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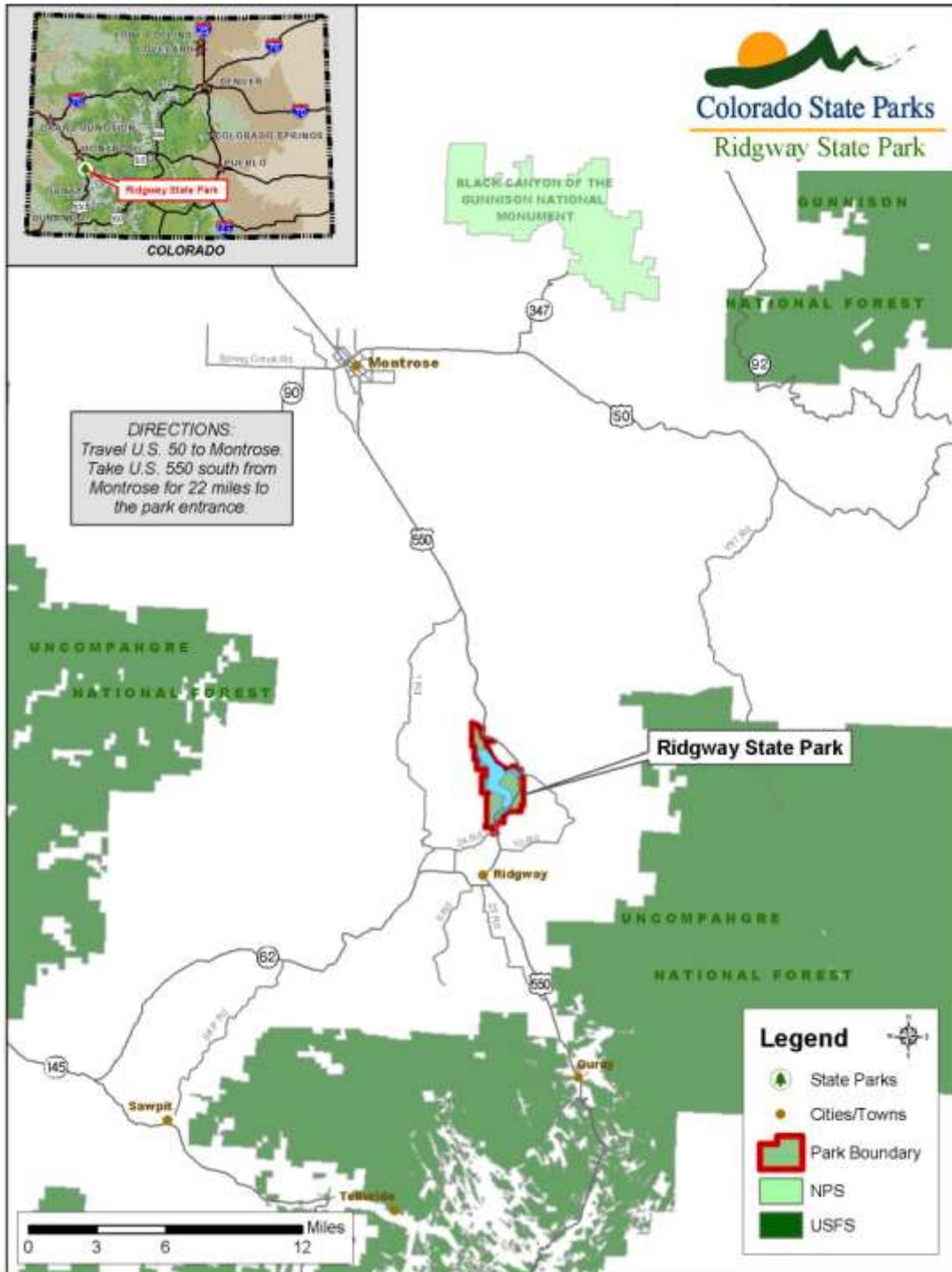
Managing Water in the West

Final Environmental Assessment- Tri-County Water Hydropower Project

**Western Colorado Area Office
Upper Colorado Region**



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Ridgway Dam and Reservoir and Ridgway State Park

CHAPTER 1-- INTRODUCTION

PROPOSED ACTION

The proposed action is to permit hydropower development at the existing Ridgway Dam on the Uncompahgre River in Ouray County, Colorado. Ridgway Dam is the water storage feature of the Bureau of Reclamation's Dallas Creek Project. The hydropower development would be permitted through a "Lease of Power Privilege" (LOPP) which allows a non-Federal party to develop the hydropower resource. The LOPP would allow connection to Ridgway Dam's outlet and use of Ridgway Dam's water releases to generate electricity. The Tri-County Water Conservancy District (Tri-County), which operates and maintains Ridgway Dam, has applied for a LOPP at Ridgway.

This final Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act, the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), and the U.S. Department of the Interior's regulations (43 CFR Part 46). The EA evaluates the environmental effects of issuing a LOPP.

NEED FOR AND PURPOSE OF ACTION

A LOPP is needed to develop hydropower at Ridgway Dam. Current federal policy encourages non-Federal development of environmentally sustainable hydropower potential on federal water resource projects. The LOPP would ensure that the development of hydropower would be implemented consistent with established authorities and operation plans of the Dallas Creek Project.

The purpose of the Tri-County Water Hydropower Project (Project) is to provide a clean, renewable energy source that is locally controlled. The electricity generated by the Project would provide Tri-County a source of revenue that can be used to defray annual operating expenses and may assist in the repayment of the Dallas Creek Project. The Project may provide the utility that ultimately purchases the power an opportunity to help diversify its generating portfolio and to meet legislatively-mandated requirements for renewable energy sources.

BACKGROUND INFORMATION

Dallas Creek Project—The Dallas Creek Project is located near the town of Ridgway in west-central Colorado. Dallas Creek was authorized by the Colorado River Basin Project Act of 1968 (Public Law 90-537) as a participating project under the Colorado River Storage Project Act of 1956. The primary features are Ridgway Dam and Reservoir.

Ridgway Dam (see Table 1) was constructed on the Uncompahgre River in 1987 to increase water supplies for irrigation and municipal and industrial purposes and to provide flood control. The Dallas Creek Project also includes recreation at the reservoir and measures to enhance fishing opportunities on the Uncompahgre River, improve wildlife habitat, and mitigate wildlife losses caused by the reservoir development. The generation of power is also an authorized purpose of the Dallas Creek Project. No water distribution facilities were constructed; and water supplies are distributed through existing facilities or facilities constructed by Tri-County, the Uncompahgre Valley Water Users, or others.

Table 1. Ridgway Dam and Reservoir statistics.

Ridgway Dam and Reservoir	
Reservoir storage capacity	84,410 acre-feet
Active storage capacity	59,396 acre-feet
Dead and Inactive storage capacity	25,014 acre-feet
Reservoir surface area	1,063 acres when full
Average annual municipal/industrial water allocation	28,100 acre-feet
Average annual irrigation water allocation	11,200 acre-feet
Existing outlet capacity	1,440 cubic feet per second
Minimum reservoir releases	Minimum flows of 75 cfs from May 16 to October 31 and 45 cfs from November 1 to May 15 below the confluence of Cow Creek and Uncompahgre River; 30 cfs between Ridgway Dam and Cow Creek.
Spillway capacity	9,830 cubic feet per second

Tri-County is the general administrative agency for the Dallas Creek Project and is the contracting and marketing agency for all project water. Tri-County is a water conservancy district, authorized and established under Title 37, Colorado Revised Statutes, and a political subdivision of the State of Colorado. Under existing contracts with the Bureau of Reclamation, Tri-County has operation, maintenance, and repayment responsibilities and obligations concerning the Dallas Creek Project.

The Dallas Creek Project makes available an annual water supply of 28,100 acre-feet (af) for drinking water and industrial purposes. Project 7 Water Authority provides treatment of the water supplied by a water exchange from Ridgway Reservoir. Through this, drinking water is supplied to municipal and rural areas of Delta, Montrose, and Ouray Counties (Table 2). Because of the physical location of the Project 7 Water Authority’s water treatment plant east of Montrose and because the quality of water in the Gunnison River is superior to that of the Uncompahgre River, an exchange of Ridgway Reservoir storage water with direct flow water from the Gunnison River via the Gunnison Tunnel has been established with the Uncompahgre Valley Water Users Association. Gunnison Tunnel water, up to 23,000 af per year, is treated for drinking in exchange for municipal and industrial water from Ridgway to be used for irrigation.

Table 2. Ridgway Reservoir municipal and industrial water users.

Contractor	Water supply (af)
City of Montrose	10,000
City of Delta	3,700
Tri-County	12,860
Town of Olathe	300
Menoken Water District	640
Chipeta Water District	600

In addition to municipal and industrial water, 11,200 af of irrigation water is supplied from Ridgway Reservoir to provide a supplemental supply to existing irrigated lands in Delta and Montrose Counties. This water is released from Ridgway Reservoir for diversions throughout the Uncompahgre Valley.

Recreation facilities and fisheries at Ridgway Reservoir State Park are managed by the Colorado Division of Parks and Wildlife and recreation supports over 300,000 visits annually.

Lease of Power Privilege- On June 2, 2010, a “Notice of intent to accept proposals, select lessee, and contract for hydroelectric power development at Ridgway Dam” was published in the Federal Register. Proposals were accepted until December 2010. Based on the recommendation from a review team, Reclamation determined that the proposal submitted by Tri-County should be accepted and that negotiations should proceed for the LOPP on Ridgway Dam.

A LOPP is an alternative to a federal agency developing hydroelectric power. The LOPP is a contractual right given to a non-Federal entity to use the Reclamation facility for electric power generation consistent with the Dallas Creek Project authorized purposes. A LOPP has a term of 40 years and the general authority includes, among others, the Town Sites and Power Development Act of 1906 (43 U.S.C. 522), and the Reclamation Project Act of 1939 (43 U.S.C. 485h(c)) (1939 Act).

A LOPP at Ridgway Dam will accommodate existing contractual and environmental commitments related to operation and maintenance of the existing facilities. All costs incurred by the United States related to development and operation and maintenance under the LOPP, including NEPA compliance, engineering reviews, and development of the LOPP, are the expense of Tri-County. In addition, Tri-County would be required to make annual payments to the United States for the use of a Government facility. Depending on the economic capability of the proposed hydropower development, this amount will be not less than 3 mills per kilowatt-hour of generation. If conditions provide opportunity for substantial benefits to accrue to the lessee, then the United States will benefit proportionally. Also, under the LOPP, provisions will be included for inflation of the annual payment with time. Such annual payments to the United States would be deposited as a credit to the Upper Colorado River Basin Fund.

