# United States Department of the Interior

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**In Reply Refer To:**
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Memorandum

To: Gail Acheson, Field Manager, Yuma Field Office, U.S. Bureau of Land Management, Yuma, Arizona

From: Field Supervisor, Arizona Ecological Services Field Office, U.S. Fish and Wildlife Service, Phoenix, Arizona

Subject: Conference Opinion for the Disposal of 80 Acres of Bureau of Land Management Land to the City of Yuma

This conference opinion responds to your April 16, 2002, memorandum requesting initiation of formal section 7 conferencing under the Endangered Species Act (Act; 16 U.S.C. 1531 et seq.), as amended. The conference concerns possible effects of an 80-acre Bureau of Land Management (Bureau) land disposal to the City of Yuma (Yuma) on the proposed threatened flat-tailed horned lizard (*Phrynosoma mcallii*) (FTHL). The Bureau's Yuma Field Office has determined that the 80-acre land disposal will not jeopardize the continued existence of the FTHL. However, the Bureau has also requested that conferencing be conducted in accordance with the procedures for formal consultation, as provided in 50 CFR §402.10 (d), and has determined that the above action is likely to adversely affect the proposed threatened FTHL.

This conference opinion is based on information provided as attachments to the Bureau's April 16, 2002, request for formal conference which included a Biological Evaluation, an Environmental Assessment, addenda to these documents, maps, and other documents associated with the proposed action; a site visit and informal FTHL survey on June 18, 2002; telephone conversations and/or electronic mail transmissions with Fred Wong of the Bureau's Yuma Field Office; and other sources of information. A complete administrative record of this consultation is on file at this office.

## Conference History

On April 17, 2002, we received the Bureau's April 16, 2002, memorandum requesting formal conference for potential effects of the proposed action to the FTHL. The Bureau's conference initiation package contained the basic information required to begin formal conference. In addition to the Bureau's request for formal conference on FTHL, the Bureau determined that the

proposed action would have "no effect" on the Peirson's milkvetch (*Astragalus magdalenae* var. *peirsonii*), a federally threatened species. This "no effect" determination was based on the apparent absence of the species in the action area (USBLM 2002).

We responded to the Bureau's request for formal conference with a memorandum dated May 10, 2002, confirming initiation of formal conferencing. On May 28, 2002, we discussed conservation measures appropriate for the project. On June 18, 2002, Our biologists Jeff Servoss, Jim Rorabaugh, and Allen Taylor met Bureau biologist Fred Wong at the project site to discuss the proposed action and conduct an informal FTHL survey to confirm the species' presence and remove and relocate any lizards from harm's way. Several sets of potential FTHL tracks were noted on-site; however, no FTHLs were observed. For further discussion of the site visit and accompanying informal FTHL survey, please see the Environmental Baseline below. A detailed description of the survey results is included in the administrative record for reference.

## DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the transfer of 80-acres of land located in Yuma, Arizona, from the Bureau to Yuma under the Recreation and Public Purposes Act of 1926, as amended (43 U.S.C. 869 *et seq*.). The land disposal is anticipated to occur at the conclusion of formal conferencing and issuance of our conference opinion. The 80-acre parcel of undeveloped land is in the northeastern corner of the intersection of 40th Street and (Yuma) County 12th Street. The legal description for the parcel is T. 9 S., R. 22 W., sec. 9, S½SW¼. Due to the indirect effects from the 80-acre land disposal [see discussion of water pollution control facility (WPCF) below], the action area includes the parcel and adjacent portions of Araby Road and 40th Street. Of these two roads, 40th Street is the primary access road to the WPCF which is considered as part of the action area and is expected to incur an increase in vehicular traffic from the construction, operation, and maintenance of the WPCF. The other access road to the WPCF is Avenue 6E which traverses developed property and is not considered part of the action area [see Appendix A (WPCF Site Plan)].

In response to projected population growth estimates (anticipated increase ranging from 34,000 to 47,000) for the Yuma area over the next 20 years, Yuma has found it necessary to construct a new WPCF in the East Mesa area of Yuma. Consequently, Yuma has chosen this 80 acre parcel for the proposed WPCF. Subsequently, this conference opinion considers the Bureau's legal disposal of the 80-acre parcel, including the environmental considerations prior to property transaction, as well as the indirect effect of Yuma's proposed use of the parcel after its disposal. The latter will be further discussed in the following "Effects Analysis" section of this conference opinion. The Bureau will maintain discretion and compliance responsibility for the parcel until disposal occurs. After disposal, Yuma will maintain responsibility for the construction, operation, and management of the WPCF and the property itself under a patent which includes a limited reverter provision. This provision specifies that no portion of the land shall, under any circumstance, revert to the United States if any such portion has been used for solid waste disposal or for any other purpose which may result in the disposal, placement, or release of any hazardous substance.

*Proposed Conservation Measures*

Yuma Department of Public Works, Engineering Services Division has agreed to perform the following conservation measures with respect to the parcel acquisition and the construction and subsequent operation of the proposed WPCF (USBLM 2002) in the following chronological order:

1) Before the construction of the WPCF commences, a FTHL-proof barrier or fenceline will be constructed. Fenceline specifications will include 1) using 0.25 inch mesh hardware cloth; 2) 36 inches high (net height, after installation, will actually be 30 inches); 3) buried to a depth of approximately 6 inches; 4) permanently attached to t-posts and two barbed wires with metal clips or ties (the 3rd and uppermost barbed wire will not be attached to the mesh); and, 5) 12-foot fence projections at 45° relative to the main fence at openings. Where a junction (end of one hardware cloth roll and the beginning of another) occurs, the hardware cloth should be supported and fastened together with wire clips or ties to an additional t-post to prevent the formation of gaps. The FTHL fenceline shall be constructed along the entire perimeter of the parcel with a 12 foot inset (to allow construction and maintenance of the fence). Should it become necessary to alter the fenceline specifications or design, we and the Bureau must agree on these alterations prior to construction of the barrier fence.

