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Managing Water in the West

Draft Environmental Assessment for

Assignment of Central Arizona Project Municipal & Industrial Priority Subcontract Water Entitlements from Four Water Companies to the Central Arizona Water Conservation District

U.S. Department of the Interior
Bureau of Reclamation
Phoenix Area Office

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DRAFT ENVIRONMENTAL ASSESSMENT

FOR

ASSIGNMENT OF CENTRAL ARIZONA PROJECT MUNICIPAL & INDUSTRIAL PRIORITY SUBCONTRACT WATER ENTITLEMENTS FROM FOUR WATER COMPANIES

TO THE

CENTRAL ARIZONA WATER CONSERVATION DISTRICT

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I. PURPOSE AND NEED

This Environmental Assessment (EA) has been prepared to describe and assess the environmental consequences anticipated to result from the Bureau of Reclamation's (Reclamation) termination of Central Arizona Project (CAP) water service subcontracts currently held by four water companies, and assignment of 7,746 acre feet annually (afa) of CAP municipal and industrial (M&I) priority water entitlements associated with those subcontracts to the Central Arizona Water Conservation District (CAWCD). As proposed, all of the CAP M&I entitlements held by West End Water Company (WEWC) (157 afa), Sunrise Water Company (Sunrise) (944 afa), and New River Utility Company (NRUC) (1,885 afa), along with the remaining 4,760 afa of Litchfield Park Service Company's (LPSCo) CAP water entitlement[1] would be transferred to CAWCD exclusively for use in meeting the Central Arizona Groundwater Replenishment District's (CAGRD) replenishment obligations as defined by Arizona Revised Statutes (ARS), Title 48, Chapter 22, Article 4. CAWCD and Reclamation would execute the "Supplemental Contract Between the United States and the Central Arizona Water Conservation District for Delivery of Central Arizona Project Water" (Supplemental Contract) as an amendment to CAWCD's master repayment contract with Reclamation (Contract No. 14-06-W-245, Amendment No. 1, Supplement No. 1). The Supplemental Contract would allow CAWCD to deliver the 7,746 afa to meet CAGRD's statutory obligations. CAWCD's use of this water would not be subject to future Federal approvals or environmental reviews. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), and Reclamation's Draft NEPA Handbook (Reclamation 2000).

A. Background

CAWCD is a multi-county water conservation district formed under laws of the State of Arizona to serve Maricopa, Pinal, and Pima Counties. CAWCD's primary responsibilities include: operating, maintaining, repaying and managing the CAP. In 1993, the Arizona Legislature provided CAWCD with additional responsibilities and authorities relating to groundwater replenishment within CAWCD's three-county service area. These new replenishment authorities are commonly referred to as the CAGRD. Therefore, although the CAGRD is not a separate legal entity from CAWCD, for purposes of this EA, the term "CAGRD" shall mean CAWCD exercising its authority under ARS Title 48, Chapter 22, Article 4.

The replenishment authorities assigned to the CAGRD establish a mechanism for landowners and water providers within the Phoenix, Pinal, and Tucson Active Management Areas (AMAs) to demonstrate they have an assured water supply, which is required under the regulations enforced by the Arizona Department of Water Resources (ADWR), termed the Assured Water Supply Rules (AWS Rules).

The AWS Rules became effective in February 1995, and are designed to protect groundwater supplies within each AMA and to ensure that people purchasing or leasing subdivided land within an AMA have a

[1] LPSCo's original CAP M&I water allocation was 5,580 afa, for which an M&I subcontract was executed on January 10, 1985. Portions of LPSCo's entitlement were subsequently transferred to the City of Avondale (670 afa) and the City of Goodyear (150 afa).

water supply of adequate quality and quantity. There are five basic criteria for proving an assured water supply (AWS). An applicant for an AWS must prove:

1. Sufficient quantity of water is continuously available to satisfy the water demands of the development or service area for 100 years;
2. Water source meets water quality standards;
3. Proposed use of water is consistent with State water conservation standards;
4. Proposed use is consistent with the state water management goals, and
5. Applicant is financially capable of installing the necessary water distribution and treatment facilities.

In each AMA, every new subdivision must demonstrate the availability of a 100-year assured water supply to the ADWR before sales of parcels within the subdivision can begin. An AWS can be demonstrated in two ways. First, the owner or developer of a proposed subdivision can prove an AWS for the subdivision and receive a Certificate of AWS (CAWS) from ADWR. The CAWS covers only the specific subdivision for which it is issued. Alternatively, a municipal water provider may prove an AWS for its entire service area and receive a Designation of AWS (DAWS) from ADWR. Any subdivisions that are served by the municipal provider are automatically deemed to have a proven AWS by virtue of the provider's DAWS.

Membership in the CAGRD provides a means by which an AWS applicant can satisfy criterion number 4 above, which requires that the proposed water use be consistent with the water management goals of the particular AMA. Because the management goals within an AMA limit the quantity of mined groundwater an applicant may use to demonstrate an AWS, new developments may not rely solely on mined groundwater to serve their water demands. However, if a water provider or a landowner has access to groundwater and desires to rely on groundwater to demonstrate a 100-year water supply, it may do so, provided it joins the CAGRD. As a member of the CAGRD, the landowner or provider must pay the CAGRD to replenish any groundwater pumped by the member that exceeds the pumping limitations imposed by the AWS Rules. There are two general types of CAGRD membership: member lands, and member service areas. Member lands are individual subdivisions enrolled in the CAGRD to obtain a CAWS. A member service area is the entire service area of a water provider that has enrolled in the CAGRD to obtain a DAWS.

In general, the CAGRD operates in the following manner. First, a property owner or water provider electing to rely partially or completely on groundwater enrolls its land or service area as a member of the CAGRD. The landowner or water provider then demonstrates compliance with criterion 1, 2, 3 and 5, as listed above, to the satisfaction of the ADWR. Once this is complete, the ADWR will consider enrollment in the CAGRD as proof of consistency with the management goals of the AMA (criterion 4), and that proof of an AWS has been established. Each year after enrollment, the water provider must

report to CAGRD the amount of "excess groundwater"[2] delivered within the member land or member service area. This volume of excess groundwater (along with volumes of excess groundwater pumped that are reported for all other CAGRD members within the same AMA) becomes CAGRD's replenishment obligation for that AMA, which must be replenished (recharged) within three years. CAGRD determines what it will cost to satisfy its replenishment obligations for an AMA and establishes appropriate assessment rates each year. The assessment rate must provide sufficient funding to acquire water supplies[3] and replenish (or recharge) them within the AMA. The assessment rates are levied against each parcel of member land (collected in property tax bills) and against each service area (paid directly to CAGRD by the water provider). Once collected, the funds are used to buy the water and recharge it to offset CAGRD's replenishment obligations. Each year, CAGRD must report to ADWR the replenishment obligations incurred and the replenishment completed in the previous year.

The four water companies—WEWC, Sunrise, NRUC, and LPSCo—have not developed the necessary infrastructure to take, treat, and serve CAP water to their customers. However, they have demonstrated to the ADWR the availability of a 100-year supply of water resources to serve their customers' water needs. These four water companies intend to continue serving groundwater to their customers and do not intend to make direct delivery of their CAP entitlements. The four water companies have decided to not obtain DAWS for their service areas. Therefore, for new subdivisions that have been platted since 1995 (when the AWS Rules became effective) which are located within the service areas of WEWC, Sunrise, NRUC, or LPSCo, developers are required to obtain a CAWS. All of those subdivisions have been enrolled as member lands of the CAGRD. Because the four water companies have not developed the infrastructure needed to take, treat, and serve CAP water, these member land subdivisions would not be served CAP water directly. Therefore, the four water companies have requested that their CAP water service subcontract entitlements be transferred to CAGRD for use in satisfying groundwater replenishment obligations incurred as a result of their continued groundwater use in excess of the pumping limits imposed by the AWS Rules, to serve CAGRD member lands within their service areas. In accordance with State policy, ADWR reviewed these requests, held public hearings, and recommended that all of the annual CAP M&I entitlements held by NRUC (1,885 af), Sunrise (944 af), and WEWC (157 af), along with the remaining 4,760 af of LPSCo's entitlement, be transferred to the CAGRD. ADWR also recommended the water first be used to offset CAGRD replenishment obligations resulting from use of excess groundwater within the service areas of the transferring water companies; any remaining water could then be used to satisfy replenishment obligations for other member lands enrolled as of the effective date of the transfer.

B. Purpose and Need

The purpose of this project is to approve the transfer of 7,746 afa of CAP water, currently allocated to four water companies whose water service areas are located in western Maricopa County, Arizona, to

[2] Excess groundwater is that amount of groundwater pumped by a member service area or a member land that exceeds the amount allowed to be pumped under the AWS rules.

[3] CAGRD must use renewable water supplies (as defined in ARS 48-3771.C.) to meet its replenishment obligations.

CAWCD for use by CAGRD. Reclamation would enter into a supplemental contract with CAWCD regarding the delivery of this CAP water to CAGRD. CAGRD would use this water to replenish excess groundwater used by its members.

CAGRD's need for the project is to secure a long-term, economically feasible, right to a renewable water supply that it can use to meet replenishment obligations incurred on behalf of its members. The CAP water entitlements proposed for transfer are currently not being utilized by their subcontract holders and have, to date, been considered to be Excess CAP water. Although CAGRD currently has the authority to purchase Excess CAP water, such water is not guaranteed to be available for the long-term, and cannot be relied upon as a permanent supply. The transfer of these CAP entitlements would create a dependable, committed replenishment water source for CAGRD. The Proposed Action would protect the groundwater within the geographic area initially envisioned to benefit from the original allocation.

C. Project Location

There are five distinct entities involved in this transfer: WEWC, Sunrise, NRUC, LPSCo (the four water companies that propose to give up their respective CAP M&I water entitlements they are currently not using), and CAGRD, the entity that would receive these entitlements. The project areas for the water companies consist of the service areas identified in each of their "Certificate[s] of Convenience and Necessity," as approved by the Arizona Corporation Commission (Figures 1, 2, 3, 4 and 5).

CAGRD, as discussed previously, is the name by which the replenishment authorities of the CAWCD are commonly referred. CAGRD is not technically defined by a "service area" boundary. It is an operational subdivision of CAWCD and, by statute, serves only within Maricopa, Pinal and Pima Counties in Arizona. The operational boundaries of CAGRD include three of the Active Management Areas currently identified in statute: Phoenix, Pinal and Tucson AMAs. Therefore, the only lands that are potentially eligible for membership in the CAGRD are those located within the Phoenix, Pinal, and Tucson AMAs. Once a subdivision or water service area is enrolled as a member of the CAGRD, the corresponding "footprint" of land becomes part of CAGRD's service area. Thus, although CAGRD is authorized to serve within the boundaries of the Phoenix, Pinal and Tucson AMAs, its service area is technically defined only by the members that have enrolled. Land that is not enrolled in CAGRD is not part of CAGRD's service area. In addition, the replenishment obligation incurred by the CAGRD as a result of use of excess groundwater by members in a particular AMA must be satisfied through replenishment in the same AMA. For purposes of this EA, CAGRD's project area potentially includes those member service areas and member lands that are located within the Phoenix Active Management Area (AMA), since the transferred water would most likely be recharged within Maricopa County to replenish excess groundwater used within the Phoenix AMA (Figure 6).

Based upon recommendations made by ADWR, under the proposed action, the Supplemental Contract would restrict CAGRD's use of the transferred CAP water by requiring that CAGRD first use the transferred water to satisfy the annual replenishment obligations for member lands and member service

areas[4] located within the boundaries of the transferring entities. For obligations incurred within the NRUC, Sunrise and WEWC service areas, the corresponding replenishment would have to occur within the area of hydrologic impact of the associated groundwater withdrawals. For obligations incurred within the LPSCo service area, the replenishment must occur within the Phoenix AMA. The CAGRD currently uses three groundwater recharge facilities that satisfy these provisions: the Agua Fria Recharge Project, the Hieroglyphic Mountains Recharge Project, and the Tonopah Desert Recharge Project. These facilities are briefly described below.

- Agua Fria Recharge Project (AFRP) - This facility is composed of two components: an in-channel recharge component and a spreading basin component. The spreading basin component includes a conveyance canal and approximately 100 acres of infiltration ponds. The project is located near central Peoria, Arizona, in the northwest valley of the Phoenix metropolitan area in Maricopa County. The site extends from approximately four miles downstream of Waddell Dam on the Agua Fria River to a point just south of Jomax Road. It has a total permitted capacity of 100,000 af per year. It is the only recharge project in Arizona that utilizes streambed recharge and infiltration basins at a single facility (CAGRD 2003).

- Hieroglyphic Mountains Recharge Project (HMRP) - This facility consists of approximately 38 acres of spreading basins adjacent to the north side of the CAP canal. The facility is located in the northwest portion of the Phoenix metropolitan area near the northern boundary of Surprise, Arizona. It is located northwest of Phoenix, approximately one mile west of the intersection of 163rd Avenue and the CAP canal. The facility has been permitted to store up to 35,000 af of CAP water per year (CAGRD 2003).

- Tonopah Desert Recharge Project (TDRP) – This facility consists of approximately 207 acres of spreading basins immediately south of the CAP canal. The facility is located in the far west portion of the Phoenix Active Management Area, about 40 miles west of Phoenix and seven miles northwest of Tonopah. The facility has been permitted to store an average of 100,000 af of CAP water per year.

The restricting provisions proposed to be included in the Supplemental Contract, along with CAGRD's operating policy to satisfy replenishment obligations using facilities that are located as close to its members' pumping as possible, effectively dictate the use of the AFRP and HMRP for replenishment of the subject CAP water. Therefore, these two groundwater recharge facilities will be considered components of the project location (Figures 1 and 6).

[4] There are currently no member service areas within the boundaries of the transferring entities; however, there is no prohibition against water providers enrolling their service areas as member service areas in the future.

D. Summary of Scoping Process

Reclamation initiated a 30-day public scoping comment period, with distribution of a scoping mailer to over 100 entities, on October 29, 2003. The public was requested to provide input to Reclamation regarding issues and concerns that should be included in the EA. One letter of comment was received. One point raised in that letter was that Reclamation's request for scoping comments failed to identify another ADWR recommendation that has been included in the proposed Supplemental Contract. This recommendation provides CAGRD with the ability to transfer a portion of the targeted entitlements in the event another entity relieves CAGRD of its replenishment obligations for member lands located within the water service areas of any of the four water companies involved. Another point raised in this letter expressed concern regarding the absence of restrictions on where the LPSCo portion of CAP water could be recharged. The issues raised in this letter have been addressed in the EA.

II. PROPOSED ACTION AND ALTERNATIVES

A. No Action Alternative

The No Action alternative describes the conditions that are assumed to exist into the future in the absence of the Federal action, and provides a basis for comparison with the Proposed Action. Under the No Action alternative, Reclamation would not approve the proposed assignment of CAP water from WEWC, Sunrise, NRUC, and LPSCo, and would not execute the Supplemental Contract with CAWCD for 7,746 afa of CAP water. WEWC, Sunrise, NRUC, and LPSCo would continue to seek to transfer their CAP water entitlements to other entities; unless and until this occurred, the 7,746 afa of CAP water would be available for purchase as Excess CAP water. None of the companies would develop the infrastructure necessary to take, treat and deliver CAP water to their customers, and all four water companies would continue to utilize groundwater to serve their customers. Developers of residential subdivisions within the water service area of these four water companies would continue to enroll their property as member lands of the CAGRD in order to meet the requirements of the AWS Rules (as outlined in Section I).

Under the No Action Alternative, CAGRD would continue to be responsible for meeting replenishment obligations for groundwater delivered to all of its member service areas and member lands, including any new member lands enrolled within the WEWC, NRUC, Sunrise, and LPSCo water service areas. CAGRD would continue to purchase Excess CAP water to the degree it remains available, for use in satisfying its replenishment obligations. CAGRD would continue to pursue acquisition of other short and long-term rights to water supplies to broaden and diversify its water supply portfolio. The supplies acquired for the purpose of satisfying replenishment obligations incurred within the WEWC, NRUC, Sunrise and LPSCo service areas would be stored at the HMRP and AFRP, with the exception of effluent supplies, which would be stored at effluent recharge facilities. The potential water supplies available to the CAGRD as outlined in its 2004 plan of operation include:

1. Excess CAP water – Excess CAP water is CAP water that is contracted but not ordered. CAWCD estimates that Excess CAP water will be available at least through 2030. However, there are other CAP customers that rely on Excess CAP water, including non-Indian agricultural (NIA) customers, the Arizona Water Banking Authority (AWBA), municipal water providers, and others. CAWCD estimates that available Excess CAP water will average about 100,000 afa over the next 45 years, ranging from 400,000 af to 0 af in some years.

2. CAP Indian Leases – Past water rights settlements have authorized Indian communities, tribes, and nations to lease their CAP water for “off-reservation” uses. Indian communities with available CAP water authorized for lease “off-reservation” include: Ak-Chin Indian Community, Gila River Indian Community, San Carlos Apache Tribe, Tohono O’odham Nation, and Fort McDowell Yavapai-Apache Nation. CAWCD estimates approximately 158,000 afa will be available from CAP Indian leases.

3. CAP NIA Priority Allocation – The Arizona Water Settlement Acts authorizes the reallocation of approximately 96,000 afa of NIA-priority CAP water to non-Indian municipal and industrial (M&I) purposes. The CAGRD is eligible to participate in the reallocation process, to be conducted by ADWR. The first phase of this reallocation process may begin in 2009. The NIA-priority water is the lowest priority within the CAP system and may suffer shortages such that the volume available may be 0 in some years.

4. Arizona non-CAP Colorado River Supplies – Existing non-CAP Colorado River contractors include irrigation districts, individual water users, and Indian communities. These water users could make water available to the CAGRD through sale, lease, forbearance/fallowing, and conservation savings. Use of water supplies held by Indian communities for use "off-reservation" requires Congressional authorization. CAWCD estimates up to 318,000 afa could be available to the CAGRD from non-CAP Colorado River supplies.

5. Imported Groundwater – Arizona law authorizes the exportation of groundwater from Butler Valley, Harquahala Valley, and McMullen Valley groundwater basins for use inside the Phoenix, Pinal, and Tucson AMAs. To develop imported groundwater resources, new groundwater well fields, conveyance pipelines, and inlet facilities would be required to deliver imported groundwater to the CAP system. The imported groundwater would then be delivered through the CAP system. At present, plans for such facilities are conceptual. Currently, Federal approval is required to utilize the CAP canal to transport (wheel) non-CAP water and should a specific proposal for wheeling non-CAP water be submitted to Reclamation, compliance with environmental regulations, including NEPA, would be required to develop imported groundwater resources for use by the CAGRD. CAWCD estimates up to 181,000 afa are available to the CAGRD from imported groundwater supplies.

6. Effluent – Numerous water providers generate effluent that exceeds the amount they can use for their own purposes. Although many of these providers eventually plan to use their effluent, in the near term such effluent could be made available to the CAGRD. CAWCD does not own or operate wastewater treatment plants or effluent underground storage facilities. Further, effluent would not be transported in the CAP system, but would likely be stored at effluent underground storage facilities adjacent to wastewater treatment plants. Rather than construct and operate effluent underground storage facilities itself, CAGRD would likely purchase storage credits developed by others through their operation of effluent treatment and recharge facilities. CAWCD estimates up to 205,000 afa may be available for use by the CAGRD. Effluent supplies are anticipated to be available for the next 15 to 30 years; however, after that point it is assumed water providers will fully utilize the effluent for their own uses.

B. Proposed Action

Under the Proposed Action, the following CAP water service subcontractors would transfer their entire entitlements to CAGRD: WEWC (157 afa); Sunrise (944 afa); and NRUC (1,885 afa). LPSCo would transfer its remaining entitlement of 4,760 afa to CAGRD. All four water service subcontracts would be terminated.

A Supplemental Contract between Reclamation and CAWCD would be executed for the delivery of 7,746 afa of CAP water to CAGRD. The proposed Supplemental Contract requires CAGRD to use the allocated CAP water to first meet replenishment obligations incurred as a result of excess groundwater delivered to CAGRD member lands by the transferring entities. After all annual replenishment obligations for these member lands have been satisfied, any remaining CAP water allocated to CAGRD under the proposed action would then be used to satisfy the replenishment obligations for member lands enrolled as of the date of the Supplemental Contract. According to CAGRD, the most likely scenario is that the remaining CAP water would be recharged within the Phoenix AMA (CAGRD 2006).

Consistent with ADWR recommendations,[5] the Supplemental Contract would require that replenishment of excess groundwater delivered to member lands located within the WEWC, Sunrise and NRUC water service areas occur within the area of hydrologic impact of the excess groundwater withdrawals. Also consistent with ADWR recommendations, for excess groundwater withdrawals associated with member lands located within the LPSCo water service area, replenishment would be required to occur within the Phoenix AMA. In addition, the proposed Supplemental Contract requires that, should another entity relieve CAGRD of its replenishment obligation for any portion of the member lands located within the WEWC, Sunrise, NRUC or LPSCo water service areas, CAGRD would transfer to that entity a prorated share of the transferred CAP water.

CAGRD would take delivery of the transferred CAP water through existing infrastructure for recharge at either the AFRP or the HMRP. These existing facilities are of sufficient size and design to allow replenishment of the transferred CAP entitlement, in compliance with existing state laws and the permits issued for the facilities. The receipt and use of this water would not change the size or configuration of the transferring entities' existing systems or service areas. The transferring entities would continue to utilize groundwater to serve their respective water service areas. Therefore, the proposed action would not require construction of additional facilities. Any CAP water left over after satisfying replenishment obligations of member lands located within the water service areas of the four water companies would be

[5] In developing its recommendations regarding transfer of the entitlements, ADWR complied with the decision guidelines established in its August 23, 1996, Policy Regarding Process for Transfers of Central Arizona Project Municipal and Industrial Water Subcontracts. These decision guidelines determine the priority between competing applications for CAP transfers. Due to the location of the AFRP and HMRP with respect to the WEWC, SWC and NRUC service areas, CAGRD was able to commit to performing replenishment within the area of hydrologic impact (AOHI) of groundwater pumping within these service areas. With this commitment, CAGRD received priority consideration for ADWR's recommended transfer of entitlements from these three subcontractors. The AFRP and HMRP are not located within the AOHI of LPSCo groundwater pumping, thus CAGRD could not make a similar commitment for water received under a transfer from LPSCo. However, CAGRD did commit to replenishing the LPSCo water in the Phoenix AMA to satisfy replenishment obligations resulting from groundwater pumping in the LPSCo service area. With this commitment, CAGRD received a somewhat elevated priority for the LPSCo transfer, resulting in an ADWR recommendation that a portion (4,760 afa) of LPSCo's entitlement be transferred to CAGRD.

recharged at existing recharge facilities. It is anticipated this recharge would occur within the Phoenix AMA.

The proposed entitlements to be transferred to CAGRD were originally intended to serve the water demands of the transferring entities' service areas. The proposed action would preserve that intent by making the water available for replenishing excess groundwater delivered by the transferring entities' within their respective service areas.

While the Proposed Action provides for a long-term sustainable water supply[6] for the CAGRD, it does not change or modify the need for the CAGRD to pursue and obtain sufficient other water supplies as identified in the No Action alternative. The Proposed Action does provide for the use of CAP water as a replenishment supply for excess groundwater uses for member lands within the service areas of the water providers assigning CAP water to the CAGRD.

C. Alternatives Considered but Eliminated

No other alternatives were considered in depth for WEWC, Sunrise, NRUC, and LPSCo. These entities do not have existing means nor regulatory incentive for taking, treating and delivering CAP water to their customers. However, the potential for a financial incentive to build the necessary infrastructure to accept the CAP water was explored. This alternative, however, would not be economically feasible to any of the entitlement holders. There was also consideration of utilizing a neighboring service provider's infrastructure to convey these entities' entitlements to their respective service areas. Sunrise and NRUC's neighbor, the City of Peoria, has a treatment plant that would be able to treat Sunrise and NRUC's CAP entitlements and deliver the water to them. This alternative was explored but at present the City and the two water companies are unable to reach agreement. LPSCo and WEWC do not have any neighboring entities with water treatment plants that would be able to treat and convey their CAP entitlements.

CAGRD has considered water sources other than those listed in its 2004 Plan of Operation (as described above), to increase its dependable, committed replenishment water supplies. Several reasons have restricted the use of other types of sources. The potential alternative supplies and reasons for elimination from consideration are listed in Table 1.

Because the water sources identified in Table 1 are all non-viable from CAGRD's perspective, they were not further considered as alternatives to the Proposed Action, nor were they considered likely to occur under the No-Action alternative.

[6] Under the Arizona Water Settlements Act (2004) CAP M&I subcontracts are permanent service contracts. It should be noted that all or some portion of the CAP M&I water to be transferred under the Proposed Action may not be available in years of extreme shortage on the Colorado River. However, water supply firming activities of the Arizona Water Banking Authority are designed to reduce shortages to CAP M&I supplies. The CAP M&I water to be transferred under the Proposed Action could be considered to be a more reliable supply than some of those identified in the No Action alternative (e.g., Excess CAP water and CAP NIA Priority water), but it may be less reliable than others (e.g., higher priority non-CAP Colorado River supplies, imported groundwater and effluent). Regardless of the supplies, CAGRD has a statutory responsibility to meet all of its replenishment obligations. Therefore, CAGRD will develop a portfolio of water supplies necessary to comply with Arizona law under both the Proposed Action and No Action alternatives.

Table 1. Alternative Water Sources Considered and Reasons For Their Elimination as Viable Options.	
Potential Water Source for CAGRD's Recharge Use	**Reason(s) for Inability of CAGRD to Utilize Water**
Active Management Area (AMA) Groundwater Rights	Prohibited by law or current law does not provide for use of water by the CAGRD
Non-Arizona Colorado River Supplies	Prohibited by law or current law does not provide for use of water by the CAGRD
Excess Salt River Project (SRP), Roosevelt Water Conservation District, Maricopa County Municipal Water Conservation District No. 1, or Salt /Gila River Rights	1. Prohibited by law or current law does not provide for use of water by the CAGRD 2. Supply would not qualify for long term storage credits (ARS 45-851.01.B)
Additional Groundwater Basins other than Butler Valley, McMullen Valley and Harquahala Valley	Prohibited by law or current law does not provide for use of water by the CAGRD
Bill Williams River Rights	Prohibited by law or current law does not provide for use of water by the CAGRD
Unused Arizona On-River (Colorado River) Municipal & Industrial Rights	Rights held by Arizona municipal providers cannot be considered because those rights are already earmarked for future development by holder
Colorado River Reserve Water for Use at National Wildlife Refuge	Mitigation costs to complete NEPA compliance would be too high
Colorado River Supplies less than 10,000 afa	Inefficient to negotiate a Colorado River lease or fallowing agreement for that small of an amount of water.
Water Supply Committed Under Existing Contracts or Leases	Water is already committed to other users
Other Surface Water Rights not identified as potentially available in CAGRD's Plan of Operation	1. Prohibited by law or current law does not provide for use of water by the CAGRD 2. Supply would not qualify for long-term storage credits (ARS 45-851.01.B)

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III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the existing affected environment and likely environmental consequences of Reclamation's approval of the assignment of 7,746 afa of CAP water entitlements from WEWC, Sunrise, NRUC, and LPSCo to CAGRD. A No Action scenario is also evaluated for the service areas and CAGRD to provide a basis for comparison with the Proposed Action. The analysis is focused on the resource areas that may be impacted.

The following resource areas are not anticipated to be affected to any measurable degree, and are therefore not included in the analysis: Surface water resources, air resources, recreational resources, geology, and soils.

A. Water Resources

1. Affected Environment

The four water companies are located within the Phoenix AMA, in the West Salt River Valley groundwater subbasin. The West Salt River Valley subbasin covers an area of approximately 1,330 square miles. The subbasin is a broad alluvial valley that is bounded on the west by the White Tank Mountains; to the south by the Buckeye Hills, Sierra Estrella, and South Mountains; to the east by the Union Hills, Phoenix Mountains, and Papago Buttes; and to the north by the Hieroglyphic Mountains and Hedgepeth Hills.

The sediments in the West Salt River Valley subbasin are generally alluvial units that range in thickness from less than 100 feet near the basin margins to over 10,000 feet in the central portions of the basin in the vicinity of Luke Air Force Base. The sediments in the subbasin are composed primarily of unconsolidated sediments of sand, gravel, silt and clays. In general, the sediments form three broad units: the upper alluvial unit, the middle fine-grained unit, and the lower alluvial unit. Groundwater is found in each of the three units, forming a large heterogeneous alluvial aquifer. In general, most groundwater is pumped from the middle fine-grained unit. It is estimated that the West Salt River Valley subbasin aquifer includes more than 8 million acre-feet of groundwater (ADWR 1999).

Groundwater development in the West Salt River Valley began in the late 1800s with the development of shallow groundwater wells along the Agua Fria, Salt, and Gila Rivers. Currently, groundwater uses include agricultural irrigation, municipal, and industrial water supply purposes. Municipal water providers include WEWC, NRUC, Sunrise, LPSCo, other private water companies, and the cities of Phoenix, Glendale, Peoria, Avondale, Goodyear, and Surprise. As a result of groundwater development, water levels in some portions of the subbasin have declined substantially, creating large cones of depression near Luke Air Force Base and Deer Valley. Groundwater pumping also has resulted in land subsidence and earth fissuring near Luke Air Force Base. Groundwater logging is occurring in the Buckeye and Goodyear areas due to effluent discharge from the 91st Avenue Waste Water Treatment Plant and irrigation practices (ADWR 1999).

a. M&I Water Entitlement Holders

(1) WEWC

The WEWC's service area encompasses approximately 5.81 square miles in the northwestern portion of the West Salt River Valley subbasin, primarily around the town of Wittmann. Depth to groundwater in the vicinity of WEWC ranges from approximately 400 to 500 feet below ground surface (bgs) (ADWR 2002). Water quality in the area is good, with concentrations of total dissolved solids (TDS) generally less than 300 milligrams per liter (mg/L), and low levels of nitrates and fluoride (ADWR 2002, USGS 2003).

Several ephemeral washes are located within the service area, and are tributary to the Agua Fria River, which is located approximately 12 miles southeast of the WEWC. Surface water generally flows northwest to southeast; however, the CAP and Beardsley Canals impede surface flow from reaching the Agua Fria River.

There are approximately 64 registered wells within the WEWC service area, ranging from approximately 300 to 800 feet in depth bgs. The majority of these wells are small-capacity domestic wells (ADWR 2003). WEWC owns and operates three of these wells. The WEWC wells range from 633 to 800 feet in depth bgs. The wells are used to meets all of its customers' demands. WEWC served 98 af of groundwater to 236 customers in 2005. Water use is primarily for domestic residential purposes.

(2) Sunrise

Sunrise's service area encompasses approximately 3.92 square miles in the northeastern portion of the West Salt River Valley subbasin, primarily within the City of Peoria corporate limits. Depth to groundwater in the vicinity of Sunrise ranges from approximately 400 to 600 feet bgs (ADWR 2002). Water quality in the area is good, with concentrations of TDS generally less than 500 mg/L, and low levels of fluoride, although there have been reports of elevated levels of nitrates and arsenic (ADWR 2002, USGS 2003).

Several ephemeral washes are located within the service area that are tributary to New River, which forms the eastern boundary of the service area. Surface water generally flows north to south in the area.

There are approximately 46 registered wells within the Sunrise service area, ranging from approximately 200 to 1,200 feet in depth bgs. The majority of these wells are small-capacity domestic wells (ADWR 2003). Sunrise owns and operates five of these wells. The Sunrise wells range in depth from 850 to 1,260 feet in depth bgs. The wells are used to meet all of Sunrise's customer demands. Sunrise served 1,009 af of groundwater to 1,272 customers in 2005. Water use is primarily for domestic residential purposes.

(3) NRUC

NRUC's service area encompasses approximately 1.68 square miles in the northeastern portion of the West Salt River Valley subbasin, primarily within the City of Peoria corporate limits and immediately south of the Sunrise Water Company. Depth to water and water quality are similar to that described above for Sunrise.

Several ephemeral washes are also located within the NRUC service area, and are tributary to New River. Like Sunrise, New River forms the eastern boundary of the NRUC service area.

There are approximately 13 registered wells within the NRUC service area, ranging from 600 to 2,000 feet in depth bgs. NRUC owns and operates six of these wells primarily for domestic residential purposes. The NRUC wells range from 1,200 to 1,977 feet in depth bgs and are used to meet all of its customers' demands. NRUC served 1,877 af of groundwater to 2,653 customers in 2005. The majority of the remaining wells are large-capacity irrigation wells (ADWR 2003).

(4) LPSCo

LPSCo's service area encompasses approximately 20.16 square miles in the western portion of the West Salt River Valley subbasin, near the cities of Litchfield Park, Goodyear, and Glendale. Depth to groundwater in the vicinity of LPSCo ranges from approximately 50 feet bgs on the east side of the service area near the Agua Fria River to approximately 300 feet bgs on the west side of the service area, near the regional cone of depression known as the Luke Sink (ADWR 2002). Water quality in the area varies widely. Concentrations of TDS can be as low as 200 mg/L; however, the presence of a massive salt body known as the Luke Salt has affected salinity levels in the area, and deeper wells can have concentrations of TDS in excess of 4,000 mg/L. Concentrations of fluoride are generally low, although there have been reports of elevated levels of nitrates and arsenic (ADWR 2002, USGS 2003).

The Agua Fria River is located immediately east of the LPSCo service area. Surface water generally flows north to south within the service area. Portions of the Roosevelt Irrigation Canal, Colter Channel, and Airline Canal also pass through the service area.

There are approximately 96 registered wells within the LPSCo service area, ranging from approximately 50 to 2,000 feet in depth bgs. LPSCo owns and operates nine of these wells. The LPSCo wells range from 503 to 2,000 feet in depth bgs and are used to serve all of its customers' demands. In 2005, LPSCo served 9,304 af of groundwater to 12,978 customers. Water use is primarily for domestic residential purposes. Approximately one third of the 96 registered wells are monitoring wells, and over half are primarily large-capacity irrigation wells (ADWR 2003).

b. CAGRD

The affected environment for the CAGRD for purposes of this EA includes the member lands and member service areas for which the CAGRD could fulfill replenishment obligations by recharging the 7,746 afa of CAP water that would be transferred to CAGRD by the four water companies. This includes the water service areas of the four water companies, which are described above, and the Phoenix AMA.

