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Initial blast starting construction of Glen Canyon Dam, October 15, 1956.

The Colorado River Storage Project

THE UPPER COLORADO RIVER COMMISSION

THE COMMISSION

The Upper Colorado River Commission is an interstate administrative agency created under the terms of the Upper Colorado River Basin Compact executed at Santa Fe, New Mexico on October 11, 1948, and subsequently ratified by each of the legislatures of the states and by the Congress of the United States. The Commission represents the states of Colorado, New Mexico, Utah and Wyoming and the Federal Government.

The major purposes of the Upper Colorado River Basin Compact are: (1) to provide for the equitable division of the use of waters of the Colorado River System among the Upper Basin states, namely, Arizona, Colorado, New Mexico, Utah and Wyoming; (2) to establish obligations of each state with respect to the delivery of water

to the Lower Basin; (3) to promote interstate harmony; (4) to remove causes of controversies; (5) to secure the expeditious agricultural and industrial development of the Upper Basin states, the storage of water, and the protection of life and property from floods.

The Commission, in order to fulfill the major purposes of the Compact, has been granted broad and comprehensive powers and charged with well-defined duties and responsibilities. Among its powers and duties are: adopting rules and regulations; locating and establishing water-gauging stations; making forecasts of water run-off; engaging in cooperative studies of water supplies; collecting, analyzing, correlating and preserving all types of water supply data; determining the quantity of water used each year in the Upper Colorado River Basin and in each state, and delivered to the Lower Basin; determining extent of curtailment of use, if necessary; determining reservoir losses and their apportionment; making findings of fact concerning obligations under the Mexican Treaty; acquiring and holding property; performing all functions required of it under the Upper Colorado River Basin Compact; reporting annually on its activities to the governors of the signatory states and to the President of the United States.



Robert J. Newell, Chairman and Commissioner for United States



George D. Clyde, Commissioner for Utah



Frank Delaney, Commissioner for Colorado



John H. Bliss, Commissioner for New Mexico



L. C. Bishop, Commissioner for Wyoming



Ival V. Goslin, Engineer-Secretary



THE COLORADO RIVER STORAGE PROJECT

On April 11, 1956, legislation authorizing construction of the Colorado River Storage Project was signed into law by the President.

This action, culminating years of research, study and congressional attention, makes possible the dream of decades — the taming of one of the longest, wildest and most savage rivers in the nation, the Colorado River.

The project is expected to develop a new land of opportunity, a vast area of more than 100,000 square miles often described as America's last frontier. Water and power will provide opportunity for industrial expansion, for agricultural development, for the progress and growth of cities and towns in the states of Colorado, New Mexico, Utah and Wyoming.

Legislation calls for expenditure of nearly \$760,000,000.

It provides for construction of four large main-stream dams and 11 irrigation units, known as "participating projects."

The project is a basin-wide undertaking, and the various units have been designed to complement one another.

The project is a multi-purpose development, regulating the river, creating power, preventing floods, and making water available for use on land and in cities.

The project will be constructed by private companies under contracts to be let by the Bureau of Reclamation of the United States Government. Construction is expected to take two decades or more.

The project will be financed initially by the Federal Government, but approximately 99 per cent of total costs will be repaid by people who use the water and power and two thirds will be repaid to the Federal Treasury with full interest.

The project will have tremendous regional benefits, providing jobs and opportunities for thousands of people. It also will have vast national benefits, creating new markets, stimulating trade, adding to the tax base and bolstering the national economy.

The Colorado River Storage Project is tomorrow's opportunity — today.

Information in this booklet is based on Public Law 485, approved by the Congress and signed into law April 11, 1956. Information relative to project units generally is based on preliminary material presented to Congress by the U. S. Bureau of Reclamation. However, additional investigations of project units are underway. This likely will result in engineering revisions of some of the contemplated units.



HISTORY

The Colorado River Storage Project was designed by the Bureau of Reclamation after more than a half century of engineering research and planning. Engineering field studies were started shortly after the turn of the century, and some land withdrawals were made as early as 1904 to preserve sites for storage dams.

In 1922, a major step toward development of the Colorado River was taken with formulation of a river-wide water-use agreement, known as the Colorado River Compact, later ratified by all seven states served by the River and approved by the Congress and the President. This Compact provides for division of river water between the Upper

and Lower Colorado River basins, with each basin granted 7½ million acre-feet each year. Upper Basin states are Colorado, New Mexico, Utah and Wyoming. Lower Basin states are Arizona, Nevada and California (small portions of two Upper Basin states, Utah and New Mexico, are in the Lower Basin; a portion of one Lower Basin state, Arizona, is in the Upper Basin).

Under terms of this Compact, the Upper Basin must deliver to the Lower Basin not less than 75 million acre-feet of water in any period of 10 consecutive years. To deliver this water and at the same time use its allocated share of river water, the Upper Basin must store water. Hence, the necessity for major dams or storage units. These units also are necessary because of the erratic flow of the river, which varies from 4 million to 22 million acre-feet each year, and because of the seasonal fluctuations of the stream.