A draft of the LOPP contract is included in Attachment A.

SCOPING

Scoping is an early and open process to determine the issues and alternatives to be addressed in the EA. Initial scoping for the draft EA included discussions with the Colorado Division of Wildlife and Colorado State Parks (now Colorado Division of Parks and Wildlife), Tri-County, Western Area Power Administration, and Reclamation staff.

A public scoping meeting was held April 26, 2011 in Ridgway. The Project was described along with the EA process, and questions and concerns were discussed and answered at the meeting. Public input was provided at the meeting or later by email and letter.

Input was requested concerning:

- Questions or concerns with the proposal
- Significant issues that should be addressed in the EA
- Information or data available that could help in review of the proposal

The following is a listing of issues presented:

- The Colorado Division of Wildlife and several citizens and groups were concerned about how fishery issues could be affected: river flows during the winter and nitrogen supersaturation are present concerns. Is there an opportunity to correct these problems; are there any opportunities to increase minimum winter flow commitments?
- Impacts of dam and reservoir are already in place; adding hydropower is a good idea.
- General support for renewable energy.
- Ouray County Land Use Department is concerned with visual impacts, particularly in the vicinity of Highway 550.

- Is there any change in non-native warm water fish escapement from the reservoir that might affect downstream endangered fish?
- What is the effect on: cost of Tri-County water to customers; mill levy to property owners in Delta, Montrose, Ouray Counties; what are financial benefits; effect on power rates?
- What are terms of the LOPP?
- Need to determine any effect on cultural resources.
- Is there any effect on streamflows or reservoir levels?
- Need to minimize environmental effects of any new powerline and substation.

CHAPTER 2 -- PROPOSED ACTION AND ALTERNATIVES

Alternatives evaluated in this EA include the No Action and variations of a Proposed Action.

NO ACTION ALTERNATIVE

Under this alternative, Reclamation would not issue a LOPP to Tri-County to develop hydropower at Ridgway Dam. However, it is possible that in the future another entity might request the opportunity to apply for a new LOPP.

PROPOSED ACTION

Under the Proposed Action, Reclamation would execute a LOPP with Tri-County to permit construction, operation, and maintenance of a powerplant at Ridgway Dam. Various turbine configuration alternatives were considered during planning for the proposed action, including single turbine and multiple turbine options. Alternative powerline locations were also considered.

Preferred Alternative- The preferred alternative includes penstocks, a powerhouse, a 0.8-mile powerline, and a substation that boosts the voltage from 4.16 kilovolts (kV) to 115-kV so that the Project can be interconnected with the regional power grid.

The electricity generated by the Project would provide Tri-County with a source of revenue that could be used to help fund annual operating expenses and may assist in the repayment of the Dallas Creek Project. The Project may also provide the utility that ultimately purchases the power an opportunity to help diversify its generating portfolio and to meet legislatively-mandated requirements for renewable energy sources.

Design

The proposed hydropower plant would be located between the spillway stilling basin and river outlets on the north side of Ridgway Dam (see Figure 1).

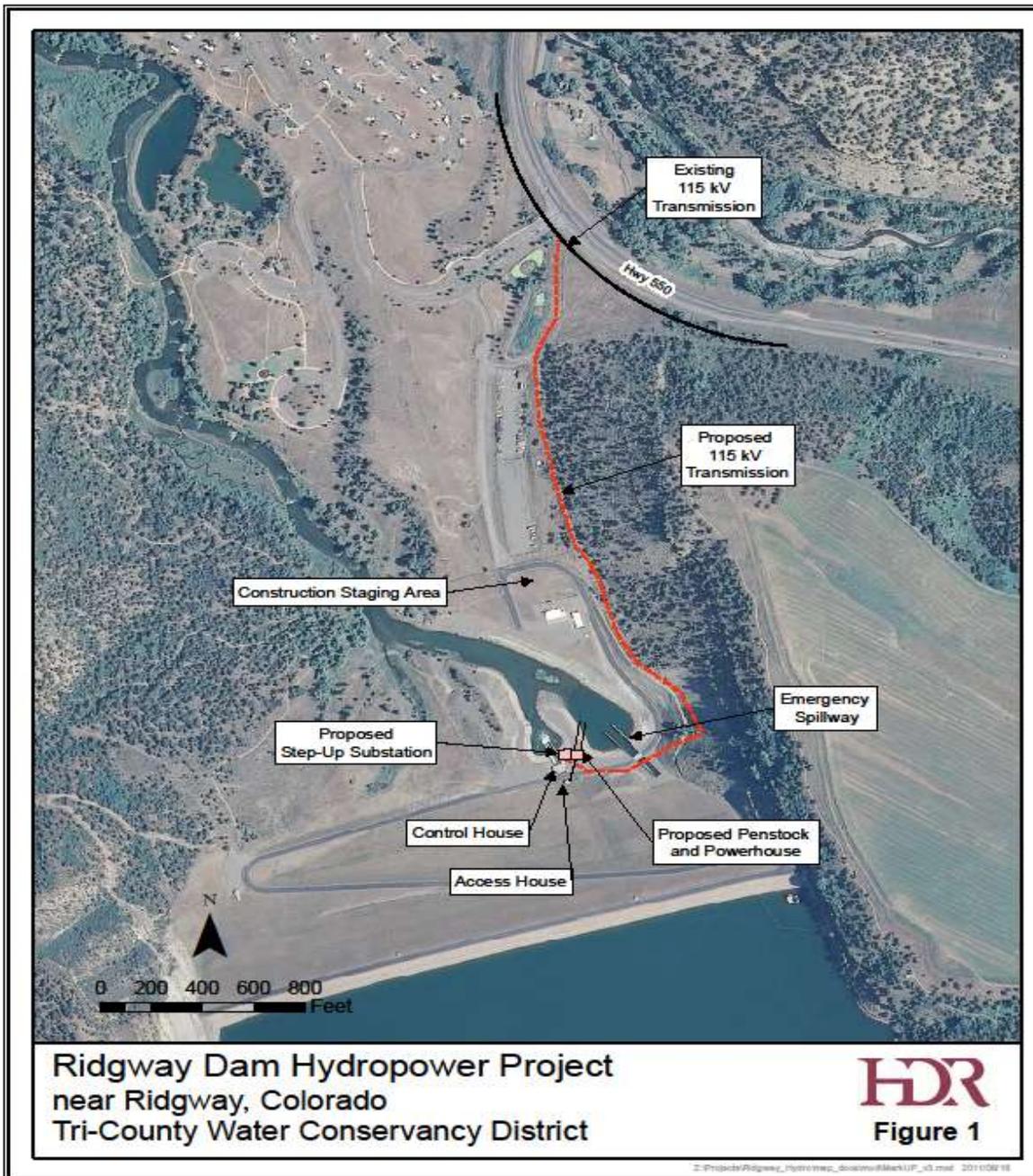


Figure 1. General design overview.

All construction would take place in the Primary Jurisdiction Area (PJA) of Ridgway Dam. This is an area closed to the public and used for maintenance and security of Ridgway Dam. Designs are preliminary and changes may occur in final design; however, designs are complete enough for environmental review.

The powerhouse would likely be a metal building constructed on a concrete foundation approximately 60 feet by 60 feet. Construction of the powerhouse would involve excavation approximately 30-35 feet below the ground surface. The powerhouse would contain the turbines, generators, and other equipment necessary for operation of the hydroelectric facility.

A small substation would be located near or adjacent to the new powerhouse at the dam. Power generated would be stepped up from 4.16 kV to 115-kV. All necessary controls and switchgear would be located at the powerhouse or this substation.

The plant would occupy part of a small peninsula that separates the spillway stilling basin from the river outlet stilling basin. Water would be discharged from the turbines into the spillway stilling basin. There is a possibility that in the final design, the discharge may be into the outlet works stilling basin.

The existing outlet works at Ridgway Dam are comprised of a 66-inch steel pipe that provides irrigation season releases and a 24-inch steel pipe that provides winter low-flow releases. These pipes are contained inside a concrete tunnel underneath the dam.

The irrigation system pipeline for the downstream Cow Creek recreation area (also termed the Pa-Co-Chu-Puk recreation area) taps into the 24-inch bypass pipe inside the outlet works access tunnel and includes a flow meter and an isolation valve. The irrigation water to the Cow Creek recreation area will continue to be delivered through the 24-inch pipe.

New connections to the outlet works would be installed that direct flows to the east through two penstocks. Conceptual designs call for a new 66-inch steel penstock and a new 24-inch penstock to the powerhouse. The penstocks would be steel pipe designed to withstand pressures generated during start-up and shutdown of the turbines. From the new connections, the pipes would run about 65 feet to the new powerhouse. The pipes would be buried.

During design, the river outlet and bypass system would be evaluated to simulated surge conditions, and appropriate measures (such as a surge tank or a flywheel on the generators) would be installed to prevent any catastrophic failure of either the outlet or the bypass pipes.

The preliminary design calls for two horizontal Francis turbines (see Table 3) with a combined rated capacity of 7 megawatts (MW) of power and producing an average of 22,600 megawatt-hours (MWh) of energy per year. The units would be different sizes in order to take maximum advantage of the reservoir discharges. The larger of the two would generate 4.9 MW at rated head (200 feet) and peak efficiency (93 percent). This turbine would operate during the irrigation season, using flows ranging from 100 to 370 cubic feet per second (cfs). Maximum power from

the unit would be 4.9 MW. The smaller turbine would nominally operate year-round, and would operate over a flow range of 40 to 140 cfs. Maximum power from the smaller unit would be 2.1 MW¹. Units would go off-line periodically for scheduled maintenance. It should be noted that these operating ranges are preliminary but are not expected to change significantly.

Table 3. General turbine data for two unit preferred alternative.

Turbine Type	Horizontal Francis	Horizontal Francis
Rated capacity	4.9 megawatts	2.1 megawatts
Peak efficiency	92.9 percent	92.5 percent
Rated discharge	320 cfs	120 cfs
Minimum operational flow	100 cfs	40 cfs
Maximum operational flow	370 cfs	140 cfs

Power would be distributed to the existing 115-kV powerline along U.S. Highway 550, via a new 0.8 mile powerline². Power from the facility would be stepped up at the dam to 115 kV. The step-up transformer would be located at or near the powerplant and thus out of the normal line-of-sight for recreation visitors to Ridgway State Park. The new 115-kV powerline would be constructed over the top of an existing 24.9 kV distribution line. That is to say, the existing wooden poles between Ridgway Dam and Highway 550 would be replaced with new ones that are taller and the new 115-kV line would be installed a few feet above the 24.9 kV line. The powerline route would follow the existing distribution alignment that supplies electricity to the dam and operating facilities. The interconnection would be made in accordance with current requirements and specifications. The new powerline would use single, wooden pole construction as shown in Attachment B.

