

RECREATION USE OF WATER PROJECTS

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I am honored to have been asked to take part in your 7th Annual Water Conference, the theme of which is, "Water in 50 Years of Statehood--With A Look to the Future."

In looking back I note with some pride that the Bureau has played an important role in water developments in the State. And also that its activities in this area predate New Mexico's statehood by a decade.

In looking forward we should be encouraged and challenged by the new era of economic opportunities that will unfold with the new water resource development now planned and under construction.

The first Bureau of Reclamation activity in New Mexico took place on the Carlsbad and Rio Grande Projects, shortly after Reclamation came into being. The economic welfare of sizable areas of the State is supported as a result of construction or rehabilitation under Reclamation Law. I will briefly describe the old projects.

The Carlsbad Project on the Pecos River serves 25,000 acres with water regulation supplied by Avalon, McMillan, and Alamogordo reservoirs. The Fort Sumner Project, also on the Pecos, serves 6,500 acres by direct diversion from the stream.

The Rio Grande Project is a multi-purpose development that provides irrigation water for lands in two Nations, and two states; provides flood control, power, and recreational opportunities. Total irrigable area served in the Rio Grande project in New Mexico and Texas is 178,196 acres. About 64 percent, or 102,082 acres, is in New Mexico.

The next project upstream from the Rio Grande Project is the Middle Rio Grande. While irrigation in the Middle Valley had been practiced for many years through private diversions and works constructed by the Middle Rio Grande Conservancy District, continued river channel deterioration and the need for water salvage and conservation prompted Federal assistance beginning in 1951. This project includes about 121,000 acres of water right land including land of 6 Indian Pueblos. During the 10-year period, 1951 to 1961, an estimated total of 556,700 acre feet of water was salvaged by channelization and drainage works.

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The Bureau has constructed two projects on the Canadian River in New Mexico. The largest is the Tucumcari Project, and facilities of this project provide water for 41,400 irrigable acres. Water is supplied from Conchas Reservoir which was constructed by the Corps of Engineers.

Upstream on the Canadian River in the vicinity of Maxwell, New Mexico, is the Vermejo Project. Construction on this project involved complete rehabilitation of the old Maxwell Irrigation District system. This work was substantially completed by 1955 and the facilities serve about 7,400 acres.

The Pine River Project, located in New Mexico and Colorado, lies in the San Juan River Basin, with about 1,000 acres located in New Mexico.

These projects developed under the Reclamation program, involving approximately 305,000 acres of land in New Mexico, produce crops ranging in value from \$35 to \$40 million annually. The total construction cost of these seven projects amounts to about \$84 million. The cumulative gross crop value to date is 14 times as much as the total construction cost. The average annual gross crop production value per irrigable acre ranges from about \$50 to a high of \$275 per acre.

On the two oldest projects--the Carlsbad and the Rio Grande--which are nearly as old as the Reclamation program itself, the cumulative gross crop value over the years amounts to approximately 39 times their construction cost.

To further illustrate the broad impacts of Reclamation projects in the State, a recent study shows (1) about 30 percent of the land irrigated in the State is in Reclamation projects; (2) there are 2,500 full-time Reclamation farms and 6,700 part-time farms--this is about 35 percent of the State's irrigated farms; (3) the sustained on-farm investment on Reclamation farms is estimated at \$120 million; (4) through the export sale of products grown on Reclamation farms, the community and State business activity is stimulated and sustained in excess of \$105 million annually; (5) Reclamation projects provide nearly \$50 million in personal income, which supports 48,000 people; and (6) the total investment in farms and facilities provides a tax base which contributes about \$700,000 in State and local taxes, and supports directly and indirectly a total tax burden of \$11.2 million per year.

The economic impact of agricultural production on a local area is illustrated by a study the Bureau made in 1960 on the Rio Grande Project. The study involved measuring the business activity generated from harvesting, ginning, processing, handling, and marketing cotton.

The study showed that each bale of cotton produced, the harvesting, ginning, compressing, storing, and hauling the baled cotton created 8.6 hours of labor valued at \$10.95. Interest on capital and returns to management for these operations amounted to \$6.22 and \$2.53 per bale, respectively. In processing cottonseed, 3.5 hours of labor valued at \$5.42 per ton of cottonseed milled were required. The return to capital was \$1.92 per ton, and to management \$8.41.

Multiply these dollar values by the total cotton produced on Reclamation projects in the State in 1961, and we find that the total economic impact from the items above amounts to more than \$2-3/4 million. Of course, the effects just described are only a fraction of the total impact the cotton crop has on the local economy. The gross income received by the farmers from cotton sales in 1961 was nearly \$23 million.

