximum Daily Load (TMDL) Program. Sampling is ongoing at the site at this time.

Effluent Dependent Reaches

- Refer to Figure 8.3-10
- A portion of the Agua Fria River in this AMA is effluent dependent, due to discharge from the Prescott Valley WWTF.

Contamination Sites

- Refer to Figure 8.3-11 and Table 8.3-9
- There are three Voluntary Remediation Program sites with soil and groundwater contamination.

Table 8.3-8 Water Quality Exceedences in the Prescott AMA[1]

A. Wells, Springs and Mines

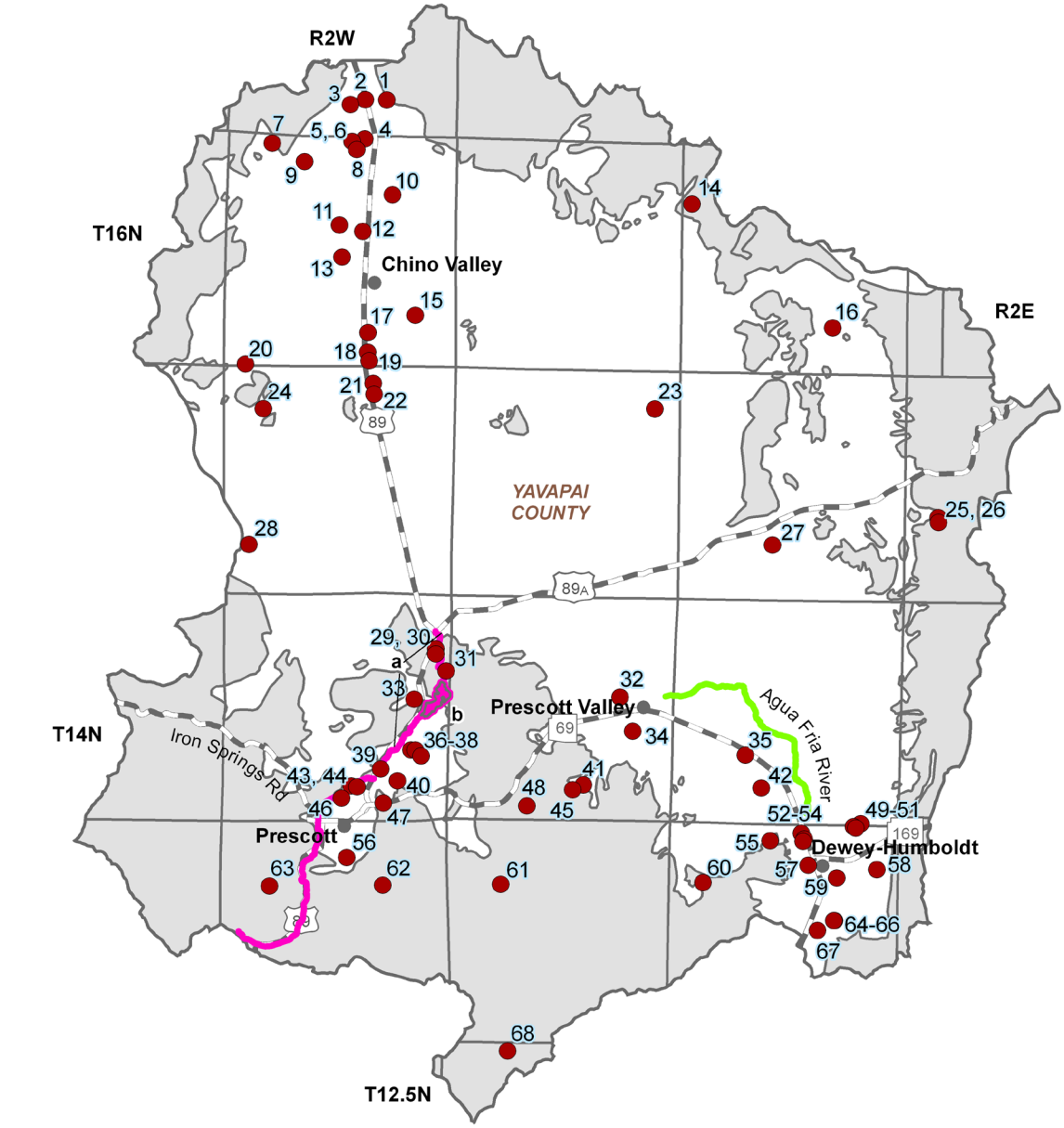
Map Key(s)	Location			Number of Stations	Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard (DWS)[2]
	Township	Range	Section		
1	17 North	2 West	35	1	As
2, 3	17 North	2 West	34	2	As
4, 5, 6, 8	16 North	2 West	3	4	As
7	16 North	2 West	5	1	As
9	16 North	2 West	4	1	As
10	16 North	2 West	39	1	As
11	16 North	2 West	16	1	As
12	16 North	2 West	55	1	As
13	16 North	2 West	22	1	As
14	16 North	1 East	7	1	As
15	16 North	2 West	26	1	As
16	16 North	1 East	26	1	Mn
17, 18, 19	16 North	2 West	34	3	As
20	16 North	2 West	31	1	As
21, 22	15 North	2 West	3	2	As
23	15 North	1 West	1	1	Mn
24	15 North	2 West	8	1	As, F
25, 26	15 North	2 East	19	2	As, Ba, Mn
27	15 North	1 East	28	1	Mn
28	15 North	2 West	30	1	F
29, 30	14 North	2 West	12	2	Mn, Rad
31, 33	14 North	2 West	13	2	F, NO3
32	14 North	1 West	14	1	NO3
34	14 North	1 West	23	1	Mn
35	14 North	1 East	29	1	Pb
36, 38	14 North	2 West	25	2	As, NO3
37, 39	14 North	2 West	26	2	Mn, NO3
40	14 North	2 West	35	1	Mn, Pb
41	14 North	1 West	34	1	Mn, NO3, Pb
42	14 North	1 East	33	1	As
43, 44, 46	14 North	2 West	34	3	As, Mn
45	14 North	1 West	34	1	Mn, NO3, Pb
47	14 North	2 West	35	1	Mn, Pb
48	14 North	1 West	33	1	As, F
49	14 North	1 East	35	1	As
50, 51	13 North	1 East	2	2	As
52, 53, 54	13 North	1 East	3	3	As, NO3, Pb
55	13 North	1 East	4	1	Cd, NO3
56	13 North	2 West	3	1	Mn
57	13 North	1 East	10	1	Cd
58	13 North	1 East	12	1	As
59	13 North	1 East	11	1	As
60	13 North	1 East	7	1	Mn
61	13 North	1 West	8	1	Mn
62	13 North	2 West	11	1	Rad
63	13 North	2 West	8	1	As, Mn
64, 65, 66	13 North	1 East	14	3	As
67	13 North	1 East	15	1	As, NO3
68	12.5 North	1 West	20	1	Mn

