THE CENTRAL ARIZONA PROJECT ALTERNATES

An Analysis Prepared by Lawrence Mehren

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This material represents the personal opinions and feelings of the writer, and is not to be construed as representing the position of any organization or group. It is intended to point up various facets of the Colorado River problem, to analyze briefly the current situation, and to stimulate discussion and thought on this whole matter.

There appear at this time to be three avenues of approach to the Central Arizona Project:

I. Proceed with the present bill before Congress, HR 4671, known as the Colorado River Basin Project Act.

II. Attempt to secure the passage by Congress of a simple Central Arizona Project bill, without involving other states.

III. Build the Central Arizona Project by the State of Arizona through an appropriate entity.

Let us analyze each of these three avenues.

I. THE PRESENT COLORADO RIVER BASIN PROJECT ACT

Immediately after the Supreme Court decision, it became evident that at that time it was not possible to pass a simple Central Arizona Project Bill. The support and votes just weren't there. At that juncture Chairman Wayne Aspinall of the House Interior and Insular Affairs Committee requested Secretary of the Interior Udall to prepare a comprehensive regional program for the Lower Colorado Basin. The resultant study, called the Pacific Southwest Water Plan, gradually developed into the first true regional water planning program in the nation.

With infinite care and patience, Arizona leaders negotiated the compromises so necessary when seven states, each a prima donna in its own way, are involved. By early this year, the job was done. The seven states agreed, and it appeared that there would be smooth sailing.

As the months passed, it became obvious that although the other six Basin states were "for" the bill, Arizona had to carry the burden. The writer has yet to see intensive pressures applied on behalf of the bill by California, Colorado, Utah, or any other of the Basin states. There is "blood" on the corridors of the House Office Building, but it is only Arizona blood.

At any rate, the bill proceeded -- at a snail's pace. Chairman Aspinall could well have pressured the bill through Committee in three

months; it took almost eight. Nonetheless, by mid-August the bill was favorably reported.

Keystones of the support of the other Basin states were the 4.4 million acre feet to California, and the two big dams (Hualapai and Marble) which would provide funds for ultimate import of water into the Colorado from other sources (probably the Columbia), thus providing additional water for both the Upper and Lower Basins to make the River "whole".

This bill is a good piece of legislation -- not perfect -- but one which could solve the water problems of the Basin states for many years to come.

Following favorable Committee report of the bill, we looked for relatively quick action by the House Rules Committee and actual consideration on the floor. Things began to drag in the Rules Committee and the reason was smoked out very quickly. Our "friends" from California had reverted to their traditional status of enemies. Why?

Simply because of a bill introduced by Congressman John Saylor of Pennsylvania, providing for the construction of the Central Arizona Project, eliminating the two dams on the Colorado and the 4.4 million acre feet guarantee to California, and financing our project from the revenues from Hoover, Parker and Davis Dams after their payout period.

With the uproar over the dams created by the Sierra Club, and Saylor's announced intention of offering his bill on the House floor as a substitute amendment for HR 4671, California quietly took a rough head-count of the House and concluded that the Saylor amendment could probably prevail.

Meanwhile, our own delegation and workers had been in good faith feverishly building support for the main bill. We owe a hearty vote of thanks to the many companies and individuals who have worked unceasingly to convince Congressmen from all over the country of the merits of the legislation. Our own head-count of votes for the main bill climbed steadily, we have spent large sums of money on television, paid for the visits of many Congressmen to become familiar with our problem at first hand, and conducted other promotional work of all kinds. California, incidentally, has spent comparatively little. Yet California has refused to accept our head-count even though we have analized it man-by-man with them many times. Their fear persists that the Saylor amendment may carry and that they would be left out in the cold.

The result is that California has been able to bottle up the bill in the Rules Committee, and there it sits. In my opinion, our bill is as dead as a dodo. The coalition of the seven basin states, of which we were so proud a few months ago, has crumbled. Wyoming defected a little while back, Utah has wavered, and now California has arrogantly used its muscle to prevent the bill from even being considered by the House.

