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U.S. Fish and Wildlife Service  
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2-21-94-F-102

March 21, 1994

Mr. Nicholas B. Nikas  
Response and Recovery Division  
Federal Emergency Management Agency  
Building 105  
Presidio of San Francisco  
San Francisco, California 94129

Dear Mr. Nikas:

This responds to your request of December 17, 1993 for formal section 7 consultation with the Fish and Wildlife Service (Service) pursuant to the Endangered Species Act (Act) of 1973, as amended on the repairs to the City of Safford (City) water supply system in Bonita Creek, Graham County, Arizona. In addition to the funding provided by the Federal Emergency Management Agency (FEMA), this project is also the subject a Clean Water Act section 404 permit to be issued by the U.S. Army Corps of Engineers (Corps). The species potentially affected by this action is the endangered razorback sucker (Xyrauchen texanus). There is no designated critical habitat in the project area.

This biological opinion was prepared using information contained in the biological evaluation provided by FEMA, other letters and documents exchanged during the consultation period, data in our files or in the published or grey literature and other sources of information.

#### BIOLOGICAL OPINION

It is the Service's biological opinion that the repairs to the City water supply system in Bonita Creek are not likely to jeopardize the continued existence of the endangered razorback sucker.

#### BACKGROUND INFORMATION

##### Consultation History

High water events in Bonita Creek early in 1993 resulted in significant damage to the infiltration gallery and portions of the pipeline used to convey water to the City. The City applied to FEMA for assistance in repairing the system. After determining that this project qualified for assistance, FEMA contracted to produce a biological evaluation (BE) that was sent to the Service on

December 17, 1993. A meeting of interested and involved parties was held on December 21, 1993 in Safford. At this meeting, the need to repair the system before the summer high water use period was stressed by the City.

Subsequent to the meeting, the City applied for emergency status for the project and FEMA determined that the damage did constitute an emergency under their regulations. The Service was contacted and concurred with the determination by FEMA. As an emergency, this project could be evaluated under the emergency provisions of the Act (50 CFR 402.05). After discussions with FEMA, the Service concluded that work on replacement of the infiltration gallery and repairs to the aerial pipeline could proceed with minimal effects to listed species. The Service based this decision on information provided that these actions would not require construction activity in watered areas of the creek. The Service requested that any work on the stabilization structures be deferred until after the biological opinion had been issued.

On February 28, 1994, the Service received from the City a packet of information on the proposed project including maps, copies of other compliance documents and a work schedule. Included in this information was the addition to the project of new buried 16 inch water mains and the placement of culverts at locations where the road crosses the creek.

As originally presented to the Service in a meeting on December 21, 1993, the proposed repair project had several component actions. The repair of the gallery itself, new casings for the wells upstream, work on the access road, repairs to portions of the aerial pipeline and the reconstruction of several stream stabilization structures were included in the project.

In the biological evaluation dated December 17, 1993, FEMA consultants do not mention that the project contained any additional actions that would result in significant effects to the natural resources of Bonita Creek. The memorandum from the City, dated December 17, 1993, and appended to the biological evaluation, discussed the actions that were part of the project and the status of those actions. This list did not contain any significant additions to the component actions beyond those discussed on December 21, 1993.

On March 1, 1994, the Service was advised by a member of the public that the City was working in a section of the creek with live water, had cut substantial areas of riparian vegetation, and impounded the creek. The site where these activities were occurring was downstream of the infiltration gallery. Based on this information, the Service contacted FEMA, the Corps, the City and lastly the Bureau of Land Management (BLM) to obtain additional information.

The City described the planned actions to the Service. The observed activity was the placement of culverts required by Arizona Department of Environmental Quality (ADEQ) to provide protection of the creek bed from the heavy equipment traffic that would be necessary during the construction period. Referencing the materials received by the Service on February 28, 1994, the origin of the two buried 16 inch pipelines was explained and construction requirements for these lines, and the aerial sections were described.

The Service provided a letter to FEMA dated March 4, 1994 which discussed the changes to the project and provided a list of recommendations for reducing the effects to proposed

critical habitat. Draft reasonable and prudent measures were also provided to reduce the likelihood of incidental take. The Service understands from a March 3, 1994 telephone conversation between FEMA, the City, BLM and the Service that actual construction work on the project was being deferred until the City and BLM could develop a plan to reduce the effects to riparian and aquatic resources along the creek.

