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July 11, 1983

Regional Environmental Officer
Lower Colorado Region
U.S. BUREAU OF RECLAMATION
Box 427
Boulder City, Nevada 89005

Dear Sir,

I writing to you on behalf of the Maricopa Audubon Society to submit comments on the Draft Environmental Impact Statement, Regulatory Storage Division, Central Arizona Project, Statement No. INT-DES, 83-27. In the recent hearings on this Draft Environmental Impact Statement it became clear, if it had not been earlier, that the one highly controversial and environmentally damaging component of the proposed plan is Cliff Dam. The most basic problem with this Draft Environmental Impact Statement is that it fails to consider alternatives to Cliff Dam. This apparently resulted from the earlier assumption that Cliff Dam was a reasonable alternative to be considered in discussion of the then proposed Orme Dam. However, in this Draft Environmental Impact Statement not a single alternative, except the no-action alternative, is an alternative to Cliff Dam.

Many of the comments you have received at the hearings and will be receiving from others focus on the adverse impacts associated with Cliff Dam, including its effects on endangered species, riparian habitat, downstream open space, archeological resources and, of course, its high cost. Because these areas are being addressed by others I will not consider them in detail here.

What concerns me is the failure to develope and describe reasonable alternatives to Cliff Dam so that decision makers and the public may consider them. The studies leading up to this point have raised several alternatives which deserve 1

careful consideration. Many of these alternatives could be accomplished for similar or lesser costs than the environmentally damaging proposed Cliff Dam. I am requesting that you consider in detail each of the alternatives described in this letter, setting forth their present costs, feasibility, references to the studies relating to them and their environmental impacts. First, the no-action alternative with regard to Cliff Dam should be considered. That is, the proposed plan (as modified by the Stage III Report) should be considered without Cliff Dam as a component. Audubon Society representatives have twice been told by flood control members of the Central Arizona Water Control Study team that this proposal, without Cliff Dam, would result in flood flows through Phoenix of
2 150,000 c.f.s. in the one hundred year flood and 200,000 c.f.s. in the two hundred year flood. Have these figures been adjusted? If so, what are the present figures? Would all of the new bridges in Phoenix withstand such flows as they are routed down? What would be the water yield of
3 Plan 6 without Cliff Dam? We have been told by C.A.W.C.S. personnel that more than 95% of the additional water to be
4 generated by Cliff Dam would be allocated to agricultural uses. Is this still the current figure? If not, how would this additional water be allocated? What is the benefit
5 cost analysis for Plan 6 without Cliff Dam?

We have been told if the C.A.P. is built and Cliff Dam is not included, ther will be an increment of water
6 yielded by the combined operation of Bartlett and Horseshoe Dams in conjunction with the C.A.P. What is the amount of this incremental yield which would be added to Plan 6 if Cliff Dam were eliminated from Plan 6?

If Plan 6 were to be implemented without construction
7 of Cliff Dam, we would assume that the Safety of Dams Study on the Verde River would continue as is proposed in the no-action alternative. Would this be so?

One of the alternatives which should be considered is
8 a 200,000 c.f.s. flood plain through Phoenix, as was favored by an overwhelming majority of the participants in the C.A.W.C.S. public participation process. The proposals developed by the Rio Salado Development District for the Salt River without new upstream flood protection also constitute a viable alternative
9 which should be described and considered. This consideration of the downstream effects of the elimination of Cliff Dam from the proposed plan should include detailed consideration of non-structural flood control measures. We have been told by

C.A.W.C.S. employees that the cost of non-structural flood control measures to protect all private structures existing in the present one hundred year flood plain without additional upstream control would be twenty million dollars, and that with a 25,000 c.f.s. outlet in Roosevelt Dam, as is proposed in Plan 6 in the Stage III Report, would be five million dollars. Have these figures been updated? Why are they not included in the impact statement? We feel that it is extremely important that non-structural alternatives be carefully and thoroughly considered. 10

The Environmental Impact Statement fails to deal with the viable structural alternatives to Cliff Dam as well. What is the most feasible alternative to Cliff Dam? 11

From the data developed in the studies leading up to the Draft Environmental Impact Statement, it seems apparent to us that alternatives relating to Horseshoe and Bartlett Dams are available and ought to have been considered in the Draft Environmental Impact Statement. These could be combined in different ways to achieve a least cost alternative in accordance with the Safety of Dams Act. Some of them could also produce some flood control and water yield benefits. What are the feasibility, costs and environmental impacts of the alternatives relating to modification of Horseshoe and Bartlett Dams? 12