Construction

Facility construction is expected to take 14 to 18 months and the initial cost estimate is approximately \$18 million. Funding for the Project is expected to come from low-interest loans of approximately \$11 million from the Colorado Water Conservation Board and the Colorado Water Resources and Power Development Authority's small hydropower loan program which complements the Colorado renewable energy standard. This standard requires investor-owned utilities to obtain 30 percent of their power from renewable sources by 2020. Other funding would come from Tri-County's reserve account.

Construction activities would be staged so as to minimize interference with on-going reservoir operations. It is expected that there would be substantial construction during the winter (for

¹ Actual maximum power would be 5.39 and 2.31 MW when turbines are running in "overspeed" which could occur in a very limited time in any given year.

² The existing 115-kV powerline is owned by San Miguel Power Association but is scheduled to be transferred to Tri-State Generation and Transmission Association in the future.

example, installation of the 64-inch bifurcation in the existing outlet pipes) so as not to interfere with reservoir operations. Streamflows would be maintained throughout construction.

A cofferdam would be needed in the spillway stilling basin to facilitate dewatering of the construction area. Construction activities would be separated from the stream by constructing the cofferdam downstream from the emergency spillway area. The stilling basin would be pumped dry to allow construction of the draft tube and outlet works. This cofferdam may be constructed from earth or rock materials obtained locally near the dam or from commercial pits, or it may be constructed using sheet piles. If material is obtained on Reclamation lands, the material site would require Reclamation approval and a revegetation plan.

Tri-County would be responsible for obtaining any required Federal, state, or local permits to construct and operate the Project, including permits under the Clean Water Act (Section 402 and 404 permits) which may be needed for dewatering the stilling basin and construction of the cofferdam.

Storage areas and staging areas during construction would be near the dam in previously disturbed areas now closed to public use. Typical construction equipment would include excavators, cranes, concrete trucks, and various utility vehicles. Existing access roads would be used and traffic control would be used when needed for public safety. Excess material from excavations or cofferdam removal would be disposed of in previously disturbed areas approved by Reclamation. All recreation facilities would remain open during construction. As presently designed, all facilities would be constructed on Reclamation land and no private land acquisition would be necessary.

At the end of construction, Tri-County would conduct start-up testing to ensure that all systems are operating properly and within the specified ranges and tolerances. This testing would be conducted to test the proposed installation to ensure that all systems are working according to specifications. These tests would include:

- General testing of civil and mechanical systems. This would include leakage tests covering both water and hydraulics, coating thickness testing, security alarms, and other tests such as communications systems.
- Electrical testing to evaluate the performance of the generator, switch gear, transformers, and control system. This is in addition to what is normally required by the State Electrical inspectors.
- Load rejection testing to ensure that the equipment will perform properly, but also to make sure the bypass will operate correctly. This testing would be conducted to avoid disrupting river flows or causing periods of zero discharge.
- Mechanical system testing for turbine wicket gates, hydraulic power systems, manual operators, bearing temperatures, vibration tests, and HVAC operation.

- Operational testing for normal startup and shutdown procedures, local and SCADA controls, data monitoring and collection (occurrence and accuracy), and continuous operation testing to ensure long-term operational stability.

This testing would be conducted to avoid simultaneous periods of zero releases through the river outlet and the bypass discharge.

Operation

Tri-County anticipates that the unit would be operated remotely, with power dispatched to the local grid by the purchasing utility from its operating center. The powerplant would be operated using normal operational releases from Ridgway Reservoir. Minimum streamflow commitments (Bureau of Reclamation 1976) would be maintained and downstream releases for irrigation, and municipal and industrial water would not be altered by the Project. The powerplant would not be operated for peaking power; in other words, daily fluctuations in releases for hydropower would not be permitted.

At the beginning of each irrigation season, water would be discharged through the existing river outlet to exercise the existing slide gates and make certain all normal systems are in working order. Then, the gate valve to the large turbine would be opened to force the water through the turbine and generate power. The system would continue to operate in that mode until the late fall, or until an unexpected outage occurs. When reservoir releases exceed flows through the turbines, the existing outlet or bypass would also be used.

The facility would be designed and equipped with synchronous bypass valves to protect river and minimum release flows. When the hydropower facility goes off-line unexpectedly, the turbine wicket gates would be closed within a few seconds to prevent damaging the generator. At the same time, the valves at the outlet works or the bypass discharge would be simultaneously opened to prevent any disruption to the quantity of downstream flows. In other words, when the flow through the powerplant was decreasing, flow through the bypass would be increasing.

Modifications to Preferred Alternative- Several turbine configurations were considered including using three units of equal size and considering using impulse turbines rather than Francis turbines. An impulse unit would not be as efficient as the Francis turbines, but has other features that could reduce overall Project costs. Efficiency of the impulse unit is significantly less than the Francis units (85 percent versus 92.5 percent), meaning that the energy generation could be at least 7 percent less than that of the recommended solution. The cost trade-off lies in the cost of excavating and installing a draft tube for the Francis unit, which would not be needed for the impulse unit. The current recommendation for transmitting power to the existing grid, described above under the preferred alternative, may be modified pending additional studies.

SUMMARY

Table 4. Summary of alternatives.

Resource	No Action Alternative	Hydropower Development
Energy production-average annual	None	22,600 megawatt-hours (MWh) of energy per year.
Wetlands and riparian resources	No effect	No effect
Recreation facilities and use effects	None	Minor disturbance during construction
Water rights/streamflows	No effect	No effect
Endangered species	No effect	No effect
Reservoir fisheries	No change	No change
Downstream Uncompahgre River fishery	No change	Potential benefit due to water quality improvement
Water supply for irrigation, municipal and industrial, or fisheries and recreation from Ridgway Reservoir	No effect	No effect
Cultural resources	No effect	No effect
Air quality	No change	Offset emissions of carbon dioxide (estimated 40,000,000 pounds per year) and other green house gases
Noise	No change	Temporary increase of noise levels during construction
Socio-economics	No effect	Temporary benefit of increased construction jobs/expenditures. Long-term benefit to Tri-County customers resulting from sale of power.

CHAPTER 3 -- AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter discusses resources that may be affected by actions taken to construct and operate a hydropower plant at Ridgway Dam. For each resource, existing conditions and impacts are described. Impacts are based on the design, construction, and operations described in Chapter 2. It is recognized that there may be changes in the final design but these changes are not believed to be significant enough to change the impact analysis and environmental commitments. This chapter is concluded with a list of environmental commitments and mitigation measures.

DALLAS CREEK PROJECT OPERATIONS AND WATER RESOURCES

Existing Conditions: Ridgway Reservoir is authorized and operated to provide water supplies for municipal and industrial uses, irrigation, recreation, and fisheries. As is typical of western reservoirs, Ridgway begins to fill as mountain snows melt, generally in the April through June time period. Whether the reservoir completely fills in any given year depends on the winter snowpack which can be highly variable. Operations strive to fill the reservoir every year in order to provide water supplies in subsequent drought years. The reservoir provides approximately 39,000 af of water annually for irrigation and municipal-industrial supplies. Releases for these purposes are usually made in the later part of the irrigation season. Table 5 summarizes reservoir releases to the Uncompahgre River between 1989 and 2011 and maximum reservoir water elevations during the same period. Figure 2 summarizes water surface elevations over a period of years. As can be seen from this figure and from Table 5, the reservoir fills in most years but may not fill in a drought year such as 2002.

Impacts: There are no changes from the No Action Alternative predicted for reservoir operations under the hydropower alternative. Reservoir releases and reservoir content would continue to be variable based on annual inflows to the reservoir and variable demands for irrigation, municipal, and industrial water supplies.

Water supplies for irrigation and municipal and industrial uses would not be affected by the proposed action. Minimum streamflow and minimum reservoir content commitments would also not be affected. Environmental commitments for the hydropower project would require that changes in streamflow levels be minimized during the infrequent events that the powerplants go off-line. In addition peaking operations (daily fluctuations in water flow through turbines to follow variable daily power needs) would not be permitted.

There would be no effect on water quality in Ridgway Reservoir because releases would continue to be made from the same level in the reservoir as now occurs. The facility design would incorporate industry standard containment measures to prevent the release of any oils to the river in the event of equipment leakage or failure during construction and operation. There is potential for improvement in downstream water quality as later discussed in this EA.

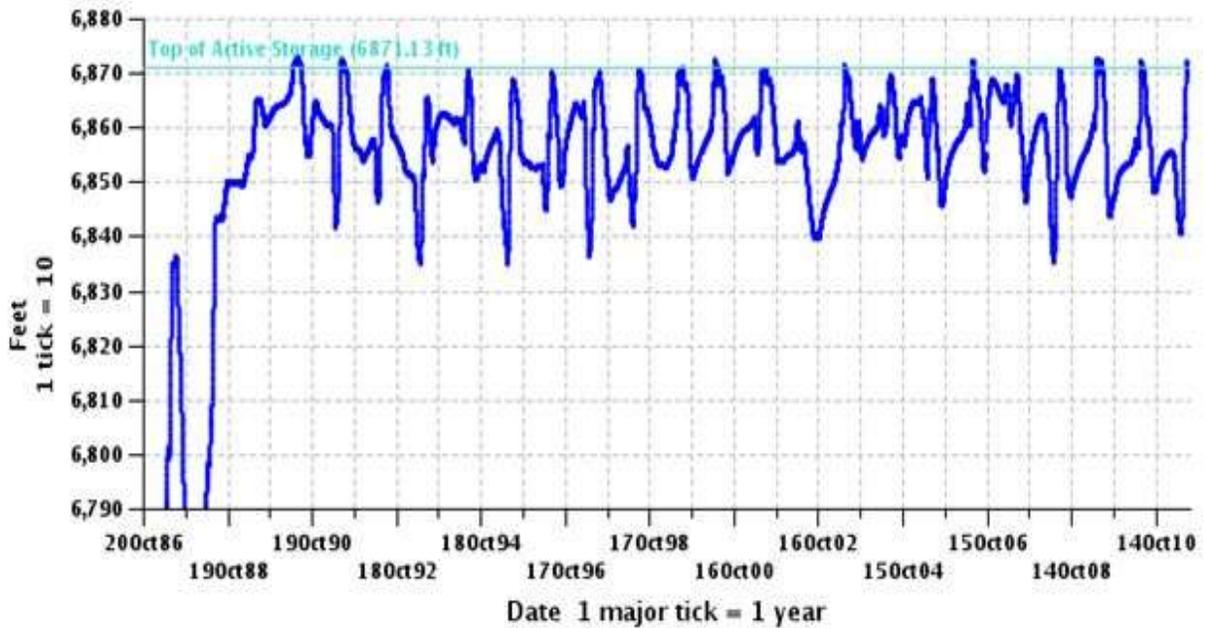


Figure 2. Reservoir elevations 1986-2010.