Other Reclamation investments are in the offing for New Mexico. The Navajo Dam of the Colorado River Storage Project was dedicated in September and there is now a sizable pool of water behind it. Nearing completion is the Hammond Project, a participating project of the Colorado River Storage Project, located in the northwestern part of New Mexico. The Hammond Project facilities will divert and pump water from the San Juan River for 3,900 acres.

Future water developments include the San Juan-Chama and Navajo Indian Projects, which were recently authorized by Congress. The Animas-La Plata Project, located north of the Farmington area, is a potential development on which feasibility investigations are in progress. This project would serve and provide full irrigation service to about 14,700 acres and supplemental service to 5,500 acres in both Colorado and New Mexico.

The plan for initial stage development on the San Juan-Chama Project contemplates an average annual diversion of about 110,000 acre feet from the San Juan River to the Chama River for utilization in the Rio Grande Basin in New Mexico. The imported waters would be used for an additional municipal and industrial water supply (57,500 acre feet) for the city of Albuquerque and to provide a supplemental water supply (29,900 acre feet) to 39,300 acres of land in the Cerro, Taos, Llano, and Pojoaque tributary irrigation units in the Rio Grande Basin in New Mexico, and to provide supplemental water (22,600 acre feet) for lands in the Middle Rio Grande Conservancy District.

The plan of development for the San Juan-Chama Project involves three major elements comprising the diversion facilities (diversion dams and conduits), regulation facilities (Heron #4 Dam and Reservoir and enlargement of outlet works

for the existing El Vado Dam), and water-use facilities (principally for the tributary irrigation units). The Navajo Indian Irrigation Project will also be constructed by the Bureau of Reclamation. This project, as proposed, involves diverting San Juan River water from the Navajo Dam and Reservoir to some 110,000 acres of irrigable land.

Estimated cost of work under construction and authorized, including the Navajo Dam and Reservoir, the Navajo Indian Project, the Hammond Project, and the initial stage of the San Juan-Chama Project, aggregates about \$265 million.

These new Reclamation projects will provide water for about 1,300 new commercial farms containing 128,000 acres of new farm land and a supplemental water supply for an additional 127,000 acres now irrigated. They are expected to produce \$6.8 million per year in net farm income, \$1.3 million in farm wages, and \$17.8 million in income for workers in agriculture-supported trades and industries.

The new municipal and industrial water supplies for the Albuquerque area from the San Juan-Chama development are expected to support industries that will add an estimated \$181 million in personal income to the State each year.

I have given you this inventory of Reclamation projects and plans in New Mexico to give you some idea of the magnitude of our operations and the importance of local, State, and Federal cooperation and coordination if we are all to get the maximum benefits from this investment.

In Reclamation's infancy, projects were single-purpose in concept; and irrigation was the only recognized paying water entity. A gradual shift to the multiple-purpose concept has come about over the years. Legislation was passed in 1906 permitting construction of power generating facilities and the sale of power to finance associated irrigation construction.

With the passage of the Reclamation Project Act of 1939 and subsequent legislation, the multiple-purpose concept has been more fully recognized, and more and more functions are being added to water resource developments.

Today, multi-purpose projects may include a combination of the following functions: irrigation, power, municipal and domestic water, industrial water, recreation, fish and wildlife, pollution control, flood control, sediment control, and navigation.

On many of the older projects, multi-purpose benefits have been occurring regularly since the projects were built,

but recognition was not made of these benefits in the project authorization and no costs have been allocated to them. Among these, of course, is recreation. Regardless of whether recreation is a planned benefit, every new reservoir automatically creates a new swimming hole and people just naturally take advantage of it. Recreation has become a big business in the United States.

The National Park Service, for example, contemplates an increase nationally from 1960's 79 million park visitors to about 400 million by the year 2000. Looking ahead to 1980 and considering the increase projected by the National Park Service, it seems reasonable to expect that outdoor recreation, in terms of visitors to public recreation areas, may increase three or four times.

The 1960 National Survey of Fishing and Hunting by the United States Fish and Wildlife Service measured the hunting and fishing potential and the amount of money which sportsmen spend for these activities. The report shows that 30 million Americans over the age of 12 either fished or hunted in 1960. It also shows that an estimated \$4 billion was spent by fishermen and hunters in pursuit of their sports.

Secretary Udall has only recently established a new Bureau of Outdoor Recreation to coordinate and aid in the planning and use of outdoor recreation facilities. We welcome their advice and assistance in developing such recreation uses as we may be authorized by law to incorporate in Reclamation projects.

Many people in New Mexico, other than the farmer-water users, know Reclamation projects best because of the opportunities that the project reservoirs have created for a variety of outdoor recreational activities. The demand for all types of recreation has soared in recent years. The demand for fishing, boating, swimming, waterskiing, and camping activities has greatly increased within the last decade.