2) After the completion of Item 1 above, an experienced biologist(s), approved by the Bureau, will conduct a thorough search of the 80-acre parcel in an attempt to capture and relocate as many FTHL as possible prior to construction activities. A minimum of 80 person-hours of FTHL search time will be spent as required for reasonable success in locating FTHL specimens. We offer assistance in expertise and person-hours for this purpose. Search efforts will only occur after the lizard-proof fenceline discussed above has been installed and only when conditions are suitable for surface activity of FTHL. These conditions are as follows:

a. April through September

b. Surface temperatures, exposed to sunlight, must be below 122°F.

c. For tracking purposes, field work must not occur immediately after precipitation events or when wind speed has equaled or surpassed 20 mph in the area.

FTHLs that are discovered while searching within the project site will be relocated out of harm's way and moved to nearby suitable habitat. Specifically, FTHLs are to be relocated to suitable habitat on Federal lands located on the Barry M. Goldwater Range south and east of the project site, on the opposite side of the canal. Permission will have to be granted from Marine Corps Air Station (MCAS) in Yuma (Ron Pearce, Range Management Office) prior to relocation of captured FTHLs. If permission for relocation is not granted by the MCAS, other arrangements will be required and further coordination with the us will be necessary. Relocated FTHLs will be placed in the shade of a large

shrub in undisturbed habitat. If surface temperatures in the sun are less than 86° F or exceed 122° F, the biologist will hold the FTHL for later release. Initially, captured FTHLs will be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards will be held at temperatures between 77° F and 95° F and will not be exposed to direct sunlight. Release will occur as soon as possible after capture and during daylight hours when surface temperatures range from 90° F to 104° F. If such conditions do not occur within 48 hours of capture, the lizard(s) will be transferred to a terrarium containing at least 2 inches of sand from the project area. The terrarium will be maintained between 77° F and 95° F until conditions at the site are appropriate for release. The biologist will be allowed some judgement and discretion to ensure that survival of FTHLs found in the project area is likely.

d. Persons that handle FTHLs shall obtain all necessary permits and authorization from Arizona Game and Fish Department before field searches are implemented.

3) After the completion of both the aforementioned FTHL relocation efforts and the subsequent construction of the WPCF, a chainlink fenceline will be constructed on the perimeter of the smaller, actual development boundary [see Appendix A (WPCF Site Plan)], within the 80-acre parcel and the associated set-backs. At this time, the previously constructed lizard-proof barrier (or fence) shall be removed from its previous location and retrofitted and incorporated into (affixed to) the constructed chainlink fenceline, along the entire perimeter of the project site, to limit accessibility and subsequent injury or mortality of lizards occupying adjacent habitats which may stray onto the project site. At the proposed access points on the western and southern sides of the WPCF [see Appendix A (WPCF Site Plan)], the FTHL barrier fenceline shall be modified to help prevent migration of FTHLs onto the WPCF grounds. These modifications shall consist of four-foot sections radiating outwards at a 45° angle away from the parcel at each junction point with the fenceline and the gates, or vehicular access points. The remainder of the FTHL barrier fenceline specifications shall remain the same as those used during initial construction of the FTHL barrier fenceline. However, should it become necessary to alter the fenceline specifications or design, we and the Bureau must agree on these alterations prior to construction of the barrier fence.

4) Prior to construction, operation, and maintenance of the WPCF, a worker education program will be developed and implemented by Yuma. Wallet-sized cards summarizing this information will be provided to all construction, operation, and maintenance personnel. The education program will include the following aspects at a minimum:

a) Biology and status of the FTHL;
b) Reporting procedures to be used if a FTHL is encountered on-site (see Item 6 immediately below); and
c) Importance of exercising care when commuting to and from the project area to reduce mortality of FTHLs on roads.

5) The FTHL barrier fenceline shall be periodically inspected with routine maintenance performed to sustain effectiveness as a lizard-proof barrier until such time as all adjacent habitats are destroyed (developed) or otherwise irreversibly modified.

6) If a FTHL is discovered on-site after the lizard-proof fence is constructed, the following measures will be implemented:

a) A facility site plan map, of appropriate scale, shall be maintained and posted in the office trailer (during construction) or the WPCF's central office (post construction) or in an otherwise central location on-site, for the sole purpose of recording FTHL observations. The location of each FTHL observation shall be noted on the map for sighting trend analysis and for troubleshooting the effectiveness of the FTHL fence. Each observation shall be given a reference number (to be included on the map) and logged into a database or other information storage system (record book, etc.). FTHL observation information to be recorded will include the date, time of day, temperature, name of observer, physical condition of the specimen, any behavioral observations made (was it basking, resting in shade, etc.), and the ultimate disposition of the specimen.

b) Immediately after a FTHL is observed on-site, Yuma will perform an inspection of the entire FTHL fenceline to assess whether there are any visible breaches or noteworthy structural problems.

c) Temporary captivity standards and subsequent relocation protocols shall be followed as specified in Item 2 immediately above.

7) Yuma will compensate the Bureau the sum of $10,560 (USBLM 2002) as a FTHL monetary compensatory measure. This figure equates to $132 per acre.

STATUS OF THE SPECIES

The FTHL is a small, cryptically colored, phrynosomatid lizard restricted to flats and valleys in the western Sonoran Desert, including the Coachella, Borrego, and Imperial valleys in California; the Yuma Desert in extreme southwestern Yuma County, Arizona; and adjacent portions of Baja California Norte and Sonora, Mexico (Funk 1981, Johnson and Spicer 1985, Rodriguez 2001). On November 29, 1993, we published a rule in the Federal Register proposing the FTHL as a threatened species (USFWS 1993). The proposed rule was withdrawn in a Federal Register notice dated July 15, 1997. However, on July 31, 2001, the 9th Circuit Court of Appeals remanded the withdrawal for further consideration. In a Federal Register notice dated December 26, 2001, we reinstated the proposed rule. A final listing decision is due one year after the reinstatement notice.