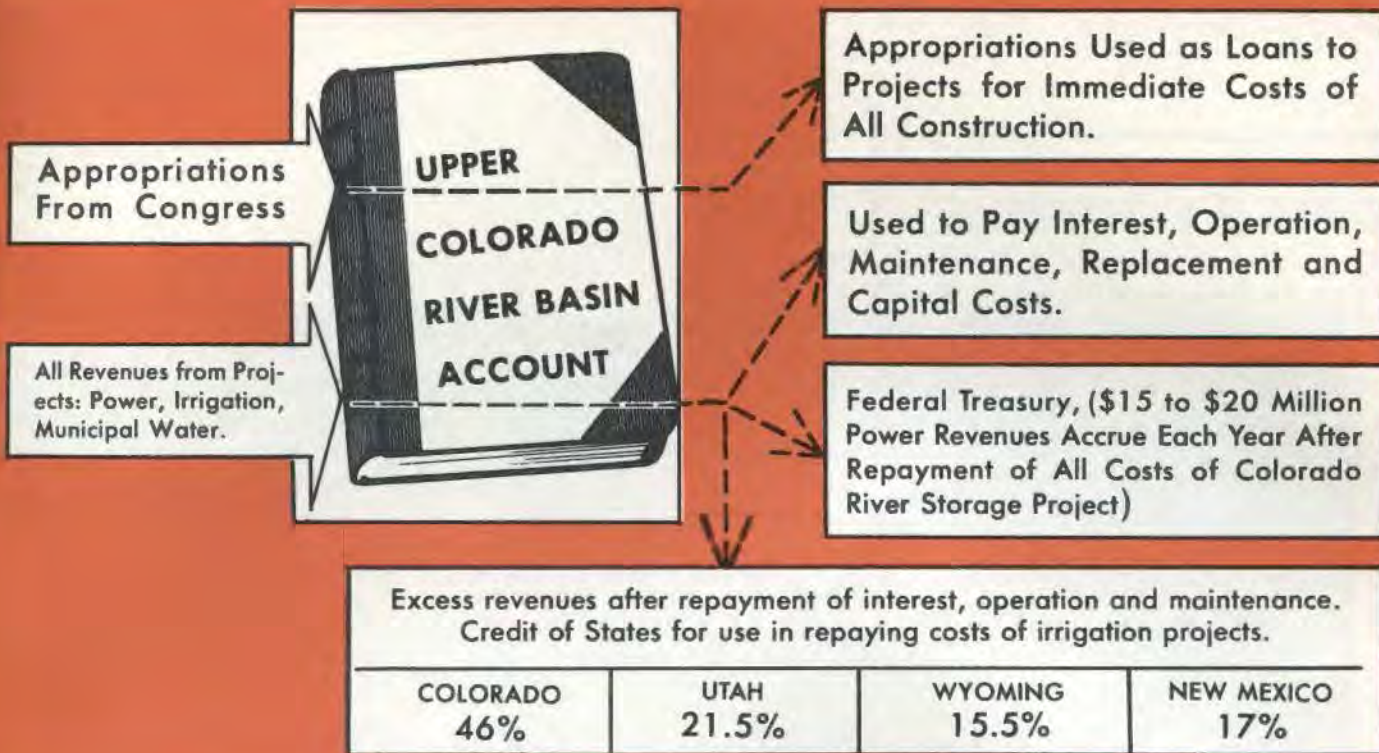
After negotiation of the Compact of 1922, the Lower Basin was developed, with Hoover, Davis, Parker, Imperial and other dams, as well as other facilities.

First investigation funds for the Upper Basin project were appropriated in 1928 in the Boulder Canyon Project Act.

In 1948, a compact dividing the water allocated to the Upper Basin was negotiated by the Upper Basin states. The Upper Colorado River Basin Compact also created the Upper Colorado River Commission, consisting of one representative from the Federal Government and one from each of the states of Colorado, New Mexico, Utah, Wyoming.

In 1950, the Bureau of Reclamation completed a plan for the Upper Basin development. This plan was formulated in cooperation with other Federal agencies and with the Upper Colorado River Commission.

The United States Senate approved a bill authorizing construction of the project on April 20, 1955, by a vote of 58 to 23. On March 1, 1956, the U. S. House of Representatives approved companion legislation authorizing construction of the project by a vote of 256 to 136. The legislation was signed as Public Law 485, 84th Congress, by President Eisenhower April 11, 1956.



THE PROJECT AND THE BASIN FUND

Public Law 485 provides for a true basin-wide approach to the development of the water and power resources. A Basin Fund is created as a master account in the United States Treasury. This account will receive all funds appropriated by Congress for construction of the various reclamation, power and municipal water features. All revenue collected from irrigation, power and municipal water sales or other sources will be credited to this Basin Fund. Revenues derived from any features of the project must be used for operation, maintenance, replacement and emergency costs. Each participating project must pay these costs from its own revenues.

Costs chargeable to power generation and municipal water must be repaid with interest within 50 years from revenues accruing in the Basin Fund.

Costs of each storage unit allocated to irrigation must be repaid within 50 years from revenues in the Basin Fund. As an example, the Navajo Dam and Reservoir, which is largely for the benefit of the Navajo Indians and having most of its costs chargeable to irrigation, will be almost entirely paid for from power revenues accumulating to the credit of the Basin Fund.

Revenues in the Basin Fund in excess of amounts needed for operation, maintenance, replacements

and emergencies, and to retire costs of power and municipal water features with interest, and to retire costs of storage units allocated to irrigation, are to be apportioned within the Basin Fund to the credit of the states as follows: Colorado 46%, Utah 21.5%, Wyoming 15.5%, and New Mexico 17%. Revenues credited to each state may be used for repaying costs of participating projects only in that state, and may not be used in another state unless appropriate consent is obtained. Annually, from the revenues apportioned to each state, there shall be paid irrigation costs of participating projects which are beyond the capability of the irrigators to repay within 50 years.



STORAGE UNITS



GLEN CANYON DAM: Located on Colorado River in northern Arizona, 12.4 miles downstream from Utah-Arizona state line and 15.3 miles upstream from Lees Ferry.

TYPE OF DAM:

Concrete, curved gravity type.
Height: 580 feet above river.
Length: 1,400 feet.

RESERVOIR:

Capacity: 26,000,000 acre-feet.
Surface area, filled: 153,000 ac.
Extends 186 miles up Colorado and 71 miles up San Juan River.

POWER:

Installed Capacity: 800,000 kw.
Average power salable: 3,813,000,000 kilowatt hours each year.



NAVAJO DAM: Located in northwestern New Mexico on San Juan River, 34 miles east of Farmington, and 3½ miles downstream from confluence of Los Pinos and San Juan rivers.

TYPE OF DAM:

Rolled, earth-filled embankment,
Height: 370 ft. above stream bed.
Length: 3,750 feet.

RESERVOIR:

Capacity: 1,450,000 acre-feet.
Surface area, maximum: 13,500 acres.
Extends 35 miles up San Juan River.



FLAMING GORGE DAM: Located on Green River in north-eastern Utah, 40 miles north of Vernal, 32 miles downstream from Utah-Wyoming state line.