The Phoenix AMA covers approximately 5,646 square miles and includes seven groundwater subbasins: East Salt River Valley, West Salt River Valley, Rainbow Valley, Hassayampa, Lake Pleasant, Carefree, and Fountain Hills subbasins. Groundwater in the Phoenix AMA generally occurs in broad alluvial aquifers composed of unconsolidated sands, silts, clays and gravels. Groundwater development in the Phoenix AMA began in the late 1800's when shallow groundwater wells were drilled adjacent to streams to supplement surface water supplies for irrigation. Currently, ADWR estimates approximately 2.3 million acre-feet are used annually in the Phoenix AMA with 1.4 million acre-feet provided from renewable supplies (CAP and SRP water) and approximately 900,000 acre-feet from groundwater (ADWR 2004). Additionally, ADWR estimates approximately 250,000 acre-feet of effluent are reused in the Phoenix AMA. At present, groundwater levels are generally stable or rising in the East Salt River Valley subbasin due to reduction in agricultural uses, increases in artificial recharge, and increased natural recharge from recent floods along the Salt River stream bed. Depth to groundwater ranges from 150' to 600' bgs. In the western subbasins (West Salt River, Hassayampa, and Rainbow Valley) groundwater levels are generally stable, with some areas suffering from water logging conditions. In general, depth to groundwater ranges from 10 feet (water logged areas near Buckeye) to 600 feet bgs. However, several large cones of depression do occur including: the Luke cone and Palo Verde cone. The remaining subbasins (Lake Pleasant, Carefree, and Fountain Hills) are isolated alluvial pockets with relatively thin alluvial aquifers. Groundwater levels are generally stable due to limited development and importation of renewable supplies (ADWR 2004).

The CAGRD currently uses two groundwater recharge facilities that are located in the West Salt River Valley subbasin (where the four water companies' service areas are located): the Agua Fria Recharge Project and the Hieroglyphic Mountains Recharge Project (Figure 7). Prior to initiating recharge operations, depth to water in the vicinity of the HMRP and AFRP were approximately 460 feet and 300 feet bgs, respectively. Currently, depth to groundwater is approximately 300 feet bgs at the HMRP and approximately 250 feet bgs at the AFRP. Water quality in these areas is good, with concentrations of TDS generally being less than 500 mg/L, and generally having low levels of arsenic, fluoride, and nitrate[7] (ADWR 2002, USGS 2003).

[7] On October 26, 2006, after nearly four years of operating the HMRP, a water quality sample taken from a monitor well located south of the facility exceeded the drinking water standard for nitrate. A subsequent sample also exceeded the nitrate standard. CAWCD has ascertained that the exceedance was likely associated with the dissolving of in-situ salts as water

2. Environmental Consequences

a. No Action

Under the No Action alternative, the transfers would not occur and WEWC, Sunrise, NRUC, and LPSCo would continue to pump groundwater to meet their supply needs. It is anticipated by 2035, approximately 15,000 afa of groundwater would be pumped to supply the water demands within the service areas of the four water companies (CAGRD 2004). They would not be expected to utilize any portion of their CAP entitlements.

Under this alternative, WEWC, Sunrise, NRUC, and LPSCo would continue to seek to transfer their CAP water entitlements to other entities; unless and until this occurred, the 7,746 afa of CAP water would be available for purchase as Excess CAP water. As long as the water remains in the Excess CAP pool and is not used by higher priority users,[8] it could be purchased and recharged by CAGRD to fulfill the replenishment obligations associated with member lands located within the water service areas of the four water companies. The availability of Excess CAP water will generally decline as contractors and subcontractors increase the use of their entitlements. To the extent that Excess CAP water is not available, CAGRD would use another source of water to meet its replenishment obligations, as described in Section II above. Because subdivisions within the service areas of the four water providers have already obtained CAWS, whether the proposed action is approved or not has no bearing on the anticipated volume of replenishment obligations that CAGRD will incur as a result of excess groundwater pumping by the transferring entities. However the mix of water supplies used to meet the obligations, as described previously, must approximate the reliability of CAP M&I priority water supplies in order that CAGRD may meet its replenishment obligations within the three-year time frame defined by Arizona statute.

Arizona statutes require CAGRD to satisfy replenishment obligations incurred from these four services areas by recharging in the west portion of the Phoenix AMA "to the extent reasonably feasible" (ARS § 48-3772.I). Therefore, CAGRD could meet its obligations by replenishing anywhere in the west portion of the Phoenix AMA. Because CAWCD currently operates two recharge projects within the West Salt River Subbasin (AFRP and HMRP), it is likely that CAGRD would maximize the amount of water that it replenishes in these two projects regardless of whether or not the proposed action is approved. However, it is possible that CAGRD's water supply portfolio under the No Action alternative could include a larger volume of effluent supplies. If this occurs, a portion of the replenishment associated with these four service areas

that had been recharged at the HMRP flushed out the vadose zone. CAWCD has developed an action plan to increase area groundwater monitoring activities and to protect nearby landowners until nitrate levels come back within compliance. CAWCD believes that aggressive operation of the project to facilitate the flushing of nitrates through the aquifer system will rectify the problem and will do so with approval and oversight from ADWR and the Arizona Department of Environmental Quality.

[8] As part of the settlement of Indian water rights claims and CAP repayment negotiations with the United States, CAWCD has adopted a policy providing NIA users with first priority for use of excess CAP water through 2030. Under the policy, NIA users have priority to 400,000 AF/year of excess CAP water through 2016; 300,000 af /year from 2017 through 2023; and 225,000 AF/year from 2024 through 2030.

may not occur within the West Salt River Subbasin. This is because effluent cannot be stored at the AFRP or HMRP and there may be a limit on the capacity available in effluent recharge projects located within the West Salt River Subbasin.

b. Proposed Action

Under the Proposed Action, entitlement to 7,746 afa of CAP M&I water, currently allocated to the four water companies, would be transferred to CAGRD, thus providing CAGRD with a permanent supply that is extremely reliable. CAGRD would incur the same replenishment obligation for the four water companies' service areas and would replenish the same volume of water under both alternatives. As with the No Action Alternative, groundwater would be used to supply future water demands within the water service areas associated with these four water companies, and CAGRD would be responsible for replenishing the excess groundwater used by the member lands located within the water service areas of the four water companies. Under the Proposed Action, the Supplemental Contract would require that replenishment on behalf of member lands in the NRUC, Sunrise and WEWC service areas be accomplished within the area of hydrologic impact of the associated groundwater withdrawals. To satisfy the replenishment obligations incurred as a result of groundwater pumping within the WEWC water service area, CAP water obtained by CAGRD under the proposed action would be replenished at the HMRP. For obligations incurred as a result of groundwater pumping within the Sunrise and NRUC water service areas, CAP water would be recharged into the AFRP.

The Supplemental Contract would require that replenishment on behalf of member lands in the LPSCo service area be accomplished within the Phoenix AMA. It is CAGRD's intent that CAP water transferred from the LPSCo water service subcontract to CAGRD would be replenished at the AFRP. While this facility is not within the area of hydrologic impact of groundwater pumping in the LPSCo service area, it is located in the western portion of the Phoenix AMA and therefore complies with the State's AWS rules as well as the provisions of the proposed Supplemental Contract.

In accordance with the proposed Supplemental Contract, any transferred CAP water that is "left-over" after fulfilling the replenishment obligations of the member lands located within the water service areas of the four water companies may be used to satisfy annual replenishment obligations for member lands enrolled as of the effective date of Exhibit A of the Supplemental Contract. More than 85% of CAGRD's total replenishment obligations for member lands is projected to be incurred in the Phoenix AMA (CAGRD, 2004), translating to large volumes of water needed to meet replenishment obligations for member lands in the Phoenix AMA. Therefore, CAGRD would, in all likelihood, replenish any of the left-over CAP water within the Phoenix AMA, and probably at the AFRP or HMRP. However, CAGRD estimates that the total annual replenishment obligations for member lands within the four water companies' service areas will exceed 7,746 AF by 2020 (CAGRD 2004), so left-over water would not be a long-term issue (Table 2).

Table 2. Projected Replenishment Obligations in Transferring Entities' Service Areas (afa)					
Service Area (annual amount to be transferred)	2008	2009	2010	2015	2020
WEWC (157)	10	11	13	322	626
Sunrise (944)	244	268	292	347	682
NRUC (1,885)	1,333	1,407	1,481	811	2,219
LPSCo (4,760)	3,989	4,317	4,644	4,252	10,166
Total (7,746)	5,576	6,003	6,430	5,732	13,693

CAGRD may replenish more water at these two facilities under the Proposed Action, as compared to what may occur under the No Action alternative. This possibility exists because, as discussed above, CAGRD may increase its reliance on effluent under the No Action alternative, thereby reducing the volume of water available to CAGRD for replenishment at the AFRP and HMRP. However, this possible increase in use of the facilities by CAGRD would not result in changes to the operating procedures at these two facilities.

B. Land Use

1. Affected Environment

a. M&I Water Entitlement Holders

(1) WEWC

WEWC's service area encompasses approximately 3,720 acres of land. Approximately 25-40% is developed, consisting mainly of sparsely distributed residential developments with some commercial businesses. The town of Wittmann is located within the service area; the remainder falls within an unincorporated area of Maricopa County. Much of the service area consists of native desert, particularly in the northern, southern, and eastern portions.

(2) Sunrise

Sunrise's service area is approximately 2,506 acres in size, and includes unincorporated Maricopa County land, a portion of the city of Peoria, and about 160 acres of State land. About 25% of the service area, including the State land, is native desert. The remainder of the service area consists of medium- to high-density residential neighborhood clusters that have been constructed or are planned for construction. There are also several commercial areas.

(3) NRUC

NRUC's water service area is approximately 1,077 acres in size and is entirely located within the limits of the city of Peoria. Although there may be some small vacant parcels scattered within the service area, the entire service area is essentially fully developed with the exception of the New River corridor.

(4) LPSCo

The LPSCo service area is the largest of the four water service areas involved in the proposed transfer, encompassing approximately 13,214 acres. Portions of the service area fall within Litchfield Park, Goodyear, and Avondale city limits. The service area also includes unincorporated Maricopa County land. The area has been experiencing rapid conversion from agriculture to high-density residential development over the past several years. Approximately 70% of the LPSCo service area is already developed or planned for development. Several golf courses are also located within the service area boundaries.

Approximately 3,000 acres consist of irrigated agricultural fields. These are located in the extreme western portion of the service area. About half of these acres are located within Luke Air Force Base's outermost noise contour. There are also about 1,350 acres of undeveloped desert in two distinct parcels within the service area. One parcel is located in the extreme northeast portion of the service area that extends east of El Mirage Road. The other is just southeast of Luke Air Force Base. Both parcels are located in unincorporated Maricopa County.

b. CAGRD

Member Lands - As of December 31, 2005, a total of 647 subdivisions have enrolled as member lands of the CAGRD in the Phoenix AMA. These 647 subdivisions represent approximately 115,600 homes. Of these 647 subdivisions, 420 are located in the west portion of the Phoenix AMA (representing about 84,200 homes) and 227 are located in the east portion of the Phoenix AMA (representing about 31,400 homes).[9]

Member Service Areas – As of December 31, 2005, a total of nine municipal water providers have enrolled their water service areas as member service areas of the CAGRD in the Phoenix AMA. Of these, five are in the west portion of the AMA and four are in the east portion, as indicated below.

[9] CAGRD will not incur parcel replenishment obligations for thirteen of these member land subdivisions (ten in the west portion of the Phoenix AMA and three in the east portion) because the municipal water providers serving the subdivisions (City of El Mirage, City of Surprise and Johnson Utilities, LLC) enrolled their service areas as member service areas of the CAGRD after the member lands were enrolled. Therefore, the 3,876 homes within these thirteen subdivisions are not included in the figures provided herein.

MSAs in the West Portion of the Phoenix AMA	MSAs in the East Portion of the Phoenix AMA
· City of Avondale	· City of Scottsdale
· City of El Mirage	· Johnson Utilities, LLC
· City of Goodyear	· Water Utilities Community Facilities
· City of Peoria	District (Apache Junction)
· City of Surprise	· Chaparral City Water Company

CAGRD will be using two existing recharge facilities within the Phoenix AMA (the AFRP and the HMRP) to fulfill its replenishment obligations for member lands and member service areas located in the west portion of the Phoenix AMA. These facilities are used exclusively for groundwater recharge. The AFRP encompasses approximately 100 acres with a permitted capacity of approximately 100,000 af per year. It is the only recharge project in Arizona to combine streambed recharge and spreading basins at a single facility. The HMRP utilizes 38 acres and has a permitted capacity of 35,000 af per year. HMRP consists of spreading basins adjacent to the north side of the CAP canal.

2. Environmental Consequences

a. No Action

Under the No Action alternative, it is anticipated that urbanization within the WEWC water service area would continue at about the same rate as, or more rapidly than, it has over the past several years. This would also be expected to occur within the Sunrise service area, with the possible exception of the State land, which might not be developed as rapidly as the neighboring private land. Development of the remaining land within the NRUC service area would not change, as at present it is essentially fully developed. Within the LPSCo service area, it is anticipated that agricultural areas and areas of native desert that lie outside the established noise contours of Luke Air Force Base would be developed within the next few years, based upon current development trends. However, it is anticipated that development of the remaining agricultural land within the noise contours would occur more slowly and would consist of development that is more compatible with the noise generated from Base activities, rather than conversion to high-density residential areas.

Prior to constructing a subdivision of six or more dwellings, developers are required to acquire certificates of assured water supply from ADWR. All currently undeveloped land within the service areas of the four water companies would be eligible to enroll as member lands of the CAGRD. As indicated in Section I, membership in CAGRD proves consistency with the State's water management goals, thereby allowing new subdivisions to obtain certificates of assured water supply. Therefore, as long as undeveloped land is still available, it is assumed that land development within the defined project area would continue to occur

at its current rate. Table 3 provides a summary of the projected growth in the number of housing units within each of the four service areas through 2030 (CAP & MAG 2004).

Table 3. Projected Number of Housing Units in Transferring Entities' Service Areas

Service Area Name	2007	2010	2015	2020	2025	2030
WEWC	395	413	1,476	2,535	3,379	4,264
Sunrise	1,299	1,446	1,701	1,952	2,165	2,394
NRUC	2,972	3,521	3,522	3,522	3,523	3,523
LPSCo	13,242	15,294	19,960	24,602	25,867	27,496
Total	17,908	20,674	26,659	32,611	34,934	37,677

WEWC, Sunrise, NRUC, and LPSCo would continue to seek to transfer their CAP water entitlements to other entities; unless and until this occurred, the 7,746 afa of CAP water would be available for purchase as Excess CAP water. However, a possible occurrence under the No Action alternative is that the entitlements held by the four water companies could be transferred to one or more other water providers that are not members of the CAGRD, thereby increasing those providers' portfolios of renewable water supplies. With an increase of available renewable supplies, State law would allow additional development (i.e., construction and land disturbance) to occur on lands located within those water providers' service areas.

b. Proposed Action

Under the Proposed Action, CAGRD would receive a CAP water entitlement of 7,746 af annually. This water would be used to fulfill replenishment obligations of member lands located within the water service areas of WEWC, Sunrise, NRUC, and LPSCo. Transferred water entitlements from Sunrise and New River would be used for recharge at the AFRP and WEWC's entitlement would be recharged at the HMRP. LPSCo's transferred entitlement would likely be used for recharge at AFRP, although legally it could be recharged at various recharge locations within the Phoenix AMA. The Proposed Action would potentially increase the volume of storage at HMRP and AFRP over that contemplated in the No Action alternative, if the No Action alternative includes the use of effluent storage.

Because all currently undeveloped land within the service areas of the four water companies are eligible to be enrolled in CAGRD, it is assumed that land development under the Proposed Action would occur as it would be anticipated to occur under the No Action Alternative. There would be no difference in the impacts to land ownership or land development within the defined Project area between the two alternatives. However, the

Proposed Action could result in less development on lands located outside of the defined Project. This would occur because, under the Proposed Action, the CAP entitlements proposed for transfer would not be available to other water providers that are not members of the CAGRD, thereby limiting the ability for additional lands to be developed in those service areas.

C. Socioeconomic Resources

1. Affected Environment

a. M&I Water Entitlement Holders

These water providers' service areas fall within the political boundaries of several entities, including the cities of Peoria, Litchfield Park, Goodyear, and Avondale, smaller towns like Wittmann, and unincorporated Maricopa County land. Analysis was conducted through the evaluation of Census tracts. A Census tract is a geographically smaller area that documents the same type of demographic, racial, and economic statistics as larger areas such as counties and states. Service areas were compared with Maricopa County data to determine whether or not service areas were demonstrating the same trends as the county as a whole.

(1) WEWC

The entire WEWC service area is located in one census tract, Tract 405.09. This tract is actually larger than WEWC's water service area. According to the Census 2000, Census Tract 405.09 consists of a smaller percentage of a non-white population, unemployment rate, and a lower 1999 Median Household Income when compared to Maricopa County, Arizona (Table 4). Also shown in Table 4, the occupational category with the greatest number of jobs in Census Tract 405.09 was the Sales and Office category while the majority of employees in Maricopa County were in the Management and Professional employment fields.

(2) Sunrise

The Sunrise service area is located in portions of three census tracts, Tract 303.71, 303.73, and 303.75. According to the Census 2000, these three census tracts consist of smaller percentages of non-white populations when compared to Maricopa County, Arizona. These census tracts also consisted of higher 1999 Median Household Incomes. Two of the three tracts had lower unemployment rates (2000) than the County (Table 5). When occupation types were compared, the largest job category in these three census tracts was the same as the County; most employees were categorized as working in Management and Professional fields.

1

Table 4. Population, Economic, and Employment Characteristics Maricopa County and Census Tract related to WEWC		
	WEWC Census Tract Census Tract 405.09	**Maricopa County**
Population Characteristics		
Population	15,675	3,072,149
%White of population	88%	77.4%
% Non-White of population	12%	22.6%
Economic Characteristics		
Median Household 1999 Income	$32,254	$45,358
% Unemployment (2000)	1.9%	3.0%
Employment		
No. Employed (over Age of 16)	4,474 (29% of population)	1,427,292 (46%)
Occupation		
Management, Professional	21.5%	33.9%
Service	21.7%	14.6%
Sales and Office	25.5%	29.7%
Farming, Fishing, Forestry	2.7%	0.4%
Construction and Maintenance	14.7%	10.5%
Production and Transportation	13.9%	11.0%

2

3

Table 5. Population, Economic, and Employment Characteristics for Census Tract related to Sunrise and Maricopa County				
	Sunrise Census Tracts			**Maricopa County**
	303.75	**303.71**	**303.73**	
Population Characteristics				
Population (persons)	2,258	12,306	2,942	3,072,149
%White of population	95.3%	92.8%	90.9%	77.4%
% Non-White of population	4.7%	7.2%	9.1%	22.6%
Economic Characteristics				
Median Household 1999 Income	$81,976	$57,103	$74,073	$45,358
% Unemployed (2000)	1%	1.6%	5%	3%
Employment				
No. Employed (over Age of 16)	1,188 (53%)	5,459 (44%)	1,491 (51%)	1,427,292 (46%)
Occupation				
Management, Professional	32.7%	37.6%	45.8%	33.9%
Service	10%	12.7%	12%	14.6%
Sales and Office	32.5%	32.4%	29.5%	29.7%
Farming, Fishing, Forestry	0.7%	0%	0%	0.4%
Construction and Maintenance	14.1%	9.8%	8.5%	10.5%
Production and Transportation	9.9%	7.5%	4.2%	11.0%

4

(3) NRUC

The NRUC service area is located in portions of three census tracts, Tract 303.68, 303.71, and 303.73. Two of these tracts, 303.71 and 303.73, also contain portions of the Sunrise service area. According to the Census 2000, all three census tracts consist of smaller percentages of non-white populations when compared to Maricopa County, Arizona. These census tracts also consisted of higher 1999 Median Household Incomes. Two of the three tracts consisted of lower unemployment rates (2000) than the County (Table 6). When occupation types were compared, the greatest amount of jobs for people living within the census tracts was the same type as the County; most employees were categorized as working in Management and Professional fields.

Table 6. Population, Economic, and Employment Characteristics for Census Tract Related to NRUC and Maricopa County

	New River Census Tracts			**Maricopa County**
	303.71	**303.73**	**303.68**	
Population Characteristics				
Population (persons)	12,306	2,942	2,738	3,072,149
%White of population	92.8%	90.9%	98.4%	77.4%
% Non-White of population	7.2%	9.1%	1.6%	22.6%
Economic Characteristics				
Median Household 1999 Income	$57,103	$74,073	$54,559	$45,358
Unemployment (2000)	1.6%	5%	2.1%	3.0%
Employment				
No. Employed (over Age of 16)	5,459 (44%)	1,491 (51%)	751 (27%)	1,427,292 (46%)
Occupation				
Management, Professional	37.6%	45.8%	53.3%	33.9%
Service	12.7%	12%	2.8%	14.6%
Sales and Office	32.4%	29.5%	34%	29.7%
Farming, Fishing, Forestry	0%	0%	0%	0.4%
Construction and Maintenance	9.8%	8.5%	3.5%	10.5%
Production and Transportation	7.5%	4.2%	6.4%	11.0%

(4) LPSCo

The LPSCo service area is located in portions of five census tracts, Tract 610.05, 610.09, 610.02, 610.03, and 610.06. According to the Census 2000, all five census tracts consisted of about the same or smaller percentages of non-white populations when compared to Maricopa County, Arizona. All five census tracts consisted of higher 1999 Median Household Incomes and lower unemployment rates (2000) than the County (Table 7). When occupation types were compared, in four of the five census tracts most employees were categorized as working in Management and Professional fields, which is the same as for the County. In the fifth

census tract, the greatest number of employees fell into the sales and office industries category.

Table 7. Population, Economic, and Employment Characteristics for Census Tract related to LPSCo and Maricopa County

	Litchfield Park Service Co. Census Tracts					**Maricopa County**
	610.05	**610.09**	**610.02**	**610.03**	**610.06**	
Population Characteristics						
Population	6,458	87	4,104	10,395	8,072	3,072,149
%White of population	79.4%	100%	91.7%	77%	79.2%	77.4%
% Non-White of population	20.6%	0%	8.3%	23%	20.8%	22.6%
Economic Characteristics						
Median Household 1999 Income	50,861	51,250	74,125	62,698	46,210	$45,358
Unemployment (2000)	0.9%	0%	2.6%	1.8%	1.9%	3.0%
Employment						
No. Employed	1,536 (24%)	45 (52%)	1,805 (44%)	5,260 (51%)	3,689 (46%)	1,427,292 (46%)
Occupation						
Management, Professional	29.6%	31.1%	47.5%	36.9%	27.9%	33.9%
Service	16.1%	0%	12.7%	10.4%	19.1%	14.6%
Sales and Office	28.4%	42.2%	23.4%	32.3%	24.2%	29.7%
Farming, Fishing, Forestry	2.1%	0%	0.2%	0.4%	3.7%	0.4%
Construction and Maintenance	9.5%	11.1%	6%	8.3%	12.1%	10.5%
Production and Transportation	14.3%	15.6%	10%	11.8%	13%	11.0%

b. CAGRD

Those portions of CAGRD's service area that are most directly impacted by the Proposed Action are the member lands located within the four water companies' service areas. The demographic, racial, and economic statistics for these areas are provided in Tables 4-7 above. Due to the expansive and non-contiguous nature of CAGRD's remaining membership in the Phoenix AMA (which makes up the project area), such statistics are not readily available. Therefore, the Maricopa County data provided in Tables 4-7 above are assumed to be representative of the remaining CAGRD membership in the Phoenix AMA as a whole. Maricopa County data as compared to the entire state of Arizona are provided below in Table 8.

Table 8. Population, Economic, and Employment Characteristics for Maricopa County and State of Arizona (U.S. Census Bureau)		
	Maricopa County	**Arizona**
Population Characteristics		
Population	3,072,149	5,130,632
%White of population	77.4%	75%
% Non-White of population	22.6%	25%
Economic Characteristics		
Median Household 1999 Income	$45,358	$40,558
% Unemployment (2000)	3.0%	3.4%
Employment		
No. Employed (over Age of 16)	1,427,292 (46%)	2,233,004 (43.5%)
Occupation		
Management, Professional	33.9%	32.7%
Service	14.6%	16.2%
Sales and Office	29.7%	28.5%
Farming, Fishing, Forestry	0.4%	0.6%
Construction and Maintenance	10.5%	11.0%
Production and Transportation	11.0%	10.9%

2. Environmental Consequences

a. No Action

(1) M&I Water Entitlement Holders

Under the No Action alternative, all four water companies would continue to seek to transfer their CAP water entitlements to other entities; unless and until this occurred, the 7,746 afa of CAP water would be available for purchase as Excess CAP water and the four water companies would continue to be responsible for the annual capital payments associated with the entitlements.[10] The providers would continue to serve water to their respective service area. Lands served by these providers would continue to be developed under the No Action alternative. These water providers would continue to pump groundwater to serve both existing and future customers. Future customers would be enrolled as member lands of the CAGRD in order to comply with Arizona's Assured Water Supply Rules. Those customers whose lands are enrolled as member lands would pay annual replenishment assessments based on the amount of excess groundwater delivered to their property. Since these four water companies have never utilized the water proposed to be transferred, there would be no

[10] Under existing CAP M&I subcontracts, the subcontractor is responsible for paying an annual capital charge to CAWCD regardless of whether the CAP water is ordered or not.

change in the water service provided. Future rates for water supplied by CAGRD to offset groundwater pumping by the water companies is discussed under "CAGRD" below.

No change in the lifestyle or social well-being of the populations serviced by any of these water companies is anticipated as a result of their continued reliance on these sources.

(2) CAGRD

Under the No Action alternative, CAGRD would continue to enroll member lands within the four water companies' service areas as provided by State law. CAGRD would be required to continue to satisfy all of its replenishment obligations through recharge in the Phoenix AMA. CAGRD would continue using available excess CAP water for replenishment and would continue to use the AFRP and HMRP. Under the No Action alternative, if there is insufficient excess CAP water available, CAGRD would secure additional water supplies from the sources described in Section II above and CAGRD rates would be set based on the cost of securing and replenishing whatever water supplies CAGRD obtains. CAGRD rates are calculated on an AMA-wide basis; therefore, the costs associated with securing and replenishing water to meet replenishment obligations in the Phoenix AMA would be "spread" over CAGRD's entire Phoenix AMA membership.

There are no residences located within the AFRP and HMRP. CAWCD operates the facilities to maximize hydrologic and economic efficiency regarding recharge. CAGRD uses the facilities to meet replenishment obligations in the Phoenix AMA using its available water supplies. To the maximum extent possible, CAGRD would use these facilities to offset replenishment obligations incurred as a result of pumping within the WEWC, Sunrise, NRUC, and LPSCo service areas.

b. Proposed Action

(1) M&I Water Entitlement Holders

Many conditions under this alternative would be identical to those under the No Action alternative. All four water companies would transfer their unused CAP water entitlements and would no longer be responsible for the entitlements' annual capital payments. Lands served by these providers would continue to be developed and the providers would continue to serve their respective service areas through groundwater pumping. Future customers within the water companies' service areas would be enrolled as member lands of the CAGRD in order to comply with Arizona's Assured Water Supply Rules and those customers would pay annual replenishment assessments based on the amount of excess groundwater delivered to their property. These four water companies have never utilized the water that is proposed to be transferred, and there is no infrastructure in place for them to do so; therefore, under the Proposed Action there would be no change in the water service provided to the residents served by WEWC, Sunrise, NRUC, or LPSCo.

The only anticipated impact to socioeconomic conditions within the four water companies' service areas relates to the difference in CAGRD assessment rates paid by members under the Proposed Action compared to the No Action alternative. As discussed above, the Proposed Action provides CAGRD with a reliable water supply that can be used to meet replenishment obligations. Under the No Action alternative, CAGRD would need to secure an equally reliable supply to meet its replenishment obligations and any difference in the costs (higher or lower) of securing and replenishing such supplies would be borne by CAGRD members. Further discussion of CAGRD rates is provided in the next paragraph.

(2) CAGRD

Under the Proposed Action alternative, CAGRD would incur essentially the same replenishment obligations as it would under the No Action alternative. CAGRD would have the ability to use the transferred 7,746 af of CAP subcontract water to meet its replenishment obligations in the Phoenix AMA. As indicated above, there could be some impact on CAGRD members' assessment rates depending on the cost of the CAP water to be transferred when compared to an alternative supply; however, the impact would likely be insignificant. This is because CAGRD rates are calculated on an AMA-wide basis and the volume of water to be transferred under the Proposed Action is relatively small compared to CAGRD's projected overall replenishment obligations for the Phoenix AMA.[11] Based on these projected replenishment obligations, it is anticipated that every $10/af incremental change (higher or lower) in CAGRD's cost of purchasing and replenishing water would result in a corresponding change of about $0.20 in the average member land homeowner's annual replenishment assessment over the long-term. Thus, it would take a large difference between the cost of the Proposed Action and the No Action alternative to have any significant economic effect on CAGRD members.

D. Biological Resources

1. Affected Environment

Table 9 lists the federally listed and candidate species identified by the United States Fish and Wildlife Service (FWS) as potentially occurring in Maricopa County, Arizona.

[11] CAGRD's annual replenishment obligations for the Phoenix AMA are projected to reach 138,200 AF by 2020 and 186,700 AF by 2035 (CAGRD 2004).

Table 9. Summary of federally listed and candidate species and their habitat needs

Species	Status	Known Distribution and Habitat Needs
Arizona agave *Agave arizonica*	E	Transition zone of oak-juniper woodland and mountain mahogany-oak scrub, usually steep rocky slopes from 3,000 to 6,000 feet (AGFD 1997)
Arizona cliffrose *Purshia subintegra*	E	Rolling limestone hills within Sonoran desertscrub from 2,500 to 4,000 feet (AGFD 2001a)
Bald eagle *Haliaeetus leucocephalus*	T	Large trees or cliffs near creeks, lakes, and rivers with abundant prey, i.e., fish (AGFD 1996)
California brown pelican *Pelecanus occidentalis californicus*	E	Shore bird usually found near sandy beaches and lagoons. Nests along coastal islands with shrubby vegetation and small trees. In AZ, this species can be found at large inland lakes (Monson, G., and A.R. Phillips 1981)
Desert pupfish *Cyprinodon macularius macularius* and *eremus*	E	Permanent water in shallow springs, streams, and marshes (AGFD 2001b)
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E	Permanent water in small streams, springs, and cienegas (AGFD 2001c)
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E	Desert scrub with agave and columnar cacti. Caves or abandoned tunnels for roosts at elevations of 6,000 feet or less (AGFD 1998)
Mexican spotted owl *Strix occidentalis lucida*	T	Canyons and dense forests above 4,100 feet in elevation (USFWS 1995)
Razorback sucker *Xyrauchen texanus*	E	Slow backwaters of medium and large streams and rivers (AGFD 2001d)
Southwestern willow flycatcher *Empidonax traillii extimus*	E	Dense cottonwood/willow & tamarisk vegetation communities along rivers & streams (AGFD 1996)
Sonoran pronghorn *Antilocapra americana sonoriensis*	E	Sonoran desert plains with wide alluvial basins and desert grassland (AGFD 1996)
Yuma clapper rail *Rallus longirostris yumanensis*	E	Freshwater or brackish stream-sides and marshes with dense vegetation, especially cattail/bulrush (AGFD 2001e)
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C	Broadleaf deciduous riparian forest habitats and tamarisk woodlands adjacent to surface water (AGFD 1996)
Gila chub *Gila intermedia*	E	Small headwater streams, springs, cienegas, and marshes of the Gila River basin (AGFD 2001f)

USFWS categories: **Endangered** (E) – Taxa in danger of extinction throughout all or a significant portion of its range; **Threatened** (T) - Taxa likely to become endangered within the foreseeable future throughout all or a significant portion of its range; **Candidate** (C) - Taxa whose protection under the Endangered Species Act has been found to be warranted, but precluded by higher priority listing activities at this time.

a. M&I Water Entitlement Holders

The biological resource observations described in this section are based largely on field reconnaissance investigations conducted by SWCA, Inc. on September 26, 2003. SWCA's findings are documented in biological report memoranda provided in Appendix D.

(1) WEWC

This 3,720-acre service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994). Approximately 25-40% of the service area is developed. The vegetation present in the natural undisturbed portions of the project area consist mainly of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. The dominant vegetation species present within the project area include the following: creosotebush (*Larrea tridentata*), blue paloverde (*Parkinsonia florida*), saguaro (*Carnegiea gigantea*), velvet mesquite (*Prosopis velutina*), triangle-leaf bursage (*Ambrosia deltoidea*), canyon ragweed (*Ambrosia ambrosioides*), desert ironwood (*Olneya tesota*), and grasses. Protected native plants classified under the Arizona Native Plant Law (ARS §3-904) are also present in the project area.

Federally Endangered and Threatened Species. All 14 federally listed and candidate species were eliminated from further consideration because their known geographic ranges are distant from the project area and/or the project area does not contain habitat known to be necessary to support these species (Table 9).

State Special Status Species. The Arizona Game and Fish Department (AGFD) also maintains a statewide database, known as the Heritage Data Management System (HDMS), which tracks records for federally listed species or other species of special concern. AGFD searched this database for occurrence records of special status species within a five-mile radius of the WEWC service area. The AGFD response letter indicated that there are no records of any special status species within five miles of the project area (Appendix B).

(2) Sunrise

This 2,506-acre service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994). Approximately 25% of the service area is native desert, with the remainder consisting of residential neighborhood clusters that have been constructed or are planned for construction, and several commercial areas. The vegetation present in the natural undisturbed areas includes the following: creosotebush, blue paloverde, saguaro, triangle-leaf bursage, chainfruit cholla (*Opuntia fulgida*), and desert ironwood. New River is also located within the project area and the following vegetation was observed along the river: catclaw acacia (*Acacia greggii*), desert broom (*Baccharis sarothroides*), blue paloverde, desert willow (*Chilopsis linearis*), and burrobrush (*Hymenoclea salsola*). New River Dam is located about 1 mile upstream of the water service area. The New River is ephemeral within the project area, and about ¼ mile of the river has been channelized in the southernmost portion of the water service area. Protected native plants classified under the Arizona Native Plant Law (ARS §3-904) are also present in the project area.