With this revised and expanded picture of the project, it was clear that the BE of December 17, 1993 provided by FEMA inadequately described the project and the effects to endangered species resources. However, in the interest of proceeding to finalize this consultation and proceeding with the project, the Service utilized other available information to supplement the BE in developing this biological opinion.

#### Description of the Proposed Project

The proposed project will repair damage to the City water supply system resulting from high flow events in Bonita Creek. There are several actions that are part of the project, including road repair, replacement of the infiltration gallery, repairs to the aerial pipeline, placement of new buried and aerial pipeline segments, reconstruction of two streambed retention structures, and placement of a new collection manifold on the wells upstream of the gallery.

The culverts placed in the creek by the City were required by ADEQ to keep the heavy equipment out of the streambed to mitigate for water quality impacts. There are a total of 19 crossings with 10 being in watered reaches of the stream. Because the culverts were to protect the creek from the transit of heavy vehicles, this portion of the project was the first undertaken by the City.

The next phase of the project would be the placement of two new 16 inch water lines in the creek to convey water to the main supply pipeline. One of the new lines will carry water from the well field upstream of the infiltration gallery and the other will carry water from the gallery. These lines replace existing lines and exit from the creekbed sooner (by about 1600 feet) to connect with a new aerial 24 inch line. On the maps provided by the City, the work area for this action is from the sand trap at station 40 immediately below the gallery to station 44. At station 44, the new line becomes aerial and joins with the existing line at station 36. The original buried lines remain in the creek bed longer, extending to station 36 before becoming aerial.

Construction of the approximately 1385 feet of buried 16 inch pipeline will require digging a 13 to 17 foot trench with a top width of about 60 feet. Work specifications provided by the City call for 120 feet of trench to be dug and refilled per day. Subsurface flows will have to be pumped out of the work areas. Given the narrowness of portions of the canyon in the project area, allowing areas for piling spoil and work areas for trucks and other equipment may require nearly the entire width of the channel.

Construction of the infiltration gallery will require the excavation and removal of the old pipes from the creekbed. The new pipes will be buried at approximately the same depth as the originals (17 feet deep) and connected to one of the new 16 inch waterlines. Although there is no surface water over the gallery, subsurface flows may have to be pumped out of the trenches in the work area.

Immediately upstream of the infiltration gallery there are 5 wells, most about 80 feet deep but at least one reaches 150 feet with 21 inch casings in the cluster. The casings are slotted between 20 and 80 feet deep and capture spring or artesian flows. The City plans to excavate around the wells, connect the outward flows to a single manifold and connect that to the other new 16 inch waterline. That line will overlay the gallery and then parallel the 16 inch waterline from the gallery to the exit point. This area is dry except during rains; however, there are subsurface flows that will have to be pumped out of the work area.

The aerial line can be placed without having any of the other actions completed. The placement of the line requires a large drill rig to drill holes in the rock face for anchors, and a 70 foot crane to hoist the pipes up. Because this equipment must be at the base of the cliff, the vegetation there will be removed to make room for the work pad. If the creek is running along that side of the cliff, it would have to be diverted. Station 36, the bottom end of the new aerial line, has live water.

The final action will be the reconstruction of two of the five existing retention structures. Two of the remaining three are not in need of replacement, and the need for the last has been removed by placing the new 24 inch line on the cliff. One of the replacements is located below station 40 and the other is immediately below station 44. Although the final design for these has not been completed, they will likely consist of large pipes driven into the creekbed with tank track attached. Water can freely pass through, but large materials cannot. The structures would cross the entire channel and be anchored into the cliffs on either side. The top of the structure would be about 2 feet above current base level. Of the existing retention structures, one has a 1 foot drop below it, another has about a 3 foot drop. These act as barriers to free fish movement upstream.

#### Description of the Project Area

Bonita Creek is a high gradient, southward flowing tributary of the Gila River. The headwaters are on the San Carlos Indian Reservation, with the rest mostly on BLM and City owned lands. For much of its length, Bonita Creek is ephemeral with only approximately the lower 15 miles containing perennial water. Within the perennial reach, continuous surface flows may not always be present, especially during drought years. Water quality is generally good, and under normal conditions, sediment load is low (M.R. Sommerfeld in Minckley et al. 1979). Turbidity was observed to increase after rainfall events that generated considerable sheet flow from the sparsely vegetated uplands of the watershed. Because of high gradients, Bonita Creek carries considerable amounts of coarse sediments downstream during high flows. Bounded by steep canyon walls on both sides, water velocity and erosive capacity can be very high during periods of high flows.