TYPE OF DAM:

Concrete.

Height: 450 feet above river bed.

Length: 1,100 feet.

RESERVOIR:

Capacity: 4,000,000 acre-feet.

Surface area, filled: 40,800 acres.

Extends 91 miles upstream to within 4 miles of town of Green River, Wyoming.

POWER:

Installed capacity: 85,000 kw.

Average power salable annually—approximately 400,000,000 kilowatt hours.



Curecanti Reservoir Area

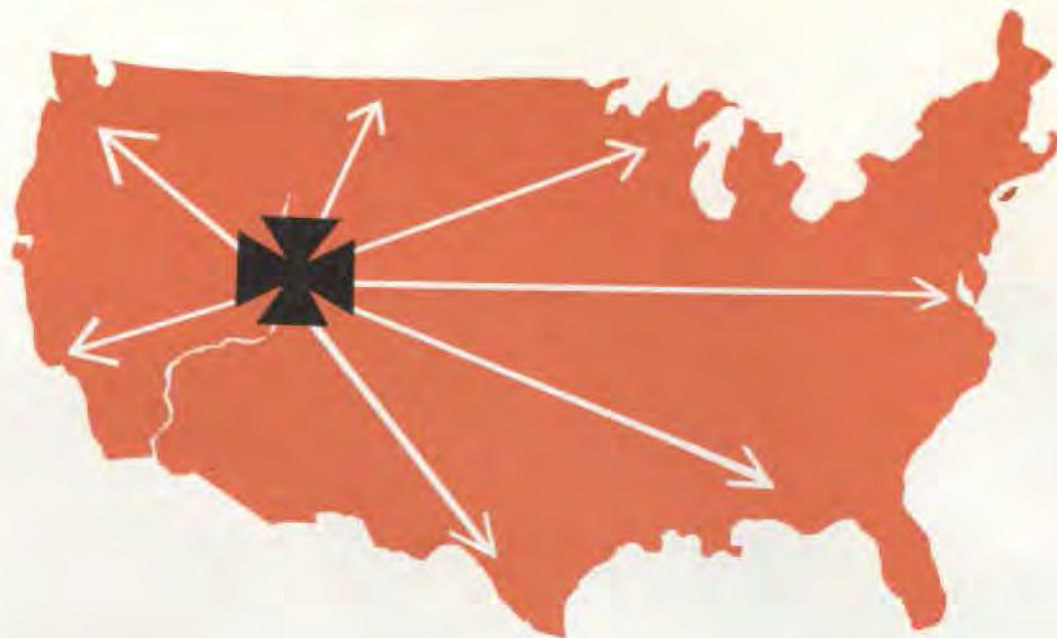
CURECANTI UNIT: Located on Gunnison River in western Colorado, upstream from the Black Canyon and downstream from the town of Gunnison.

(In order to prevent damage to property near the town, the authorizing legislation provides that Curecanti Dam shall be constructed to a height to store not less than 940,000 acre-feet of water, or to create a reservoir of such greater capacity as can be obtained by a high waterline located at 7,520 feet above sea level. Construction will not be commenced until further engineering and economic studies have been made and until the Secretary of the Interior has certified to the Congress and the President that the Curecanti Unit is economically justified.)

Studies show that a favorable plan would include a series of several dams, reservoirs, and power plants along the 35-mile river section. These power plants would have an installed generating capacity of about 152,000 kilowatts and would develop about 970 feet of static power head.

The Curecanti Reservoir, the farthest upstream of the series, would be formed by Blue Mesa Dam located 30 miles downstream from Gunnison. This dam, about 350 feet high, would create a reservoir with a capacity of about 940,000 acre-feet at a high water elevation of 7,520 feet. This reservoir would provide seasonal regulation for a power plant at Blue Mesa Dam and for power plants at other dams in the 15-mile reach of river downstream.

Detailed investigation and planning of the Curecanti Unit should be completed in the near future.)



BENEFITS FOR MANY

The Colorado River Storage Project often has been called "A Project for People" because of the extensive benefits it will provide to the people of the four states it serves.

The project will stimulate agricultural production, particularly of specialty crops, row crops and food products not in surplus. A total of 132,360 acres of new land will receive water from the project. In addition, 234,000 acres of land already under cultivation will receive supplemental water.

More than 1,000,000 kilowatts will be added to Upper Basin power capacity.

Industrial expansion will be greatly stimulated.

New jobs will be created as a result of multi-million-dollar construction work.

Job opportunities for thousands will result from agricultural and industrial expansion.

The project opens a whole new era of opportunity for residents of the Intermountain West.

The project provides benefits for the entire nation.

It will stimulate prosperity. Products produced will create new income in many industries.

The project will open new markets for commodities produced in other areas of the country. New income will create buying power for manufactured items in every state in the union.

The project will add to tax revenues, broadening the tax base and providing new revenues for Federal and State governments.

Every part of the nation will benefit from actual construction, because an estimated 81 per cent of construction costs will be spent in markets outside the Upper Colorado River Basin.

The project will aid the national defense by creating a mountain stronghold important to defense and by providing the power and water necessary to develop minerals essential to the defense program.

Few eras in history have seen such startling changes in population, science, living conditions and industrial growth as the world is noting now. The Colorado River Storage Project, because of its contribution of such essential items as water and power, will be an integral part of the dynamic progress that lies ahead of the nation.



Work begins on Flaming Gorge Dam

UPPER COLORADO RIVER BASIN

COLORADO RIVER STORAGE PROJECT AND PARTICIPATING PROJECTS

UPPER COLORADO RIVER COMMISSION

Public Law 485, 84th Congress



EXTENSIVE RECREATION BENEFITS

In addition to increasing the nation's recreational facilities, legislation authorizing the project specifically provides for protection of all national parks and monuments in the project area. As part of this protection, a restraining dam and other facilities will be constructed to provide for protection of famed Rainbow Bridge in Rainbow Bridge National Monument. Construction of Glen Canyon Dam will make this scenic wonder accessible to the people of the nation by means of a scenic short boat trip. In its current isolated status, Rainbow Bridge is accessible only by an arduous pack trip by horseback or by a long river trip and a 10-mile hike. As a result, comparatively few people have seen this wonder of the world.