The diet of the FTHL consists primarily of ants, particularly from May to July (Parker and Pianka 1975; Turner and Medica 1982; Mark Fisher, Deep Canyon Desert Research Center, Palm Desert, California, pers. comm. 1992; Young and Young 2000). The species is active primarily

from mid-February to mid-November (Muth and Fisher 1992, Mayhew 1965) and juveniles may be active throughout the winter on warm days (Muth and Fisher 1992). Mean home ranges of telemetered FTHLs in Imperial County, California was 4.7 acres (Muth and Fisher 1992). In the Yuma Desert, mean annual home ranges for FTHLs were 1.7-25.5 acres for males and 2.4-12.6 acres for females (Young and Young 2000). Limited information exists to quantify densities of FTHL; however, estimates have ranged from 0.06 to 2.0 per acre (Turner *et al.* 1978, Muth and Fisher 1992, Rorabaugh 1994, Wone and Beauchamp 1995, Young and Young 2000). Daily movements decline as density of lizards increase and as forage resources decline (Young and Young 2000). Females produce one or two clutches of eggs that hatch in July through September (Turner and Medica 1982, Muth and Fisher 1992, Howard 1974). FTHLs construct burrows in which they hibernate in winter and escape high temperatures in summer (Muth and Fisher 1992, Rorabaugh 1994, Young and Young 2000). Mean cloacal temperature of active FTHLs in California was 100° F (Mayhew 1965). Maximum and minimum voluntary body temperatures are106° F and 85° F, respectively (Brattstrom 1965). Individuals become stressed when cloacal temperatures reach 113° F or more (Mayhew 1965).

Predators of the FTHL include a number of birds, most notably the loggerhead shrike; but also the sidewinder (*Crotalus cerastes*), leopard lizard (*Gambelia wislizenii*), round-tailed ground squirrel (*Spermophilus tereticaudis*), coyote (*Canis latrans*), and fox (*Vulpes macrotis* or *Urocyon cinereoargenteus*) (Young 1999, Duncan *et al.* 1994, Muth and Fisher 1992, Funk 1981). Eighty-two percent of FTHLs approached by researchers at Ocotillo Wells State Recreational Vehicle Area crouched low and remained motionless (Wone and Beauchamp 1995).

We proposed the FTHL as a threatened species because of documented and anticipated population declines and widespread habitat loss, fragmentation, and degradation due to human activities such as agricultural and urban development, off-highway vehicle use, energy developments, sand and gravel mining, construction of roads and canals, and military activities (USFWS 1993). Based on a 1997 analysis, roughly 48.6 percent of the historical habitat of the FTHL in the United States had been converted to other uses, particularly urban development and agriculture, and by filling of the Salton Sea (Hodges 1997). Remaining habitats are threatened by continued habitat conversion, off-road vehicles, pesticide applications, and invasion of nonnative plants. Insecticide applications in FTHL habitat to control an agricultural pest may have reduced ant populations, the primary prey of the FTHL (USFWS 1993, Bolster and Nicol 1989); although that practice has been discontinued on Bureau lands (Foreman 1997). Invasion of nonnative plants, such as split grass (*Schismus barbatus*) and Sahara mustard (*Brassica tournefortii*) may alter the prey base of the FTHL. Stem densities of these species can also become dense enough to perhaps impede the movement of FTHLs. Furthermore, nonnative plants can carry fire that eliminates native shrubs (Foreman 1997).

In the Yuma Desert west and north of the Goldwater Range, numerous proposed or ongoing activities threaten the habitat of the FTHL. Federal actions, many of which have undergone formal conferencing and are discussed in the Environmental Baseline, that have affected the species over the last two decades include construction of a desalinization sludge disposal facility, a State Prison at County 23rd and Avenue B, paving of County 23rd and Avenue B, development

of a Yuma County Administrative Center, and rights-of way for roads and utilities. A landfill is proposed along County 23rd east of its intersection with Avenue D. Yuma Metropolitan Planning Organization has proposed a highway (the "Area Service Highway") from San Luis to Interstate 8 that would traverse County 23rd and then cross the northwestern portion of the Goldwater Range, run adjacent to eastern boundary of the action area, and connect to Interstate 8 at Araby Road. Additionally, a new border crossing is proposed in FTHL habitat near San Luis. Border Patrol and illegal activities along the border in the Yuma area have increased dramatically over the last decade, and much of the habitat along the border has been adversely affected by off-road-vehicle activity. Many new roads and routes have been created in recent years. On State and private lands in the northern Yuma Desert, habitat continues to be developed for agriculture. The habitat north of the Goldwater Range in the Foothills area is rapidly being lost to housing developments. Habitats on the Goldwater Range are the least disturbed of the Arizona portion of the lizard's range. The public is prohibited from entering that portion of the Goldwater Range that supports FTHLs. As of 1997, approximately 31.1 percent of the historical habitat in Arizona had been converted to other land uses, with agriculture (17.5 percent) and urban development (11.1 percent) accounting for most of the habitat conversions (Hodges 1997).

From 1994 to 1997, representatives from 10 State and Federal agencies worked with herpetologists to develop a comprehensive conservation strategy for the lizard. The agency representatives comprised the FTHL Rangewide Strategy Working Group. The Working Group was responsible for preparing the strategy with the help of the FTHL Conservation Team. The Conservation Team was composed of conservation biologists and herpetologists familiar with the FTHL. A draft conservation strategy was completed and made available for public comment in January 1997. The strategy was finalized (Foreman 1997) and a conservation agreement was signed in June 1997, committing signatory agencies to implementation of the strategy. Agencies signing the agreement included the Fish and Wildlife Service (Regions 1 and 2), Bureau (Arizona and California), Bureau of Reclamation (Reclamation) (Lower Colorado Region), Marine Corps Air Station (MCAS) in Yuma, El Centro Naval Air Facility, AGFD, California Department of Fish and Game, and California Department of Parks and Recreation (Rorabaugh *et al.* 2000).