B. Lakes and Streams

Map Key	Site Type	Site Name	Length of Impaired Stream Reach (in miles)	Area of Impaired Lake (in acres)	Designated Use Standard[3]	Parameter(s) Exceeding Use Standard[2]
a	Stream	Granite Creek headwaters - Willow Creek	13	NA	A&W	Do
not shown[4]	Lake	Granite Basin Lake	NA	7	A&W	Do
b	Lake	Watson Lake	NA	152	A&W, FBC, AgI	N, Do, pH

Notes:

[1] Water quality samples collected between 1975 and 2004.
[2] As = Arsenic
Ba = Barium
Cd = Cadmium
Do = Dissolved Oxygen
F = Fluoride
Mn = Manganese
N = Nitrogen
Pb = Lead
NO3 = Nitrate/ Nitrite
Rad = radionuclides
[3] A&W = Aquatic and Wildlife
AgI = Agriculture
FBC= Full Body Contact
[4] Granite Basin Lake was added to ADEQ's impaired waters list in 2006. Figure 8.3-10 contains impaired waters through 2004.



0 3 6 Miles

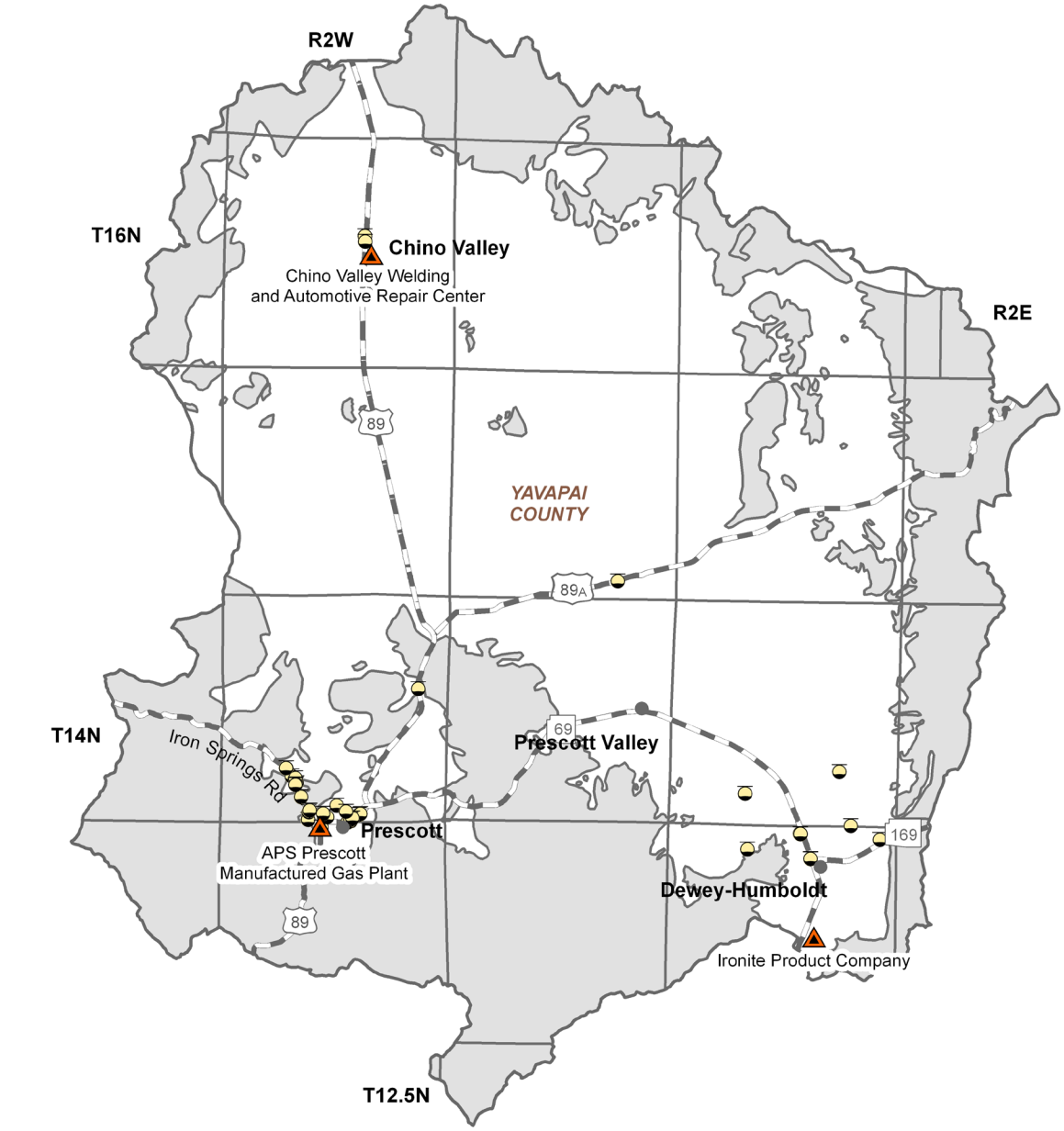
Site that has Equaled or Exceeded DWS
Impaired Stream or Lake
Effluent dependent reach
Consolidated Crystalline & Sedimentary Rocks
Unconsolidated Sediments
Major Road
City, Town or Place

