



United States Department of the Interior



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In Reply Refer to:
AESO/SE
22410-2009-F-0090

May 20, 2009

Memorandum

To: Chief, Environmental Resource Management Division, Bureau of Reclamation,
Phoenix Area Office, Phoenix, Arizona (Attn: Diane Lausch)

From: Field Supervisor

Subject: Biological Opinion for the Construction of Community Water Company of
Green Valley Central Arizona Project Water Delivery System

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended, hereafter ESA. This biological opinion addresses the impacts that may result to the Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) (PPC) from the construction of a Central Arizona Project (CAP) water delivery system for the Community Water Company of Green Valley (CWC, applicant), Arizona. You have determined that the project may adversely affect the endangered PPC and may affect, but is not likely to adversely affect, the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*). The basis for our concurrence on the lesser long-nosed bat is provided in the Appendix of this document. We are conducting this consultation in accordance with the revised regulations for Interagency Cooperation Under the Endangered Species Act (74 FR 20421), which vacated the December 16, 2008 revised regulations.

This biological opinion for the PPC is based on information provided in the November 25, 2008, report titled, "Biological Assessment for Community Water Company CAP Water Delivery System" prepared for the Bureau of Reclamation (Reclamation) by Stantec Consulting, Inc., but also information you have provided us through correspondence and phone calls, as well as published and non-published literature available on the species of concern and related impacts. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office.

Consultation History

The following summarizes the consultation history for this opinion.

- December 1, 2008: We received your November 25, 2008, memorandum requesting consultation on the PPC and lesser long-nosed bat and attached biological assessment for these two species.

- December 24, 2008: We notified you that additional information was needed before consultation could be initiated.
- January 20, 2009: We received your January 8, 2009, memorandum that included the additional information requested.
- January 12, 2009: Meeting held among the FWS, Reclamation, and CWC staff, clarifying the relationship between the proposed project and the Rosemont Mine.
- March 2, 2009: Bruce Ellis, Chief, Environmental Resource Management Division, Bureau of Reclamation, sent FWS a report titled, “An Introduction to the Central Arizona Groundwater Replenishment District,” and one page from the draft Environmental Assessment for the proposed project.
- March 6, 2009: Memorandum from Reclamation, to All Interested Parties, Organization, and Agencies, regarding Notice of Availability of a Draft Environmental Assessment on the proposed action.
- May 7, 2009: We provided you with our draft Biological Opinion.
- May 14, 2009: We received your comments on our draft Biological Opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The CWC has provided Reclamation with its plans for taking and using its CAP water allocation. The CWC’s water delivery system would be composed of a delivery pipeline from the Pima Mine Road Recharge Project to an artificial recharge facility located near Green Valley, Arizona. The CWC proposes to construct and operate a raw water delivery pipeline and underground storage facility (i.e., a recharge site) to deliver and recharge CAP water in the Green Valley area. Under the proposed project, the pipeline would be sized to provide additional flow capacity, should other water users make arrangements with CWC to use the system for delivery of CAP water. Funding for the proposed project is being provided through an agreement between the CWC and Rosemont Copper Corporation. The agreement would allow Rosemont Copper Corporation to recharge the CWC’s water allocation from CAP for a period of 15 years. The anticipated result is a recharge volume up to 5,000 acre-feet of water per year. Using the CAP water supply for recharge would assist in maintaining the local aquifer and maximize use of renewable water sources.

The Proposed Project is located in the Santa Cruz Valley within Pima County on the edge of the Sonoran Desert. The proposed project will be located along the Nogales Highway between Pima Mine Road and the town of Green Valley in southern Pima County. The proposed pipeline will extend approximately eight miles to a proposed 20-acre recharge site. One section of the pipeline ties in with the Pima Mine Road Recharge Project’s existing pipeline and extends eastward approximately 0.4 mile. Details regarding the proposed project’s staging area, iron pipeline, booster station, and a recharge facility are discussed in detail below. The pipeline turns and continues south along the western portion of the Nogales Highway for roughly five miles to the intersection of the Old Nogales Highway. The pipeline continues south approximately 0.9 mile along the western right-of-way of Old Nogales Highway. Near the intersection of Old Nogales Highway and El Corto Road, the proposed pipeline turns east continuing 1.6 miles to the recharge site.