Federally Endangered and Threatened Species. All 14 federally listed and candidate species were eliminated from further consideration because their known geographic ranges are distant from the project area and/or the project area does not contain habitat known to be necessary to support these species (Table 9).

State Special Status Species. AGFD searched the HDMS database for occurrence records of special status species within a three-mile radius of the Sunrise service area These species are the desert tortoise (*Gopherus agassisii*), California leaf-nosed bat (*Macrotus californicus*), and the cave myotis (*Myotis velifer*). No known occurrences are from within the service area proper. Although these species have status listings, these listings do not afford the species any statutory protection under the Endangered Species Act. A copy of the request letter and the AGFD response letter is included in Appendix B.

The Sonoran desert population of the desert tortoise is listed as a Wildlife of Special Concern in Arizona (WSCA) by the AGFD. They are found above the flats on rocky bajadas and hillsides. Because of the flat topography of the Sunrise service area and the fragmented nature of the remaining undisturbed desert, it is unlikely that this species is present.

The California leaf-nosed bat is listed as a WSCA by the AGFD. This bat is found primarily south of the Mogollon Plateau in Sonoran and Mohave desertscrub and occasionally in Chihuahuan and Great Basin desertscrub. Roost sites include mines, caves, and rock shelters. Foraging could occur over remnant desertscrub within the project area, but it is more likely that the species would be transient from roosting sites to larger patches of undisturbed desert habitat.

The cave myotis can be found south of the Mogollon Plateau from Lake Mohave, Burro Creek, Montezuma Well, the San Carlos Apache Reservation and the Chiricahua Mountains south to Mexico. It is predominantly found in desertscrub of creosote, brittlebush, paloverde and cacti, but sometimes up to pine-oak communities. Roosts include mines, caves, or rock shelters. As with the California leaf-nosed bat above, foraging could occur over remnant desertscrub within the project area, but it is more likely that the species would be transient from roosting sites to larger patches of undisturbed desert habitat.

(3) NRUC

This 1,077-acre service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994). Although there are some small vacant parcels scattered within the service area, the entire service area is essentially fully developed with the exception of a small portion of the New River corridor, which is located within the southern part of the water service area. The New River is ephemeral in the project area and has been channelized. The dominant vegetation species

present within natural undisturbed portions of the project area include the following: creosotebush, blue paloverde, desert broom, and velvet mesquite. The following vegetation was observed along New River: desert broom, blue paloverde, and singlewhorl burrobrush (*Hymenoclea monogyra*). Protected native plants classified under the Arizona Native Plant Law (ARS §3-904) are also present in the project area.

Federally Endangered and Threatened Species. All federally listed species and candidate endangered species (a total of 14 species) were eliminated from further consideration because their known geographic ranges are distant from the project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 9).

State Special Status Species. AGFD searched the HDMS database for occurrence records of the following special status species within a three-mile radius of the Sunrise service area: the Western burrowing owl (*Athene cunicularia hypugaea*), California leaf-nosed bat, and the cave myotis. No known occurrences are from within the service area proper.

Burrowing owls are associated with very sparse vegetation that allows long vistas over which danger can be detected. The best areas to observe these owls in Maricopa County are in the creosotebush-bursage associations adjacent to agricultural lands (Glinski 1998). Although we know of no records of the burrowing owl from the service area, it is possible that small, isolated populations may exist within the vicinity of the New River where habitat requirements are met and the soil substrate supports animal burrows suitable for nesting.

The two bats species are most likely transient over the service area, moving from roosts to suitable foraging areas and back.

(4) LPSCo

This 13,214-acre service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994). Only about 10% of the service area is undeveloped or undisturbed. The remaining portion consists of constructed (or planned) residential and commercial developments, golf courses and irrigated agriculture. The vegetation present in the undisturbed natural portions of the project area consists mainly of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. The dominant vegetation species present within the project area include the following: Creosotebush, velvet mesquite, and saltbush (*Atriplex* spp.). Protected native plants classified under the Arizona Native Plant Law (ARS §3-904) are also present in the project area.

Federally Endangered and Threatened Species. All federally listed and candidate species (a total of 14 species) were eliminated from further consideration because their known geographic ranges are distant from the project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 9).

State Special Status Species. TAGFD searched the HDMS database for occurrence records of special status species within a four-mile radius of the WEWC service area. The AGFD response letter indicated that there are no records of any special status species within four miles of the project area (Appendix B).

b. CAGRD

As discussed in section I.C., for purposes of this EA, CAGRD's project area includes those member service areas and member lands that are located within the Phoenix AMA. This area includes several ecological communities, but most of this region is within the Sonoran Desertscrub Biome as defined by Brown (1994). The majority of the lands within CAGRD's project area are, or will be, fully urbanized.

The AFRP is located within the Arizona upland subdivision of the Sonoran desertscrub biotic community, as defined by Brown (1994). This portion of the Agua Fria River and its floodplain contain xeroriparian vegetation. Hills and mountains are located to the west of the area. The HMRP is located within the lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community, as defined by Brown (1994). Most of the native desert vegetation has been disturbed in this area, but undisturbed portions contain upland and xeroriparian vegetation.

The areas utilized by both recharge facilities (at each location) were surveyed for biological resources prior to the time of construction and use. Local and federal organizations were also consulted to determine how these replenishment facilities would affect the environment and what could be done to minimize those effects. Through planning and mitigation, AFRP and HMRP were permitted and developed with appropriate mitigation completed for each project.

2. Environmental Consequences

a. No Action

(1) M&I Water Entitlement Holders

(a) WEWC

Continued groundwater pumping in the WEWC service area is not anticipated to affect local biological resources. There are no perennial streams, wetlands, riparian areas, or other special aquatic habitats in the service area that provide wildlife values which could

be impacted by a continued use of groundwater. Through eventual development in the area, there is a potential that the entire service area would be developed, resulting in the removal of between approximately 2,200 to 2,800 acres of Sonoran Desertscrub vegetation. The service area, however, does not contain any habitat for federally listed or candidate species, or any State special status species; therefore, none would be adversely affected under the No Action alternative. There would, however, be local loss of small mammals, reptiles, and avian habitat from more common species typically associated with Sonoran desertscrub vegetation. Arizona Department of Agriculture (ADA) protected native plants are located within the project area.

(b) Sunrise

Continued groundwater pumping in the Sunrise service area is not anticipated to affect local biological resources. There are no perennial streams, wetlands, riparian areas, or other special aquatic habitats in the service area that provide wildlife values that could be impacted by a continued use of groundwater. Through eventual development in the area, there is a potential that the entire service area would be developed, disturbing approximately 750 to 1,000 acres of undeveloped land indirectly under the No Action alternative, and vegetation removal would occur. The service area, however, does not contain any habitat for federally listed or candidate species, or any State special status species; therefore, none would be adversely affected under the No Action alternative. With regard to WSCA including the desert tortoise, California leaf-nosed bat, and the cave myotis, vegetation removal is not expected to significantly effect the foraging, breeding, or roosting activities of these species. There would, however, be local loss of small mammals, reptiles, and avian habitat from more common species typically associated with Sonoran desertscrub vegetation. ADA protected native plants are located within the project area.

(c) NRUC

Continued groundwater pumping in the NRUC service area is not anticipated to affect local biological resources. Although there is a small portion of the New River within the service area, this portion is ephemeral. Except for this small portion of the New River corridor, this entire service area has been developed (or construction is underway). The service area does not contain any habitat for federally listed or candidate, species; therefore, none would be adversely affected under the No Action alternative. ADA-protected native plants are located within the project area.

(d) LPSCo

Continued groundwater pumping in the LPSCo service area is not anticipated to affect local biological resources. There are no perennial streams, wetlands, riparian areas, or other special aquatic habitats in the service area that provide wildlife values that could be

impacted by a continued use of groundwater. Through eventual growth in the area, there is a potential that the entire service area would be developed, resulting in the removal of between approximately 1,300 to 3,300 acres of Sonoran Desertscrub vegetation under the No Action alternative. The service area, however, does not contain any habitat for federally listed or candidate species, or any WSCA. There would, however, be local loss of small mammals, reptiles, and avian habitat from more common species typically associated with Sonoran desertscrub vegetation. ADA-protected native plants are located within the project area.

(2) CAGRD

As provided under current Arizona statutes, CAGRD will continue to enroll new members under the No Action alternative.[12] Although CAGRD will not initiate any construction itself, new developments within new and existing member lands and member service areas will result in additional construction and ground disturbance in locations scattered throughout CAGRD's three-county service area.

Under the No Action alternative, the four water companies would continue to seek to transfer their CAP water entitlements to other entities; unless and until this occurred, the 7,746 afa of CAP water would be available for purchase as Excess CAP water. However, a possible occurrence under the No Action alternative is that the entitlements held by the four water companies could be transferred to one or more other water providers that are not members of the CAGRD, thereby increasing those providers' portfolios of renewable water supplies. With an increase of available renewable supplies, state law would allow additional development (i.e., construction and land disturbance) to occur within those water providers' service areas.

Operations of the AFRP and the HMRP recharge facilities would continue to occur under the No Action alternative. The facilities would not require any additional infrastructure or facilities to accommodate the water it receives or recharges under the No Action alternative. Therefore, no ground disturbance would occur. There would be no adverse effect to any species utilizing the area, including federally listed, candidate, or proposed endangered species.

[12] Current statutes do not allow CAGRD to deny enrollment of a member land or member service area if the applicant meets all of the qualifications listed in Arizona Revised Statutes Title 48, Chapter 22, Article 4.

b. Proposed Action

(1) M&I Water Entitlement Holders (WEWC, Sunrise, NRUC, and LPSCo)

Impacts to local biological resources or their water resources in each of the service areas from implementation of the Proposed Action would be the same as is described and anticipated to occur under the No Action alternative. There would be no additional environmental consequences to biological resources under the Proposed Action as compared to the No Action alternative. Each of the four water companies' CAP entitlements would be transferred to CAGRD and CAGRD would take possession of the water through the existing infrastructure. The proposed water transfers, therefore, would not result in any additional, transfer-related land disturbing or vegetation removal activities

(2) CAGRD

Impacts to local biological resources or their water resources from implementation of the Proposed Action would be the same as is described and anticipated to occur under the No Action alternative within the defined project area. There would be no additional environmental consequences to biological resources under the Proposed Action as compared to the No Action alternative. The Proposed Action would not result in the enrollment of more members in the CAGRD than would occur under the No Action alternative. CAP entitlements would be transferred to CAGRD and CAGRD would take possession of the water through existing infrastructure. Therefore the proposed water transfer would not result in any additional transfer-related land disturbing activities. In fact, the Proposed Action could result in less land-disturbing development on lands located outside of the defined project area. This would occur because, under the No Action alternative, the CAP entitlements proposed for transfer could be transferred to other water providers that do not serve member lands or member service areas of the CAGRD. With the increased availability of renewable water supplies, these water providers could prove an increased ability to serve new growth in their service areas under Arizona's existing AWS regulations.

E. Cultural Resources

1. Affected Environment/Existing Conditions

a. M&I Water Entitlement Holders

For each service area, SWCA Environmental Consultants, Inc. (SWCA) conducted a site file search in October 2003 (Appendix C). This search consisted of review of the AZSite online database that contains archaeological survey and site information from previous studies. Additionally, archaeological site files were examined at the Arizona State Historic Preservation Office (SHPO), the Arizona State Museum (ASM), Arizona State University (ASU), and the BLM Phoenix Area Office. The General Land Office (GLO) survey plat maps of the region,

which show historic roads and buildings, were examined at the BLM office in Phoenix. National, state, and local Register[s] of Historic Places were also checked for historic properties and districts.

(1) WEWC

The Class I site file search of this service area indicates seven archaeological sites have been previously identified within the WEWC service area: Three sites are considered eligible for inclusion on the National Register of Historic Places (NRHP); three are considered to be not eligible for inclusion on the NRHP, and the eligibility of one site, which is prehistoric in nature, is unknown. The General Land Office plat map indicates that within the service area there are two segments of historic roads (US 60 and US 89), a historic rail way line (the Santa Fe-Prescott-Phoenix Rail Road), and a telegraph line that is directly adjacent to the rail way line. Additionally, mapping from 1919 shows a "flag station" within the service area. Records show that 11 archaeological surveys have been conducted within this service area.

(2) Sunrise

The Class I site file search of this service area indicates 18 archaeological sites have been previously identified within the Sunrise service area: Two sites are considered eligible for inclusion on the NRHP; eight have been determined to be not eligible for inclusion on the NRHP; and the eligibility of eight sites is unknown. Of these 18 sites, 11 have been identified as "prehistoric" (see Appendix C). Records also indicated that nine archaeological surveys have been conducted within this service area. The New River Dam Archaeological District lies north of the Sunrise parcel. There are abundant resources for tool making and lithic production in the district. Records show that six archaeological surveys have been conducted within this service area.

Historically, several mining claim patents were issued on March 3, 1904, for areas just north of this water service area. As of 1916, several buildings were reported to exist atop and along the southern base of the Sunrise Mountains, including a dining room, cook house, bunk house, company office, store house, cyanide plant, assay office, water tank, and mill. Descriptions of historical findings include the identification of historic artifact scatters possibly associated with mining as well as a possible temporary mining camp with a possible trail to rock/wall alignments and enclosures.

(3) NRUC

The Class I site file search of this service area indicates seven archaeological sites have been previously identified within the 1,077-acre NRUC water service area; however all seven were recorded by avocational archaeologist Frank Midvale during the 1940s and 1950s and no information is available on these sites. Records also indicate that seven archaeological surveys have been conducted within the service area. No historic resources were identified as occurring within the service area.

(4) LPSCo

The Class I site file search of this service area indicates seven archaeological sites have been previously identified within the service area: Four of these sites are considered eligible for inclusion on the NRHP; one site is considered to be not eligible for inclusion on the NRHP; and the eligibility of two sites is unknown. Two sites have been identified as "prehistoric" and one site has been identified as both prehistoric and historic. Records also indicate that 23 archaeological surveys have been conducted.

b. CAGRD

Member Lands and Service Areas. CAGRD's project area (the member lands and member service areas within the Phoenix AMA) contains a variety of landscapes from highly urbanized to native desert. In spite of more than 100 years of often-intensive development, intact cultural resources are present beneath the veneer of twentieth-century urbanization. In rural areas where development has been less intrusive and perhaps more localized, the chances for finding intact, relatively undisturbed cultural resources are obviously greater.

2. Environmental Consequences

a. No Action

(1) M&I Water Entitlement Holders (WEWC, Sunrise, NRUC, LPSCo)

Under the No Action alternative, each water service company would continue to seek to transfer its CAP water entitlements to other entities and would continue to use its existing wells and distribution system to serve its respective water service area. It is anticipated undeveloped areas within each service area would be developed subject to the local jurisdiction's future planning and zoning decisions, and market conditions for private development. If cultural sites do exist, they may be impacted by such future development. Mitigation of cultural resources due to urban expansion would be determined by local jurisdictions and development of applicable permit requirements.

(2) CAGRD

Member Lands and Member Service Areas. There would be no new construction required in order for CAGRD to recharge the transferred CAP water entitlements.

CAGRD would continue to enroll new member lands and member service areas throughout its three-county service area as provided by State law. Development within existing member lands and member service areas would occur subject to the local jurisdiction's future planning and zoning decisions and market conditions for private development. If cultural sites do exist, they may be impacted by such future development. Mitigation of cultural resources due to urban expansion would be determined by local jurisdictions and compliance with applicable permit requirements. The 160 acres of State land located within the Sunrise water service area would need to be surveyed for cultural resources prior to sale for development.

Recharge Facilities. AFRP and HMRP operations into the future would not change and no additional infrastructure or facilities would be needed under the No Action alternative; therefore, no ground disturbance would occur. It is therefore expected that cultural resources, if present, would not be impacted. There would be no adverse effect to any archaeological or historic resources within the recharge areas.

b. Proposed Action

(1) M&I Water Entitlement Holders (WEWC, Sunrise, NRUC, and LPSCo)

Under the Proposed Action, currently undeveloped properties would be developed consistent with what is expected to occur under the No Action alternative. There would be no additional effect to archaeological sites or historic properties directly attributable to implementation of the Proposed Action.

(2) CAGRD

Under the Proposed Action, currently undeveloped properties within the three-county area would be developed consistent with what is expected to occur under the No Action alternative. There would be no additional effect to archaeological sites or historic properties directly attributable to implementation of the Proposed Action. The transferred CAP water would be delivered and used by CAGRD utilizing existing facilities; no new facilities would need to be constructed. Currently undeveloped properties that become members of CAGRD would be developed consistent with what is expected to occur under the No Action alternative and impacts to cultural resources would be the same as described under the No Action alternative.

F. Indian Trust Assets

1. Affected Environment/Existing Conditions

Indian Trust Assets (ITAs) are legal assets associated with rights or property held in trust by the United States for the benefit of federally recognized Indian Tribes or individuals. The United States is responsible for protecting and maintaining rights reserved by, or granted to, Indian Tribes or individuals by treaties, statutes, and executive orders. ITAs include property in which a Tribe has legal interest. While most ITAs are located on a reservation, they can also be located off-reservation. Examples of ITAs include lands, minerals, water rights, and hunting and fishing rights. Tribal lands within the general project area include the Salt River Pima Maricopa Indian Community (SRPMIC) and the Gila River Indian Community.

a. M&I Water Entitlement Holders

(1) WEWC

There are no tribal lands within several miles of this service area; however, two tribal lands are located within a reasonably close proximity; they are the SRPMIC and the Gila River

Indian Community. The Gila River Indian Community is the closest reservation located approximately 28 miles southeast of the WEWC service area boundary. The SRPMIC is located approximately 37.5 miles east of the service area. No ITAs have been identified during the cultural resource site file search conducted on this service area as being located within the WEWC service area.

(2) Sunrise

There are no tribal lands within several miles of this service area however, two tribal lands are located within a reasonably close proximity to the metropolitan Phoenix area; they are the SRPMIC and the Gila River Indian Community. The Gila River Indian Community and SRPMIC are both located approximately 21 miles from the Sunrise service area. No ITAs have been identified as being located within the Sunrise service area.

(3) NRUC

There are no tribal lands within several miles of this service area, however two tribal lands are located within a reasonably close proximity to the metropolitan Phoenix area; they are the SRPMIC and the Gila River Indian Community. The Gila River Indian Community is the closest reservation located approximately 18 miles southwest of the NRUC service area boundary. The SRPMIC is located approximately 20.5 miles east of this service area. No ITAs have been identified as being located within the NRUC service area during the site file search conducted on this service area.

(4) LPSCo

There are no tribal lands within several miles of this service area. However, two tribal lands are located within a reasonably close proximity to the metropolitan Phoenix area. They are the SRPMIC and the Gila River Indian Community. The Gila River Indian Community is the closest reservation located approximately 6 miles south of the LPSCo service area boundary. The SRPMIC is located approximately 24 miles east of this service area. No ITAs were identified as being located within the LPSCo service area during the cultural resource work conducted for this service area.

b. CAGRD

By law, CAGRD member lands and member service areas cannot be located on tribal lands; however, there are portions of three tribal communities located within the boundaries of the Phoenix AMA. These are the SRPMIC, the Gila River Indian Community and the Fort McDowell Indian Community.

There are no tribal lands within several miles of the two recharge facilities, however, two tribal communities are located within a reasonable distance. These are the SRPMIC and the Gila River Indian Community. The SRPMIC is located approximately 28 and 34 miles away from the

AFRP and HMRP, respectively. The Gila River Indian Community is located approximately 29 and 27 miles away from the AFRP and HMRP, respectively. These recharge facilities are already constructed. ITAs were considered prior to the construction of the HMRP as part of Reclamation's NEPA process; however, there was no Federal nexus to the construction of AFRP, thus impacts to ITAs were not required to be considered.

2. Environmental Consequences

a. No Action

(1) M&I Water Entitlement Holders (WEWC, Sunrise, NRUC, and LPSCo)

Under the No Action alternative, WEWC, Sunrise, NRUC, and LPSCo would not utilize their CAP entitlements and would continue to seek to transfer them to other entities. Since there are undeveloped areas within each of their service areas, future development and ground disturbance could occur. Due to the fact that there are no known ITAs identified and the two Tribes closest to these service areas have not raised any ITA issues, it is unlikely that ITAs would be impacted or that the No Action alternative would affect any known resources that could potentially be related to ITAs.

(2) CAGRD

Under the No Action alternative, CAGRD would not receive any of the four water companies' CAP entitlements. However, prior to the date when the water companies successfully transfer their entitlements to other entities, the 7,746 afa of CAP water would be available for purchase as Excess CAP water. Both recharge areas, AFRP and HMRP, would continue to operate within their existing footprint with no new land disturbance. These areas will have no further development, therefore, it is not expected that ITAs would be impacted.

As discussed in Section II above, CAGRD will pursue acquisition of short and long-term rights to water supplies to broaden and diversify its water supply portfolio in order to meet its replenishment obligations. One potential water supply that CAGRD may seek to acquire is CAP Indian priority water through one or more lease arrangements with tribal communities that hold such entitlements. CAP water made available through such a lease arrangement would be considered use of an ITA, but it would be used only with the approval and concurrence of the impacted tribe(s), which would result in a financial benefit to the tribe(s).

b. Proposed Action

(1) M&I Water Entitlement Holders

No land disturbing activities would occur with implementation of the Proposed Action. Impacts to ITAs from implementation of the Proposed Action would be the same as is described and anticipated to occur under the No Action alternative. There would be no additional effect to ITAs directly attributable to implementation of the Proposed Action.

(2) CAGRD

Under the Proposed Action alternative, CAGRD would receive the four water providers' CAP entitlements. Both recharge areas, AFRP and HMRP, would continue to operate within their existing footprint with no new land disturbance. These areas would not have any further development. Impacts to ITAs from implementation of the Proposed Action would be the same as is described and anticipated to occur under the No Action alternative, except possibly with respect to leases of tribal CAP water. It is possible that the annual volume leased from the tribes by CAGRD would be less under the Proposed Action than it would under the No Action alternative. Therefore, the magnitude of the impacts to ITAs could be less under the Proposed Action. However, under both alternatives, ITAs would only be used with the approval and concurrence of the impacted tribe(s), which would benefit financially.

IV. SELECTED RELATED ENVIRONMENTAL LAWS/DIRECTIVES

The following is a summary of selected Federal laws, regulations and Executive Orders that provide information relevant to this EA.

A. National Environmental Policy Act of 1969, as amended (NEPA) (P.L. 91-190)

This law requires Federal agencies to evaluate the potential environmental consequences of major Federal actions. NEPA also requires full public disclosure about the proposed action, accompanying alternatives, impacts, and mitigation.

This EA was prepared in accordance with the requirements of NEPA. Reclamation initiated a 30-day public scoping comment period with distribution of a scoping mailer on October 29, 2003, to over 100 entities. One comment letter was received; relevant issues identified in that letter have been addressed in this EA. Although a substantial amount of time has elapsed between the scoping period and issuance of this draft EA, the relevant conditions and policies have not changed; therefore, Reclamation believes another scoping period is not necessary.

B. Fish and Wildlife Coordination Act (FWCA) (P.L. 85-624)

This Act requires coordination with Federal and state wildlife agencies (FWS and AGFD) for the purpose of mitigating project-caused losses to wildlife resources from water development projects. This proposed project would not impound or divert surface waters in any of the service areas. Reclamation believes the consultation requirements of NEPA and the ESA are sufficient to also meet the requirements for consultation under the Fish and Wildlife Coordination Act. The FWS will receive a copy of the draft EA for review and comment.

C. Endangered Species Act of 1973 (P.L. 93-205)

Section 7 of the ESA requires Federal agencies to consult with the FWS to ensure that undertaking, funding, permitting, or authorizing an action is not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. There are no federally listed or candidate species or critical habitat that would be adversely affected by the proposed project.

D. Wild and Scenic Rivers Act of 1968 (P.L. 90-542)

This Act designated the initial components of the National Wild and Scenic River System, and established procedures for including other rivers or reaches of rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and preserving them in a free-flowing condition. There are no rivers designated or proposed for designation as wild or scenic within or near the project area.

E. Wilderness Act of 1964 (P.L. 88-577, as amended)

This Act established the National Wilderness Preservation System to preserve certain Federal lands for the public purposes of recreation, scenic, scientific, educational, conservation, and historical use

by current and future generations of Americans. There are no areas designated or proposed for designation as wilderness areas within or near the project area.

F. Clean Water Act (P.L. 92-500, as amended) (CWA)

The CWA strives to restore and maintain the chemical, physical, and biological integrity of the nation's waters by controlling discharge of pollutants. The basic means to achieve the goals of the CWA is through a system of water quality standards, discharge limitations, and permits. Section 404 of the CWA identifies conditions under which a permit is required for actions that result in placement of fill or dredged material into waters of the United States (U.S.). In addition, a 401 water certification and 402 National Pollutant Discharge Elimination System permit are required for activities that discharge pollutants to waters of the U.S. There would be no construction directly related to the proposed action that would require either a Clean Water Act 402 or 404 permit. Since these permits are not limited to Federal projects, private developers would be required to obtain any applicable permits under the Clean Water Act for their projects.

G. National Historic Preservation Act (P.L. 89-665)

This Act establishes as Federal policy the protection of historic sites and values in cooperation with States, tribes, and local governments. Because the proposed project does not involve land disturbing activities, it does not have the potential to cause effects to historic properties. The State Historic Preservation Office concurs with this determination (personal communication, Ms. Joanne Medley, March 21, 2007).

The following tribes were each sent a copy of the scoping mailer regarding the proposed action on October 29, 2003: Hopi Tribe, Yavapai Prescott Indian Tribe, Salt River Pima-Maricopa Indian Community, Ak-Chin Indian Community, Tohono O'odham Nation, Gila River Indian Community, Fort McDowell Yavapai Nation, and Yavapai Apache Community Council. No comments were received from any of these tribes. Each tribe is also being provided a copy of the draft EA. Consultation with appropriate tribes and the Bureau of Indian Affairs would be undertaken should any of the tribes indicate a concern regarding effects to traditional cultural properties.

H. Farmland Protection Policy Act (P.L. 97-98)

This Act requires identification of proposed actions that would adversely affect any lands classified as prime and unique farmlands, to minimize the unnecessary and irreversible conversion of farmland to nonagricultural uses. The U.S. Department of Agriculture's Natural Resources and Conservation Service administers this Act. The proposed action would not directly impact any lands classified as prime and unique farmlands. Agricultural land within the water service areas, some of which is classified as prime and unique, would continue to be developed based upon the demand for residential and commercial development and market conditions. It is anticipated the development patterns would be the same under either the No Action alternative or Proposed Action.

I. Executive Order 11988 (Floodplain Management)

This Presidential directive encourages Federal agencies to avoid, where practicable alternatives exist, the short- and long-term adverse impacts associated with floodplain development. Federal agencies are required to reduce the risk of flood loss, minimize the impacts of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains in carrying out agency responsibility. The Sunrise and NRUC water service areas contain small portions of the New River floodplain, and the eastern boundary of the LPSCo water service area abuts the Agua Fria River floodplain. The Proposed Action does not directly affect any floodplains.

J. Executive Order 12898 (Environmental Justice)

Executive Order 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of Federal actions on minority populations and low-income populations. Low-income populations include communities or individuals living in close geographic proximity to one another, identified by U.S. Census Bureau statistical thresholds for poverty. Minority populations are identified where the percentage of minorities in the affected area exceeds 50 percent, or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage of a much broader area. Neither of these conditions exists within either Maricopa County or the water service areas of the four water companies. No disproportionately high and adverse human health or environmental effects on minority populations and low-income populations would result from the proposed project.

K. Executive Order 11990 (Wetlands)

Executive Order 11990 requires Federal agencies, in carrying out their land management responsibilities, to take action that will minimize the destruction, loss, or degradation of wetlands, and take action to preserve and enhance the natural and beneficial values of wetlands. There are no wetlands in the project area that would be affected.

L. Department of Interior, Secretarial Order, Indian Trust Assets (ITAs)

ITAs are legal interests in assets held in trust by the U.S. Government for Indian tribes or individual Indians. These assets can be real property or intangible rights, including lands, minerals, water rights, hunting rights, money, and other natural resources. The trust responsibility requires that all Federal agencies take actions reasonably necessary to protect ITAs. No ITAs are currently known to be present within the project area or that could be affected by implementation of the proposed action.

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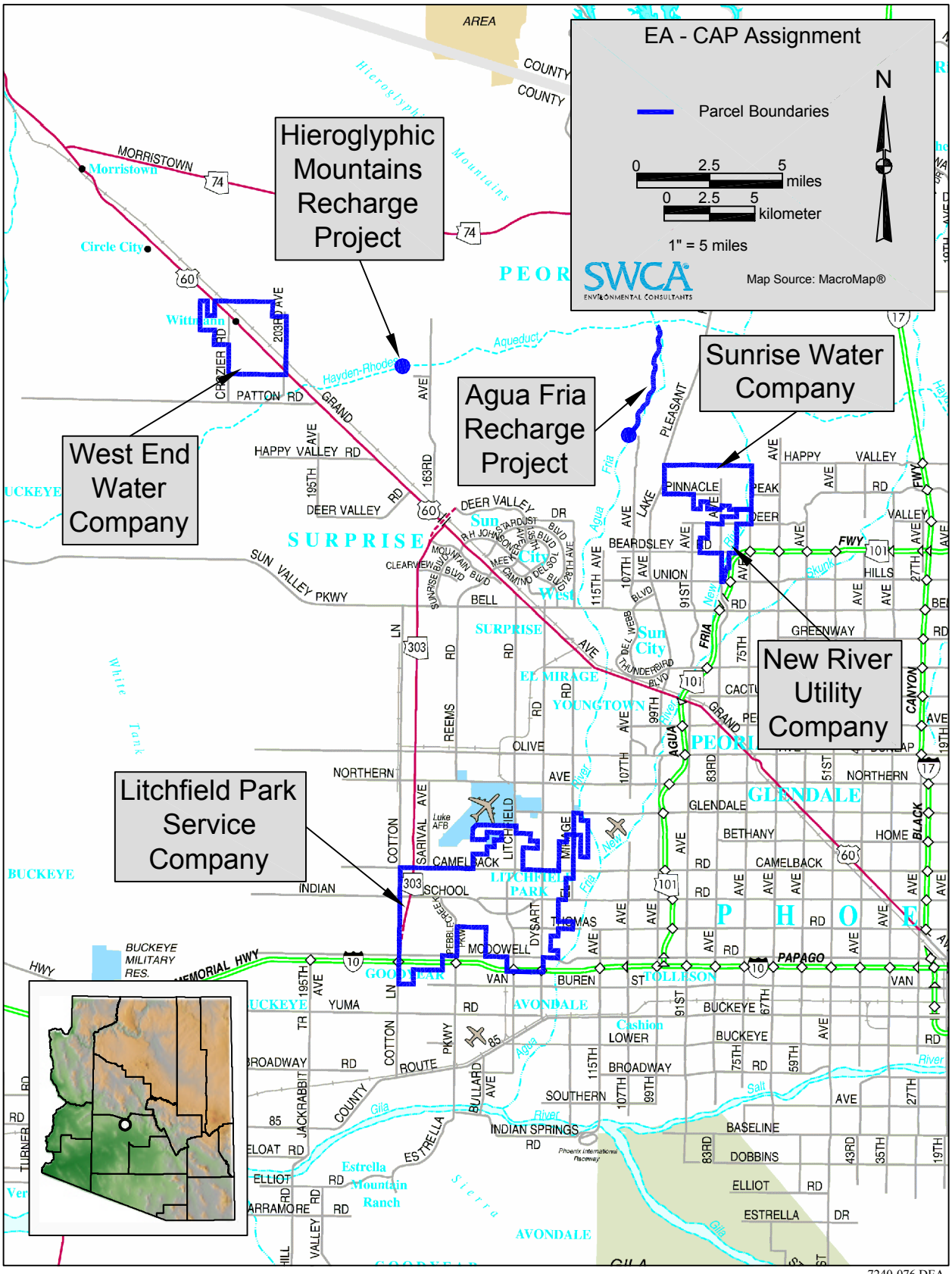

7240-076 DEA

Figure 1. Service Areas Of All Five Entities Involved In Proposed CAP Assignment.