Figure 8.3-10
Prescott AMA
Water Quality Conditions

Table 8.3-9 Contamination Sites in the Prescott AMA

SITE NAME	MEDIA AFFECTED AND CONTAMINANT
Voluntary Remediation Sites	
APS Prescott Manufactured Gas Plant (MGP)	Soil/Polycyclic aromatic hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH), Benzene and Lead Groundwater/Nitrate, Cyanide and Arsenic
Chino Valley Welding and Automotive Repair Center	Soil & Groundwater/Total Petroleum Hydrocarbons (TPH) and Lead
Ironite Product Company	Soil & Groundwater/Not known at this time

Sources: ADEQ 2002, ADEQ 2006a, ADEQ 2006b



0 3 6 Miles

Contamination Site Type

- Leaking Underground Storage Tank (LUST)
- Voluntary Remediation Program (VRP)
- Major Road
- City, Town or Place

Figure 8.3-11
Prescott AMA
Contamination Sites

8.3.8 Cultural Water Demands in the Prescott AMA

Cultural water demand data including population, number of wells and the average well pumpage and non-groundwater use by the municipal, industrial and agricultural sectors are shown in Table 8.3-10. Effluent generation including facility ownership, location, population served and not served, volume treated, disposal method and treatment level is shown in Table 8.3-11. Figure 8.3-12 shows the location of demand centers. A description of cultural water demand data sources and methods is found in Volume 1, Section 1.3.5. More detailed information on cultural water demands is found in Section 8.0.7.

Cultural Water Demands

- Refer to Table 8.3-10 and Figure 8.3-12.
- Population in the AMA increased from 32,618 in 1980 to 92,832 in 2000 and projections suggest an increase to over 221,000 residents by 2050.
- The majority of the water used in the AMA is groundwater.
- In the period of 2001-2003, municipal water demand accounted for almost 70% of the total average annual water demand.
- Agricultural demand dropped by more than 60% between the early to mid-90s and 2001-2003 and has continued to drop as agricultural land is developed and taken out of production.
- As of 2003 there were 9,782 registered wells with a pumping capacity of less than or equal to 35 gallons per minute and 709 wells with a pumping capacity of more than 35 gallons per minute.

Effluent Generation

- Refer to Table 8.3-11.
- 9 wastewater treatment facilities were identified in the AMA.
- There are a wide range of effluent disposal methods including discharge into a watercourse, permitted recharge projects and golf course irrigation
- More than 6,150 acre-feet of effluent are treated/generated annually in the AMA.

Table 8.3-10 Cultural Water Demands in the Prescott AMA[1]

Year	Recent (Census) and Projected (DES) Population	Number of Registered Water Supply Wells Drilled		Average Annual Demand (in acre-feet)[2]						Data Source
				Well Pumpage			Non-Groundwater[3]			
		Q ≤ 35 gpm	Q > 35 gpm	Municipal	Industrial	Irrigation[4]	Municipal	Industrial	Irrigation[4]	
1971		3,435[5]	301[5]	13,000			3,000			ADWR (1994)
1972										
1973										
1974										
1975										
1976				15,000			3,300			
1977										
1978										
1979										
1980	32,618									
1981	35,077	1,125	18	15,000			3,900			
1982	37,536									
1983	39,995									
1984	42,454									
1985	47,016									
1986	49,126	1,052	83	14,100			6,000			ADWR (2008)
1987	51,709									
1988	54,047									
1989	56,898									
1990	57,944									
1991	59,622	1,339	111	9,600	700	5,600	400	0	10,300	
1992	61,330									
1993	64,021									
1994	67,611									
1995	71,613									
1996	73,990	1,692	138	12,300	900	5,400	200	0	4,500	
1997	77,719									
1998	80,133									
1999	85,399									
2000	92,832									
2001	94,916	1,121	58	14,800	1,500	4,000	2,400	0	2,100	
2002	100,429									
2003	106,384									
2010	127,581									
2020	161,196									
2030	187,655									
2040	206,392									
2050	221,024									
ADDITIONAL WELLS:[6]		**19**	**0**							
WELL TOTALS:		**9,801**	**709**							

Notes:
[1] Does not include evaporation losses from stockponds and reservoirs.
[2] Includes Indian Demand
[3] Non-Groundwater supplies may include surface water or effluent.
[4] Agricultural demand includes use by small exempt irrigation rights.
[5] Includes all wells through 1980.
[6] Other water-supply wells are listed in the ADWR Well Registry for this basin, but they do not have completion dates. These wells are summed here.

