14. City of Peoria

The City of Peoria is a rapidly growing suburban community located in Maricopa County, in the northwest portion of the Valley of the Sun. Formerly an agricultural town, Peoria is today a business and medical hub for the northwest valley. The City of Peoria encompasses approximately 117 square miles. The economy of Peoria has shifted from agriculture to commercial, light industrial and retail development. Peoria's MPA is located north of Beardsley Road, west of 67th Avenue, east of 171st Avenue, and south of the Maricopa County line.

According to the ADWR Annual Water Withdrawal and Use Report, in the City of Peoria in 1998, a total of 15,828 af of groundwater were pumped and delivered. Additional deliveries included 594 af of SRP water; 458 af of groundwater from Citizen's Resources and 467 af of CAP water from Pyramid Peak. A total of 17,347 af of water were delivered for use in the City of Peoria MPA.

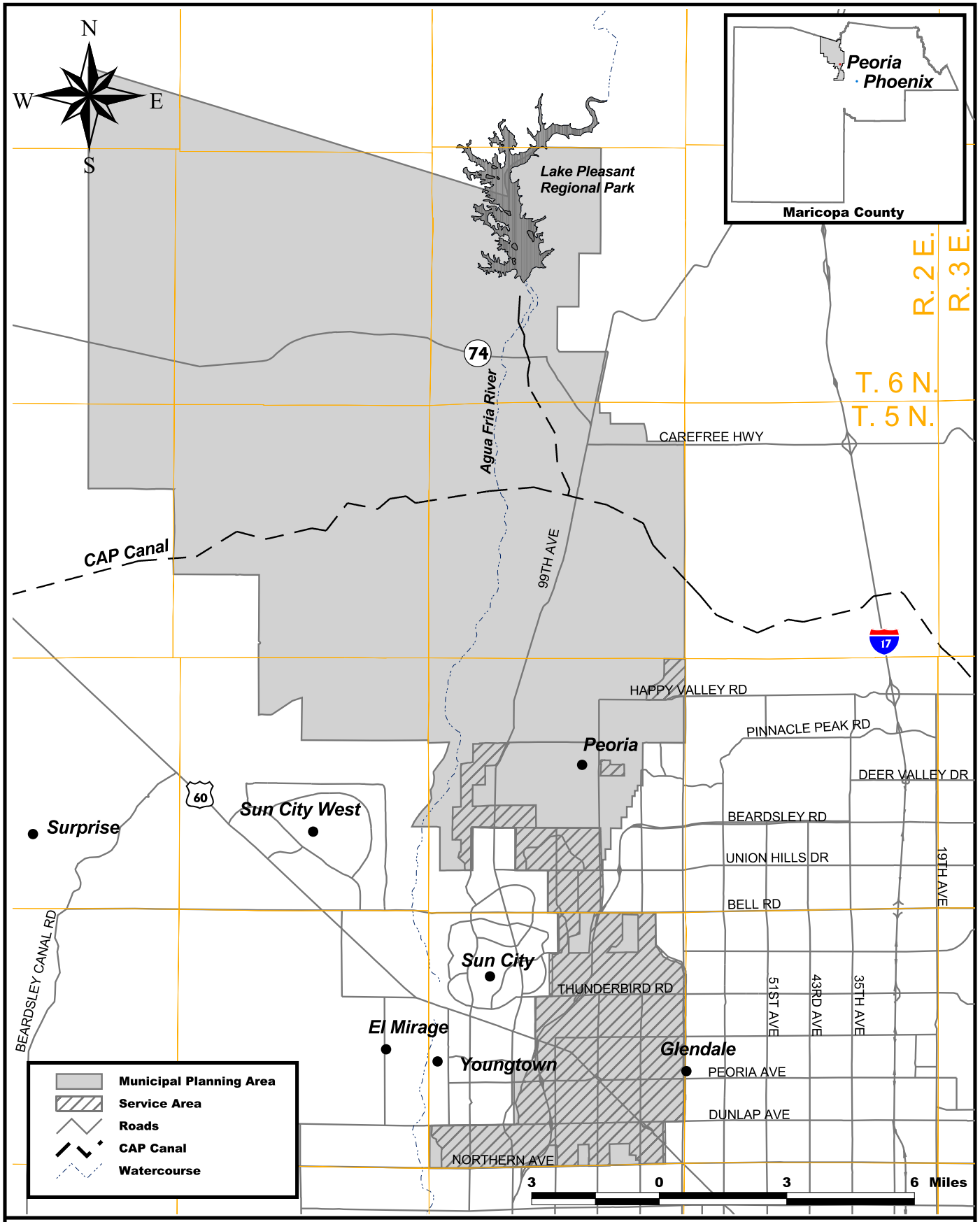
A. Plans to Take and Use CAP Water

The City of Peoria currently has a subcontract for 18,709 af of CAP water. This allocation includes 15,000 af received under the 1983 allocation; 2,849 af transferred from Clearwater Company; 374 af transferred from New River Utility Company; and 486 af transferred from McMicken ID. Under the Settlement Alternative, the City of Peoria would receive an additional 5,527 af of CAP water. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051). The CAP water would be used to supplement both current and projected water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Table L-M&I-81 outlines the proposed CAP allocation by alternative.

Table L-M&I-81
CAP Allocation Draft EIS
City of Peoria – Proposed CAP Allocation

Alternative	Allocation (in afa)	Priority
Settlement Alternative	5,527	M&I
No Action	0	-
Non-Settlement Alternative 1	5,527	M&I
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	0	-
Non-Settlement Alternative 3B	6,046	NIA
Existing CAP Allocation	18,709	-

Figure L-M&I-41 shows the service area and MPA for the City of Peoria. The service area covers approximately 16,957 acres, and the MPA covers approximately 127,716 acres. The City of Peoria is currently constructing the Greenway Water Treatment Plant. This plant would have a capacity of 17,900 afa for SRP and CAP water. The plant is expected to be