Table 5. Mean, maximum, and minimum monthly flows in Uncompahgre River downstream from Ridgway Reservoir and maximum reservoir elevation, 1989-2010 (source-USGS).

YEAR	Monthly mean in cubic feet per second (cfs)												Max reservoir Elevation (ft)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1989	56.6	59.0	75.3	133.0	158.8	198.6	185.9	188.3	98.5	60.5	43.1	41.9	6865
1990	42.0	40.5	39.3	36.8	210.7	529.7	347.9	249.5	101.1	55.4	90.2	94.8	6872
1991	76.2	77.4	77.7	381.4	326.8	238.8	363.9	275.1	238.5	106.7	95.6	90.3	6872
1992	41.3	41.0	81.0	380.0	272.5	392.5	439.4	534.8	178.5	115.0	108.5	105.5	6871
1993	74.1	70.9	156.0	278.6	313.2	448.0	447.5	287.1	68.1	74.9	73.7	80.5	6865
1994	72.1	76.4	96.7	168.1	406.5	421.5	348.3	296.4	122.5	124.1	70.4	48.9	6870
1995	48.2	49.2	178.8	352.2	492.8	589.2	846.1	514.4	394.8	166.4	100.0	89.2	6870
1996	70.5	71.4	72.9	283.6	291.7	355.4	360.0	278.2	81.9	75.4	78.3	53.8	6870
1997	76.5	93.9	167.8	559.9	510.4	605.6	530.0	470.6	439.1	307.5	102.4	74.4	6870
1998	47.7	39.9	40.0	284.7	423.0	208.4	387.1	296.9	163.3	181.2	165.4	104.2	6871
1999	74.9	79.0	74.5	73.7	253.0	651.8	563.6	532.5	455.5	175.3	48.4	50.9	6870
2000	49.4	48.1	47.0	60.2	456.7	445.0	300.3	228.5	97.1	68.6	58.4	52.2	6871
2001	52.0	51.7	51.3	221.2	299.1	384.3	326.6	234.4	220.0	187.4	66.0	54.6	6870
2002	48.0	47.7	46.2	101.3	194.5	205.4	154.3	130.9	131.6	88.9	31.1	30.7	6861
2003	30.0	30.0	28.9	36.8	218.9	514.6	282.1	237.3	145.9	189.7	46.8	44.5	6871
2004	45.6	45.7	71.2	278.2	348.2	370.4	335.6	305.4	132.7	146.6	30.8	54.0	6869
2005	74.2	77.0	98.9	267.7	402.9	576.8	568.3	420.8	163.6	97.8	50.6	48.5	6868
2006	48.0	48.8	49.2	77.9	300.6	392.3	334.5	367.6	195.3	46.0	57.6	98.3	6872
2007	94.6	94.0	92.3	275.8	423.8	607.7	535.8	402.7	151.6	76.4	45.9	45.1	6869
2008	50.0	106.8	229.7	426.3	359.0	519.5	662.9	530.4	211.0	71.3	49.5	49.8	6870
2009	53.4	54.1	53.6	184.6	571.2	617.2	483.5	354.7	78.5	57.7	43.0	42.6	6872
2010	45.8	50.0	50.0	237.4	288.6	692.7	400.0	360.8	215.5	63.2	51.3	52.6	6872
Mean of monthly flow	58	61	85	232	342	453	418	341	186	115	68	64	
Maximum monthly flow	105	94.6	107	230	560	571	693	846	535	456	307	165	
Minimum monthly flow	30.7	30.0	30.0	28.9	36.8	159	199	154	131	68.1	46.0	30.8	

ENERGY AND SOCIOECONOMIC CONDITIONS

Existing Conditions: There are no hydropower facilities at Ridgway Dam at the present time. Energy needs in the area are projected to increase in the future. The Project area is located in the Northwest Power Pool Area of the Western Electric Coordinating Council region of the North American Electric Reliability Council. The peak demand and annual energy requirements for the area are projected to increase at an average annual compound rate of 1.9 to 2.0 percent over the 10-year planning period of 2007 through 2017 (Tri-County 2010).

Water supplies from Ridgway Reservoir are important to the economies of Delta, Montrose, and Ouray Counties. Irrigation water from the reservoir provides supplemental supplies to farm fields in Delta and Montrose Counties; and municipal and industrial water serves as a reliable supply to these counties and Ouray County.

Tri-County is responsible for operating and maintaining Ridgway Dam and Reservoir. Tri-County receives revenues from water sales, tap fees, and property taxes to fund operation and maintenance, debt payment, and capital improvements.

With over 300,000 recreation visits per year, Ridgway State Park has become important to the local economy of both Ouray and Montrose Counties.

Impacts: The hydropower project would produce 22,600 megawatt-hours (MWh) of energy per year and would help meet increasing regional power demands in the future. The Project is within the service area of San Miguel Power Association (SMPA), an affiliate of Tri-State. Tri-State is a wholesale electric power supplier owned by the 44 electric cooperatives that it serves. Tri-State generates and transmits electricity to its member systems throughout a 200,000 square-mile service territory across Colorado, Nebraska, New Mexico and Wyoming. Power from the proposed Project would be distributed through Tri-State facilities. Potential customers of the Ridgway power include Tri-State, the City of Aspen, Colorado and SMPA.

The electricity generated by the Project would provide Tri-County a source of revenue that can be used to defray annual operating expenses, may assist in the repayment of the Dallas Creek Project, and may provide the utility that ultimately purchases the power an opportunity to help diversify its generating portfolio and to meet legislatively-mandated requirements for renewable energy sources. While the lease of power privilege has a 40 year term, the life of the Project is expected to extend well beyond 50 years and could thus provide Tri-County both a short-term and a long-term reliable revenue stream. According to Tri-County initial years revenues could be relatively small (<\$100,000), dependent on financial terms of interest and amortization schedule; but the Project should produce positive cash flow once operations start. After amortization (possibly 20-30 years), the Project would produce average annual revenue in the order of \$1 million, in 2009 dollars (Tri-County 2010).

Tri-County does not predict additional permanent staff to operate or maintain the new hydropower facilities. There would be short-term employment and spending on goods, services, and materials during the construction period with an overall increase in the level of income in the county during the construction phase. This would benefit local communities and businesses, as well as increase taxes collected on these purchases.

There would be minor impacts to recreation during the construction phase but overall visitation is not expected to be affected and there should be no long-term impact on visitor numbers or the quality of the recreation experience.

Water supplies from Ridgway Reservoir for municipal, industrial, and recreation purposes would not be affected by hydropower development.

FISH, WILDLIFE AND VEGETATION

Existing Conditions: There are several plant communities in the Project area including: pinon-juniper woodland, sagebrush shrubland, cottonwood forest, mountain shrubland, and ponderosa pine woodland. Wetlands with willows, cattails, water sedge and horsetails exist along the Uncompahgre River downstream from the dam; however, there are no wetlands in the Project impact area.

The construction area for the power facilities and substation is a graveled area without vegetation. Vegetation along the powerline route is primarily grasses and rabbitbrush/sagebrush with scattered pinon and juniper trees.

More than 140 species of migratory and resident birds have been identified in the park, including many species of waterfowl and shorebirds attracted to the reservoir (Colorado State Parks 2011). Raptors are common along the Uncompahgre River including wintering bald eagles, osprey, and red-tailed hawks. Mule deer and occasionally elk are common in the Project area. The powerline route provides winter range for big game.

Ridgway Reservoir is managed as a sport fishery by the Colorado Division of Parks and Wildlife and has been stocked with rainbow trout, brown trout, kokanee salmon, and splake. Rainbow trout are the primary species stocked with stocking rates in recent years ranging from 40,000 to 70,000 fish annually. In addition, longnose sucker, largemouth bass, green sunfish, and yellow perch live in the reservoir. Ridgway Reservoir provides good angling for stocked rainbow trout, small yellow perch, and an opportunity at trophy-sized brown trout. The reservoir's potential as a sport fishery is limited, however, because of low productivity and because much of the fish biomass is tied up in non-game fish such as longnose suckers and stunted yellow perch. Because of the low productivity and competition with suckers and perch, the growth and survival of young trout is low (Colorado Division of Wildlife 2010).

Prior to construction of Ridgway Dam, the Uncompahgre River was a very poor fishery (Colorado Division of Wildlife 1975). The Uncompahgre River downstream from Ridgway Dam has now become a popular tailwater fishery with brown trout, rainbow trout, and cutthroat trout maintained by a stocking program of the Colorado Division of Parks and Wildlife.

Approximately 1.3 miles of the river are open to public fishing downstream to the Cow Creek confluence. Extensive rock and log improvements along the river have increased habitat for trout; however, the fish habitat and fish populations are still limited by several factors:

- Low winter flows-Colorado Division of Parks and Wildlife recommends at least 50 cfs based on instream flow studies (Colorado Division of Wildlife 2011).
- Nitrogen supersaturation in waters released from Ridgway Dam causes Gas Bubble Trauma in trout (Frizel and Hiebert 2004 and Frizel and Sechrist 2006).
- Lowering winter flows affect brown trout reproduction and recruitment-unfavorable flows can occur during fall spawning of brown trout and spring fry emergence of brown and rainbow trout.

Table 5 in the Dallas Creek Project operations section of this EA previously summarized river flow data downstream from Ridgway Dam. Minimum flows established under the Dallas Creek final environmental impact statement (EIS) have been met³. However, as can be seen from the table, winter flows have occasionally fallen below the current Division of Parks and Wildlife recommendations cited above of at least 50 cfs. This reduces available habitat and exacerbates nitrogen problems.

High dissolved gas levels, in particular nitrogen supersaturation in the river, can be harmful as this affects gas concentrations in the bloodstream of fish and can cause gas bubbles to come out of solution creating harmful bubbles in the bloodstream and other metabolic effects. This can result in acute or chronic Gas Bubble Trauma (GBT) or “gas bubble disease.” GBT has been observed in trout and mottled sculpin downstream from Ridgway Dam.