Table 8.3-11 Effluent Generation in the Prescott AMA

Facility Name	Ownership	City/Location Served	Population Served	Volume Treated/Generated (acre-feet)	Disposal Method									Current Treatment Level	Population Not Served	Year of Record
					Water - course	Evaporation Pond	Irrigation	Golf Course	Wildlife Area	Discharged to Another Facility	Infiltration Basin	Industrial Reuse	Other			
Chino Valley WWTF, Town of	Town of Chino Valley	Chino Valley	8,500	37							P			NA	NA	2007
Clipper Wash	Prescott Country Club	Dewey	NA	NA	X									NA	NA	NA
Hassayampa WWTF	City of Prescott	Prescott	NA	347				X						NA	NA	2007
Hidden Hills WWTP	NA	Dewey	NA	NA	NA									NA	NA	NA
La Fiesta WWTF	Prescott Country Club	Dewey	NA	2.7		X								NA	NA	2007
Prescott Valley WWTF	Prescott Valley	Prescott Valley	33,500	2,072	X			X		X	P			Advanced Treatment II	40	2004
Prescott, City of - Airport WWTF	City of Prescott	Prescott	11,330	784				X				X		Advanced Treatment I	1330	2004
Prescott, City of - Sundog WWTF	City of Prescott	Prescott	25,500	2,912				X			P			Advanced Treatment II with Nutrient Removal	500	2004
Softwinds Mobile Home Park	Private	Dewey	NA	4	NA									NA	NA	2007
Total			**78,830**	**6,159**											**1,870**	

Sources: Clean Water Needs Survey (CWNS) 2002 and 2004 Data, City of Prescott Water Management Policy 2005-2010 (2007), Town of Prescott Valley (2008), ADEQ's AZURITE Facility website
P=Permitted Underground Storage Facility
WWTF=Wastewater Treatment Facility
WWTP=Wastewater Treatment Plant