With regard to Horseshoe Dam, the Salt River Project has informed us that it would fail only in a three thousand year flood. Do you concur with this evaluation made by the Salt River Project in its evaluation of the Safety of Dams candidate plans in September, 1981? 13 If the Horseshoe Dam were permitted to fail in a flood of such magnitude, what would be the impact on downstream flows as the flood is routed down through Phoenix? 14 The memorandum report on Safety of Dams Program, Salt River Project, dated May 1981 indicates that the inflow design flood, compounded by an upstream Horseshoe Dam failure, would result in a flow at Bartlett Dam of 775,000 c.f.s. which is only slightly in excess of the I.D.F. flood of around 750,000 c.f.s. at Bartlett Dam. 15 What is the significance, if any, of the failure of Horseshoe Dam in a flood of this magnitude and extreme unliklihood? How would this additional flow affect such a flood as it was routed down through Phoenix? We understand that Camp Dresser and McKee prepared a study for the Corps of Engineers dated April 1981 which determined that Horseshoe Dam could be protected by construction of a fuse plug spillway at a cost of fifty-four million dollars. 16 In light of the remote probability of this

dam's failure and the apparently slight consequences of such a failure it might not be prudent to invest any money to address the dam failure problem, but if an investment were to be made, would this not be a prudent approach to the problem? We understand that the Corps of Engineers has used fuse plug spillways on its Mississippi Levee system. Is this accurate? Is there any reason why this same concept cannot be used here? Two other alternatives relating to Horseshoe Dam are a new gated spillway at a 1981 cost of one hundred twenty five million dollars and raising and
17 providing an ungated spillway at a cost of one hundred forty eight million dollars. The present costs, impacts and feasibility of these alternatives should be considered in detail.

With regard to Bartlett Dam the consultants to the
18 Corps of Engineers estimated the cost of a fuse plug spillway at about eleven million dollars. What is the present feasibility, cost and impact of this alternative? Various alternatives for raising Bartlett and adding a gated spillway
19 were considered by the Bureau of Reclamation in May of 1981 at costs as little as eighty five million dollars. What are the present costs and feasibilities of these alternatives?
20 What benefits would they yield in terms of additional water yield and flood control? Why was not an ungated spillway considered for Bartlett Dam such as was considered with regard
21 to Horseshoe? If an ungated spillway would result in a loss of water from Bartlett Dam, what effect would this have on the benefit-cost ratio?

22 What is the least cost Safety of Dams alternative for a combination of measures to protect Horseshoe and Bartlett Dams?

In the May of 1981 comparisons on cost of Safety of Dams alternatives on the Verde River, Cliff Dam was stated to cost one hundred ninety three million dollars. Six months later
23 in the October, 1981 C.A.W.C.S. report the cost of Cliff Dam was stated to be two hundred forty one million dollars. What caused this raise in cost? If Cliff Dam's cost had been accurately stated in the May 1981 report would it have been the least cost alternative?

The complete failure to include any meaningful alternatives to Cliff Dam in the Draft Environmental Impact Statement would
24 justify issuance of a new draft impact statement so that the public and other agencies are not deprived of the opportunity to comment on meaningful alternatives to the proposed action.

I request that you include your responses to these comments in such a revised draft impact statement. If you should choose not to issue a new draft impact statement I request that your responses to these comments be included in the final impact statement.

Sincerely,

GILBERT T. VENABLE

GTV/plc
cc: Mr. Scott Burge
Dr. Robert Witzeman
Mr. Frank Welsh

Responses to Comments
Gilbert T. Venable

46-1 See response to General Comment #5.

46-2 Plan 9 would reduce the 100 year flood to 170,000 cfs and the 200 year flood to 215,000 cfs. In the 200 year flood three river crossings would remain operable.

46-3 Plan 9 would yield 115,500 acre-feet.

46-4 Water developed at the Cliff Dam site would be an increment of the total water available to the Secretary of the Interior to be allocated to all CAP water users. In normal and surplus years on the Colorado system, this increment would add to the water available to agricultural districts. In shortage conditions it would add to the water deliverable to both Indian and M&I users. Agricultural water use accounts for approximately 80 percent.

46-5 The benefit/cost ratio for Plan 9 is 1:88.

46-6 If Cliff Dam is not constructed, the conservation storage space at Horseshoe and Bartlett Dams would not be increased and would remain exclusively with the Salt River Project. These reservoirs would be operated as they have historically or according to SRP's needs. There would be no opportunity for any water yield to the CAP users.

46-7 The safety of dams solution without Cliff Dam is described in the response to General Comment #5.

46-8 See response to Comment 11-2.

46-9 Non-structural flood control measures were eliminated early in Stage III because of the minimal level of protection afforded and the inability to meet the safety of dams' objective.

46-10 See response to Comment 9.

46-11 See response to General Comment #5.

46-12 See response to General Comment #5.

46-13 In November 1982 Reclamation discussed this 3,000 year flood with Salt River Project and with International Engineering Company, their consultant for this study. Based on this discussion, it was the consensus of all parties that available data on flood flows does not permit an estimate of the frequency of this flood, that it is misleading to call it a 3,000 year flood, and that future discussions will not use that term. Reclamation has evaluated Horseshoe Dam under Probable Maximum Flood (PMF) conditions and determined that, with current spillway and outlet capacities, this earthfill dam would be overtopped to a depth of approximately 14.4 feet resulting in rapid erosion of the embankment and entire loss of the reservoir. This in turn would cause a peak inflow to Bartlett

Dam of an estimated 776,000 cfs and 23 feet of overtopping of Bartlett Dam. This is judged to result in subsequent failure of Bartlett Dam due to progressive downstream erosion, and loss of the reservoir. An estimated 775,000 cfs peak discharge would follow failure of Bartlett Dam.