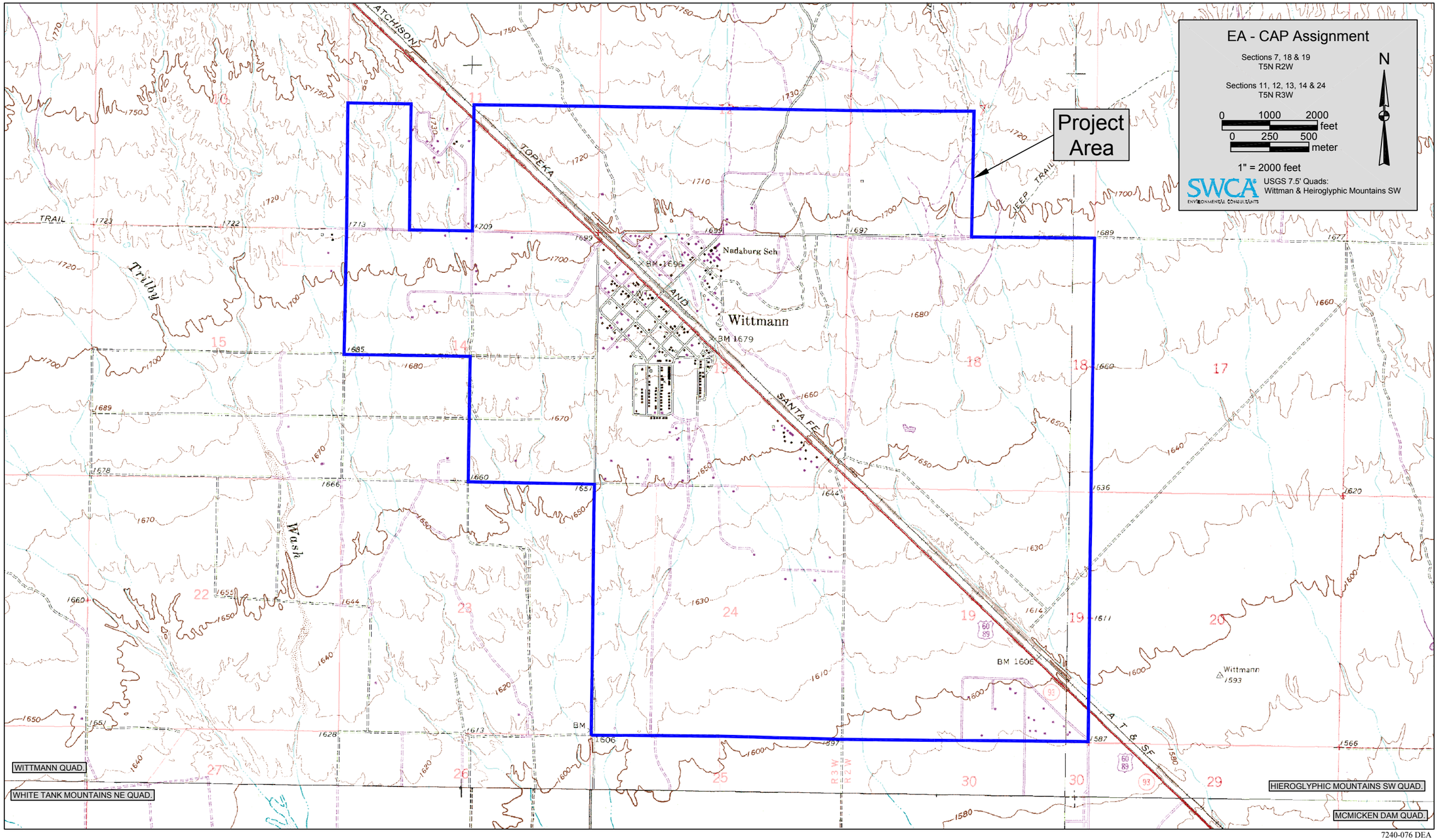

Figure 2. West End Water Company Service Area.

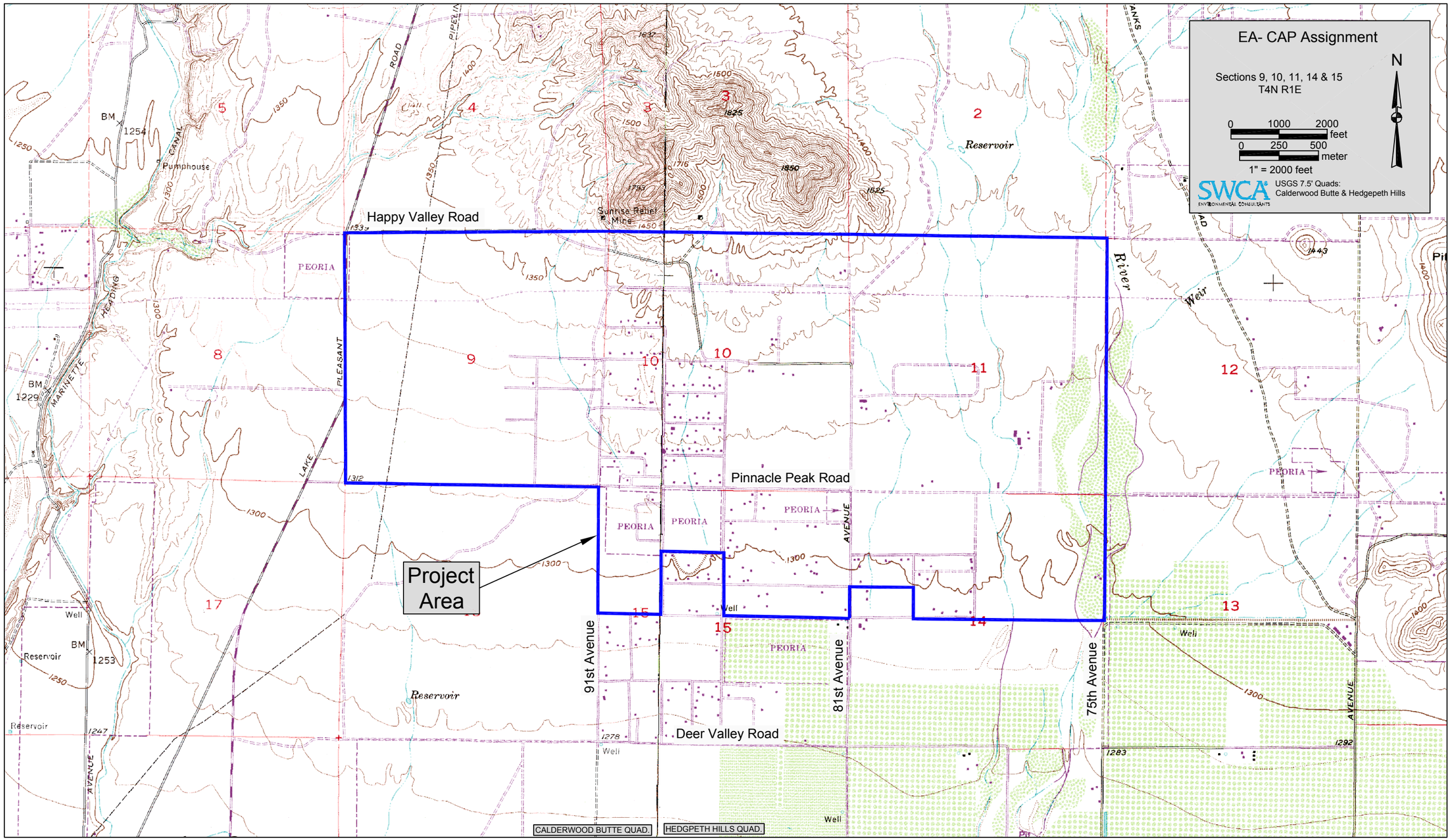

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Figure 3. Sunrise Water Company Service Area.

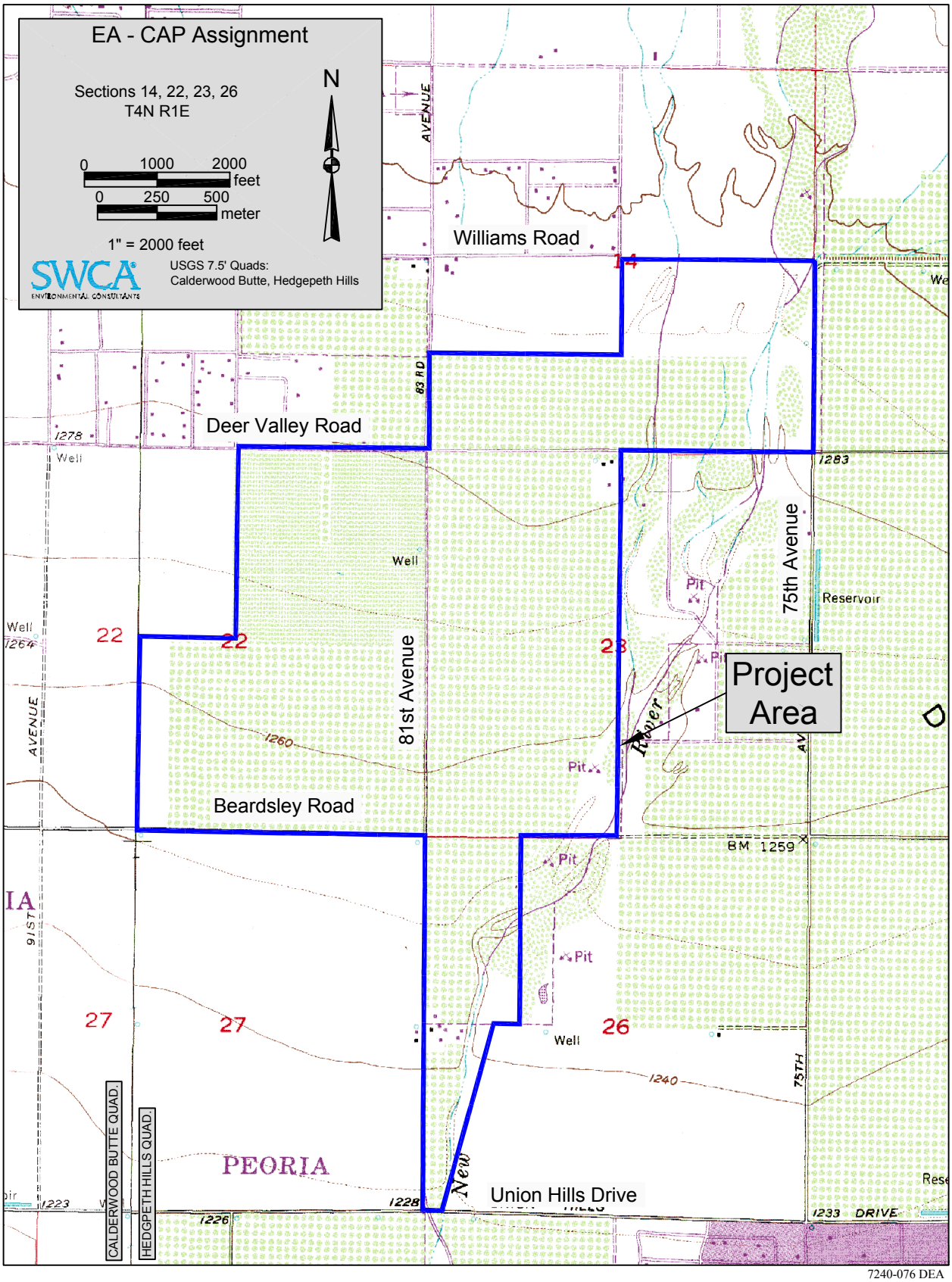

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Figure 4. New River Utility Company Service Area.

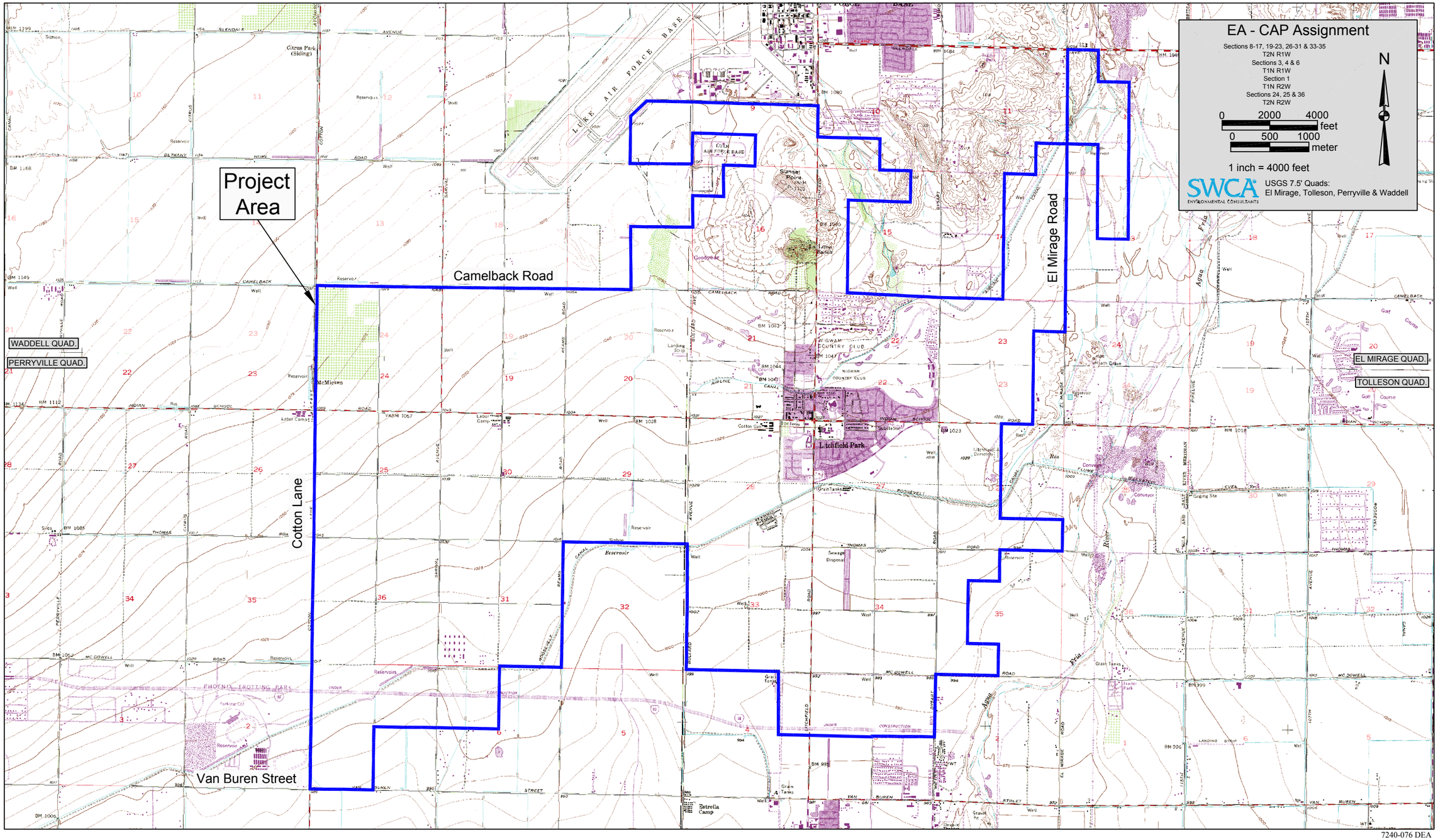

Figure 5. Litchfield Park Service Company Service Area.

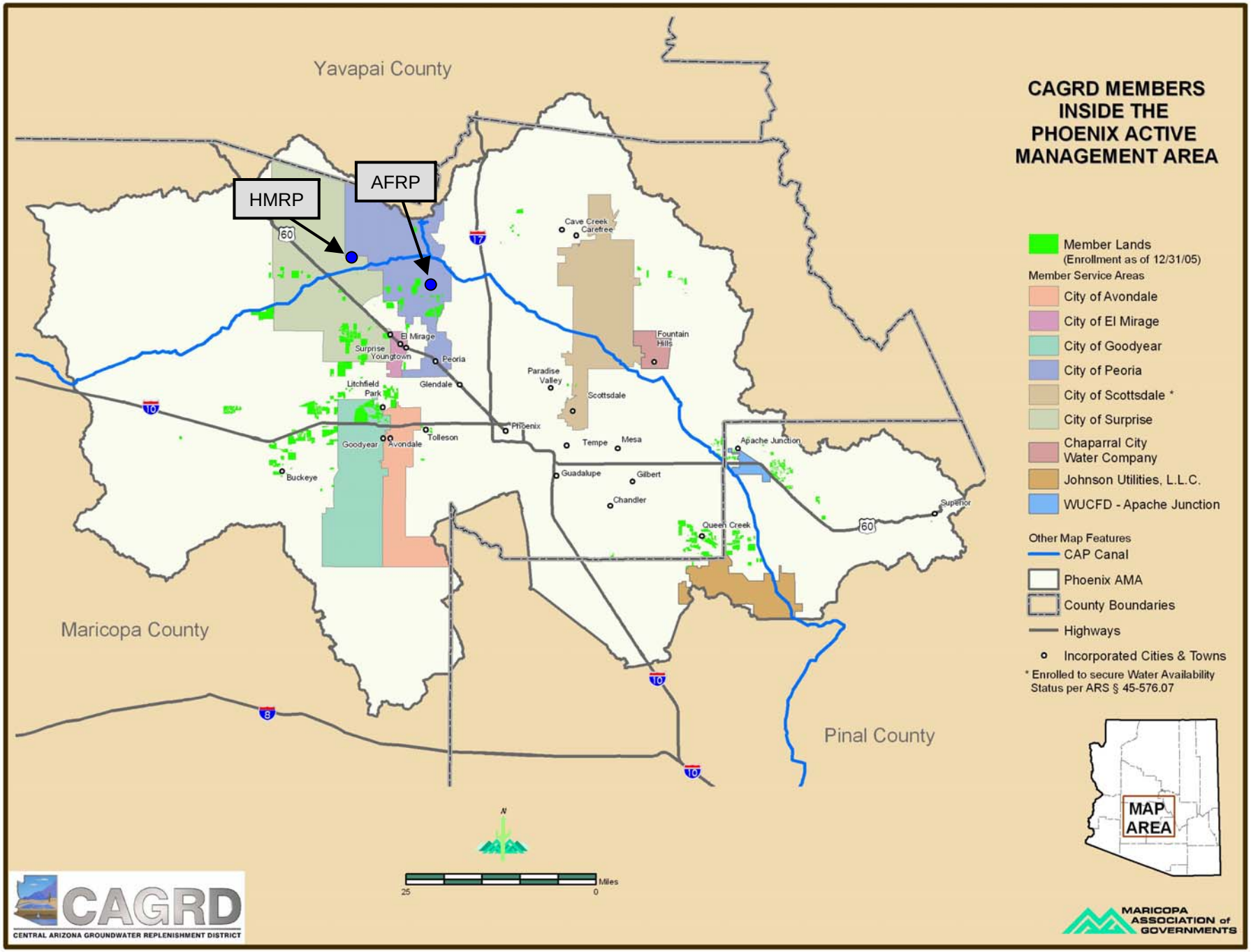

Figure 6: Phoenix AMA, Including CAGRD Members, HMRP and AFRP

APPENDIX A

ADWR CORRESPONDENCE RELATED TO TRANSFER EVALUATIONS

ARIZONA DEPARTMENT OF WATER RESOURCES
Colorado River Management Section
500 North Third Street, Phoenix, Arizona 85004-3903
Telephone 602 - 417-2442
Fax 602 - 417-2424

JANE DEE HULL
Governor

JOSEPH C. SMITH
Director

June 10, 2002

RECEIVED
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REPLENISHMENT DIST

Mr. J.D. Campbell
West End Water Company
9098 W. Pinnacle Peak Road
Peoria, Arizona 85382

RE: Preliminary Recommendation for the Transfer of West End Water Company's (West End) Central Arizona Project (CAP) Subcontract to the Central Arizona Groundwater Replenishment District (CAGRD)

Dear Mr. Campbell:

Attached is a copy of the Arizona Department of Water Resources' (Department) evaluation of the proposed transfer of the West End's CAP subcontract to the CAGRD. The Department applied its CAP transfer policy to the proposed action to determine the preliminary transfer recommendation that is presented at the conclusion of the document. The Department will issue its final recommendation after the Department and all other parties have reviewed and approved the final subcontract and supporting documents.

Please review the attached analysis and recommendation. If you have any comments, please provide them to the Department.

If you have any questions, please contact me at 602-417-2442.

Sincerely,

Tricia McCraw

Tricia McCraw
Environmental Program Planner

Enclosure

c: Greg Wallace, Assistant Director, ADWR
Jan Ronald, Attorney, ADWR
Tom Delgado, Attorney, CAP
Cliff Neal, CAGRD

Evaluation of the Transfer of West End Water Company's Central Arizona Project Allocation

I. Background

In February 2000, New River Utilities (New River), Sunrise Water Company (Sunrise) and West End Water Company (West End) initiated the process to transfer their Central Arizona Project (CAP) allocations to the Central Arizona Groundwater Replenishment District (CAGRD). Included in the proposed transfer are 1,885 acre-feet from New River, 944 acre-feet from Sunrise and 157 acre-feet from West End.

Following the public notification period for the transfer, the Town of Carefree (Carefree) and Arizona Water Company (AWC), on behalf of its Apache Junction and White Tanks water systems, requested that they be considered during the evaluation.

In accordance with the Section IV of the Decision Guidelines of the Department's 1996 CAP transfer policy, the applicants were evaluated according to the priorities that applied to them. Upon review of each applicant's request and the supporting information that they supplied to the Department, the applicant's various water demands were evaluated using the priority 2, 4 and 5 criteria.

Because it proposed to recharge the entire 2,986 acre-feet of CAP water at the Aqua Fria Recharge Project facility (AFRP), the CAGRD requested consideration under priority 2. To determine whether the CAGRD qualified for recommendation under this priority for one or more entities, the Department had to determine if recharge at the AFRP could physically replace the groundwater that would continue to be withdrawn from each entity's service area. Utilizing two groundwater flow models it was determined that the AFRP would assist in mitigating some of the projected groundwater decline. However, it was determined that the recharge facility was limited to physically replacing pumped groundwater within approximately a 6-mile radius of the facility. The Sunrise, New River and West End service areas are located 1.5, 3.5 and 13 miles from the facility, respectively. Therefore, recharge at the facility could directly offset groundwater withdrawals within New River and Sunrise's service areas but not groundwater pumping within West End's service area.

As a result of the evaluation, the CAGRD qualified to have New River and Sunrise's entire CAP entitlement (2,829 acre-feet, total) transferred to it under priority 2. It did not qualify for West End's 157 acre-feet, so the transfer of West End's entitlement was further evaluated according to subsequent priority criteria.

Upon conclusion of this portion of the evaluation, it was determined that Carefree qualified to receive 100 acre-feet of West End's entitlement under priority 4 and AWC-White Tanks qualified for the remaining 57 acre-feet under priority 5.

West End then requested that the transfer action associated with its entitlement be rescinded to enable it to further evaluate its options. The CAP supported this request. As a result, further action regarding the proposed transfer of West End's entitlement was suspended.

II. Introduction

On April 8, 2002, the Department received a request from West End to reinitiate the evaluation of the transfer of West End's CAP allocation to the CAGRD. In conjunction with the request, the CAGRD submitted a revised replenishment plan which proposes to acquire West End's 157 acre-feet allocation and recharge the water in the Hieroglyphic Mountains Recharge Project (HMRP).

III. Evaluation of the Proposed Transfer

The HMRP is located approximately five miles east of the center of West End's service area. The HMRP is permitted to recharge up to 35,000 acre-feet of CAP water annually. Using the Theis equation, Hydrology calculated that the potential water level rise near the center of West End's service area after 10 and 20 years of recharging 35,000 acre-feet/year at the HMRP. The calculated water level rise is predicted to be 12.5 feet following 10 years of recharge and 23.8 feet after 20 years.

IV. Conclusion

The Hydrology staff concluded that the operation of the HMRP would likely raise groundwater levels within the area of hydrologic impact associated with West End. Therefore, the CAGRD's replenishment of the 157 acre-feet CAP allocation at the HMRP would serve to offset West End's groundwater withdrawals. As a result, the CAGRD qualifies to have West End's 157 acre-feet CAP subcontract transferred to it in accordance with priority 2 of the Department's transfer policy.

ARIZONA DEPARTMENT OF WATER RESOURCES
Colorado River Management Section
500 North Third Street, Phoenix, Arizona 85004-3903
Telephone 602 - 417-2442
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JANE DEE HULL
Governor

RITA PEARSON MAGUIRE
Director

November 20, 2000

Mr. Cliff Neal
Central Arizona Groundwater Replenishment District
23636 North Seventh Street
Phoenix, Arizona 85080-3020

RE: Preliminary Recommendation for the Transfer of the New River Utility Company (New River), Sunrise Water Company (Sunrise) and West End Water Company (West End) Central Arizona Project (CAP) Subcontracts

Dear Mr. Neal:

Attached is a copy of the Arizona Department of Water Resources' (Department) evaluation of the proposed transfer of the New River, Sunrise and West End CAP subcontracts. The Department applied its CAP transfer policy to the proposed action to determine the preliminary transfer recommendation that is presented at the conclusion of the document.

Please review the attached analysis and recommendation. If you have any comments, please provide them to the Department no later than Friday, December 8, 2000.

If you have any questions, please contact me at 602-417-2442.

Sincerely,

Tricia McCraw

Tricia McCraw
Water Resource Specialist

Enclosure

c: Rita Pearson Maguire, Director, ADWR
Jan Ronald, Attorney, ADWR
Tom Delgado, Attorney, CAP

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Arizona Department of Water Resources
Colorado River Management Section

Evaluation of the Transfer of Central Arizona Project Allocations From New River Utility, Sunrise and West End Water Companies

I. Introduction

In February 2000, New River Utilities (New River), Sunrise Water Company (Sunrise) and West End Water Company (West End) initiated the process to transfer their Central Arizona Project (CAP) allocations to the Central Arizona Groundwater Replenishment District (CAGRD). Included in the proposed transfer are 1,885 acre-feet from New River, 944 acre-feet from Sunrise and 157 acre-feet from West End.

Following the public notification period for the transfer, the Town of Carefree (Carefree) and Arizona Water Company (AWC), on behalf of its Apache Junction and White Tanks water systems, requested that they be considered during the evaluation process. A summary of the CAGRD's request and Carefree's and AWC's subsequent requests is presented in Table 1.

Table 1. Summary of Proposed CAP Transfer Comments

Entity	Comments
CAGRD	• Requests that 2,986 acre-feet be transferred to it for replenishing withdrawals • Transfer of entitlements will create replenishment obligations for CAGRD. Current obligations: - 5 subdivisions enrolled as member lands within New River service area, replenishment obligation at build-out is 1,804 acre-feet - 6 subdivisions enrolled as member lands within Sunrise service area, replenishment obligation at build-out is 172 acre-feet • Will replenish groundwater withdrawals within area of hydrologic impact at the Aqua Fria Recharge Facility • If an entity will eventually relieve the CAGRD of its replenishment obligation for members within a transferring entity's service area, the CAGRD will transfer the entitlement to that entity
AWC	• White Tanks System - quality of groundwater affects ability of AWC to meet future demands - will need additional supplies to meet future demand • Apache Junction System - need additional supplies to meet demand beyond 2000 - transfer will accelerate direct use of CAP water
Carefree	• Requests that ADWR assist the Town in obtaining 1,000 acre-feet to meet current, committed and projected M&I demand

II. Evaluation of Relative Water Demands Using Section IV. Decision Guidelines

In accordance with the Section IV. Decision Guidelines of the Department's 1996 CAP transfer policy, the applicants were evaluated according to the priorities that applied to them. Upon review of each applicant's request and the supporting information that they supplied to the Department, the applicant's various water demands were evaluated using the priority 2, 4 and 5 criteria.

A. Priority 1 and 2 Analyses

1. Description of Priorities

a. Priority 1

First priority is "recommended to entities that are successors in interest to a water provider and that will provide water to the same service area".

b. Priority 2

Second priority is "recommended either to: 1) a municipality which can provide substantive evidence that it will be the successor in interest to a transferring entity and will provide water to the same service area, or 2) an entity, including the CAGRD or a county augmentation district, which will use the CAP water to replenish in the area of hydrologic impact of groundwater withdrawals of the transferring entity or to deliver water for direct use by the transferring entities' customers".

2. Applicant Claims

a. Priority 1

Representatives for West End submitted comments suggesting that the proposed transfer of the CAP allocations to the CAGRD should constitute a priority 1 transfer because the allocations will continue to be available to the original service areas. Even though the CAGRD would not be a successor in interest to a water provider, its intention "to allow the transferring entity to reacquire the allocation at a later date" should make it eligible for consideration under this priority.

The Department's CAP transfer policy was developed through public process. As the policy was being developed, many of the participants, particularly the larger cities, indicated that they did not want the CAGRD to be eligible to acquire CAP allocations. As a compromise, the CAGRD is only eligible for consideration under priorities 2, 4 and 7 of the transfer policy.

b. Priority 2

Because it will be recharging the entire 2,980 acre-feet of CAP water at the Aqua Fria Recharge Project facility (AFRP), the CAGRD requested consideration under priority 2.

To determine whether the CAGRD qualified for recommendation under this priority for one or more entities, the Department had to determine if recharge at the AFRP could physically replace the groundwater that would continue to be withdrawn from each entity's service area. To accomplish this, the Department's Hydrology Division (Hydrology) utilized two groundwater flow models to assess the effect the AFRP may potentially have on groundwater supplies available to the New River, Sunrise and West End service areas. Both models are based on the Salt River Valley groundwater flow model constructed by the Department (Department Modeling Report Numbers 6 and 8).

The results from the two models indicate that, as water demands increase in the West Salt River Valley, the AFRP will assist in mitigating some of the projected groundwater decline. However, the recharge facility is limited to physically replacing pumped groundwater within approximately a 6-mile radius of the facility. The Sunrise, New River and West End service areas are located 1.5, 3.5 and 13 miles from the facility, respectively. Therefore, recharge at the facility could directly offset groundwater withdrawals within New River and Sunrise's service areas. West End, on the other hand, may receive indirect benefits from the recharge activities at AFRP, but its groundwater withdrawals would not be directly offset.

The CAGRD and West End representatives have requested that the Department consider two other proposed recharge facilities that could serve as potential replenishment sites for West End. The first is a proposed demonstration project that would be located within 3 miles of West End's service area. The CAWCD has performed feasibility studies on the site. The second project is nearing completion of the permit process. West Maricopa Combine (WMC) recently resubmitted an application to the Department for a managed underground storage facility permit in the Hassayampa River basin. The application has been circulated for public notice and is currently protested. Hearings are scheduled for the project in December.

When evaluating proposed recharge facilities in association with CAP transfers, the Department has to be provided with a high level of certainty that a recharge facility will meet all regulatory requirements and be permitted and constructed within a reasonable timeframe. To ensure that a reasonable level of certainty is maintained, the Department has determined that it will only consider proposed recharge facilities that are in the final stage of the permit process. The AFRP and the WMC project meet this criterion, while the state demonstration project does not. Therefore, the state demonstration project could not be considered as a potential recharge site for West End's CAP allocation.

Despite its current protested status, Hydrology conducted a preliminary evaluation of the WMC project as a potential recharge site for West End. Unfortunately, similar to the AFRP, West End's service area is located a substantial distance from the proposed recharge facility location. The preliminary evaluation indicates that the facility could potentially offset groundwater withdrawals within an approximate 3 to 6 mile radius of the facility. West End's service area is located more than 12 miles from the recharge project, thus eliminating the facility from consideration as a potential recharge facility under priority 2 of the transfer criteria.

3. Summary of Priority 2 Recommendations

The CAGRD qualifies to have all of New River's and Sunrise's CAP entitlement transferred to it under this priority. As a result, 2,829 acre-feet are recommended for transfer to the CAGRD while West End's 157 acre-feet remain to be allocated according to subsequent priority criteria.

B. Priority 4 Analysis

1. Description of Priority

Under this priority, "fourth priority will be given to those entities in the same AMA which can demonstrate the need for additional water supplies to meet the current and committed water demand, or the committed replenishment obligation for the transferring entity".

2. Applicants Evaluated

a. Carefree

Carefree does not have sufficient water supplies to meet its current and committed demand. The Town is currently in the process of having 900 acre-feet transferred to it to meet this water supply deficit. The estimated long-term deficit is projected to range from 267 to 1,016 acre-feet (Department's 1995 report titled "Physical Availability of Groundwater in the Cave Creek/Carefree Area"). Assuming the high end of the deficit range and deducting the CAP supplies that are already being transferred to Carefree, Carefree's current and committed demand is approximately 116 acre-feet in excess of its water supply. Carefree has requested that the Department assist it in acquiring 1,000 acre-feet of CAP supplies. Since it is already in the process of obtaining 900 acre-feet, Carefree qualifies to receive 100 acre-feet of West End's allocation.

b. AWC

AWC's Apache Junction and White Tanks systems have enough CAP and/or groundwater supplies to meet current and committed M&I demand. Therefore, AWC does not qualify for evaluation under this priority.

c. CAGRD

The CAGRD does not have any replenishment obligation for the current or committed development within West End's service area. Therefore, the CAGRD does not qualify for evaluation under this priority.

C. Priority 5 Analysis

1. Description of Priority

According to this priority, "fifth priority will be given to entities within the same AMA which can demonstrate the need for additional assured water supplies in excess of current, and committed demand to meet the annual projected water demand in the twentieth year from the date of the application for the CAP transfer, if before the year 2035".

2. Applicants Evaluated

Under this priority, AWC's Apache Junction and White Tanks systems qualify to be considered for the remaining 57 acre-feet of West End's CAP allocation.

The projected 2020 populations and 1998 actual gpcd's were used to determine the 2020 demand for each entity (Table 2).

Table 2. Populations and Projected Supplies, Demand and Deficit

Applicant	2020 population	GPCD[1]	2020 Demand (AF)	Dependable Supplies	Supply Deficit	Pro rata Distribution (%)
AWC: AJ	44,202	277	13,715	6,000	7,715	>99
AWC: White Tanks	5,146	179	1,032	968	64	<1

[1] Represent 1998 actual GPCD figures

According to the information presented in Table 2, the Apache Junction system qualifies to have the remaining 57 acre-feet of West End's CAP allocation transferred to it.

III. Conclusions and Recommendations

The CAP subcontracts for Sunrise, New River and West End can be allocated to applicants in accordance with the criteria associated with priority 2 through 5 of the Department's CAP transfer policy.

Table 3 presents the final recommended CAP transfer results for New River, Sunrise and West End water companies.

Table 3. Transfer Recommendations for CAP Allocations

Applicant	Priority 2	Priority 4	Priority 5	Total
AWC: Apache Junction			57	57
AWC: White Tanks				
Carefree		100		100
CAGRD	2,829			2,829
Total	2,829	100	57	2,986

ARIZONA DEPARTMENT OF WATER RESOURCES

Colorado River Management Section
500 North Third Street, Phoenix, Arizona 85004
Telephone 602 - 417-2442
Fax 602 - 417-2424

JANET NAPOLITANO
Governor

HERB GUENTHER
Director

RECEIVED
JUL 15 2003
GROUNDWATER REPLENISHMENT DISTRICT

July 10, 2003

Mr. David Ellis
Manager, LPSCO
111 West Wigwam Boulevard, Suite B
Litchfield Park, Arizona 85340

RE: Arizona Department of Water Resources Final Evaluation Results of the Transfer of Litchfield Park Service Company's (LPSCO) Central Arizona Project (CAP) Subcontract

Dear Mr. Ellis:

The Arizona Department of Water Resources (Department) has completed its review of the proposed transfer of LPSCO's CAP subcontract to the Central Arizona Groundwater Replenishment District (CAGRD).

