The project was authorized by Public Law 93-320. This law provides for the construction of facilities necessary to enable the United States to comply with its obligations to Mexico under Minute No. 242 and the Treaty of February 3, 1944. Title I of the law authorizes the construction, operation, and maintenance of a desalting plant near Yuma, Arizona; extending the bypass drain to the Santa Clara Slough in Mexico; replacement of the existing metal flume with a concrete siphon; reduction of acreage on the Wellton-Mohawk Irrigation and Drainage District; land acquisition of the Painted Rock Reservoir; lining of the first 49 miles of the Coachella Canal; protective and regulatory pumping near the Arizona-Sonora land boundary with Mexico. Funds in the amount of $26,000,000 were included in the Public Works Appropriation Act of 1975 for the start of preconstruction and construction of the Title I features of the project.

With release of these funds on October 18, 1974, preconstruction activities were initiated on the Desalting Complex, the Coachella Canal Lining, and the Protective and Regulatory Pumping. Studies are also underway on measures for reducing drainage flow from the Wellton-Mohawk Division.

The firm of Burns and Roe, Incorporated, under contract with the Office of Water Research and Technology is preparing a conceptual design of the desalting plant.
Preliminary engineering data are being prepared to provide Mexico with the location and elevation of the drain where it crosses the border into Mexico.

Construction of well fields for protective and regulatory ground-water pumping was authorized in the Act for the purpose of utilizing the ground waters underlying lands in the United States to the benefit of the United States' interest. These ground waters in the Yuma, Arizona area exist partly as a result of irrigation on Yuma Mesa and in the Yuma Valley. Various alternatives for utilizing these ground-water resources are being investigated.

Preconstruction studies were initiated during the current fiscal year on the Coachella Canal Lining. An archeological survey of the area has been completed. An ad hoc committee has been appointed to collect basic data and prepare recommendations for inclusion of fish and wildlife and recreation facilities in the designs and specifications for the canal.

The draft environmental statement was issued April 1, 1974. A supplement to the draft environmental statement was issued August 24, 1974, to provide for the protective and regulatory ground-water pumping. A public hearing was held in Yuma, Arizona on October 5, 1974 on all Title I measures.

The authorized construction cost for the Title I activity is $121,500,000, and $34,000,000 is authorized for protective and regulatory pumping. These amounts are based on April 1973 prices.
November 11, 1974

BUREAU OF RECLAMATION
COLORADO RIVER BASIN SALINITY CONTROL PROJECT
TITLE II LAS VEGAS WASH UNIT
(Authorized for Construction)

Authority to construct, operate, and maintain the Las Vegas Wash Unit, Nevada, was provided under Title II of Public Law 93-320, and funds in the amount of $300,000 were included in the Public Appropriation Act of 1975, Public Law 93-393, to start the advance planning studies. With the release of these funds on October 18, 1974, advance planning activities were initiated. Negotiations are presently underway with the National Park Service to obtain archeological clearance for the investigations and accomplish an archeological survey of the Las Vegas Wash area.

Plans are also underway for the installation of a stream gaging station near a proposed ground-water interception facility in the wash. This gage will be installed and maintained by the USGS through cooperative funding.

An environmental impact statement is being outlined at the present time, and a drilling and geologic investigation program is being undertaken.

A public involvement program has been initiated and meetings have been held with the Clark County Wastewater Management Agency and the local Wash Development Committee.

The estimated total construction of the Las Vegas Wash Unit for the Desalting Plans is $31,676,000. The estimated total cost for the total evaporation of ground water plan is $49,590,000. The prices are based on April 1973 costs. (PRELIMINARY ESTIMATE)
The second stage of the Southern Nevada Water Project was authorized under Public Law 89-292 and Public Law 89-510. Funds in the amount of $1,500,000 were scheduled for advance planning studies and $500,000 was included in the Public Works Appropriation Act of 1975, Public Law 93-393, to start the advance planning studies on the second stage of the project. With the release of these funds on October 31, 1974, advance planning studies were initiated. Portions of the first stage, which became operational November 1, 1971, were constructed to accommodate the full delivery capability authorized by the Act of October 22, 1965 (Public Law 89-292). The treatment facility was funded and constructed separately by the State of Nevada through the Division of Colorado River Resources. Expansion capability of the treatment plant was provided in the first stage of construction.

