

HISTORY OF THE CENTRAL UTAH PROJECT A FEDERAL PERSPECTIVE

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ABSTRACT

The Central Utah Project (CUP), located in the central part of Utah is the largest water resources development program ever undertaken in the State. The project provides Utah with the opportunity to beneficially use a portion of its allotment from the Colorado River water through a transbasin diversion. Water resources development has long been a part of the area's history. Settlement of the Salt Lake Valley in 1847 by Brigham Young and the Mormon pioneers launched the first large scale irrigation in the United States. The CUP concept was first conceived in 1902, when farmers investigated the feasibility of diverting water from the Colorado River to the Bonneville Basin in central Utah. Since that time the CUP has evolved from studies of various independent projects. The U.S. Bureau of Reclamation began investigations of the CUP in 1945 and published a feasibility report of their findings in February 1951. Portions of the CUP were authorized for construction in 1956 by the Colorado River Storage Project Act, and other portions were authorized in 1968 by the Colorado River Basin Project Act. In October 1992 final construction of the CUP was re-authorized through public law 102-575 of which titles II through VI comprise the Central Utah Project Completion Act. This Act was unprecedented in that it transferred the responsibility for completion of the CUP from the U.S. Bureau of Reclamation to three joint lead entities comprised of a state organization, a presidential commission, and a federal office.

BACKGROUND

The name Utah comes from the Native American Ute Tribe and translates "people of the mountains." Utah, located in the western United States is home to the Uinta and Wasatch Mountain Ranges (See Figure 1). The Uinta Range, the only major east-west trending range in the U.S., claims the highest mountain in Utah, Kings Peak, over 13,500 feet. Wasatch peaks are lower, with the highest, Mount Nebo, just under 12,000 feet. Utah also consists of a variety of landscapes including high mountain lakes, salt flats, deserts, and plateaus.

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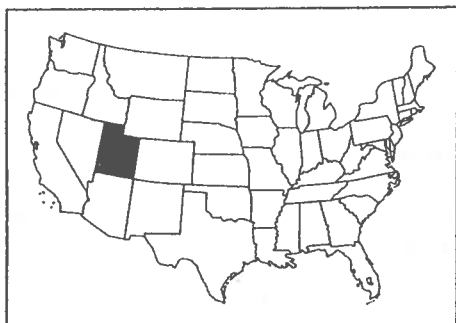


Figure 1 - Utah and the United States

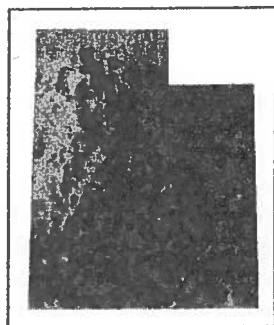


Figure 2 - State of Utah

Most of eastern and southern Utah rivers drain into the Colorado River system. Other major rivers in the State terminate at the Great Salt Lake Desert or, like the south-to-north flowing Jordan River, drain into the Great Salt Lake, the remains of a large inland lake having no outlet. Utah is justifiably ranked the second driest state in the United States. In most of the State annual precipitation averages between 8 and 16 inches, but in the Great Salt Lake Desert annual rainfall is less than 5 inches. By contrast, high mountain precipitation averages more than 40 inches annually, mostly in the form of snow that can reach depths up to 30 feet.

Most of the population resides along the Wasatch Front, a narrow corridor of land extending 120 miles along the western base of the Wasatch Mountains from Ogden on the north to Nephi on the south. The Wasatch Front is the most fertile and productive part of Utah. Chief field crops include hay, wheat, and barley.

EARLY WATER DEVELOPMENT IN UTAH

Private Development

The first known development in Central Utah by non-Native Americans occurred in 1822, when a group of fur traders established a trading post at Utah Lake, known as Fort Ashley. Even then, it was well known that the Salt Lake Valley suffered from an inadequate water supply. Mountain man Jim Bridger offered to pay \$10,000 for the first bushel of corn produced in the valley.

Settlement of Utah's Salt Lake Valley began in 1847 by western colonizer Brigham Young and the Mormon pioneers.² Under Young's leadership, these

² Members of the Church of Jesus Christ of Latter-day Saints are referred to as Mormons because of their belief in the *Book of Mormon*.

pioneers launched the first large-scale irrigation system in the United States. Young is credited with instituting a system of irrigation that subsequently laid the basis for irrigation law in the West. He reportedly said, "No man has the right to waste one drop of water that another man can turn into bread." The principle was laid down that the water belonged to the people, "all the people," said Young, and no man could gain a right to more than he could beneficially use.