When the proposed CAP transfer action was noticed to the public during September 2002, the city of Avondale (Avondale), Arizona American Water Company and Arizona Water Company requested that they be considered for a portion of the allocation during the transfer evaluation process. The Department conducted the process and presented its findings to the interested parties for review and comment. The preliminary evaluation results indicated that Avondale qualified to have 670 acre-feet transferred to it with the CAGRD qualifying to receive the remaining 4,910 acre-feet. The two other participants in the transfer process, Arizona American Water Company and Arizona Water Company did not qualify to receive any of the allocation.

Subsequent to the conclusion of the review and comment period, the city of Goodyear (Goodyear) requested that it be considered for 264 acre-feet of the allocation to meet the water demand associated with former LPSCO service area lands that it had acquired and was currently serving. LPSCO and Goodyear negotiated the amount of water associated with the area water demand and agreed that 150 acre-feet should be allocated to Goodyear. As a result, the preliminary recommended distribution of LPSCO's 5,580 acre-feet allocation is 670 acre-feet to Avondale, 150 acre-feet to Goodyear and the remaining 4,760 acre-feet to the CAGRD (see attached final transfer evaluation).

The Department's recommendation for the transfer will not be finalized until the final subcontract and assignment documents are completed and provided to the Department for review. After the Department has approved the documents, a final recommendation will be sent to the U.S. Bureau of Reclamation.

Under priority-four of the Department's CAP transfer policy, the CAGRD qualified to receive all of LPSCO's 5,580 acre-feet CAP allocation. Therefore, if either Avondale or Goodyear do not complete the

CAP transfer process, the Department recommends that the portion of LPSCO's allocation that either entity qualified to receive, be added to the 4,760 acre-feet that will be recommended for the CAGRD. A copy of the attached final CAP transfer evaluation will be provided to CAWCD. LPSCO, Avondale, and Goodyear will be contacted by CAWCD to initiate the transfer process.

If you have any questions or need assistance, please contact Tricia McCraw or me at 602-417-2442.

Sincerely,

Thomas Carr
Manager, Colorado River Section

Enclosure

c: Jan Ronald, ADWR
Tom Delgado and Tom McCann, CAWCD
Steve Ruppenthal, City of Avondale
Grant Anderson, City of Goodyear
Cliff Neal, CAGRD
William Garfield, AWC
Keith Larson, AAWC

Arizona Department of Water Resources
Colorado River Management Section

Final Evaluation of the Proposed Transfer of Litchfield Park Service Company's (LPSCO) CAP Allocation

Introduction

LPSCO has requested the transfer of its 5,580 acre-feet allocation of CAP water to the Central Arizona Groundwater Replenishment District (CAGRD). Following the public notification period for the transfer, the City of Avondale (Avondale), Arizona-American Water Company (AAWC) and Arizona Water Company (AWC) requested that they be considered during the evaluation process. Subsequent to the notification period, the City of Goodyear requested consideration for former LPSCO service area lands that it has acquired and is providing service to.

Table 1 presents a summarization of the CAGRD's replenishment plan, the requests for consideration and proclamations of support.

Table 1. Summary of Proposed CAP Transfer Comments

Entity	Comments
CAGRD	• Requests that the entire subcontract be transferred to it to meet its 8,238 acre-feet replenishment obligation for member lands (26 subdivisions) located within LPSCO's service area. • Will replenish groundwater withdrawals within area of hydrologic impact at three facilities, including the proposed LPSCO Groundwater Savings Facility, the City of Goodyear's proposed White Tanks Recharge Project and the Maricopa County Municipal Water Conservation District #1's Groundwater Savings Facility. • During years in which LPSCO's deliveries of excess groundwater total less than 5,580 acre-feet, CAGRD will replenish remaining portion of allocation for other west valley members using the Agua Fria and Hieroglyphic Recharge Facilities. • If an entity will eventually relieve the CAGRD of its replenishment obligation for member lands within LPSCO's service area, the CAGRD will transfer the entitlement to that entity
Avondale	• Requests that all or a portion of the allocation to meet projected water demand. Current water resources plan indicates that additional water supplies will be needed prior to 2011.
AAWC	• Requests consideration under priority 3 of the criteria • Claims future impacts to two potential service area wells
AWC	• White Tanks and Apache Junction Systems: - requests 1,740 acre-feet for White Tanks and 3,785 acre-feet for Apache Junction Systems - acquisition of additional CAP supplies will reduce need to pump groundwater - direct delivery of CAP water through area water systems reduces the CAGRD's replenishment obligation for member lands located within those service areas
City of Goodyear	• Requests that 150 acre-feet of the allocation be assigned to it to meet the existing water demand associated with a portion of LPSCO's service area that Goodyear has assimilated into its water service area boundaries.
City of Litchfield Park	• Provides conditional support of proposed transfer. • Opposes any request to transfer the allocation to an entity that does not commit to meeting LPSCO's service area water demand.
City of Peoria	• Supports replenishment of the allocation within the Northwest valley.

The Department conducted a preliminary evaluation of the transfer in accordance with the Department's CAP transfer policy. In December 2002, the preliminary findings were circulated to the interested parties for review and comment. Following the review and comment period, Goodyear requested that it be considered for a portion of the allocation. This document represents the final evaluation of the proposed transfer.

Evaluation of Relative Water Demands Using Section IV. Decision Guidelines

The applicants were evaluated according to the applicable CAP transfer priorities.

Priorities 1 and 2 Analyses

Description of Priorities

Priority 1

First priority is "recommended to entities which are successors in interest to a water provider and which will provide water to the same service area".

Priority 2

Second priority is "recommended either to: 1) a municipality which can provide substantive evidence that it will be the successor in interest to a transferring entity and will provide water to the same service area, or 2) an entity, including the CAGRD or a county augmentation district, which will use the CAP water to replenish in the area of hydrologic impact of groundwater withdrawals of the transferring entity or to deliver water for direct use by the transferring entities' customers".

Evaluation of Avondale's LPSCO Area Water Demand under Priority 1

There are former LPSCO service area lands that Avondale has incorporated into its water service area (Attachment 1). As the successor in interest to these lands, Avondale is eligible to receive a portion of LPSCO's allocation under priority 1.

The total projected 2020 population for the acquired area is 9,309 or 12% of LPSCO's projected population of 74,621. Based on a pro rata distribution of the projected 2020 population for this area v. the projected 2020 population of LPSCO's entire service area, Avondale should be allocated 12% of LPSCO's 5,580 acre-feet allocation or 670 acre-feet.

Evaluation of Goodyear's LPSCO Area Water Demand under Priority 1

There are former LPSCO service area lands that Goodyear has incorporated into its water service area (Attachment 1). As the successor in interest to these lands, Goodyear is eligible to receive a portion of LPSCO's allocation under priority 1.

The total projected 2020 population for the acquired areas is 5,879. Due to the net increase in its water demand associated with a series of service area exchanges between Goodyear and LPSCO, Goodyear requests that it be provided with 150 acre-feet of LPSCO's 5,580 acre-feet allocation to meet the resulting service area demand. This volume of CAP water was negotiated and agreed upon by both Goodyear and LPSCO. Based on the projected population for these areas, Goodyear qualifies to receive the requested amount.

Evaluation of the CAGRD's Replenishment Plan under Priority 2

The CAGRD submitted a replenishment plan to the Department requesting consideration under priority 2 of the transfer policy. The CAGRD plans to replenish the CAP entitlement at three facilities that the CAGRD believes to be located within the area of hydrologic impact associated with LPSCO's service area. These include the proposed White Tanks Recharge Project, LPSCO's proposed groundwater savings facility (LPSCO's GSF), and the Maricopa County Municipal Water Conservation District #1's Groundwater Savings Facility (MWD's GSF).

The Department evaluated two issues with respect to these facilities including; 1) the consideration of proposed, rather than existing, facilities, and 2) whether groundwater savings facilities can serve as replenishment sites within the context of the Department's CAP transfer policy criteria.

At present, Goodyear's recharge facility is in the initial stages of planning and development. Goodyear has not filed an application for a recharge permit with the Department. Earlier this year, an application was filed with the Department for LPSCO's GSF. However, the application was deemed incomplete. As of this date, the application status has not changed.

When evaluating proposed replenishment facilities in association with CAP transfers, the Department has to be provided with a high level of certainty that the facility will meet all regulatory requirements and be permitted and constructed within a reasonable timeframe. To ensure that a reasonable level of certainty is maintained, the Department has determined that it will only consider proposed facilities that are in the final stage of the permit process. The White Tanks Recharge Facility and LPSCO's GSF do not meet this condition. Therefore, these facilities will not be considered as potential replenishment sites for LPSCO's CAP allocation.

The second issue, which deals with the potential use of the MWD GSF to meet the replenishment obligation under priority 2, is twofold. The first concern is whether replenishment through the use of MWD's GSF can offset LPSCO's continued groundwater pumping within the area of hydrologic impact. Although the boundaries of MWD and LPSCO abut one another along a portion of LPSCO's western border, it is not readily apparent whether the use of the groundwater savings facility affects the area of hydrologic impact associated with LPSCO's groundwater pumping. The replenishment plan provided by the CAGRD does not include an effort to demonstrate that replenishment at this facility has the ability to meet this criterion. The second concern is that groundwater savings facilities, in general, will be phased out as agricultural lands associated with these facilities are retired and developed. Therefore, groundwater savings facilities are limited to providing a temporary means of using CAP water to acquire replenishment credits. In order for the CAGRD to qualify under priority 2 to receive LPSCO's CAP M&I subcontract, it must be able to replenish the allocation in a facility that can provide a long-term replenishment function. The MWD GFS, as well as any other groundwater savings facility, is not able to meet this requirement.

It would not be appropriate to use the MWD GFS to meet the replenishment requirements associated with the transfer of LPSCO's CAP allocation. Therefore, in accordance with the CAP M&I transfer policy criteria associated with priority 2, the Department will not consider the MWD GFS as a potential replenishment site.

Summary of Priority 1 and 2 Evaluations

As a result of the above findings, Avondale qualifies to have 670 acre-feet of the allocation assigned to it under priority 1, while Goodyear qualifies for 150 acre-feet. None of the applicants qualifies for transfer under priority 2. Therefore, a total of 4,760 acre-feet remain to be allocated according to the subsequent priorities.

Priority 3 Analysis

Description of Priority

This priority "will be recommended to an entity which can demonstrate future adverse impacts caused by the withdrawal of groundwater as a result of the transfer of CAP water. The recommended allocation will be limited to the average annual loss of groundwater which may have been recoverable by an adjacent water provider".

Evaluation of Impacts to AAWC Wells

AAWC requested that the Department consider potential impacts to future AAWC wellsites resulting from the proposed transfer. However, this assessment is limited to determining impacts that may result from continued groundwater pumping that is associated with the volume of LPSCO's CAP allocation that is transferred away from its service area.

The Department examined AAWC's request that future South Agua Fria District (SAFD) wellsites be considered. The portion of the SAFD that was examined is located within Goodyear's municipal planning area. This area is located generally southwest of the Luke depression and adjacent to the western boundary of LPSCO's service area.

When evaluating whether LPSCO's continued groundwater pumping will affect a nearby water provider, it is necessary to establish a "damages" timeframe. AAWC has submitted what appears to be a bonafide plan to expand its water system. The expansion includes adding additional well sites, conveyance facilities and the construction of a surface water treatment facility. According to its plan, the water treatment plant will enable AAWC to treat and deliver CAP water to its customers by 2006.

A component of the plan includes adding at least two new production wells to the system (B(2-2) 23 dad, well registry no. 55-591437and B(2-2) 26 aab, well registry no. 55-592226). Both wells are located approximately one mile west of LPSCO's service area. According to the submitted plan, the wells will be used to provide the initial water supply to the proposed Verrado development. Once the treatment plant is on-line, Verrado will be served treated CAP water. The wells will then serve as a back-up water supply.

At present, DMB White Tank L.L.C. (DMB) has drilled the wells for hydrologic testing purposes. The authorization for testing these wells expired during July and August 2002. Test results have not been submitted to the Department for review. According to its plan, AAWC anticipates that the wells will be developed into production wells and plans to acquire them from DMB during the second quarter of 2003. Subsequent to its first request, AAWC requested that the Department consider a third well that AAWC plans to use as a water supply for the Verrado development. Although an application has been submitted to the Department for a service area well permit for this well, similar to the other two wells it is currently owned by DMB. It is located approximately 4 ½ miles west of LPSCO's service area.

The Department has fully considered AAWC's request for consideration due to future, potential damages associated with LPSCO's continued groundwater pumping. The Department has determined that the evaluation of potential damages due to groundwater level decline and the determination of associated mitigation should be limited to those related to an existing water withdrawal and use.

As a result, none of LPSCO's CAP allocation qualifies for transfer under priority 3. This leaves 4,760 acre-feet to be allocated to lower priority applicants.

Priority 4 Analysis

Description of Priority

Under this priority, water is allocated to "those entities in the same AMA, which can demonstrate the need for additional water supplies to meet the current and committed water demand, or the committed replenishment obligation for the transferring entity".

Applicant Evaluation

At this time, neither Avondale, AAWC, AWC or Goodyear need additional water supplies to meet their current and committed demand. As a result, they are not eligible to be considered under this priority.

The CAGRD has a substantial replenishment obligation for LPSCO's service area. Currently, the CAGRD has a committed demand of 8,238 acre-feet resulting from its replenishment obligation for twenty-six LPSCO area member lands. This amount is greater than the 4,760 acre-feet that were remaining after consideration of the priority 1-3 applicants. Therefore, the CAGRD qualifies for the remaining 4,760 acre-feet of LPSCO's allocation.

Conclusion

LPSCO's CAP allocation can be completely allocated under priorities 1 and 4 of the policy to Avondale, Goodyear and the CAGRD, respectively. The results of the evaluation are presented in Table 2.

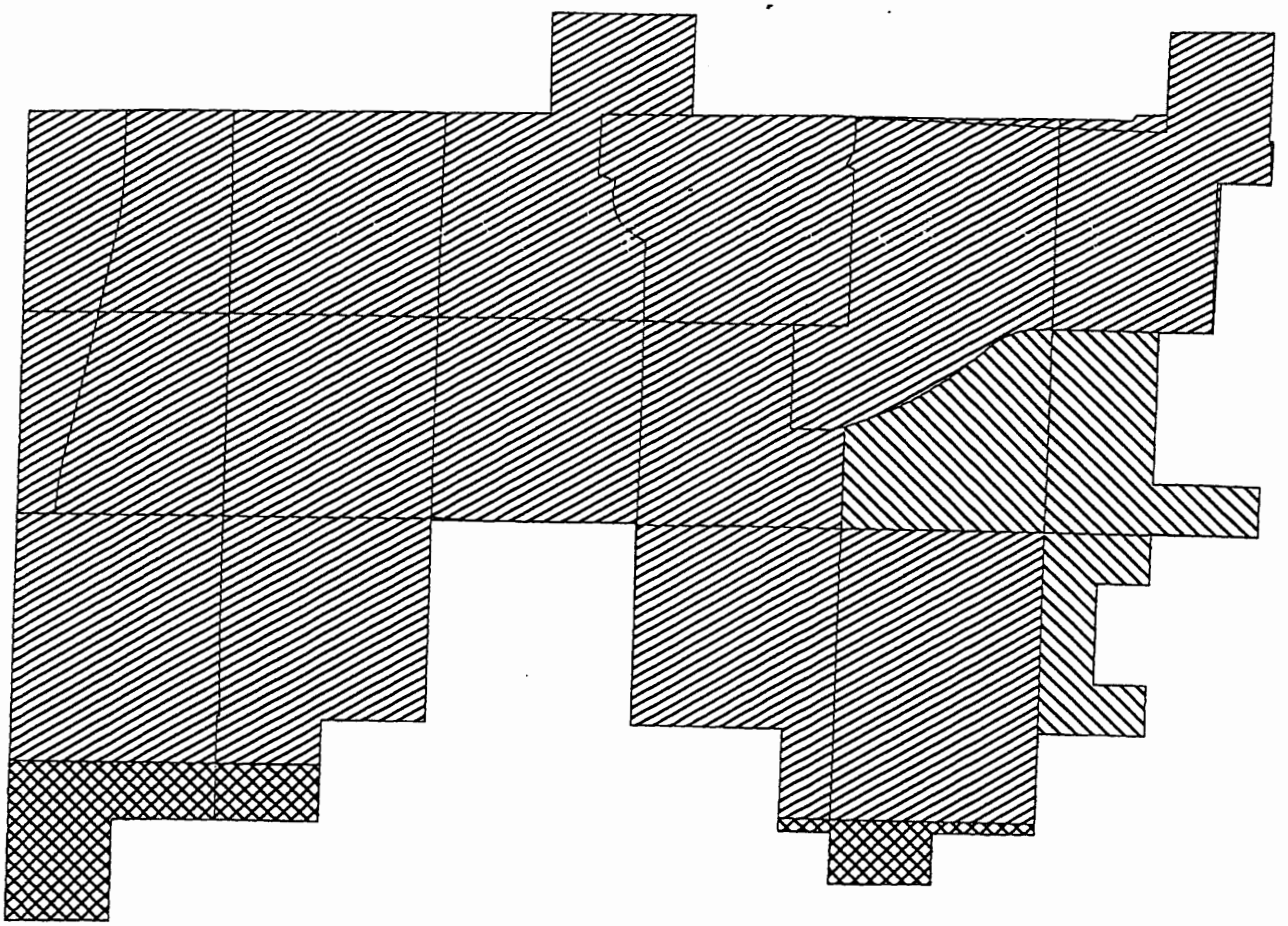
Table 2. Final Transfer Evaluation Results

	Acre-Feet			
Applicant	Priority 1	Priority 3	Priority 4	Total
Avondale	670			670
Goodyear	150			150
AAWC				0
AWC				0
CAGRD			4,760	4,760
Total	820		4,760	5,580

Consistent with the CAP transfer policy, Avondale, Goodyear, AAWC, and AWC could have been considered under priority 5. However, all of LPSCO's CAP allocation qualified to be allocated prior to reaching priority 5. As a result, no water remained to be allocated to applicants under this or subsequent priorities.

Attachment 1

Litchfield Park Service Co.



Avondale
Goodyear
LPSCO/Goodyear

APPENDIX B

AGFD CORRESPONDENCE

SWCA
ENVIRONMENTAL CONSULTANTS

Phoenix Office
2120 North Central Ave., Suite 130
Phoenix, Arizona 85004
Tel 602.274.3831 Fax 602.274.3958
www.swca.com

September 5, 2003

Mr. John Kennedy
Arizona Game and Fish Department
2222 W. Greenway Road
Phoenix, Arizona 85023

RE: REQUEST FOR INFORMATION CONCERNING ARIZONA SPECIAL STATUS SPECIES AND HABITAT RELATED ISSUES

Dear Mr. Kennedy:

SWCA has been contracted to complete an Environmental Assessment (EA) to describe and assess the environmental consequences that may result from the Bureau of Reclamation transferring Central Arizona Project (CAP) water subcontracts from four water companies: (1) New River Utility Company, (2) Sunrise Water Company, (3) West End Water Company, and (4) Litchfield Park Service Company (LPSCo). The EA will be prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), and Reclamation's NEPA Handbook. The New River Utility Company service area is located in Sections 14, 22, 23, and 26 of Township 4 North, Range 1 East, Maricopa County, Arizona. The Sunrise Water Company service area is located in Sections 9, 10, 11, 14, and 15 of Township 4 North, Range 1 East, Maricopa County, Arizona. The West End Water Company service area is located in Sections 7, 18, and 19 of Township 5 North, Range 2 West and in Sections 11, 12, 13, 14, and 24 of Township 5 North, Range 3 West, Maricopa County, Arizona. The LPSCo service area is located in Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 33, 34, and 35 of Township 2 North, Range 1 West, in Sections 24, 25, and 36 of Township 2 North, Range 2 West, in Section 1 of Township 1 North, Range 2 West, and in Sections 3, 4, and 6 of Township 1 North, Range 1 West, Maricopa County, Arizona. Please refer to the attached figures for topographic locations of each of the service areas.

This correspondence is a request for information concerning special status species potentially occurring in the geographical area that encompasses each of the service areas. **Please provide a separate report for each service area.** We also invite comments on habitat-related issues or any other concerns which your agency may have regarding future development of this area.

If you have any questions or require additional information, please contact me at (602) 274-3831. We appreciate your assistance and respectfully request your response as soon as possible.

Sincerely,

Eleanor R. Gladding

Eleanor R. Gladding
Biologist/Project Manager

enclosure

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
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MICHAEL M. GOLIGHTLY, FLAGSTAFF
DIRECTOR
DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL

September 15, 2003

Ms. Eleanor Gladding
SWCA
2120 N. Central Ave.
Suite 130
Phoenix, AZ 85004

Re: Special Status Species Information for **Township 5 North, Range 2 West, Sections 7, 18 and 19; Township 5 North, Range 3 West, Sections 11-14 and 24; Proposed Water Subcontract Transfer: The West End Water Company.**

Dear Ms. Gladding:

The Arizona Game and Fish Department (Department) has reviewed your request, dated September 5, 2003, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records do not indicate the presence of any special status species as occurring in the project vicinity (5-mile buffer). In addition, this project does not occur in the vicinity of any proposed or designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding this letter, please contact me at (602) 789-3618. General status information and county distribution lists for special status species are also available on our new web site at http://www.azgfd.com/hdms, as well as some abstracts for special status species.

Sincerely,

Sabra S. Schwartz
Heritage Data Management System, Coordinator

SSS:ss

cc: Bob Broscheid, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD# 09-10-03(02)

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.COM

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MICHAEL M. GOLIGHTLY, FLAGSTAFF
DIRECTOR
DUANE L. SHROUFE
DEPUTY DIRECTOR
STEVE K. FERRELL

September 15, 2003

Ms. Eleanor Gladding
SWCA
2120 N. Central Ave.
Suite 130
Phoenix, AZ 85004

Re: Special Status Species Information for **Township 4 North, Range 1 East, Sections 9-11, 14, and 15; Proposed Water Subcontract Transfer: Sunrise Water Company.**

Dear Ms. Gladding:

The Arizona Game and Fish Department (Department) has reviewed your request, dated September 5, 2003, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachment have been documented as occurring in the project area (3-mile buffer). In addition, this project does not occur within the vicinity of any Proposed or Designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding the attached species list, please contact me at (602) 789-3618. General status information, state-wide and county distribution lists, and abstracts for some special status species are also available on our web site at: http://www.azgfd.com/hdms.

Sincerely,

Sabra S. Schwartz
Heritage Data Management System, Coordinator

SSS:ss

Attachment

cc: Bob Broscheid, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD #09-10-03(01)

Special Status Species within 3 Miles of T4N,R1E Sec 9, 10, 11, 14, 15

Arizona Game and Fish Department, Heritage Data Management System

September 15, 2003

Scientific Name	Common Name	ESA	USFS	BLM	WSCA	NPL
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	SC			WSC	
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC		S	WSC	
MYOTIS VELIFER	CAVE MYOTIS	SC		S		

No Critical Habitats in project area. AGFD # 09-10-03 (01), Proposed Water Subcontract Transfer: Sunrise Water Company.

GUIDELINES FOR HANDLING SONORAN DESERT TORTOISES ENCOUNTERED ON DEVELOPMENT PROJECTS

Arizona Game and Fish Department
Revised January 17, 1997

The Arizona Game and Fish Department (Department) has developed the following guidelines to reduce potential impacts to desert tortoises, and to promote the continued existence of tortoises throughout the state. These guidelines apply to short-term and/or small-scale projects, depending on the number of affected tortoises and specific type of project.

Desert tortoises of the Sonoran population are those occurring south and east of the Colorado River. Tortoises encountered in the open should be moved out of harm's way to adjacent appropriate habitat. If an occupied burrow is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest appropriate alternate burrow or other appropriate shelter, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. Tortoises should be moved quickly, kept in an upright position at all times and placed in the shade. Separate disposable gloves should be worn for each tortoise handled to avoid potential transfer of disease between tortoises. Tortoises must not be moved if the ambient air temperature exceeds 105 degrees Fahrenheit unless an alternate burrow is available or the tortoise is in imminent danger.

A tortoise may be moved up to two miles, but no further than necessary from its original location. If a release site, or alternate burrow, is unavailable within this distance, and ambient air temperature exceeds 105 degrees Fahrenheit, the Department should be contacted to place the tortoise into a Department-regulated desert tortoise adoption program. Tortoises salvaged from projects which result in substantial permanent habitat loss (e.g. housing and highway projects), or those requiring removal during long-term (longer than one week) construction projects, will also be placed in desert tortoise adoption programs. *Managers of projects likely to affect desert tortoises should obtain a scientific collecting permit from the Department to facilitate temporary possession of tortoises.* Likewise, if large numbers of tortoises (>5) are expected to be displaced by a project, the project manager should contact the Department for guidance and/or assistance.

Please keep in mind the following points:

- These guidelines do not apply to the Mohave population of desert tortoises (north and west of the Colorado River). Mohave desert tortoises are specifically protected under the Endangered Species Act, as administered by the U.S. Fish and Wildlife Service.

- These guidelines are subject to revision at the discretion of the Department. We recommend that the Department be contacted during the planning stages of any project that may affect desert tortoises.

- Take, possession, or harassment of wild desert tortoises is prohibited by state law. Unless specifically authorized by the Department, or as noted above, project personnel should avoid disturbing any tortoise.

RAC:NLO:rc

TRIBAL STATUS

NESL Navajo Endangered Species List (2000)
Navajo Nation, Navajo Fish and Wildlife Department
(http://www.heritage.tnc.org/nhp/us/navajo/esl.html)

The Navajo Endangered Species List contains taxa with status from the entire Navajo Nation which includes parts of Arizona, Utah, and New Mexico. In this notebook we provide NESL status for only those taxa whose distribution includes part or all of the Arizona portion of the Navajo Nation.

Groups

1 Those species or subspecies that no longer occur on the Navajo Nation.

2 Any species or subspecies which is in danger of being eliminated from all or a significant portion of its range on the Navajo Nation.

3 Any species or subspecies which is likely to become an endangered species, within the foreseeable future, throughout all or a significant portion of its range on the Navajo Nation.

4 Any species or subspecies for which the Navajo Fish and Wildlife Department (NF&WD) does not currently have sufficient information to support their being listed in Group 2 or Group 3 but has reason to consider them. The NF&WD will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

MEXICAN STATUS

MEX Mexican Federal Endangered Species List (October 16, 2000)
Proyecto de Norma Oficial Mexicana PROY-NOM-059-ECOL-2000

The Mexican Federal Endangered Species List contains taxa with status from the entire Mexican Republic and waters under its jurisdiction. In this notebook we provide MEX designations for only those taxa occurring in Arizona and also in Mexico.

P En Peligro de Extinción (Determined Endangered in Mexico): in danger of extinction.

A Amenazada (Determined Threatened in Mexico): could become endangered if factors causing habitat deterioration or population decline continue.

Pr Sujeta a ProtecciónEspecial (Determined Subject to Special Protection in Mexico): utilization limited due to reduced populations, restricted distribution, or to favor recovery and conservation of the taxon or associated taxa.

E Probablemente extinta en el medio silvestre (Probably extinct in the wild of Mexico): A native species whose individuals in the wild have disappeared, based on pertinent documentation and studies that prove it. The only existing individuals of the species are in captivity or outside the Mexican territory.

[| = One or more subspecies of this species has status in Mexico, but the HDMS does not track it at the subspecies level (most of these subspecies are endemic to Mexico). Please consult the NORMA Oficial Mexicana PROY-NOM-059-ECOL-2000 for details.]

STATE STATUS

NPL **Arizona Native Plant Law** (1999)
Arizona Department of Agriculture (http://agriculture.state.az.us/PSD/nativeplants.htm)

- **HS** Highly Safeguarded: no collection allowed.
- **SR** Salvage Restricted: collection only with permit.
- **ER** Export Restricted: transport out of State prohibited.
- **SA** Salvage Assessed: permits required to remove live trees.
- **HR** Harvest Restricted: permits required to remove plant by-products.

WSCA **Wildlife of Special Concern in Arizona** (in prep)
Arizona Game and Fish Department (http://www.azgfd.com)

- **WSC** Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA, in prep). Species indicated on printouts as WSC are currently the same as those in **Threatened Native Wildlife in Arizona** (1988).

Revised 8/14/02, AGFD HDMS
J:\HDMS\DOCUMENT\NBOOKS\TEMPLATE\EORDEFS\STATDEF

THE STATE OF ARIZONA
GAME AND FISH DEPARTMENT
2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399
(602) 942-3000 • AZGFD.COM

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DEPUTY DIRECTOR
STEVE K. FERRELL

September 15, 2003

Ms. Eleanor Gladding
SWCA
2120 N. Central Ave.
Suite 130
Phoenix, AZ 85004

Re: Special Status Species Information for **Township 4 North, Range 1 East, Sections 14, 22, 23, and 26; Proposed Water Subcontract Transfer: New River Utility Company.**

Dear Ms. Gladding:

The Arizona Game and Fish Department (Department) has reviewed your request, dated September 5, 2003, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records show that the special status species listed on the attachment have been documented as occurring in the project area (3-mile buffer). In addition, this project does not occur within the vicinity of any Proposed or Designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding the attached species list, please contact me at (602) 789-3618. General status information, state-wide and county distribution lists, and abstracts for some special status species are also available on our web site at: http://www.azgfd.com/hdms.

Sincerely,

Sabra S. Schwartz
Heritage Data Management System, Coordinator

SSS:ss

Attachment

cc: Bob Broscheid, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD #09-09-03(08)

Special Status Species within 3 Miles of T4N,R1E Sec 14, 22, 23, 26

Arizona Game and Fish Department, Heritage Data Management System

September 15, 2003

Scientific Name	Common Name	ESA	USFS	BLM	WSCA	NPL
ATHENE CUNICULARIA HYPUGAEA	WESTERN BURROWING OWL	SC		S		
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	SC		S	WSC	
MYOTIS VELIFER	CAVE MYOTIS	SC		S		

No Critical Habitats in project area. AGFD # 09-09-03 (08), Proposed Water Subcontract Transfer: New River Utility Company.

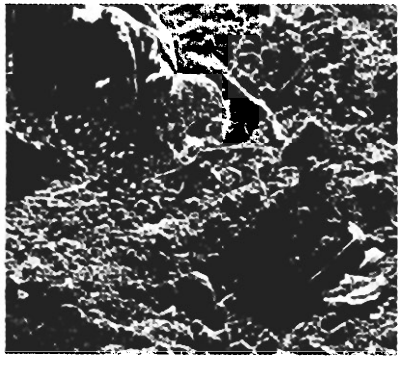
Where Are the Owls Found?

It is possible to find Burrowing Owls anywhere in Arizona where the land is flat and open. The most likely locations are near agricultural fields where the burrows are found in dirt canal banks

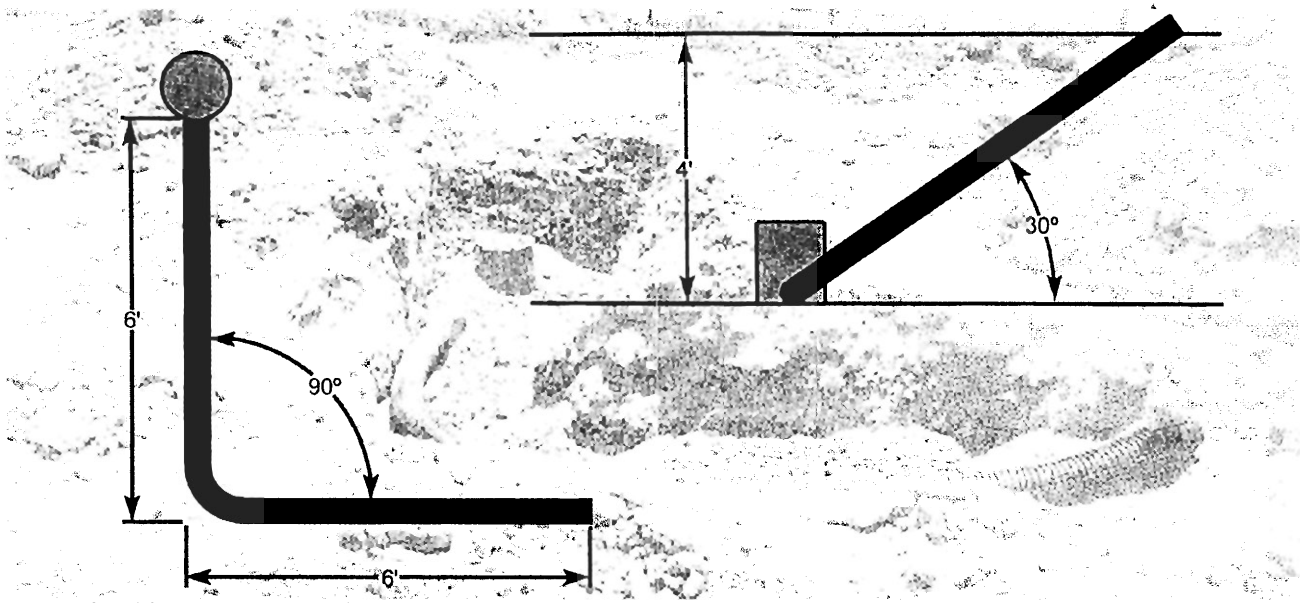
and culvert pipes. Burrowing Owls are also found in undisturbed desert and grassland areas where the vegetation is sparse and there are very few big trees.

What is Relocation?

Burrowing Owls can be safely captured by an expert and held for later release. Typically, the site for the release is designated within or near the development, and artificial burrows are installed in advance of capture.



The cost of materials for a burrow is only $10, and digging the hole for installation is quick and easy with a backhoe.

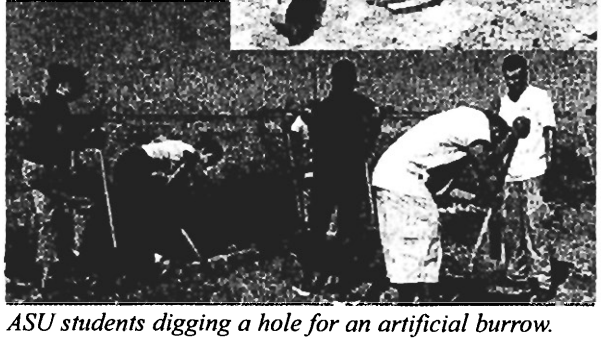


An artificial burrow consists of one five-gallon plastic bucket and 12 feet of perforated drain pipe.