Nitrogen supersaturation can occur during use of the existing outlet, bypass, and possibly the spillway due to their designs. Gas supersaturation and GBT generally decrease downstream through the public fishing area as gas levels are dissipated. Deeper pools provide some refuge for fish and thus higher flows which create deeper pools generally decrease the incidence or severity of GBT. Highest incidence and severity of GBT in fish is reported during low flow periods (Colorado Division of Wildlife 2011, Wahl 2011).

³ Dallas Creek final EIS: For fishery maintenance on the Uncompahgre River, minimum flows of 75 second-feet from May 16 to October 31 and 45 second-feet from November 1 to May 15 would be maintained below the confluence of Cow Creek and the Uncompahgre River to the Montrose and Delta Canal Diversion. Flows of 30 second-feet would be maintained between Ridgway Dam and Cow Creek...except during extremely dry years when the flow from Ridgway Reservoir would be restricted to inflow to the reservoir.

The fishery is generally maintained by stocking; however, there is some natural recruitment. Brown trout generally spawn in October and if river flows drop significantly after eggs are deposited; the eggs can be lost through drying out or freezing. As seen in Table 5, this sometimes occurs due to late fall water needs or snowpack conditions. High spring flows can also affect survival of fry in the river.

Impacts: Vegetation impacts would be limited to work areas along the powerline. This would be limited and temporary as the plan is to replace existing poles. Vegetation in the impact area is sagebrush, rabbitbrush, and grasses.

Wildlife impacts would be temporary. Replacement of the existing power distribution line with taller poles for both transmission and distribution would cause disturbance and reduce wildlife use, including big game, in the immediate vicinity during construction. The powerline would be designed raptor-proof to avoid electrocution of raptors. The Migratory Bird Treaty Act will be complied with during powerline construction either by doing construction outside of the nesting period or by inventory/avoidance during the nesting period.

Potential use of the stilling basin area would be reduced during construction of the powerhouse and penstock, impacting species such as mergansers and bald eagles that might hunt in the stilling basin area.

As indicated previously, the hydropower project would not affect reservoir or river water operations. In other words, existing flow regimes would be followed and there should be no significant change in physical habitat for downstream or reservoir fisheries.

There would be short-term (several days) water quality impacts during construction or placement and removal of the cofferdam and during initial testing of the powerplant as silt could be stirred up and enter the streamflow. Construction techniques and the limited silt in the impact area would help control this impact.

Operation of the hydropower facilities is expected to reduce nitrogen supersaturation problems with the downstream fishery. Wahl (2011) indicated:

“A properly designed powerplant should not introduce air into the flow under normal flow conditions, and should thus be a benefit, since it will draw water off of the outlet works penstock before the flow reaches the points where air is presently being drawn in. The water entering the powerplant will have the same dissolved gas characteristics as when it left the reservoir. Since the discharge from the draft tube of a properly designed powerplant occurs well below the tailrace water surface, it does not cause additional air entrainment and will not increase dissolved gas levels. The powerplant would thus pass water through the dam without creating aerated flow and without changing the dissolved gas concentration. In addition, the use of the powerplant will likely cause some reduction of the use of the bypass and outlet works systems, which do create air entrainment and

increase dissolved gas (at either the outlet works stilling basin entrance or downstream from the jet-flow gate).”

When reservoir releases exceed powerplant flows, during reservoir spilling, or at times the power facilities are down, nitrogen supersaturation sources would remain, so the hydropower project is expected to improve conditions but not entirely eliminate the problem. Reclamation will initiate a monitoring program of nitrogen levels before and after project construction. Monitoring will occur under different flow levels and different operational situations.

Overall, the hydropower facility has the potential to improve downstream fisheries at Ridgway State Park and should have no effect on the reservoir fishery.

RECREATION AND AESTHETICS

Existing Conditions: Ridgway State Park includes three recreation areas constructed as part of the Dallas Creek Project. The largest area is the Dutch Charlie Recreation area located along the eastern side of Ridgway Reservoir. The Dallas Creek area is located at the upper end of the reservoir and the “Pa-Co-Chu-Puk” or Cow Creek area is located along the Uncompahgre River downstream from Ridgway Dam. Recreation is managed by the Colorado Division of Parks and Wildlife and recreation activities include camping, boating, fishing, hiking, picnicking, and nature study. Visitation to the state park is 300,000 to 400,000 visits annually.

The Cow Creek area downstream from the dam is the only recreation area potentially affected by the hydropower project. This area includes camping and day use facilities and the river here is a popular year-round stream fishing destination. Based on 2006-2007 creel surveys, the river receives 7-8,000 angler days annually (Colorado Division of Wildlife 2009). Habitat improvements and special fishing regulations have been implemented on the river. Aesthetics is a key resource of Ouray County in general and Ridgway State Park specifically. Ouray County is very concerned with visual impacts in the county and in views from U.S. Highway 550.

Impacts: The hydropower project is planned to operate under existing reservoir operations and thus changes in reservoir content or downstream streamflows that might affect recreation activities are not expected. As discussed previously in this EA, the hydropower facility may reduce existing water quality problems with nitrogen supersaturation and this may improve the fisheries in the river and associated recreation.

Recreation facilities would remain open during construction of the hydropower facility and access to the Cow Creek area should not be significantly affected. There would be periodic delivery of over-sized loads delivered to the work site. These deliveries would be coordinated with State Park personnel in advance to avoid conflicts with recreation access.

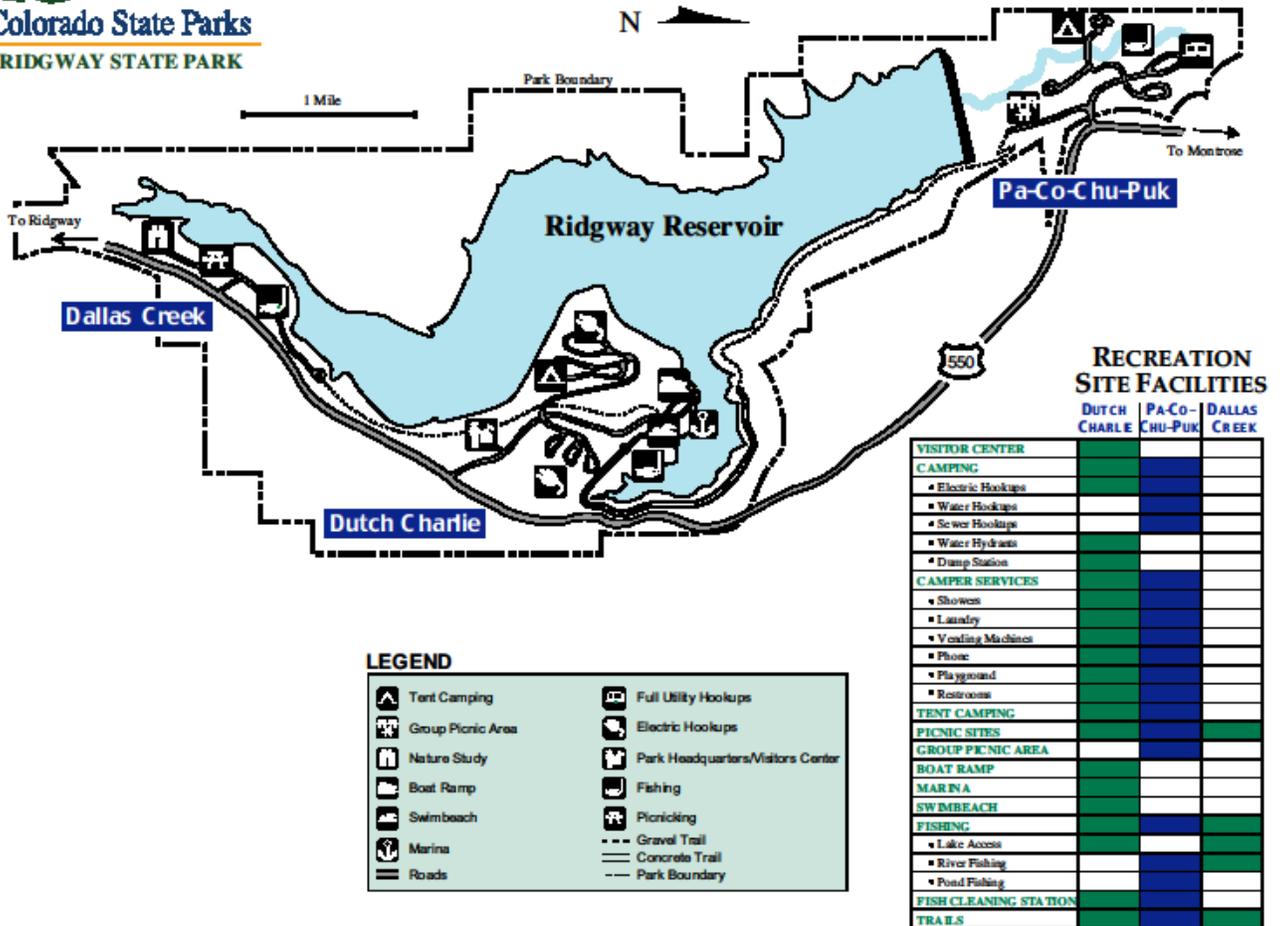


Figure 3. Ridgway State Park.

Most construction would occur in areas at the dam that are already closed to the public and are out of sight of recreation visitors. The primary construction area would be approximately 1,700 feet from the nearest recreation facility and 2,500 feet from the campground. As seen in Figure 4 the distance, topography, and vegetation between the hydropower plant location at the foot of the dam and the nearest major recreation site would minimize any visual or sound impacts. In addition non-reflective construction material would be used with colors that blend with the surroundings.

The new powerline would be constructed in the location of an existing powerline which would be incorporated into the new line. The new wooden power poles would be taller than the existing poles. Construction of the line would require closure of the Enchanted Mesa recreation

trail for a few days during construction and the taller wooden poles would be more visible than the existing poles.

Location of the facilities, including the substation, at the base of Ridgway Dam would reduce the potential for aesthetic impacts.

Overall there is no long-term effect on the quantity or quality of recreation at Ridgway State Park.



Figure 4. Looking south across the day use area toward Ridgway Dam. Star shows approximate powerplant location.

THREATENED AND ENDANGERED SPECIES

Existing Conditions: Table 6 includes species potentially occurring in Ouray County or in downstream rivers that are listed under the Endangered Species Act as endangered, threatened, or a candidate for listing.

There are no known special status species in the vicinity of the proposed Project. The bonytail, Colorado pikeminnow, humpback chub, and razorback sucker are found in the Gunnison or Colorado rivers downstream. Potential habitat for the yellow-billed cuckoo occurs along the Uncompahgre River several miles downstream from Ridgway Dam.