The purpose of the agreement and strategy was to maintain viable populations of FTHLs in five management areas (MAs), including the Yuma Desert MA in Yuma County, Arizona; and the East Mesa, West Mesa, Yuha Desert, and Borrego Badlands MAs in Imperial and eastern San Diego counties, California. These MAs range in size from 42,400 to 136,100 acres and total 485,200 acres. Also established was a research area at the Ocotillo Wells State Recreational Vehicle Area in California where the effects of human activities and other studies of the lizard would be supported. The strategy's format was that of a recovery plan, summarizing the biology, status, threats, and current management of the species; a management goal and objectives; planning actions; an implementation schedule that identified each task needed to meet the management goal; parties responsible for implementing tasks; and schedules and cost estimates. The strategy also included standard mitigation and compensation formulas and an interim survey

protocol that all signatory agencies would use, and suggested techniques for restoration of degraded FTHL habitat (Foreman 1997).

Key planning actions included establishing the MAs and, within MAs, limiting cumulative new disturbance to one percent of each MA, limiting vehicle use to designated routes only and reducing route densities; acquisition of inholdings; law enforcement and public education; rehabilitation of degraded habitats; and prohibition of competitive recreational events, long term camping, and use of pesticides. The planning actions also included research needed to promote conservation of the lizard and its habitat, inventory and monitoring of horned lizard populations and habitats, and maintenance of habitat corridors between MAs. A technical team (the Interagency Coordinating Committee [ICC]) and a management team (the Management Oversight Group [MOG]), modeled after similar groups for the desert tortoise, coordinate and track implementation of the strategy.

The ICC compiles an annual report that tracks implementation of the strategy. Compliance with the strategy has been very good, particularly in regard to establishing MAs, regulating recreation and pesticide use, mitigation and compensation of project impacts, conducting research, monitoring of habitat conditions, and acquiring inholdings in Arizona. Plans are in place or in preparation to fully implement the strategy, and the ICC and MOG meet regularly. Off-road vehicle activity by the Border Patrol in some MAs is an increasing problem; we have begun discussions with the Border Patrol about limiting this activity. To date, no method of monitoring populations of FTHLs has been devised; thus this task is incomplete.

Further information on the range, biology, and ecology of the FTHL can be found in Young and Young (2000), Rorabaugh *et al.* (2000, 1987), Beauchamp *et al.* (1998), Hodges (1997, 1995), Wone and Beauchamp (1995), Rorabaugh (1994), Muth and Fisher (1992), Turner and Medica (1982), Turner *et al.* (1980), Norris (1949), and Mayhew and Wright (1971).

**Past Conference Opinions**

A number of formal conference opinions have been issued for projects proposed throughout the FTHL's distribution within California and Arizona. We do not maintain records of the actual number of formal conference opinions and associated take issued for projects involving FTHL in California. However, we offer the following summary of formal conference opinions and associated take issued for projects involving FTHL in Arizona:

- On February 17, 1994, we issued a conference opinion (2-21-92-F-414) on potential effects to FTHL from the construction and operation of a natural gas pipeline within La Paz and Yuma counties in Arizona (USFWS 1994a). Take was anticipated for FTHL in the form of 1) direct and indirect mortality (unknown number of lizards) from construction activities and the associated loss of habitat; 2) direct mortality (two lizards per year) from operation and maintenance activities; and, 3) harassment (30 lizards) from relocation efforts during construction (USFWS 1994a).

• On June 1, 1994, we issued a conference opinion (2-21-95-F-348) on potential effects to FTHL from the construction and maintenance of a 69 kilovolt Arizona Public Service Company powerline near San Luis, in Yuma County, Arizona (USFWS 1994b). Take was anticipated for FTHL in the form of 1) direct mortality (three lizards) from construction activities; 2) direct mortality (two lizards per year) from maintenance activities during the ten-year term of right-of-way; and, 3) harassment (six lizards) from relocation efforts during construction (USFWS 1994b).

• On April 17, 1995, we issued a conference opinion (2-21-95-F-114) on potential effects to FTHL from the Marine Corps - Yuma military use of the Barry M. Goldwater Range which included proposed changes to military flights over the Cabeza Prieta National Wildlife Refuge, on-going flights over the Goldwater Range, and the operation of training facilities such as landing strips, a rifle range, targets, a parachute drop zone, a transmitter/telemetry system and ground support areas in Yuma County, Arizona (USFWS 1995a). Take was anticipated for FTHL in the form of 1) direct mortality (23 lizards) from training activities; 2) harm (ten lizards per year) from habitat loss or degradation; and, 3) harassment (unlimited lizards) from relocation efforts during field exercises (USFWS 1995a).

• On June 28, 1995, we issued a conference opinion (2-21-94-F-359) on potential effects to FTHL from the construction and maintenance of a 34.5 kilovolt Arizona Public Service Company powerline east of San Luis, in Yuma County, Arizona (USFWS 1995b). Take was anticipated for FTHL in the form of 1) direct mortality (two lizards) from construction activities; 2) direct mortality (one lizard every two years) from maintenance activities; and, 3) harassment (three lizards) from relocation efforts during construction (USFWS 1995b).

• On February 8, 1996, we issued a conference opinion (2-21-96-F-144) on potential effects to FTHL from a 160-acre land transfer, under a Recreation and Public Purposes Lease to Yuma County for the construction and operation a County Administrative Complex housing the offices of Agricultural Extension, Development Services, Public Works, and Administrative Services (USFWS 1996a). Take was anticipated for FTHL in the form of direct mortality, injury, or harassment (up to 65 lizards) from construction and relocation activities (USFWS 1996a).