Be Part of the Solution

Burrowing Owls are a valuable addition to a development. Wholly beneficial, they catch insects, such as scorpions, and rodents that most people would rather not have around. In addition, the owls can be an important educational resource for schools and children.

The builder provided a backhoe and operator to excavate the hole for an artificial burrow.



ASU students digging a hole for an artificial burrow.

Partners in Flight

Partners in Flight
is an international cooperative program of agencies, organizations, and individuals committed to conserving our neotropical migratory and native land birds.
Arizona Partners in Flight
(APIF) is a subgroup of this international program. Its goal is to maintain healthy populations of Arizona's birds and their habitats.

This brochure was created as part of the Partners in Flight Conservation Initiative. Through improved habitat management and environmental awareness, Partners in Flight strives to reverse the declining numbers of many North American bird species and to work toward keeping common birds common.

THE STATE OF ARIZONA
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DEPUTY DIRECTOR
STEVE K. FERRELL

September 15, 2003

Ms. Eleanor Gladding
SWCA
2120 N. Central Ave.
Suite 130
Phoenix, AZ 85004

Re: Special Status Species Information for **Township 2 North, Range 1 West, Sections 7-16, 19-23, 26-31, and 33-35; Township 2 North, Range 1 West, Sections 24, 25, and 36; Township 2 North, Range 2 West, Section 36; Township 1 North, Range 2 West, Section 1; Township 1 North, Range 1 West, Sections 3, 4, and 6; Proposed Water Subcontract Transfer: LPS Company.**

Dear Ms. Gladding:

The Arizona Game and Fish Department (Department) has reviewed your request, dated September 5, 2003, regarding special status species information associated with the above-referenced project area. The Department's Heritage Data Management System (HDMS) has been accessed and current records do not indicate the presence of any special status species as occurring in the project vicinity (4-mile buffer). In addition, this project does not occur in the vicinity of any proposed or designated Critical Habitats.

The Department's HDMS data are not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity.

Making available this information does not substitute for the Department's review of project proposals, and should not decrease our opportunities to review and evaluate new project proposals and sites. The Department is also concerned about other resource values, such as other wildlife, including game species, and wildlife-related recreation. The Department would appreciate the opportunity to provide an evaluation of impacts to wildlife or wildlife habitats associated with project activities occurring in the subject area, when specific details become available.

If you have any questions regarding this letter, please contact me at (602) 789-3618. General status information and county distribution lists for special status species are also available on our new web site at http://www.azgfd.com/hdms, as well as some abstracts for special status species.

Sincerely,

Sabra S. Schwartz
Heritage Data Management System, Coordinator

SSS:ss

cc: Bob Broscheid, Project Evaluation Program Supervisor
Russ Haughey, Habitat Program Manager, Region VI

AGFD# 09-10-03(03)

APPENDIX C

CULTURAL RESOURCE SITE FILE SEARCH SUMMARY

A Class I Site File Search for the Proposed Purchase and Transfer of 7,746 Acre-Feet of Central Arizona Project Water to the Central Arizona Water Conservation District, Maricopa County, Arizona

Prepared for

Central Arizona Water Conservation District

Prepared by

SWCA Environmental Consultants

October 2003

A CLASS I SITE FILE SEARCH FOR THE PROPOSED PURCHASE AND TRANSFER OF 7,746 ACRE-FEET OF CENTRAL ARIZONA PROJECT WATER TO THE CENTRAL ARIZONA WATER CONSERVATION DISTRICT, MARICOPA COUNTY, ARIZONA

Prepared for

Central Arizona Water Conservation District
2626 N. 7th Street
Phoenix, Arizona 85024

Prepared by

Cara Schmidt
Douglas R. Mitchell

SWCA Environmental Consultants
2120 North Central Avenue, Suite 130
Phoenix, AZ 85004

Cultural Resources Report No. 03-311

October 2003

PROJECT ABSTRACT

AGENCY: Central Arizona Water Conservation District (CAWCD), Bureau of Reclamation (BOR).

PROJECT TITLE: A Class I Site File Search for the Proposed Purchase and Transfer of 7,746 Acre-Feet of Central Arizona Project Water to the Central Arizona Water Conservation District, Maricopa County, Arizona (SWCA Project No. 7264-076).

PROJECT DESCRIPTION: This site file search was conducted prior to the proposed purchase and transfer of 7,746 acre-feet (af) of water to the Central Arizona Water Conservation District. CAP M&I entitlements held by New River Utility Company (NRUC) (1,885 af), Sunrise Water Company (SWC) (944 af) and West End Water Company (WEWC) (157 af), along with 4,760 af of Litchfield Park Service Company's (LPSCo) entitlement would be transferred to CAWCD exclusively for use in meeting its replenishment obligations as defined by Arizona Revised Statutes.

LOCATION: *LPSCo Parcel:* Sections 3 and 4 of T1N, R1W and Sections 8, 9, 10, 12-16, 19-23, 26-31, and 33-35 of T2N, R1W, Sections 24, 25, and 36 of T2N, R2W, and Section 1 of T1N, R3W (Waddell, El Mirage, Tolleson, and Perryville 7.5' quadrangles). *NRUC Parcel:* Sections 14, 22, 23, and 26 of T4N, R1E (Calderwood Butte and Hedgepeth Hills 7.5' quadrangles). *SWC Parcel:* Sections 9, 10, 11, 14, 15 of T4N, R1E (Calderwood Butte and Hedgepeth Hills 7.5' quadrangles). *WEWC Parcel:* Sections 11, 12, 13, 14 and 24 of T5N, R3W and Sections 18 and 19 of T5N, R2W (Wittman 7.5' quadrangle).

NUMBER OF SURVEYED ACRES: 0.

NUMBER OF SITES: 40.

LIST OF ELIGIBLE PROPERTIES: 9.

LIST OF INELIGIBLE SITES: 31.

COMMENTS: A Class I overview conducted for four water service areas identified a total of 40 archaeological sites and 50 surveys. Nine of the sites are eligible for inclusion on the National Register of Historic Places.

INTRODUCTION

This report presents the results of a Class I site file search of a four parcels in Arizona (Figure 1). SWCA conducted site file search prior to the proposed purchase and transfer of 7,746 acre-feet (af) of water to the Central Arizona Water Conservation District. If approved, CAWCD will enter into a 50-year water service contract for the total annual volume of 7,746 af. CAP M&I entitlements held by New River Utility Company (NRUC) (1,885 af), Sunrise (944 af) and West End Water Company (WEWC) (157 af), along with 4,760 af of Litchfield Park Service Company's (LPSCo) entitlement would be transferred to CAWCD exclusively for use in meeting its replenishment obligations as defined by Arizona Revised Statutes.

There are a total of 40 archaeological sites, 9 of which are eligible for inclusion on the National Register of Historic Places, within the four parcels. Fifty archaeological surveys have been recorded for the four parcels. For the 12,900 acre LPSCo area, 23 surveys and 7 sites were identified; for the 1,077 acre NRUC area, 7 surveys and 7 sites were identified; for the 2,506 acre SWC area, 9 surveys and 19 sites were identified; for the 3,720-acre WEWC area, 11 surveys and 7 sites were identified.

CULTURAL OVERVIEW

The earliest human occupation of the Southwest occurred during the Paleoindian period, which is "well-documented from about 11,000 years ago to about 7,500 years ago" (Cordell 1997:99). Many Paleoindian sites have been identified in southern Arizona. However, evidence of Paleoindian occupation in central and south-central Arizona is relatively sparse and consists of isolated projectile points (Crownover 1994; Huckell 1982; Mabry 1998). Throughout the greater Southwest the Paleoindian Period is seen in the form of Clovis and Folsom points, generally regarded as the material remains from a widespread hunting tradition that focused on large mammals (McGuire and Schiffer 1982:166). Although Paleoindian camps have been located in southeastern Arizona (Haury 1956; Haury et al. 1959; Hemmings and Haynes 1969), remains from near the project area are rare. Isolated Clovis points have been found in central Arizona (Crownover 1994), and in the northwest Papagueria (Ezell 1954).

Following the Paleoindian Period, Archaic populations occupied the area. While better understood than the Paleoindian era, the Archaic Period also suffers from problematic dating and conflicting artifact typologies. Beginning dates for the Archaic Period are unclear, but it was in place by 7000 B.C., with possibly earlier occupations (McGregor 1965:124). Ending dates for the Archaic are also somewhat vague, but are generally tied to the rise of agriculture and the production of ceramics, sometime around A.D. 1. The terminating dates are highly variable and are generally determined by the appearance of agriculture. In southern Arizona the Archaic Period has been split between two traditions that contain distinct projectile points and lithic tools. The Amargosa tradition is mainly concentrated in southern California and southwestern Arizona (Rogers 1939; Haury 1950), while the Cochise tradition is associated with southeastern Arizona (Sayles and Antevs 1941). The relationship between the two traditions is ambiguous, and materials from the various periods of each have been found to overlap geographically in places such as Ventana Cave, south of the project area (Haury 1950). It has been suggested that the two represent regional and environmental variations of the same basic toolkit (McGuire and Schiffer 1982:177-178).

Excavation of sites in the Harquahala Valley west of the Phoenix metropolitan area identified Archaic projectile points representative of the Amargosa, Cochise, and Great Basin traditions (Bostwick 1988). Explanations of the mixture of materials included expansion of the Cochise tradition into the western desert, manufacture of similar types by the different groups, and unsystematic analysis techniques that prevent valid regional comparisons (Bostwick and Stone 1988:326-328). Late Archaic sites have been investigated

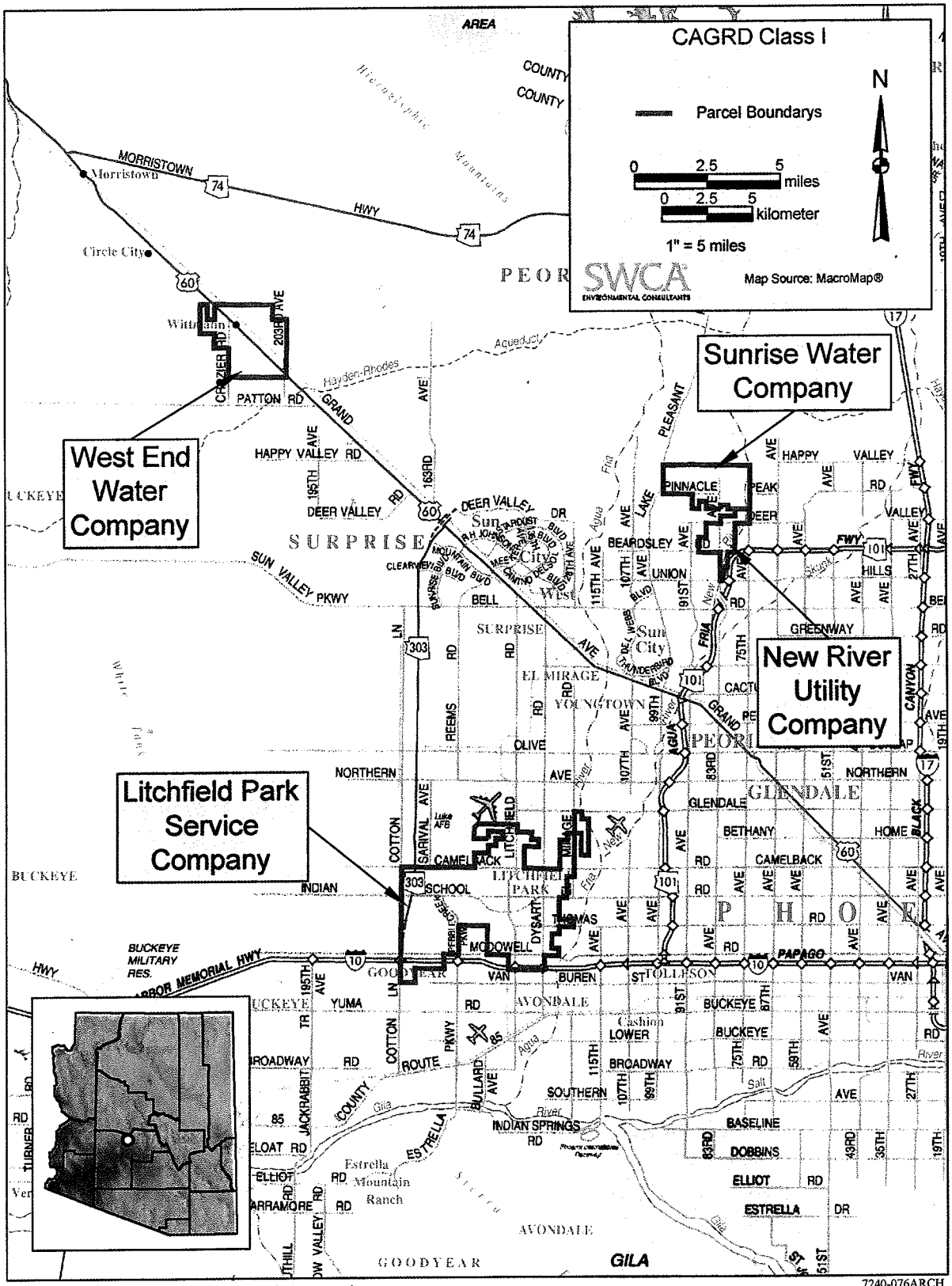


Figure 1. General location of the project areas.

immediately north of the Phoenix Basin in the McDowell Mountains and Paradise Valley (Hackbarth 1999; RECON 1987; Stubing and Mitchell 1999).

The Hohokam occupation is generally divided by researchers into four distinct periods, which have been further subdivided into phases. The beginnings of Hohokam culture are initially seen in the Pioneer Period, whose inception date is currently under debate by archaeologists. An early Red Mountain phase has been suggested as beginning around A.D. 1 and continuing until circa A.D. 450 (Cable and Doyel 1987; Mabry 2000; Morris 1969), and is followed by the more traditionally accepted Vahki, Estrella, Sweetwater, and Snaketown phases, that together make up the Pioneer Period (Haury 1976). The Colonial period followed the close of the Pioneer around A.D. 750 and continued to approximately A.D. 950, containing the Gila Butte and Santa Cruz phases. The Sedentary Period, consisting of the Sacaton phase, lasted from circa A.D. 950 to 1150.

The Classic Period succeeds the Sedentary Period, with dates from approximately A.D. 1150 to 1450. The Soho and Civano Phases occur within the Classic Period. The occurrence of a Post-Classic period, designated the Polvoron phase that would extend from the end of the Classic Period into the 16th century is currently being debated (Chenault 2000; Doyel 1991; Henderson and Hackbarth 2000; Sires 1984).

During the Protohistoric period, which occurred from the late 1400s through the 1600s, the region encompassing the project area was inhabited by the Pima, Papago, and Maricopa (Bostwick 1988; Spier 1933). Studies of these groups suggest they lived in rancherias and relied on a variety of subsistence strategies, including hunting and gathering, fishing, and a small amount of agriculture (McGuire and Schiffer 1982; Spier 1933:48–59). These groups continue to occupy the area on several reservations including the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, the Ak-Chin Indian Reservation, and the Tohono O'odham Reservation.

Historic use of the area begins with Spanish missionary and mineral exploration expeditions throughout southern Arizona in the late 17th century into the 18th century (Walker and Bufkin 1979). Further historic use of the region is associated with ranching, homesteading, and mining. Late historic occupation of this project area involved land cultivation associated with agricultural activity.

PREVIOUS RESEARCH

SWCA consulted the AZSite online database for previous survey and site information. Additionally, archaeological site files were examined at the Arizona State Historic Preservation Office (SHPO), the Arizona State Museum (ASM), the Arizona State University (ASU), and the Bureau of Land Management Phoenix Area Office. The General Land Office (GLO) survey plat maps of the region, which show historic roads and buildings, were examined at the BLM office in Phoenix. National, State, and Local Registers of Historic Places were also checked for historic properties and districts.

Litchfield Park Service Company

Seven archaeological sites have been identified within the 12,900-acre Litchfield Park Service Company (LPSCo) parcel, four of which are considered eligible for inclusion on the National Register of Historic Places (Table 1). Additionally, twenty-three archaeological surveys have been conducted (Figures 2-4, Table 2). The General Land Office plat maps for T1N, R1W (filed in 1870 and 1919), for T1N, R2W (filed in 1883 and 1907), and for T2N, R1W (filed in 1870) show no historic resources within the LPSCo parcel. The plat map for T2N, R2W (filed in 1883) shows a segment of a road trending northwest to southeast (Figure 4).

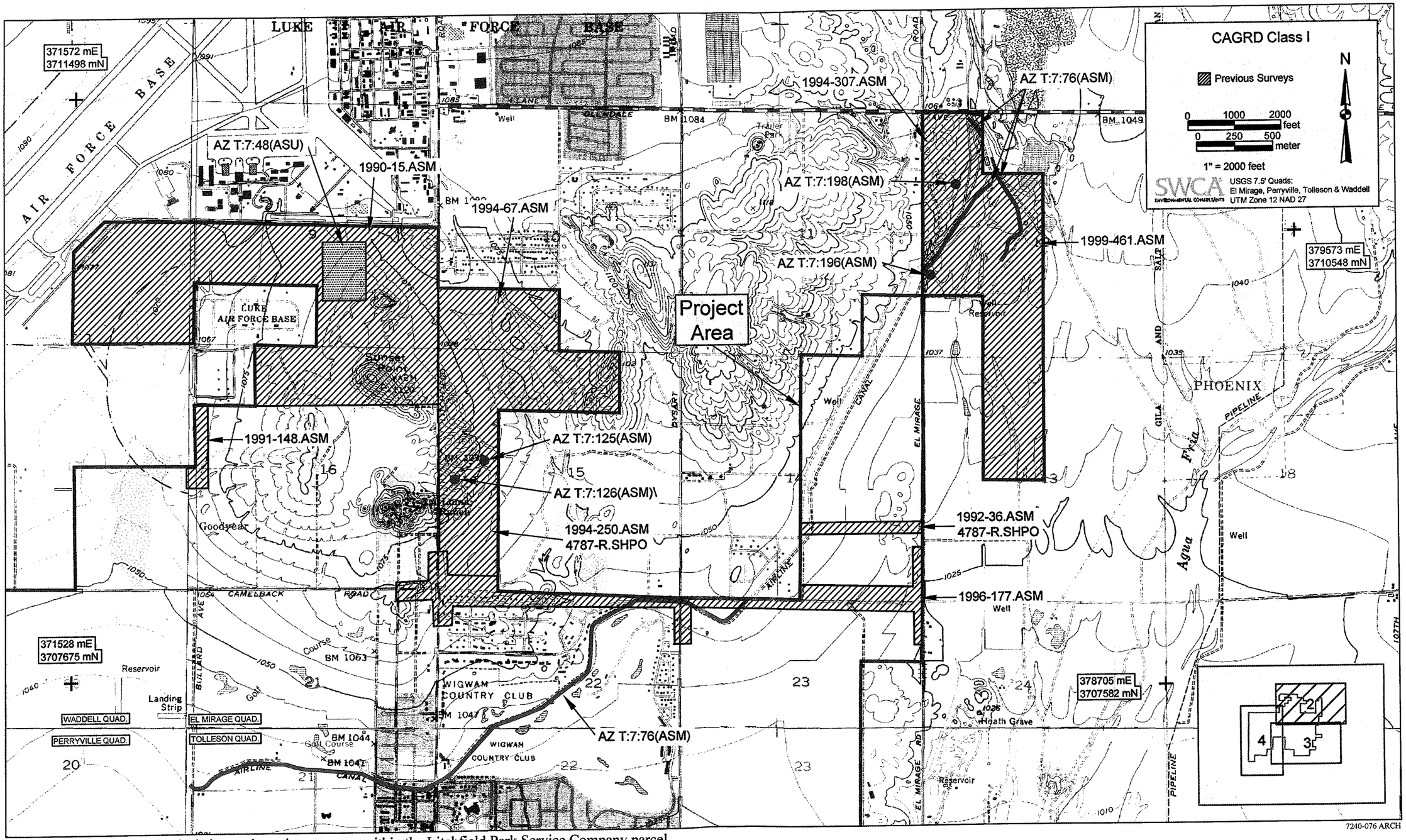
Table 1. List of Archaeological Sites Located within the Litchfield Park Service Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
AZ T:10:83(ASM)	Euro-american	Roosevelt Canal, built in 1928. The western portion of the Roosevelt Canal extends between South Phoenix and the Hassayampa River north of Dixie.	Historic	Yes
AZ T:7:76(ASM)	Euro-american	Air Line (or Airline) Canal built circa 1916. Designates a 4.7-mile long historic canal that was, based on archival data, and is continuing to be used today. It is 12 ft wide and 3.0 ft deep.	Historic	Yes
AZ T:7:125(ASM)	Euro-american	Two discrete trash deposits and an artifact scatter.	Historic	No
AZ T:7:126(ASM)	Hohokam	Chipping station lithic scatter and a rock ring.	Prehistoric	*
AZ T:7:196(ASM)	Hohokam	Low-density scatter of prehistoric ceramics and chipped stone. Resource procurement and/or processing area.	Prehistoric	Yes
AZ T:7:198(ASM)	Euro-american	Historic home site and a moderate-density artifact scatter (AD 1900-1930).	Historic	Yes
AZ T:7:48(ASU)	Hohokam/ Euro-american	Three structure foundations, two wells, six trash dumps, stock tank and a fishpond. Also a prehistoric artifact scatter.	Prehistoric / Historic	*

*NRHP eligibility unknown.

Table 2. List of Previous Archaeological Work within the Litchfield Park Service Company Parcel.

Survey No.	Report Reference
1987-222.ASM	*Cultural Resource Technical Report for the U.S. Telecomm Fiber Optic Cable Project from San Timoteao, California to Socoro, Texas: The Arizona Segment* by Patrick M. O'Brien, J. Simon Bruder, David A. Gregory, A.E. Rogge and Deborah A. Hull (1987). Dames & Moore, Inc., Phoenix.
1988-148.ASM	*Cultural Resource Survey of an 85 acre Parcel Adjacent to the North Side of Interstate 10 in Goodyear, Western Maricopa County, Arizona* by Ross S. Curtis (1988). Archaeological Research Services, Inc., Tempe.
1988-239.ASM	*Archaeological Survey of the Estrella Freeway Interim Roadway (Loop 303) in Metropolitan Phoenix, Arizona* by James B. Rodgers (1989). Plateau Mountain Desert Research, Inc., Flagstaff.
1990-15.ASM	*An Archaeological Survey of 435 Acres for a Proposed Golf Course Adjacent to Luke Air Force Base in Maricopa County, Arizona* by Laurie V. Slawson and Ronald P. Maldonado (1990). Cultural and Environmental Systems, Tucson.
1991-148.ASM	*An Archaeological Assessment of a Parcel near Luke Air Force Base, Maricopa County, Arizona* by Kim Adams (1991). Archaeological Consulting Services, Ltd., Tempe.



7240-076 ARCH

Figure 2. Known archaeological sites and previous surveys within the Litchfield Park Service Company parcel.

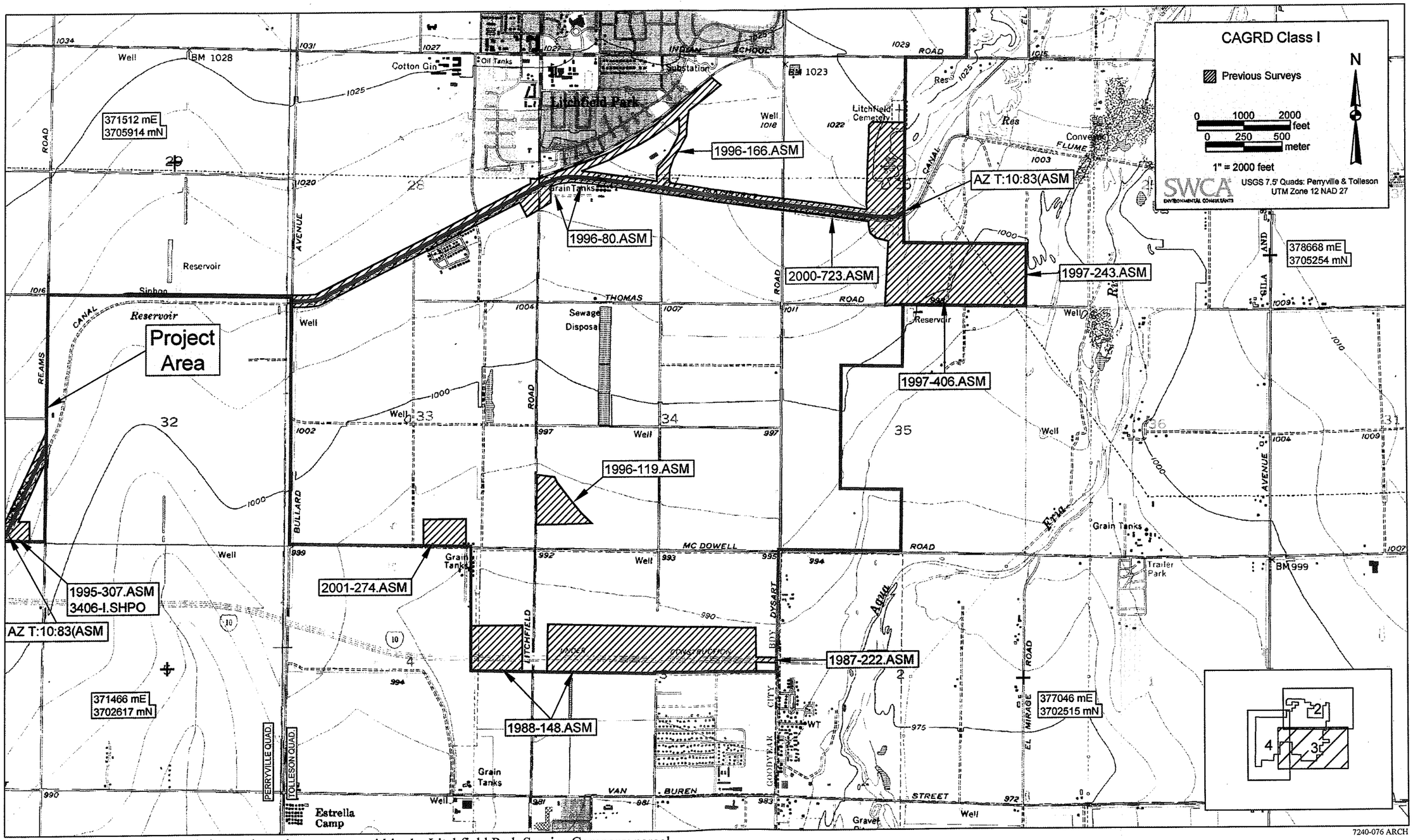


Figure 3. Known archaeological sites and previous surveys within the Litchfield Park Service Company parcel.

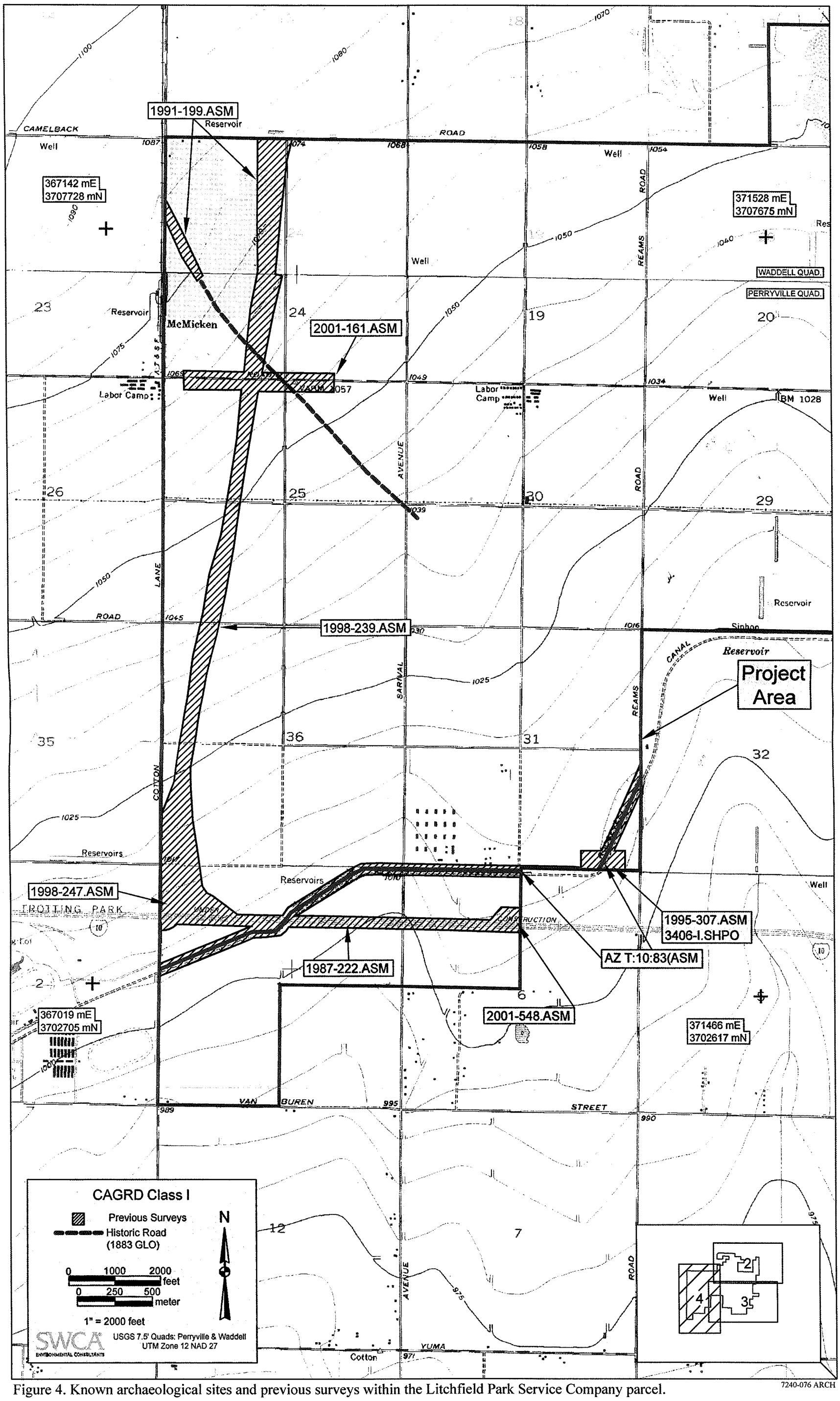


Figure 4. Known archaeological sites and previous surveys within the Litchfield Park Service Company parcel.

7240-076 ARCH

Table 2 (Continued). List of Previous Archaeological Work within the Litchfield Park Service Company Parcel.

Survey No.	Report Reference
1991-199.ASM	*Archaeological Survey of Parcel 8 the Estrella Freeway Interim Roadway (Loop 303) in Goodyear, Arizona* by James B. Rodgers (1991a). Plateau Mountain Desert Research, Inc., Flagstaff.
1992-36.ASM/ 4787-R.SHPO	*An Archaeological Inventory of the Colter Channel North of Litchfield Park, Arizona* by James B. Rodgers (1992). Contract Archaeological Series No. 992-3A, Scientific Archeological Services, Phoenix.
1994-250.ASM/ 5385-R.SHPO	*The Quail Ridge Archaeological Inventory Project near Litchfield Park, Arizona* by James B. Rodgers (1994). Contract Archaeological Series No. 994-8, Scientific Archeological Services, Phoenix.
1994-307.ASM	*A Cultural Resource Survey of Glendale Avenue between Litchfield Road and 115th Avenue, and Portions of El Mirage Road, Glendale, Maricopa County, Arizona* by Caroline Davies and Michael S. Foster (1994). Soil Systems Technical Report No. 94-37, Phoenix.
1994-67.ASM	*Archaeological Survey of the Proposed Litchfield and Bethany Home Roads Development for the Suncor Development Company, Litchfield Park, Maricopa County, Arizona* by Holly S. DeMaagd (1994). Archaeological Consulting Services, Ltd., Tempe.
1995-307.ASM/ 3406-I. SHPO	*An Archaeological Survey of a Canal Crossing on McDowell Road between Pebble Creek Parkway and Sarival Road, Maricopa County, Arizona* by Michael Stubing and Douglas R. Mitchell (1995). Archaeological Report No. 95-116, SWCA Environmental Consultants, Phoenix.
1996-119.ASM	*Palm Valley Luxury Rentals, Goodyear, Maricopa County, Arizona* by Mark R. Hackbarth (1996). Northland Research Inc., Flagstaff.
1996-166.ASM	*The Roosevelt Irrigation District Canal Overchute Archaeological Inventory Project of Goodyear and Avondale, Arizona: An Adjunct Investigation* by James B. Rodgers (1996b). Contract Archaeological Series No. 996-7, Scientific Archeological Services, Phoenix.
1996-177.ASM	*An Archaeological Survey along Camelback Road between El Mirage Road and Litchfield Road, Maricopa County, Arizona* by Michael S. Stubing (1995b). Archaeological Report No. 96-133, SWCA Environmental Consultants, Phoenix.
1996-80.ASM	*The Roosevelt Irrigation District Canal Overchute Archaeological Inventory Project of Goodyear and Avondale, Arizona* by James B. Rodgers (1996a). Contract Archaeological Series No. 996-7, Scientific Archeological Services, Phoenix.
1997-243.ASM	*Archaeological Survey of 109 Acres near Dysart and Indian School Roads in Litchfield Park, Arizona* by Northland Research Inc. (no author), Tempe (1997).
1997-406.ASM	*Archaeological Survey of 100 Acres near Dysart Road and 109th Avenue, Litchfield Park, Maricopa County, Arizona* by Mary-Ellen Walsh-Anduze (1997). Northland Research Inc., Tempe.
1998-247.ASM	*A Cultural Resources Assessment for Ten Locations in the Phoenix District along I-10 at Mileposts 124.70, 133.7, 141.68, 151.18, 157.74, 162.38 and along I-17 at Mileposts 195.93, 216.00 and along SR 51 at Mileposts 3.32 and 5.57* by Bob Larkin and John Giacobbe (1998). Stantech Consulting, Inc., Phoenix.
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2000-723.ASM	*Archaeological Survey of Link Three of the AT&T NexGen/ Core Project, Arizona and California* by T.M. Kearns, T.J. Lennon, J. Jones, and S.F. Mehls (2000). Western Cultural Resource Management Inc., Farmington.
2001-161.ASM	*Cultural Resource Survey of the Indian School Road, Northern Avenue, and Olive Avenue Intersections with the Loop 303 Expressway, Maricopa County, Arizona* by A.E. (Gene) Rogge and Sebastian Chamorrow (2001). URS Corporation, Phoenix.