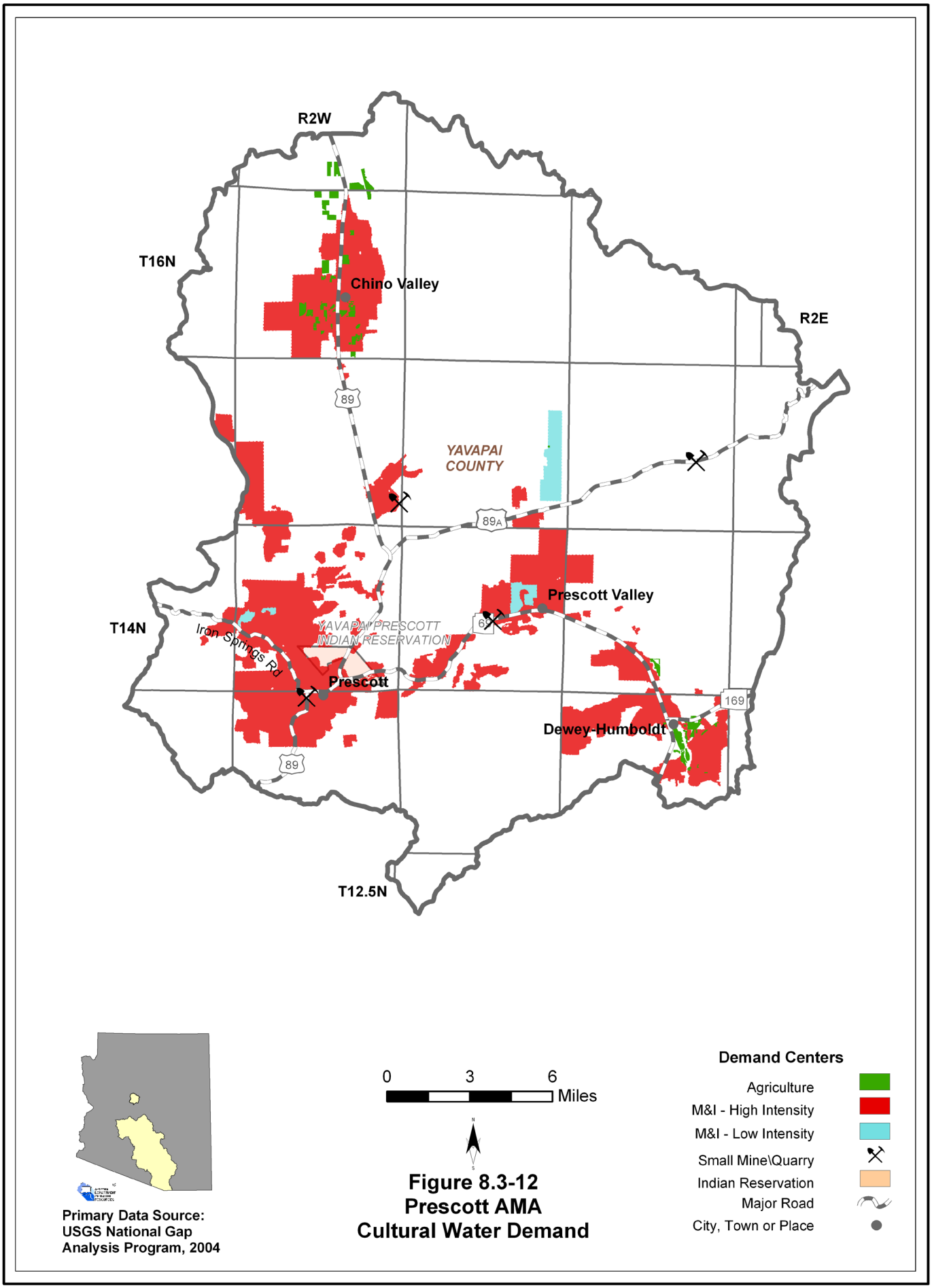


Figure 8.3-12
Prescott AMA
Cultural Water Demand

8.3.9 Assured Water Supply Determinations in the Prescott AMA

Assured water supply determination information including the subdivision name, location, number of lots, date of determination and subdivision water provider are shown in Table 8.3-12A, B and C for certificates, water adequacy reports and analysis of assured water supply. Designated water provider information is shown in Table 8.3-12D with date of application, date the designation was issued and projected or annual estimated demand. Figure 8.3-13 shows the general locations of subdivisions (to the section level) and designated provider water service areas keyed to the Table. A description of the Assured Water Supply Program is found Section 8.0.5 and in Volume 1, Appendix A. Assured Water Supply determination data sources and methods are found in Volume 1, Sections 1.3.1.

Water Supply Records

- See Table 8.3-12
- As of February 2008, 115 subdivisions with a total of more than 196,000 lots have been reviewed for an assured water supply determination.
- 16,431 lots in 104 subdivisions received a Certificate of Assured Water Supply, 298 lots in nine subdivisions received Water Adequacy Reports and 2,871 lots in two developments received an Analyses of Assured Water Supply.
- There is one designated provider, City of Prescott, with a total projected or estimated annual water use of 14,350 acre-feet by 2014.

Table 8.3-12 Assured Water Supply Determinations in the Prescott AMA[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Proivderat the Time of Application
			Township	Range	Section				
1	Rancho Santa Maria	Yavapai	16 North	2 West	17	87	27-200279	9/26/83	NA
1	Rancho Santa Maria #2	Yavapai	16 North	2 West	17	18	27-200280	5/23/94	NA
1	Rancho Santa Maria #2, 3	Yavapai	16 North	2 West	17	38	27-200281	3/17/95	NA
1	Vista de Chino	Yavapai	16 North	2 West	17	80	27-200388	5/27/87	NA
1	Rancho Santa Maria Unit Two	Yavapai	16 North	2 West	17	19	27-400162	11/12/99	NA
2	Quail Ridge	Yavapai	16 North	2 West	5	180	27-300493	10/14/98	NA
3	Gold Rush Ranches	Yavapai	16 North	2 West	21	16	27-200122	4/6/93	NA
3	Fire Sky Ranch	Yavapai	16 North	2 West	21	18	27-300440	7/27/98	NA
4	Grassland	Yavapai	16 North	2 West	4	16	27-200132	12/15/80	NA
4	Stetson Ranch	Yavapai	16 North	2 West	4	14	27-200319	7/8/85	NA
4	Yo He Wah	Yavapai	16 North	2 West	4	32	27-200408	4/28/83	NA
5	Easy Street Estates	Yavapai	16 North	2 West	16	42	27-300511	3/29/99	NA
6	Appaloosa Meadows Phases I,II and III	Yavapai	16 North	2 West	9 & 10	318	27-300352	1/16/98	Appaloosa Water Co
7	Chino Valley Business Park & Marketplace	Yavapai	16 North	2 West	15	13	27-300455	7/14/98	NA
7	Hawksnest Estates	Yavapai	16 North	2 West	15	150	27-700399	12/19/07	Town of Chino Valley
10	Chino de Manana	Yavapai	16 North	2 West	10	20	27-200053	5/15/89	NA
10	Luna Estates	Yavapai	16 North	2 West	10	31	27-200188	8/21/89	NA
10	Commerce Park	Yavapai	16 North	2 West	10	9	27-300334	10/16/97	NA
11	Chino Meadows #4	Yavapai	16 North	2 West	23	98	27-200052	8/6/94	NA