The pioneers soon learned that streams entering the Salt Lake Valley from the Wasatch Mountains did not maintain sufficient flow to support large-scale irrigation. Eventually farmers shifted their irrigation development to the Uinta Mountains where the larger Weber, Bear, and Provo Rivers originated. Young's principle of cooperative use of resources led to the doctrine of beneficial use and appropriation of water as the underlying legal basis for distributing water to local consumers. This doctrine held that all individuals desiring the use of water were entitled to an equal share of available water, regardless of when they settled the area or what their proximity to the water.

Federal Projects

As irrigation projects increased in scale, local water users turned to the Federal Government for expertise and funding. Under the new Reclamation Act of 1902 several early Federal projects were authorized by Congress and constructed by the U.S. Bureau of Reclamation (Reclamation). Early Federal projects constructed in Utah included the Strawberry Valley Project, Uintah Indian Irrigation Project, Provo River Project, and Moon Lake Project.

Strawberry Valley Project: In August 1902, a group of farmers and civic leaders traveled east to Strawberry Valley to investigate the feasibility of diverting water for their farms in South Utah County. The diversion would bring water from the Uinta Basin, a part of the Colorado River Basin, to the Bonneville Basin, a part of the Great Basin. The services of Reclamation were solicited, and preliminary surveys for supplemental water storage and investigations of irrigable lands were conducted in 1903. Thus the Strawberry Valley Project became one of the earliest projects investigated under the new Reclamation Act.

Uintah Indian Irrigation Project: During the years 1904-05, the United States granted irrigation and grazing allotments to individual Native American Ute Indians. In 1906 Congress authorized construction of the Uintah Indian Irrigation Project (UIIP), owned and operated by the U.S. Bureau of Indian Affairs for irrigation and grazing allotments in the Duchesne River Basin. At least 22 canals were completed for the UIIP by 1922. No tribal lands were included in the project, although the Tribe has since acquired a number of project allotments. About 60,000 acres currently receives water, with approximately 28,500 acres served by the project now being held in fee by non-Native Americans.

Provo River Project: The Provo River Project was initiated under provisions of the National Industrial Recovery Act of 1933. Municipalities in Utah and Salt Lake Valleys who needed additional municipal supplies joined with irrigation interests to sponsor the project. Construction of the Provo River Project started in 1938, but when World War II began in 1941 the project was severely hampered by scarcities of manpower, materials, and funds and was not completed until 1952.

Moon Lake Project: Even before the arrival of homesteaders in 1905, Native American inhabitants had established water rights for irrigation of their lands throughout the Uinta and Duchesne River Basins. As the settlers began to irrigate, it became apparent that the streamflow was insufficient to satisfy existing Native American rights and also irrigate some 70,000 acres owned by the settlers. Local interests began investigations and planning for the Moon Lake Project in 1922. Construction began in 1935 and was completed in 1941.

These early Federal projects served the people for a time, but as water users sought to expand or enlarge their projects, the idea of a Central Utah Project developed, which became part of the massive Colorado River Storage Project.

MODERN WATER DEVELOPMENTS IN UTAH

Colorado River Storage Project

The Colorado River is one of the most important and thoroughly used rivers in America. Draining one-twelfth the area of the continental United States, the 1,400-mile-long river provides water to seven Colorado River Basin states. The river flows through a dry and barren land made productive only by irrigation. This needed irrigation is made possible by the Colorado River Storage Project (CRSP) through a series of dams, reservoirs, and canals.

The CRSP serves millions of people by providing water for farms, municipalities, industry, wildlife, and recreation along with hydroelectric power which is distributed for use throughout the West. Revenues from the sale of this water and power, as required by law, are paying for the CRSP storage units and for the CRSP participating projects, of which the Central Utah Project is one.

The CRSP was envisioned at the time of the Colorado River Compact of 1922. The compact set aside 7.5 (seven and one-half) million acre-feet of Colorado River water for consumption in the Upper Basin each year. However, this allocation was contingent upon the upper basin's delivering to the lower basin not less than 75 million acre-feet of water in any period of 10 consecutive years and delivering additional water for use in Mexico under certain circumstances. The compact guaranteed the Lower Basin its share, even when flows were far below average.

