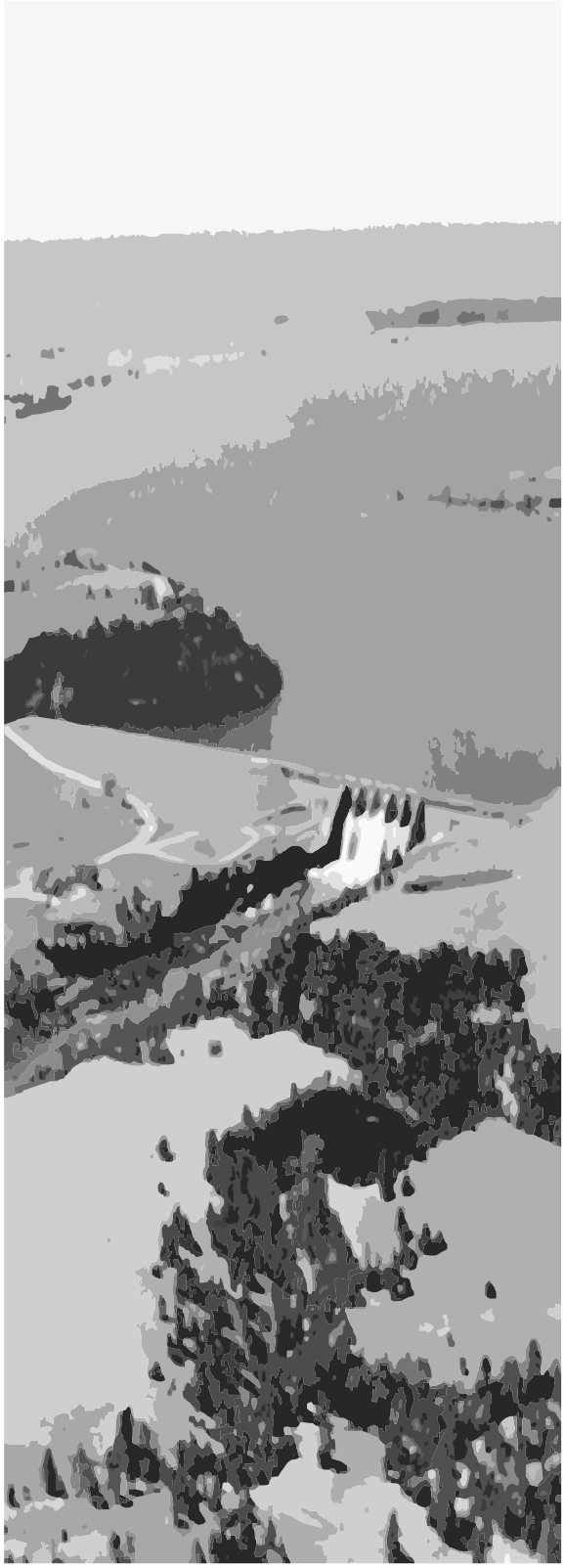


CHAPTER ONE
Purpose and Need

The Angostura Irrigation District wants to renegotiate a long-term water service contract for water from the Angostura Unit of the U.S. Bureau of Reclamation. An agency of the Department of the Interior, Reclamation supplies irrigation water to 17 Western States, in addition to water for recreation, fish and wildlife purposes, and other uses. The Angostura Unit, part of the Pick-Sloan Missouri River Basin Project, is situated in southwestern South Dakota at the foot of the Black Hills. It includes Angostura Dam, Angostura Reservoir, and irrigation facilities. The contract would be for water supply, repayment of construction costs, and payment of annual O&M (operating and maintenance) costs of the unit.

Others besides the District have an interest in Angostura Reservoir since, in addition to irrigation benefits, it also provides flood and sediment control, recreation, and fish and wildlife habitat. The Cheyenne River downstream of the reservoir forms the northwestern border of the Pine Ridge Reservation, home of the Oglala Sioux Tribe, and the southern border of the Cheyenne River Reservation, home of the Cheyenne River Sioux Tribe (see figure 1.1). The Lower Brule Sioux Tribe also has expressed an interest in how water from the reservoir is used (their reservation in on the west bank of the Missouri River below the confluence with the Cheyenne River.)

As part of renegotiating the contract, Reclamation—with help from the District, the Tribes, and cooperating agencies—published

a draft EIS (environmental impact statement) in January 2001 as required by NEPA (National Environmental Policy Act). This final EIS incorporates revisions made to the draft EIS.