Table 6. Special status species in Ouray County.

Common Name	Scientific Name	Status	General habitat
Bonytail	<i>Gila elegans</i>	Endangered	Colorado River and major tributaries
Canada lynx	<i>Lynx canadensis</i>	Threatened	High elevation forest
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	Threatened	River benches, xeric slopes with cobbles, pebbles
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	Endangered	Colorado River and major tributaries
Greenback cutthroat trout	<i>Oncorhynchus clarki stomias</i>	Threatened	Small, high elevation streams
Humpback chub	<i>Gila cypha</i>	Endangered	Colorado River and major tributaries
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered	Colorado River and major tributaries
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Riparian, cottonwood woodland
Uncompahgre Fritillary butterfly	<i>Boloria acrocneuma</i>	Endangered	High elevations, snow willow areas
North American wolverine	<i>Gulo gulo luscus</i>	Candidate	Mountainous wilderness areas

Generated by the Information, Planning, and Conservation (IPaC) System of Fish and Wildlife Service on 07/19/2011

The Fish and Wildlife Service (1979) issued a jeopardy biological opinion for the Dallas Creek Project on November 16, 1979. The reasonable and prudent alternative was the release of water from the Dallas Creek Project or from other projects that regulate flows in the Gunnison River and the Colorado River in order to replace the 17,200 acre-feet (af) depletion caused by the Dallas Creek Project. The biological opinion stated that it may be necessary that an equal volume be released to the Gunnison River from one or more projects, but studies may reveal that flow releases totaling less than 17,200 af annually may be adequate for the fishes to survive in the areas and in the numbers necessary for recovery. The biological opinion identified the Aspinall Unit (Blue Mesa Reservoir) as the best source of water for such releases. In January 2009, Reclamation requested reinitiation of consultation for the Dallas Creek Project in conjunction with consultation on the Aspinall Unit.

In accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), the Fish and Wildlife Service (2009) issued a Programmatic Biological Opinion (PBO) for the Gunnison River Basin and the operation of the Aspinall Unit and the reconsultation for the Dallas Creek and Dolores Projects and their effects on the endangered Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and razorback sucker (*Xyrauchen*

texanus) and their critical habitats. Consultation for the Gunnison River basin includes operation and depletions associated with existing Reclamation projects, other Federal projects and existing non-federal water depletions. This consultation concluded ESA consultation on the Dallas Creek Project.

Impacts: There should be no effect on endangered or threatened species or their habitat due to the development of hydropower at Ridgway Dam. There are no species present in areas that would be affected by construction and there would be no significant changes in river flows or water quality that could affect the downstream endangered fish. There would be no change in riparian habitat downstream that could potentially support the yellow-billed cuckoo.

INDIAN TRUST ASSETS & ENVIRONMENTAL JUSTICE

Indian trust assets (ITAs) are legal interests in property held by the United States for Indian Tribes or individuals. Reclamation and other Federal agencies share the responsibility to protect these assets. There are no potentially affected ITA's in the Project area and therefore no impacts are projected.

Executive Order 12898 on Environmental Justice provides that Federal agencies analyze programs to assure that they do not disproportionately adversely affect minority or low income populations or Indian Tribes. There are no potentially affected minorities or low income populations or Indian Tribes affected by the Project; therefore no impacts are predicted under alternatives.

CULTURAL RESOURCES

Existing Conditions: Cultural resource surveys and research have been completed for the Dallas Creek Project. The "Old Dallas Historical Archaeological Program" documented extensive prehistoric and historic use of what is now Ridgway Reservoir and Ridgway State Park (Buckles et al. 1986). The report presents a synthesis of prehistoric and historic lifeways of the area's past inhabitants. There are no sites recorded within the area of potential effect of the hydropower facility.

Impacts: There have been no cultural resources identified that could be impacted by the proposed action. The State Historic Preservation Officer (2011) concluded that "Based on the nature of the proposed project and previous disturbances in the project vicinity, it is our opinion that a finding of no historic properties affected is appropriate for the proposed project and the project may proceed without additional cultural resource inventory." Contract specifications will require halting work if unidentified cultural/archeological resources are discovered during construction until the resource can be evaluated under the National Historic Preservation Act and

the terms of the National Register of Historic Places eligibility criteria in consultation with the State Historic Preservation Officer.

AIR QUALITY AND NOISE

Existing Conditions: Air quality is generally excellent in the Project area and there are no air quality non-attainment areas in the vicinity. Agricultural operations and construction activities can be sources of dust pollution during wind events in the general region. There are no significant noise sources or problems in the Project area. The primary source of noise in the Project area is traffic along U.S. Highway 550. The Uncompahgre River itself along with campground noises are the major sources within the recreation area downstream from Ridgway Dam.

Impacts: There would be short-term dust impacts during excavation work although this would be limited because most access and storage areas are paved and dust control would be followed during construction. There would be no long-term adverse impacts on air quality due to operation and maintenance of the hydropower facilities. As with other hydropower projects, there would be an offset of emissions of carbon dioxide and other green house gases. Carbon dioxide emissions would be reduced by an estimated 40,000,000 pounds per year.

There would be minor noise impacts during excavation for the powerplant and from construction traffic. During operation, the turbines and generators would produce machinery noise; however, such equipment would be fully enclosed and located a considerable distance from recreation facilities.

CUMULATIVE IMPACTS

Cumulative impacts are impacts on the environment, which result from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The tailwater fishery developed from the original construction of Ridgway Dam may benefit from the proposed hydropower development due to water quality improvements. Overall, the construction of the hydropower plant should not have significant cumulative impacts.

SUMMARY AND ENVIRONMENTAL COMMITMENTS

In summary, the primary effect of the proposed action would be to develop a renewable energy resource. There would be short term economic benefits due to construction expenditures and employment. In the long-term, Tri-County and its members would benefit from income generated from the Project. Recreation impacts would be minor and temporary and downstream fishery habitat may improve as water quality is improved.

Environmental Commitments

The following measures will be implemented and followed by Tri-County and its contractors. The LOPP requires that these commitments be followed and met. An environmental commitment plan will be prepared to document how environmental commitments and mitigation measures will be implemented during design, construction, and operation of the Project.

Design and Construction:

- Approval of final designs by Reclamation will be necessary prior to any construction.
- Construction equipment and supply staging areas will be located within existing disturbed areas.
- Erosion-control Best Management Practices for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution during excavation and construction for the powerplant.
- Excavated material and cofferdam material will be disposed of in previously disturbed areas approved by Reclamation.
- Dust control will be undertaken in all areas disturbed by construction.
- Dewatering of the stilling basin will be conducted in such a manner as to prevent sediment and other pollution from entering the river downstream.
- A hazardous spill plan will be required from the contractor prior to the start of construction indicating actions taken in case of a spill and preventive measures.
- The facility will incorporate industry standard containment measures to prevent the release of any oils to the environment in the event of equipment leakage or failure.
- Streamflows will be maintained at normal levels during construction with either the river bypass or outlet works available for use at all times.
- Tri-County or its contractor will be responsible for obtaining any required permits under the Clean Water Act (Section 402 and 404 permits) or any other federal, state or local permits.
- In the event of discovery of evidence of possible cultural or paleontological resources, the contractor shall immediately cease all ground-disturbing activities in the vicinity of the discovery and notify Tri-County and Reclamation and work shall not be resumed until approved by Reclamation.

- Existing recreation area access will be maintained at all times with the exception that the Enchanted Mesa Trail may be closed for public safety during powerline construction. Delivery of heavy equipment, pipe material, powerplant equipment and other large truck loads will be coordinated with Colorado Parks and Wildlife in advance of delivery to avoid any potential safety and traffic problems at the entrance to Ridgway State Park. Periods of high recreation traffic will be avoided by these large truck loads. Traffic control will be provided by the contractor when necessary for public safety.
- The Migratory Bird Treaty Act will be complied with during powerline construction either by doing construction outside of the nesting period or by inventory/avoidance during the nesting period.
- Powerline will be designed raptor-proof.
- Any land disturbed by powerline construction will be smoothed, treated for erosion, and reseeded.
- Powerhouse and substation will be non-reflective and painted to blend with the color and architecture of the surrounding existing structures or background.
- Substation will be located at the dam or designed to minimize visual impacts.
- Streamflows will be maintained during testing of the powerplant.
- If there is unanticipated damage to roadways in Ridgway State Park due to construction traffic, the damage will be repaired by Tri-County or its contractor.

Operations:

- Daily fluctuation of releases for the purpose of providing peaking power will not be permitted.
- The hydropower facility will be operated based on historic release patterns from the reservoir and the Dallas Creek Project water supply will have priority of water use.
- Minimum streamflows and inactive reservoir storage called for in the Dallas Creek final EIS will be maintained.
- The hydropower facilities will be designed and operated so that streamflows (quantity and timing) will not be interrupted in the event that powerplants go off-line; and the Project will be designed and operated so that streamflows are not interrupted during periodic gate exercises or tests as described in the EA.
- Nitrogen supersaturation levels will be monitored by Reclamation before and after the hydropower is developed.
- Irrigation water will be delivered to the State Park through existing or modified facilities.

CHAPTER 4 -- CONSULATATION AND COORDINATION

GENERAL

Scoping was initiated in April 2011 through news release, mailings, and email contacts. A public scoping meeting was held in Ridgway, Colorado in April. Written and verbal comments were received from the public and interested agencies and local governments. Consultation was conducted with the Colorado State Historic Preservation Officer under Section 106 of the National Historic Preservation Act and with the Fish and Wildlife Service under the Endangered Species Act. The Colorado Division of Parks and Wildlife was contacted concerning potential effects of the proposal on fish and wildlife and recreation resources.

DISTRIBUTION LIST

News Releases announced the availability of the draft and final EA, and the EA's have been placed on Reclamation's website at: www.usbr.gov/uc/ under environmental documents. The draft and final EA was distributed to the following list and the EA was also distributed electronically to email addresses collected during the scoping process and during the draft EA review.