Table 2 (Continued). List of Previous Archaeological Work within the Litchfield Park Service Company Parcel.

Survey No.	Report Reference
2001-274.ASM	*An Archaeological Survey of a 10-Acre Parcel West of the Intersection of McDowell Road and Litchfield Road* by Keith Knoblock (2001). Letter report No. 631. Lone Mountain Archaeological Services, Inc., Tucson.
2001-548.ASM	*A Cultural Resource Survey at Six Land Disposal Areas on Interstate 10 between Avondale and Buckeye, Maricopa County, Arizona* by Toni Gertilli and Lisa Folb (2001). EcoPlan Cultural Resources Report No. 00-469, Mesa.

New River Utility Company

Seven archaeological sites have been identified within the 1,077-acre New River Utility Company (NRUC) parcel, however all seven sites were recorded by avocational archaeologist Frank Midvale during the 1940s and 1950s and no information is available on these sites (Figure 5, Table 3). Additionally, seven archaeological surveys have been conducted within the NRUC parcel (Table 4). The General Land Office plat map for T4N, R1E (filed in 1895) shows no historic resources within the NRUC parcel.

Table 3. List of Archaeological Sites Located within the New River Utility Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
M-14	n/a	*No information available*	n/a	n/a
M-15	n/a	*No information available*	n/a	n/a
M-16	n/a	*No information available*	n/a	n/a
M-17	n/a	*No information available*	n/a	n/a
M-18	n/a	*No information available*	n/a	n/a
M-20	n/a	*No information available*	n/a	n/a
M-21	n/a	*No information available*	n/a	n/a

*NRHP eligibility unknown.

Table 4. List of Previous Archaeological Work within the New River Utility Company Parcel.

Survey No.	Report Reference
1994-228.ASM (3358-I. SHPO)	*A Cultural Resource Survey along New River, Maricopa County, Arizona* by John T. Marshall (1994). Northland Research, Inc., Tempe.
1994-297.ASM	*A Phase I Archaeological Reconnaissance of 69.58 Acres at Union Hills Drive and 83rd Avenue for the Maricopa County Department of Transportation* by Peg Davis (1994). Louis Berger and Associates, Phoenix.
1997-47.ASM	*Archaeological Survey of the Proposed Terramar Development Sewer and Water Alignments* by Mark Hackbarth (1997a). Northland Research, Inc., Tempe.
1997-178.ASM	*Archaeological Survey of the Proposed Lake Pleasant Parkway, Peoria, Maricopa County, Arizona* by Mark Hackbarth (1997b). Northland Research, Inc., Tempe.
1998-369.ASM	*A Cultural Resource Survey of the Deer Valley Road Bridge Across the New River, Maricopa County, Arizona* by Lourdes Aguila (1999). Archaeological Consulting Services, Ltd., Tempe.
2001-8.ASM	*Communications Tower Survey at Sunrise Mountain High School, 21200 N. 83rd Avenue in Peoria* by Eric Kaldahl (2001). Old Pueblo Archaeology Center Letter Report No. 2001.04, Tucson.
NRI Task 20	*Archaeological Survey in the New River Irrigation District and City of Peoria Water System* by Patricia Quillian (1986). Northland Research, Inc., Tempe.

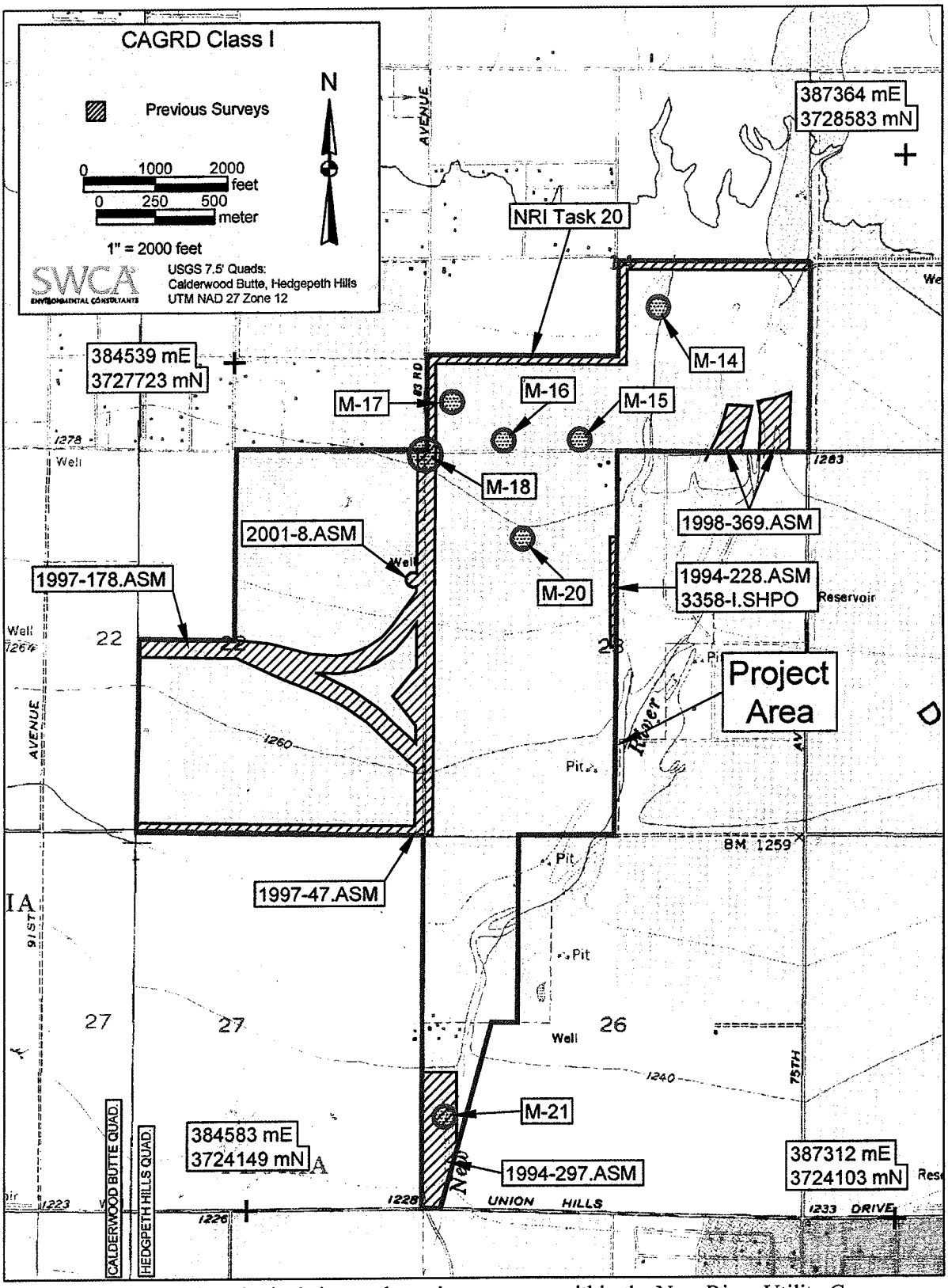

Figure 5. Known archaeological sites and previous surveys within the New River Utility Company parcel.

Sunrise Water Company

Nineteen archaeological sites have been identified within the 2,506-acre Sunrise Water Company (SWC) parcel, two of which are considered eligible for inclusion on the National Register of Historic Places (Figure 6, Table 5). Additionally, nine archaeological surveys have been conducted (Table 6). The New River Dam Archaeological District lies north of the NRUC parcel. There are abundant resources for tool making and lithic production in the District. At the time the district was designated, there were 43 sites recorded (Brown 1976). Site types range from sherd and/or lithic scatters to agricultural and habitation sites.

The General Land Office (GLO) survey plat map of the region was examined at the BLM office in Phoenix. The 1895 plat map for T4N, R1E displays the Sunrise Nos. 1–6, Venus, Relief and Relief Mine No.2, Pick Me Up, and the Banden and Banden Mine No. 2., located just north of this project area along the southern flank of the Sunrise Mountains (Figure 6). Land patent details obtained from BLM records indicate that Relief Gold Mining Company was originally issued mining patents for these claims on March 3, 1904.

Records at the Arizona Mining and Mineral Museum indicate that the Sunrise Relief Gold Mine has been operated by three companies; the Relief Gold Mining Company beginning in 1904 and ending around 1912, followed by the Glendale Mining and Milling Company beginning in 1916 (Moore 1916) with an unknown dissolution date, and later by the Sunrise Relief Mining Company from 1929–1933. The claims included in the Sunrise Relief Gold Mining cluster include Sunrise Nos. 1–6, Venus, Relief and Relief Mine No.2, Pick Me Up, and the Banden and Banden Mine No. 2. The two patented claims in closest proximity to the project area are the Banden and Banden Mine No. 2 in the N ½ of Section 10, T4N, R1E.

As of 1916, several buildings are reported to exist atop and along the southern base of the Sunrise Mountains, including a dining room, cook house, bunk house, company office, store house, cyanide plant, assay office, water tank, and mill (Figure 7).

Table 5. List of Archaeological Sites Located within the Sunrise Water Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
AZ T:7:16(ASM)	Hohokam	Two ceramic scatters.	Prehistoric	*
AZ T:7:161(ASM)	Euro-american	Five shallow, low-bermed ditches comprise the site. A similar segment was recorded nearby as a possible Hohokam canal segment (AZ T:7:14[ASM]).	Historic	Not Eligible
AZ T:8:39(ASU)	Hohokam	Two rock clusters with artifacts (ceramics and lithics).	Prehistoric	*
AZ T:8:2(ASM)	Hohokam	Extremely large Hohokam village (Sacaton phase). *Recorded in 1970 as badly looted.*	Prehistoric	*
AZ T:8:111(ASM)	Hohokam	Surficial artifact scatter.	Prehistoric	Not Eligible
AZ T:8:37(ASM)	Hohokam	Large, diffuse ceramic, ground stone, and lithic scatter, with three concentrations.	Prehistoric	Eligible
AZ T:8:79(ASM)	Hohokam	Prehistoric habitation site, including ceramics, lithics, ground stone, FCR, shell, and clustered river cobbles (5-8m in diameter). Two canals are visible as depressions (includes M-9).	Prehistoric	*
AZ T:8:98(ASM)	Euro-american	Historic site consisting of a small concentration of steel food and milk cans and a nearby glass scatter. Concentrated scatter suggests a single dumping episode.	Historic	Not Eligible

Table 5. List of Archaeological Sites Located within the Sunrise Water Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
AZ T:8:115(ASM)	Hohokam	Dense Hohokam sherd and lithic scatter. The quantity and variety of artifacts and the presence of possible human bone suggests the site may be a habitation with burials. The integrity of any subsurface remains, however, is unknown (includes M-8).	Prehistoric	Eligible
AZ T:8:172(ASM)	Euro-american	Dense, historic artifact scatter located along a small south trending ephemeral wash with five dumping episodes. (Possibly associated with the Banden Mines)	Historic (1907–1920)	Not Eligible
AZ T:8:173(ASM)	Euro-american	Possible temporary mining camp with seven features ranging from a possible historic trail to several rock/wall alignments and enclosures. (Possibly associated with the Banden Mines)	Historic	Not Eligible
AZ T:8:10(ASU)	Hohokam	Canal remnant (possibly associated with AZ T:8:19(ASU)	Prehistoric	*
AZ T:8:11(ASU) / AZ T:8:33(ASM)	Hohokam	Sherd and lithic scatter associated with a large rock pile and a small rock pile.	Prehistoric	Not Eligible
AZ T:8:13(ASU)	Hohokam	Canal remnant with a small rock concentration (possible temporary field structure). Also a small garden plot at the end of the canal segment.	Prehistoric	*
AZ T:8:19(ASU)		Large field area with many rock concentrations and 2 pieces of ceramics.		
AZ T:8:105 (ASU) / M-7	Hohokam	Originally recorded as an extensive artifacts scatter by Midvale in the 1920s. In 1986, only a few ceramics were recorded (Bostwick and Rice 1986). Residential development now exists where the site was located.	Prehistoric	Not Eligible
M-10	n/a	*No information available*	n/a	n/a

*NRHP eligibility unknown.

Table 6. List of Previous Archaeological Work within the Sunrise Water Company Parcel.

Survey No.	Report Reference
2000-645.ASM	*Cultural Resource Survey for the Proposed Arizona Public Service Company's Westwing-Hedgepeth 69/12 kV Powerline, Northwest Phoenix, Maricopa County, Arizona* by Lourdes Aguila (2000). Archaeological Consulting Services, Ltd., Tempe.
2000-494.ASM	*A Cultural Resources Survey of 120 Acres at 91st Avenue and Happy Valley Road, Peoria, Maricopa County, Arizona* by Chris T. Wenker and Douglas R. Mitchell (2000). Cultural Resources Report No. 00-73, SWCA Environmental Consultants, Phoenix.
1998-335.ASM	*Archaeological Survey for a Proposed 83rd Avenue Realignment, Access Corridors, and Waterline. Peoria, Maricopa County, Arizona* by Ronald F. Ryden, Michael S. Stubing, Chris T. Wenker, and Douglas R. Mitchell (1998). SWCA Archaeological Report No. 98-119, Phoenix.
1997-47.ASM	*Archaeological Survey of the Proposed Terramar Development Sewer and Water Alignments* by Mark R. Hackbarth (1997a). Northland Research, Inc., Tempe.
1970-3.ASM	*Archaeological Investigation of the Corps of Engineers Phoenix Vicinity Flood Control Project Area* by R.G. Vivian (1970). Arizona State Museum Archaeological Series No. 1, Tucson.
85-003.ASU	*An Archaeological Testing Program at Three Sties for the El Paso Natural Gas North Phoenix Area Pipeline* by Todd Bostwick (1986). Arizona State University, Tempe.

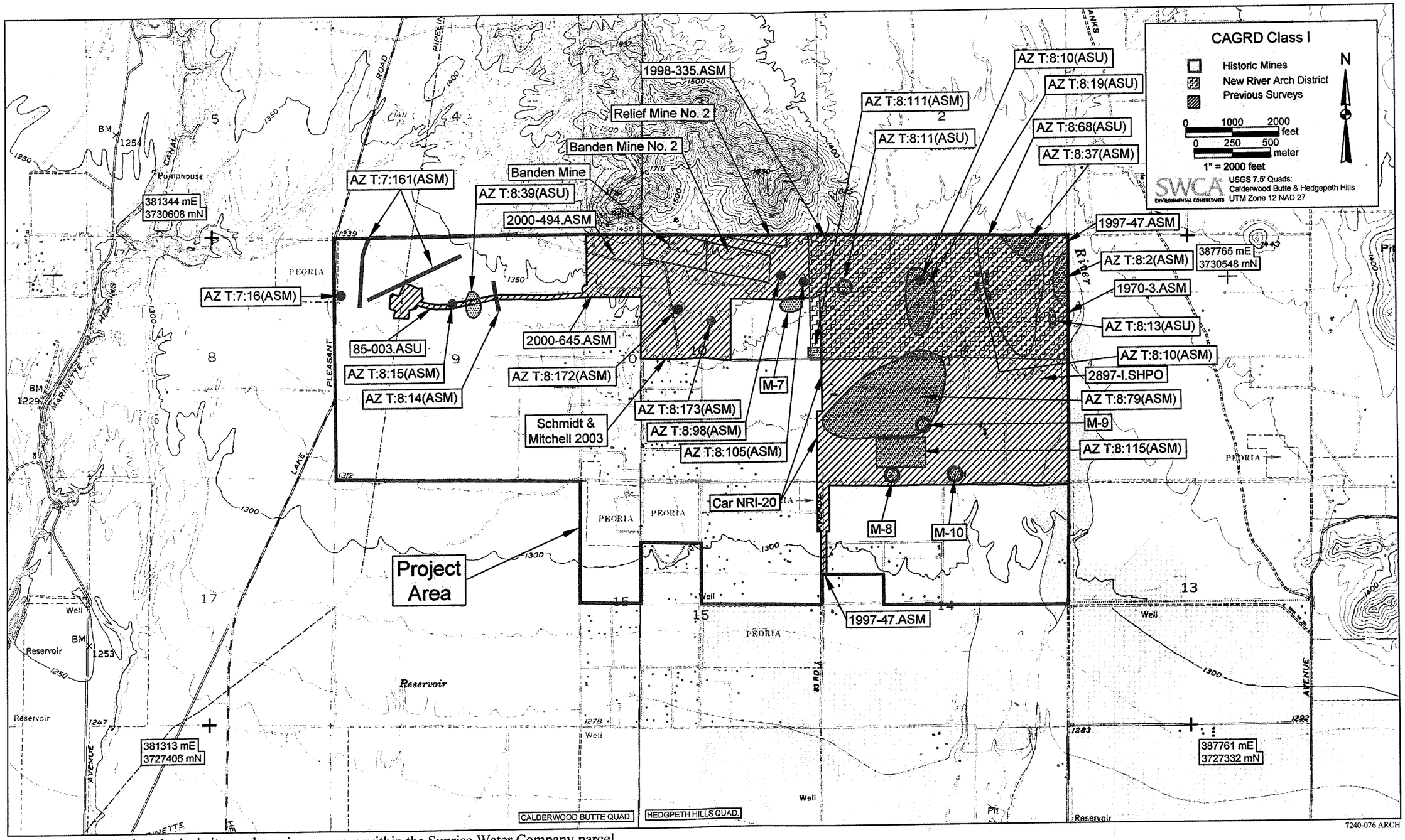

Figure 6. Known archaeological sites and previous surveys within the Sunrise Water Company parcel.

Table 6 (Continued). List of Previous Archaeological Work within the Sunrise Water Company Parcel.

Survey No.	Report Reference
2897-I / 1764-R	*West-Wing Sunrise Mountain Archaeological Investigations* by Kathleen S. McQuestion (1987). Bureau of Land Management, Phoenix Area Office.
NRI Task 20	*Archaeological Survey in the New River Irrigation District and City of Peoria Water System* by Patricia Quillian (1986). Northland Research, Inc., Tempe.
Bostwick & Rice 1986	*An Additional Test of Site AZ T:8:19(ASU) on the El Paso Natural Gas Pipe Line in North Phoenix* by Todd Bostwick and Glen Rice (1986). Arizona State University, Tempe.
Schmidt & Mitchell 2003	*Archaeological Survey of SKG Enterprises 60-Acre Project Area in Peoria, Maricopa County, Arizona* by Cara Schmidt and Douglas R. Mitchell (2003). Cultural Resources Report No. 03-120, SWCA Environmental Consultants, Phoenix.

Figure 7. Sunrise Relief Mountains and associated mining structures, as depicted in the Glendale Mining & Milling Company's prospectus.

West End Water Company

Seven archaeological sites have been identified within the 3,720-acre West End Water Company (WEWC) parcel, three of which are considered eligible for inclusion on the National Register of Historic Places (Figure 8, Table 7). Additionally, eleven archaeological surveys have been conducted (Table 8). The General Land Office plat map for T5N, R3W shows two segments of historic roads, the Santa Fe, Prescott, Phoenix Rail Road (also recorded as AZ N:3:32[ASM]), and a Telegraph Line that is directly adjacent to the Rail road. The plat map for T5N, R2W (filed in 1919) shows one segment of a historic road, a portion of the Santa Fe, Prescott, Phoenix Rail Road and the Telegraph Line. Additionally, a "Flag Station" is mapped in the N ½ of Section 13 of T5N, R3W.

Table 7. List of Archaeological Sites Located within the West End Water Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
AZ T:2:53(ASM)	Euro-american	Huge trash disposal area and associated berm (approximately 5' tall).	Historic	Not Eligible
AZ T:2:82(ASM)	Euro-american	Four abandoned, possibly historic dirt road segments.	Historic	Not Eligible
AZ T:2:83(ASM)	Hohokam	Low-density artifact scatter with a possible feature.	Prehistoric	*
AZ T:3:268(ASM)	Euro-american	Bladed gravel road of possible historic origin and an associated road feature.	Historic	Not Eligible
AZ V:2:101(ASM)	Euro-american	Historic (1930s) alignment of US 60.	Historic	Variable

Table 7. List of Archaeological Sites Located within the West End Water Company Parcel.

Site Number	Cultural Affiliation	Description	Time Period	NRHP Eligible
AZ N:3:32(ASM)	Euro-american	Santa Fe, Prescott, and Phoenix Rail Way Line (nick named the Peavine). It is a standard-gauge, single-track built in the late 1800s and early 1900s.	Historic	Variable
AZ I:3:10(ASM)	Euro-american	Historic alignment of US 89.	Historic	Variable

*NRHP eligibility unknown.

Table 8. List of Previous Archaeological Work within the West End Water Company Parcel.

Survey No.	Report Reference
1990-92.ASM	*Archaeological Assessment of the South Florida Test Service Desert Site, Wittman, Maricopa County, Arizona* by Barbara Macnider (1990). Archaeological Consulting Services, Ltd., Tempe.
1991-54.ASM/ 3787-R.SHPO	*Archaeological Inventory of 211th Avenue between Birdsong Avenue and State Route 74 in Maricopa County, Arizona* by James B. Rodgers (1991b). Contract Archaeological Series 990-8G. Scientific Archeological Services, Phoenix.
1992-55.ASM	*Cultural Resource Survey of a 6.93 Mile Segment of U.S. 60 Right-of-way Northwest of Sun City in Northwest Phoenix in North Central Maricopa County, Arizona* by Bradford Stone (1992). Archaeological Consulting Services, Ltd., Tempe.
1993-72.ASM	*Cultural Resource Survey of a 7.07 Mile Long Segment of U.S. 60 Right-of-Way in the Vicinity of Morristown and Wittman, Northwestern Maricopa County, Arizona* by Scott Kwiatkowski (1993). Archaeological Research Services, Inc., Tempe.
1994-259.ASM	*An Assessment of Cultural Resources along US 60 between Mileposts 123.55 and 138.6, Beardsley Road and the Morristown Railroad Overpass, Maricopa County, Arizona* by Karolyn Jackman (1995). Archaeological Consulting Services, Ltd., Tempe.
1995-196.ASM	*An Archaeological Survey along Lone Mountain Road near Wittman, Maricopa County Arizona* by Michael Stubing (1995a). Archaeological Report No. 95-32. SWCA Environmental Consultants, Phoenix.
1996-173.ASM	*An Archaeological Survey along Center Street between Grand Avenue and Hovey Street in Wittman, Maricopa County Arizona* by Michael Stubing (1996). Archaeological Report No. 96-132, SWCA Environmental Consultants Phoenix.
1999-142.ASM	*Cultural Resource Survey of 11 Proposed Frontage Road Segments and Intersection Realignments along US 60 between Mileposts 123.55 and 138.6 in Maricopa County, Arizona* by David Webb (1999). Logan Simpson Design, Inc., Tempe.
1999-351.ASM	*A Cultural Resources Survey of 39 Parcels of Land Along US 60 Between Mileposts 123.55 and 138.66, Maricopa County, Arizona* by Karolyn Jackman (2000). Archaeological Consulting Services, Ltd., Tempe.
2002-225.ASM	*Cultural Resources Survey of a 2,100 acre Parcel for the Proposed Sun Haven Ranch Development Southeast of Wittman, Maricopa County, Arizona* by Thomas E. Jones and Lourdes Aguila (2002). Archaeological Consulting Services, Ltd., Tempe.
4381-R/3122-I. SHPO	*A Cultural Resource Survey of a 7.07 Mile Long Segment of U.S. 60 Right-of-way in the Vicinity of Morristown and Wittman, Northwestern Maricopa County, Arizona* by Scott Kwiatkowski (1993). Archaeological Research Services, Inc., Tempe.
3062-I. SHPO	*No information available.*

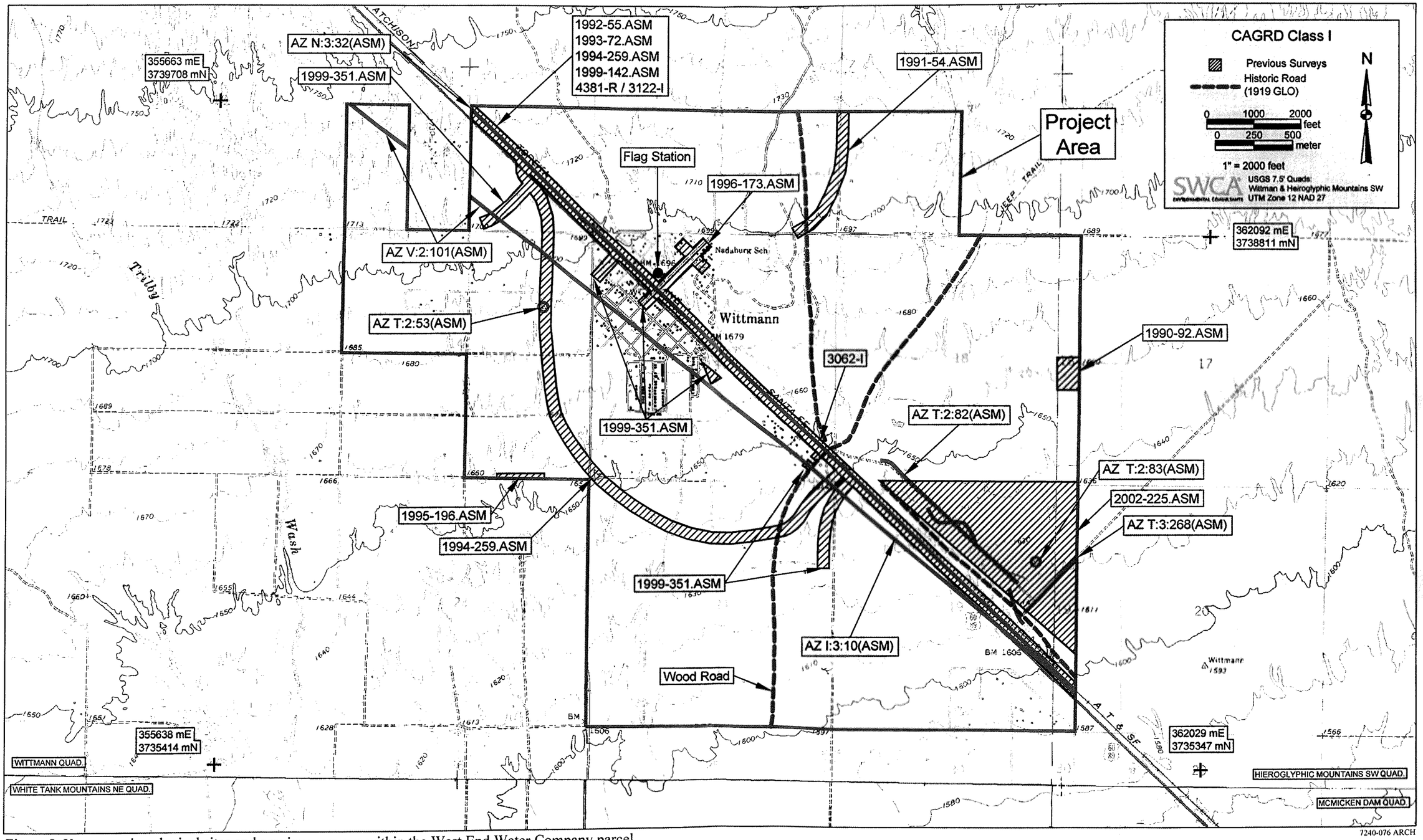

Figure 8. Known archaeological sites and previous surveys within the West End Water Company parcel.

SUMMARY

This report presents the results of a Class I site file search of a four parcels in Arizona. SWCA conducted site file search prior to the proposed purchase and transfer of 7,746 acre-feet (af) of water to the Central Arizona Water Conservation District. If approved, CAWCD will enter into a 50-year water service contract for the total annual volume of 7,746 af. CAP M&I entitlements held by New River Utility Company (NRUC) (1,885 af), Sunrise Water Company (944 af) and West End Water Company (WEWC) (157 af), along with 4,760 af of Litchfield Park Service Company's (LPSCo) entitlement would be transferred to CAWCD exclusively for use in meeting its replenishment obligations as defined by Arizona Revised Statutes. There are a total of 40 archaeological sites, 9 of which are eligible for inclusion on the National Register of Historic Places, within the four parcels.

Litchfield Park Service Company

Seven archaeological sites were identified in the 12,900-acre Litchfield Park Service Company (LPSCo) parcel, four of which are considered eligible for inclusion on the National Register of Historic Places. Additionally, twenty-three archaeological surveys have been conducted. Although only a small part of the parcel has been surveyed, site density does not appear to be high.

New River Utility Company

Seven archaeological sites and seven surveys were identified in the 1,077-acre New River Utility Company (NRUC) parcel. Only a small portion of the parcel has been surveyed and the information on the previously recorded sites is very vague. Subsequently, the archaeological sensitivity within this parcel is not clear.

Sunrise Water Company

For the 2,506-acre Sunrise Water Company (SWC) parcel, nineteen archaeological sites and nine archaeological surveys were recorded. The New River Dam Archaeological District lies north of the parcel. Which include over 40 sites. Additionally, the remains of several historic period mining operations are known for this area. This parcel has the highest archaeological sensitivity based on previous research in the area.

West End Water Company

Seven archaeological sites and 11 archaeological surveys were recorded in the 3,720-acre West End Water Company (WEWC) parcel. Three sites are considered eligible for inclusion on the National Register of Historic Places. This parcel appears to have a moderate archaeological sensitivity.

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APPENDIX D

BIOLOGICAL REPORT MEMORANDA

SWCA Environmental Consultants

Memo

To: Clifford A. Neal, Central Arizona Project

From: Eleanor Gladding, Biologist

CC: Project File: 7240-076 Task BIO

Date: 10/6/2003

Re: West End Water Company Service Area Biological Report

The West End Water Company (WEWC) service area is located in Sections 7, 18, and 19 of Township 5 North, Range 2 West and Sections 11, 12, 13, 14, and 24 of Township 5 North, Range 3 West in unincorporated Maricopa County. The WEWC service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994).[1] The vegetation present in the project area consists mainly of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. However, some portions of the project area contain residential developments, commercial developments, and horse properties. The dominant vegetation species present within the project area include the following: creosotebush (*Larrea tridentata*), blue paloverde (*Parkinsonia florida*), saguaro (*Carnegiea gigantea*), velvet mesquite (*Prosopis velutina*), triangle-leaf bursage (*Ambrosia deltoidea*), canyon ragweed (*Ambrosia ambrosioides*), desert ironwood (*Olneya tesota*), and grasses. Protected native plants classified under the Arizona Native Plant Law (A.R.S. §3-904) are also present in the project area.

There are no permanent existing surface waters, and no wetland vegetation or stands of deciduous broad-leaved riparian trees present in the project area. No natural caves, adits, or mine features are depicted on the United States Geological Survey map, and none were observed during field reconnaissance. Elevations within the project area range from approximately 1,590 feet above mean sea level (msl) to 1,740 feet above msl. The topography is relatively flat, and there are a few ephemeral drainages that cross through the project area.

SWCA biologist, Eleanor Gladding, conducted field reconnaissance on September 26, 2003 to obtain biological data on this service area. Thirteen federally listed species, one candidate species, and one proposed endangered species are addressed in this report. This species list was accessed by SWCA through the USFWS internet database (http://ifw2es.fws.gov). The Arizona Game and Fish Department (AGFD) also maintains a statewide database, known as the Heritage Data Management System (HDMS), which tracks records for federally listed species or other species of special concern. At the request of SWCA, the AGFD searched this database for occurrence records of special status species within a five-mile buffer of the project area.

All federally listed species plus the candidate and proposed endangered species (a total of 15 species) were eliminated from further consideration in this report because their known geographic ranges are distant from the

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[1] Brown, D.E. (ed.). 1994. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342 pp.

project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 1). These species include: Arizona agave (*Agave arizonica*), Arizona cliffrose (*Purshia subintegra*), bald eagle (*Haliaeetus leucocephalus*), California brown pelican (*Pelecanus occidentalis californicus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), desert pupfish (*Cyprinodon macularius macularius*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican spotted owl (*Strix occidentalis lucida*), razorback sucker (*Xyrauchen texanus*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and Gila chub (*Gila intermedia*). Also, the AGFD response letter indicated that there are no records of any special status species within five miles of the project area.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the WEWC Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Arizona agave *Agave arizonica*	E HS	Transition zone of oak-juniper woodland and mountain mahogany-oak scrub, usually steep rocky slopes from 3,000 to 6,000 feet[2]	No habitat – no oak-juniper or mountain mahogany-oak woodlands occur in the project area or in the vicinity of the project area. The project area is below the elevational range of this species.
Arizona cliffrose *Purshia subintegra*	E HS	Rolling limestone hills within Sonoran desertscrub from 2,500 to 4,000 feet[3]	No habitat – no limestone hills are present in the project area, and the project area is below the lower elevational limits of this species.
Bald eagle *Haliaeetus leucocephalus*	T WSCA	Large trees or cliffs near creeks, lakes, and rivers with abundant prey, i.e., fish[4]	No habitat – no large lakes or rivers to support this species are present in the project area. The closest known bald eagle nest location is at the confluence of the Salt and Verde Rivers (SRP and AGFD 1995).
California brown pelican *Pelecanus occidentalis californicus*	E S	Shore bird usually found near sandy beaches and lagoons. Nests along coastal islands with shrubby vegetation and small trees. In AZ, this species can be found at large inland lakes[5]	No habitat – no large lakes or rivers to support this species are present in the project area.

[2] Arizona Game and Fish Department. 1997. *Agave arizonica.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

[3] Arizona Game and Fish Department. 2001a. *Purshia subintegra.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[4] Arizona Game and Fish Department. 1996. Wildlife of special concern in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, AZ. 40 pp.