In the chapters to follow, alternative plans (including the Preferred Alternative) are discussed (Chapter Two), the environment of the area affected by the alternatives described (Chapter Three), and impacts of the alternatives analyzed (Chapter Four). The EIS concludes with a chapter on consultation and coordination completed during the study (Chapter Five).

PURPOSE

The Federal action analyzed in this EIS is to renew a long-term water service contract for the Angostura Unit, while balancing the District's needs with the water needs of other resources in the area. Other resources include recreation at the reservoir and aquatic and riparian habitat in and along the Cheyenne River below the dam. In terms of balancing needs, the OST (Oglala Sioux Tribe) asked specifically for an analysis of reestablishing natural flows in the river below the dam.

Renewal of a long-term water service contract with the District presents Reclamation with a chance to evaluate current and future operations of the Angostura Unit. Such an evaluation provides information important for understanding direct, indirect, and cumulative impacts of renewal on resources in the Angostura area. It also provides information to evaluate possible enhancement of reservoir benefits.

NEED

The original contract having expired, the District is now operating under a temporary contract. Reclamation is required to renegotiate a long-term water service contract under the 1939 Reclamation Project Act. Reclamation is also required to consult with Indian tribes under the Department of the Interior's instructions on Indian trust responsibilities and the Presidential Memorandum of April 29, 1994.

STUDY APPROACH

This EIS

This EIS analyzes impacts implementing a new water service contract and associated impacts of water management at Angostura Reservoir. After a 60-day review period during which the public and other agencies were invited to comment on the draft EIS, this final EIS was prepared, responding to the comments received on the draft. No fewer than 30 days after publication of the final EIS, a *Record of Decision* (ROD) will be signed identifying the final course of action.