• On July 12, 1996, we issued a conference opinion (2-21-96-F-445) on potential effects to FTHL from the extension of two roads, Avenue B and County 23rd and the interrelated and interdependent construction of a City of Yuma landfill and additional Arizona State Medium Security Prison building, in Yuma County (USFWS 1996b). Take was anticipated for FTHL in the form of 1) direct mortality and injury (six lizards) from road construction activities; 2) harassment (unlimited number of lizards) from relocation efforts (which may reduce lizards taken as a result of direct mortality noted immediately above); and, 3) direct mortality (15 lizards) from lizards moving onto the new pavement

of County 23rd and Avenue B from adjacent habitats; and, 4) direct mortality (approximately 1000 lizards) from construction activities associated with the City of Yuma landfill and Arizona State Medium Security Prison buildings as interrelated and interdependent to the proposed action (USFWS 1996b).

• On April 30, 1997, we issued a programmatic biological and conference opinion (2-21-95-F-216) on potential effects to FTHL from the implementation of Reclamation's Lower Colorado River Operations and Maintenance Project from Lake Mead to the southerly International Boundary in Mohave, La Paz and Yuma counties, Arizona (USFWS 1997). Take was anticipated for FTHL in the form of 1) direct mortality (eight lizards) from moving onto travel routes or project sites from adjacent habitats and being crushed or injured by moving vehicles or equipment; and, 2) harassment (unlimited numbers of lizards) relocation efforts during project implementation (USFWS 1997).

In all of the aforementioned conference opinions we found that the proposed actions were not likely to jeopardize the continued existence of the FTHL. Since no critical habitat has been designated for the FTHL, adverse modification of critical habitat would not occur.

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 to provide a platform to assess the effects of the action now under consultation.

**Geophysical Description**

The proposed action area is situated within the lower Colorado River Valley subdivision of Sonoran desertscrub, the largest and most arid subdivision of Sonoran desertscrub (USFWS 1996b). Elevation within the action area ranges from 210 to 215 feet above sea level (SWCA 2000a). Geology of the immediate area consists of surficial deposits from the Holocene through the middle Pleistocene that, in modern time, included sand and gravel deposits in the valleys in addition to wind-blown sand (Kamilli and Richard 1998; SWCA 2000a). Specifically, soils occurring in the action area are classified as Rositas Sand, which occur as deep, well-drained, and nearly level on alluvial fans, terraces, and dunes (Barmore 1978; SWCA 2000a). Hydrologic features are absent from the action area as no drainages or pools occur (SWCA 2000a).

**Vegetation Community**

The vegetation community of the action area, a creosote bush-white bursage association, is consistent with that of undisturbed areas in close proximity. Specifically, dominant perennial

plant species within the action area, in order of descending abundance, include white bursage (*Ambrosia dumosa*), creosote bush (*Larrea tridentata*), annual big galleta (*Hilaria rigida*), and three-awn (*Aristida sp.*) (SWCA 2000a). No invasive weed species, as identified by the Bureau's National List of Invasive Weed Species of Concern, are known to occur within the project area (SWCA 2000a).

**Anthropogenic Concerns**

Anthropogenic impacts to the action area can be summarized by the presence of two traversing dirt roads and illegal or wildcat dumping (unregulated deposition of solid waste) (SWCA 2000a). Wildcat dumps in the action area consist of dead citrus trees, domestic trash, and construction debris (SWCA 2000a). No evidence of mine shafts, natural caves, or cattle grazing were noted (SWCA 2000a).

The action area is bounded by citrus groves to the north, private undeveloped property (undisturbed habitat) to the south and east, and agricultural fields to the west. A unique aspect of the action area, however, is its relative isolation (in terms of FTHL-occupied habitat) to larger, contiguous tracts of undisturbed habitat. This disjunct character of the action area is the result of a cement-lined canal ("A Canal") located approximately 1/3 of a mile (0.54 km) southeast of the action area (the canal transverses the area in a southwest to northeast direction), representing what may be an impassable barrier to the FTHL and isolating the parcel from other habitat to the south and east. If the Area Service Highway is constructed as planned, the action area will be further isolated. The closest large undisturbed, contiguous tract of FTHL habitat, the Barry M. Goldwater Range approximately 2 miles southeast of action area, is owned and managed by the U.S. Department of Defense.

**Status of the Species within the Action Area**

In Arizona, the range of this species is approximately bounded by the Gila River on the north, urban and agricultural development along the Colorado River on the west, and to the east by bajadas and relatively coarse, alluvial, granitic soils immediately west of the Gila and Butler mountains (Rorabaugh *et al.* 1987, Hodges 1995). In this area, most records for the species are from areas of fine, often windblown, silica sand dominated by sparse stands of white bursage, creosote, and galleta grass (Rorabaugh *et al.* 1987, Hodges 1995). The species shows a preference for and may be more abundant on sandy substrates as compared to desert pavement or hardpan surfaces (Muth and Fisher 1992, Rorabaugh *et al.* 1987), and in Arizona is most often found in areas of silica sand, rather than granitic sands and gravels (Hodges 1995).

Two biologists from SWCA conducted a FTHL survey on August 9th, 2000. [(For a definition of survey methods see SWCA (2000b)]. SWCA survey efforts failed to yield evidence of the presence of FTHL within the action area (SWCA 2000b). Two large red harvester ant (*Pogonomyrmex sp.*) nests, a staple of FTHL diet, were detected within the action area. It is the

opinion of the SWCA biologists that it is unlikely that the FTHL is currently occupying the project area, based on survey results and marginal habitat characteristics (SWCA 2000b).

On June 18, 2002, additional FTHL survey efforts were conducted by our biologists Jim Rorabaugh, Jeff Servoss, and Allen Taylor as well as Bureau personnel. Several sets of tracks, which may have been FTHL, were observed on-site. Significant effort was made following the tracks in an attempt to locate actual lizards, their body impressions or scat; however, because of frequent presence of hardpan, tracks could not be followed to the lizards that made them. No FTHLs, scat, or impressions were noted during the informal surveys. During scat/lizard surveys in the Yuma Desert, typically 12.5 hours is needed to find one FTHL (Rorabaugh et al. 1987). FTHL can be found more readily by tracking them, but as noted, we were unsuccessful with this technique due to soil conditions. Our 16.1 hours of working surveys is not adequate to confirm absence of FTHL on-site. However, lack of any definitive evidence of the species suggests it is probably scarce, if present.