The second stage of the aqueduct system will deliver 166,800 acre-feet annually. The installation of the first and second stages of the project will provide for an ultimate annual delivery rate of supplemental M&I water from the lake of 299,000 acre-feet. Allowance will be made for creditable return flows to Lake Mead. It is anticipated that the total contract diversion from the Colorado River by the Southern Nevada Water Project will be 312,000 acre-feet per year. This would allow 13,000 acre-feet per year for losses. Based on January 1974 prices, the estimated total construction cost for the second stage of the Southern Nevada Water Project is $52,356,000. (PRELIMINARY ESTIMATE)
Pres. Myron Holbert
Sid - Member of Guests & Cole Roy

Keep it short - lie a lot.

Craig Jim Johnson
From Fort Collins

Bill Clay

Mistakes - 1 to CU.
offset that by going to
Fort Collins

Narrow - curve by Camps -
can't really place the
blame there

Storm - Montana to Colo
Reclamation is most people-oriented

...does more for people -
domestic - 1501
hydro power - 50 Bill
Reculation - 50 to 75 Visits
Free - 1000 - 1 to 1000
ADDRESS BY GILBERT G. STAMM
COMMISSIONER OF RECLAMATION
U.S. DEPARTMENT OF THE INTERIOR
AT THE COLORADO RIVER WATER USERS ASSOCIATION
NOVEMBER 18, 1974

WATER FOR ENERGY IN THE WEST

It is always a pleasure to attend the annual meeting of the Colorado River Water Users Association. Since my last appearance before this group, we have witnessed some very dramatic changes not only in our national government but in our national priorities as we focus attention on the major challenges facing the country.

One of those problems is the increasing need for energy of all forms, and the national goal of greater self-reliance in supplying our energy needs. And when we talk about energy, we also have to talk about water. For water is the key to conversion and use of our vast fossil fuel reserves of the West. Whether energy production processes involve oil shale, coal, gasification, liquefaction, or just
cooling for nuclear or conventionally fired steam electric plants, water is essential.

The Bureau of Reclamation has long recognized the importance of water for truly balanced and comprehensive western development. The energy shortage has caused a much broader segment of the public also to become aware of the role that only a dependable source of water can play.

In recent months, three important studies of water for energy in the West have been prepared and published. I would like to outline briefly the basic findings of those studies. One relates to the Upper Colorado River Basin, another to the Northern Great Plains, and the third to prototype oil shale development. Additionally, I want to summarize our plans for implementing the Colorado River Salinity Control Program authorized by the Congress earlier this year.

**WATER FOR ENERGY IN THE UPPER COLORADO RIVER BASIN**

Last July, I accompanied Assistant Secretary of the Interior Jack Horton to the Western Governor's Conference at Albuquerque, where we outlined the findings of the report on, "Water for Energy
in the Upper Colorado River Basin."

The report was a product of the Denver Management Team of the Department's Water for Energy Committee, an intra-departmental group made up of representatives of eight Interior bureaus and offices. The Bureau of Reclamation holds the chairmanship of the Denver Management Team. The report was not meant to establish or represent departmental policy on water for energy development in the basin. Rather, it was prepared to provide a factual basis for future decisions regarding water for development of coal and oil shale resources, while continuing to recognize the need for water to meet related as well as competing needs.

The conclusion of the management team defines the difficult problems ahead—problems which will require full and close cooperation among the Federal Government, the States in the basin, and the water users.