Reservoirs on Reclamation projects generally offer facilities for several, or all, of these activities and are, therefore, subjected to recreational usage that was not anticipated a few years back. Sales of sporting and camping supplies, boats, trailers, etc., have soared even in a place like Albuquerque, which is many miles from water impoundments.

Hundreds of people in New Mexico and many thousands in the Nation make their livelihood from manufacturing and selling sporting and camping goods and supplies, which are needed because of Reclamation projects and other water recreational areas.

Reservoirs of the Reclamation projects in New Mexico during 1960 recorded over 1.4 million visitor-days. This is more than half the visitors that visited the renowned Lake Mead area for the same year. The upsurge in recreation activities has resulted in a large volume of business done by retailers in the State. Selling sporting goods and boats has been of material benefit to the entire economy of the State.

The National Park Service, in computing recreational benefits to be used in comparing the cost for determination of economic justification of proposed recreational developments, has used a figure of \$1.60 per visitor-day. On this basis, using the 1960 recorded visitors, the Reclamation projects in New Mexico from recreational standpoints could justify an annual cost of \$2-1/4 million, and over a 100-year period an expenditure of about \$82 million.

We should mention, also, Conchas Reservoir on the Canadian River near Tucumcari and Clayton Reservoir located in north-eastern New Mexico near Clayton, both of which contribute a great deal to the recreational opportunities in the State. Conchas Reservoir was constructed by the Corps of Engineers and Clayton Reservoir by the New Mexico Department of Game and Fish.

To illustrate further, the impact that the recreation use of existing projects has upon New Mexico's economy may be determined by use of data developed in other studies dealing with recreational aspects of water resources. Studies made by Dr. Nathaniel Wollman and Associates of the University of New Mexico have developed information from on-the-spot surveys relating to recreation expenditures by fishermen, boaters, and picnickers which indicate that each person visiting New Mexico reservoirs is probably spending at least an average of \$5 per visitor-day.

Based on \$5 a day, the total expenditure made by 1.4 million persons spending a day at New Mexico reservoirs in 1960 would be \$7 million annually. This money is spent for both capital and current expenditures items on boats, camps, trailers, groceries, gasoline, car depreciation, fishing licenses, boat licenses, etc.

Dr. Wollman and associates also developed data showing that about 29 percent of the expenditures made by the fishermen, picnickers, and campers represent value added to the State gross products.

It is estimated that \$996,000 is the annual increase in personal income in the State caused by the recreationists who used Reclamation project reservoirs.

The use of New Mexico project reservoirs is expected to continue and increase for some time. Benefits accruing to the State will increase in proportion.

With the addition of the Navajo and Heron No. 4 reservoirs and the State-constructed Ute Reservoir at Logan, recreational opportunities and total use will increase greatly and will significantly stimulate business. The National Park Service estimates that the reservoirs of potential Reclamation projects in New Mexico will have recreational use amounting to about 400,000 visitor-days per year.

It is anticipated that the bulk of these visits will occur at Navajo Reservoir, which will offer the largest water surface area in the State. There is no doubt that the recreation opportunities that will be offered on potential projects will be well utilized. It is anticipated that recreational usage of the potential projects proposed and being constructed in New Mexico will cause \$2 million in added visitor expenditures annually. It is estimated that 200,000 persons will visit Navajo Reservoir in 1963 when the reservoir is still filling and recreational facilities are just being developed.

Congress for several years has recognized recreation as a function of multi-purpose projects and in the last few years has authorized construction of minimum basic health and safety facilities on a nonreimbursable basis. However, as yet they have not authorized allocation of joint works costs on a non-reimbursable basis.

Further recognition of recreation benefits to the State and Nation was extended by Congress when money was appropriated to provide public-use facilities on some of the older projects. The first such appropriation in New Mexico was for Alamogordo Reservoir in the amount of \$25,000. While the facilities provided in this instance were minimal, they have been appreciated by those using the area. A very substantial appropriation was made for providing minimum basic recreation facilities at El Vado, and the work was completed this year.

Public Law 87-545 approved by the President July 25, 1962, providing for establishment of additional recreational facilities at Elephant Butte and Caballo Reservoirs, authorized a nonreimbursable expenditure of \$607,000 for construction of public-use facilities. Most of you are acquainted with the limited facilities which are available for the public to use on Elephant Butte and Caballo Reservoirs. You may not be aware that these limited facilities were constructed by the Civilian Conservation Corps back in the 1930's. That group of young men did fine work and I support Secretary Udall's recommendations for a new youth corps.