There are no significant diversions on Bonita Creek upstream of the infiltration gallery, and the creek's flow to the project area is unregulated. High flows are usually of short duration and are the result of rainfall events on the watershed. Being rainfall driven, high flows occur most often in the summer and winter rainy seasons. Spring and fall flows are generally more stable. During periods of higher flows, areas of surface water that may be isolated by dry reaches are connected, enabling fish to move up or downstream.

Bonita Creek has an extensive riparian community dominated by mesquite (Prosopis sp.), sycamore (Platanus sp.), cottonwood (Populus sp.), walnut (Juglans sp.) and willow (Salix sp.). Owing to the nature of the canyon, very high flows may have significant effects on the riparian community.

Surrounded by desert, the riparian and aquatic habitats associated with Bonita Creek support a number of fish and wildlife species, including several listed, proposed and candidate species. The endangered bald eagle (Haliaeetus leucocephalus) has been reported from the area and razorback suckers have been reintroduced to the creek in the last ten years. Critical habitat for the razorback sucker includes the reach of Bonita Creek from the infiltration gallery to the confluence with the Gila River. The proposed endangered southwest willow flycatcher (Empidonax traillii extimus) likely was a historic resident of the riparian community. The ferruginous cactus pygmy owl (Glaucidium brasilianum cactorum), a candidate category 1 species currently under petition, may be found in the vicinity of the project.

### Species Description

The status and biology of the razorback sucker were reviewed in Minckley and Deacon 1991. Information from this source is incorporated by reference.

The razorback sucker is a large fish native to the Colorado River basin, including the major tributaries of the Gila River subbasin (Bestgen 1990). The original description of the species was made in part from specimens taken from the Gila River downstream of the confluence of Bonita Creek and the Gila River. The razorback sucker was extirpated from the Gila River subbasin by the 1950's, with the last individuals taken from the Verde River. It is not known when the Gila River population vanished since extensive fish surveys were not done. Surveys in the late 1970's in the vicinity of the project area did not find any individuals of this species.

Beginning in 1981, efforts were made to restore razorback suckers to the Gila River basin through stocking of young hatchery bred fish. Razorback suckers were stocked into the mainstem Gila River and some of its tributaries, including Bonita Creek and Eagle Creek from 1981 to at least 1989 (Hendrickson 1993). Since most of the research and monitoring has concentrated on the Salt and Verde Rivers, there is little recapture data for the Gila River, although there are anecdotal reports from knowledgeable individuals. The listing of the razorback sucker as an endangered species in 1991 included as fully protected all reintroduced populations of the species.

Given the natural variance in physical characteristics of Colorado River basin rivers that was present prior to extensive water development, and the historic range of the razorback sucker from the Gila River basin through the Yampa and Green Rivers, northern tributaries of the Colorado River in Colorado and Utah, it is apparent that the razorback sucker can successfully live in a variety of physical habitats. Population declines have been linked to the presence of non-native fish species that compete with or prey on young fish, virtually eliminating recruitment.

Bonita Creek was proposed as critical habitat for the razorback sucker on January 29, 1993. In the final rule issued on March 15, 1994, Bonita Creek was not included in the designation. This does not mean that the Service does not consider the aquatic habitat in Bonita Creek suitable for the razorback sucker.

### Environmental Baseline

The environmental baseline serves to define the current status of the listed species and its habitat to provide a platform to assess the effects of the action now under consultation. While it is clearly focused on conditions in the project area, it is important to include in the environmental baseline the status of the listed species throughout its range. Any evaluation of the effects of the action must be made in the context of the overall status of each affected species.

The environmental baseline is developed using past and present impacts of all Federal, State and private actions and other human activities in the project 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 or private actions which are contemporaneous with the consultation process. A summary of status information for the species from outside the action area also forms part of the environmental baseline.

### Past Actions

Actions that have affected Bonita Creek in the past are not significantly different from the actions that have modified the Gila River. Physical changes to aquatic habitats have resulted from water diversions, degradation of the watershed through overgrazing and road construction and use. Riparian areas have been overused by grazing animals, recreation use and access, and watershed changes that affect creek flows may have an effect on riparian resources through increases in erosion, scouring or aggradation of substrates. In addition to physical changes, the introduction of non-native fish species such as catfish, sunfish or carp has a significant effect on the ability of the native fish to maintain their populations.