Colorado State Representatives Coram, Scott, Wilson, and Bradford
Colorado State Senators King, Schwartz, and Roberts
Congressman Scott Tipton, Grand Junction, CO
Senator Michael Bennet, Montrose, CO
Ute Mountain Ute Indian Tribe, Towaoc, CO
Southern Ute Indian Tribe, Ignacio, CO
Colorado Division of Water Resources, Montrose, CO
Colorado Division of Parks and Wildlife, Montrose, Ridgway, Clifton, CO
Colorado State Historic Preservation Officer, Denver, CO
Colorado Water Conservation Board, Denver, CO
Colorado Water Resources and Power Development Authority, Denver, CO
Tri County Water Conservancy District, Montrose, CO
Uncompahgre Valley Water Users Association, Montrose, CO

Shavano Conservation District, Montrose, CO
Colorado River Water Conservation District, Glenwood Springs, CO
Project 7 Water Authority, Montrose, CO
Chipeta Water District, Montrose, CO
Menoken Water District, Montrose, CO
San Miguel Power Association, Ridgway, CO
Tri-State Generation and Transmission Association, Denver, CO
Ouray County Commission, Ouray, CO
Delta County Commission, Delta, CO
Montrose County Commission, Montrose, CO
Town of Ridgway, Ridgway, CO
Ouray County Land Use Department, Ridgway, CO
City of Delta, Delta, CO
Town of Olathe, Olathe, CO
City of Montrose, Montrose, CO
Montrose Daily Press, Montrose, CO
Telluride Watch, Telluride, CO
Ouray Plain Dealer, Ouray, CO
Daily Sentinel, Grand Junction, CO
Trout Unlimited, Delta, Boulder, Grand Junction, and Montrose, CO
Western Resource Advocates, Boulder, CO
High Country Citizens Alliance, Crested Butte, CO
Friends of Ridgway State Park, Ridgway, CO
Fish and Wildlife Service, Grand Junction, CO
U.S. Geological Survey, Grand Junction, CO
Corps of Engineers, Grand Junction, CO
U.S. Environmental Protection Agency, Denver, CO
Western Area Power Administration, Montrose, CO
Bureau of Land Management, Montrose, CO

COMMENTS ON THE DRAFT EA

The draft EA was made available for comment during a 30 day comment period in October, 2011. Comments on the draft were received from:

- Colorado Division of Parks and Wildlife
- Trout Unlimited
- Ouray County
- Western Resource Advocates
- Tri-County Water Conservancy District
- U.S. Fish and Wildlife Service
- High Country Citizens Alliance
- State Historic Preservation Officer

Colorado Division of Parks and Wildlife:

Comment: The Division requested that construction traffic control be coordinated with them to avoid conflicts with recreation users at Ridgway State Park. Also concerned with any impacts on access to public dry storage area. Fishing downstream from Ridgway Dam is an important recreation activity in the winter as well as the summer and should be protected.

Response: Access to the dry storage area will not be affected. An environmental commitment has been added to the EA to coordinate construction access with state park managers to avoid traffic conflicts and safety concerns. Winter flows will be maintained during construction to protect the fishery. The EA recognizes that there will be short periods of increased turbidity associated with construction and removal of the cofferdam.

Trout Unlimited:

Comment: TU is generally in favor of the proposed action and renewable energy development. Winter flow levels and nitrogen supersaturation are concerns downstream from Ridgway Dam. EA needs to be made clear that environmental commitments listed are requirements under the LOPP; the commitments are unclear in the draft EA.

Need to clarify what is meant by “maintaining releases during construction”. Does this mean normal releases maintained or a bare minimum maintained. The EA should discuss and evaluate the possibility of increasing the minimum winter flow requirement.

Supports commitments to not allow peaking power, daily stream fluctuations, and interruptions of streamflows; cannot support the project without these commitments.

Response: The wording on environmental commitments has been clarified to show that the commitments are requirements under the LOPP. Releases will be maintained during construction and the commitment is to maintain these at normal levels, in other words at levels that would occur if construction was not occurring. Commitments to avoid peaking power, daily fluctuations, and flow interruptions are maintained in the final EA.

Increasing the minimum flow requirements from those included in the Dallas Creek Project EIS will not be considered as part of this hydropower EA. Reclamation will continue to work with Colorado Parks and Wildlife and Tri-County on winter flows.

Ouray County:

Comment: Prior to construction, completion and approval of a Location and Extent application from Ouray County must be completed. The project area is within the Ouray County Visual Impact Corridor. As such, Ouray requests that structures visible from the highway take the following into consideration: maximum height of 35 feet, colors that blend with natural surroundings, and use of non-reflective material.

Response: The powerline connection to the existing powerline along Highway 550 will be visible from the motorists; other hydropower structures will not be visible from the highway. Tri-County will be responsible for completing the Location and Extent application prior to construction.

Western Resources Advocates:

Comment: Overall pleased with plan and environmental commitments; however, it seems there is a missed opportunity to simultaneously improve aquatic habitat and potentially generate more power (by increasing winter releases). Maintaining winter flows at 50 cfs or higher would be beneficial. Recognizes that project may improve water quality conditions and recommends monitoring of nitrogen saturation levels; this may provide data for other hydropower projects and may encourage higher winter flows.

More consideration of impacts of transmission line on vegetation and wildlife should be included in the final EA and long-term effects of climate change needs to be considered.

Response: Reclamation recognizes that winter flows of 50 cfs or higher are beneficial to the downstream fishery. However, the minimum flow requirements under the EIS for the Dallas Creek Project will not be reviewed or changed under this EA. These requirements have been added to Chapter III, “Fish, Wildlife, and Vegetation.” The power facility will operate under existing flow requirements and regimes. Reclamation agrees that monitoring of nitrogen supersaturation before and after hydropower operations is appropriate and has added this to the project plan and list of environmental commitments.

Because the new powerline will be in the location of an existing line, impacts will be minimal. Revegetation commitments have been added to the final EA.

Tri County Water Conservancy District:

Comment: Comments clarified design information on penstocks and on the initial cost estimate. Suggested that sentences referring to early and late years of revenue be deleted as they are speculative. Need to clarify that minimum flows are flows required under the Dallas Creek Project EIS. Suggestions made on clarifying commitment that facilities blend with background. Also official name of project is now “Tri-County Water Hydropower Project.”

Suggested changing environmental commitment referring to peaking power to “Daily fluctuation of releases for the purpose of providing peaking power will not be permitted.”

Response: The final EA has been updated as suggested in the comments.

Fish and Wildlife Service:

Comment: The EA concluded that there would be no effect to any threatened or endangered species. Concurrence from the Service is not necessary.

Response: The final EA completes compliance with the Endangered Species Act on this project.

High Country Citizens' Alliance:

Comment: Generally supportive of the project; however encourages Reclamation to look for ways to increase winter flows in future evaluations of reservoir operations. Commitments to not permit peaking power operations need to be maintained. Streamflows should be maintained during periods when hydropower plant goes offline. Suggests water quality monitoring to determine effects on nitrogen supersaturation.

Response: Minimum streamflow commitments will remain as presented in the Dallas Creek final EIS. These are not specified in Chapter III of the final EA, "Fish, Wildlife, and Vegetation" section. Peaking power commitments are retained in the final EA and the relationship of the commitments and the LOPP clarified. Water quality monitoring has been added to the project.

State Historic Preservation Officer:

Comment: Based on the nature of the proposed project and previous disturbances in the project vicinity, it is our opinion that a finding of no historic properties affected is appropriate for the proposed project and the project may proceed without additional cultural resource inventory. If resources discovered during construction, work should stop and resources evaluated.

Response: Reclamation concurs. Environmental commitment included to halt construction in event of discovery of cultural resources.

REFERENCES

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Attachment A-Draft Lease of Power Privilege

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LEASE OF POWER PRIVILEGE
BETWEEN
THE UNITED STATES OF AMERICA
AND
TRI-COUNTY WATER CONSERVANCY DISTRICT
FOR
THE DEVELOPMENT OF HYDROELECTRIC POWER
ON THE RIDGWAY DAM

THIS Lease of Power Privilege (LOPP), is made this _____ day of _____, 2011 (the "Effective Date"), pursuant to the Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto, and particularly the Act of August 4, 1939 (53 Stat. 1189) as amended, the Colorado River Basin Project Act of September 30, 1968 (Public Law 90-537), as a participating project under the Colorado River Storage Project Act of April 11, 1956 (Public Law 84-485) (CRSP), between the UNITED STATES OF AMERICA ("United States"), acting by and through the Bureau of Reclamation; and the TRI-COUNTY WATER CONSERVANCY DISTRICT ("District"), a Water Conservancy District organized and existing under laws of the State of Colorado, having its principal place of business at Montrose, Colorado.

1. PREAMBLE

- a. WHEREAS, the United States has constructed the Dallas Creek Project (Project), a Federal Reclamation Project, residing in portions of three Counties (Delta, Montrose and Ouray), Colorado, hereinafter called the "Project", which was authorized by the Secretary of the Interior on September 30, 1968; and
- b. WHEREAS, construction of the Ridgway Dam was completed in 1987 and Ridgway Reservoir was first filled in 1990; and
- c. WHEREAS, the initial contract between the United States and the District was dated January 14, 1977, Contract No. 7-07-40-L0273, under which the Project was transferred to the District for operation and maintenance under this contract; and
- d. WHEREAS, in accordance with a Memorandum of Understanding, dated November 6, 1992, between the Federal Energy Regulatory Commission and the Department of the Interior, it has been determined that authority for licensing hydroelectric power on the Dallas Creek Project rests with the Bureau of Reclamation; and
- e. WHEREAS, the request for proposals for hydroelectric power development on the Project was published in the Federal Register on June 2, 2010 (Volume 75, No. 105. Page 30852); and
- f. WHEREAS, based on the recommendation from the proposal review team, the Bureau of Reclamation has determined that the proposal submitted by the District be accepted and that negotiations should proceed for the lease of power privilege on Ridgway Dam.

NOW, THEREFORE, in consideration of the mutual and dependent stipulations and covenants herein contained, the parties to this Lease agree as follows:

2. DEFINITIONS

For the purpose of this Lease, the following definitions shall apply:

- (a) "Dallas Creek Project" or "Project" means those features and operation of the Dallas Creek Project authorized for construction by the Secretary of the Interior on April 11, 1956, under the provisions of the Colorado River Basin Project Act, as a participating project under the CRSP Act.
- (b) "Reclamation" means the Bureau of Reclamation, Department of the Interior.
- (c) "Facility" means a hydroelectric power facility, to be constructed at the Ridgway Dam, comprised of the complete unit for a hydroelectric power generation feature associated with the Ridgway Dam and consisting of, but not limited to, structures, turbines, generators, and corresponding water conduits, valves, transformers, circuit breakers, fences, poles, wires, and control and protection devices to the interconnection point for transportation, distribution and marketing of the Facility's output. "Facility" does not include the Ridgway Dam.