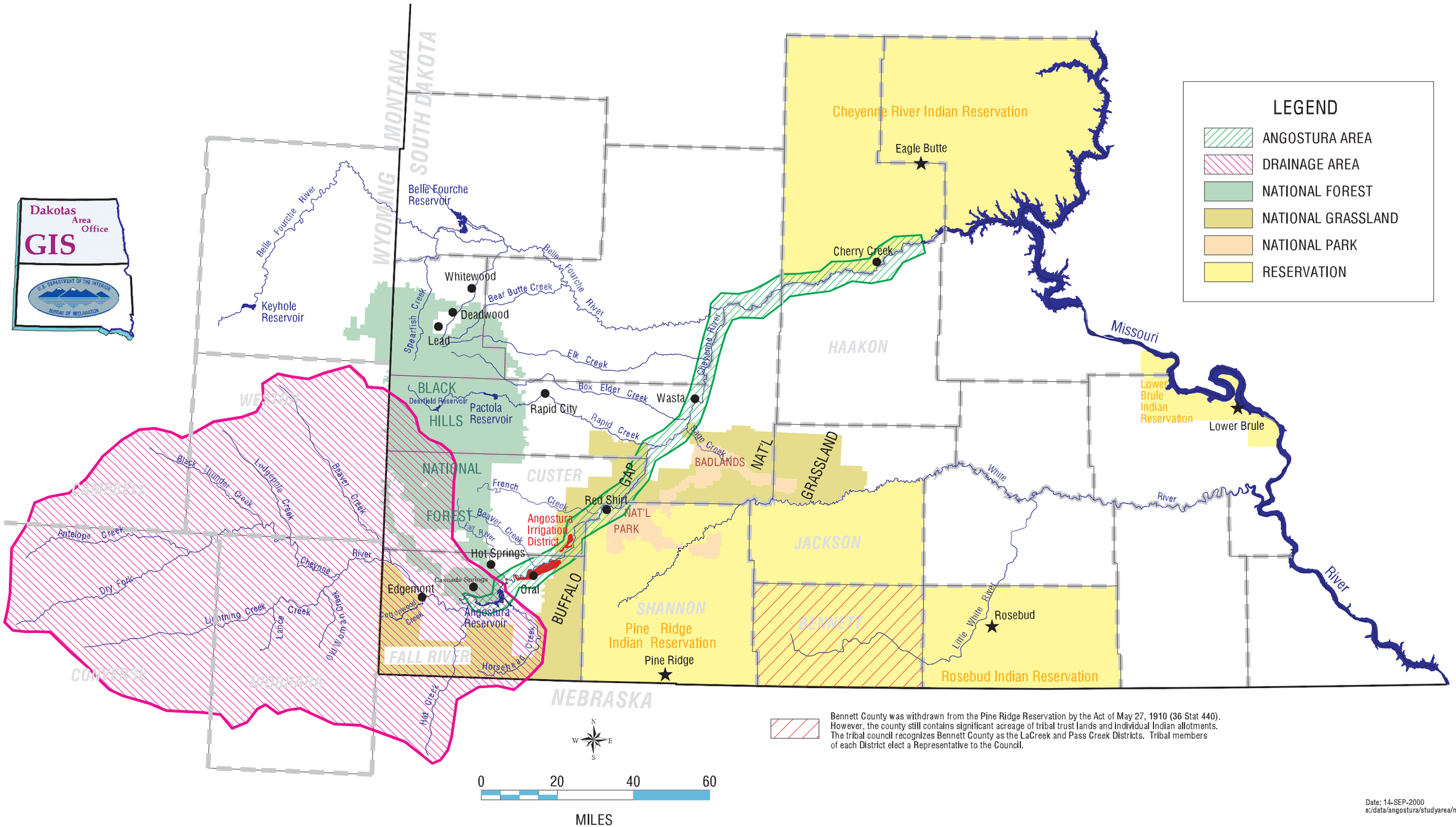
Water Service Contract

The District signed a contract with Reclamation January 25, 1951, under authority of Section 9(e) of the Reclamation Project Act of 1939 (53 Stat 1196; 43 U.S.C. § 485h(e)). This section allowed for a two-part contract: Part A was a water service contract for water deliveries from the Angostura Unit for a term of 40 years from an effective date of January 1, 1956. Part B provided for repayment of construction costs for the delivery system. In anticipation of Part A of the original contract expiring, the District negotiated temporary renewals to continue irrigation while the EIS was prepared.

Reclamation law was supplemented July 2, 1956, by the Administration of Contracts Under Section 9, Reclamation Project Act of 1939 (ch 492, 70 Stat 483), which allowed water users who had entered into contracts under Section 9(e) to amend existing contracts to conform with the new law.

Fig. 1.1

ANGOSTURA AREA



Contract elements to be negotiated with the District could include:

- Quantity of water to be contracted for
- Water rates, rates of repayment, and other fees/charges (reviewed at least every 5 years to implement new rates based on up-to-date studies)
- Water use buildup/development period
- O&M responsibility, fees and assessments system, transfer of function
- O&M cost allocations for recreation, fish, and wildlife
- Collection and maintenance of reserve funds.

Future Resource Management Plan

This EIS does *not* analyze land management issues at Angostura Reservoir like exclusive use, development of land-based recreation, management of wildlife, etc. These issues—and others relating to land resources in the Angostura Unit—will be analyzed in an RMP (Resource Management Plan) requiring a separate NEPA document. The RMP will follow completion of the ROD and the water service contract.

Resource Appraisal Study Report

Reclamation's *Angostura Resource Appraisal Study Report* was completed September 1996. This study collected baseline data and helped identify water and land management issues at Angostura. Information from the report has been incorporated into this EIS and will be used in the RMP.

DISTRICT, TRIBES, AND COOPERATING AGENCIES

The District, Tribes, and State and other Federal agencies cooperating with Reclamation to produce this EIS are listed below. Cooperating groups participated in meetings, shared information about resources in the area, helped develop alternatives and analyze impacts, and reviewed team drafts of the EIS. Their contributions are discussed in Chapter Five.

- Angostura Irrigation District
- Oglala Sioux Tribe
- Cheyenne River Sioux Tribe
- Lower Brule Sioux Tribe
- South Dakota Department of Game, Fish and Parks
- U.S. Geological Survey
- U.S. Natural Resources Conservation Service
- U.S. Bureau of Indian Affairs
- South Dakota Department of Environment and Natural Resources.

BACKGROUND

Angostura Area

For the purpose of this EIS, the Angostura area was considered to be the Cheyenne River drainage from just above Angostura Reservoir to the joining of the Cheyenne River with the Missouri River about 275 river miles downstream in central South Dakota (figure 1.1). Angostura Reservoir is about 17 miles long, with another 7.6 miles extending along Horsehead Creek (a major tributary), and averages about ½ mile wide in the main body, ⅓ mile wide on Horsehead Creek. Total surface area of the reservoir is 4,612 acres at an elevation of 3187.2 feet.

The Cheyenne River rises in the high plains of Wyoming in the Thunder Basin National Grasslands. Tributaries from an area of about

9,100 square miles, including parts of Niobrara, Converse, Weston, and Campbell Counties in Wyoming; Fall River and Custer Counties in South Dakota; and Sioux County in Nebraska, contribute to the river. About 50 river miles upstream from the Wyoming-South Dakota border, two of the larger tributaries—Antelope and Dry Fork Creeks—join to form the Cheyenne River (figure 1.1). The river meanders around the southern end of the Black Hills, entering South Dakota about 14 miles northwest of the town of Edgemont. It then passes through the narrows south of Hot Springs, where Angostura Reservoir is located. While it also receives flows from the southern Black Hills, the river mainly receives flows from the plains.

