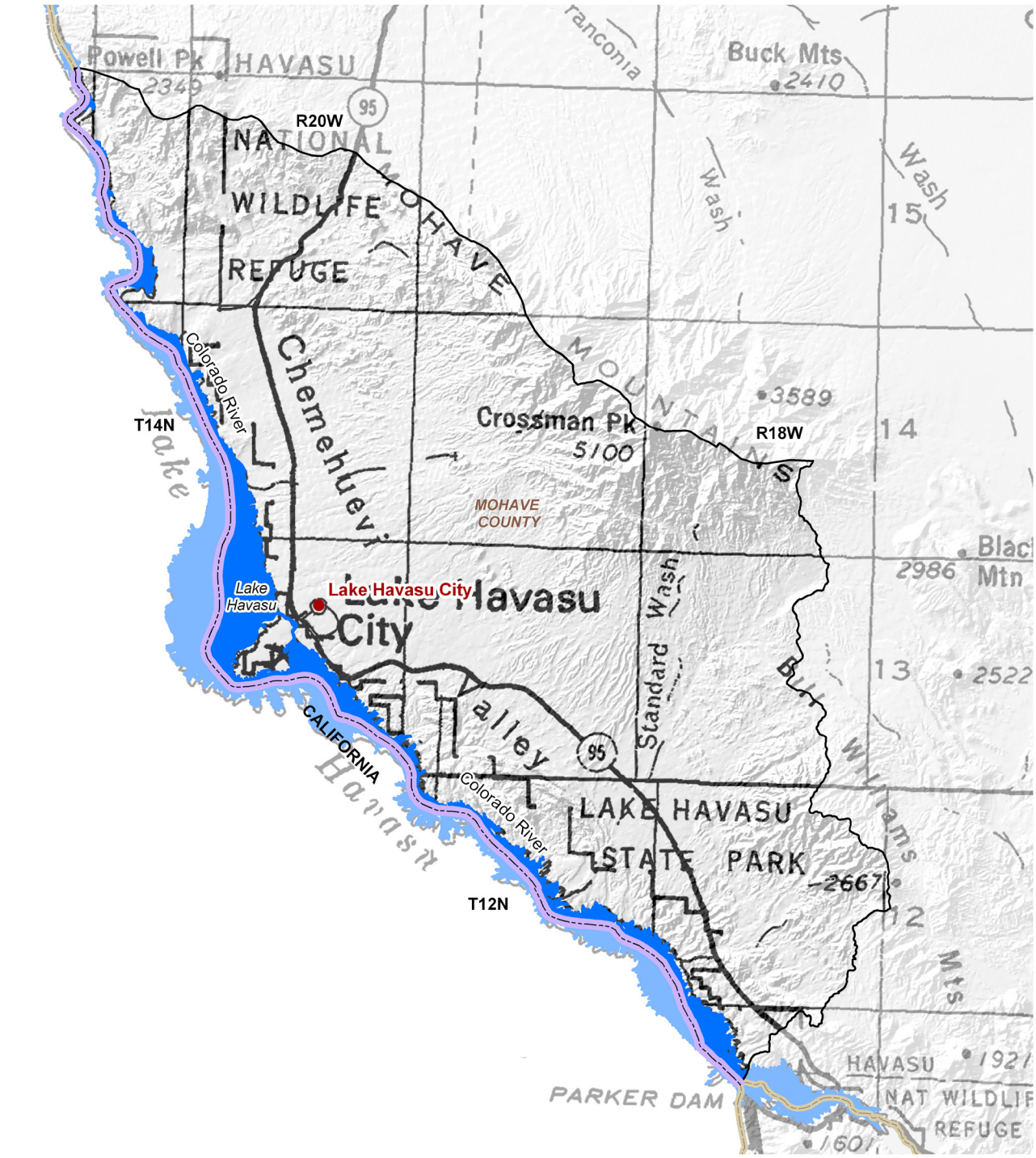
Section 4.5
Lake Havasu Basin

4.5.1 Geography of the Lake Havasu Basin

The Lake Havasu Basin, located in the southwestern part of the planning area, is the second smallest basin at 252 square miles. Geographic features and principal communities are shown on Figure 4.5-1. The basin is characterized by a valley adjacent to the Colorado River and Lake Havasu, which form the western boundary of the basin, and by lower elevation mountains along the north and eastern basin boundary. Vegetation types include lower Colorado River and Arizona upland Sonoran desertscrub and Mohave desertscrub. (see Figure 4.0-9) Riparian vegetation includes tamarisk and marsh along sections of the Colorado River.

- Principal geographic features shown on Figure 4.5-1 are:
    - Chemehuevi Valley running parallel to the Colorado River and Lake Havasu
    - Standard Wash running north to south in the eastern part of the basin
    - Bill Williams Mountains on the southeastern basin boundary
    - Mohave Mountains along the northeastern basin boundary with the highest point in the basin, Crossman Peak at 5,100 feet
    - The lowest point in the basin at approximately 470 feet at the Colorado River



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Base Map: USGS 1:500,000, 1981

Figure 4.5-1
Lake Havasu Basin
Geographic Features

California State Boundary
City, Town or Place

4.5.2 Land Ownership in the Lake Havasu Basin

Land ownership, including the percentage of ownership by category, for the Lake Havasu Basin is shown in Figure 4.5-2. The principal feature of land ownership in this basin is the large percentage of U.S. Bureau of Land Management lands. A description of land ownership data sources and methods is found in Volume 1, Appendix A. More detailed information on protected areas is found in Section 4.0.4. Land ownership categories are discussed below in the order from largest to smallest percentage in the basin.

U.S. Bureau of Land Management (BLM)

- 59.7% of the land is federally owned and managed by the Lake Havasu Field Office of the Bureau of Land Management.
- BLM lands in this basin are primarily contiguous and located throughout the basin.
- This basin contains the largest percentage of BLM lands in the planning area.
- Primary land uses are recreation and grazing.

Private

- 15.3% of the land is private.
- The majority of the private land is contiguous and located around Lake Havasu City.
- Primary land uses are domestic and commercial.