I lay the blame squarely on the selfishness, short-sightedness and duplicity of California. The knife has been used effectively -- right into our back. Arizona stands alone once more.

At this point, I say to you that Arizona owes a tremendous debt of gratitude to John Rhodes and Morris Udall. They have been towers of strength, have conducted the delicate and difficult negotiations with the other six states with wisdom and good judgment. We owe much, too, to the Task Force which supported them -- Les Alexander, Roger Ernst, Ozell Trask, Ted Riggins, Rich Johnson, Bill Gookin, Ray Killian, Morley Fox, and others.

Congressman Senner was helpful. Governor Goddard's role was effective, particularly with other Governors. Senator Fannin was constantly involved and completely cooperative.

Unfortunately, Senator Hayden has chosen to be of no help for a year and a half, to my knowledge, despite the influence he should have throughout Congress as its senior member and Senate Appropriations Committee chairman. Why? I don't know. You'll have to ask him. Many prominent Arizonans have pleaded with him for help in this hour of need. Nothing productive has been forthcoming; no action, either, on the Senate side. And I am not talking about the period of his recent illness, for which I am genuinely sorry.

The Administration has similarly not lifted a finger -- despite the plea of the seven Basin state governors (most of them Democrats) -- and moreover it has evidently bottled up Stewart Udall to the point where he could be of little help. Yet the U. S. can pay the major portion of a huge water project in Turkey, just announced; we can sponsor an international conference next May to solve the water problems of the world. But the Administration can't lift a finger to help Arizona. Big deal!

II. A BILL AUTHORIZING SOLELY THE CENTRAL ARIZONA PROJECT

As mentioned earlier, there appeared to be no hope for a separate Central Arizona Project bill immediately after the Supreme Court decision. That situation may have changed considerably.

One extremely important and positive development from the agonizing processes and frustrations of the last two years has been the emergence of an overwhelming realization by the members of Congress that Arizona has a critical water problem and that it needs solution. Through thousands of pages of testimony before Congressional Committees, through the visits of many Congressmen to our state to learn of our problems on the spot, through speeches, newspaper articles, radio, television, and the factual information we have issued, at long last the point has been driven home that we face a bleak future without water relief.

While we have stoutly supported the bill for the entire Basin and believe that it is the most logical and economical answer for us, nonetheless it now appears that a bill for the Central Arizona Project

without the two dams, and with the payout being from the revenues of Hoover, Parker and Davis, could readily pass in both houses. John Saylor, long considered our arch-enemy, has offered such a bill, states that Arizona deserves its water and that he will work for it. Even David Brower, Executive Director of the Sierra Club, considered as another foe, has announced his support of the Saylor bill and insists he would work for its passage.

Remember, such a measure has considerable appeal to Congressmen in general. A much lower appropriation would be involved since the two dams would be eliminated. Next, the Grand Canyon issue, over which the Sierra Club has generated so much heat, would be completely out of the picture.

Such a bill has its deficiencies. The water provided to Arizona would cover less than half our annual overpumping deficit, with no provision for ultimate import. But at least it would be a start, and subsequent legislation could be considered in approaching the future.

The great problem is getting a bill of this kind on the floor for a vote. The Interior and Insular Affairs Committee and the Rules Committee would have to approve and I see no chance of this happening this Fall.

But there is the opportunity to build strength and support for such a proposal during the fall months in anticipation of the next session. There have been indications within the last two weeks that there would be substantial support at high Congressional levels for such a measure.

Of course we would be faced with the determined opposition of California. Don't discount this. California's water leaders are able and ruthless. On the other hand, although California is the most populous state in the nation with a big delegation in Congress, it is far from being the most popular state in Washington. We have acquired many friends in the East, Midwest and South. The Upper Basin States would have to be reckoned with too; such a bill would not be greeted with enthusiasm there.

III. A STATE OF ARIZONA WATER PLAN

The hue and cry has been raised "why don't we go it alone; why doesn't Arizona build its own project?" Moreover, "why hasn't somebody been doing some thinking about this?"