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CAP Allocation Draft EIS
General Location Map
City of Peoria

Figure #L-M&I-41

operational in 2001. Peoria also has an agreement with the City of Glendale for approximately 6,700 afa of additional capacity to treat CAP water at the Pyramid Peak Water Treatment Plant. Recharge facilities utilized by Peoria include in-lieu with SRP, which has a capacity of 40,000 afa, and the GRUSP, which has capacity of 20,000 afa for Peoria (Kadlec 2000).

B. Population Projection

In 1985, the population in the City of Peoria was 16,100. The estimated 2001 population is 93,675, and the estimated 2051 population level is 358,317.

C. Water Demand and Supply Quantities

As previously shown in Appendix C–M&I Sector Water Uses, it is estimated that water demand in the City of Peoria would increase from 16,505 af in year 2001 to 63,132 af in year 2051. The projected water uses both by water source and alternatives are provided below in Table L-M&I-82. Based on anticipated water demands, CAP water which would be allocated under the Settlement Alternative would provide 33 percent and 8.8 percent of the current estimated water supply required for the City of Peoria for the years 2001 and 2051, respectively.

Table L-M&I-82
CAP Allocation Draft EIS
City of Peoria– Projected Water Use

Alternative	Annual CAP Deliveries		Groundwater		Effluent		CAGRD (Groundwater)		Others Surface Water*		Total Demand	
	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051
Settlement Alternative	4,613	30,093	2,423	2,423	0	0	0	17,835	9,469	12,780	16,505	63,132
No Action	4,613	18,709	2,423	2,423	0	0	0	29,219	9,469	12,780	16,505	63,132
Non-Settlement Alternative 1	4,613	24,236	2,423	2,423	0	0	0	23,692	9,469	12,780	16,505	63,132
Non-Settlement Alternative 2	4,613	18,709	2,423	2,423	0	0	0	29,219	9,469	12,780	16,505	63,132
Non-Settlement Alternative 3A	4,613	18,709	2,423	2,423	0	0	0	29,219	9,469	12,780	16,505	63,132
Non-Settlement Alternative 3B	4,613	24,236	2,423	2,423	0	0	0	23,692	9,469	12,780	16,505	63,132

*SRP and other ID water.
Note: A more detailed breakdown of supplies may be found in Appendix C.