State Trust Land

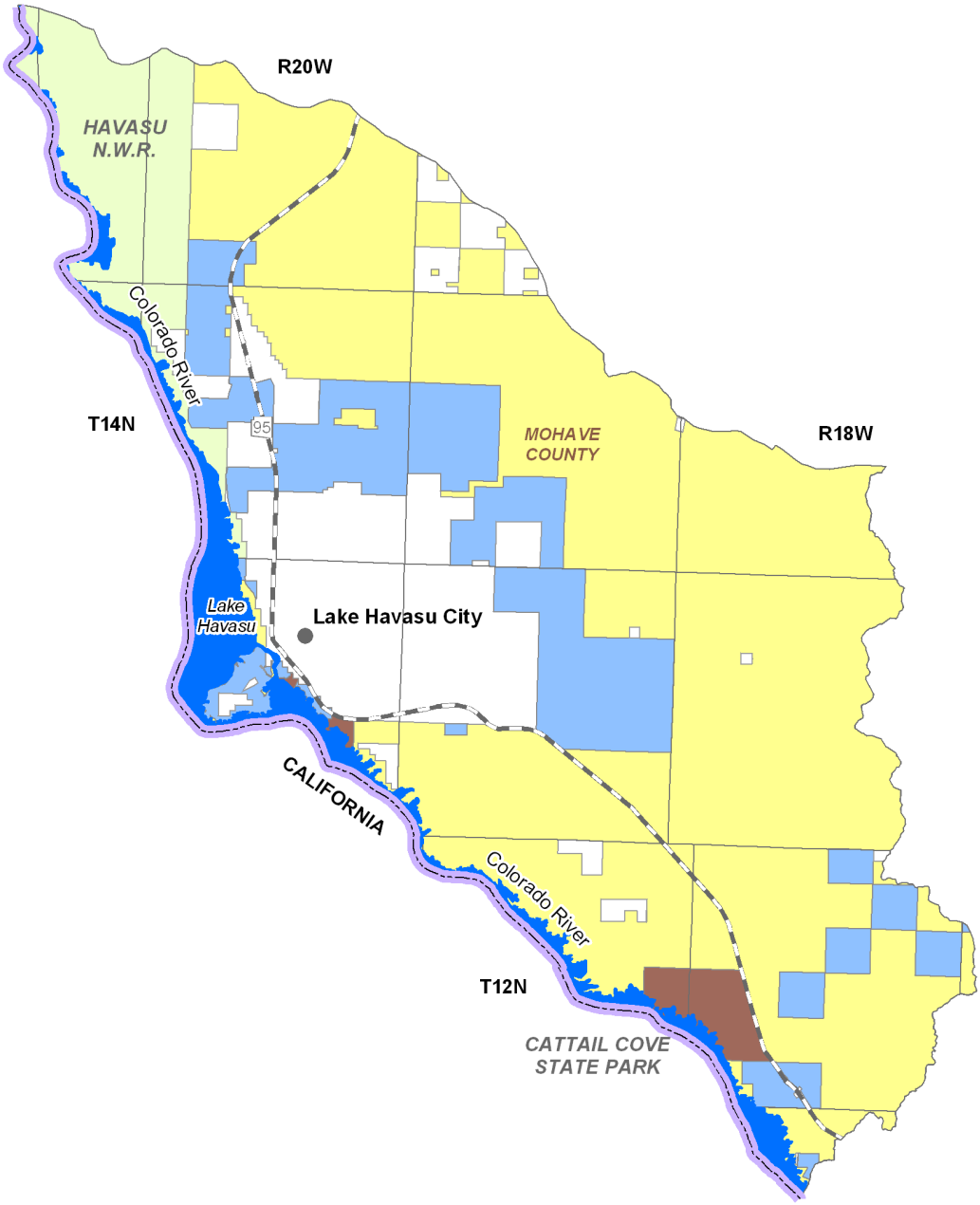
- 14.7% of the land in this basin is held in trust for the public schools and the Miner's Hospital under the State Trust Land system.
- Most state lands are surrounding Lake Havasu City. One portion of state land is located on an island created by the Bridgewater Channel in T13N, R20W.
- Primary land uses are recreation and grazing.

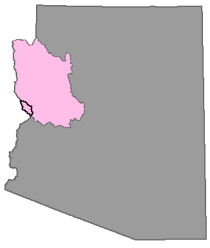
Wildlife Refuge

- 8.7% of the land is federally owned and managed by the U.S. Fish and Wildlife Service.
- All wildlife refuge lands are part of the Havasu National Wildlife Refuge located in the northwestern portion of the basin.
- Primary land uses are wildlife conservation and recreation.

Other (Game and Fish, County and Bureau of Reclamation Lands)

- 1.6% of the land is under ownership of Arizona State Parks.
- The portion of Arizona State Park land in T13N, R20W is Windsor Beach State Park and the larger portion of land along the southwestern basin boundary is Cattail Cove State Park.
- Primary land use is recreation.





Source: ALRIS, 2004

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Figure 4.5-2
Lake Havasu Basin
Land Ownership

Land Ownership
(Percentage in Basin)

- U.S. Bureau of Land Management (59.7%)
- Private (15.3%)
- State Trust (14.7%)
- Wildlife Refuge (8.7%)
- Other (1.6%)
- California State Boundary
- Major Road
- City, Town or Place

4.5.3 Climate of the Lake Havasu Basin

Climate data from NOAA/NWS Co-op Network stations are complied in Table 4.5-1 and the location is shown on Figure 4.5-3. Figure 4.5-3 also shows precipitation data from the Spatial Climate Analysis Service (SCAS) at Oregon State University. The Lake Havasu Basin does not contain Evaporation Pan, AZMET and SNOTEL/Snowcourse stations. More detailed information on climate in the planning area is found in Section 4.0.3. A description of the climate data sources and methods is found in Volume 1, Appendix A.

NOAA/NWS Co-op Network

- Refer to Table 4.5-1A
- There are two NOAA/NWS Co-op network climate stations in the basin. The average monthly maximum temperature occurs in July and ranges between 96.6°F at Lake Havasu and 98.5°F at Lake Havasu City. The average monthly minimum temperature occurs in January or December and ranges between 52.9°F at Lake Havasu and 54.5°F at Lake Havasu City.
- Highest average seasonal rainfall occurs in the winter (January – March). For the period of record used, the highest annual rainfall is 4.82 inches at Lake Havasu and lowest is 2.90 inches at Lake Havasu City.

SCAS Precipitation Data

- See Figure 4.5-3
- Additional precipitation data shows average annual rainfall as high as 12 inches in the Mohave Mountains along the eastern basin boundary and as low as four inches along the boundary with California.
- This basin is one of three basins in the planning area with a range of eight inches between areas of highest and lowest average annual precipitation, the lowest in the planning area.

Table 4.5-1 Climate Data for the Lake Havasu Basin

A. NOAA/NWS Co-op Network:

Station Name	Elevation (in feet)	Period of Record Used for Averages	Average Temperature Range (in F)		Average Total Precipitation (in inches)				
			Max/Month	Min/Month	Winter	Spring	Summer	Fall	Annual
Lake Havasu	480	1967-1991[1]	96.6/Jul	52.9/Jan	1.65	0.39	1.59	1.19	4.82
Lake Havasu City	500	1991-2004[1]	98.5/Jul	54.5/Dec	1.45	0.16	0.68	0.60	2.90

Source: WRCC, 2005

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

B. Evaporation Pan:

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

C. AZMET:

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

D. SNOTEL/Snowcourse:

Station Name	Elevation (in feet)	Period of Record	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								

Figure 4.5-3
Lake Havasu Basin
Meteorological Stations
and Annual Precipitation

4.5.4 Surface Water Conditions in the Lake Havasu Basin

This basin does not contain streamflow data. Flood ALERT equipment in the basin is shown in Table 4.5-2. Reservoir and stockpond data, including maximum storage or maximum surface area, are shown in Table 4.5-3. The location of large reservoirs and flood ALERT gages are shown on Figure 4.5-4. There are no runoff data available for this basin. Descriptions of stream, reservoir and stockpond data sources and methods are found in Volume 1, Appendix A.

Flood ALERT Equipment

- Refer to Table 4.5-2.
- As of October 2005 there were four stations in the basin.