Much of the Cheyenne River basin is relatively flat and gently rolling with local steep-walled tributary stream valleys. Most streambeds are narrow with vertical banks. Flows usually are low, but floods frequently overtop the banks.

The river channel proper ranges from 50 feet wide in the upper reaches to 300 feet wide in the lower; the flood plain ranges from a few hundred feet to a mile or more wide.

Many tributaries enter the river, most with long reaches prone to high flows during periodic storms. Larger tributaries from the north are Lodgepole Creek, Black Thunder Creek, and Beaver Creek—the principal tributary of which, Stockade Beaver Creek, drains the southwestern slopes of the Black Hills—Lodgepole Creek, and Black Thunder Creek (figure1.1). The two main tributaries from the south are Lance Creek and Hat Creek. Both rise along the flank of Pine Ridge, a prominent north-facing escarpment forming the southern drainage divide of the basin. Hat Creek, fed by springs along Pine Ridge, is perennial in the upper reaches, but during summer much of the flows are diverted for irrigation. Horsehead Creek, another tributary from the south, flows directly into the reservoir.

Angostura Dam

The Cheyenne River below Angostura Reservoir drains an area of about 14,800 square miles.

The area between Angostura Dam and the town of Red Shirt on the Pine Ridge Reservation about 50 river miles downstream comprises a drainage area of about 1,000 square miles. This area has been regulated by the reservoir since 1949. The reservoir and many tributaries from the Black Hills contribute flows to the Cheyenne River below the dam. Major tributaries are Fall River, Beaver Creek, Cottonwood Creek, and French Creek. Iron Draw, below Beaver Creek, is one of the tributaries that contributes return flows to the river.

The drainage below Red Shirt to Cherry Creek at the mouth of the river comprises an area of about 14,000 square miles. Rapid Creek flows are regulated by Deerfield and Pactola Reservoirs and Belle Fourche River flows by Keyhole Reservoir (figure 1.1). Belle Fourche Reservoir, an off-stream reservoir, also stores water from Belle Fourche River. Flows are affected by irrigation of about 70,000 acres in this area and by consequent return flows.

The semiarid climate of the Angostura area is typical of the Northern Great Plains. Summers are hot during the day and cool at night. Winters are long and cold, with periods of sub-zero temperatures. Annual temperatures, measured by the National Weather Service at Angostura Dam for 1953-1971 and at nearby Oral, South Dakota, for 1971-1997, averaged 48 °F. July is the hottest month of the year, with average minimum and maximum temperatures of 56.8 °F and 90.2 °F, respectively, with a maximum temperature of 112 °F. The coldest month is January, when the average minimum temperature is 11.4 °F and the average maximum temperature is 38.9 °F, with a record minimum temperature of -41 °F. The average growing season extends from mid-May to late September, an average of 110-140 frost-free days.

Although precipitation varies widely from year to year, the average is 16.06 inches per year at Oral, of which most occurs from April-September. From April-August, average rainfall is 11 inches. Snow provides another 4-5 inches of precipitation a year.

The Angostura area is a transition zone of the ponderosa pine woodlands of the Black Hills and the mixed-grass prairie of the Northern Plains. The diversity of habitat created by the ponderosa woodlands, mixed-grass prairie, agricultural lands, the reservoir, and Cheyenne River attracts a wide variety of wildlife.

Rapid City, South Dakota, is the largest city in the region, with a 1990 population of about 54,500 people. It acts as a trading center to a wide agricultural region, to mining interests in the Black Hills, to a sizable Government workforce (including Ellsworth Air Force Base several miles to the east), and to the thousands of tourists traveling along Interstate 90 to the Badlands National Park, Pine Ridge Reservation, Mount Rushmore National Memorial, and the Black Hills National Forest. Rapid City also has a manufacturing capacity, producing flour, lumber, cement, gypsum products, and machine parts. Hot Springs, about 30 miles south of Rapid City, is the town nearest Angostura Reservoir. It has a population of about 4,300.

Angostura Unit Facilities

The Angostura Unit was found feasible on February 14, 1941, pursuant to the Water Conservation and Utilization Act, and was then re-authorized by the Flood Control Act of 1944. Construction of the dam began in 1946, and it was completed in 1949. Delivery of water began in 1953, full service in 1956.