The answers are, "yes, it is possible to build the project ourselves, if we are willing to pay the price -- and we may have to pay the price, so important is this water to us;" next, "yes, there has been a lot of thinking going on about a state project, but the time did not seem opportune, at least to me, to air the whole subject while our delegation was completely absorbed in the Congressional effort. Don't forget that two years ago the Legislature of the state committed its support to the effort for a Federal project, as did the Central Arizona Project Association.

The time has now come, however, when we had better take a close look at what we are talking about in a state project. And rather than give you only an end figure which may seem to have been plucked out of thin air, I think you and I should take the time to build the figure step by step.

How About Dams?

There's a lot of brave talk these days that we should just go ahead and get the damsites at Marble and Bridge and be off to the races. The feeling seems to prevail that all we have to do is snap our fingers and the Federal Power Commission will roll over and grant either the Marble license or both. Come now, let's be a bit more realistic.

Let's remember that the uproar over any dams in the Grand Canyon area, generated in the last two years, has had a profound effect on official Washington, to the point where I consider the granting of a license to any Arizona entity a remote possibility.

Keep in mind, too, that there are a couple of new members on the Federal Power Commission, including the Chairman, and I doubt seriously that they will be anxious to jump on this matter. Some will disagree violently with these statements, but I am entitled to my own opinion and I have given it to you.

I want to comment on another point which seems to have become almost a religion with some -- that because the eastern bond houses are willing to float a bond issue for a state project, this automatically makes it feasible, good, and above reproach.

Don't forget that the bond houses are in the business of selling money for a profit. Certainly they would be delighted to float the bonds -- provided there is gilt-edged security behind them; which could be bonding all the lands involved, having the full credit of the state of Arizona in back of the issue, or the credit of the municipalities involved. What burden the payoff of the issue involves on the people of Arizona is not the particular concern of the underwriting houses. By the same token I suppose I could buy a couple of Rolls Royces tomorrow; the salesman would be overjoyed with the commission, but I can tell you that the payments would really be rugged on me as time went on.

Perhaps I'm all wrong. Maybe the Federal Power Commission will roll over at the snap of a finger. But meanwhile I'd like to explore with you a program which I consider to be somewhat more realistic.

Who Should Do It?

There is no existing agency in the state of Arizona with authority to contract for a lump sum allocation of Colorado River water, determine the distribution of the water, construct the works necessary to deliver water to the many municipalities and irrigation districts that will be involved, issue bonds for such purposes, operate a major venture of this kind.

The Arizona Power Authority, under law, is concerned only with electric energy. It has no powers to develop or operate a water project. The Interstate Stream Commission is basically a water planning agency, and incidentally, its functions along these lines should be broadened.

What we are talking about here is an actual operating entity to handle a specific water project in a specific area. It would seem obvious therefore that the State Legislature would have to create such an agency by law, perhaps somewhat along the lines to the Metropolitan Water District of Southern California.

What Should Be Built?

We are herein talking about the delivery of water from the Colorado -- and not development of other sources within the state. Moreover, for purposes of this memo the assumption is used that we envision the diversion of 1,200,000 acre feet from the mainstream. Actually, probably about 1,600,000 acre feet are available from Arizona's total entitlement of 2,800,000 acre feet, and a study should be made of the possibility of diverting this full amount.

I asked the Bureau of Reclamation for some figures. Its records are open to the public and anyone could obtain the information I received.

The Bureau studies over a long period of years show the Central Arizona Irrigation Unit (excluding dams, of course) at a projected grand total cost of $525,940,000.

Under a program envisioning only Colorado River water development, the following units would be built:

Granite Reef Aqueduct and pumping plant	$284,290,000
Salt-Gila Aqueduct	36,920,000
Tucson Aqueduct and pumping plant	42,030,000
Orme Dam	38,410,000
	$401,650,000

N.B. The above figures include the pumping plant at Lake Havasu, rights of way, legal costs, engineering, etc.

The items which would be eliminated from this plan, and which make up the balance of the $525,940,000 grand total, are:

Hooker Dam	$ 28,800,000
Charleston Dam & Aqueduct	33,050,000
Buttes Dam	31,970,000
Miscellaneous items, such as Indian lands distribution	30,470,000
	$124,290,000

How About Financing?