Reservoirs and Stockponds

- Refer to Table 4.5-3.
- The basin contains one large reservoir, Havasu, with a maximum capacity of 651,000 acre-feet. Lake Havasu, created by Parker Dam, is operated for hydroelectric power generation, irrigation and water supply.
- There are no other reservoirs or stockponds in this basin.

Table 4.5-2 Flood ALERT Equipment in the Lake Havasu Basin

Station ID	Station Name	Station Type	Install Date	Responsibility
7490	Desert Hills	Precipitation/Stage	NA	Mohave County FCD
7530	Ram Peak Repeater	Repeater/Precipitation	NA	Mohave County FCD
7550	Horizon 6	Precipitation/Stage	NA	Mohave County FCD
7630	Lake Havasu City	Weather Station	NA	Mohave County FCD

Source: ADWR 2005b

Notes:
FCD = Flood Control District
NA = Not available

Table 4.5-3 Reservoirs and Stockponds in the Lake Havasu Basin

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
None	Havasu (Parker Dam)[2]	Bureau of Reclamation	651,000[3]	H,I,S	Federal

Source: Compilation of databases from ADWR & others

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

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: 0
Total maximum storage: 0 acre-feet

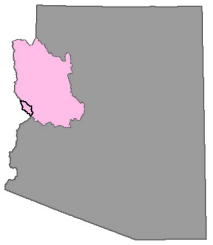
D. Other Small Reservoirs (between 5 and 50 acres surface area)

Total number: 0
Total surface area: 0 acres

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

Total number: 0 (from water right filings)

Notes:
[1]H=hydroelectric; I=irrigation; S=water supply
[2]Dam is located in Parker Basin but lake storage is in the Lake Havasu, Sacramento Valley and Bill Williams Basins
[3] Includes 28,600 acre-feet of dead storage



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Stream Data Source: ALRIS, 2005b

0 3 6 Miles

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Figure 4.5-4
Lake Havasu Basin
Surface Water Conditions

Stream Channel (width of line reflects stream order)

Stream Gages

Flood ALERT Equip. and Station ID 9999

California State Boundary

Major Road

City, Town or Place

4.5.5 Perennial/Intermittent Streams and Major Springs in the Lake Havasu Basin

The total number of springs in the basin is shown on Table 4.5-4. There are no major or minor springs in this basin. The locations of perennial and intermittent streams are shown on Figure 4.5-5. Descriptions of data sources and methods for intermittent and perennial reaches and springs are found in Volume 1, Appendix A.

- There is one perennial stream, the Colorado River, located along the western basin boundary. There are no intermittent streams.
- There are three springs with discharges less than one gpm identified by the USGS in this basin.

Table 4.5-4 Springs in the Lake Havasu Basin

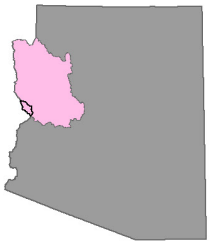
A. Major Springs (10 gpm or greater):

Map Key	Name	Location		Discharge (in gpm)	Date Discharge Measured
		Latitude	Longitude		
None identified by ADWR at this time					

B. Minor Springs (1 to 10 gpm):

Name	Location		Discharge (in gpm)	Date Discharge Measured
	Latitude	Longitude		
None identified by ADWR at this time				

C. Total number of springs, regardless of discharge, identified by USGS (see ALRIS, 2005a and USGS, 2006a): 3



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Stream Data Source: AGFD, 1993 & 1997

0 3 6 Miles

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Figure 4.5-5
Lake Havasu Basin
Perennial/Intermittent Streams and Major (>10 gpm) Springs

Perennial Streams
California State Boundary
Major Road
City, Town or Place

4.5.6 Groundwater Conditions of the Lake Havasu Basin

Major aquifers, well yields, estimated natural recharge, estimated water in storage, number of index wells and date of last water-level sweep are shown in Table 4.5-5. Figure 4.5-6 shows aquifer flow direction and water-level change between 1990-1991 and 2003-2004. Figure 4.5-7 contains hydrographs for selected wells shown on Figure 4.5-6. Figure 4.5-8 shows well yields in three yield categories. A description of aquifer data sources and methods as well as well data sources and methods, including water-level changes and well yields are found in Volume 1, Appendix A.

Major Aquifers

- Refer to Table 4.5-5 and Figure 4.5-6.
- The major aquifer in this basin is basin fill.
- Flow direction is from north to south in this basin.

Well Yields

- Refer to Table 4.5-5 and Figure 4.5-8.
- As shown on Figure 4.5-8 well yields in this basin range from 100 gallons per minute (gpm) to more than 2,000 gpm.
- One source of well yield information, based on 17 reported wells, indicates that the median well yield in this basin is 1,500 gpm.

Natural Recharge

- Refer to Table 4.5-5.
- The estimate of natural recharge for this basin is 35,000 acre-feet per year (AFA).

Water in Storage

- Refer to Table 4.5-5.
- Storage estimates for this basin range from 1.0 million acre-feet (maf) to 2.0 maf to a depth of 1,200 feet.

Water Level

- Refer to Figure 4.5-6. The water level is shown for one well measured in 2003-2004 with a depth of 74 feet.
- The Department annually measures one index well in this basin. A hydrograph of this well is shown in Figure 4.5-7.

Table 4.5-5 Groundwater Data for the Lake Havasu Basin

Basin Area, in square miles:	252	
Major Aquifer(s):	**Name and/or Geologic Units**	
	Basin Fill	
Well Yields, in gal/min	Range 310-3,600 Median 1,500 (17 wells reported)	Reported on registration forms for large (>10-inch) diameter wells (Wells55)
	Range 30-500	ADWR (1990 and 1994b)
	Range 0-2,500	Anning and Duet (1994)
Estimated Natural Recharge, in acre-feet/year:	35,000	Freethey and Anderson (1986)
Estimated Water Currently in Storage, in acre-feet:	2,000,000[1] (to 1,200 ft)	Freethey and Anderson (1986)
	1,000,000 (to 1,200 ft)	Arizona Water Commission (1975)
Current Number of Index Wells:	1	
Date of Last Water-level Sweep:	1998-99 (30 wells measured)	