In the same way as it makes Rainbow Bridge accessible, the project will open other spectacular areas to the public.

One of the major dams, the Glen Canyon Dam, will create a reservoir extending 186 miles up the Colorado River and 71 miles up the San Juan River. The reservoir will provide excellent clear-water fishing, camping and lake recreational activities in one of the most beautiful regions of the nation.

The Colorado River Storage Project will greatly expand the nation's existing facilities for fishing, boating, camping, water-skiing, swimming and other recreational activities.

It will open up new scenic areas, now inaccessible. Colorful natural bridges, spectacular canyons and historic sites will be made available to the people of the nation.

The project will provide numerous havens for ducks and other migratory birds.

Flaming Gorge Reservoir will make accessible the awesome scenery of the deep gorge of the Green River and will provide a cold water fishery and a beautiful high valley reservoir with accompanying recreational opportunities.

Navajo Dam will turn the muddy, sluggish San Juan River into a clear reservoir.

Curecanti unit will develop scenic reservoirs in the famed Black Canyon of the Gunnison River, thus providing excellent fishing and recreational activities upstream from the Black Canyon of the Gunnison National Monument.

Most of the participating projects to be constructed also include reservoirs that will provide picturesque recreational attractions in high, green valleys and in the mountains of the West.

The projects will open new vistas for conservationists, tourists, fishermen, nature lovers and the American family.



PARTICIPATING PROJECTS

COLORADO

ADDITIONAL COLORADO PARTICIPATING PROJECTS TO BE GIVEN PRIORITY IN PLANNING:

- | | | | |
|--------------|-----------------|-------------------------|-----------------|
| Parshall | Bluestone | Boehrick Park | Animas-La Plata |
| Troublesome | Battlement Mesa | Grand Mesa | San Miguel |
| Rabbit Ear | Tomichi Creek | Savery-Pot Hook | East River |
| Eagle Divide | Ohio Creek | Dolores | Dallas Creek |
| West Divide | Fruitland Mesa | Fruit Growers Extension | Yellow Jacket |

SMITH FORK: Located in Delta County, Colorado, along Smith Fork of the Gunnison River near Crawford, Colorado.

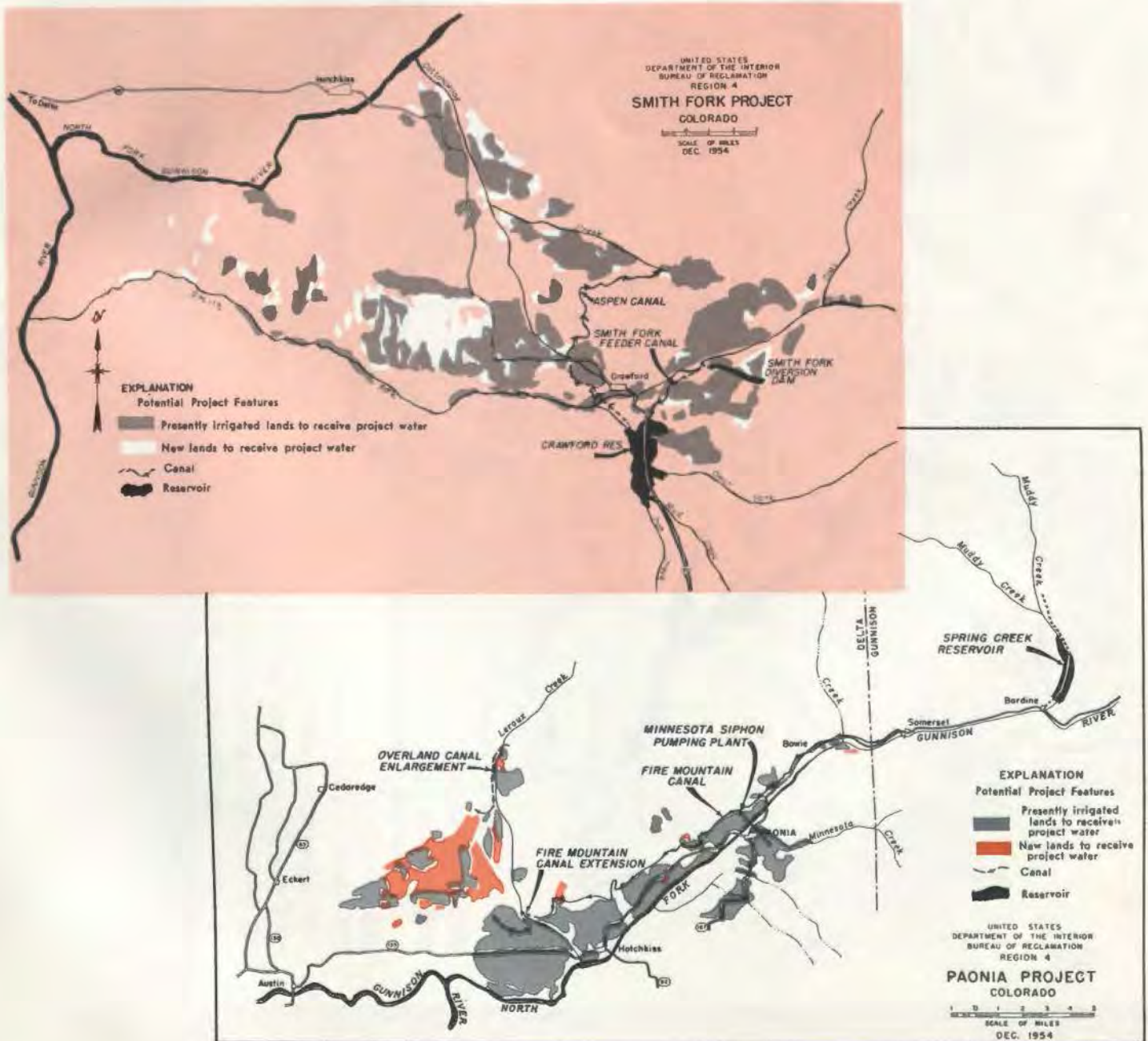
PRINCIPAL FEATURES: Construction of 14,000 acre-foot Crawford Reservoir on Iron Creek, Smith Fork diversion dam on Smith Fork with headworks and sluiceway. Smith Fork feeder canal 2¾ miles from diversion dam to Crawford Reservoir and 6.6 miles of canals to project lands.