It is estimated that the demand for water at the end of the CAP contract period would be approximately 63,132 af. For all alternatives, there is estimated to be no unmet demand. In the Settlement Alternative, Non-Settlement Alternative 1 and 3B, 5,527 afa of demand are met by the additional CAP allocation. Alternatively, this 5,527 afa of demand are met by

CAGRD membership under the No Action Alternative and Non-Settlement Alternative 2 and 3A.

D. Environmental Effects

The following sections include a general description of existing conditions relating to land use, water resources and socioeconomics for each entity. The following summaries also include a description of the existing conditions and brief description of the impacts to biological and cultural resources that would result from construction of CAP delivery facilities and conversion of desert and agricultural lands to urban uses.

1. Land Use

According to data from MAG, the land use designations in the City of Peoria MPA in 1995 consisted of approximately 4,330 acres of agriculture, 17,662 acres of developed land, 1,286 acres of rural land, 98,058 acres of vacant land and 6,380 acres of water, including lakes, rivers and canals. As described in the introduction to this appendix, the 1995 MAG categories were redefined into three new categories (i.e., agriculture, desert and urban). These 1995 data were also updated and adjusted based on reviews of the 1998 aerial photography and the field surveys that were completed to assess biological resources for this EIS. Table L-M&I-83 provides the projected acres of land within the City of Peoria MPA that are agriculture, desert or urban and the number of acres expected to change from the existing category for the years 2001 and 2051.