Since the flow of the Colorado River is extremely erratic, varying from 4 to 22 million acre-feet annually at Lees Ferry, it was necessary to construct large Storage Unit dams and reservoirs in the Upper Basin that could be filled when flows were high to provide the additional water needed for compact fulfillment. Construction of four storage units of the Colorado River Storage Project and 11 participating projects were authorized by the act of April 11, 1956 (Public Law 485, 84th Cong., 70 Stat. 105) known as CRSPA. The four storage units, called the main stem projects, are shown in Table 1. The Central Utah Project was authorized as one of the 11 participating projects.

<u>Project Name</u>	<u>Key Feature</u>	<u>Location</u>
Glen Canyon Unit	Glen Canyon Dam	Arizona/Utah
Flaming Gorge Unit	Flaming Gorge Dam	Utah/Wyoming
Navajo Unit	Navajo Dam	New Mexico/Colorado
Curecanti Unit	Blue Mesa Dam	Colorado

Table 1 - CRSP Main Stem Projects

ORIGIN OF THE CUP

Introduction

The Central Utah Project (CUP), located in north-central Utah, is the largest water resource development ever undertaken in the State. The project benefits the State and provides much of Utah's rapidly expanding population, now surpassing 2 million, the opportunity to use a portion of its allotment from the Colorado River, by means of a transbasin water diversion.

The concept of a project for central Utah was envisioned when a reconnaissance investigation of the newly conceived Colorado River-Great Basin Project was conducted by Reclamation from 1939 to 1943. The project plan called for an annual transbasin diversion of 1 million acre-feet of water from the Green River of the Colorado River Basin to the Great Basin.

Close on the heels of the Colorado River-Great Basin Project was another forerunner of the Central Utah Project, the Strawberry Valley Project. The possibility of expanding the existing 1913 Strawberry Valley Project was considered as early as 1919 by local municipal and agricultural water users and other leaders, who recognized future water requirements in Central Utah.

Reconnaissance investigations for obtaining additional water for the Strawberry Valley Project were started in the spring of 1945. The name Central Utah Project was given to an extended version of the plan, which covered essentially the same area as that considered in the Colorado River-Great Basin Project. Results of the

investigations were contained in a planning interim report of September 1945. The report included a reconnaissance plan which provided for the exportation of 575,000 acre-feet of water from the Colorado River Basin to the Bonneville Basin.

A Central Utah Project Office was established in 1946, and feasibility investigations were carried out over the next several years. Results of these investigations were compiled in a feasibility report released in 1951. This widely circulated report served as the basis for authorizing the initial phase of the Central Utah Project in 1956. The plan for development was similar to that reported in the 1945 reconnaissance report, with refinements and modifications that greatly reduced the transbasin diversion from 575,000 to 141,400 acre-feet.

In 1956 Congress authorized construction to begin on the Central Utah Project, Initial Phase, and the Bonneville Unit Definite Plan Report (DPR) was published in August 1964. The DPR contained the results of many years of comprehensive planning. The report was approved by the Commissioner of Reclamation on November 5, 1965, and the project lands were certified December 28, 1965, by the Secretary of the Interior. The project plan was basically the same as that contained in the 1951 feasibility report, with some modifications that reduced the transbasin diversion to 136,600 acre-feet.

As planning for the CUP was being refined by Reclamation, local support for the project was clearly evident. In 1965 George D. Clyde, then Governor of Utah said: "The Central Utah Project is the key to development of Utah's resources for the next 100 years. Without it, Utah can never get the benefits of its share of the Colorado River, our last major water resource." The truth of his statement, is reflected not only in the revenues the project has brought to the State, but also in water resources development for municipal, industrial, and agricultural uses; recreational opportunities; fish and wildlife enhancement; and flood protection.

The CUP was introduced in two phases: the Initial Phase included four of the six units: Bonneville Unit, Jensen Unit, Vernal Unit, and the Upalco Unit, and the Ultimate Phase involved the remaining two units, the Uintah Unit and the Ute Indian Unit.