46-14 The Bureau of Reclamation has not assessed the downstream effects of a failure of Horseshoe Dam during a 3,000 year flood. Therefore, no flood routings for such an event are available. Under Probable Maximum Flood conditions, however, the failure of Horseshoe Dam combined with the failure of Bartlett Dam could result in the following downstream peak discharges, assuming 136,000 cfs is being routed down the Salt River System:

Location	Peak Discharge [1/] (cfs)
Below Bartlett Dam	4,356,000
Granite Reef Dam	2,173,000
Mill Avenue	1,992,000
Central Avenue	1,734,000
51st Avenue	1,675,000
Buckeye	1,334,000

46-15 The failure of Horseshoe Dam under maximum flood conditions would result in the loss of Bartlett Dam as well, causing a long-term loss in water supply and flood protection from subsequent lesser floods until these two dams could be reestablished. Downstream consequences in terms of peak discharges at several downstream locations have been described in response to the previous comment.

Given the proposed action, the spillway release from Bartlett Dam under I.D.F. conditions would peak at 175,000 ft^3/s without loss of either Cliff or Bartlett Dams, and far less downstream consequences than dam failure.

It should also be noted that concern for the safety of Horseshoe Dam is not limited to the occurrence of the inflow design flood. The dam would be expected to fail during any inflow greater than the capacity of the spillway, which is about 25 percent of the peak inflow design flood.

46-16 The difference between a failure of Horseshoe Dam and no failure during an IDF could be as much as 600,000 cfs below Bartlett Dam plus the long-term loss of storage capabilities. Regarding fuse plug spillways, the Bureau of Reclamation's current practice is to limit their height to a maximum of about 10 feet. Use of fuse plug spillways are acceptable in limited situations, but Reclamation, in general, discourages the use of a planned failure of an embankment section because of the many uncertainties and the potential unreliability of such a structure.

1/ Preliminary results from Reclamation's inundation mapping studies, 1983.

Also, current Reclamation practice dictates that fuse plugs should not be considered if the downstream hazards are such that loss of life or moderate to high property damage could result. All of the above weigh against consideration of fuse plug spillways at any Salt River Project dam.

Fuse plug spillways have been used in limited application by the Corps of Engineers along the Mississippi Levee system. Reasons for not applying fuse plug spillways to Verde River storage dams are discussed above. It should be noted that the Draft Camp, Dresser, and McKee Report was rejected by the Corps of Engineers based on technical considerations.

46-17 Both of these options were considered in detail during the Safety of Dams plan formulation process. The alternative of raising Horseshoe Dam 60 feet and installing an ungated spillway would also require raising Bartlett Dam 27 feet, modification to the existing Bartlett Dam gated spillway, and the addition of a new saddle dike spillway. January 1981 field costs of this alternative were estimated to be $233 million, and the maximum release at Bartlett Dam during the IDF would be 733,000 cfs.

Adding a new gated spillway to Horseshoe Dam also requires the above mentioned Bartlett Dam modifications, costing a total of $210 million (January 1981 field costs) and a maximum Bartlett release of 742,000 cfs. These results were reported in the Bureau of Reclamation's "Preliminary Memorandum Report on Safety of Dams Program, Salt River Project", 1982. These options received continued scrutiny during Stage III of the Central Arizona Water Control Study. Looking at the Verde River as a system, we still conclude that the most cost effective solution is the construction of Cliff Dam with a discharge capacity equal to the existing maximum discharge capacity of Bartlett Dam.

46-18 The Corps of Engineers rejected the reporting question on technical considerations. The Bureau of Reclamation has not evaluated the present cost or impact of a fuse plug spillway at Bartlett Dam. This action is not considered a feasible or acceptable choice by Reclamation under its current practices for reasons cited in response to previous comments regarding Horseshoe Dam.

46-19 None of the Bartlett Dam gated spillway alternatives could be taken alone, without major investments in the upstream Horseshoe Dam. Again, Reclamation has concluded that, when looking at the Verde River as a system, construction of Cliff Dam is more cost effective than modifying both Horseshoe and Bartlett Dam. Also, see General Comment #5.

46-20 Raising Bartlett Dam by 27 feet and adding a new gated spillway would provide no new water conservation or flood control benefits. Bartlett Dam cannot be raised beyond this height, and all new space resulting from the 27 feet of increased height would be required to route the IDF without failure. Therefore, no opportunity exists to provide Safety of Dams protection for Bartlett Dam and

simultaneously provide new space for either water conservation or flood control.

46-21 Ungated spillways for Bartlett Dam were considered early in the Safety of Dams investigations, and were rejected as being incompatible with the design of Bartlett Dam.

46-22 The least cost alternative for Safety of Dams modifications for both Horseshoe and Bartlett Dams is the construction of the new Cliff Dam with a discharge capacity equal to the maximum discharge capacity of Bartlett Dam. This solution requires no modifications to Bartlett Dam, and Horseshoe Dam would be breached.