ACREAGE IRRIGATED: New Land: 2,270. Supplemental: 8,160.

PAONIA: Located near Paonia in West Central Colorado on North Fork of the Gunnison River.

PRINCIPAL FEATURES: Completion of enlargement and extension of Fire Mountain Canal which will distribute project water. Construction of 18,000 acre-foot reservoir behind Spring Creek Dam on Muddy Creek. Enlarge Overland Canal. Construction of Minnesota Siphon to carry water across North Fork to Minnesota Canal.

ACREAGE IRRIGATED: New Land: 2,210. Supplemental 14,830.



COLORADO



FLORIDA: Located southwestern Colorado southeast of Durango in Florida River Valley and on Florida Mesa.

PRINCIPAL FEATURES: Construction of Lemon Dam on Florida River with reservoir capacity of 23,300 acre-feet. Enlargement of Florida Farmers Ditch and construction of new diversion dam. Laterals to 6,300 acres of project lands. Drainage facilities. Flood control and fish and wildlife values will be improved.

ACREAGE IRRIGATED: New Land: 6,300. Supplemental: 12,650.

SILT: Located in Garfield County in west central Colorado between Rifle and Elk creeks near towns of Rifle and Silt.

PRINCIPAL FEATURES: Construction of 10,000 acre-feet reservoir on Rifle Creek near Rifle, Colorado. Pumping plant; new and rehabilitated canals.

ACREAGE IRRIGATED: New Land: 1,900 Supplemental: 5,400.



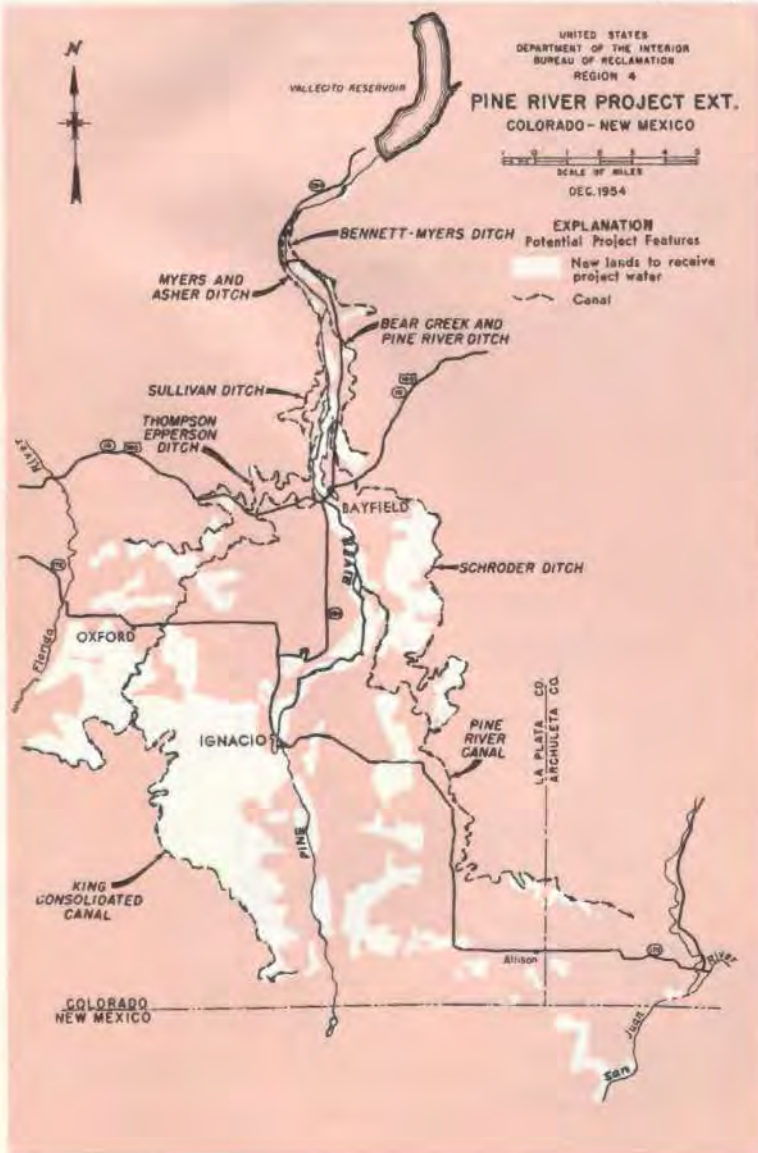
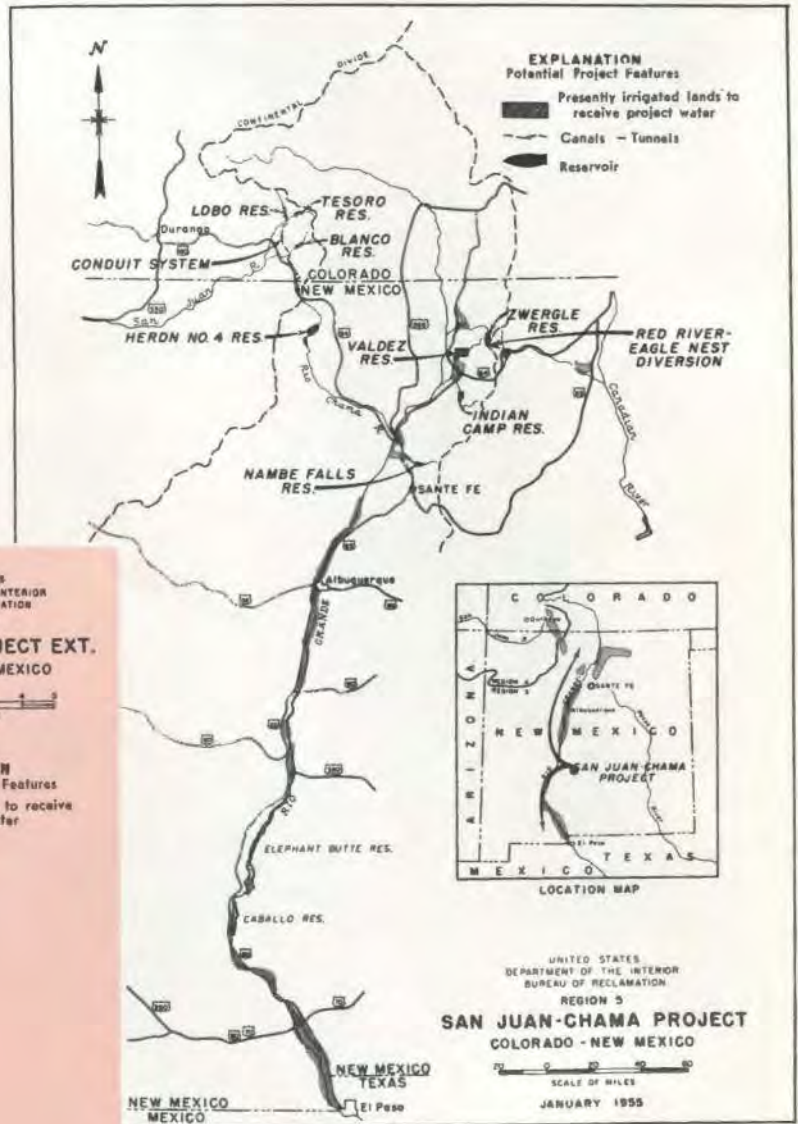
PARTICIPATING PROJECTS