Water Rights

On September 4, 1946, Reclamation filed an application (No. 18043) with the State Engineer covering the appropriation of water for both the initial and ultimate phases of the Central Utah Project. This application sought the appropriation of 800,000 acre-feet of water from lakes, streams, and proposed reservoirs in the Uinta Basin along the 37-mile-long Strawberry Aqueduct. The aqueduct was to extend from Brush Creek on the east to Strawberry Reservoir on the west.

On November 19, 1964, a second application (No. 36639) was filed for 500,000 acre-feet for the main Bonneville Unit supply including the Strawberry Aqueduct and Collection System and related facilities. This latter application was approved June 14, 1965, paving the way for construction to begin. The Bonneville Unit plan called for enlarging Strawberry Reservoir from its initial capacity of 270,000 acre-feet to an active capacity of close to 1.4 million acre-feet (1,370,000). The application covered all reservoirs and points of diversion along the collection system as well as lands in the Bonneville Basin only. This latter application was approved June 14, 1965.

Organization of the Central Utah Water Conservancy District.

Early in the planning process, Reclamation and local sponsors recognized the need to organize a conservancy district to represent the people within the project area, and to collect payments from water users to repay the United States Treasury for project costs. Petitions to create the conservancy district were initially signed by Duchesne, Juab, Salt Lake, Summit, Uintah, Utah, and Wasatch Counties, with the Central Utah Water Conservancy District (CUWCD) later approving the inclusion of Garfield, Millard, Piute, Sanpete, and Sevier Counties. Since then Millard, Sanpete, and Sevier Counties have withdrawn from the CUWCD and/or the CUP Project.

On March 2, 1964, the CUWCD was established and organized under the laws of the State of Utah. A repayment contract between the United States and the CUWCD was executed December 28, 1965.

Ute Deferral Agreement

On September 20, 1965, Contract No. 14-06-W-194 was executed among the United States (Reclamation and the Bureau of Indian Affairs), the Ute Indian Tribe, and the CUWCD. In this deferral agreement, the Indian Tribal authorities agreed to defer development of 15,242 acres of land, which allowed construction of the Bonneville Unit to proceed. It was agreed that the year 2005 would be the maximum date of deferral or that equitable adjustments would have to be made to permit the immediate Native American use of water previously deferred. It was further agreed that facilities would be provided to mitigate for losses to fish, wildlife, and recreation upon the lands owned by the Ute Indian Tribe.

Congressional Actions

As the CUP was developed, the Utah Congressional delegation fought to establish funding in Congress. Money was earmarked in Congress to start construction of the Bonneville Unit, only to have the Senate cut the construction funds from the 1966 appropriations. Eventually the appropriation was approved at \$3.5 million

to initiate construction, and the groundbreaking was held May 31, 1967. As construction on the CUP continued, the Utah delegation fought to maintain the needed level of funding, but since the beginning support for the CUP has fluctuated in Congress.

ENVIRONMENTAL CONSIDERATIONS

Beginning in the mid 1960s, environmental concerns about the CUP began to appear from local outdoor groups. These issues eventually caught the attention of national organizations such as the Sierra Club. The main points centered around the proposed diversions from streams in the Uinta Basin. The Sierra Club voiced misgivings about moving water from the Uinta Basin to the Wasatch Front, stating: "The net result of the CUP will be to force all future growth in Utah to occur along the populous Wasatch Front." The Federal government saw the need to protect the environment and soon enacted major laws, among them the Environmental Policy Act of 1969.

National Environmental Policy Act of 1969

Environmental concerns were also growing around the nation, which resulted in enactment of the National Environmental Policy Act of 1969 (NEPA), signed into law January 1, 1970. NEPA was described as the most important and far-reaching environmental and conservation measure ever enacted by the Congress. NEPA applies to all Federal agencies and to every major action taken by these agencies that would significantly affect the quality of the human environment.

With the new law in place, Reclamation began to work on an environmental Impact statement. In August 1973 Reclamation issued the Bonneville Unit Final Environmental Impact Statement. The document was a programmatic environmental impact statement for the entire Bonneville Unit, but also provided specific NEPA compliance for construction of the Strawberry and Starvation Collection Systems. In 1974 the United States District Court for the State of Utah ruled that the Bonneville Unit Final EIS was in compliance with NEPA, and this decision was upheld by the United States Tenth Circuit Court of Appeals. Reclamation committed to prepare a site-specific EIS for each of the remaining Bonneville Unit Systems before initiating construction. Reclamation accordingly published the Bonneville Unit Municipal and Industrial System Final Environmental Statement October 25, 1979.