If Cliff Dam is precluded from the analysis, the next least-cost alternative would be addition of auxiliary spillways at both Horseshoe and Bartlett Dams, and raising Bartlett Dam by 27 feet. This alternative, Plan 9, is displayed and analyzed in the final EIS.

46-23 The May 1981 comparisons of various Safety of Dams alternatives did not include costs of land for rights-of-way, relocation, or environmental mitigation. In contrast, the October 1981 CAWCS "Factbook", also based on January 1981 costs, included the costs of land acquisition, relocation, engineering and contingencies, in addition to construction costs. The Cliff Dam costs were accurately stated in the May 1981 report on a comparable basis with the other costs included therein. Based on this and subsequent comparisons, Cliff Dam is the least cost solution.

46-24 See response to General Comment #5.

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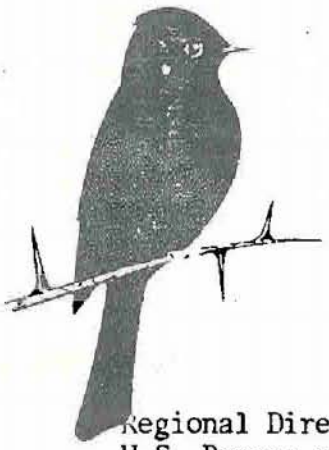

TUCSON AUDUBON SOCIETY

30-A N. TUCSON BLVD.

August 26, 1983

Regional Director
U.S. Bureau of Reclamation
P.O. Box 427
Boulder City, Nevada 89005

Dear Sir:

Now that Orme Dam is only a historical name it is timely for the U.S. Bureau of Reclamation (BR) to stand back, take a deep breath, and once again courageously undertake a thorough, unhurried re-inspection of the non-Cliff alternatives available in the non-Orme alternative. Rome was not built in a day and the massive funding and time needed for Congressional funding for the various portions of plan 6 will allow us time to take pause. The Tucson Audubon Society wishes to compliment you on your past CAWCS study which showed the sort of imaginativeness and creativity which should make you feel proud.

Let us continue that step-at-a-time educational and mutual learning process between agency and public without destroying the foundation of information and data which CAWCS developed (in this worthy three-year $10,000,000 study). In many ways your agency is far ahead of the community in sensing the issue, the problem and the need.

There remains much to be achieved and it will not be any easier this time than before. Why should anyone in the Bureau or in Arizona expect that the largest single BR-authorized project be a simple straight shot. It was conceived decades ago, planned in the 50's, authorized in the 60's and it is now being refined in the 80's to meet projected needs. Who would have predicted our present knowledge of a truly remarkable desert eagle population, of meteoric urban growth with agricultural attrition, or of the great concern of society for vanishing desert stream ecosystems!

AUXILIARY SPILLWAYS... Now to be addressed are the range of alternatives to Cliff Dam in the plan 6 setting. Let us not cast aside the carefully labored CAWCS deliberations of consulting engineers such as Camp, Dresser, 1

McKee. Yes, a replacement spillway may not be BR policy at present. But many policies which BR had in past years have been replaced by new or differing policies. Are any agency's policies ever fixed in concrete (no pun intended). No! Once an agency becomes that inflexible it becomes part of a history book. This is the sort of challenge which whets the appetites of creative, perceptive planners. The CAWCS study demonstrates that there already are creative federal public servants in BR and the Corps who can imaginatively work to serve the public need.

INTENT OF CONGRESS... A common trait of both the Orme Dam EIS dated 1976 and the present plan 6 EIS is the proposal of a 55,000 cfs 100 year flood through Phoenix. The present EIS alleges wide public support in Maricopa County for reduction of the floodplain to that value. However, from a Pima County point of view, as well as a national perspective, this appears to be more protection than necessary for the safety and welfare of the Phoenix metropolitan area.

It does not appear that redistributing the national wealth to help local interests outweighs the national interest of preserving unique Salt and Verde Sonoran Desert riparian ecosystems.

2 It may be added that expenditure of $100-600 million, the disguised and real costs, respectively, of the flood control dams in plan 6, invested in any plot of real estate, whether it be a desert, interior of a city or a flood plain, will also derive comparable development benefits. This kind of redistribution of wealth from other sectors of the nation to the Phoenix area does not seem to be a very convincing argument for Cliff Dam, especially in light of the upstream environment which would be irretrievably sacrificed.

It is recognized that certain developers and planners in the Phoenix area may like this redistribution of wealth, but can BR provide testimony or other documentation that Congress wanted the CAP to be used as an instrument to develop the flood plain?

Additionally, what flow did Congress intend the Orme Dam to release?

Uncle Sam should not be a bottomless well of largesse to satiate local growth groups. In this case it is flood plain land developers who would juxtapose hotels, homes and businesses in a floodplain "guaranteed" by a federal earthen dam just a few miles upstream at the expense of a national treasure, the Verde River; and a national emblem, the Bald Eagle.

DEATH OF THE VERDE... These are some of the last quality river miles of Sonoran Desert riparian habitat in the world. We in Tucson value this river as much as any river in our state. We see what is left of the San Pedro, the Santa Cruz, the Gila and the Salt. They have become sorrowful reminders of past reclamation and land misuse.