COLORADO-NEW MEXICO

PINE RIVER EXTENSION: Located in Colorado and New Mexico on Pine River, 20 miles east of Durango, Colorado.

PRINCIPAL FEATURES: Enlarge and lengthen eight canals to distribute storage water now available in Vallecito Reservoir. Construction of a new diversion dam.

ACREAGE IRRIGATED: New Land: Colorado: 14,520. New Mexico: 630. Supplemental: None.



SAN JUAN-CHAMA: Located in south central Colorado and north central New Mexico in San Juan, Rio Grande and Canadian River basins.

PRINCIPAL FEATURES: (This project would divert water from the headwaters of the San Juan River into the Rio Grande Basin for the purpose of providing supplemental water for existing irrigation projects and for municipal and industrial uses in the Albuquerque metropolitan area. Although water for diversion would be collected from the tributaries of the San Juan River located in both Colorado and New Mexico, all the water would be used in New Mexico in the Rio Grande Basin. By exchange, the project would also increase the use of water in New Mexico in the Canadian River Basin. The present plan provides for the diversion of 235,000 acre-feet of Colorado River Basin water annually. In addition, the project would improve conditions for recreation, fish, and wildlife in the Rio Grande Basin. Detailed investigations and planning of the San Juan-Chama Project should be completed in the near future.)

NEW MEXICO

NAVAJO: Located in northwestern New Mexico, along south side of San Juan River in Farmington-Shiprock area.

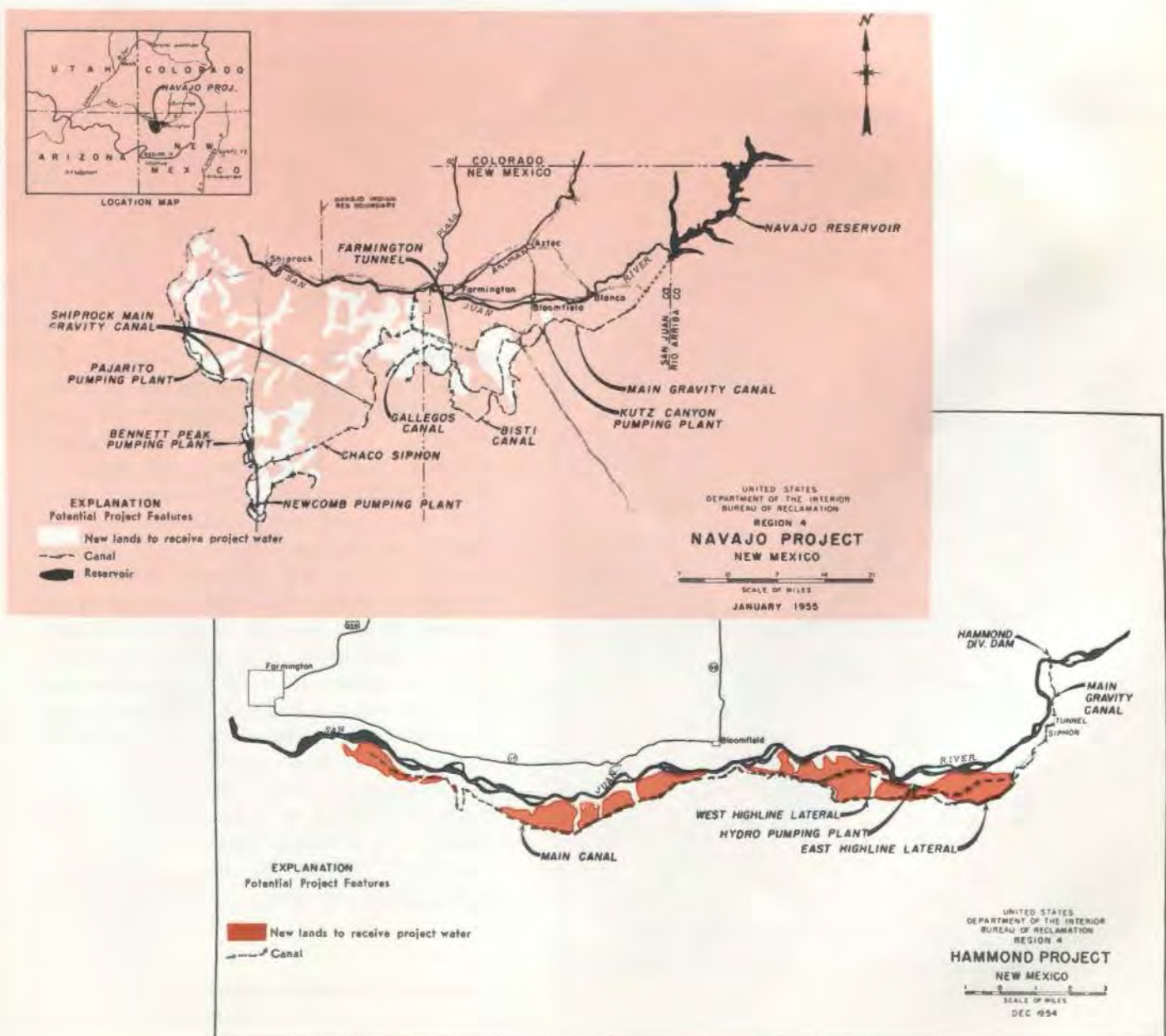
PRINCIPAL FEATURES: (This project is part of the basin-wide development proposed in the Colorado River Storage Project. The Navajo Project will irrigate 137,250 acres of new land, most of it on the Navajo Indian Reservation. While this Project is part of the Colorado River Storage Project and dependent upon the Navajo Dam, Public Law 485 specifies that irrigation costs of the Navajo participating project that will be beyond the capability of the land to repay shall be non-reimbursable, and irrigation costs of Indian lands that are within the capability of the land to re-