Endangered Species Act of 1973

The Endangered Species Act (ESA) was enacted to allow protection and conservation of endangered and threatened species and their natural environment. The ESA, administered by the U.S. Fish and Wildlife Service (FWS), is a program to identify and conserve endangered and threatened species. The

ultimate goal and purpose of the ESA is for full recovery of these species. The FWS has the responsibility to determine which species is threatened with extinction and whether the species decline is the result of human activities. Species may be listed as endangered, threatened, or candidate.

The enactment of ESA also prompted State and private entities to study species of concern. The State of Utah has created a State Sensitive Species list to identify species in the State that are most vulnerable to population or habitat loss. The list is intended to stimulate management action for the sensitive species before they reach the point where they may require listing under the ESA. Several special status species have been considered during development of the CUP as shown in Table 2.

Endangered species

Common Name

Scientific Name

Peregrine falcon

Falco peregrinus

Humpback chub

Gila cypha

Bonytail chub

Gila elegans

Razorback sucker

Xyrauchen texanus

June sucker

Chasmistes liorus

Colorado squawfish

Ptychocheilus lucius

Threatened species

Bald eagle

Haliaeetus leucocephalus

Candidate species

Spotted frog

Rana pretiosa

Least chub

Notichthys phlegenthontis

Conservation species

Bonneville cutthroat trout

Oncorhynchus clarki utah

Table 2. Special-Status Species Potentially Occurring Within the CUP

Instream Flow Agreement

As NEPA documents were being prepared for the Diamond Fork Power System of the Bonneville Unit, Federal and State fishery biologists realized that the mitigation flows of 6,500 acre-feet as suggested in the Bonneville Unit EIS were insufficient. This opinion was echoed by several organizations. At the request of the governor of Utah, an Interagency Biological Assessment Team (IBAT) was organized to evaluate alternatives to mitigate for the Strawberry Collection System and the Bonneville Unit Instream Fisheries Flow Agreement (Instream Flow Agreement) was produced by the IBAT.

The Instream Flow Agreement was executed February 27, 1980, after which a supplemental memorandum of agreement was signed September 25, 1981, and amended September 13, 1990. The Instream Flow Agreement was created to provide minimum streamflows on some of the streams affected by the Strawberry Aqueduct and Collection System. The agreement required providing an additional 37,900 acre-feet to Rock Creek, Currant Creek, and the Strawberry River. When combined with the original 6,500, the total streamflow is 44,400 acre-feet. This agreement mitigates for half the required flows for the Strawberry Aqueduct and Collection System.

To offset the remaining loss of fishery habitat in other streams which were taken for project purposes, the Refined Aquatic Mitigation Plan for the Strawberry Aqueduct and Collection System was drafted in December 1984. One of the three major components of the refined plan was the Upper Strawberry Exchange. The concept for this exchange was to terminate completely the existing transbasin diversions from four streams in the upper Strawberry River drainage into Daniels Creek in the Provo River drainage. Under this action, natural streamflows would be restored to the upper Strawberry River tributaries. In February 1990 the Diamond Fork Supplemental EIS was filed, which contained commitments regarding the Aquatic Mitigation Plan.

Changes to the CUP Plan

Reclamation routinely refines definite plan reports to accommodate changed conditions which necessitate adaptations and modifications of the original plan. In 1988 Reclamation prepared the Supplement to the Definite Plan report to address refinements made to the Bonneville Unit since 1964 when the Bonneville Unit was conceptually divided into six systems as shown in Table 4.

Construction progress on the Bonneville Unit proceeded slowly because of the enormity and complexity of the unit and because of unforeseen events. Chief among these were the new federal environmental laws and inadequate Federal funding. The slow progress prompted State and local officials to request Congress to make unprecedented changes to the way federal water projects are planned and constructed.

NEW MANDATE

Central Utah Project Completion Act

Priorities within the wide geographical areas served by Reclamation and delays in the CUP led officials to appropriate funds earmarked for the CUP to other Reclamation projects. This created a difference of opinion between local representatives of Utah and Reclamation.