What will be done to protect the people and homes which moved into the post-Cliff Dam 55,000 cfs floodplain when the Cliff Dam becomes unsafe or sediment laden? There will be a great clamor for another upstream dam. This will destroy irreplaceable, final strategic portions of the Verde. After only 70 years dam safety problems must be addressed for Roosevelt Dam and after only 30 years Stewart Mtn. Dam is in trouble. Roosevelt is silting heavily and the proposed plan 6 will raise that structure several feet to address its sediment problem. (Will this cost be charged to Tucson CAWCD taxpayers or to the real beneficiary- SRP- and will SRP be charged their full and fair share of that cost?) **3**

Cliff Dam would saddle with future generations another Verde Dam to bail out Rio Salado floodplain victims who were promised that it would be forever safe and logical to live in a floodplain. The Verde above Horseshoe will undoubtedly in time become "wild and scenic" and Wilderness. Such ecologically significant wild places will become ever more scarce and treasured by future generations. This issue is of great concern to all Arizonans who prize the Verde as this state's most pristine, undisturbed, scenic, still vigorously flowing Sonoran Desert river. **4**

Though a few remaining high quality portions of the Upper and Middle Gila, San Francisco and Salt still tenuously remain (and they too are now in the gunsights of your agency's planners), this EIS must emphasize the singular importance of the Verde as the exemplar of what remains of the riparian streamside Sonoran Desert ecosystem of this state and nation.

FOOLHARDY, GROSSLY IRRESPONSIBLE LAND PLANNING... What rational person would purchase flood plain real estate for their home or business which is protected by an earthen dam only 40 miles upstream of a volatile, flood-prone 5000 mile watershed with a short warning time?

That such devastating floods can very quickly erupt from these two 5000 square mile Salt and Verde watersheds was highlighted by the Water Resources Associates, Inc (WRA) expose of the exaggerated BR probable

maximum flood (pmf) determination. Even if one used the 678,000 cfs BR figure for Roosevelt rather than the WRA 417,000 cfs, Phoenix' Salt River flood plain is emphatically not the sort of place for responsible land planners to be placing people. WRA, BR and Corps figures all agree that the Salt and Verde have produced higher flood flows than anywhere else in Arizona, including the Colorado River. The largest flow in the West from a similarly sized watershed was from the very wet Klamath River watershed and it was only 557,000 cfs. The largest flood on the Missouri River, 842,000 cfs in 1884, turns out to be a lesser figure than the Corps' projected 1,000,000 cfs Salt River pmf. WRA pointed out that very few flows over 1,000,000 cfs have occurred anywhere in the U.S.

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In summary, it would be foolhardy, grossly irresponsible land planning on the part of a federal agency or a state or city government to encourage the movement of property into this powerful and hazardous flood plain (or alongside it as in the case of Rio Salado Alternative I).

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BR should withhold release of the present plan 6 EIS until there is time to study and present the alternatives to Cliff Dam. This has not been done.

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SMELL OF PORK... As the nation's taxpayers, national conservation groups and non-Western Congressman had long suspected, inflated BR pmf figures were part of a strategy to obtain quick and easy federal funding for Salt and Verde flood plain developement dams under the "motherhood" cloak of dam safety. Such subterfuge has the makings of a national scandal. The sweet smell of pork on the stove for Phoenix flood plain developers has brought them into the federal kitchen. This fiasco reflects on how far afield a federal agency has permitted itself to be enticed from its Congressionally-authorized purpose, namely, creating new farmland; or in the case of the CAP, rescuing farmland.

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NEEDED: A RATIONAL NONSTRUCTURAL ANALYSIS... The new or next EIS will need a list of the viable, reasonable alternatives to Cliff Dam for safety and flood control. The EIS, fails to present the far less costly,

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less destructive non-structural, semi-structural and structural flood control and dam safety alternatives to Cliff Dam. Flood control should stress flood damage reduction and not location and intensification benefits as in the case of Cliff Dam which purports that 60% of its "flood control" benefits are for real estate profiting-- rather than protecting existing homes and businesses.

HIDEBOUND CORPS POLICY... We in Tucson are not familiar with why the Corps contended it was against their current policy to protect a community like Holly Acres. Now is the time for bringing those rules up to date to conform to the societal needs of today.

BR should not ignore least cost options even it they may have a lower b/c ratio for they may be less destructive of Bald Eagles and vanishing desert streams. A few miles of levees, relocations and non-structural modifications may be far less costly than huge new dams. The CAWCS non-structural analysis failed, not because it lacked an excellent data base, but because hidebound Corps policy failed to interpret that data correctly. Now is the time for innovative interpretations which can simultaneously save eagles, precious rivers and the pocketbooks of taxpayers. **10**

The Carr, Lynch January 1983 Rio Salado analysis of the flood plain gives us an omnibus $70,000,000 nonstructural figure and that includes amenities such as Rio Salado for Tempe plus protecting the <u>entire</u> 100 year flood plain through metropolitan Phoenix. Why has BR so assiduously avoided reporting this far less costly non-dam option? This appears to be the worst sort of "keep busy" pro-dam bias on the part of a federal dam building agency.