pay shall be deferred so long as the land remains in Indian ownership. Detailed investigations and planning of the Navajo irrigation project should be completed soon).

HAMMOND: Located in northwestern New Mexico south of San Juan River.

PRINCIPAL FEATURES: Low diversion dam and gravity canal will divert water from San Juan River. Pumping unit will lift water to two high-line laterals. Construction of drainage facilities.

ACREAGE IRRIGATED: New Land: 3,670. Supplemental: None.



UTAH

ADDITIONAL UTAH PARTICIPATING PROJECT TO BE GIVEN PRIORITY IN PLANNING:

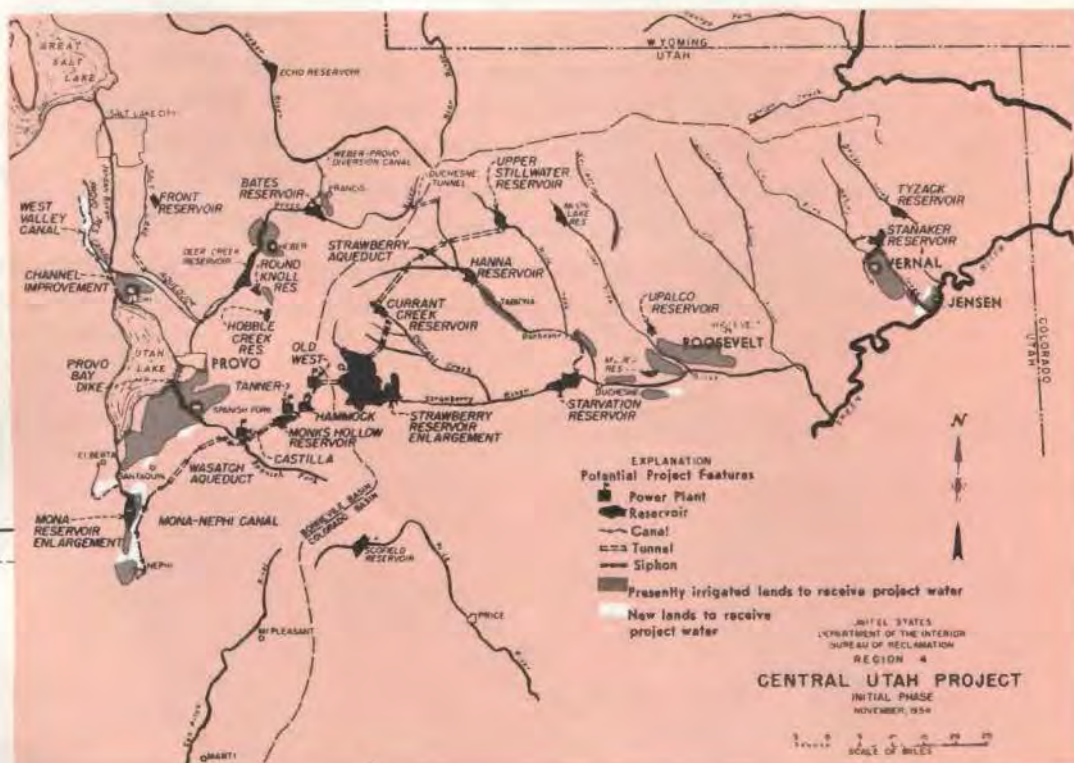
Gooseberry

PARTICIPATING PROJECTS

EMERY COUNTY: Located central Utah near Huntington, Castle Dale, and Orangeville Utah.

PRINCIPAL FEATURES: Construction of 57,000 acre-feet Joes Valley Dam and Reservoir on Cottonwood Creek. Diversion Dam at head of Cottonwood Creek. Cottonwood Creek-Huntington Canal to deliver water to existing canals.

ACREAGE IRRIGATED: New Land: 3,630. Supplemental: 20,450.



CENTRAL UTAH: Located in Uinta Basin and in eastern Bonneville Basin in central Utah.

PRINCIPAL FEATURES: Construction of canal to convey water to central Utah. Soldier Creek Dam to enlarge Strawberry Reservoir from 283,000 to 1,370,000 acre-feet capacity. Many small dams, reservoirs, etc. Included are four power plants with installed capacity of 61,000 kilowatts. Some flood control, recreation, and forest resource development. Rock Creek and Uinta Basin streams west of Rock Creek diverted into Bonneville Basin. Development limited to areas between Salt Lake City and Nephi—in Uinta Basin near Jensen, Vernal, Upalco areas and lands along Duchesne River to be developed. 36.8 miles of aqueducts to collect Rock Creek, Hades Creek, Wolf Creek, West Fork Duchesne River, Curreant Creek, Layout Creek, Water Hollow.