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Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the WEWC Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	E WSCA	Mature cottonwood/willow riparian forest, mesquite bosques, and dense desert scrub with saguaros at elevations of 4,000 feet or less[4]	No habitat –there are no known historic occurrences on the property. This area is not located within the any of the USFWS survey zones; therefore, species-specific surveys are not recommended.
Desert pupfish *Cyprinodon macularius macularius* and *eremus*	E WSCA	Permanent water in shallow springs, streams, and marshes[6]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E WSCA	Permanent water in small streams, springs, and cienegas[7]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E WSCA	Desert scrub with agave and columnar cacti. Caves or abandoned tunnels for roosts at elevations of 6,000 feet or less[8]	No habitat – no potential roosts sites (i.e., mine shafts, mine adits, or natural caves) are known to occur on the property. No agaves are present within the project area. Additionally, this project area is outside the known typical foraging range of this species in Arizona.
Mexican spotted owl *Strix occidentalis lucida*	T WSCA	Canyons and dense forests above 4,100 feet in elevation[9]	No habitat – project area is below the typical elevation range of this species and habitats within the project area are not similar to those known to be used by this species.
Razorback sucker *Xyrauchen texanus*	E WSCA	Slow backwaters of medium and large streams and rivers[10]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

[6] Arizona Game and Fish Department. 2001b. *Cyprinodon macularius macularius*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 3 pp.

[7] Arizona Game and Fish Department. 2001c. *Poeciliopsis occidentalis occidentalis*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

[8] Arizona Game and Fish Department. 1998. *Leptonycteris curasoae yerbabuenae*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[9] U.S. Fish and Wildlife Service (USFWS). 1995. Determination of critical habitat for the Mexican Spotted Owl; Final Rule. June 6, 1995. Federal Register 60(108):29914-29951.

[10] Arizona Game and Fish Department. 2001d. *Xyrauchen texanus*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the WEWC Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Southwestern willow flycatcher *Empidonax traillii extimus*	E WSCA	Dense cottonwood/willow & tamarisk vegetation communities along rivers & streams[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Sonoran pronghorn *Antilocapra americana sonoriensis*	E WSCA	Sonoran desert plains with wide alluvial basins and desert grassland[4])	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Yuma clapper rail *Rallus longirostris yumanensis*	E WSCA	Freshwater or brackish stream-sides and marshes with dense vegetation, especially cattail/bulrush[11]	No habitat – no heavily vegetated streams or marshes are present in the project area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C WSCA	Broadleaf deciduous riparian forest habitats and tamarisk woodlands adjacent to surface water[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Gila chub *Gila intermedia*	PE WSCA	Small headwater streams, springs, cienegas, and marshes of the Gila River basin[12]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

USFWS categories: **Endangered** (E) – Taxa in danger of extinction throughout all or a significant portion of its range; **Threatened** (T) - Taxa likely to become endangered within the foreseeable future throughout all or a significant portion of its range; **Candidate** (C) - Taxa whose protection under the Endangered Species Act has been found to be warranted, but precluded by higher priority listing activities at this time; **Proposed Endangered** (PE) - Taxa whose protection under the Endangered Species Act has been proposed as endangered., due to the likelihood of it becoming endangered within the foreseeable future throughout all or a significant portion of its range.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

ADA category: **Highly Safeguarded** (HS) - no collection or destruction allowed.

Although, ADA protected native plants are located within the project area, no ground disturbance is proposed with this project; therefore, no impacts area expected to ADA protected native plants. Additionally, no species-specific surveys are recommended for this project, and it is not likely that the proposed project will have an effect on any federally listed species and their habitat or any special status species and their habitat.

[11] Arizona Game and Fish Department. 2001e. *Rallus longirostris yumanensis*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 7 pp.

[12] Arizona Game and Fish Department. 2001f. *Gila intermedia*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

SWCA Environmental Consultants

Memo

To: Clifford A. Neal, Central Arizona Project

From: Eleanor Gladding, Biologist

CC: Project File: 7240-076 Task BIO

Date: 10/7/2003

Re: Sunrise Water Company Service Area Biological Report

The Sunrise Water Company (Sunrise) service area is located in Sections 9, 10, 11, 14, and 15 of Township 4 North, Range 1 East in the city of Peoria and in unincorporated Maricopa County. The Sunrise service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994).[1] The vegetation present in the project area consists mainly of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. However, approximately 50% of the project area consists of residential developments, commercial developments, and horse properties. The dominant vegetation species present within the project area include the following: creosotebush (*Larrea tridentata*), blue paloverde (*Parkinsonia florida*), saguaro (*Carnegiea gigantea*), triangle-leaf bursage (*Ambrosia deltoidea*), chainfruit cholla (*Opuntia fulgida*), and desert ironwood (*Olneya tesota*). New River is also located within the project area and the following vegetation was observed along the River: catclaw acacia (*Acacia greggii*), desert broom (*Baccharis sarothroides*), blue paloverde, desert willow (*Chilopsis linearis*), and burrobrush (*Hymenoclea salsola*). Protected native plants classified under the Arizona Native Plant Law (A.R.S. §3-904) are also present in the project area.

There are no permanent existing surface waters in the project area, and no wetland vegetation or stands of deciduous broad-leaved riparian trees are present in the project area. No natural caves, adits, or mine features are depicted on the United States Geological Survey map, and none were observed during field reconnaissance. Elevations within the project area range from approximately 1,300 feet above mean sea level (msl) to 1,440 feet above msl. The topography is relatively flat except in the northern part of the project area where a small portion of the West Wing Mountains extends into the project area. Also, there are a few ephemeral drainages that cross through the project area.

SWCA biologist, Eleanor Gladding, conducted field reconnaissance on September 26, 2003 to obtain biological data on this service area. Thirteen federally listed species, one candidate species, and one proposed endangered species are addressed in this report. This species list was accessed by SWCA through the USFWS internet database (http://ifw2es.fws.gov). The Arizona Game and Fish Department (AGFD) also maintains a statewide database, known as the Heritage Data Management System (HDMS), which tracks records for federally listed species or other species of special concern. At the request of SWCA, the AGFD searched this database for occurrence records of special status species within a three-mile buffer of the project area.

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[1] Brown, D.E. (ed.). 1994. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342 pp.

All federally listed species plus the candidate and proposed endangered species (a total of 15 species) were eliminated from further consideration in this report because their known geographic ranges are distant from the project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 1). These species include: Arizona agave (*Agave arizonica*), Arizona cliffrose (*Purshia subintegra*), bald eagle (*Haliaeetus leucocephalus*), California brown pelican (*Pelecanus occidentalis californicus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), desert pupfish (*Cyprinodon macularius macularius*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican spotted owl (*Strix occidentalis lucida*), razorback sucker (*Xyrauchen texanus*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and Gila chub (*Gila intermedia*). Also, the AGFD response letter indicated that there are three records of special status species within three miles of the project area. These species are addressed in Table 2.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the Sunrise Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Arizona agave *Agave arizonica*	E HS	Transition zone of oak-juniper woodland and mountain mahogany-oak scrub, usually steep rocky slopes from 3,000 to 6,000 feet[2]	No habitat – no oak-juniper or mountain mahogany-oak woodlands occur in the project area or in the vicinity of the project area. The project area is below the elevational range of this species.
Arizona cliffrose *Purshia subintegra*	E HS	Rolling limestone hills within Sonoran desertscrub from 2,500 to 4,000 feet[3]	No habitat – no limestone hills are present in the project area, and the project area is below the lower elevational limits of this species.
Bald eagle *Haliaeetus leucocephalus*	T WSCA	Large trees or cliffs near creeks, lakes, and rivers with abundant prey, i.e., fish[4]	No habitat – no large lakes or rivers to support this species are present in the project area. The closest known bald eagle nest location is at the confluence of the Salt and Verde Rivers (SRP and AGFD 1995).

[2] Arizona Game and Fish Department. 1997. *Agave arizonica*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

[3] Arizona Game and Fish Department. 2001. *Purshia subintegra*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[4] Arizona Game and Fish Department. 1996. Wildlife of special concern in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, AZ. 40 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the Sunrise Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
California brown pelican *Pelecanus occidentalis californicus*	E S	Shore bird usually found near sandy beaches and lagoons. Nests along coastal islands with shrubby vegetation and small trees. In AZ, this species can be found at large inland lakes[5]	No habitat – no large lakes or rivers to support this species are present in the project area.
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	E WSCA	Mature cottonwood/willow riparian forest, mesquite bosques, and dense desert scrub with saguaros at elevations of 4,000 feet or less[4]	No habitat –there are no known historic occurrences on the property. This area is not located within the any of the USFWS survey zones; therefore, species-specific surveys are not recommended.
Desert pupfish *Cyprinodon macularius macularius* and *eremus*	E WSCA	Permanent water in shallow springs, streams, and marshes[6]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E WSCA	Permanent water in small streams, springs, and cienegas[7]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E WSCA	Desert scrub with agave and columnar cacti. Caves or abandoned tunnels for roosts at elevations of 6,000 feet or less[8]	No habitat – no potential roosts sites (i.e., mine shafts, mine adits, or natural caves) are known to occur on the property. No agaves are present within the project area. Additionally, this project area is outside the known typical foraging range of this species in Arizona.
Mexican spotted owl *Strix occidentalis lucida*	T WSCA	Canyons and dense forests above 4,100 feet in elevation[9]	No habitat – project area is below the typical elevation range of this species and habitats within the project area are not similar to those known to be used by this species.

[5] Monson, G., and A.R. Phillips. 1981. *Annotated Checklist of the Birds of Arizona.* The University of Arizona Press, Tucson, Arizona. 172 pp.

[6] Arizona Game and Fish Department. 2001. *Cyprinodon macularius macularius.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 3 pp.

[7] Arizona Game and Fish Department. 2001. *Poeciliopsis occidentalis occidentalis.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

[8] Arizona Game and Fish Department. 1998. *Leptonycteris curasoae yerbabuenae.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[9] U.S. Fish and Wildlife Service (USFWS). 1995. Determination of critical habitat for the Mexican Spotted Owl; Final Rule. June 6, 1995. Federal Register 60(108):29914-29951.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the Sunrise Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Razorback sucker *Xyrauchen texanus*	E WSCA	Slow backwaters of medium and large streams and rivers[10]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Southwestern willow flycatcher *Empidonax traillii extimus*	E WSCA	Dense cottonwood/willow & tamarisk vegetation communities along rivers & streams[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Sonoran pronghorn *Antilocapra americana sonoriensis*	E WSCA	Sonoran desert plains with wide alluvial basins and desert grassland[4])	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Yuma clapper rail *Rallus longirostris yumanensis*	E WSCA	Freshwater or brackish stream-sides and marshes with dense vegetation, especially cattail/bulrush[11]	No habitat – no heavily vegetated streams or marshes are present in the project area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C WSCA	Broadleaf deciduous riparian forest habitats and tamarisk woodlands adjacent to surface water[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Gila chub *Gila intermedia*	PE WSCA	Small headwater streams, springs, cienegas, and marshes of the Gila River basin[12]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

USFWS categories: **Endangered** (E) – Taxa in danger of extinction throughout all or a significant portion of its range; **Threatened** (T) - Taxa likely to become endangered within the foreseeable future throughout all or a significant portion of its range; **Candidate** (C) - Taxa whose protection under the Endangered Species Act has been found to be warranted, but precluded by higher priority listing activities at this time; **Proposed Endangered** (PE) - Taxa whose protection under the Endangered Species Act has been proposed as endangered., due to the likelihood of it becoming endangered within the foreseeable future throughout all or a significant portion of its range.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

ADA category: **Highly Safeguarded** (HS) - no collection or destruction allowed.

[10] Arizona Game and Fish Department. 2001. *Xyrauchen texanus*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

[11] Arizona Game and Fish Department. 2001. *Rallus longirostris yumanensis*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 7 pp.

[12] Arizona Game and Fish Department. 2001. *Gila intermedia*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

Table 2. Summary of Special Status Species and Their Habitat Needs and Potential to Occur Within the Sunrise Service Area

Species	Status*	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Sonoran desert tortoise *Gopherus agassisii*	SC WSCA	Rocky foothills and bajadas within Sonoran and Mohave desertscrub communities south and east of the Colorado River in AZ and Mexico at 510 to 5,300 feet in elevation[13]	Suitable emigrational habitat – the project area is within the geographical and the elevational range of this species; however, they occur mostly in the adjacent foothills and mountains (West Wing Mountains) and may occasionally travel through the project area while migrating from one area to another.
California leaf-nosed bat *Macrotus californicus*	SC S WSCA	Sonoran desertscrub with roosts in mines, caves, or rock shelters in CA, NV, AZ, and Mexico at 160 to 3,980 feet in elevation[14]	Suitable foraging habitat – although there are no mines, caves, or rock shelters present in the project area, the project area is suitable as foraging habitat for this species, they have been found in Sonoran desertscrub, which is present in the project area.
Cave myotis *Myotis velifer*	SC S	Desertscrub with roosts in caves, tunnels, mineshafts, and under bridges in AZ, CA, NV, NM, and Mexico at 300 to 5,000 feet in elevation[15]	Suitable foraging habitat – although there are no mines, caves, or tunnels, present in the project area, the project area is suitable as foraging habitat for this species, they have been found in Sonoran desertscrub, which is present in the project area.

*Although these species have status listings, these listings do not afford the species any statutory protection under the Endangered Species Act (ESA).

BLM categories: **Sensitive** (S) – those taxa occurring on BLM Field Office Lands in Arizona, which are considered sensitive by the Arizona State Office.

USFWS categories: **Species of Concern** (SC) - taxa whose conservation status may be of concern to the USFWS, but does not currently have official status.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

Although, ADA protected native plants are located within the project area, no ground disturbance is proposed with this project; therefore, no impacts area expected to ADA protected native plants. Since it is possible that Sonoran desert tortoises may be encountered in the project area, the AGFD Guidelines for Handling Sonoran Desert Tortoises included in Attachment A should be followed if any tortoises are found in harm's way within the

13 Arizona Game and Fish Department (AGFD). 2001. *Gopherus agassizii.* Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 8 pp.

14 Arizona Game and Fish Department (AGFD). 2001. *Macrotus californicus.* Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

15 Arizona Game and Fish Department (AGFD). 1997. *Myotis velifer.* Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

project area. Additionally, no species-specific surveys are recommended for this project, and it is not anticipated that the proposed project will have an effect on any federally listed species and their habitat or any special status species and their habitat.

SWCA Environmental Consultants

Memo

To: Clifford A. Neal, Central Arizona Project

From: Eleanor Gladding, Biologist

CC: Project File: 7240-076 Task BIO

Date: 10/7/2003

Re: New River Utility Company Service Area Biological Report

The New River Utility Company (NRUC) service area is located in Sections 14, 22, 23, and 26 of Township 4 North, Range 1 East in the city of Peoria. The NRUC service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994).[1] The vegetation present in the project area consists of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. However, approximately 95% of the project area consists of residential and commercial developments. The dominant vegetation species present within the project area in undeveloped areas include the following: creosotebush (*Larrea tridentata*), blue paloverde (*Parkinsonia florida*), desert broom (*Baccharis sarothroides*), and velvet mesquite (*Prosopis velutina*). A small portion of New River is located within the southern part of the project area and the following vegetation was observed along the River: desert broom (*Baccharis sarothroides*), blue paloverde, and singlewhorl burrobrush (*Hymenoclea monogyra*). Protected native plants classified under the Arizona Native Plant Law (A.R.S. §3-904) are also present in the project area.

There are no permanent existing surface waters, and no wetland vegetation or stands of deciduous broad-leaved riparian trees are present in the project area. No natural caves, adits,[2] or mine features are depicted on the United States Geological Survey map, and none were observed during field reconnaissance. Elevations within the project area range from approximately 1,230 feet above mean sea level (msl) to 1,290 feet above msl. The topography is relatively flat, and no ephemeral drainages were observed in the project area.

SWCA biologist, Eleanor Gladding, conducted field reconnaissance on September 26, 2003 to obtain biological data on this service area. Thirteen federally listed species, one candidate species, and one proposed endangered species are addressed in this report. This species list was accessed by SWCA through the USFWS internet database (http://ifw2es.fws.gov). The Arizona Game and Fish Department (AGFD) also maintains a statewide database, known as the Heritage Data Management System (HDMS), which tracks records for federally listed species or other species of special concern. At the request of SWCA, the AGFD searched this database for occurrence records of special status species within a three-mile buffer of the project area.

All federally listed species plus the candidate and proposed endangered species (a total of 15 species) were eliminated from further consideration in this report because their known geographic ranges are distant from the

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[1] Brown, D.E. (ed.). 1994. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342 pp.

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project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 1). These species include: Arizona agave (*Agave arizonica*), Arizona cliffrose (*Purshia subintegra*), bald eagle (*Haliaeetus leucocephalus*), California brown pelican (*Pelecanus occidentalis californicus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), desert pupfish (*Cyprinodon macularius macularius*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican spotted owl (*Strix occidentalis lucida*), razorback sucker (*Xyrauchen texanus*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and Gila chub (*Gila intermedia*). Also, the AGFD response letter indicated that there are three records of special status species within three miles of the project area. These species are addressed in Table 2.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the NRUC Service Area

Species	**Status**	**Known Distribution and Habitat Needs**	**Likelihood of Occurrence in Project Area**
Arizona agave *Agave arizonica*	E HS	Transition zone of oak-juniper woodland and mountain mahogany-oak scrub, usually steep rocky slopes from 3,000 to 6,000 feet[3]	No habitat – no oak-juniper or mountain mahogany-oak woodlands occur in the project area or in the vicinity of the project area. The project area is below the elevational range of this species.
Arizona cliffrose *Purshia subintegra*	E HS	Rolling limestone hills within Sonoran desertscrub from 2,500 to 4,000 feet[4]	No habitat – no limestone hills are present in the project area, and the project area is below the lower elevational limits of this species.
Bald eagle *Haliaeetus leucocephalus*	T WSCA	Large trees or cliffs near creeks, lakes, and rivers with abundant prey, i.e., fish[5]	No habitat – no large lakes or rivers to support this species are present in the project area. The closest known bald eagle nest location is at the confluence of the Salt and Verde Rivers (SRP and AGFD 1995).
California brown pelican *Pelecanus occidentalis californicus*	E S	Shore bird usually found near sandy beaches and lagoons. Nests along coastal islands with shrubby vegetation and small trees. In AZ, this species can be found at large inland lakes[6]	No habitat – no large lakes or rivers to support this species are present in the project area.

[3] Arizona Game and Fish Department. 1997. *Agave arizonica.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

[4] Arizona Game and Fish Department. 2001. *Purshia subintegra.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[5] Arizona Game and Fish Department. 1996. Wildlife of special concern in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, AZ. 40 pp.

[6] Monson, G., and A.R. Phillips. 1981. *Annotated Checklist of the Birds of Arizona.* The University of Arizona Press, Tucson, Arizona. 172 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the NRUC Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	E WSCA	Mature cottonwood/willow riparian forest, mesquite bosques, and dense desert scrub with saguaros at elevations of 4,000 feet or less[4]	No habitat –there are no known historic occurrences on the property. This area is not located within the any of the USFWS survey zones; therefore, species-specific surveys are not recommended.
Desert pupfish *Cyprinodon macularius macularius* and *eremus*	E WSCA	Permanent water in shallow springs, streams, and marshes[7]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E WSCA	Permanent water in small streams, springs, and cienegas[8]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E WSCA	Desert scrub with agave and columnar cacti. Caves or abandoned tunnels for roosts at elevations of 6,000 feet or less[9]	No habitat – no potential roosts sites (i.e., mine shafts, mine adits, or natural caves) are known to occur on the property. No agaves are present within the project area. Additionally, this project area is outside the known typical foraging range of this species in Arizona.
Mexican spotted owl *Strix occidentalis lucida*	T WSCA	Canyons and dense forests above 4,100 feet in elevation[10]	No habitat – project area is below the typical elevation range of this species and habitats within the project area are not similar to those known to be used by this species.
Razorback sucker *Xyrauchen texanus*	E WSCA	Slow backwaters of medium and large streams and rivers[11]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

[7] Arizona Game and Fish Department. 2001. *Cyprinodon macularius macularius.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 3 pp.

[8] Arizona Game and Fish Department. 2001. *Poeciliopsis occidentalis occidentalis.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

[9] Arizona Game and Fish Department. 1998. *Leptonycteris curasoae yerbabuenae.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[10] U.S. Fish and Wildlife Service (USFWS). 1995. Determination of critical habitat for the Mexican Spotted Owl; Final Rule. June 6, 1995. Federal Register 60(108):29914-29951.

[11] Arizona Game and Fish Department. 2001. *Xyrauchen texanus.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the NRUC Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Southwestern willow flycatcher *Empidonax traillii extimus*	E WSCA	Dense cottonwood/willow & tamarisk vegetation communities along rivers & streams[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Sonoran pronghorn *Antilocapra americana sonoriensis*	E WSCA	Sonoran desert plains with wide alluvial basins and desert grassland[4])	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Yuma clapper rail *Rallus longirostris yumanensis*	E WSCA	Freshwater or brackish stream-sides and marshes with dense vegetation, especially cattail/bulrush[12]	No habitat – no heavily vegetated streams or marshes are present in the project area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C WSCA	Broadleaf deciduous riparian forest habitats and tamarisk woodlands adjacent to surface water[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Gila chub *Gila intermedia*	PE WSCA	Small headwater streams, springs, cienegas, and marshes of the Gila River basin[13]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

USFWS categories: **Endangered** (E) – Taxa in danger of extinction throughout all or a significant portion of its range; **Threatened** (T) - Taxa likely to become endangered within the foreseeable future throughout all or a significant portion of its range; **Candidate** (C) - Taxa whose protection under the Endangered Species Act has been found to be warranted, but precluded by higher priority listing activities at this time; **Proposed Endangered** (PE) - Taxa whose protection under the Endangered Species Act has been proposed as endangered., due to the likelihood of it becoming endangered within the foreseeable future throughout all or a significant portion of its range.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

ADA category: **Highly Safeguarded** (HS) - no collection or destruction allowed.

[12] Arizona Game and Fish Department. 2001. *Rallus longirostris yumanensis.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 7 pp.

[13] Arizona Game and Fish Department. 2001. *Gila intermedia.* Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

Table 2. Summary of Special Status Species and Their Habitat Needs and Potential to Occur Within the NRUC Service Area

Species	Status *	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Western burrowing owl *Athene cunicularia hypugaea*	SC S	Grasslands, pastures, coastal dunes, desertscrub, edges of agricultural fields, and other human areas where there is sufficient friable soil for a nesting burrow in western North and Central America[14]	Suitable habitat – the project area contains suitable habitat, i.e. desertscrub with small mammal burrows, to support this species; this species is known to occur in Maricopa County. However, only a very small portion of the project area contains desertscrub due to development; therefore, it is unlikely that this species uses the project area at all. The AGFD record is probably from desertscrub areas in the vicinity of the project area.
California leaf-nosed bat *Macrotus californicus*	SC S WSCA	Sonoran desertscrub with roosts in mines, caves, or rock shelters in CA, NV, AZ, and Mexico at 160 to 3,980 feet in elevation[15]	Suitable foraging habitat – although there are no mines, caves, or rock shelters present in the project area, the project area is suitable as foraging habitat for this species. They have been found in Sonoran desertscrub, which is present in the project area. However, only a very small portion of the project area contains desertscrub and most of the project area is developed; therefore, it is unlikely that this species uses the project area at all. The AGFD record is probably from desertscrub areas in the vicinity of the project area.
Cave myotis *Myotis velifer*	SC S	Desertscrub with roosts in caves, tunnels, mineshafts, and under bridges in AZ, CA, NV, NM, and Mexico at 300 to 5,000 feet in elevation[16]	Suitable foraging habitat – although there are no mines, caves, or tunnels, present in the project area, the project area is suitable as foraging habitat for this species. They have been found in Sonoran desertscrub, which is present in the project area. However, only a very small portion of the project area contains desertscrub and most of the project area is developed; therefore, it is unlikely that this species uses the project area at all. The AGFD record is probably from desertscrub areas in the vicinity of the project area.

*Although these species have status listings, these listings do not afford the species any statutory protection under the Endangered Species Act (ESA).

BLM categories: **Sensitive** (S) – those taxa occurring on BLM Field Office Lands in Arizona, which are considered sensitive by the Arizona State Office.

USFWS categories: **Species of Concern** (SC) - taxa whose conservation status may be of concern to the USFWS, but does not currently have official status.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

14 Haug, E.A., B.A. Milsap and M.S. Martell. 1993. Burrowing Owl (Speotyto cunicularia). In The Birds of North America, No. 61 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA. 19 pp.

15 Arizona Game and Fish Department (AGFD). 2001. *Macrotus californicus*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

16 Arizona Game and Fish Department (AGFD). 1997. *Myotis velifer*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

Although, ADA protected native plants are located within the project area, no ground disturbance is proposed with this project; therefore, no impacts area expected to ADA protected native plants. Since it is possible that western burrowing owls may be encountered in the project area, a pamphlet on removal of burrowing owls is included as Attachment A. This information will be helpful if any burrowing owls are found in harms way within the project area and need to be relocated. Additionally, no species-specific surveys are recommended for this project, and it is not likely that the proposed project will have an effect on any federally listed species and their habitat or any special status species and their habitat.

SWCA Environmental Consultants

Memo

To: Clifford A. Neal, Central Arizona Project

From: Eleanor Gladding, Biologist

CC: Project File: 7240-076 Task BIO

Date: 10/7/2003

Re: Litchfield Park Service Company Service Area Biological Report

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The Litchfield Park Service Company (LPSCo) service area is located in Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 33, 34, and 35 of Township 2 North, Range 1 West, in Sections 24, 25, and 36 of Township 2 North, Range 2 West, in Section 1 of Township 1 North, Range 2 West, and in Sections 3, 4, and 6 of Township 1 North, Range 1 West and serves portions of Litchfield Park, Avondale, Goodyear and in unincorporated Maricopa County. The LPSCo service area is located in the Lower Colorado River Valley subdivision of Sonoran desertscrub biotic community, as defined by Brown (1994).[1] The vegetation present in the project area consists mainly of native desert vegetation typical of the Lower Colorado River Valley subdivision of the Sonoran desertscrub biotic community. However, some portions of the project area contain residential developments, commercial developments, and agricultural areas. The dominant vegetation species present within the project area include the following: creosotebush (*Larrea tridentata*), velvet mesquite (*Prosopis velutina*), and saltbush (*Atriplex* spp.). Protected native plants classified under the Arizona Native Plant Law (A.R.S. §3-904) are also present in the project area.

There are no permanent existing surface waters in the project area, and no wetland vegetation or stands of deciduous broad-leaved riparian trees are present in the project area. No natural caves, adits, or mine features are depicted on the United States Geological Survey map, and none were observed during field reconnaissance. Elevations within the project area range from approximately 982 feet above mean sea level (msl) to 1,129 feet above msl. The topography is relatively flat, and no ephemeral drainages were observed in the project area. However, a small portion of the Agua Fria River crosses through the northeastern and southeastern portions of the project area.

SWCA biologist, Eleanor Gladding, conducted field reconnaissance on September 26, 2003 to obtain biological data on this service area. Thirteen federally listed species, one candidate species, and one proposed endangered species are addressed in this report. This species list was accessed by SWCA through the USFWS internet database (http://ifw2es.fws.gov). The Arizona Game and Fish Department (AGFD) also maintains a statewide database, known as the Heritage Data Management System (HDMS), which tracks records for federally listed species or other species of special concern. At the request of SWCA, the AGFD searched this database for occurrence records of special status species within a four-mile buffer of the project area.

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[1] Brown, D.E. (ed.). 1994. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City. 342 pp.

All federally listed species plus the candidate and proposed endangered species (a total of 15 species) were eliminated from further consideration in this report because their known geographic ranges are distant from the project area and/or the project area does not contain conditions similar to those known to be necessary to support these species (Table 1). These species include: Arizona agave (*Agave arizonica*), Arizona cliffrose (*Purshia subintegra*), bald eagle (*Haliaeetus leucocephalus*), California brown pelican (*Pelecanus occidentalis californicus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), desert pupfish (*Cyprinodon macularius macularius*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican spotted owl (*Strix occidentalis lucida*), razorback sucker (*Xyrauchen texanus*), Sonoran pronghorn (*Antilocapra americana sonoriensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma clapper rail (*Rallus longirostris yumanensis*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and Gila chub (*Gila intermedia*). Also, the AGFD response letter indicated that there are no records of any special status species within four miles of the project area.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the LPSCo Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Arizona agave *Agave arizonica*	E HS	Transition zone of oak-juniper woodland and mountain mahogany-oak scrub, usually steep rocky slopes from 3,000 to 6,000 feet[2]	No habitat – no oak-juniper or mountain mahogany-oak woodlands occur in the project area or in the vicinity of the project area. The project area is below the elevational range of this species.
Arizona cliffrose *Purshia subintegra*	E HS	Rolling limestone hills within Sonoran desertscrub from 2,500 to 4,000 feet[3]	No habitat – no limestone hills are present in the project area, and the project area is below the lower elevational limits of this species.
Bald eagle *Haliaeetus leucocephalus*	T WSCA	Large trees or cliffs near creeks, lakes, and rivers with abundant prey, i.e., fish[4]	No habitat – no large lakes or rivers to support this species are present in the project area. The closest known bald eagle nest location is at the confluence of the Salt and Verde Rivers (SRP and AGFD 1995).
California brown pelican *Pelecanus occidentalis californicus*	E S	Shore bird usually found near sandy beaches and lagoons. Nests along coastal islands with shrubby vegetation and small trees. In AZ, this species can be found at large inland lakes[5]	No habitat – no large lakes or rivers to support this species are present in the project area.

[2] Arizona Game and Fish Department. 1997. *Agave arizonica*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

[3] Arizona Game and Fish Department. 2001a. *Purshia subintegra*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[4] Arizona Game and Fish Department. 1996. Wildlife of special concern in Arizona. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix, AZ. 40 pp.

[5] Monson, G., and A.R. Phillips. 1981. *Annotated Checklist of the Birds of Arizona*. The University of Arizona Press, Tucson, Arizona. 172 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the LPSCo Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	E WSCA	Mature cottonwood/willow riparian forest, mesquite bosques, and dense desert scrub with saguaros at elevations of 4,000 feet or less[4]	No habitat –there are no known historic occurrences on the property. The majority of the project area is not located within the any of the USFWS survey zones (160 acres in the southwestern portion of the project area is within Survey Zone 3; however, this area is developed, and it does not contain suitable habitat for the pygmy-owl); therefore, species-specific surveys are not recommended.
Desert pupfish *Cyprinodon macularius macularius* and *eremus*	E WSCA	Permanent water in shallow springs, streams, and marshes[6]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E WSCA	Permanent water in small streams, springs, and cienegas[7]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E WSCA	Desert scrub with agave and columnar cacti. Caves or abandoned tunnels for roosts at elevations of 6,000 feet or less[8]	No habitat – no potential roosts sites (i.e., mine shafts, mine adits, or natural caves) are known to occur on the property. No agaves are present within the project area. Additionally, this project area is outside the known typical foraging range of this species in Arizona.
Mexican spotted owl *Strix occidentalis lucida*	T WSCA	Canyons and dense forests above 4,100 feet in elevation[9]	No habitat – project area is below the typical elevation range of this species and habitats within the project area are not similar to those known to be used by this species.
Razorback sucker *Xyrauchen texanus*	E WSCA	Slow backwaters of medium and large streams and rivers[10]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

[6] Arizona Game and Fish Department. 2001b. *Cyprinodon macularius macularius*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 3 pp.

[7] Arizona Game and Fish Department. 2001c. *Poeciliopsis occidentalis occidentalis*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 5 pp.

[8] Arizona Game and Fish Department. 1998. *Leptonycteris curasoae yerbabuenae*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.

[9] U.S. Fish and Wildlife Service (USFWS). 1995. Determination of critical habitat for the Mexican Spotted Owl; Final Rule. June 6, 1995. Federal Register 60(108):29914-29951.

[10] Arizona Game and Fish Department. 2001d. *Xyrauchen texanus*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 4 pp.

Table 1. Summary of Federally Listed Species, Proposed Endangered Species, and Candidate Species and Their Habitat Needs and Potential to Occur Within the LPSCo Service Area

Species	Status	Known Distribution and Habitat Needs	Likelihood of Occurrence in Project Area
Southwestern willow flycatcher *Empidonax traillii extimus*	E WSCA	Dense cottonwood/willow & tamarisk vegetation communities along rivers & streams[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Sonoran pronghorn *Antilocapra americana sonoriensis*	E WSCA	Sonoran desert plains with wide alluvial basins and desert grassland[4])	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Yuma clapper rail *Rallus longirostris yumanensis*	E WSCA	Freshwater or brackish stream-sides and marshes with dense vegetation, especially cattail/bulrush[11]	No habitat – no heavily vegetated streams or marshes are present in the project area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	C WSCA	Broadleaf deciduous riparian forest habitats and tamarisk woodlands adjacent to surface water[4]	No habitat – vegetation communities in the project area are not similar to those known to support this species.
Gila chub *Gila intermedia*	PE WSCA	Small headwater streams, springs, cienegas, and marshes of the Gila River basin[12]	No habitat – no suitable water habitat exists in the project area for this species. There are no known natural or translocated populations present in the project area.

USFWS categories: **Endangered** (E) – Taxa in danger of extinction throughout all or a significant portion of its range; **Threatened** (T) - Taxa likely to become endangered within the foreseeable future throughout all or a significant portion of its range; **Candidate** (C) - Taxa whose protection under the Endangered Species Act has been found to be warranted, but precluded by higher priority listing activities at this time; **Proposed Endangered** (PE) - Taxa whose protection under the Endangered Species Act has been proposed as endangered., due to the likelihood of it becoming endangered within the foreseeable future throughout all or a significant portion of its range.

AGFD category: **Wildlife of Special Concern in Arizona** (WSCA) - Wildlife species that are or may be in jeopardy in Arizona or with known or perceived threats or population declines (AGFD 1996).

ADA category: **Highly Safeguarded** (HS) - no collection or destruction allowed.

Although, ADA protected native plants are located within the project area, no ground disturbance is proposed with this project; therefore, no impacts area expected to ADA protected native plants. Additionally, no species-specific surveys are recommended for this project, and it is not likely that the proposed project will have an effect on any federally listed species and their habitat or any special status species and their habitat.

[11] Arizona Game and Fish Department. 2001e. *Rallus longirostris yumanensis*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 7 pp.

[12] Arizona Game and Fish Department. 2001f. *Gila intermedia*. Unpublished abstract compiled and edited by the Arizona Game and Fish Department, Phoenix, AZ. 6 pp.