Congress responded to these local concerns about delays in construction, high overhead, and Reclamation's practice of combining cost ceiling figures of the Central Utah Project by passing Public Law 102-575, of which Titles II through VI comprise the Central Utah Project Completion Act (CUPCA). The law was enacted October 30, 1992, amending CRSPA. Under CUPCA, the Congress provided direction for completing the CUP with certain modifications to Reclamation's plan of development. With CUPCA, Congress approved and made final the 1988 Supplement to the Central Utah Project, Bonneville Unit, Definite Plan Report, which identified modifications to Reclamation's plan. It also called for a new supplemental DPR to be written. These modifications resulted in the current CUP as shown in Figure 3.

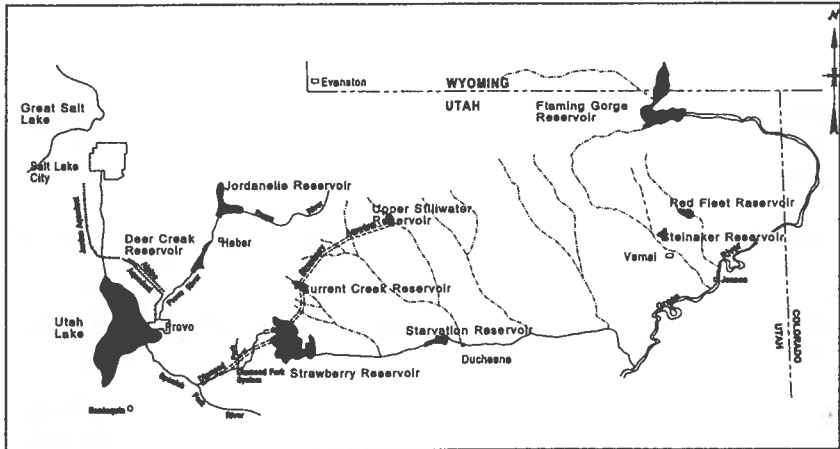


Figure 3. Central Utah Project.

The primary purpose of CUPCA is to provide for the orderly completion of the CUP by increasing the appropriations ceiling, by authorizing certain water conservation and wildlife mitigation projects, and by providing funding for

construction of certain project features for delivery of water for irrigation, municipal and industrial use, and instream flows for fisheries to specified areas within the CUP service area. To implement CUPCA, Congress established a partnership arrangement among the Department of the Interior, CUWCD, the Utah Reclamation Mitigation and Conservation Commission, and the Ute Indian Tribe.

Department of the Interior: The Department of the Interior (Interior) appointed a Program Director to oversee accomplishment of the CUPCA in Utah. The Program Director and his limited staff work with agencies within Interior through cooperative agreements, to fulfill Interior's role in CUPCA. All Federal funds for CUPCA are appropriated through the Program Director.

Central Utah Water Conservancy District: Under provisions of CUPCA, the CUWCD was authorized to plan and construct specified features identified in the Act. CUWCD was also tasked with developing a quantitative water conservation goal which must be met within 10 years of CUPCA's enactment. Failure to meet the goal would result in significant financial penalties.

Utah Reclamation Mitigation and Conservation Commission: CUPCA also provides for the establishment and funding of the Utah Reclamation Mitigation and Conservation Commission, composed of five directors appointed by the president of the United States. The purpose of the Commission is to complete recreation, fish and wildlife, and conservation projects in Utah associated with the CUP.

Ute Indian Tribe: The Ute Indian Tribe of the Uintah and Ouray Reservation is authorized by the Act to quantify its reserved water rights by compact directly with the State of Utah and to settle long-outstanding Tribal claims against the United States arising out of the Central Utah Project.

Additionally, the Act stipulates cost-sharing of project capital costs; allows local entities to construct certain project features; requires compliance with environmental laws; and establishes a program of water conservation.

CUPCA Titles: CUPCA is comprised of titles II through VI of public law 102-575, which stipulate the following:

Title II provides for cost-sharing of project capital costs, allows local entities to construct certain project features, requires compliance with environmental laws, and establishes a program of water conservation.

Titles III and IV establish administrative and funding mechanisms to mitigate damages to fish and wildlife resources already caused by construction of the CUP and other CRSP projects in Utah. These titles also provide for ongoing administration and funding of activities to conserve, mitigate, and enhance fish,

wildlife, and recreation resources affected by the development and operation of Federal reclamation projects in the State of Utah.