Although FTHLs have not been recorded on the side of the canal where the action area occurs, a significant amount of suitable habitat exists, surveys have been few, and we believe it is reasonable to assume that a small population of FTHLs occur within the action area and adjacent, undisturbed habitats. This assumption is primarily based upon three factors. Firstly, FTHLs are extremely difficult to find in the field, even by the most experienced herpetologist, given their burying behavior and intensely cryptic color and pattern. Roughly ten field person-hours are required on average to find a FTHL during transects (Turner and Medica 1982, Rorabaugh *et al.* 1987), significantly more than the four hours SWCA spent on the August 2000, survey. Secondly, undisturbed habitat, which has not been surveyed, occurs adjacent to the action area on the eastern and southern sides and may be a source of FTHL to the action area. Additionally, several FTHL sightings and confirmative scat counts have occurred within one to two miles of the action area on the opposite side of the A Canal (Rorabaugh pers. comm. 2002, SWCA 2000b). Lastly, although surveys (road and walking scat/FTHL surveys) were conducted according to survey protocol in terms of temperature, time of day, speed limitations, and procedure, fifteen minutes of active road surveys, in conjunction with the minimum four hours of scat and FTHL surveys on foot, are inadequate to conclude the absence of FTHLs within the action area.

## EFFECTS OF THE PROPOSED ACTION

"Effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action" (50 CFR §402.02). "Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR §402.02).

A direct effect of the proposed action is the environmental "clearance" required for real estate transactions. A recent Phase I environmental site assessment of the parcel has revealed the presence of pesticide containers mixed with the solid waste illegally dumped as wildcat dumps on the parcel. This discovery triggered the necessity for a Phase II environmental site assessment

which ultimately requires soil sampling to delineate the vertical and horizontal extent of soil contamination, if any.

Small animals, including FTHLs, will often use these debris piles to escape extreme temperatures or for other nesting, sheltering, or feeding requirements. The removal and disturbance of these piles will harass the FTHLs and may also injure or kill FTHLs if they are pinned or crushed by shifted debris. Likelihood of injury or mortality of FTHL could be reduced by removing debris when lizards are active, rather than when they are hiding in burrows or under debris.

Indirect effects are caused by or are the result of a proposed action, are later in time, and are reasonably certain to occur. Indirect effects are expected to result from the proposed construction, operation, and maintenance of the WPCF. In accordance with 50 CFR §402.02, the indirect effects of such actions must be considered herein as an effect of the action and are the focus of the following discussion.

**Effects of WPCF Construction on Habitat and FTHLs**

Habitat within the project area will be lost in its entirety. Yuma anticipates total utilization of all 80-acres for the construction and operation of the proposed WPCF. Any FTHL which have not been captured and relocated or otherwise migrated out of the action area at the time construction commences will suffer direct mortality or injury as a result of operation of heavy earth-moving machinery and destruction of foraging and sheltering habitat within the action area. Specifically, animals could be crushed by vehicles or equipment while in their underground, shallow burrows, or while on the surface. Additionally, although the lizard-proof barrier is believed to be 99% effective in deterring lizards from gaining access to enclosed areas, there remains the risk of an occasional lizard gaining access from an undiscovered breach in the fenceline or from one or more of the three vehicular access points to the WPCF. Employing their cryptic color and pattern, FTHLs often freeze, rather than flee, when approached. This defensive behavior may enhance the odds of FTHLs being crushed by vehicles or equipment.

**Effects to FTHLs During Operation and Maintenance of the WPCF**

FTHLs likely occur in habitat adjacent to the action area and may migrate onto WPCF grounds, mainly from the eastern and southern directions due to the occasional penetration of the lizard barrier discussed immediately above. In addition to increased vehicular activity on 40$^{th}$ Street along the southern edge of the parcel during the construction phase of the WPCF, day-to-day operation of the WPCF will sustain elevated vehicular use of this access road. The increased, continuous use of this access road will result in higher mortality levels for FTHL due to crushing by vehicles.

It has been shown that roads can act as mortality sinks for small animals (Boarman *et al.* 1992, Klemens 1989, Rosen and Lowe 1994). For example, over a four-year period, mortality of snakes along a 27.4 mile section of Route 85 in southern Arizona equaled the estimated snake

population in a 1.93 $mi^2$ area (Rosen and Lowe 1994). They also found this to be equivalent to eliminating all snakes within 213 feet of the road. Furthermore, desert tortoise populations are depleted up to a mile or more on either side of roads for which average daily traffic is greater than 180 vehicles (Nicholson 1978a&b). Evidence suggests that FTHL populations are depleted within 0.5 mile of Highway 98 in California (G. Wright, pers. comm. 2002). Young and Young (2000) suggested populations would be affected within 0.3 mile of a road, with severe impacts within 0.15 mile. Recent analysis suggests that FTHL population viability is particularly sensitive to the effects of mortality (FTHL Conservation Team 1996).

Assuming moderate densities of FTHL (0.7 per acre), then approximately 50 to 60 FTHL may currently occupy the action area that will be lost as a result of the Bureau's land disposal. These animals will be subject to death or injury.

Hodges (1995) estimated that between 212 and 222 $mi^2$ of FTHL habitat occurs in Arizona. The total habitat directly affected by the proposed action, including its indirect and cumulative effects, represents approximately 0.1 percent of available habitat in Arizona. Populations of FTHLs in adjacent habitats may be adversely affected as well due to the roads acting as mortality sinks. As discussed earlier, the project area is outside the Yuma Desert Management Area and is therefore not considered necessary to preserve viable populations of FTHL in Arizona. Given the isolation of the FTHL population north of the A Canal, the value of this population is lessened as its viability in the long-term is questionable, even if private and/or Bureau lands remain undeveloped. Furthermore, compensation funds proposed, as discussed below, will assist in the management of the Yuma Desert Management Area.