Tucson newspapers portrayed the flood as being essentially one of the airport, the bridges and Holly Acres. It is our understanding that the first two problems have been solved. The EIS should unquestionably contain a list of both the Salt and the Gila bridge crossings, their capacities, and the size of the 100 year flood plain at each crossing. It is difficult to believe this has been omitted. **11**

PLAN 6 WITH AND WITHOUT CLIFF... (1) What would be the size of the 100 year flood through Phoenix at each bridge crossing in a plan 6 without Cliff Dam? (2) How much of Roosevelt's total construction cost is for flood control vs. dam safety vs. sediment replacement in plan 6? (3)
12 What would those three figures be using the WRA pmf as the basis? (4) How much of Cliff's cost would be dam safety vs. flood control vs. water storage in plan 6? Also give these figures using the WRA pmf as the basis.

The outdated and confusing plan 6 EIS economic data cannot be understood because many of the figures differ from subsequent economic data and structural changes in the Stage III CAWCS April 1983 report. For example, the EIS mentions no 25,000 cfs outlet in Roosevelt, only
13 the 11,000 cfs "service" outlet! A draft impact statement should be a comprehensible report so that commentary may be made based upon correct and comparable data. This has not been done. Please allow another opportunity for NEPA format public scrutiny and agency reply.

DEVELOPING FLOOD PLAIN REAL ESTATE... As stated above, we in Tucson are interested in knowing who is going to pay for the bond issue or other tax instrument which will purchase the real estate and existing structures in the proposed 55,000 cfs flood plain created by plan 6. What percentage of those area redevelopment or intensification benefits (which are 60% of the total flood control benefits for plan 6) would be for purchasing
14 empty land vs. land with structures on them? What will it cost to buy out and relocate the gravel companies?

By comparison, how much less would it cost to relocate or floodproof the structures in the current 200,000 cfs flood plain. None of the above questions are answered in the EIS but are a relevant part of the plan 6 redevelopment and intensification benefits issue. How much of the Rio Salado Alt. II $650,000,000 buy out cost will be spent in acquiring (1) empty land, (2) gravel pits, and (3) the businesses and residences of people and entire neighborhoods who do not wish to be forcibly relocated from the flood plain by the eminent domain process. The EIS correctly devotes space to the plight of the Yavapai but not to the plight of South Phoenix neighborhoods and ethnic minorities who may not wish to be forcibly uprooted from their homes for the greater glory of the Rio Salado Development

District Alternative II "intensification benefits" which plan 6 trumpets from the hills.

What was the total figure for location and intensification in plan 6 for the entire Salt River flood plain and what are the geographic river reach boundaries? Is it the annual benefit figure x 50 yrs? Give the cost per separate river reach, e.g. from Hayden to Scottsdale Roads.

The EIS must list the cost of the Rio Salado Alt. II $650,000,000 buy out cost as a cost of plan 6 or, if not, omit inclusion of the location and intensification benefits in the b/c ratios of the Salt and Verde dams. This $650,000,000 cost, when added to the cost of the two upstream dams, reveals a benefit/cost ratio below unity for plan 6. Please include these corrected b/c ratios for all dams including, additionally, the calculations and ratios using the WRA pmf as the basis for dam safety costs.

DESTROYING EAGLES TO RESCUE SURPLUS CROPS... The EIS should state how much of New Waddell and Cliff regulatory yields, respectively, (not lumped together) will be for Pima County agriculture vs. for M&I use. What will these figures be for Pinal and Maricopa County? This should be the net Cliff yield. In other words what is the regulatory yield with and without Cliff Dam. And conversely, how much of the regulatory yield without Cliff Dam is from New Waddell and how much is from SRP dam exchanges if Cliff were not a part of plan 6?

What percent of the total costs (principle and interest) of construction of regulatory dams will Arizona agriculture pay? Will they pay more than 1% of that cost? Will M&I users pay 99% of the cost yet receive hardly any of the water? It is essential that these figures be included in the EIS. **15**

Please list what types of crops will be rescued with CAP regulatory water and what the types of crops are to be rescued in each county. Does Pima County grow more or less alfalfa or cotton or fruit and nuts than Maricopa or Pinal County? Are water-wasting crops being encouraged with underpriced regulatory water? What will be the acre-foot increase in yield from plan 6 regulatory water with and without Cliff Dam?

What percentage of the acreage of the irrigation districts receiving plan 6 regulatory water grow cotton, feed grains and other crops eligible for payment-in-kind subsidization? List by county and district, please.

Why is BR, with environmentally destructive dams, attempting to rescue farmlands which for the most part grow crops which the federal government is paying farmers not to grow? This is contrary to national economic development. The EIS should discuss how these environmentally destructive dams perpetuate the underpricing of agricultural water supplies, and act as a disincentive to on-the-farm water conservation in the arid West. The EIS lacks discussion of the huge kilowatt costs and capital costs required to provide this regulatory water to grow water-profligate field crops which can be grown elsewhere in the nation at much less energy and capital cost.