The unit consists of Angostura Dam, Angostura Reservoir, main canal and irrigation distribution system, and public lands surrounding the reservoir. The 193-feet high dam (see photo) is a combination of a concrete gravity structure with an earth embankment. It is 10-feet wide at the

top, with a maximum width at the bottom of 230 feet. Crest length is 2,030 feet. The concrete part includes a gated spillway section in the river channel and two non-overflow sections, one extending to the left abutment, the other joining the earth embankment which extends to the right abutment. The spillway is controlled by five 50- x 30-foot radial gates. Discharge capacity is designed to pass a flow of 247,000 cfs (cubic feet per second) at a reservoir elevation of 3198.1 feet (top of surcharge).

A 4½-foot-diameter steel conduit through the concrete section of the dam constitutes the river outlet works at elevation 3179.75 feet, controlled by a 4-foot-square high-pressure slide gate in the valve house at the downstream end. From 1951-1959, the river outlet works supplied water to a power plant, later abandoned because of an inadequate water supply. Discharge capacity of the river outlet is 590 cfs at elevation 3198.1 feet.

The main canal outlet works consist of a 6-foot-diameter steel conduit through the concrete dam (the bottom at elevation 3158.0 feet), ending in a valve house, stilling basin, and canal headworks at the downstream end. Releases are controlled by two 3½-foot-square high-pressure slide gates in the valve house. The main canal begins with a concrete-lined prism at station 10+89 at a bottom elevation of 3160.03 feet. Maximum releases into the canal are 720 cfs at elevation 3187.2 feet (top of active conservation) and 290 cfs at elevation 3169.4 feet. The main canal is about 30 miles long, conveying water from the reservoir toward the northeast. Bottom width of a typical section is 14 feet, with side slopes of 2:1. Water depth is 5.2 or 5.51 feet at maximum, respectively, for earth-lined and membrane-lined sections of the canal.

The latest sedimentation survey indicates Angostura Reservoir has a total capacity of 130,770 AF (acre-feet) at elevation 3187.2 feet, 82,443 AF active capacity, and a dead and inactive storage of 48,327 AF. The reservoir has a surcharge capacity of 56,360 AF used for flood control in conjunction with conservation storage.

Management of public lands at Angostura is the responsibility of the South Dakota Department of Game, Fish and Parks (SDGF&P) under an agreement with Reclamation. About 1,500 acres on the east shore of the reservoir have been classified a State Recreation Area, with campgrounds, boat ramps, marina, cabin areas, day-use area, and beach. The rest (about 3,150 acres along the west and south shores) is managed mainly for wildlife, although there are some boat docks and facilities.

Angostura Irrigation District and Operation of the Unit

Angostura Irrigation District assumed responsibility for O&M of the unit January 1, 1968. Under its contract (Contract No. I79r-1974), the District obtains water from the reservoir to irrigate 12,218 acres below the dam on both sides of the Cheyenne River (figure 1.1). District lands are located on alluvial terraces and upland soils from the reservoir downstream for about 30 miles. Temporary water service contracts for irrigating another 184.8 acres when the reservoir is above elevation 3,184.2 feet have been signed with the Hot Springs Airport (139.8 acres) and two private landowners (45 acres). These lands are within District boundaries but are not part of the original authorization for irrigation.

The reservoir is operated primarily to serve irrigation needs. Water is directly diverted from the reservoir and delivered through the main canal. The canal, extending from the dam along the south edge of the unit, serves about 78% of District lands before crossing under the river through a 9,800-foot inverted siphon to serve the remaining 22% of the lands. Irrigation is by gravity. Average releases from the reservoir to District lands are about 40,000 AF/year,

providing an average onsite farm delivery of 2.5 AF/acre. Thirty-nine miles of laterals and twenty-one miles of open and closed drains serve individual farms.

Angostura Unit and the Tribes

The Cheyenne River basin is situated within the historic homelands of the Teton Sioux Tribes. Angostura Reservoir and the upper end of the basin are at the southeastern and southern base of the Black Hills, which has both historic and spiritual significance for the Tribes.