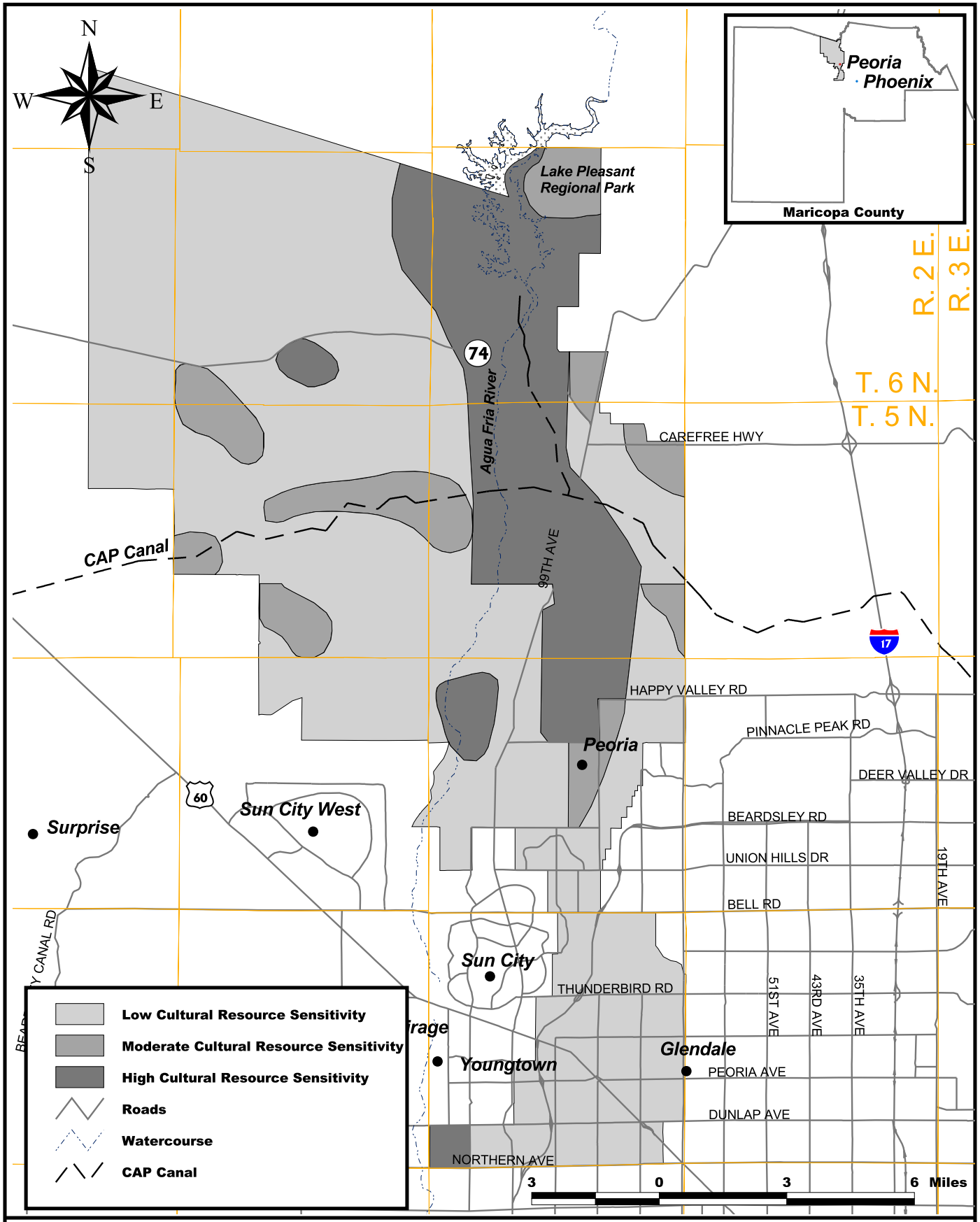
TableL-M&I-83
CAP Allocation Draft EIS Appendix L
City of Peoria - Projected Land Use Changes Within the MPA (in acres)

Alternative	Year	Agriculture	Agriculture Urbanized	Desert	Desert Urbanized	Urban	Changes in Urban Acreage
Settlement Alternative	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136
No Action	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136
Non-Settlement Alternative 1	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136
Non-Settlement Alternative 2	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136
Non-Settlement Alternative 3A	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136
Non-Settlement Alternative 3B	2001	1,920	--	101,044	--	24,752	--
	2051	1,920	0	70,908	30,136	54,888	30,136

2. Archaeological Resources

Few surveys have occurred in the northwest portion of the City of Peoria MPA; elsewhere, survey coverage has been moderate, including both linear (e.g., Green 1984; Hoffman and Green 1988) and large block surveys (e.g., Green 1989; Greenwald and Keller 1988). Numerous sites have been documented along the Lake Pleasant–Agua Fria River portion of the MPA, making this an area of high to moderate cultural resource sensitivity. High site density is also identified in a small area between State Route 74 and Saddleback Mountain. The east-central portion of the City of Peoria MPA extends onto the New River Dam Archaeological District and the Calderwood Butte Archaeological District, both National Register properties. Documented prehistoric site types include artifact scatters of Hohokam and Sinagua affiliation, resource procurement and processing loci, field houses, petroglyphs, and rock features. Historic resources include water-control features (e.g., the Beardsley Canal), residential properties, transportation-related sites, and camps associated with sheep herding and other ranching activities. The City of Peoria has implemented a comprehensive master plan for future development that includes policies for conserving archaeological resources.