Notes:
[1]Predevelopment Estimate

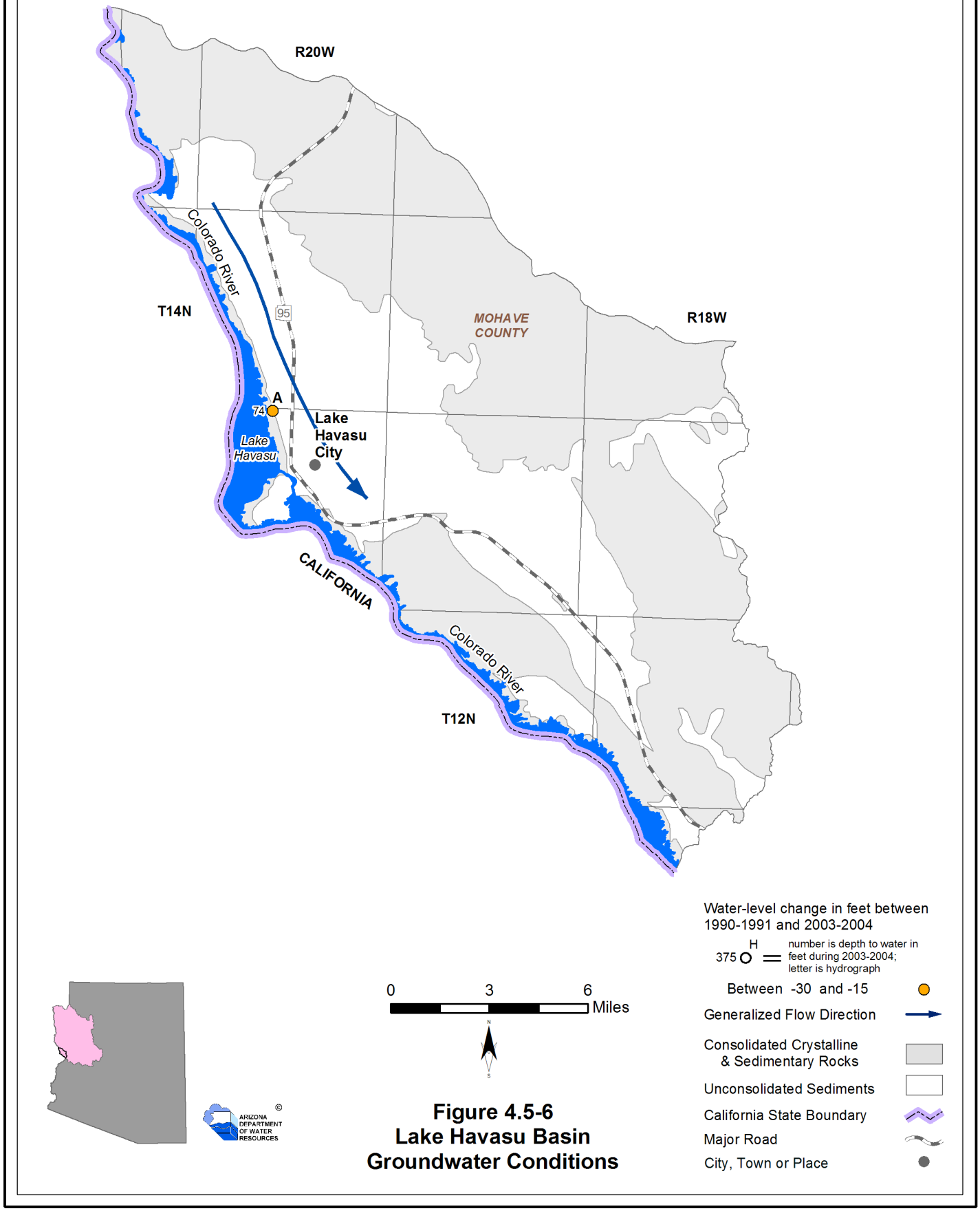
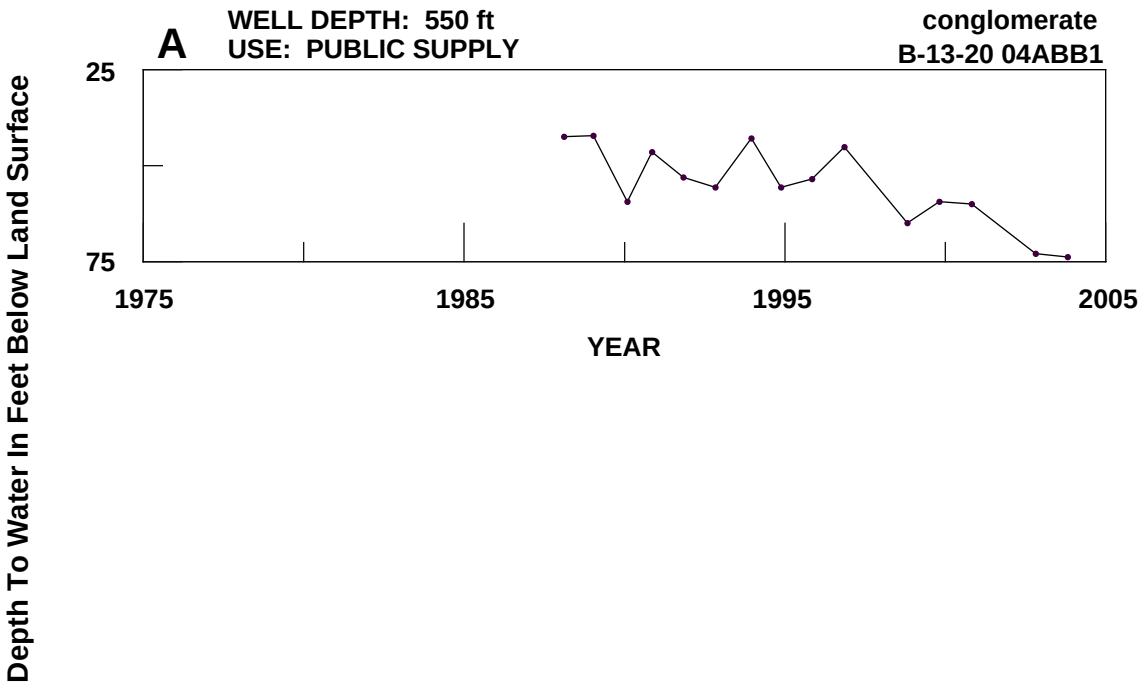
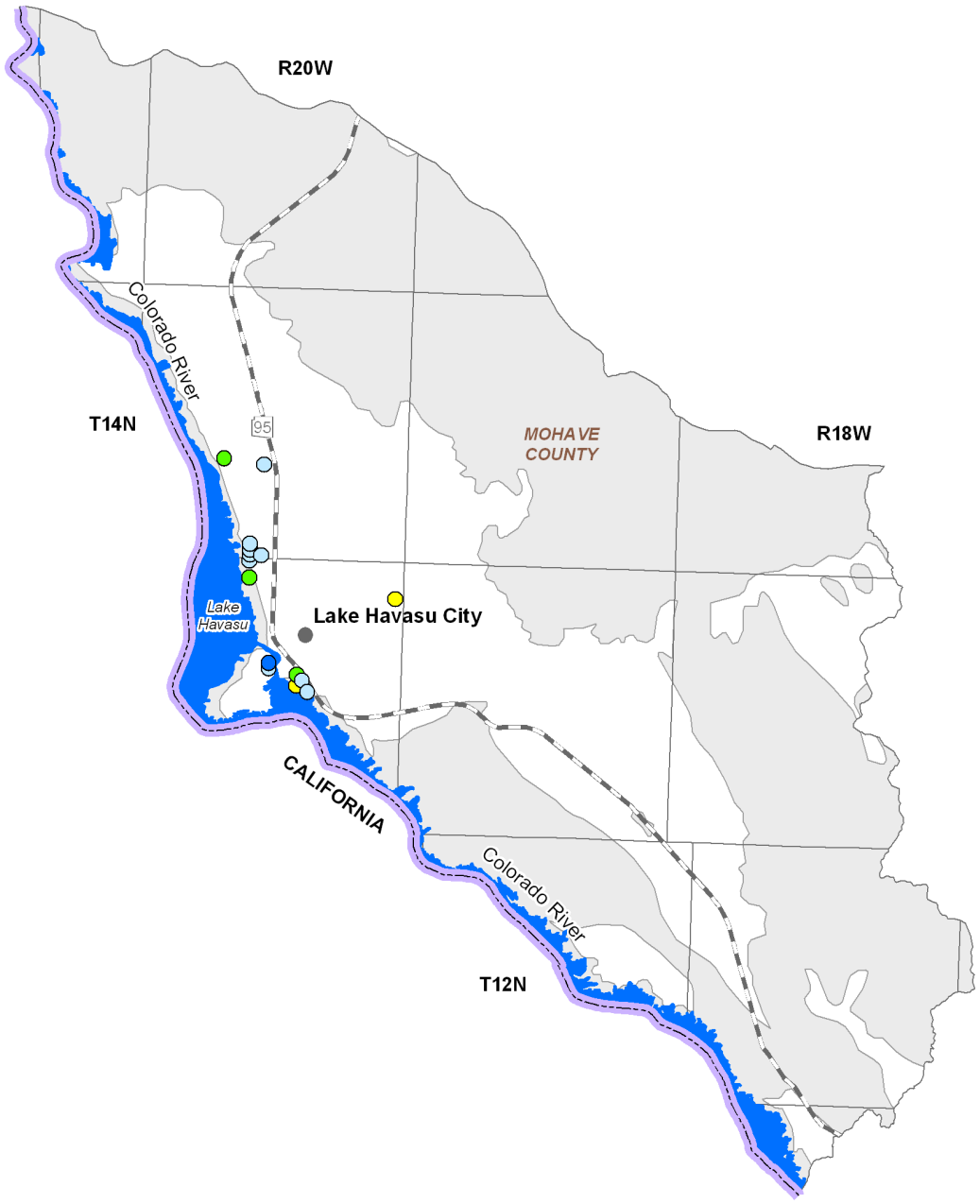