The proposed action involves construction of a staging area, pipeline, booster station, and recharge basin. PPC are located within the recharge basin construction area. Descriptions of these four construction phases are summarized below.

Staging Area Construction

Equipment staging areas, temporary offices, and areas for storing excavated material will require up to three acres of land. Privately owned and previously disturbed areas adjacent to the project will serve as staging areas. Access to the staging area will use existing public roadways adjacent to the alignment project. Pipe and other materials will be temporarily stored at the staging areas. Soil from construction will also be stored on the staging areas. For example, construction of the new recharge basin will require removing an estimated 950,000 cubic yards of soil from the basin area. This soil will be stored on previously disturbed areas of the Staker & Parson gravel mining operation located approximately 1.5 miles west of the recharge basin site. Should the contractor propose to use any areas for staging that include native vegetation, Reclamation will be consulted, and this opinion would be reinitiated if required under 50 CFR 402.16.

Pipeline Construction

The proposed new pipeline will be constructed using conventional construction methods of open cut trenching and backfill. Materials excavated from the trench will be temporarily stockpiled adjacent to the trench and used for backfill of the trench after installation of the new pipe. Excess excavated material will be spread within the limits of the right-of-way. Areas where the installation of the pipeline has been completed will be backfilled continuously throughout construction. The completed pipeline will be pressure tested to assure that no significant leaks occur during the operation of the new delivery system. The connection to the existing CAP pipeline leading to the Pima Mine Road Recharge Project will be located on the northern side of Pima Mine Road within an area that has been previously disturbed. The connection will involve a flow meter that will be owned and maintained by the CAP.

Booster Station

The booster station will be constructed on previously disturbed land. The footprint of the booster station is proposed to be roughly over one acre of land (i.e., 300 feet by 155 feet). The booster station will be located near the northwestern corner of the Staker & Parson gravel pit property. The entire booster station will be enclosed within a concrete eight foot high wall. According to the biological assessment, an additional booster station may be required if a flow of 30,000 acre feet of water is requested. Any additional booster stations will be constructed by entities requesting water service using the CWC water delivery systems, and thus are not being considered in this biological opinion and may require a separate consultation.

Recharge Basin

The new recharge basin will be constructed within the 20-acre site and will require clearing of approximately 13.5 acres of the 20-acre site. The site design will include a 30-foot wide buffer zone around the northern, eastern, and western sides of the basin. The buffer zone will serve as a visual screen for the recharge area, but also as a location for transplanting saguaro cacti and PPC. Construction of the new recharge basin will require removing an estimated 950,000 cubic yards of soil from the basin area. Permanent facilities will be located on approximately 6.5 acres in the southern portion of the site.

The contracted CAP water allotments for the Green Valley area include 2,858 acre-feet for CWC and 1,900 acre-feet for the Green Valley Domestic Water Improvement District for a total of 4,758 acre-feet annually. The required daily recharge volume to accommodate the design volume of 5,000 acre feet annually will be 16.28 acre feet per day. Recharging two feet of water per acre per day will require a total of 8.14 acres of recharge basins. The CAP water to be delivered will occur on the southern side of the parcel and will be channeled to the inlets of the recharge areas by pipes and open

channels. The recharge basin area will be fenced (chain link), and signs will be installed indicating private property and that no trespassing is allowed.

Proposed Conservation Measures

The applicant and Reclamation propose the following conservation measures to minimize the effects to PPC and its habitat.

- 1) Use of any other areas (disturbed or undisturbed) by the contractor that are not already identified in Figures E and F of the Biological Assessment will require prior approval by Reclamation. Should the contractor propose to use any area that is adjacent to or includes native vegetation, surveys for Federally listed species will need to be conducted by a professional biologist, with the information provided to Reclamation prior to construction. If additional PPC are located, Reclamation will reinitiate section 7 consultation, if required under 50 CFR 402.16. Use of any areas that require a survey will not proceed unless and until Reclamation has provided approval.
- 2) CWC will purchase 20 acres of credit from an approved conservation bank to compensate for the direct and indirect effects to PPC. Conservation bank credits will be secured through a Notarized Credit Agreement prior to the start of construction.
- 3) All construction vehicles and equipment operating within the recharge basin 20-acre parcel will be cleaned with high-pressure water hoses prior to entering the construction area to remove invasive weed seeds. Vehicles not involved in the construction will be prevented from accessing the construction site.
- 4) Noxious weed growth will be monitored during construction, and Environmental Protection Agency-approved treatment will be applied as needed during construction.
- 5) All disturbed areas not required for permanent facilities will be revegetated with salvaged native species and reseeded with a native seed mix.
- 6) Five PPC that will be directly impacted by the recharge basin will be relocated within the 30-foot buffer zone that will border the recharge basin on three sides.

