

AWSA TIER 2 CRITERIA
HIDALGO COUNTY OFF-STREAM PROJECT PROPOSAL

1. [570] If the proposal would extend the water supply through conservation, or increase the supply through development of new water.
 - a. The location of the project is as follows. The diversion is near the confluence of Mogollon Creek and the Gila River in Grant County. The canal/pipeline conveyance follows near the Gila River downstream to the mouth of Schoolhouse Canyon where the dam would be constructed to store water in Schoolhouse Canyon (see attached map). Ownership of the affected lands is a combination of private and public. It would be necessary to obtain rights of way in order to implement this project.
 - b. The source of water is the Gila River.
 - c. This project would increase the supply of water to Southwest New Mexico by development of an average of up to 10,000 acre feet annually of new water from the Gila River through diversion of surface water. The 10,000 acre feet is the sum total of water that will be stored at Schoolhouse Canyon (approximately 5,500 acre feet), water that will be used out of the pipeline/canal for irrigation in the Gila Valley before reaching Schoolhouse Canyon, infiltration, evaporation, and water that will be used out of the storage over the course of the year. It is not realistic to think that the entire 10,000 acre feet will be diverted in one flood event due to maximum diversion limitations so storage will be depleted between events and allow for storage of new water.
 - d. A head gate at the diversion would allow for absolute control of the amount of water diverted at any time and therefore provide for adherence to the AWSA and CUFA requirements of diversion parameters as well as to satisfy the needs of any environmentally sensitive species identified through scientific study. Since it will only be allowable to divert water when the river is running at certain levels at different times during the year, it will be necessary to be able to control the diversion through use of a head gate.

2. [40] Describe the proposal and its technical viability.
 - a. Attached is the Upper Gila Watershed Study conducted in 1987 by the Bureau of Reclamation that includes diversion and storage in Schoolhouse Canyon. Some notable differences between it and this proposal are the diversions (pumping rather than gravity flow), costs (pumping vs. gravity flow), and annual operation and maintenance (no pumps or energy costs). One potential drawback to the Schoolhouse Canyon location is limited storage, 5500 acre feet according to the study (the size of the dam is not specified in the study). However, Schoolhouse Canyon is the best identified alternative on the reach of the river where the water can be made available to the greatest population and on the side of the river most suitable for pumping water to other locations within the region. Also, it is anticipated that water will be utilized between diversion opportunities and there will be infiltration and evaporation due to surface storage creating additional space for new water and allowing for an annual average of up to 10,000 acre feet of AWSA water. Also, water may be used in the Gila Valley for agriculture on its way to the lake reducing lake storage requirements. Even if the water is to be used to recharge aquifers, it needs to be clean enough to not seal up the aquifer. Since this water will be diverted during high flows it will not be very clean and by storing it in a lake and allowing the dirt to settle out of it before pumping it into the aquifer this problem is greatly reduced. Sedimentation will be allowed to go back into the river when water is released from the bottom of the dam for use in the Red Rock and Virden agricultural areas or for regeneration of the river during extremely dry times. The Upper Gila Watershed Study does not address ecologic or geotechnical issues associated with the Schoolhouse Canyon site.
 - b. The Upper Gila Watershed Study in a. above supports this project in that it is similar in location and purpose. The diversion parameters in the CUFA dictate that pumping from the river would be difficult because water must be diverted during floods and the water will be too dirty to pump without extensive filtering and the volume too great to be feasible.

3. [40] Quantify estimated costs.
 - a. The best cost estimate we have come up with is based on the 1987 BOR study and adjusted to this project and time. We took the estimated \$26.2 million to construct the dam, tripled it (\$78.6 million), then added \$30 million to construct the pipeline (15+ miles) and added \$6.4 million for design and other associated costs such as obtaining rights of way for a total of \$115 million. Pumping and pipeline facilities designed to convey water from the lake to other localities are not covered under this project plan.
 - b. On-going costs will be limited to maintenance and administration of the diversion, maintenance and administration of the dam facility and pumping and administration of the distribution line. These costs may need to be borne by state or local governmental entities. We estimate that it may cost from \$200,000 to \$300,000 annually. These numbers do not reflect costs of the CAP exchange which will be borne by the water users.
 - c. Environmental compliance and mitigation activities will be largely determined by studies done at the diversion and dam/lake sites. Diversion and dam release flows can be controlled in order to meet the needs of environmentally sensitive species. Environmental mitigation costs adjusted from the 1987 study may be approximately \$5 million to \$6 million.
 - d. The AWSA funding sought for this project is approximately \$115 million. Required studies should be financed beginning with the initial 2012 installment of \$6.6 million of AWSA money. Design and construction of the project would begin as AWSA money becomes available.

4. [40] If the proposal impacts, beneficially or adversely, the environment of the Southwest Planning Region, the Gila River, its tributaries or associated riparian corridors, use the best available science to:
 - a. The stream flow interruption at the diversion may negatively impact the up-stream/down-stream movement of fish species, especially the spikedace and loach minnows.

The dam and lake location will impact the normal terrain in Schoolhouse Canyon by covering it up with water. The normal terrain is a dry creek bed with hillsides covered with trees, shrubs and grass typical to the area. The Gila River downstream from Schoolhouse Canyon stands to benefit from the project in that water that is let out for Virden Valley agricultural purposes will keep the river alive for several miles that normally go dry in late spring and early summer.