Cultural resource sensitivity areas in the City of Peoria MPA are shown on Figure L-M&I-42. Based on the limited data used to generate the cultural sensitivity designations, the



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CAP Allocation Draft EIS
Cultural Resources
City of Peoria

Figure #L-M&I-42

potential for cultural resource impacts in the City of Peoria MPA is moderate to high. Mitigation of cultural resource impacts due to urban expansion would be determined by local jurisdictions and development of applicable permit requirements (such as the CWA Section 404 permit). Impacts on cultural resources due to future land use changes would be identical for each of the five alternatives. Mitigation for such impacts would be dependent on the requirements of the local jurisdiction. Significant impacts to cultural resources from new CAP delivery and treatment facilities are not expected, since most facilities are already in place. Reclamation would continue to work with the City of Peoria regarding any additional cultural resource clearances from CAP delivery facilities.

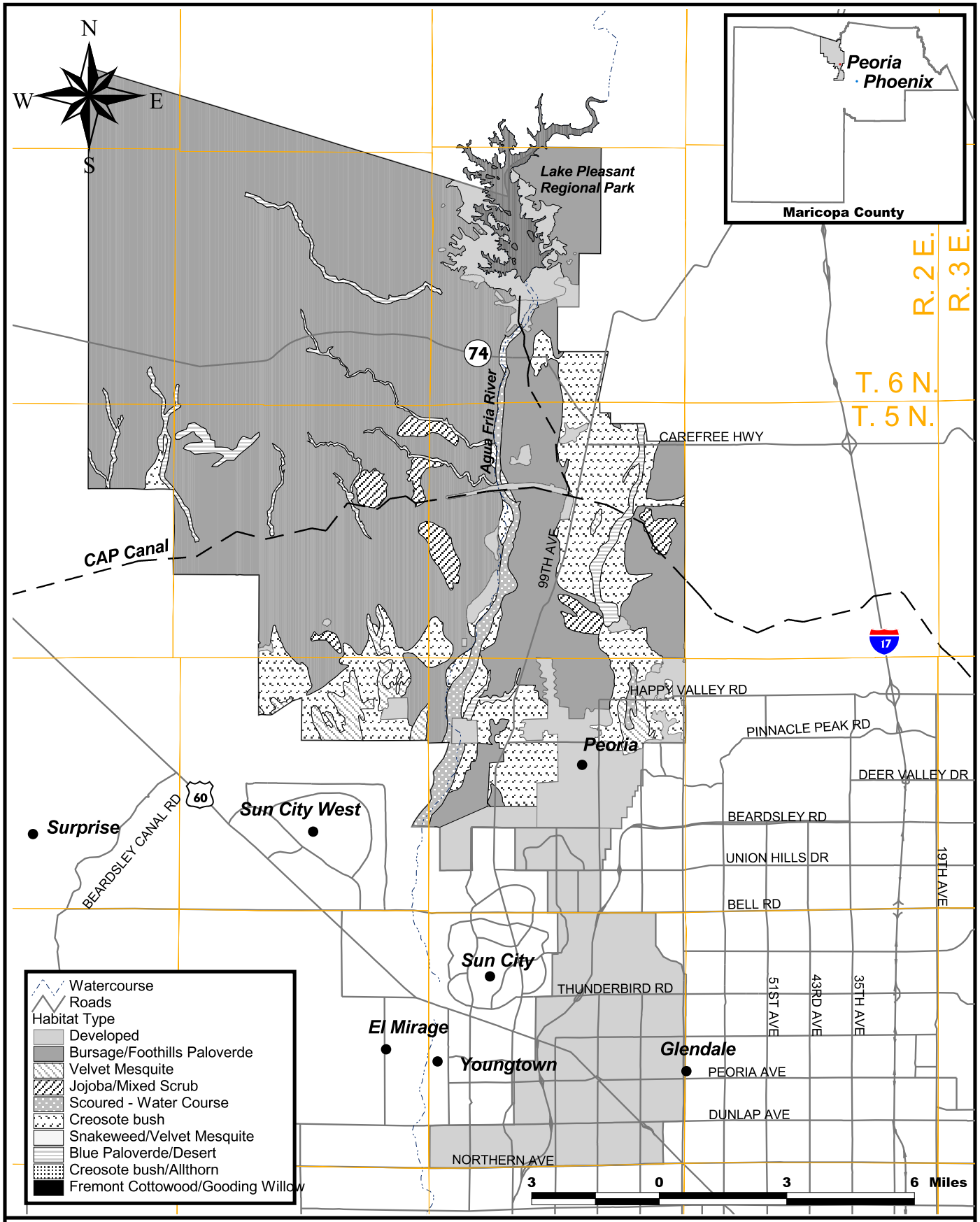
3. Biological Resources

Existing Habitats

The northern portion of the City of Peoria MPA is composed of rocky hills and ridges known as the Hieroglyphic Mountains. Numerous washes drain though alluvial fans and then onto silty plains to the south. The lower half of Lake Pleasant occurs in the northeast corner of the MPA. Jojoba/Mixed Scrub Association occurs on north-facing slopes of the highest elevations (to 3200 feet), much of which is dominated by wild buckwheat, while Bursage/Foothill Paloverde Association is most common in most of the remaining undeveloped portions. Co-dominants include creosote-bush, staghorn cholla, and teddybear cholla with buckwheat brush dominating the north facing slope. Other common trees include velvet mesquite, desert ironwood, blue-paloverde, and saguaro. The density of saguaros is generally moderate. Creosote-Bush Association is the main plant association on silty plains where cover is very low and dominated almost entirely by creosote-bush. Trees, such as foothill paloverde, desert ironwood, and saguaro are widely-spaced. Blue-Paloverde/Desert Ironwood Association habitat occurs along major ephemeral washes where conspicuous species include burrobush, desert-broom, blue-paloverde, desert ironwood, and desert-willow. The habitat zones are shown on Figure L-M&I-43. Table L-M&I-84 provides the habitat acreages for the habitat zones described above.