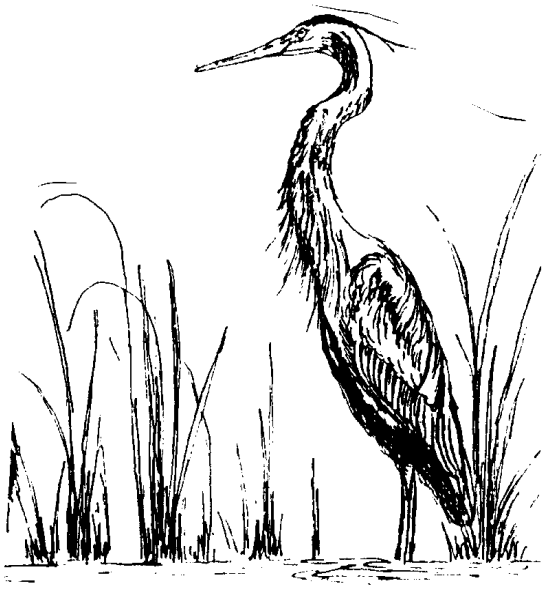
The Black Hills (along with the Cheyenne River) were included in the Great Sioux Reservation established by the Ft. Laramie Treaty of 1868. This reservation was to be the permanent homeland of the Sioux Nation, including the seven bands of the Lakota. Article 12 stipulated that no future treaty for the cession of any part of the reservation would be valid unless executed and signed by three-fourths of all adult male tribal members.

Gold was discovered in the Black Hills in 1874, resulting in a rush of settlers onto the Reservation. Afterwards, Congress ratified the Act of February 28, 1877, known as the *Manypenny Agreement*. This agreement withdrew the Black Hills from the Great Sioux Reservation and extinguished any rights of Tribal members to lands outside the revised Reservation boundaries. The agreement was not signed by three-fourths of the adult male Tribal members as required in Article 12 of the 1868 Ft. Laramie Treaty, however. The failure to comply with Article 12 became one of the primary points in future litigation over the validity of the Manypenny Agreement.

In 1889, Congress passed 25 Stat. 888 which broke up the Great Sioux Reservation into smaller reservations: Pine Ridge, Cheyenne River, Standing Rock, Rosebud, and Lower Brule. This agreement established the current boundaries of these reservations.

Beginning with passage of the Sioux Jurisdictional Act in 1920, the Sioux Tribes began to petition the Court of Claims (and later the Indian Claims Commission) to ask for the return of the Black Hills. The Tribes argued that the Black Hills were taken illegally and without just compensation. In 1979, the Court of Claims affirmed that the Black Hills were taken without just compensation. The court awarded the tribes $17.5 million plus 5% simple interest compounded annually from 1877. The Supreme Court reaffirmed this decision in 1980. The Sioux Tribes, though, have refused to accept this decision, preferring return of the Black Hills instead.

Although the Supreme Court has upheld the monetary award as compensation for the taking, the Tribes have continued to press for return. Since the Supreme Court decision, some Tribes have filed separate court actions or have



introduced legislation (such as the Bradley Bill in 1986) to have the Black Hills returned. They argue that because of their historical and spiritual ties, the only just compensation must include return of the Black Hills.

Indian Trust Assets

Reclamation defines *Indian Trust Assets* as "legal interests in property held in trust by the United States for Indian tribes or individuals." Assets include lands, minerals, timber, hunting and fishing rights, water rights, instream flows, or other assets of a tribe or individual over which the Federal Government also holds an interest through either administration or direct control. The Federal Government acts in a fiduciary or trust capacity with respect to these properties, interests, or assets. This definition parallels regulations for trust resources in 25 CFR Part 900.6 which implements Public Law 93-638, the Indian Self-Determination and Education Assistance Act.

Water Rights

States have jurisdiction over adjudication and administration of surface and groundwater outside of the reservations. Determination of water rights in South Dakota, like in most Western States, is based on the appropriative system and the principal of prior appropriation, "first in time, first in right," in which senior rights have priority over junior rights. The State issues permits according to this principle.

Under State law, the seniority of a water right is most often determined by when an appropriator first diverted the water and put it to beneficial use, such as irrigation or mining. A senior appropriator has the right to continue to take the same volume of water without interference by any later appropriator, so long as the senior appropriator continues to put the water to beneficial use. South Dakota has issued 308 permits in the Cheyenne River drainage above the Rapid Creek confluence. The earliest of these permits dates to 1880, when two permits were issued on Fall River and Beaver Creek.

The basis for Indian water rights stems from the Supreme Court's decision of Winters v. United States 207 U.S.564 (1908), commonly known as the *Winters Doctrine*. According to the doctrine, the establishment of an Indian reservation implied that sufficient water was reserved (or set aside) to fulfill purposes for which the reservation was created, with the priority date being the date the reservation was established. As such, Indian water rights constitute an ITA (Indian Trust Asset).

Under Winters Doctrine, the OST, CRST (Cheyenne River Sioux Tribe), and LBST (Lower Brule Sioux Tribe) have a claim to Cheyenne River water, as do other Tribes of the Lakota Nation. Their reservations were established by the Agreement of 1889 (25 Stat. 888); this means their claims would probably predate most other appropriators in the basin. To date, none of the Tribes have established the volume of their reserved water rights.