Bonita Creek has been fortunate in that for most of its length human activities are limited to grazing livestock and recreation. This is not to say that significant effects to the watershed have not occurred, but the types of floodplain development, channelization and potential for contaminant inflows common to developed waters are lacking. The City's water system has been in place for about 50 years and to maintain this facility requires the commitment of road access along the creek and allow for repair actions like the project under consultation.

Bonita Creek is located in the Gila Box Riparian National Conservation Area, designated under the Arizona Desert Wilderness Act of 1990 (PL 101-628). Bonita Creek was also designated a "Unique Water" by the Arizona Department of Health Services for its exceptional water quality and dependable flow and is on the list of eligible waterways for inclusion under the Wild and Scenic Rivers Act of 1968 (PL 90-542).

### Status of the Razorback Sucker

The razorback sucker persists in limited reaches of the Colorado, Green, San Juan and Yampa Rivers in the Upper Colorado River basin. Total number of fish is likely less than a few thousand spread over 750 miles of rivers. In the Lower Colorado River basin, there are small populations in the Colorado River in Lake Mead and the Grand Canyon, Lake Havasu, and below Parker Dam. The reintroduced populations in the Gila, Salt and Verde Rivers are also small. The largest remaining population of razorback sucker is in Lake Mohave on the Colorado River. Estimated at approximately 60,000 individuals in the late 1980's, 1993 estimates had declined to 25,000. Like the small populations in the upper basin and in the lower Colorado River, the Lake Mohave population is made up of old adults nearing the end of their life span. The decline in population observed in 1993 is indicative of increasing adult mortality. The razorback sucker may become extinct in the wild unless efforts to augment recruitment are successful.

## EFFECTS OF THE ACTION

### Direct and Indirect Effects

Direct effects to razorback suckers from the proposed project are of several types. The most obvious is the disturbance of existing surface water, either in isolated or continuous reaches, by the passage and operation of construction equipment or other vehicles. This causes disturbance to the substrate which may increase turbidity downstream, disrupts invertebrate faunas in or on the substrate, alters depth or configuration of the stream bottom, and may damage spawning areas. These effects result in impairment of the habitat to support breeding, feeding and sheltering. There is also the chance of direct mortality if any individuals are in the affected water and are unable to leave the area.

The placement of the road culverts at watered crossings caused disturbance effects to the creek that may have been equal to or greater than those likely without the culverts. Removal of the culverts after construction is complete will extend the period of adverse effect. Obtaining borrow material from creekside terraces destabilizes these areas which may lead to changes in erosion and deposition downstream. There has also been an increase in the number of crossings due to the transport needs of heavy construction equipment, further expanding the area affected.

The area of construction of the gallery and at the well heads is in a portion of the creek that is usually dry. Flowing water is present in these areas after rainfall events and there is continuous subsurface flow. A considerable amount of disturbance to the creekbed will be required for these actions, it is likely the entire width and breadth of the creekbed would be affected. Any flows from rainfall events that cross the work area would likely pick up additional turbidity due to the disturbed substrates and depending upon the changed configuration of the substrate, changes in flow or erosional conditions may result. Even if no surface flows occur during the construction period, pumping of subsurface flows from the work trenches will increase downstream turbidity if the water is allowed to flow directly into the creek surface flows.

Placement of the new 16 inch pipelines in the creekbed downstream of the infiltration gallery have similar impacts. Because of the narrow canyon and the size of the trench needed to lay

the pipelines, it is likely that most of the width of the creekbed would be affected by construction. Spoil piles will have to be placed such that the construction equipment can access the trench to lay the pipes. Refilling the trench will leave a disturbed surface that may have more fine materials in the upper layers. The work areas could be contoured to match pre-disturbance elevations, but if there has been alterations to terraces or banks, then changes to erosion or deposition patterns downstream may result.

Repairs to and replacement of the aerial pipeline will also result in direct effects to the creekbed. The construction will require continuous access to the cliff face from the point of emergence of the two 16 inch lines and the conversion to the 24 inch aerial line and the link up with the existing aerial line. Attaching the pipeline to the cliff will require the clearing of a series of work areas at each connection point. This will destroy an unknown amount of riparian vegetation and have significant adverse effects to creekbed and terrace substrates. Depending upon the actual size and how far apart the work stations are, the adverse effects could be more or less continuous, or be separated by undamaged areas. It is likely that any undamaged areas between the work sites would be affected by changes in flow patterns and erosion resulting from the disturbed sites. Additional disturbance to the creekbed and terraces would result from the travel of the construction equipment down the creek as work progresses. There may be significant effects to surface water areas if such are located in work areas and would have to be filled or diverted or would be crossed by equipment accessing the work areas. The extent of such impacts is not presently known.