STATUS OF THE SPECIES

PPC

Our April 22, 2009, Biological Opinion for the Mission Peaks Residential Subdivision (File No. 22410-2008-F-0473) included a detailed Status of the Species for the PPC. This biological opinion is available on our website at <http://www.fws.gov/southwest/es/arizona/>, under Document Library; Section 7 Biological Opinions. Herein we incorporate that status discussion by reference, with the following changes:

We do know the number and fate of PPC that have been detected during surveys for development projects that have undergone section 7 consultation. Through section 7 consultation, we are aware of 2,994 plants found on approximately 19,488 acres within the range of the PPC. Of the total number of plants, 2,255 PPC (75 percent) were destroyed, removed, or transplanted as a result of development, mining, and infrastructure projects. In terms of PPC habitat, some of the 19,488 acres likely did not

provide PPC habitat, but that amount is difficult to quantify because PPC habitat was not consistently delineated in every consultation. Across the entire PPC range, it is difficult to quantify the total number of PPC lost and the rate and amount of habitat loss for three reasons: 1) we review only a small portion of projects within the range of PPC (only those that have Federal involvement), 2) development that takes place without any jurisdictional oversight is not tracked within Pima and Santa Cruz counties, and 3) many areas within the range of the PPC have not been surveyed; therefore, we do not know how many plants exist or how much habitat is presently available.

There have been some notable conservation developments for this species. There are two conservation banks for PPC, one on a private ranch in the Altar Valley (Palo Alto Ranch Conservation Bank) and another owned by Pima County that includes areas in both the Altar Valley and south of Green Valley. In the Palo Alto Ranch Conservation Bank, 131.6 acres have been conserved to date. In Pima County's Bank, a total of 530 acres are under a conservation easement at this time (the County offsets its own projects within this bank). Additionally, three large blocks of land totaling another 1,078 acres have been set aside or are under conservation easements through previous section 7 consultations (see consultations 02-21-99-F-273, 02-21-01-F-101, and 02-21-03-F-0406). These areas, currently totaling 1,739.6 acres, are set aside and managed specifically for PPC as large blocks of land, and likely contribute to recovery of the taxon for this reason; therefore, we consider these acres conserved. Another 1,112 acres of land have been set aside as natural open space within the developments reviewed through section 7 consultation between 1995 and 2009. However, these are often small areas within residential backyards (not in a common area) that are difficult to manage and usually isolated within the larger development, and often include areas that do not provide PPC habitat (e.g., washes). Some conservation may occur onsite because of these open space designations, but long-term data on conservation within developed areas are lacking, and we generally do not feel these areas contribute significantly to PPC recovery over the long-term.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the Action Area

The "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur (50 CFR 402.02).

For this project, we define the action area as the footprint of the project, including construction of the staging area, pipeline, booster station, and recharge basin. Additionally, the action area includes the CWC service area, which is the area that will benefit from groundwater recharge occurring because of this project (Figure 1). The CWC service area contains approximately 5,120 acres roughly between Duval Mine Road to the north, the Santa Cruz River to the east, Cyprus Sierrita to the west, and Mission Twin Buttes Road to the south.

The area surrounding the recharge site is State Land. Existing land uses along the pipeline route from the Pima Mine Road to the Staker & Parson booster station include roadways and driveways, and surface and subsurface utilities including gas, telephone, cable television, fiber optic lines, electrical power lines, and two existing water lines. The installation of the paved roads and utilities has previously disturbed the ground surface in these locations.