Table L-M&I-84
CAP Allocation Draft EIS
City of Peoria– Habitat Acreages

Vegetation Name	Acres
Developed	26,671
Bursage/Foothills Paloverde	78,562
Velvet Mesquite	1,788
Jojoba/Mixed Scrub	2,110
Scoured, Washes and Creekbeds	1,838
Creosote-Bush	13,917
Blue Paloverde/Desert	2,830
Total	**127,716**



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CAP Allocation Draft EIS
Habitat Zones
City of Peoria

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Figure No. L-M&I-43

Impacts to Biological Resources

Under the No Action Alternatives, urban growth within the MPA over the 50-year study period would result in loss of an estimated 30,136 acres of Sonoran desertscrub and associated wildlife resources. Under the action alternatives, there is no difference in impacts from the No Action baseline. Significant impacts to biological resources from new CAP delivery and treatment facilities are not expected, since most facilities are already in place. Reclamation would continue to work with the City of Peoria regarding any additional biological resource clearances from CAP delivery facilities.

Potential T&E Species and Acres of Potential T&E Species Habitat

Because the allocation of CAP water has no effect on urban growth, there would be no effect on T&E species from the CAP allocation. The City of Peoria would be responsible for complying with the relevant provisions of the ESA as it permits and approves future urban growth.

This City of Peoria MPA is located within Maricopa County for which there are 14 T&E species listed by the USFWS. Potentially suitable habitat only exists for cactus ferruginous pygmy-owl, southwestern willow flycatcher and bald eagle. Approximately 83,181 acres of potentially suitable habitat for the cactus ferruginous pygmy-owl were identified within the City of Peoria MPA. A nesting pair of bald eagles is known in the upper part of Lake Pleasant within the park boundaries. The foraging area is primarily on the Lake and Agua Fria River upstream from the nest, outside the Peoria MPA. The potential suitable habitat for southwestern willow flycatcher is just below the Waddell Dam within the park boundaries.