The last portion of the project, the placement of the stabilization/retention structures, would require a disturbance area the width of the canyon bottom since the anchors for the structures would be embedded in the canyon walls. Disturbance of the creekbed by trenching and placement of the structures would result in the same types of effects as discussed previously. These structures would not affect subsurface flows, but since the top would be approximately two feet above the existing elevation, a drop may develop on the downstream side. One of the existing structures has a one foot drop, the other a three foot drop. At normal flows, these are barriers to fish passage upstream. At some higher flow levels, this effect may be cancelled out, but the specific volume and velocity at that point is not known. Changes to creekbed elevation may have effects on water velocity or flow patterns both downstream and upstream.

Indirect effects of the project likely result mostly from the changes in channel stability, loss of riparian vegetation and subsequent alterations to flow and erosion patterns. Because Bonita Creek does experience significant high flow events that can considerably alter these habitats, it may be difficult in the future to determine how much of the long-term condition of the creek is the result of this project.

#### Effects to Survival and Recovery

As discussed previously, the status of the razorback sucker is precarious. Loss of any population becomes critical to the survival of the species. It is reasonable to assume that the size of the Gila River population is very small, thus the loss of even a few individuals is significant. It must also be considered that the probability of an individual being lost is related to the size of the population and the likelihood that individuals are located in the area to be disturbed. According to stocking records maintained by Arizona Game and Fish Department (Hendrickson 1993), the last stocking of razorback sucker in Bonita Creek was in



1987. Some razorback suckers were observed in the creek after that date, but records are not extensive. The fully successful reestablishment of the razorback sucker to the Gila River drainage will require additional management efforts regardless of the status of the City action.

The effects to recovery may be more clearly tied to the effects to the aquatic and riparian habitats of Bonita Creek. The creek is and has been subject to disturbances to the watershed and directly to the creek that have adversely affected the stability and physical characteristics of the system. The extensive work in the creekbed that is part of the proposed action will only exacerbate these adverse effects. The result may be an increase in the time required for the creek to recover the habitat capability to contribute to the recovery of the razorback sucker. There are proposed improvements to management of the watershed uses currently under evaluation to attempt to deal with degraded conditions and these efforts may be less successful as a result of changes to the creek resulting from the proposed project.

### Cumulative Effects

Cumulative effects are those effects of future State or private activities that have no Federal connection, that are reasonably certain to occur within the action area of the Federal action subject to consultation.

Most of the watershed of Bonita Creek is either in direct Federal ownership or is part of and established Native American reservation on which the Federal government has trust responsibilities. The remainder of the watershed is privately owned. The only significant private development along Bonita Creek is the City water supply system. Road access to this and other private lands is required and has an effect to Federal management. It is not likely that significant new development will take place on the watershed or along the creek itself without some measure of Federal involvement, either through a funding or permit nexus. However, projects without a Federal nexus may require section 10(a) permits to comply with section 9 of the Act.

### INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits the taking (harass, harm, pursue, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species without a special exemption. The concept of harm includes habitat modification and degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding or sheltering. Case law has affirmed that taking does harm to threatened species when there is definable injury or death to individuals. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action, is not considered taking within the bounds of the Act, provided such taking is in compliance with the incidental take statement provided in the biological opinion.

The Service has determined that construction activities in Bonita Creek would result in incidental take of razorback suckers through two mechanisms; the direct take of an individual fish through construction activity and because the construction would have effects to the

habitat's ability to provide areas for breeding, feeding and sheltering. Given the small population size of the razorback sucker in the Gila River drainage, it is not possible to determine the actual amount of take or the number of individuals that would be affected. Given this uncertainty, the incidental take level is assumed to be one razorback sucker and some unquantifiable amount of aquatic habitat in Bonita Creek. The amount of disturbed creekbed and riparian acreage resulting from the construction can be estimated and then measured once construction is complete. It is important to remember that changes to aquatic and riparian habitats will extend beyond the area of immediate impact. Even if the area to be disturbed is minimized, changes to turbidity levels and erosion patterns may be felt for some unknown distance downstream. For this incidental take statement to be valid, there must be some measurable parameter used to define when incidental take has been exceeded. Since the actual level of taking is unclear, this further complicates the definition. There is no effective way to directly measure the changes to erosion patterns likely to result from the proposed project, but changes to turbidity can be measured. For the purposes of this consultation, the level of incidental take will also be considered to be exceeded if there is a greater than 25% increase in suspended sediments or turbidity in water areas one half mile downstream of the active work area as compared to levels above the project area (upstream of the well site).