The fact that they have not been quantified, however, does not negate the reserved water rights of the Tribes. The claim of reserved rights by these Tribes for Cheyenne River water may be supported by Articles 3 and 5 of the 1868 Ft. Laramie Treaty and Sections 1, 4, and 14 in the 1889 Agreement. Articles 3 and 5 of the treaty specify that the reservation of the Great Sioux Nation was established in part to promote farming among the Tribes. Section 1 of the agreement established the Pine Ridge Reservation, defining the northern boundary as extending from the intersection of the 103rd meridian with "the South Fork of the Cheyenne River and down said stream to the mouth of Battle Creek. . .." Section 4 established the Cheyenne River Reservation, the southern boundary of which was defined as extending from the "main channel of the Missouri River . . . opposite the mouth of the Cheyenne River; thence west to said Cheyenne River and up the

same to its intersection with the one hundred and second meridian of longitude. . .." The boundaries of both reservations, thus, in part incorporate the Cheyenne River.

Section 14 of the 1889 Agreement addressed irrigation:

> That in cases where the use of the water for irrigation is necessary to render the lands within any Indian reservation created by this act available for agricultural purposes, the Secretary of the Interior be, and he is hereby, authorized to prescribe such rules and regulations as he may deem necessary to secure a just and equal distribution thereof;. . .and not other appropriation or grant of water by any riparian proprietor shall be authorized or permitted to the damage of any other riparian proprietor.

Section 14 supports the reserved water rights of the Tribes under the Winters Doctrine to water in the Cheyenne River. The Secretary of the Interior was charged to ensure that enough water be provided to the Tribes "render the lands within [the] reservation[s]. . .available for agricultural purposes." Although the water rights of the OST, CRST, and LBST have not been quantified, Reclamation still must consider that the Tribes might have established reserved rights to the water in the river when evaluating alternatives in this EIS. The Tribes—or the Federal Government acting on behalf of the Tribes—eventually quantifying their reserved water rights and putting the water to beneficial use might affect the volume of water available in the Cheyenne River for the alternatives.

Reclamation holds a water right from South Dakota for an annual one-time fill of 138,761 AF, stored in the reservoir for irrigation of 12,218 acres, and for fish, wildlife, recreation, and other purposes under U.S. Withdrawal License No. US5792, dated April 11, 1941 (amended March 18, 1946, and November 26, 1976). South Dakota water law allows up to 3 AF/acre for the unit. Other diversions are allowed for water losses in the distribution system.

There is no State requirement for minimum flows in the Cheyenne River below the reservoir. Seepage past the gates, flows from Fall River, and irrigation return flows satisfy downstream State-permitted water rights.

Wyoming and South Dakota have no compact for the Cheyenne River, although they have tried to negotiate one in the past. Wyoming has proposed construction of several reservoirs for recreation and fish and wildlife purposes on Beaver Creek and Stockade Beaver Creek near Newcastle and Indian Creek 20 miles north of Lusk, Wyoming. Due to the present economic infeasibility of these projects, no development is anticipated in the near future (Evan Green 1995: personal communication).

ENVIRONMENTAL COMPLIANCE

All agreements between Reclamation and the District will be reviewed during the EIS and contract renegotiation process. Agreements with SDGF&P will also be reviewed and modified as necessary to reflect any changes in reservoir operations. Besides NEPA, this EIS complies with other Federal laws and regulations as listed below.

Endangered Species Act

The Endangered Species Act requires consulting with USFWS (U.S. Fish and Wildlife Service) on actions that could affect federally listed threatened and endangered fish and wildlife species. As part of its consultation responsibilities under Section 7 of the act, Reclamation used this EIS as a biological assessment of potential impacts resulting from

the agency's proposed alternatives. The assessment concluded that the Federal action would not affect listed species; if the USFWS concurs with this finding, then the action could be implemented. Conversely, if the assessment—or the USFWS—determines that the action might adversely affect a listed species, then formal consultation between the two agencies would begin in order to eliminate or mitigate adverse impacts.

Clean Water Act

Section 402—Section 402 regulates the point source discharge of wastewater. The State administers this section of the act, while EPA (U.S. Environmental Protection Agency) oversees it.

Section 404—Section 404, administered by the Corps (U.S. Army Corps of Engineers) with oversight from EPA, regulates activities involving placement of dredged or fill materials into water bodies, including wetlands. The Corps issues both nationwide permits on a state, regional, or nationwide basis for similar activities that cause only minimal adverse environmental effects both individually and cumulatively, and individual permits issued for specific activities on specific water bodies. If the Corps determined an individual Section 404 permit were required, a South Dakota State Water Quality Certification (Section 401) would also be required.