Let me read you that conclusion:

"Sufficient water in the Upper Basin to meet energy developments and other anticipated needs to
the year 2000 will not be available unless certain State and Federal actions are taken soon. These actions include strong State leadership in the resolution of water rights and water allocation actions and attainment of efficiency in water use. Additional storage facilities will be required and augmentation of the supply will be needed through weather modification.

"Ground water can be utilized as an interim supply/prior to development of surface storage, and subsequently as a conjunctive supply. The adoption of air cooling for thermal powerplants and the shift of water use from agriculture to industry will also be necessary to some extent. It is well to note that this picture is the situation as it is seen today...and that the rapidly changing energy situation can produce a much different picture in a short time. Therefore, an indepth appraisal must be continued with close cooperation among State and Federal interests and industry."

The study team estimated that the amount of
water presently being used in the Upper Basin is approximately 3.7 million acre-feet per year, although appropriations are much greater. Most of the present use is for irrigation. Differences of opinion exist as to the total amount available to the Upper Basin under the Colorado River Compact. We have conservatively estimated that 5.8 million acre-feet would be available under one set of assumptions, thus leaving a differential of 2.1 million acre-feet, even though appropriations in the books exceed supply.

It is estimated that about 870,000 acre-feet of water will be needed annually in the Upper Basin by the year 2000 to meet the requirements of about 30 major energy development projects which are in various stages of operation, construction, or planning. These include coal-fired electric generating plants, oil shale retort operations, and coal gasification plants.

Likewise, demands for water for other uses such as municipal, industrial, agricultural,
and environmental purposes are also expected to increase greatly during the same period. These competing uses in the basin could result in significant water shortages by the year 2000. However, as energy companies switch to air-cooled thermal powerplants and convert water rights from other uses, the supply-demand relationship could improve somewhat.

The study team cited the Bureau of Reclamation’s weather modification program as one of the most promising sources of increasing the supply of water in the Upper Colorado River Basin. Its report estimated that weather modification techniques could add an additional 1.3 million acre-feet of water per year to the Colorado River, resulting in a potential increase in annual water yield of 6 to 9 percent. Cost wise, weather modification can produce is the cheapest source new water on the horizon.

One of the most important of all questions in the consideration of water for energy development in the Upper Colorado Basin relates to water rights. Historically, developers of energy and other
mineral resources have provided their own water supplies. The Federal Government in the past has not sought to supply water rights to mineral or other energy resource developers on Federal land. Accordingly, it is anticipated that nonfederal entities/obtaining leases, permits, or other rights to develop federally-owned energy resources/will obtain the water for such development under existing State procedures.

The study team noted that the surface water supply in the Upper Basin is already overappropriated, especially in Colorado and Utah/where water rights exceed present water use/as well as the long-term potential water supply. The obvious conclusion is that many appropriative rights granted to private parties by the various States are not being fully utilized, although they remain as charges against the use of water in the basin. Recognizing this, energy interests have been involved to some extent in speculative activities in an effort to obtain water rights in the basin.

The study team suggested, therefore, that the
States begin comprehensive evaluations of existing water rights with the objective of reconciling present water uses with established rights. It said particular attention should be addressed to the abandoned and inactive rights.

This action, of course, has special significance to you as water users, and underscores the need for increased cooperation between the various levels of government and local interests in determining priorities over the next quarter century and beyond.

Several Other decision items identified by the study team which require further consideration include these:

- Construction of additional surface storage, if it is to be developed to optimize multiple water use objectives, should be scheduled so as to meet the energy development timetable. This means that storage projects capable of providing industrial water should be placed under construction as soon as possible. Such storage, and the water supply created thereby, could be used now for industry and energy production, and converted...
to municipal and agricultural uses as the finite sources of energy are consumed.

-Water requirements for Indian Tribes and Federal lands should be studied and evaluated in relation to other water needs in the Upper Basin. Potential claims for those purposes should not continue to be addressed on a future and hypothetical basis.

-Thirdly, water usage for environmental purposes such as water quality, endangered species, wild and scenic rivers, recreation, and fish and wildlife must receive immediate evaluation at both the Federal and State levels to assure equitable considerations within total basin development programs.