ACREAGE IRRIGATED: New Land: 28,540. Supplemental: 131,840.

WYOMING

LaBARGE: Located southwestern Wyoming between Big Piney and LaBarge.

PRINCIPAL FEATURES: Construction of diversion dam and canal 38 miles long to divert water from Green River.

ACREAGE IRRIGATED: New Land: 7,970. Supplemental: None.

LYMAN: Southwestern Wyoming along Black's Fork of Green River near Wyoming-Utah boundary.

PRINCIPAL FEATURES: Construction of Bridger Reservoir of 43,000 acre-feet capacity on Willow Creek. Reservoir will be fed by canals from Black's Fork and West Fork of Smith Fork.

ACREAGE IRRIGATED: New Land: None. Supplemental: 40,600.

SEEDSKADEE: Located southwest Wyoming along Green River.

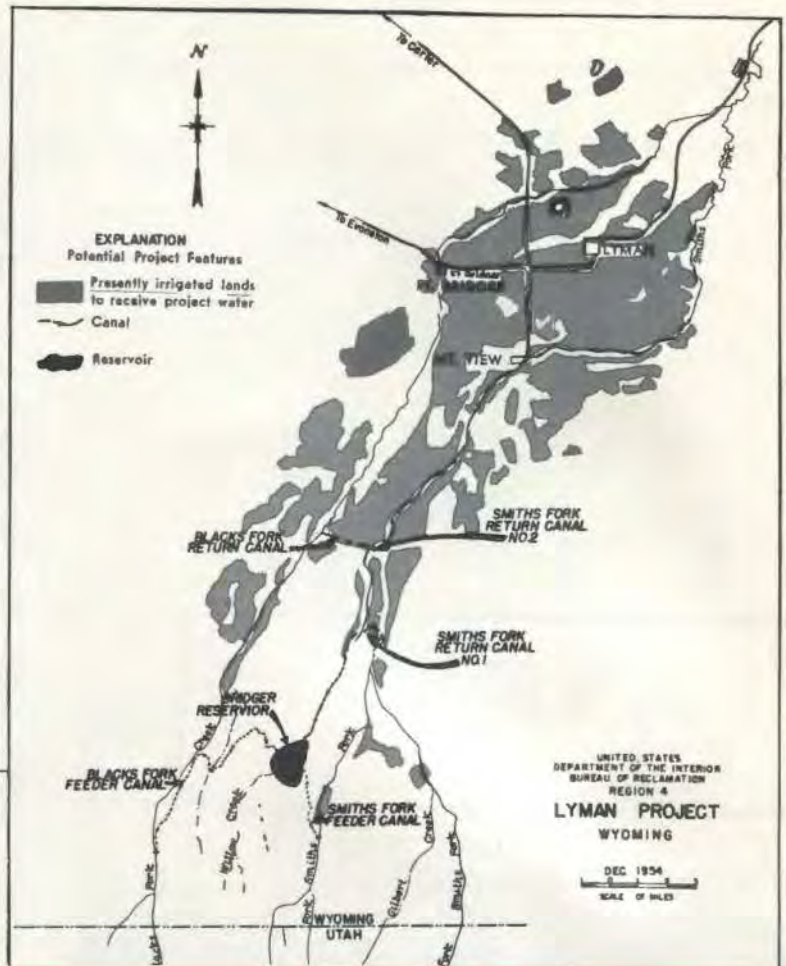
PRINCIPAL FEATURES: Construction of diversion dam, canals, pumps, and laterals for diversion of water from Green River and conveyance to land about 35 miles east of Kemmerer.

ACREAGE IRRIGATED: New Land: 60,720. Supplemental: None.



ADDITIONAL WYOMING PARTICIPATING PROJECTS TO BE GIVEN PRIORITY IN PLANNING:

- Sublette
- Savery-Pot Hook



THE NAVAJOS

The Colorado River Storage Project provides some immediate benefits for members of the Navajo Tribe, the nation's largest Indian Tribe. In addition, the project opens the way for further opportunities for this poverty-stricken Tribe whose members are seeking ways to help themselves.

Immediate benefits will come from construction of the Navajo Dam, one of the major storage units of the project, near Farmington, New Mexico. This dam will provide flood control and regulate the river. In so doing, it will make possible industrial development of the area. One major company has plans for a large plant in the area that will provide jobs for hundreds of Navajos, once the Navajo Dam is constructed.

Future hope for the Tribe rests with construction of the Navajo Irrigation Project. The Navajo Dam makes this second phase possible.

The Navajo Irrigation Project is among the projects given priority for future planning.

This project will irrigate 137,250 acres of new land, most of it on the Navajo Reservation.

This will provide the Navajos an opportunity to grow their own food and to become self-sustaining. A major step toward rehabilitation of the Navajos can be taken with construction of this provisionally authorized project.

Thus, the Navajo Dam will provide immediate benefits to the Indians and will make possible future development and rehabilitation of this long-neglected segment of the original American society.



DEVELOPING NATURAL RESOURCES

The Upper Colorado River Basin long has been known as the "Treasure Chest" of the nation because of its vast deposits of the world's most valuable and necessary minerals.

The Colorado River Storage Project will provide the water and power necessary for full development of these natural resources and raw materials. More than 200 different minerals are found in this area, many of them of a strategic and economic importance.

This area contains 90 per cent of the known uranium deposits in the United States. It supplies a third of the nation's copper. Lead, zinc, phosphates, gold, silver, oil, natural gas, gilsonite, gypsum, tungsten, molybdenum, vanadium and many other minerals are found in abundance in this area.

The project will be the key to unlock this treasure chest, and in so doing will aid the national defense, provide for industrial expansion and establish new job opportunities.





The relief model of the Upper Colorado River Basin, pictured above, was constructed by the Upper Colorado River Commission in cooperation with the Babson Institute of Business Administration. This model shows the topographic features of the area and indicates location of major units of the Colorado River Storage Project and Participating Projects. It is used by the Commission in work connected with administration of Upper Basin activities and is available at times for display at conventions and other public events.

THE UPPER COLORADO RIVER COMMISSION

748 North Avenue • Grand Junction, Colorado