4. Water Resources

Demands in the City of Peoria have historically been met by pumping groundwater from the underlying basin fill. In more recent years, CAP water has been used to meet a portion of the demands. Groundwater level declines have been experienced in response to the groundwater development. The concentration of TDS in the underlying groundwater is generally less than 1,000 ppm.

Estimated groundwater level impacts are summarized in Table L-M&I-85, which shows the estimated groundwater level change for the period of 2001–2051 as well as the groundwater level impacts or the difference between the change in groundwater levels for each alternative relative to the change for the No Action Alternative. The City of Peoria falls within two groundwater sub-areas used for the analysis. Table L-M&I-85 shows estimated groundwater conditions in the southeasterly portion of the City of Peoria (adjacent to the City of Glendale) and the northwesterly area (in the vicinity of Sun City West).

Under the No Action Alternative, groundwater levels would decline by about 35 feet during the 2001 to 2051 period in the southeastern part of the city, and groundwater levels

would be essentially unchanged over that period in the northwestern part. Substantial changes in groundwater quality would not be expected under the No Action Alternative. There would be some potential for subsidence in the southeasterly portion of the City of Peoria.

Groundwater levels in the southeastern part of the City of Peoria would also decline under the Settlement and all Non-Settlement Alternatives. The greatest declines occur under the Settlement Alternative and Non-Settlement Alternatives 3A and 3B, which have the smallest amount of direct recharge. There would be potential subsidence in this area under all alternatives.

In the northwesterly part of the City of Peoria, groundwater levels are generally similar to the No Action Alternative (within 14 feet). These groundwater levels are influenced both by the amount of direct recharge of CAP water in adjacent areas, and by changes in the amount of CAP water available to the City of Peoria.

Table L-M&I-85
CAP Allocation Draft EIS Appendix L
City of Peoria–Groundwater Data Table

Alternatives		
	Estimated Groundwater Level Change from 2001-2051 (in feet)	**Groundwater Level Impact**(in feet)**
No Action	-35 / 1	--
Settlement Alternative	-78 / 4	-43 / -4
Non-Settlement Alternative 1	-34 / 12	1 / 11
Non-Settlement Alternative 2	-44 / -5	-9 / -5
Non-Settlement Alternative 3A	-68 / -13	-13 / -14
Non-Settlement Alternative 3B	-65 / 3	-30 / 2

* Values correspond to the Glendale / Peoria and Sun City West sub-areas, as discussed in Appendix I.
** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.

5. Socioeconomic

The same population growth is supported under all alternatives, including the No Action Alternative. However, the cost of providing water may vary by alternative. Costs were estimated, on a per af basis, for providing the proposed allocations and, in their absence, alternative water supplies. The alternative water supplies include joining the CAGRD and, if needed, treating and reusing effluent. The difference in cost for this small increment of the City of Peoria's total water supply is considered insignificant. It should be noted that the increment of demand met by the proposed CAP allocation is approximately 8.8 percent of the total year 2051 demand for the City of Peoria.

Table L-M&I-86
CAP Allocation Draft EIS Appendix L
City of Peoria–Cost of Potable Water for Additional Allocation Increment

Alternative	Cost of Water ($ per af)	Water Source
Settlement Alternative	154[a, c]	CAP Allocation
No Action	275 – 280[b]	CAGRD
Non-Settlement Alternative 1	154[a]	CAP Allocation
Non-Settlement Alternative 2	275 – 280[b]	CAGRD
Non-Settlement Alternative 3A	275 – 280[b]	CAGRD
Non-Settlement Alternative 3B	154[a]	CAP Allocation

Notes:
a. Estimated average unit cost in year 2000 dollars.
b. Estimated range of unit costs in year 2000 dollars. Range is due to estimated change in groundwater pumping lifts during study period and does not include wellhead treatment costs.
c. Does not include monetary contribution to the GRIC Settlement.