11	Highlands Ranch	Yavapai	16 North	2 West	23	210	27-401234	10/8/04	Town of Chino Valley
11	Highlands Ranch Unit 1B & Unit 2	Yavapai	16 North	2 West	23	349	27-401741	1/25/06	Town of Chino Valley
11	Colonial Villas	Yavapai	16 North	2 West	23	60	27-700393	1/15/08	Town of Chino Valley
12	Tony Town	Yavapai	16 North	2 West	11	57	27-300418	8/27/98	NA
13	BrightStar at Chino Valley	Yavapai	16 North	2 West	24	80	27-400861	8/18/03	Town of Chino Valley
13	Bright Star Phase 3	Yavapai	16 North	2 West	24	166	27-500060	6/20/07	Town of Chino Valley
14	Bright Star, Unit 1, Phase 2, Unit 2, Phase 2	Yavapai	16 North	2 West	13 & 24	125	27-401835	10/21/05	Town of Chino Valley
15	I U Bar Ranch Estates	Yavapai	16 North	1 West	18 & 19	15	27-200147	3/9/88	NA
15	I U Bar Ranch Estates	Yavapai	16 North	1 West	18 & 19	56	27-200148	6/12/89	NA
16	Royal Oaks	Yavapai	15 North	2 West	30	165	27-200294	10/28/91	NA
16	Royal Oaks Lots 166-185	Yavapai	15 North	2 West	30	20	27-200295	4/4/94	NA
16	Granite Park Ranch	Yavapai	15 North	2 West	30	29	27-300158	8/30/96	NA
16	Granite Oaks Estates	Yavapai	15 North	2 West	30	10	27-300400	8/27/98	NA
17	Granite Oaks I, Units 1, 2, 3	Yavapai	15 North	2 West	19	160	27-200129	3/6/90	NA
17	Granite Oaks I, Units 4 & 5	Yavapai	15 North	2 West	19	141	27-200130	11/27/92	NA
17	Granite Oaks II	Yavapai	15 North	2 West	19	14	27-200131	9/28/94	NA
18	Bee Mountain Estates	Yavapai	16 North	2 West	27	20	27-200007	4/20/87	NA
19	Vista Grande Estates, Unit IV	Yavapai	16 North	2 West	26	118	27-300323	12/1/97	NA
20	Antelope Village	Yavapai	15 North	1 West	23 & 26	1440	27-300522	12/30/99	Prescott Valley Water District
21	Viewpoint, Phase I	Yavapai	15 North	1 West	23, 26 & 35	112	27-300019	5/15/95	Town of Prescott Valley
21	Viewpoint, The	Yavapai	15 North	1 West	23, 26 & 35	488	27-300183	8/29/96	Town of Prescott Valley
21	Viewpoint North, The	Yavapai	15 North	1 West	23, 26 & 35	112	27-300434	5/17/95	Town of Prescott Valley
22	Poquito Valley Development	Yavapai	15 North	1 West	2, 11, 14, 23, 26 & 35	48	27-200236	3/9/88	NA
24	Mingus West	Yavapai	15 North	1 East	23	468	27-300225	10/16/97	Town of Prescott Valley
26	Granite Mountain Homesites #4	Yavapai	15 North	2 West	31	19	27-200126	8/18/86	NA
26	Granite Mountain Homesites #3	Yavapai	15 North	2 West	31	8	27-200128	9/15/82	NA
27	Willow Lake Estates	Yavapai	14 North	2 West	15	277	27-200407	6/10/81	Wilhoit Water Co
29	Victorian Estates Unit I & II	Yavapai	14 North	1 West	21 & 28	179	27-200375	5/23/94	Prescott Valley Water District
30	Castle Canyon Mesa #4	Yavapai	14 North	1 West	15	118	27-200045	10/25/93	Prescott Valley Water District
31	Glassford Hill Road Property	Yavapai	14 North	1 West	3, 10 & 15	3288	27-300494	10/3/00	Prescott Valley Water District
32	Castle Canyon Mesa #2	Yavapai	14 North	1 West	15 & 22	19	27-200044	9/16/92	Prescott Valley Water District
32	Prescott East #1,2	Yavapai	14 North	1 West	15 & 22	40	27-200243	9/1/81	Town of Prescott Valley
33	Town and Country Industrial Pk	Yavapai	14 North	1 West	22 & 23	43	27-200352	8/3/84	Prescott Valley Water District
34	StoneRidge	Yavapai	14 North	1 West	26, 27 & 35	3053	27-300483	4/14/00	Town of Prescott Valley