They have been supplemented by the concession developments in an effort to meet the needs of the public. Construction of these badly needed facilities will no doubt attract many more visitors. Current usage is estimated at 1,270,000 visitor-days on Elephant Butte and 70,000 visitor-days on Caballo Reservoir. During 1961, there were 1,900 boat permits issued.

In earlier years, fishing was the primary attraction for visitors; however, recently boating, waterskiing, and vacationing have become important uses. This phenomenal growth in recreation use seems to be typical of many areas. In this case, the facilities authorized will assist in meeting a demand which is steadily increasing.

Early developments in the State were agrarian in nature, and because of the aridness of the country it was necessary to develop irrigation water supplies from scratch for agricultural production. As a result, all of the firm waters of the State were appropriated by the irrigators in the early days of irrigation development.

Later water projects and rights to use water are based on storage and regulation of flood and return flows and in some instances underground water supplies. State and Federal statutes protect the valid claimants to water.

Water is considered appurtenant to the land, and water rights are transferred along with the land when it is sold or transferred. These rights are guarded zealously by their owners in a water-short area such as this. The statutes provide for the beneficial use of water according to priority of appropriation, but do not preclude its use and reuse for other purposes, such as recreation.

The later users of water must recognize and honor the established rights of the early appropriators. Unfortunately, this is not always done and we hear about situations arising where the sportsmen have enjoined the irrigators in an effort to stop legitimate stream diversions or reservoir releases. Such unorthodox action has made the primary water-right holders distrustful of secondary users. This, in turn, has made it difficult to expand recreation uses of water.

There is not only competition between various users of water of a reservoir area, but there are conflicts between individual sportsmen themselves. Some reservoirs may have to be zoned as some natural lakes now are in populous centers of the east and midwest. For example, a part of a reservoir might be designated for waterskiing; another portion designated for bathing and swimming, still other portions designated for fishing although how we will get the fish to understand that is beyond me. Time-zoning has proved effective in some heavily utilized water areas.

Zoning of reservoirs to achieve maximum use of facilities is often brought about through legislative action. Using Foss and Fort Cobb Reservoirs in Oklahoma as an example, the upper portions of these reservoirs are being used primarily for wildlife management, and fishing. The lower portions of the reservoirs are being used for camping, boating, picnicking and skiing.

Nonreimbursable allocation of joint reservoir costs for fish and wildlife benefits to offset these benefits was included in the authorizing legislation.

Limitations on authority for the older Reclamation projects have prevented orderly consideration of recreation use pressures that have developed in recent years. Most of these older projects, when authorized, required little or no consideration of recreation. Consequently, today we must deal with these various individual authorizing documents as best we can.

Until further authority is provided by the Congress, a uniform administrative program for recreation on Bureau of Reclamation projects is not possible.

At the present time, we are not managers of recreation facilities on Bureau projects although we do have certain administrative responsibilities resulting from management agreements under which management functions are transferred to other qualified agencies. We look to the National Park Service and the Bureau of Sport Fisheries and Wildlife to administer areas of national significance for recreation and wildlife. The Forest Service usually undertakes this job on reservoirs within or adjacent to national forest lands.

We look to the State agencies for administration of areas that are of local and State significance. In the case of El Vado Reservoir, the New Mexico State Park Commission has contracted for its administration. The Bureau of Reclamation administers Elephant Butte Reservoir and in cooperation with the Carlsbad Irrigation District handles the recreational aspects of Alamogordo.

Your sister State of Oklahoma has a strong recreational program and through its State Park Division has one of the most efficient and enthusiastic programs in this part of the country. Through the sale of bonds, arrangements for adequate finances to construct lodges at reservoirs throughout the State were made. Other facilities such as launching ramps, picnic facilities, picnic shelters and domestic water supplies have been provided through the appropriations made by the State Legislature.

A study of the Oklahoma State Park program would be well worthwhile. I noticed in a newspaper story just a couple of months ago that the State of Texas, through its Parks Division, has sold bonds and plans to construct lodging facilities on the Texas side of Lake Texoma. California and Washington states also have very active and well financed State parks divisions.

I would be happy to see the New Mexico State Park Commission take the leadership in more fully developing and administering recreation of existing reservoirs and participating to the fullest extent on the new reservoirs. To accomplish this task in an effective way, and to derive the maximum benefits, you will need the support of all the people to obtain adequate financial backing. About the only way to obtain the wholehearted endorsement of the States' citizenry is to inform and impress them of the benefits of these programs and of the needs and demand for recreation.

It has been a pleasure to speak to you. I thank you for your indulgence in my remarks about our common problems and successes. I offer my congratulations on the progress New Mexico has made in 50 years of water resource development. May our efforts and achievements be continued and multiplied in the future.