**Cumulative Effects**

Cumulative effects are those impacts of future non-Federal (State, local government, and private) actions that are reasonably certain to occur in the action area. Future Federal actions will be subject to the consultation and conferencing requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed project.

Approximately 240 acres of privately-owned lands that likely support FTHL occur to the east, south, and southeast of the project area. Continued development of non-Federal lands for residential, industrial, and agricultural purposes is expected. If the FTHL is subsequently listed, take of the species from non-Federal actions, including residential and other development, will be addressed through the section 10(a)(1)(B) permit process.

CONCLUSION

After reviewing the current status of the FTHL, the environmental baseline for the action area, the anticipated effects of the proposed action, and the cumulative effects, it is our biological

opinion that the proposed action is not likely to jeopardize the continued existence of the FTHL. Our conclusion is based on the following reasons:

1) The proposed action would affect a relatively minor portion of the species' range;

2) Yuma and the Bureau have proposed conservation measures to help offset impacts of the proposed action by reducing direct take of FTHL through relocation and other efforts and monetary compensation that will be used to enhance the management of the Yuma Desert Management Area; and

3) FTHL density within the action area and the adjacent undisturbed habitat on private land north of the A Canal, is believed to be low and the area is isolated and disjunct from the closest large contiguous habitat which occurs south and east of the action area due to the presence of the A Canal.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act prohibits the take of listed species without special exemption. Taking is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR §17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). "Incidental take" is any take of a listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with this incidental take statement.

The prohibitions against taking in section 9 of the Act do not apply to proposed species, such as FTHL. Nevertheless, we advise the Bureau to consider implementing reasonable and prudent measures that address protection of this species. If the species is listed, and if this conference opinion is adopted as a biological opinion for the FTHL, those measures would become non-discretionary, and would have to be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Bureau would also have a continuing duty to regulate the activity covered by this incidental take statement. If the Bureau (1) fails to require any applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) could lapse.

AMOUNT OR EXTENT OF TAKE

This conference opinion anticipates the following forms of take would occur as a result of the proposed action:

1) All FTHLs inhabiting the 80-acre proposed project site in the form of direct mortality or injury, including crushing or injury as a result of the removal of solid waste and soil sampling for the Phase II environmental site assessment and WPCF construction activities, and in the form of harassment resulting from moving lizards out of harm's way. We anticipate that, after capture and relocation efforts have concluded, up to 13 FTHLs may be taken incidentally to the proposed action.

2) One FTHL per year as a result of animals moving onto the facility grounds from adjacent habitats and being crushed or injured by the operation of on-site machinery and or vehicle movements.

3) Three FTHLs per year as a result of lizards crushed by project-related vehicle traffic on 40th Street.

If this conference opinion is adopted as a biological opinion, will only authorize forms of take that are incidental to the proposed action, or the disposition of 80-acres of Bureau land to Yuma. Incidental take will be authorized only if such activities are consistent with the terms and conditions of this conference opinion. The "Terms and Conditions" below only apply to the Bureau. If adopted as a biological opinion, take will be authorized for the construction, operation, and maintenance of the proposed WPCF by Yuma so long as the reasonable and prudent measures, their terms and conditions, and the proposed action are carried out as described herein.

EFFECT OF THE TAKE

In this conference opinion, we find that this level of anticipated take is not likely to result in jeopardy to the FTHL based upon 1) the location of the proposed action and the action area's physically isolated, disjunct relationship to nearby contiguous, undisturbed FTHL habitat; and 2) the consideration for inevitable development in the immediate, surrounding parcels which will further isolate whatever habitat may exist within close proximity.

REASONABLE AND PRUDENT MEASURES

We believe that the following reasonable and prudent measure is necessary and appropriate to minimize the incidental taking discussed in this conference opinion:

> Take and the effectiveness of these terms and conditions shall be monitored and reported to us.

If the species is listed, then the incidental take statement in this opinion, including its protection against a section 9 violation, will apply to the proposed action, the implementation of the Phase II environmental site assessment, and the subsequent construction, operation and management of Yuma's WPCF.

**Terms and Conditions**

The following terms and conditions are established to implement the reasonable and prudent measure described above. If the species is listed, implementation of these terms and conditions will be mandatory.

> Within 90 days after completing the survey and removal of FTHLs, the Bureau shall supply to this office a report summarizing FTHLs found and relocated. The report shall also make recommendations, as needed, to refine or modify these terms and conditions to enhance protection of the FTHL.

Provided that FTHLs are listed and this document is adopted as a biological opinion, we anticipate that no more than 60 FTHLs will be incidentally taken on the project site and 10 per year on 40th Street as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If the FTHL is listed and, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring reinitiation of consultation. The Bureau would be required to immediately provide explanation of the causes of the taking and review with us the need for possible modification of the reasonable and prudent measures and their implementing terms and conditions.

**DISPOSITION OF DEAD, INJURED, OR SICK FTHLS**

If the species is listed, and if a dead, injured, or sick FTHL is found at the project sites, initial notification must be made to our Law Enforcement Division, Federal Building, Room 108, 26 North McDonald, Mesa, Arizona, 85201 (Telephone: (480) 835-8289) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the finding, a photograph of the animal, and any other pertinent information. The notification shall be sent to the Division of Law Enforcement with a copy to the Arizona Ecological Services Office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. If possible, the remains of intact FTHLs shall be placed with educational or research institutions holding appropriate State and Federal permits. If such

institutions are not available, the information noted above shall be obtained and the carcass left in place.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated FTHLs survive, we should be contacted regarding the final disposition of the animals.

## 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 suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or regarding the development of information. The recommendations provided here do not necessarily represent complete fulfillment of the agency's section 2(c) or 7(a)(1) responsibilities for the FTHL, should it be listed. We recommend implementing the following actions:

1. The Bureau should continue to work with the MCAS in Yuma and AGFD to support research necessary to: a) improve our knowledge of the ecology and life history of the FTHL, particularly in regards to demographic parameters needed to better understand population dynamics and viability; b) improve upon survey techniques, protocols, and recommendations to enhance statistical confidence of survey efforts; and c) determine the relationship between scat/lizard counts and lizard densities.