Figure 4.5-6
Lake Havasu Basin
Groundwater Conditions

Figure 4.5-7
Lake Havasu Basin
Hydrographs Showing Depth to Water in Selected Wells





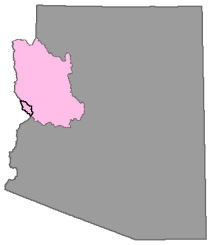


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Figure 4.5-8
Lake Havasu Basin
Well Yields

Well Yields
- Greater than 2000 gals/min
- Between 1000 and 2000 gals/min
- Between 500 and 1000 gals/min
- Between 100 and 500 gals/min

Consolidated Crystalline & Sedimentary Rocks

Unconsolidated Sediments

California State Boundary

Major Road

City, Town or Place

4.5.7 Water Quality of the Lake Havasu Basin

Sites with parameter concentrations that have equaled or exceeded drinking water standard(s) (DWS), including location and parameter(s) are shown in Table 4.5-6A. There are no impaired lakes or streams in this basin. Figure 4.5-9 shows the location of exceedences keyed to Table 4.5-6A. 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. A description of water quality data sources and methods is found in Volume 1, Appendix A.

Well, Mine or Spring sites that have equaled or exceeded drinking water standards (DWS)

- Refer to Table 4.5-6A.
- Twenty sites have parameter concentrations that have equaled or exceeded DWS.
- The most frequently equaled or exceeded parameter was nitrates.
- Other parameters equaled or exceeded in the sites measured in this basin were arsenic, chromium and organics.

Table 4.5-6 Water Quality Exceedences in the Lake Havasu Basin[1]

A. Wells, Springs and Mines

Map Key	Site Type	Site Location			Parameter(s) Concentration has Equaled or Exceeded Drinking Water Standard[2]
		Township	Range	Section	
1	Well	14 North	20 West	21	As
2	Well	14 North	20 West	21	NO3
3	Well	14 North	20 West	21	NO3
4	Well	13 North	20 West	3	NO3
5	Well	13 North	20 West	3	Cr
6	Well	13 North	20 West	3	Cr, Organics
7	Well	13 North	20 West	9	NO3
8	Well	13 North	20 West	10	Organics
9	Well	13 North	20 West	10	Organics
10	Well	13 North	20 West	10	Organics
11	Well	13 North	20 West	15	As
12	Well	13 North	20 West	15	As
13	Well	13 North	20 West	15	NO3
14	Well	13 North	20 West	15	As
15	Well	13 North	20 West	16	NO3
16	Well	13 North	20 West	16	Organics
17	Well	13 North	20 West	16	NO3
18	Well	13 North	20 West	16	NO3
19	Well	13 North	20 West	16	NO3
20	Well	13 North	20 West	22	NO3