Table 8.3-12 Assured Water Supply Determinations in the Prescott AMA (cont)[1]

A. Certificates of Assured Water Supply

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Proivderat the Time of Application
			Township	Range	Section				
35	Town and Country Industrial Pk	Yavapai	14 North	1 West	23	35	27-200351	12/10/82	Prescott Valley Water District
36	Town and Country Valley Mall	Yavapai	14 North	1 West	14 & 23	300	27-200353	3/30/81	Prescott Valley Water District
37	Prescott Valley #19	Yavapai	14 North	1 West	11	6	27-200252	4/23/87	Prescott Valley Water District
37	Prescott Valley #19	Yavapai	14 North	1 West	11	4	27-200253	6/21/93	Prescott Valley Water District
38	Prescott Valley #18-20	Yavapai	15 North	1 West	35	8	27-200251	1/14/82	Prescott Valley Water District
38	Antelope Park 1	Yavapai	15 North	1 West	35	102	27-300525	3/2/99	NA
38	Antelope Park 2	Yavapai	15 North	1 West	35	75	27-300526	3/2/99	NA
39	Prescott Valley	Yavapai	14 North	1 West	11, 12 & 13	51	27-200245	1/28/81	Town of Prescott Valley
40	Villas, The	Yavapai	14 North	1 West	13	8	27-200384	9/14/82	Prescott Valley Water District
40	Mingus View Condominiums	Yavapai	14 North	1 West	13	12	27-401543	3/18/05	Prescott Valley Water District
41	Prescott Valley, Town of	Yavapai	14 North	1 West	1, 12 & 13	42	27-200257	11/14/89	Prescott Valley Water District
42	Quad Villas	Yavapai	14 North	1 West	12	8	27-200259	3/17/82	Prescott Valley Water District
42	Quad Villas #2	Yavapai	14 North	1 West	12	4	27-200260	3/17/82	Prescott Valley Water District
43	Prescott Valley #09	Yavapai	14 North	1 West	1	10	27-200247	2/3/81	Town of Prescott Valley
43	Prescott Valley #15	Yavapai	14 North	1 West	1	4	27-200248	3/23/81	Town of Prescott Valley
43	Prescott Valley #20	Yavapai	14 North	1 West	1	1	27-200254	8/24/81	Prescott Valley Water District
44	Prescott Valley Business Park	Yavapai	14 North	1 East	19	44	27-200256	4/15/83	Prescott Valley Water District
45	Fairway Patio Homes	Yavapai	14 North	1 East	18	5	27-200117	1/10/83	Prescott Valley Water District
46	Prescott Valley	Yavapai	14 North	1 East	7	49	27-200244	1/28/81	Town of Prescott Valley
46	Prescott Valley #18-20	Yavapai	14 North	1 East	7	8	27-200249	1/14/82	Town of Prescott Valley
46	Prescott Valley #20	Yavapai	14 North	1 East	7	8	27-200255	10/25/93	Prescott Valley Water District
47	Prescott Country Club #6	Yavapai	14 North	1 East	29	54	27-200242	3/29/94	Prescott Valley Water District
47	Prescott Country Club #6, phase 2	Yavapai	14 North	1 East	29	31	27-300111	5/16/96	Town of Prescott Valley
48	Green View Townhomes	Yavapai	14 North	1 East	28	34	27-300527	3/29/99	Prescott Valley Water District
51	Prescott Buttes	Yavapai	14 North	2 West	31	38	27-300581	3/5/99	City of Prescott
52	Lynx Mountain View Estates	Yavapai	14 North	1 West	33	95	27-200189	7/3/86	Bradshaw Water Co
52	Lynx Mountain View Estates	Yavapai	14 North	1 West	33	122	27-200190	6/12/89	Bradshaw Water Co
52	Lynx Mountain View Estates #6	Yavapai	14 North	1 West	33	39	27-200191	10/25/93	Bradshaw Water Co
52	Creekside of Prescott, Phase 1	Yavapai	14 North	1 West	33	33	27-300045	10/12/95	Bradshaw Water Co
52	Creekside of Prescott, Phase 2	Yavapai	14 North	1 West	33	39	27-300513	4/15/99	Bradshaw Water Co
52	Creekside of Prescott Phase 3	Yavapai	14 North	1 West	33	25	27-400759	11/15/02	Bradshaw Water Co
53	Mobile Villas Units #1&2	Yavapai	14 North	1 East	28 & 29	NA	27-200200	5/6/87	Prescott Valley Water District
53	Mobile Villas Units #1&2	Yavapai	14 North	1 East	33	NA	27-200200	5/6/87	Prescott Valley Water District
53	Prescott Country Club	Yavapai	14 North	1 East	28, 29 & 33	87	27-200240	5/6/87	Prescott Valley Water District
53	Prescott Country Club	Yavapai	14 North	1 East	28, 29 & 33	104	27-200241	5/8/87	Prescott Valley Water District
54	Wagon Wheel Condominiums	Yavapai	14 North	1 East	33	4	27-200394	7/12/88	NA
55	Country Club Townhomes	Yavapai	14 North	1 East	28 & 33	76	27-200081	3/11/85	Prescott Valley Water District
56	Chaparral Heights	Yavapai	13 North	1 East	10 & 15	34	27-300178	1/21/97	NA
57	Quailwood Meadows Townhomes	Yavapai	14 North	1 East	34	204	27-401653	8/29/05	Prescott Valley Water District
58	Parker Hill	Yavapai	13 North	1 East	15	186	27-200218	3/2/82	NA
59	Villages at Lynx Creek	Yavapai	14 North	1 East	27 & 34	515	27-200380	5/5/89	Prescott Valley Water District
60	Quailwood Meadows	Yavapai	14 North	1 East	27, 34 & 35	1012	27-300521	3/29/99	Prescott Valley Water District
61	Rolling Ridge Ranches	Yavapai	13 North	1 East	11	10	27-200293	10/6/80	NA
62	Command Estates #2	Yavapai	13 North	1 East	13	17	27-200075	7/21/85	NA
63	Command Estates	Yavapai	13 North	1 East	12	47	27-200074	9/4/80	NA
63	Golden View Estates	Yavapai	13 North	1 East	12	14	27-200123	6/10/82	NA
63	Indian Castles	Yavapai	13 North	1 East	12	17	27-200149	9/4/80	NA
64	Clearview Estates	Yavapai	13 North	1 East	1 & 12	22	27-200059	11/4/85	NA
64	Meadow Ranch	Yavapai	13 North	1 East	1 & 12	34	27-200196	5/30/95	NA
64	Vista View Estates	Yavapai	13 North	1 East	1 & 12	8	27-200387	7/4/80	NA
64	Meadow View	Yavapai	13 North	1 East	1 & 12	40	27-401979	9/5/06	NA

Table 8.3-12 Assured Water Supply Determinations in the Prescott AMA (cont)[1]

B. Water Adequacy Reports

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	ADWR Adequacy Determination[2]	Date of Determination	Water Proivder at the Time of Application
			Township	Range	Section					
8	Luna Estates	Yavapai	16 North	2 West	10 & 15	106	53-500930	Inadequate	5/5/80	NA
12	Sunrise	Yavapai	16 North	2 West	11	43	53-501503	Adequate	2/3/77	NA
19	Vista Grande Estates	Yavapai	16 North	2 West	26	66	53-501648	Adequate	8/15/77	NA
25	Granite Foothills	Yavapai	14 North	2 West	30	11	53-500726	Adequate	1/16/89	NA
26	Granite Mountain Estates	Yavapai	15 North	2 West	31	23	53-500727	Adequate	3/30/76	NA
28	Savage Mountain	Yavapai	14 North	2 West	23	12	53-501374	Adequate	3/12/79	NA
49	Highland Pines	Yavapai	14 North	3 West	33 & 34	27	53-500202	Adequate	9/6/73	NA
49	Highland Pines	Yavapai	14 North	3 West	33 & 34	NA	53-500203	Adequate	7/6/73	NA
50	Aspen Acres	Yavapai	13 North	2 West	7	10	53-500302	Adequate	4/10/80	NA