This is an area of considerable speculation as to length of bond issue, interest rate, level annual payment versus sliding scales, etc. The arguments will be long and hot on this whole subject, but to make a beginning, a financial institution, well versed in this field, was consulted and given the following set of premises:

- $401,650,000 capital funds needed
- 50 year maturity
- 5 year construction
- $80,000,000 capital funds needed for each of 4 years and $81,650,000 in the fifth year
- Interest during the construction period to be covered by issuance of additional bonds since there would be no salable water until the sixth year.

Then there was the matter of interest rate to consider. The Federal National Mortgage Association (a government agency) has recently issued $4 billion of debentures at 6%; Time Certificates of Deposit are paying 5½%; on today's stock market there are any number of top quality companies paying dividends of over 6% at current prices; a recent Arizona Board of Regents issue for $25,000,000 went at 4.90%; even U.S. Savings Bonds, traditionally low in yield, are now at 4.15%.

With these rates in mind, it seems entirely realistic on today's market to use a 5% interest factor.

Based on all of the above assumptions, the calculations indicate that to obtain the $401,650,000 of needed money and the interest until revenues are forthcoming, the bond issue would have to be for a total of $470,200,000. The computation for level payment retirement of this issue for principal and interest is

$26,450,000 per year for debt servicing

If the interest rate were 4½%, the total issue would be $456,650,000, and the level payment program would require $23,800,000 per year. However, at this moment and probably for the foreseeable future the 5% interest figures is more realistic.

Underwriting Costs

Charges by the investment houses which would float the bond issue might possibly be in the $14,000,000 bracket, although it is almost impossible to pinpoint a figure at this time. Assuming technically that this could in some way be spread over the 50 year life of the issue, the cost would be

$280,000 per year

Operation, Maintenance, and Replacement

The Bureau of Reclamation has developed in its extensive studies a set of figures for operation and maintenance and the replacement of

machinery and equipment. The detail is minute - number of men, pickups, gas, office rent, accounting work, trucks, and so on down the line. The annual costs for these items are estimated to be:

Unit	Operation & Maint.	Replacement	Total
Granite Reef Aqueduct	$1,528,500	$93,000	$1,621,500
Salt-Gila Aqueduct	374,700	8,600	383,300
Tucson Aqueduct	92,300	17,800	110,100
Orme Dam	34,800	-	34,800
			$2,149,700

How About Power Sources?

If the Marble license cannot be obtained, the following alternate is offered for consideration:

According to Bureau of Reclamation, approximately 2 billion kilowatt hours of power would be needed for the two major installations requiring energy each year -- the main pumping plant on Lake Havasu, and the system to pump water through the Tucson Aqueduct uphill to that city from Pinal County.

A coal-fired steam plant could be constructed at Lake Mohave, just as is currently planned by two utilities. The projected cost of power at this latter installation is 3.7 mills. The transmission distance from Mohave to Havasu is relatively short, and the executive officer of one of the utilities consulted agreed that the use of a 4 mill figure for delivered power was "in the ball park". This 4 mill figure would, of course, include plant amortization and consequently no capital figure is included in the irrigation bond computation above.

Based on 4 mill power, and the annual requirement of 2 billion kilowatt hours, the energy cost would be:

$8,000,000 per year

This figure assumes, of course, full operation of the Project each year with availability of the full entitlement of water.

If, by any chance, the Arizona Power Authority were able to obtain the Marble Canyon license, it could provide the power for the project, of course.

Let's Put the Figures All Together

Summarizing where we are at this moment, the annual costs for such a project would be:

Debt servicing	$26,450,000
Underwriting costs	280,000
Operation, Maintenance, Replacement	2,149,700
Electric Power	8,000,000
	$36,879,700 per year

What does it mean on an acre foot basis? Assume a full 1,200,000 acre feet of diversion -- which is probably an unrealistic assumption -- river flow and storage will fluctuate, etc. This diversion of 1,200,000 acre feet must be reduced by about 10% for transmission losses, evaporation, etc., and we then arrive at a salable water figure of 1,080,000 acre feet at the service area. A more realistic figure of salable water might be 1,000,000 a/f - or even less. However, the 1,000,000 a/f amount results in a cost of water figure of

$36.88 per a/f average

As a farmer, I can tell you I have no interest in $36.88 per a/f water and I would vigorously oppose bonding my land for it.