This, then, is a brief summary of the report and the problems we face. I do not believe these problems are insurmountable. However, it will take an extraordinary effort to stretch the limited water supply in the Upper Colorado River Basin to accommodate the Nation's growing demand for energy and to continue to meet the spiraling demand for water for man's food, fiber, and domestic needs.
WATER FOR PROTOTYPE OIL SHALE DEVELOPMENT

A draft report outlining alternative sources of water for prototype oil shale development in Colorado and Utah has been submitted to the Oil Shale Environmental Advisory Panel. That report, prepared by the Bureau of Reclamation, applies particularly to the four Federal tracts recently leased to private oil companies under the prototype development program.

The report makes no specific recommendations. However, it will be used, with any subsequent modifications, as part of the basis for recommendations to the Secretary of the Interior for actions required to make water available for development of the test leases.

Water requirements for the four tracts are presently estimated at 111,000 acre-feet annually with 75,000 acre-feet required in Colorado and 36,000 acre-feet in Utah. Part of the Utah requirement is for municipal purposes at a new town near the lease area.
The alternative water sources for the prototype program consist of either existing water storage facilities or planned multiple purpose projects in various stages of investigation. The report states that water could be utilized from the Green, Yampa, White, or Colorado Rivers, or from ground water supplies, or from a combination of these sources.

Like the general report on water for energy in the Upper Colorado River Basin, this specific report on the prototype oil shale program points out that Colorado and Utah presently have unused water available, but that the potential need for water could eventually exceed supply. Here again, water availability will depend on resolution of water rights, water allocations, efficiency of use, and construction of new facilities. I'm not optimistic that shale oil development will move rapidly. In fact, prevalent circumstances, including State severance taxes in prospect, may already have made development uneconomic.

**WATER FOR ENERGY IN THE NORTHERN GREAT PLAINS**

Another area prominently mentioned in any discussion of energy self-sufficiency is that part of the Northern Great Plains region containing vast coal reserves which lie principally in Wyoming, Montana, and the two Dakotas. It is estimated that
the coal deposits in that area total about 231 billion tons, minable under present technology. This is 48 percent of the United States' minable coal reserves. About 68 billion tons could be mined with present surface mining techniques. Much of this coal is low in sulfur content, and therefore is especially attractive from an environmental viewpoint.

Here again the development of these vast coal reserves for coal-fired electric generating plants and coal gasification operations will require substantial amounts of water. However, the supply of water for energy development in the Northern Great Plains poses a lesser problem than in the Upper Colorado River Basin.

Preliminary studies recently released on the Northern Great Plains Resources Program indicate that there is sufficient water in the Missouri basin to supply a high level of coal energy development. The water-use estimates under the highest projected level of development show a requirement for approximately 1.5 million acre-feet
annually by the year 2000. It is estimated that there are up to 3 million acre-feet of water in the Upper Missouri River Basin that could be made available for energy production without conflict with existing, authorized, and developing uses. It may, however, be necessary eventually to construct new storage facilities if all ultimate needs are to be met, including instream requirements. Other issues still to be resolved that potentially could constrain water resource development are, 1) article 10 of the Yellowstone River Compact which prohibits transport of water out of the Yellowstone River Basin, unless all three States concur, and 2) Indian water right claims. Nonetheless, there appears to be sufficient water available if adequate conveyance facilities (long mileage aqueducts) can be provided.

Coal is the most abundant of our energy resources. We have 10 times more coal than our oil and gas reserves combined, yet coal presently supplies only 10 percent of our energy needs.

If we are to achieve the goal of energy self-sufficiency set forth in Project Independence, or
even the goals of Project Interdependence as outlined by President Ford at the World Energy Conference, coal from the Northern Great Plains will have to play a major role in the effort. Development of those resources, like those in the Upper Colorado River Basin, will require hard decisions, tradeoffs, and action programs. But, to my mind, the problems we face in developing our domestic resources are far less threatening to the Nation than the continued reliance on energy supplies from unpredictable, foreign sources.