C. Analyses of Assured Water Supply

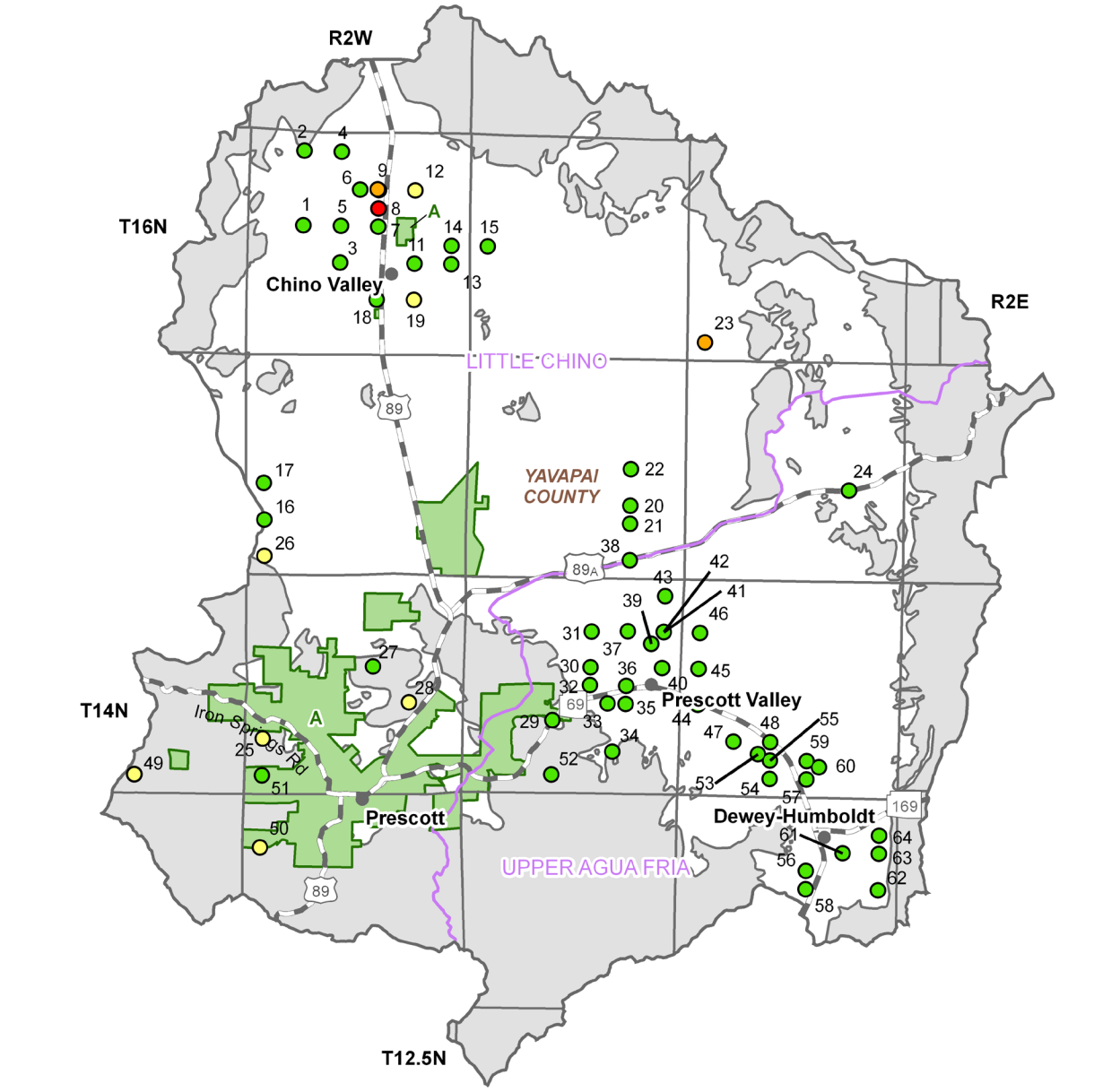
Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.	Date of Determination	Water Proivderat the Time of Application
			Township	Range	Section				
9	Old Home Manor	Yavapai	16 North; 16 North	1 West; 2 West	7; 12	2700	28-700319	1/3/08	Town of Chino Valley
23	Mingus Meadows Estates Subdivision	Yavapai	16 North	1 East	31	171	28-500006	7/19/07	NA

D. Designated Water Providers

Map Key	Water Provider Name	County	Designation No.	Date Application Received	Date Designation Issued	Projected or Annual Estimated Demand (af/yr)	Year of Projected or Annual Estimated Demand
A	City of Prescott	Yavapai	26-401501.0000	09/02/04	09/16/05	14,350	2014

[1] Includes water reports issued under the Water Adequacy program prior to 1980 implementation of the Assured Water Supply program.

[2] Adequacy determinations were based on the information available to ADWR and the standards of review and policies in effect at the time the determination was made. A determination of inadequacy could be due to insufficent physical or legal access to water or poor water quality. The Adequacy Program was replaced by the Assured Water Supply Program in the AMAs in 1980.



Designated Water Provider Service Area Boundary
Certificate of Assured Water Supply
Analysis of Assured Water Supply
Water Report (Adequate)
Water Report (Inadequate)
Consolidated Crystalline & Sedimentary Rocks
Unconsolidated Sedidments
Sub-basin Boundary
Major Road
City, Town or Place

0 3 6 Miles

Figure 8.3-13
Prescott AMA
Assured Water Supply Determinations

Prescott AMA
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