RECREATIONAL DISASTERS... The EIS does not adequately describe the individual recreation and construction impacts of the four new Salt and
16 Verde dams upon the eagles nesting at Horseshoe, Bartlett, Ft. McDowell, Blue Point and Pinal Creek. Why are borrow sites and earth movement, blasting, turbidity and traffic impacts essentially unanswered in the impact statement?

The recreational development in the EIS, as propsed for Cliff and Roosevelt, is unthinkable. By opening presently closed areas, it would
17 create irreconcilable disturbances to the critical nesting and foraging activities of this already highly threatened desert eagle population.

LOST RIVER MILES... The EIS charts do not comprehend the value of future potential nesting sites nor the downstream impacts of eliminating dam spills with subsequent flood plain attenuation. Even though an eagle may only be foraging in the area below Horseshoe or above Bartlett, that
18 area (where Cliff would be built) holds potential as a future nesting site. The reduction of peak flows on the Salt and Verde with the plan 6 "river-killer" dams has severe environmental impacts upon the cottonwood-willow-cattail-bulrush riparian ecology of (1) the Verde through the Bartlett and Ft. McDowell territories, (2) the Salt through the Blue Point nesting area, and (3) the Salt-Gila all the way to Yuma. These are irretrievable, unmitigable impacts which the EIS has not acknowledged or that BR does not appear to comprehend.

CONCLUSION... A worthy first step has been achieved by the U.S. Bureau of Reclamation in resolving some aspects of the highly controversial regulatory and flood control needs of Central Arizona. Please let us know how we may assist you in addressing the alternatives to the Cliff Dam alternative. Patience, communication, insight, creativity and wisdom will yield the solution but we should not expect it to come easily.

Sincerely,

Gertrude A. Hochgraf

Gertrude A. Hochgraf
Conservation Chairperson
Tucson Audubon Society

Responses to Comments
Tucson Aubudon Society

47-1 See response to General Comment #5.

47-2 See response to General Comment #8.

47-3 Cliff Dam will be designed and constructed to withstand the most extreme hydrologic and seismic conditions. The design of Cliff Dam includes adequate storage to fully function after the accumulation of sediment for 100 years. After that time, conservation space will be reduced by accumulating sediment. Modification of Roosevelt Dam accounts for accumulation of sediment.

Cost allocation is discussed in the Stage III Report and Appendices.

47-4 The proposed action would not foreclose any options to classify the designated segments of the Verde River as wild, scenic or recreational river areas, or the identified areas as wilderness.

47-5 See response to General Comment #9.

47-6 Your comment is noted and is available for consideration by decisionmakers.

47-7 See response to General Comment #5.

47-8 See resonse to General Comment #9.

47-9 See response to General Comment #5.

47-10 Non structural flood control measures were eliminated from consideration because they did not meet the planning objective of safety of dams and significant flood damages would still occur.

47-11 Bridge capacities are presented in the supporting documentation Social Impacts and Effect of CAWCS Plans.

47-12 See response to General Comments #5 and #9.

47-13 More detailed designs for construction of New/Modified Roosevelt Dam include use of gated spillways rather than the 25,000 cfs flood outlet.

47-14 See response to General Comment #8.

47-15 Cost allocation for the Regulatory Storage Division is discussed in the Stage III Report and Stage III Report Addendum.

47-16 All aspects of project implementation were used to derive the impacts as described in the Stage III Environmental Quality Assessment Methodology.

47-17 Section IV.C. describes mitigation to alleviate potential impacts of recreation.

47-18 The impacts from lost river miles and a commitment to mitigate those impacts by stream reclamation measures are described in Sections IV B and C. Also see response to comment 3-44.

48

NEW MEXICO INTERSTATE STREAM COMMISSION

48

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

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Woodrow O. Gary, Hatch

July 18, 1983

Mr. N. W. Plummer
Regional Director
Lower Colorado Region
Bureau of Reclamation
P. O. Box 427
Boulder City, Nevada 89005

Dear Bill:

Recently a copy of the Draft Environmental Impact Statement for the Regulatory Storage Division, Central Arizona Project, was forwarded to this office.

Plan 6 (agency-proposed action) proposes construction of New Waddell, Cliff, Roosevelt and Stewart Mountain Dams for regulatory storage, flood control and other purposes as a part of the Central Arizona Project (CAP). According to the report, the plan would provide 660,000 acre feet of regulatory storage space at New Waddell Reservoir and 170,000 acre feet of new conservation storage space at Cliff Reservoir and would use one-half of the sediment pool at Roosevelt Lake for conservation. The CAP yield would thus be increased by an average of 137,000 acre feet per year; the average annual CAP water yield for this plan is 1,172,000 acre feet. 1

During recent meetings with the staff of your Central Arizona Projects office, much discussion was held on the amount of water required for the exchange needed to enable New Mexico to use its authorized average of 18,000 acre feet per year of CAP water. Because of the availability of the water supply from the Gila River in New Mexico and Arizona it may be necessary to store up to 80-90,000 acre feet of water in a year in New Mexico in order to realize an average use in New Mexico of 18,000 acre feet per year. Full replacement of water to the San Carlos Project may be needed in the same year that large amounts are stored in New Mexico.