National Historic Preservation Act

The National Historic Preservation Act establishes protection of historic properties as Federal policy in cooperation with states, tribes, local governments, and the general public. Historic properties are those buildings, structures, sites, objects, and districts, or properties of traditional religious and cultural importance to Native Americans, determined to be eligible for inclusion in the National Register of Historic Places. Section 106 requires Federal agencies to consider effects of Federal actions and gives the Advisory Council on Historic Preservation the opportunity to comment. Comments are delivered after consultation with the State Historic Preservation Officer, tribal Historic Preservation Officer or tribes, and the general public. Reclamation is using the means of the EIS to comply with the act and implementing regulations.

Farmland Protection Policy Act

The purpose of this act is to ensure that impacts to prime or unique farmlands are considered. The U.S. Natural Resources Conservation Service is responsible for this act.

PUBLIC CONCERNS

Reclamation determined some issues to be analyzed in the EIS, and the District, Tribes, and cooperating agencies offered others. Concerns were also offered by the public at scoping meetings held April 23-May 1, 1997, at Rapid City, Hot Springs, Lower Brule, Eagle Butte, and Kyle, South Dakota, and from letters of comment (see Chapter Five). Not all issues and concerns were related to renegotiation of a water service contract or the management of water resources at Angostura Reservoir. Some were more suited for the future RMP dealing with land management issues, while others were beyond the scope of either report. Disposition of issues pertinent to this EIS is detailed in Table 1.1.

Table 1.1: Public Concerns and Location in EIS

	Concerns	Location in EIS
New Water Service Contract	How closely will the new contract resemble the old? Will the contract guarantee the District's water supply? The new contract should be reasonably flexible.	Chapter One "Water Service Contract"; Chapter Two "No Action Alternative."
Water Rights	Winters Doctrine and Tribal water rights. Effects of changes in water management on water rights.	Chapter One "Water Rights" ; Chapter Three "Indian Trust Assets" and "Surface Water Quantity."
Water Quantity	Is there enough water to meet the needs of current users, like the District, and future users, like the Tribes? Effects on river flows, floods, and ice jams from changes in water management.	Chapters Three and Four "Surface Water Quantity."
Reservoir Operations	Reservoir water levels due to changes in water management. Instream flows due to changes in water management.	Chapters Three and Four "Surface Water Quantity."
Water Quality	Quality should be determined by sampling of bottom sediment, aquatic organisms, and the water itself in the reservoir, the river below the reservoir, and irrigation return flow. Attention should be paid to selenium, mercury (and other heavy metals), and pesticides in the water. Attention should be paid to possible contaminants from mining, oil wells, grazing, recreation, and the bombing range. Effects of changes in water management on groundwater.	Chapters Three and Four "Surface Water Quality." Chapters Three and Four "Groundwater."
Sedimentation	Loss of reservoir storage from sedimentation and effects on water allocation.	Chapters Three and Four "Sediment."

Table 1.1: Public Concerns and Location in EIS (Continued)

	Concerns	Location in EIS
Stream Corridor	Effects of changes in water management on riparian zones along the river.	Chapters Three and Four "Stream Corridor."
Fisheries	Effects of changes in water management on reservoir habitat. Effects of changes in water management on reservoir and river fisheries. Effects of water quality on fisheries, especially sturgeon chub. Effects of Angostura Dam on movement of fish.	Chapters Three and Four "Fisheries."
Wildlife	Effects of changes in water management on wildlife. Wildlife mitigation requirements. Possible creation of wetlands from changes in water management.	Chapters Three and Four "Wildlife" and "Threatened or Endangered Species." None required. Chapters Three and Four "Wetlands."
Economics	Effects on District and other current water users of reducing water allocations. Effects on the counties and State from changes in water management. Benefits to the region from irrigation and reservoir recreation. Compensation for lost water. Possibility of increased irrigation. Buying out of irrigation interests. Increase in District's ability to pay? Livestock watering on the reservations.	Chapters Three and Four "Social and Economic Conditions." This would be determined during contract negotiations with the District.

Table 1.1: Public Concerns and Location in EIS (Continued)

	Concerns	Location in EIS
Cultural Resources	Effects on archeological and paleontological resources from changes in water management.	Chapters Three and Four "Cultural Resources" and Paleontological Resources."
Indian Trust Assets	Define Indian Trust Assets and include instream flows. Effects of changes in water management on traditional Tribal plants—chokecherry, buffaloberry, and wild plum.	Chapters Three and Four "Indian Trust Assets."