Source: Compilation of databases from ADWR & others

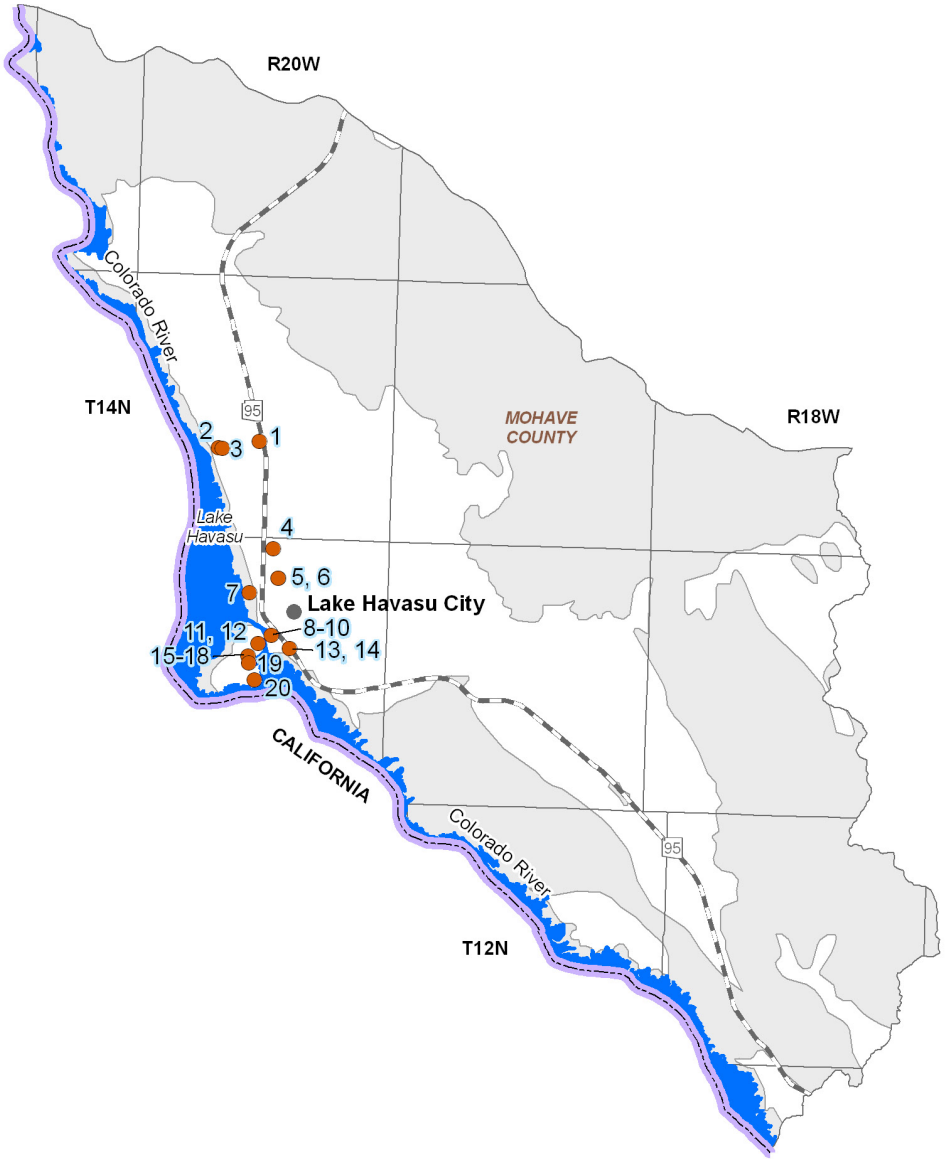
B. Lakes and Streams

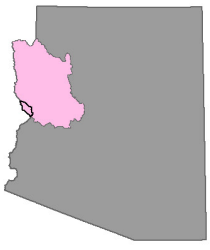
Map Key	Site Type	Site Name	Length of Impaired Stream Reach (in miles)	Area of Impaired Lake (in acres)	Designated Use Standard	Parameter(s) Exceeding Use Standard
None identified by ADWR at this time						

Notes:

[1] Water quality samples collected between 1976 and 2000.

[2] As = Arsenic
Cr = Chromium
NO3 = Nitrate
Organics = One or more of several volatile and semi-volatile organic compounds and pesticides





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0 3 6 Miles

Well, Spring or Mine Site that has Equaled or Exceeded DWS 1
Consolidated Crystalline & Sedimentary Rocks
Unconsolidated Sediments
California State Boundary
Major Road
City, Town or Place

Figure 4.5-9
Lake Havasu Basin
Water Quality conditions

4.5.8 Cultural Water Demand in the Lake Havasu Basin

Cultural water demand data including population, number of wells and the average well pumpage and surface water diversions by the municipal, industrial and agricultural sectors are shown in Table 4.5-7. Effluent generation including facility ownership, location, population served and not served, volume treated, disposal method and treatment level is shown in Table 4.5-8. Figure 4.5-10 shows the location of demand centers. A description of cultural water demand data sources and methods is found in Volume 1, Appendix A. More detailed information on cultural water demand is found in Section 4.0.7.

Cultural Water Demand

- Refer to Table 4.5-7 and Figure 4.5-10.
- Population in this basin has more than doubled since 1980, increasing from 17,487 in 1980 to 44,591 in 2000.
- Groundwater use has increased in this basin since 1971, with an average of 6,000 AFA from 1971-1975 to an average of 16,650 AFA from 2001-2005. The majority of this demand was for municipal use.
- The cultural water demand table for this basin reflects the amount of water pumped from wells and diverted from streams for use. Some of these water uses may be accounted as Colorado River water based on an entitlement system established by Decree by the U.S. Supreme Court in Arizona v. California et.al. Further information on Colorado River entitlements in this planning area is provided in Section 4.0.6.
- All surface water diversions, less than 300 AFA from 1991-2005, are for municipal use at two state parks in the vicinity of Lake Havasu City.
- The only demand center in this basin is high intensity municipal and industrial located in the vicinity of Lake Havasu City.
- Industrial groundwater demand is minimal in this basin. Less than 300 AFA were used in 2001-2005 for a small mine or quarry.
- As of 2005 there were 99 registered wells with a pumping capacity of less than or equal to 35 gallons per minute and 45 wells with a pumping capacity of more than 35 gallons per minute.

Effluent Generation

- Refer to Table 4.5-8.
- There are five wastewater treatment facilities in this basin.
- Over 30,000 people are served by these facilities. Only three facilities have information on treatment volumes, Island Plant Wastewater Treatment Plant (WWTP), Mulberry WWTP and Sweetwater. Together these plants generate over 3,360 acre-feet of effluent per year.

Table 4.5-7 Cultural Water Demand in the Lake Havasu Basin[1]

Year	Estimated and Projected Population	Number of Registered Water Supply Wells Drilled		Average Annual Demand (in acre-feet)[3]						Data Source
				Well Pumpage			Surface-Water Diversions			
		Q ≤ 35 gpm	Q > 35 gpm	Municipal	Industrial	Agricultural	Municipal	Industrial	Agricultural	
1971		33[2]	19[2]	6,000			NR[4]			ADWR (1994a)
1972										
1973										
1974										
1975										
1976				14,000			NR			
1977										
1978										
1979										
1980	17,487									
1981	18,376	9	8	16,000			NR			
1982	19,265									
1983	20,154									
1984	21,043									
1985	21,932									
1986	22,821	15	3	12,000			NR			
1987	23,710									
1988	24,599									
1989	25,488									
1990	26,377									
1991	28,198	21	8	13,700	<300	NR	<300	NR	NR	USGS (2007) ADWR (2008b) ADWR (2008c)
1992	30,019									
1993	31,841									
1994	33,662									
1995	35,484									
1996	37,305	7	3	15,400	<300	NR	<300	NR	NR	
1997	39,127									
1998	40,948									
1999	42,770									
2000	44,591									
2001	46,911	14	4	16,500	<300	NR	<300	NR	NR	
2002	49,231									
2003	51,551									
2004	53,871									
2005	56,192									
2010	67,792									
2020	89,215									
2030	106,614									
	WELL TOTALS:	**99**	**45**							