According to the most recently available imagery (Google Earth, accessed May 5, 2009), most of the existing land base within the CWC service area is already developed, except for approximately 190 acres near the southwestern part of the service area. Development of this area can occur without the addition of the CAP water to the CWC service area.

The CWC's water source is groundwater pumped from the Tucson Basin Aquifer. Recently, the CWC closed two of its wells due to contamination from a sulfate plume spreading from the mine tailings piles associated with the Freeport McMoRan Sierrita mine located to the southwest of the service area. Contaminated water can be detoxified, but the process is costly. Delivery of CAP water into the CWC service area provides assurance that CWC will be able to continue economical water delivery to their customers, despite closure of wells and groundwater contamination.

Since 1985, CWC has pursued opportunities to develop a means for taking and using its CAP entitlement. Rosemont Copper (Rosemont) is providing the funding for building the project that will provide the CAP water to the CWC service area. In exchange, Rosemont will have first priority to Green Valley's CAP water allocation for 15 years. Rosemont will recharge up to 5,000 acre feet per year at the Green Valley facility, which will help them meet their commitment, made in their mine plan of operation (MPO), to recharge 105 percent of the water they withdraw from their wells near Sahuarita, Arizona for use at the proposed Rosemont Mine.

While Rosemont is funding the proposed project, we have determined that the Rosemont Copper Mine (Mine) is not an action interrelated or interdependent to the proposed project. Approval of the proposed recharge facility does not automatically trigger approval of the Rosemont Mine, and development of the mine could occur without Rosemont Copper funding CWC's facility. Use of the proposed recharge system is not identified in Rosemont's MPO, and approval of the CWC CAP delivery system and funding of the project by Rosemont Copper are not contingent upon approval of Rosemont's MPO, nor the operation of the mine itself. Rosemont Copper can meet its stated commitment to replenish water within the Santa Cruz basin using other sources of CAP water and other ground water storage facilities, as has been occurring since 2007. Construction of the proposed project would allow Rosemont Copper to recharge water closer to its proposed production wells, rather than at facilities farther away.

Implementation of the proposed project (recharge of up to 5,000 acre-feet annually of CAP water) may raise ground-water levels by approximately 135 feet directly underneath the recharge facility. The regional impact (ground water elevation rise greater than or equal to one foot as compared to the "No Action" alternative) will extend about 8.5 miles north, 5.25 miles south, 6 miles west, and 4 miles east of the CWC recharge facility. It is not predicted that this recharge will alter groundwater gradients or flow direction west of the Santa Cruz River in the vicinity of the sulfate plume (January 8, 2009, memorandum from Bruce Ellis to Steven Spangle, p. 4).

Status of the species within the Action Area

Protocol-level surveys for PPC were completed within the area proposed for construction of the staging area, pipeline, booster station, and recharge basin. These surveys were completed from May 22 to June 22, 2008. Within the surveyed area, a total of five PPC were found, all within the 20-acre recharge site. Most of the area outside the recharge basin is within paved road rights-of-way and is currently disturbed.

EFFECTS OF THE ACTION

The proposed action will result in the direct removal of five PPC and approximately 13.5 acres of PPC habitat within the 20-acre recharge site. Within the context of PPC individuals and surveyed area we have reviewed through section 7 consultation, this project adds five individuals and 20 acres to the known baselines, bringing each baseline up to 2,999 individuals and 19,508 acres surveyed.

The loss or modification of PPC and its habitat can impact the taxon both directly and indirectly. Areas of permanent disturbance will remove portions of the seed bank, and areas of temporary disturbance can also alter the seed bank. Disturbance of soils will change water infiltration, compact soil, and change local site conditions. Additionally, recently disturbed areas have an increased potential to be invaded by noxious weeds (e.g., Lehmann lovegrass), which can negatively affect PPC. Although some areas of temporary disturbance may recover, it may take many years before full recovery is achieved. Vasek *et al.* (1975) found that desert vegetation is fragile and easily destroyed, but does have a long-term potential (probably measured in centuries) to recover from drastic disturbance such as a pipeline project. PPC can be found in areas of recent disturbance, as competition with other plants for nutrients and light are reduced.