Title V authorizes the Ute Indian Tribe of the Uintah and Ouray Reservation in Utah to quantify by compact its reserved water rights held by the State of Utah and to settle long-outstanding claims against the United States arising out of construction of the Central Utah Project.

Title VI provides that nothing in the other titles of the Act would be interpreted as modifying or amending the provisions of the Endangered Species Act or the National Environmental Policy Act.

Refinements and Modifications to Bonneville Unit Components

Of the six original units of the CUP, only the Vernal and Jensen Units have been completed. The Upalco Unit has been indefinitely postponed, the Uintah Unit has been classified as inactive, the Ute Indian Unit has never been authorized for construction, and the Bonneville Unit is currently under construction. Enactment of CUPCA necessitated refinement to Bonneville Unit components. Table 3 presents a list of these components and indicates new components added to the Bonneville Unit.

<u>Previous Component</u>	<u>New Component</u>
Diamond Fork Power System*	Additional Studies
Irrigation and Drainage System*	Conjunctive Use of Groundwater Program
Municipal and Industrial System	Diamond Fork System*
Starvation Collection System	Fish, Wildlife, Recreation Mitigation and Conservation
Strawberry Collection System	Uinta Basin Replacement Project
Ute Indian Tribal Development	Utah Lake Drainage Basin Water Delivery System*
	Ute Indian Water Rights
	Wasatch County Water Efficiency
	Water Management Improvement

*The Diamond Fork Power System was changed to the Diamond Fork System and the Irrigation and Drainage System was changed to the Utah Lake Drainage Basin Water Delivery System.

Table 3. Bonneville Unit Components

FUTURE OF THE CUP

The CUPCA re-authorized planning and construction of the original Bonneville Unit Irrigation and Drainage System. This final component of the Bonneville Unit has now been named the Utah Lake Drainage Basin Water Delivery System (Utah Lake System). Construction of this system will complete the project and allow the transbasin diversion of the remaining portion of the approved 101,900 acre-feet of water from the Colorado River Basin to the Great Basin.

The Utah Lake System will connect with the Diamond Fork System to convey project water for irrigation, municipal and industrial, and fish and wildlife uses. The system would have the capability of delivering water to locations throughout the Wasatch Front as well as by exchange from Utah Lake. The available water supply will derive from several sources, including Strawberry Reservoir, Utah Lake, Jordanelle Reservoir, and the Provo River. The remaining water supply could vary from 30,000 to 70,000 acre-feet, depending on the place of use, subsequent return flows, and the use of such return flows. During the planning process for the Utah Lake System, other additional uses of Bonneville Unit water on the Wasatch Front and all remaining environmental issues and commitments associated with the Bonneville Unit will be addressed.

REMAINING ISSUES

Since its inception, the CUP has faced financial and environmental challenges. Project construction delays have been costly not only in the time value of money but in the changing social climate of Utah and the United States. When the CUP was initiated the project purpose was primarily for agricultural development. Today the Wasatch Front is one of the most urbanized areas of the American West. People no longer have an agrarian connection to the land and are increasingly turning their attention to the environment. These changes are highly apparent in the enactment of CUPCA which added water conservation, water efficiency, and wildlife enhancement to the purposes of both the CUP and CRSP.

As the final component of the Bonneville Unit is planned several issues must be addressed in all Utah Lake System alternatives. These issues include: aggressive water conservation policies; endangered species recovery; resolution of project water rights in Utah Lake; maintaining water quality in Utah Lake; identifying, measuring, and protecting project return flows; and the urbanization of agricultural lands and conversion of project water.

CUPCA provides sufficient authority to address these remaining issues. Section 207 provides funding for implementation of water conservation measures as a means to reach the mandated water conservation goal. Section 202 provides for a groundwater/surface water conjunctive use grant program. Several sections of

CUPCA provide for acquisition and maintenance of minimum flows in streams to support endangered and sport fish. The Aquatic Mitigation Plan has also been updated for continued mitigation.

CONCLUSION

In a 1960 preliminary plan formulation document, Reclamation identified several challenges facing the CUP. These included (1) clarifying water rights for the CUP, (2) maintaining water quality in Utah Lake, (3) identifying and measuring return flows, and (4) converting irrigated lands to residential, commercial, and industrial use. Although 40 years have passed since these issues were recognized, the challenges remain today. Other new challenges have also developed during the CUP's long history. The completion of the CUP continues to require creative solutions.

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