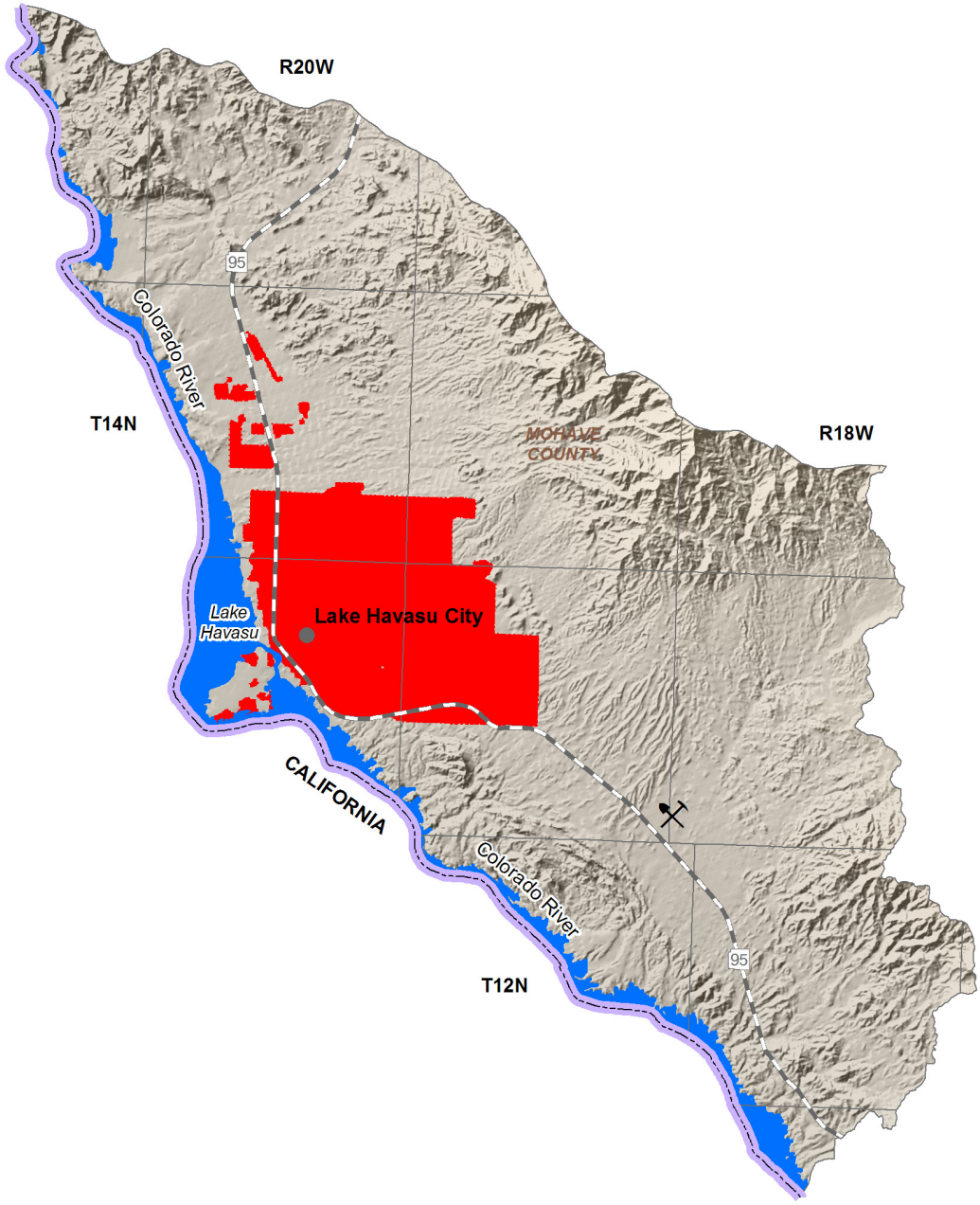
Notes:
NR = Not reported
[1] Does not include effluent or evaporation losses from stockponds and reservoirs.
[2] Includes all wells through 1980.
[3] Includes pumpage and diversion of Colorado River Contract Water.
[4] The 1994 ADWR Arizona Water Resources Assessment included surface water diversions for this basin for the Havasu National Wildlife Refuge.

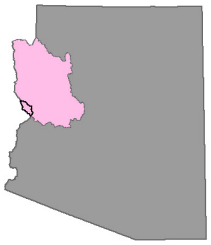
Table 4.5-8 Effluent Generation in the Lake Havasu Basin

Facility Name	Ownership	City/Location Served	Population Served	Volume Treated/Generated (acre-feet/year)	Disposal Method							Current Treatment Level	Population Not Served	Year of Record
					Water-course	Evaporation Pond	Irrigation	Golf Course/Turf/ Landscape	Wildlife Area	Discharged to Another Facility	Infiltration Basins			
Havasu Falls RV Park	Private	Lake Havasu City	NA			X						Primary/Secondary	NA	
Island Plant WWTP	Lake Havasu City	Lake Havasu City	11,000	1,120		X	Recreational fields	Havasu Island				Adv. Trt.I & Nutrient Removal	7000	2008
Mulberry WWTP	Lake Havasu City	Lake Havasu City	11,000	1,120				London Bridge				Adv. Trt.I & Nutrient Removal	7000	2008
North Regional WWTF	Lake Havasu City	Lake Havasu City	11,000	1,120				Refuge			X[1]	Secondary	7000	2008
Sun Lake Village	Private	Lake Havasu City	NA			X						Primary	NA	
Total			**33,000**	**3,360**										

Source: Compilation of databases from ADWR & others

Notes:
Year of Record is for the volume of effluent treated/generated
NA: Data not currently available to ADWR
WWTP: Waste Water Treatment Plant
WWTF: Waste Water Treatment Facility
Adv. Tr 1: Advanced treatment level I
SD: Sanitiation District
[1]Injection Wells





ARIZONA DEPARTMENT OF WATER RESOURCES ©

Primary Data Source: USGS National Gap Analysis Program, 2004

0 3 6 Miles

N
S

Figure 4.5-10
Lake Havasu Basin
Cultural Water Demand

Demand Centers

- M&I High Intensity
- Small Mine/Quarry
- California State Boundary
- Major Road
- City, Town or Place

4.5.9 Water Adequacy Determinations in the Lake Havasu Basin

Water adequacy determination information including the subdivision name, location, number of lots, adequacy determination, reason for the inadequacy determination, date of determination and subdivision water provider are shown in Table 4.5-9A. Designated water provider information is shown in Table 4.5-9B with date of application, date the designation was issued and projected or annual estimated demand. Figure 4.5-11 shows the locations of subdivisions and designated providers keyed to the Table. A description of the Water Adequacy Program is found in Volume 1, Appendix C. Adequacy determination data sources and methods are found in Volume 1, Appendix A.

- All subdivisions receiving an adequacy determination are in Mohave County. Fourteen water adequacy determinations for more than 1,697 lots have been made in this basin through December 2008.
- One determination of inadequacy has been made north of Lake Havasu City because the applicant failed to demonstrate a legal right to use the water or failure to demonstrate their legal authority to serve the subdivision.
- There are two designated water providers, Havasu Heights Water Improvement District and Lake Havasu City. The total projected or annual estimated demand for Havasu Heights WID is 140 acre-feet. Lake Havasu City does not have a projected or annual estimated demand in their designation.

Table 4.5-9 Adequacy Determinations in the Lake Havasu Basin[1]

A. Water Adequacy Reports

Map Key	Subdivision Name	County	Location			No. of Lots	ADWR File No.[2]	ADWR Adequacy Determination	Reason(s) for Inadequacy Determination[3]	Date of Determination	Water Provider at the Time of Application
			Township	Range	Section						
1	Aztec Junction Tract 3019	Mohave	12 North	18 West	10	NA	53-500304	Adequate		6/13/1988	Valley Pioneer Water Co.
2	Canterbury Estates Tract 3702-A	Mohave	14 North	20 West	21	63	53-400683	Adequate		3/26/2002	Arizona-American Water Co. Havasu
3	Canterbury Estates Tract 3702B	Mohave	14 North	20 West	21	45	53-400798	Adequate		10/28/2002	Arizona-American Water Co. Havasu
4	Havasu RV Resort	Mohave	14 North	20 West	15	169	53-401108	Adequate		11/12/2003	Arizona-American Water Co. Havasu
5	Havasu RV Resort Phase II	Mohave	14 North	20 West	15	96	53-401889	Adequate		10/18/2005	Arizona-American Water Co. Havasu
6	Havasu RV Resort Phase III	Mohave	14 North	20 West	15	133	53-700449	Adequate		12/28/2007	Arizona-American Water Co. Havasu
7	Inn at Tamarisk	Mohave	14 North	21 West	21	212	53-500815	Adequate		1/5/1984	Havasu Water Company
8	North Pointe	Mohave	14 North	20 West	17	455	53-401582	Adequate		12/28/2004	Arizona-American Water Co. Havasu
9	Sunlake Village Tract 3700A	Mohave	14 North	20 West	21	35	53-300024	Adequate		8/8/1995	Arizona-American Water Co. Havasu
10	Sunlake Village Tract 3700 B	Mohave	14 North	20 West	21	40	53-300407	Adequate		3/9/1998	Arizona-American Water Co. Havasu
11	Sunlake Village Tract 3700 C	Mohave	14 North	20 West	21	52	53-400081	Adequate		8/24/1999	Arizona-American Water Co. Havasu
12	Sunlake Village Tract 3700 D	Mohave	14 North	20 West	21	35	53-400206	Adequate		12/3/1999	Arizona-American Water Co. Havasu
13	Tamarisk Resort & Country Club	Mohave	14 North	20 West	20	NA	53-501535	Inadequate	B	1/5/1984	Havasu Water Company
14	The Refuge	Mohave	14 North	20 West	20	362	53-400660	Adequate		2/5/2002	Arizona-American Water Co. Havasu