To offset the indirect effects to PPC and its habitat, the applicant proposes to pressure wash all construction vehicles and equipment operating within the 20-acre recharge basin prior to entering the construction area to remove invasive weed seeds, as well as monitor and treat noxious weeds during construction. The applicant also proposes to reseed disturbed areas with native seed after the project is completed. These conservation measures should offset this project's indirect effects to PPC and its habitat by preventing the spread of noxious weeds during construction activities and encouraging native plants to reseed after construction is completed.

To offset the direct impacts to PPC and its habitat, the applicant proposes to translocate the five PPC that would be directly affected to the 30-foot buffer zone bordering the recharge basin, as well as purchase 20 acre-credits in a FWS-approved conservation bank prior to construction. Salvage of PPC has shown very limited success. Transplanted individuals usually experience high first year mortality, and we generally do not consider this a meaningful conservation measure for the direct impacts to PPC individuals. However, by purchasing 20 acre-credits in a conservation bank, the applicant is offsetting the direct effects of this project to PPC habitat, which contributes to the overall recovery and conservation of the species.

In summary, the proposed project will result in the direct loss of five PPC and 13.5 acres of PPC habitat. This represents a loss of less than one percent of the known individuals and surveyed area we have reviewed through section 7 consultation. The applicant proposes to offset this loss by purchasing 20 acre-credits within a PPC conservation bank. The project, while contributing to further fragmentation of PPC habitat, also contributes to the survival and recovery of PPC because it will

provide for offsite conservation of PPC individuals and habitat in a conservation bank, which will be protected in perpetuity.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. For example, additional booster stations will require a separate consultation if a federal nexus occurs and if any listed species may be adversely affected.

Most of the future growth within Green Valley is anticipated to be within master planned communities according to the draft Environmental Assessment for the proposed project, including one area for developing commerce near Duval Mine Road and I-19. However, as previously mentioned, most of the area within the CWC service area is already developed, and the potential for future growth is limited.

Other relevant plans in the region that would have an effect on land use in the action area include the Pima County Comprehensive Plan and the related Sonoran Desert Conservation Plan. The Pima County Comprehensive Plan indicates the site of the recharge basin to be within a proposed land use category of “Low Intensity Urban” development. In October 2008, the Town of Sahuarita adopted a General Plan Amendment for the site of the recharge basin with a proposed land use category of “Low-Medium Density Residential,” effective upon annexation into Green Valley. The Sonoran Desert Conservation Plan identifies the area near the Santa Cruz River as a significant wildlife corridor and will most likely benefit the PPC.

According to Ferris *et al.* (2006, p. 6), the replenishment obligation by the Central Arizona Groundwater Replenishment District (CAGRDR) is expected to grow in the next 20 years. The CAGRDR was created in 1993 to provide groundwater replenishment services within the CAP service area (Maricopa, Pinal, and Pima counties) while complying with the Groundwater Management Act. The Groundwater Management Act provides for the creation of Active Management Areas (AMAs) in areas where groundwater overdraft is of critical concern. Each AMA has its own water management goal, which generally must comply with the Assured Water Supply program. The Assured Water Supply program requires that proposed residential developments within an AMA demonstrate that enough water is available to satisfy the needs of the development for at least 100 years. Generally, an applicant must demonstrate that the development will draw a substantial proportion of its water from renewable supplies (i.e., CAP). To allow development to occur far from the CAP or other renewable sources, and to supply the needs of water users there with groundwater, the CAGRDR was formed. When a water provider or development entity becomes a member, the CAGRDR assumes the replenishment obligations of the development and promises to replenish the legal equivalent of the renewable water the development would otherwise have had to use. In essence, the water provider or development owner contracts for replenishment services (Ferris *et al.* 2006, pp. 1-3).

As homes within the existing membership lands and membership service areas are built and occupied, their water demand will increase; consequently, the CAGRDR’s replenishment obligation is likely to increase. Membership of CAGRDR is expected to grow significantly, as well (Ferris *et al.* 2006). According to the proposed project’s draft Environmental Assessment, developers within the CWC service area would continue to be able to join the CAGRDR, enroll their lands as member lands of

CAGRD, and then pay CAGRD to replenish excess ground water delivered within the member lands, whether or not the proposed project is constructed. Therefore, the proposed action is not expected to promote growth in the CWC Service Area.