The measures described below are not discretionary and must be undertaken by the agency as part of the implementation of the proposed project or made a binding condition of any permit on implementation document given to, or developed by the applicant, as appropriate.

#### Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take documented in this biological opinion:

1. Efforts to reduce the risk of mortality to an individual razorback sucker will be incorporated into the project construction plans.
2. Efforts to minimize ground disturbing activities in the creek and riparian areas and reduce the downstream effects of the action will be incorporated into the project construction plans.

#### Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, FEMA must ensure the applicant's and their own compliance with the following terms and conditions which implement the reasonable and prudent measures described above. These terms and conditions largely correspond to the recommendations made by the Service in our letter to FEMA dated March 4, 1994.

1. To implement reasonable and prudent measure 1, the following terms and conditions will be implemented:
  - a. Before any construction work is done that requires equipment to operate in or adjacent to surface water reaches of Bonita Creek, a qualified fishery biologist will survey the water area for the presence of razorback suckers. The biologist

- must have, or be capable of getting, valid State and Federal permits for this work. This survey must consist of a visual examination of the area, netting (seine or other appropriate equipment) of deeper waters and, if feasible, electroshocking of potential habitats. This survey must be repeated if there is a flow event that connects the water area with other areas of surface flow and construction in that area has not been completed.
- b. If the surveys in 1.a. do locate a razorback sucker, construction work in the area cannot commence until the individual has been relocated to suitable habitat out of the project area. If one individual is located, more intensive survey of the specific water area will be completed to locate any other individuals. The Service must be informed of any captures within 72 hours.
  - c. All areas of surface water will be off limits to all pre-construction to post-construction actions unless there is no alternative to that use. If an area of surface water must be disturbed, restrictions to minimize the extent of the use will be in place. Construction crews in the field will be informed of these restrictions and crew supervisors will see they are enforced. Assistance from BLM, AGFD or the Service on developing restrictions should be sought.
2. To implement reasonable and prudent measure 2, the following terms and conditions will be implemented:
- a. The City will, in cooperation with the BLM and other entities with biological or engineering expertise, develop and implement a construction plan for the proposed project that incorporates ways to minimize the destruction or disturbance of aquatic and riparian habitats along Bonita Creek and contains plans to enhance the restoration of any areas damaged or destroyed by the action. This plan should incorporate recommendations contained in our letter to FEMA dated March 4, 1994.
  - b. A photographic record be maintained that shows the project areas before and after construction, immediately after mitigation is in place and at one year intervals for 5 years thereafter.

### Reporting Requirements

Either FEMA or their designated representative will inform the Service of the capture or mortality of a razorback sucker in Bonita Creek. If there is a mortality, all construction activity associated with the mortality must halt until the circumstances of the taking have been investigated. A copy of all mitigation plans developed for this project must be given to the Service.

### 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 endangered and threatened species. The term "conservation recommendations" has been defined as

Service 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 relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for the species.

The Service recommends the following:

1. The two stream stabilization structures should not be constructed until the Service and other interested parties have had a chance to examine the design.
2. The revised route of the access road that has required more crossings (and therefore more culverts) than the previous route should be reviewed after construction is completed, the route with the smallest effect to aquatic and riparian resources should be maintained for access with any other routes obliterated
3. Based on a hydrological and biological review, determine if the actions needed to place the culverts in the creek are more or less detrimental to aquatic and riparian resources than allowing construction vehicles to use designated but undeveloped crossings.

#### CONCLUSION

This concludes formal section 7 consultation on the City of Safford Bonita Creek water supply system repairs. As required by CFR 402.16, reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded, 2) new information reveals effects of the agency action that may impact 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 the agency action.

In future communications on this project, please refer to consultation number 2-21-94-F-102. If we may be of further assistance, please contact Lesley Fitzpatrick or Tom Gatz.

Sincerely,

/s/ Sam F. Spiller  
State Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico (AES)  
Supervisor, Regulatory Branch, U.S. Army Corps of Engineers, Phoenix,  
Arizona  
Director, Arizona Game and Fish Department, Phoenix, Arizona

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