B. Designated Adequate Water Supply

Map Key	Water Provider Name	County	Designation No.	Projected or Annual Estimated Demand *(af/yr)*	Date Application Received	Date Application Issued	Year of Projected or Annual Demand
a	Havasu Heights Domestic Water Improvement District	Mohave	40-700420.0001	140	6/26/2007	5/8/2008	2017
b	Lake Havasu City	Mohave	40-900008.0000	No amount designated	NA	6/18/1973	No data, hydrologic study needed

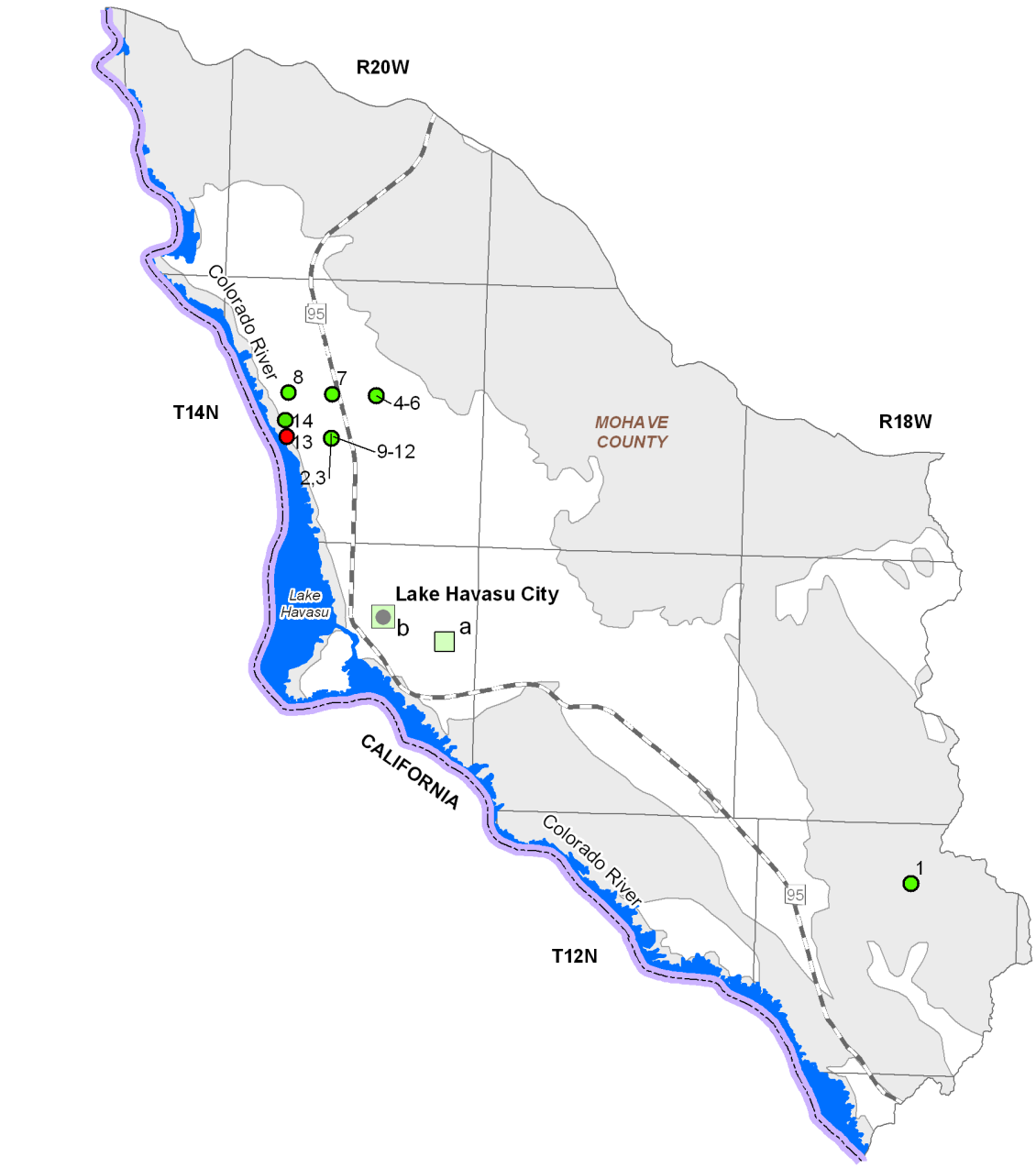
Source: ADWR 2008a

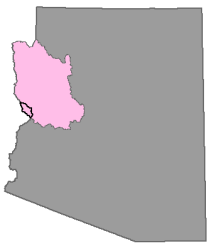
Notes:

[1] Each determination of the adequacy of water supplies available to a subdivision is based on the information available to ADWR and the standards of review and policies in effect at the time the determination was made. In some cases, ADWR might make a different determination if a similar application were submitted today, based on the hydrologic data and other information currently available, as well as current rules and policies.

[2] Prior to February 1995, ADWR did not assign file numbers to applications for adequacy. Between 1995-2006 all applications for adequacy were given a file number with a 22 prefix. In 2006 a 53 prefix was assigned to all water adequacy reports and applications regardless of their issue date.

[3] A. Physical/Continuous
1) Insufficient Data (applicant chose not to submit necessary information, and/or available hydrologic data insufficient to make determination)
2) Insufficient Supply (existing water supply unreliable or physically unavailable; for groundwater, depth-to-water exceeds criteria)
3) Insufficient Infrastructure (distribution system is insufficient to meet demands or applicant proposed water hauling)
B. Legal (applicant failed to demonstrate a legal right to use the water or failed to demonstrate the provider's legal authority to serve the subdivision)
C. Water Quality
D. Unable to locate records
NA= not currently available to ADWR





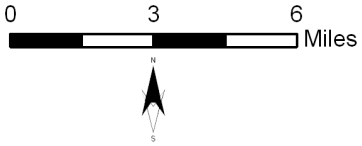


Figure 4.5-11
Lake Havasu Basin
Adequacy Determinations

Adequacy Determinations

- Adequate
- Inadequate
- Designated Water Provider
- Consolidated Crystalline & Sedimentary Rocks
- Unconsolidated Sediments
- California State Boundary
- Major Road
- City, Town or Place

Lake Havasu Basin
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