CONCLUSION

After reviewing the current status of PPC, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed construction of a CAP water delivery system for the CWC of Green Valley, is not likely to jeopardize the continued existence of the PPC. No critical habitat has been designated for this species; therefore, none will be affected. We make this determination because:

- The loss of five PPC and 13.5 acres of PPC habitat represent less than one percent of the PPC individuals and area surveyed we have reviewed through section 7 consultation.
- The proposed project will contribute to the overall conservation and recovery of PPC by conserving 20 acres of PPC habitat in perpetuity in a conservation bank.
- The proposed action is not expected to promote growth in the CWC Service Area.
- Development of the Rosemont Copper Mine could proceed with or without the proposed action, and therefore, in accordance with 50 CFR 402.02, the mine is not an interrelated or interdependent action.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of Federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

CONSERVATION RECOMMENDATIONS

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of listed species. Conservation recommendations are discretionary agency activities to minimize or avoid effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that Reclamation participate in efforts to identify and conserve PPC throughout its range, including participation in forums that address the control of invasive, exotic plants (e.g. buffelgrass and Lehmann lovegrass).
2. We recommend that Reclamation consider coordinating the removal of the PPC with the Arizona-Sonora Desert Museum and local PPC experts.

3. We recommend that Reclamation participate with us and other parties in the development and implementation of a recovery plan for the PPC.

In order that we are kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the construction of a Central Arizona Project (CAP) water delivery system for the Community Water Company of Green Valley (CWC), Santa Cruz County, Arizona. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

We appreciate Reclamation's efforts to identify and minimize effects to listed species from this project. For further information please contact Ms. Marit Alanen at (520) 670-6150 (x 234) or Mr. Jim Rorabaugh (x 230). Please refer to the consultation number 22410-2009-F-0090 in future correspondence concerning this project.

/ s / Sherry Barrett for
Steven L. Spangle

cc: Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

Community Water Company of Green Valley, Green Valley, AZ (Attn: Arturo Gabaldon)
Habitat Branch Chief, Arizona Game and Fish Department, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ (Attn: Joan Scott)

LITERATURE CITED

- Ferris, J. 2006. An Introduction to the Central Arizona Groundwater Replenishment District. Water Resources Research Center, University of Arizona. 9 pp.
- Vasek, F.C., H.B. Johnson, and D.H. Eslinger. 1975. Effects of pipeline construction on creosote bush scrub vegetation of the Mojave Desert. *Madroño* 23: 1-13.