- b. It may become necessary to mitigate movement of fishes at the diversion location by establishing a bypass to the diversion structure. Mitigation at Schoolhouse Canyon may be to offset any negative impact by establishing a lake that will provide the normally dry area with shores that will support lively trees, shrubs and other lakeshore plants as well as water to support wildlife.
 - c. As stated in a. above, keeping the river alive downstream from Schoolhouse Canyon in normally dry times will help to support any species that cannot survive in or near a dry stream bed, including the Southwest Willow Flycatcher.
 - d. Implementation of this proposal will comply with the Environmental Species Act along with any other appropriate laws or regulations through ESA and/or NEPA process. This process should be administered by appropriate federal and state agencies.
5. [70] Describe any economic or cost analysis information and data for the proposal.
- a. The only cost analysis done on a project similar to this one we are aware of is located in the attached 1987 BOR Study, beginning on page 10. Recreational benefits are assumed to be equivalent to the costs. We believe that the value of the water for Southwest New Mexico for future growth and economic growth far exceed the cost of the project.
 - b. Estimated cost for planning, design, construction and environmental compliance is \$115 million. Costs for operation, maintenance and repair are estimated to be between \$200,000 and \$300,000 annually. These costs are

based on the 1987 BOR study with an attempt to adjust to this project at this time as explained in item 3 above.

- c. It is anticipated that the individual water users from this project will bear the CAP exchange costs for water they contract for. No other source of funding has been determined.

- 6. [120] Describe how the proposal addresses the needs of a particular group or groups or interests on the issues of:
 - a. Historic and traditional uses of surface water from the Gila River are primarily for agriculture and mining. These uses are also in agreement with the cultures and customs of the area. Depending upon who decides to contract for the AWSA water, we anticipate that this trend will continue. There may be a time in the future that a higher percentage of the water will be needed for municipal use and that need can be met provided we secure the water for the future (see attached 1987 BOR Study).
 - b. Current demands for AWSA water are primarily for agricultural use. Future demands may trend for more water to be used for municipal and industrial purposes. The 2005 Regional Water Plan shows a prediction of low to moderate population growth through 2040 and water needs ranging from a reduction of 50,000 acre feet to an increase of 113,000 acre feet. If the population range and water needs are on the high end, it is obvious that the AWSA water will become essential to meet the water needs of the region.
 - c. This project provides for limited flood protection, only to the extent that reduction of flows by 350 cubic feet per second of water will help reduce flooding. Only a project of building a main stem dam on the river will provide significant flood protection.
 - d. This project can assist in fire protection in that the water can be made available to firefighters as it passes through the Cliff/Gila Valley through the canal or pipeline. The pipeline can be fitted with access valves at necessary intervals to supply adequate water to refill fire fighting vehicles so that they do not have to travel far and consequently save time in their effort to save lives

- e. The construction of a new dam and lake in the region will provide a great opportunity for additional recreation in the form of fishing, bird watching and boating. Additionally, as water is diverted during floods and let out to downstream users during dry times it will keep the river flowing at times it may normally be dry and allow for more recreational opportunity as well as improve the habitat for birds, fish and other wildlife.
 - f. Environmental protection will be provided for by mitigating identified concerns for any environmentally sensitive species that are determined through scientific studies. We believe the environment of the river will be enhanced through diverting the water during high flows and releasing it to downstream users during low flows. The environment at the dam location will be enhanced by establishing lake shores that will support growth of additional trees and shrubs.
 - g. None identified.
7. [40] List those supporting the application, including federal, state, and local government entities; Indian nations, tribes or pueblos; irrigation or conservation districts; non-profit organizations; and other entities. Provide letters or resolutions of support for the application.

This project is supported by the Hidalgo County Commission and the Gila San Francisco Water Commission.

8. [30] Describe whether the proposal would benefit one or more than one of the counties in the Southwest New Mexico Planning Region-Catron, Grant, Hidalgo, and/or Luna Counties.

Grant, Hidalgo and/or Luna Counties can benefit from this proposal. Grant County can benefit from agricultural, municipal and/or industrial use due to the location of the project. Luna County can benefit from water being pumped to the Mimbres aquifer and/or pumped to Deming for agricultural, municipal and/or industrial uses. Hidalgo County can benefit from water being used for agriculture in the Virden Valley and/or pumped to Lordsburg for agricultural, municipal

and/or industrial uses. Current needs and economics do not support the feasibility of piping the water to Deming or Lordsburg, however it is hard to say what the future holds regarding growth in those areas. It only makes sense to develop the AWSA water while it is possible to do so and have it available for the future.

9. [50] Describe whether the proposal would support economic growth or benefit one or more than one of the following interests in the Southwest New Mexico Planning Region- agricultural, ranching, municipal, recreational, or other (specify).

This proposal will support economic growth by making water available for contract in three counties of the Southwest region of New Mexico. By providing for a diversion, conveyance and storage of the AWSA water, location of the use of the water can vary according to where it is most needed and for what purpose it is most needed. It can be used for agricultural, ranching, municipal, industrial or recreational purposes.