Incidentally, in this regard, President Ford, in his Detroit talk to the World Energy Conference, stated that the U.S. did not intend to become totally self-sufficient in the energy field, but rather suggested that Project Independence might better be termed Project Inter-dependence. This, he explained, contemplated an international cooperative effort among nations which would preclude placing any single nation at the mercy of the principal oil producing nations.
COLORADO RIVER SALINITY CONTROL PROGRAM

The Bureau of Reclamation is proceeding with implementation of the $280 million Colorado River Salinity Control Program which was authorized by the Congress and signed into law last summer.

That legislation gives us the tools we need to combat deteriorating water quality, which has been a persistent and growing problem for water users in both the United States and Mexico. To give you an idea of the magnitude of this problem, we estimated that the loss to the regional economy along the river due to high salinity was about $53 million in 1973. By the year 2000, losses could reach about $124 million per year if water resource development were to continue without concomitant salinity reduction measures.

Congress has appropriated funds to proceed at once with preparations for construction of facilities authorized by Title I of the bill, which will benefit Mexico primarily, and to expedite planning on Title II, which authorizes salinity control measures of benefit to U.S. water users.
Funds appropriated by the Congress will allow the Bureau to award a design contract for the desalting complex near Yuma, to move ahead with plans for lining or reconstructing 50 miles of the Coachella Canal to reduce conveyance losses, and to begin an irrigation efficiency program for the Wellton-Mohawk Irrigation District. In addition, the Congress appropriated over $9.2 million to be transferred to the Government of Mexico through the International Boundary Commission for construction of the portion of the bypass channel located in Mexico.

We expect to begin acquiring equipment for the desalting plant in the next fiscal year, and to begin construction of the plant in fiscal 1977.

Preconstruction planning has begun for the $125 million salinity control program upstream from Imperial Dam. That activity includes the Paradox Valley and Grand Valley Units in Colorado, the Crystal Geyser Unit in Utah, and the Las Vegas Wash Unit in Nevada. The legislation further directs the expediting of planning reports on 12...
other potential projects, including the Lower Gunnison, Glenwood-Dotsero Springs, and McElmo Creek areas of Colorado; the Uintah Basin, LaVerkin Springs, Price, San Rafael, and Dirty Devil River areas of Utah; the Big Sandy River area of Wyoming; the Littlefield Springs and Colorado River Indian Reservation areas of Arizona; and the Palo Verde Irrigation District of California. Some of the projects on the U.S. side of the border could include a combination of irrigation management techniques and other salt reduction systems.

The salinity control program puts the Bureau of Reclamation into a new phase of water resource management. I look upon it as one of the most significant developments since the passage of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968. The quality of water affects every water user, from housewife to farmer, industry to city. In the years ahead I think you will see substantial improvements in Colorado River water quality—improvements which will add value to the economic base of all water users.
As a matter of fact

On a global basis the need for expanded food production is very great. Millions of people are starving today, and the world food population is growing at the rate of 93 million each year. (15M India alone)
and this on the face of concerted efforts to reduce the rate of increase.

U.S. is the most efficient producer of agricultural products in the world. If we recognize our obligation and opportunity to help meet world needs, we can make a great contribution and at the same time obtain significant benefit for improved balance trade and economic growth and world well being at home.

This can be done with renewable resources & that will serve us and the world in perpetuity if properly developed and managed.
I think we are on the threshold of an exciting and progressive time in water resource management. It is a time when production of both energy and food are gaining increasing importance in our list of national and world priorities. The Bureau, as the primary water resources agency in the West; and you, as our constituency; must assume a major leadership role in this undertaking. We look forward to continuing our close relationship with you in this effort.

And in implementing any course that involves greater and more efficient use of our land and natural and water to meet world needs today — but doing so in a manner that will serve equally well for the generations yet to come. We look forward to continuing our close relationship with you in meeting the challenge before us.