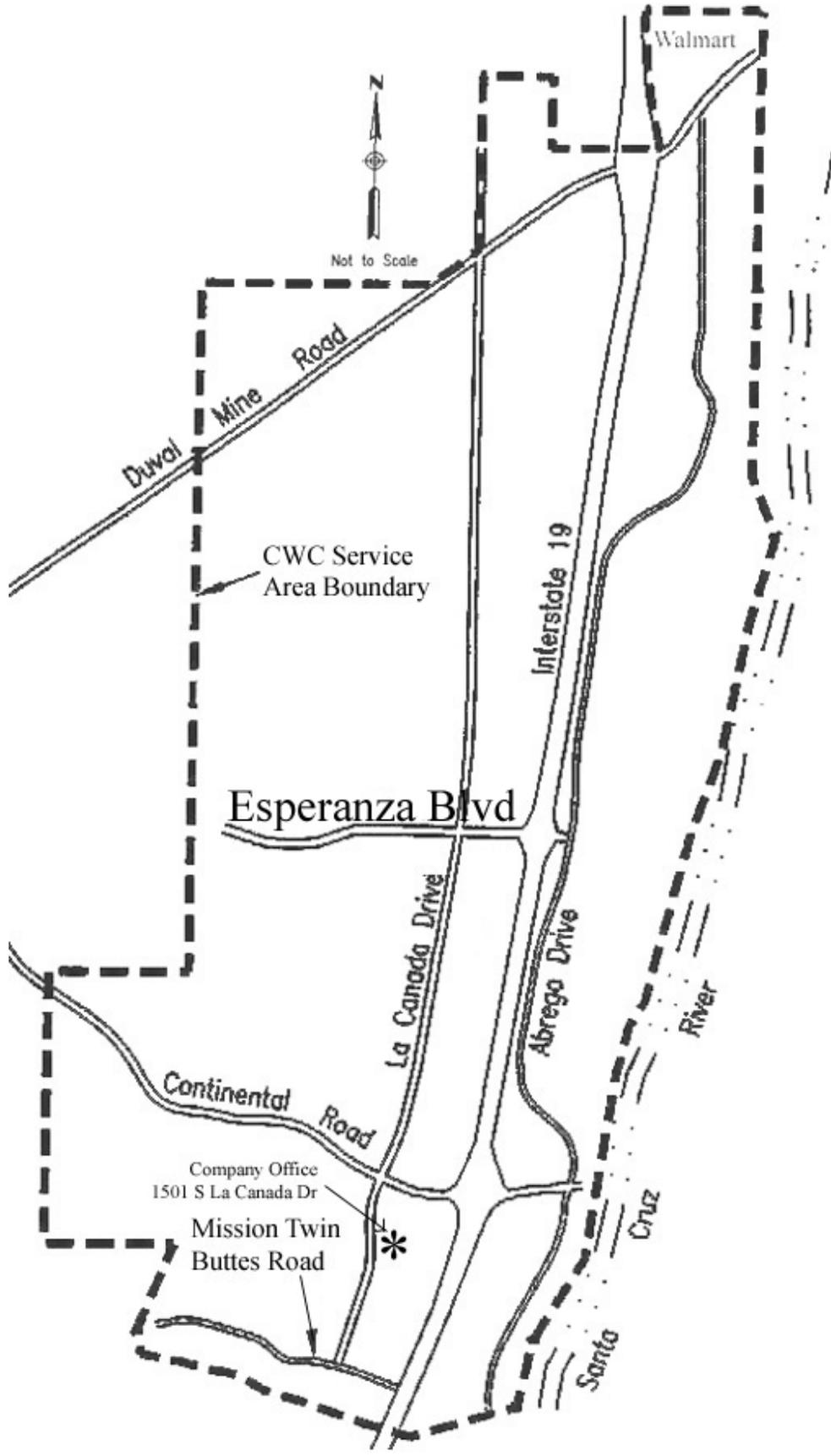


Figure 1. Outline of the Community Water Company of Green Valley service area.

APPENDIX – CONCURRENCE

The appendix contains our concurrence with your determinations that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*). This concurrence is based on the full implementation of the proposed action as described in the Description of the Proposed Action section of the Biological Opinion, including the conservation measures proposed by the applicant.

Lesser long-nosed bat

The lesser long-nosed bat is migratory and found throughout its historical range, from southern Arizona and extreme southwestern New Mexico, through western Mexico, and south to El Salvador. The bat is a seasonal resident in Arizona, usually arriving in early April and leaving in mid-September to early October. Lesser long-nosed bats consumes nectar and pollen of paniculate agave flowers and the nectar, pollen, and fruit produced by a variety of columnar cacti, and have been documented foraging many miles from maternity colonies. A lesser long-nosed bat colony exists 13 miles to the southeast of the action area.

For a detailed Status of the Species, please see our September 4, 2008 Biological Opinion on the effects of the Secure Border Initiative (SBI^{net}) Tucson West Tower Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Area of Operation, U.S. Border Patrol, Tucson Sector, Arizona (22410-2008-F-0373) available on our website at <http://www.fws.gov/arizonaaes>, under Document Library; Section 7 Biological Opinions.

CONSERVATION MEASURES

There are no conservation measures proposed by the applicant specific to the lesser long-nosed bat.

CONCURRENCE

We concur with your determination that this project may affect, but is not likely to adversely affect, the lesser long-nosed bat for the following reasons:

- A bat colony exists 13 miles to the southeast of the project, and the species likely makes foraging flights through the action area. One mature saguaro is located in the recharge site and 93 immature saguaros that may provide future foraging resources occur within the project site. No saguaros occur within the pipeline alignments. All saguaros located on the recharge facility will be transplanted to the buffer area and/or that portion of the recharge site that remains undisturbed. Therefore, indirect effects related to removal of forage resources are insignificant, as these resources will essentially remain the same.
- No critical habitat has been designated for the lesser long-nosed bat, thus none will be affected.