2. In the future and in accordance with that prescribed by Foreman (1997) in the FTHL Rangewide Management Strategy, the Bureau should consider higher monetary compensation for loss of FTHL habitat. Other recent projects in Arizona offering monetary compensation as mitigation for loss of FTHL habitat have offered $1000 per acre of habitat lost. For example, perhaps the Bureau should consider monetary compensation which equals the fair market value, as calculated for routine property transactions within the private sector, for Bureau property being disposed.

3. The Bureau should assist the City of Yuma Public Works Department in minimizing impacts to the FTHL and its habitat in the vicinity of the WPCF.

We request notification of the implementation of any conservation recommendations so we can be kept informed of actions that either minimize or avoid adverse effects, or that benefit proposed species or their habitats.

CLOSING STATEMENT

This concludes the conference for the disposal of 80 acres of Bureau land to Yuma. You may ask that we confirm the conference opinion as a biological opinion through formal consultation if the FTHL is listed. The request must be in writing. If we review the proposed action and find that there have been no significant changes in the action as planned, or in the information used during the conference, we will confirm the conference opinion as a biological opinion and no further section 7 consultation will be necessary.

After listing of the FTHL as threatened and any subsequent adoption of this conference opinion, the Bureau shall request reinitiation of consultation if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may adversely 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 a listed species or critical habitat that was not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by this action (50 CFR §402.16).

The incidental take statement provided in this conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the FTHL has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the FTHL may occur between the listing of FTHL and the adoption of the conference opinion through formal consultation, or the completion of a subsequent formal consultation.

Any questions or comments should be directed to Jeff Servoss (x237) or Jim Rorabaugh (x238).

/s/ Steven L. Spangle

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (Attn: Cindy Schulz)
Field Supervisor, Fish and Wildlife Service, Carlsbad, CA
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
State Director, Bureau of Land Management, Phoenix, AZ

Larry Voyles, Arizona Game and Fish Department, Yuma, AZ
John Kennedy, Arizona Game and Fish Department, Phoenix, AZ
Director, Arizona Game and Fish Department, Phoenix, AZ

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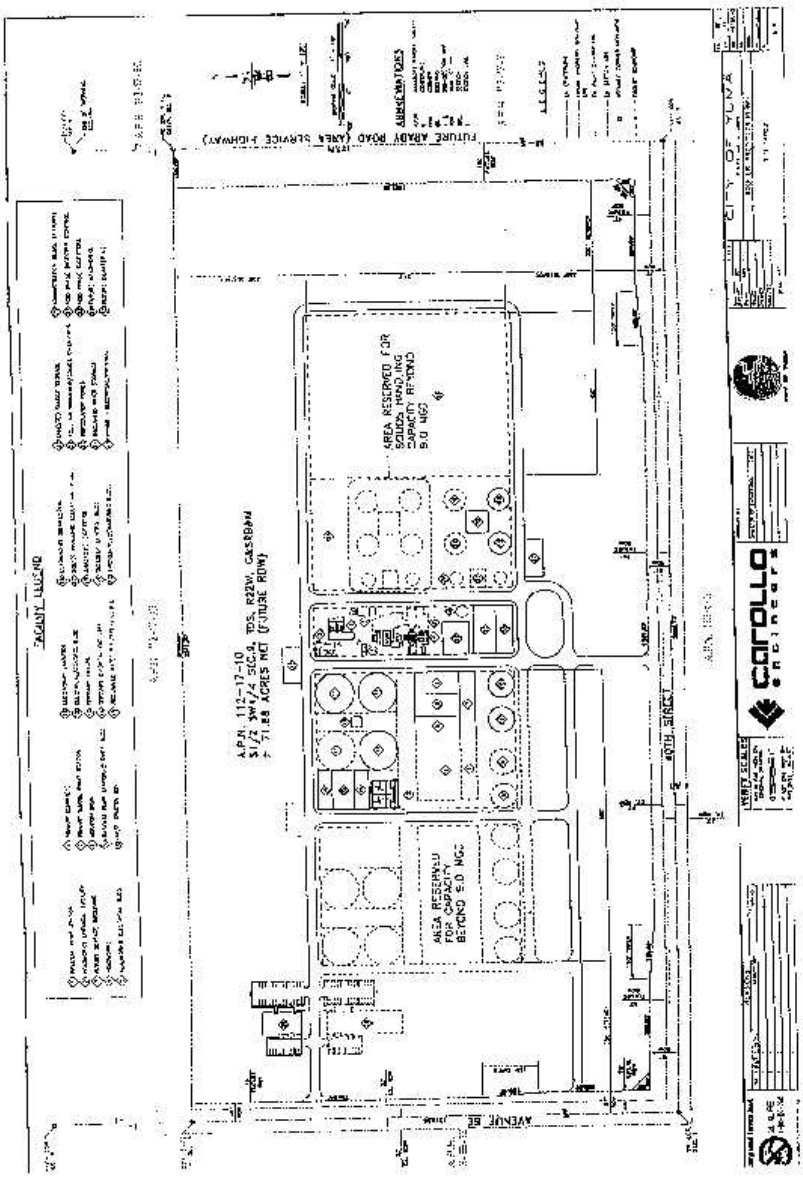
# Appendix A:
# Water Pollution Control Facility Site Plan
# Yuma, Arizona


FUTURE MAROY ROAD (AREA SERVICE HIGHWAY)
ABBREVIATIONS
ACCESS
CITY OF YUMA
VICINITY MAP
AREA RESERVED FOR SOLIDS HANDLING CAPACITY BEYOND 5.0 MGD
A.P.N. 112-17-10
S1/2 SW1/4 SEC.9, T9S, R22W, G&SRB&M
± 71.68 ACRES NET (FUTURE ROW)
AREA RESERVED FOR CAPACITY BEYOND 5.0 MGD
40TH STREET
AVENUE 8E
carollo
engineers