Where Will the Money Come From?

Let us assume Municipal and Industrial deliveries of:

Maricopa County area	200,000 a/f
Tucson area	100,000 a/f
	300,000 a/f

This leaves 700,000 a/f for farm use.

If we apply the Bureau of Reclamation figure of $10 per a/f as the amount which the farmer can afford to pay, and assume that the balance of the necessary funds would come from municipalities and industry, we wind up with these figures:

Income from 700,000 a/f farm water	$7,000,000	= $10 per a/f
Income from 300,000 a/f M & I water	29,879,700	= $99.60 per a/f

This $99.60 is a "way out" figure as far as the willingness of cities to pay it is concerned. Let's try another one. Take the Bureau figure of $50 per a/f for M & I water under the Federal project and boost the farm water to $12 per a/f. Then the revenue situation becomes:

700,000 a/f farm water @ $12 =	$ 8,400,000
300,000 a/f M & I water @ $50 =	15,000,000
Total revenues from sale of water	$23,400,000
Total revenues needed	$36,879,700
Annual revenue to come from "somewhere"	$13,479,700

What is this "somewhere"? Could be from the general fund of the state -- if the entire state would go along with the concept that the economy of the central basin is highly important to the total economy. This might be extremely difficult to sell, particularly in outlying counties. Or the deficit could be made an obligation of the governments of the counties involved directly -- Maricopa, Pinal, Pima, Graham.

Remember, that lower water deliveries than the 1,000,000 a/f will boost acre foot costs substantially because the debt servicing and operation and maintenance figures will remain constant. The only variable would be less power because of less water to handle. However, savings from reduced energy use could well be offset by higher power costs than the 4 mills since power plant amortization would have to be spread over a lower number of kilowatt hours.

What Other Problems?

The Santa Fe Compact of 1922 is "gummy" and vague in several of its key sections. There has been considerable uneasiness in the Upper Basin States over their rights and future in the event a Central Arizona Project were built. Into what concrete form this uneasiness might develop, who can say.

Next, the Supreme Court left up in the air the matter of the allocation of shortages in times of low River flow, and merely directed the Secretary of the Interior to make the decision. With the 4.4 million acre feet guarantee to California out the window, what action would be taken by that state to try to prevent a cutback? Who knows?

Remember, too, that the overdraft on the groundwater basins of Central Arizona is currently 2,250,000 a/f. Thus the delivery of 1,000,000 a/f to the service area solves less than half the problem of stabilizing the water supply for the present economy. On top of that there is growth to consider. There is no provision for that deficit.

These three problems are present in both the state plan and in the Saylor plan. The current bill before Congress solves all three, but as I have said, it unfortunately appears to be dead.

The $64 Question

Assuming that the above cost analysis for a state plan is reasonably accurate and that the price of water would be somewhere in the range of $35 to $40 per acre foot on an average, the ultimate question in utter simplicity becomes

IS ARIZONA WILLING TO PAY THE BILL?

The present economy is at stake, and we may well have to afford it despite the financial burden it would impose.

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WE ARRIVE AT SOME RECOMMENDATIONS

In view of the factors discussed in this document, the recommendations of the writer are threefold:

1. That every attempt be made early in the next session of Congress to secure passage of a Central Arizona Project bill along the lines of the Saylor bill.

2. That a bill be introduced in the state Legislature in January authorizing the creation of an entity which would have the authority to proceed with a state project. It won't cost anything to put this legislation on the books, and if it appears that favorable action will not be forthcoming quickly from Congress, Arizona would be in a position to proceed immediately on its own.

3. Our Congressional delegation should offer to cooperate with the delegations of the other Basin states in the formulation of separate and subsequent legislation to bring supplemental water into the Colorado River system for the ultimate solution of the entire problem.

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