It was our understanding at the recent meetings that there was concern on the part of the Bureau staff that no water was available within the total of the CAP allocations to exchange more than 18,000 acre feet in any one year for the New Mexico use. It appears that Plan 6 of the regulatory storage division as discussed in the environmental statement may make it possible to provide from the CAP yield sufficient water to implement the exchange necessary for the authorized New Mexico use, if the aqueduct has sufficient capacity to deliver the additional water to the San Carlos Project. If the aqueduct does not have sufficient capacity for the additional delivery it may be necessary to augment the aqueduct capacity or construct Buttes Reservoir on the Gila River and dedicate a portion of the yield of that reservoir to supplement the capability of the aqueduct to make the replacement to the San Carlos Project. Otherwise, shortages to the Arizona CAP allottees may occur in those years when large amounts of replacement water to the San Carlos Project are required for the New Mexico exchange.

The above suggestion should not be construed to reflect our view that it is the sole possibility for supplying the required exchange for the authorized in use in New Mexico.

Sincerely,

SER:PBM:bmm

S. E. Reynolds
Secretary

48-1 Details of the water exchange agreements necessary to deliver Gila River water to New Mexico are beyond the scope of this EIS. Water supply developed from Regulatory Storage will be considered a part of the total CAP supply and allocated accordingly. Any increase in supply to Central Arizona could potentially make water exchanges easier.

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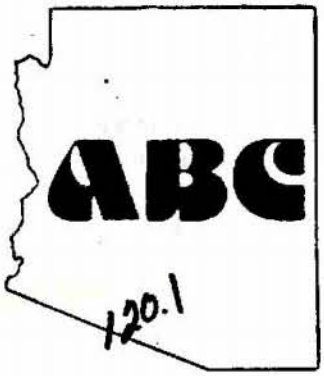
H 49



Arizona's State Reclamation Association to the National

AGRI-BUSINESS COUNCIL OF ARIZONA INC.
1010 East Missouri, Suite 203, Phoenix, Arizona 85014, (602) 274-3422

July 19, 1983

Regional Environmental Officer
Lower Colorado Region
Bureau of Reclamation
Post Office Box 427
Boulder City, NV 89005

RE: EIS Statement INT DES 83-27
Regulatory Storage Division, CAP

Gentlemen:

This letter is submitted as testimony for the record on the referenced Environmental Impact Statement.

ABC believes that the EIS completely and correctly sets forth the options and their environmental impacts. Additionally, several members of ABC participated in technical workshops arranged and conducted by Central Arizona Water Control Study prior to their finalization report.

Our testimony on the options was given by then-President Jerry Grady on September 28, 1981 in Phoenix,

As to the EIS, ABC offers no further comment, nor do we seek modification.

However, we are advised and have followed the testimony of the Rio Salado Association relative to their extremely tardy attempt to be allocated CAP water. We want the record to reflect our position as to their attempt to shift attention from Plan 6 to Plan 7

First, they are attempting to seize water for which they have neither State Department of Water Resources allocation, nor Secretary of Interior recognition. Absent both of those prerequisite "permissions," Rio Salado Association's testimony and claim to water should be disallowed as totally inappropriate to the EIS proceedings. 1

Second, assuming that Rio Salado's position of allocated water being unused in the early years is correct, no reasonable environmental, social, or hydrologic fact exists to support their claim to such water. More critically, will more water sunk in the Salt River bed at their site be environmentally more sound than that same water delivered to agriculturalists who could then further decrease pumping. Obviously, the Rio Salado priority request is absurd against those opportunities.

Additionally, without any existing, recognized allocation, and, under no pressure from the Arizona groundwater law, any delivery to Rio Salado is contrary to Secretarial dictates to Arizona, and an affront to the agricultural community.

Third, we understand Rio Salado's testimony to have indicated that their request was interim and to be supplanted by effluent or other waters as the CAP allottees came fully on-line. Two facts clearly refute that posture.

Rio Salado Association did not offer any contractual-level documentation to support the "other" waters contention. Without such documentation, showing who is supplying such water under what terms and conditions, their testimony is meaningless.

Then, water law must be carefully considered. Neither the Central Arizona Water Conservation District, Department of Water Resources, nor the Department of Interior should entertain a situation which conceivably leads to prescriptive rights through adverse possession. Rio Salado's interim use could, through no present intent, nevertheless be pursued in the future on just such a basis.

For each, and all, of the foregoing reasons, we respectfully request that Rio Salado's testimony be stricken from this Environmental Impact Statement's public record.

Very truly yours,

AGRI-BUSINESS COUNCIL

Robert E. Moore

ROBERT E. MOORE
Executive Vice President

REM/km

Responses to Comments
Agri-Business Council of Arizona Inc.

49-1 Evaluation of the merits of the Rio Salado Development District is beyond the scope of this EIS. CAP water is fully allocated; if all CAP water is not contracted for Rio Salado will have the opportunity to seek an allocation through the ADWR process.