(d) "Leased Premises" means any interest in lands, roads, dam, and structures which the United States may hold, the use or occupancy of which are concurred in by Reclamation as reasonably necessary or appropriate for the construction, operation, or maintenance of the Facility, as depicted in the site plan attached hereto and incorporated by reference as Exhibit A.

(e) "Lease of Power Privilege" or "Lease" means the total agreement embodied in the combined terms and conditions of this Lease.

(f) "Lessee" means the District.

"Power Right" means the water right described in Article 2.(h), herein.

(g) "Project Water Rights" means:

(1) The rights of the Lessee to control all water rights for the Dallas Creek Project. The original storage rights were originally adjudicated to the Lessee in Case No. CA 2440 as Priority No. 47-5th.ad., dated November 16, 1956, in the amount of 223,048.14 acre-feet (AF). These storage rights were subsequently modified for the constructed Project.

a. In Case No. 94CW52 in Water Division 4, 84,602 AF was decreed absolute for irrigation, stock, power, municipal, industrial, fish culture, recreation, flood control and supplemental stream flows for fish culture and recreation purposes, with Priority No. 47. The balance of the 223,048.14 AF storage right was cancelled.

b. In Case No. 96CW139 in Water Division 4, a 300 cubic feet per second (cfs) conditional decree was granted for use in production of hydroelectric power.

c. In Case No. 96CW140 in Water Division 4, a second fill conditional decree for 84,602 AF was granted for irrigation, livestock, hydropower production, municipal, industrial, fish culture, recreation, and flood control.

d. In Case No. 04CW11 in Water Division 4, a second fill absolute decree for 84,602 AF was granted for recreation, piscatorial, and flood control uses; 7,262 AF for municipal and industrial uses; 11,143 AF for irrigation and stock uses. The balances of the second fill and the remaining available water for hydropower uses were decreed conditional with an appropriation date of November 6, 1956.

e. In Case No. 10CW88 in Water Division 4, the second fill decree was made absolute for an additional 1858 AF for municipal and industrial uses and for an additional 711 AF for irrigation and stockwater. The balances of the second fill and the remaining available water for hydropower uses (84,602 AF) were continued conditional.

(2) Any water from other sources that may from time to time be available for power generation.

(h) "Ridgway Dam" means the existing dam and reservoir, physical structures and appurtenances, as constructed on the Uncompahgre River.

3. LEASE OF POWER PRIVILEGE

(a) Subject to the conditions and terms herein set forth, the United States leases to the Lessee the opportunity or privilege to utilize the Leased Premises for the purpose of developing the Facility for generation and use and/or sale of hydroelectric power.

(b) No Federal funds will be provided by Reclamation or utilized by the Lessee to develop, construct, or operate and maintain the Facility pursuant to this Lease, unless acquired by a separate grant or loan.

4. TERM OF CONTRACT

This Lease shall be effective for 40 years from the date the Lease is executed unless terminated by mutual consent among the parties hereto or by default or cancellation under provisions of this Lease.

5. USE OF POWER

The Lessee will use or market the power generated at the Facility.

6. LEASE PAYMENTS TO THE UNITED STATES

(a) The Lessee shall make annual lease payments in the amount of 3 mills per kilowatt-hour of gross energy produced by the Facility, measured at the generator, to the United States for the use of the Leased Premises. Calculation of said payments will begin after the initial successful startup and testing of the generating equipment, or within twenty (20) days from the commencement of initial startup and testing of the generating equipment, whichever comes first, and then will continue throughout the term of the lease. In addition, during initial startup and testing, the Lessee shall make said annual lease payments for that portion of gross energy produced by the Facility that is sold and which results in a payment made for the energy produced. Lease payments shall be adjusted as provided in Article 6.(e) herein.

(b) Each payment shall be made on or before April 1 in each year for the total generation during the prior calendar year as reported in Article 13.(d) herein. Reclamation will send an invoice for lease payments to the Lessee at least 30 days prior to their due date.

(c) Lease payments to the United States shall reference this Lease by title and number. Reclamation will provide a billing document to the Lessee. Payment will be made payable to the "Bureau of Reclamation," and payment instructions will be followed as stated in the billing document, unless directed otherwise by the United States.

(d) Lease payments will be credited to the Upper Colorado River Basin Fund and applied as required by Section 5(c) of the CRSP Act, as amended.

(e) Beginning the first year after the Facility has generated electricity for five full years, the lease payment mill rate shall be increased annually by 3 percent, simple. The increase shall be effective January 1 of each year. The table of mill rates is attached hereto and incorporated herein as Exhibit B.

7. RECLAMATION EXPENSES

(a) The Lessee shall advance funds in minimum increments of \$10,000 (Incremental Advance) to Reclamation to pay for future expenses which may be incurred by Reclamation under this Lease. Expenses shall include an hourly rate, travel, materials, mailing, copying costs, and administration overhead costs at the then current rate, as incurred by Reclamation's personnel, contractors or consultants; provided, however, that no charge shall be assessed for information, services, or relationships that would normally be provided by Reclamation to the public at no charge. Reclamation expenses under this Lease may include, but are not limited to, the following:

- (1) Environmental compliance.
- (2) Inspections of the Facility called for by the United States, either routine or based upon a unique problem, major rehabilitation, or a reasonable concern for the integrity of a Federal structure or operation of other Facility features.
- (3) Preparation or review of technical studies.
- (4) Review of designs, specifications, legal and other documents.
- (5) Site visits and participation in meetings.
- (6) Copies of reports, drawings, and similar data.
- (7) Consultation, observation, review, and comment on tests of piping, valving, automated equipment, supervisory control systems, and any and all other aspects of construction, operation, maintenance and replacement that might impact the integrity of a Federal structure or environmental commitments.
- (8) Work necessitated by non-performance of the Lessee.
- (9) The expenses incurred in the event of failure of Federal structures resulting from operations and/or maintenance of the Facility.
- (10) All other administrative expenses incurred in the execution of the above-listed activities.

(b) The United States will establish a non-interest bearing account for the funds advanced by the Lessee; an initial advance of \$10,000 will be required upon execution of this Lease. The intent is that such account shall have at all times a minimum balance of \$5,000. At such time when funds in the account are anticipated to be reduced to or below \$5,000, the United States will request an Incremental Advance of funds as provided in Article 7.(a) herein. The United States will not pay or credit the Lessee for any interest. When performing

work identified in Article 7.(a) herein, the United States will furnish the Lessee, not less than on a quarterly basis prior to completion of the activity, an accounting of activity, an itemization of all expenses incurred under this Article, and a reconciliation of such expenses billed with the amounts requested under this Article. After completion of the activity an accounting of expenses will be furnished to the Lessee on an annual basis or upon request of further Incremental Advances.

(c) Each request for an Incremental Advance of funds under this Article shall be in writing and shall include a statement describing the anticipated use of the requested funds. Reclamation will discuss with the Lessee in advance of requesting funds to identify anticipated activities related to the Facility. The Lessee shall advance the requested funds within 30 days after receiving the request.

(d) Following the expiration, cancellation or termination of this Lease, Reclamation will determine its expenses associated with the Facility and submit a final accounting report to the Lessee within sixty (60) days after the date of expiration, cancellation or termination. The United States will refund to the Lessee any surplus in the account within 60 days after submitting the final accounting report. The Lessee shall pay any deficit in the account within 60 days after receipt of the final accounting report.

8. DISTRIBUTION OF REVENUES

All power revenues received by the Lessee from the Facility shall be applied in the following priority:

- (1) To lease payments to the United States as provided in Article 6.
- (2) To Reclamation Expenses as provided in Article 7.
- (3) To the annual operation and maintenance cost of the Facility.
- (4) To the recovery of costs and/or the payment of debts associated with construction of the Facility.
- (5) To the reserve fund as provided in Article 23.
- (6) All additional power revenues received by the Lessee shall be available to the Lessee for its use.

9. ENVIRONMENTAL COMPLIANCE

(a) Reclamation will be the lead federal agency for compliance with the National Environmental Policy Act (NEPA), as amended.

(b) The Lessee agrees to comply with the applicable terms and conditions, including environmental commitments and mitigation measures, resulting from the completion of NEPA and Endangered Species Act compliance.

(c) Reclamation will complete an Environmental Commitment Plan prior to approving final designs for the Facility; this plan will provide specific details on environmental commitments and other environmental documents required under law. The Lessee shall implement and comply with the Environmental Commitment Plan during design, construction and operation phases of the Facility..

10. WATER AND LAND USE

(a) The Water Rights used for power generation shall be non-consumptive, and the Facility shall be developed, operated, and maintained consistent with applicable Federal and State law.

(b) The operation of the Facility shall not interfere with the purpose and operations of the Dallas Creek Project, including, but not limited to, the Ridgway Dam and Reservoir.

(c) Reclamation does not guarantee either the quality or quantity of water for the Facility and has no obligation to alter operations of the Ridgway Dam or other Federal projects for the benefit of power generation at the Facility. The Lessee shall not be entitled to compensation for loss of generation due to changes in operations at the Dallas Creek Project.

(d) The Lessee shall be responsible to be sure that land rights, as necessary, are available for the construction and operation of the Facility. The Leased Premises and all rights hereunder shall be held by the Lessee at all times subject to the rights of the United States. Jurisdiction and supervision of the United States over the Leased Premises are not surrendered or subordinated by issuance of this Lease. The United States reserves

the right to issue licenses, rights-of-way, or permits for compatible uses of the Leased Premises with said issuance to be made in consultation with the parties to this Lease.

(e) There is also reserved the right of the United States, its officers, agents, and employees, at all times to unrestricted ingress to, passage over, and egress from all of said Leased Premises for the purpose of exercising, enforcing, and protecting the rights reserved herein. In addition, the United States reserves the right of its officers, agents, and employees at all times to have unrestricted access and ingress to, passage over, and egress from all of said Leased Premises, to make investigations of all kinds, dig test pits and drill test holes, to survey for and construct reclamation and irrigation works and other structures incident to Federal Reclamation Projects, or for any purpose whatsoever.

(f) The Lessee shall reimburse the United States for all costs and expenses incurred in the defense of any action which challenges the Lessee's use of the Leased Premises under this Lease.

(g) Any existing survey markers shall not be changed or destroyed. In the event that any survey markers are moved or destroyed, inadvertently or otherwise, by construction or any other activity of the Lessee or their contractors, they shall be replaced by a licensed land surveyor in consultation with Reclamation.

11. PRECONSTRUCTION REQUIREMENTS

(a) The following Plans for the Facility are subject to approval by Reclamation before construction of the Facility begins:

(1) Plans, specifications, and schedules(s) for construction and operation, including site restoration plans. Upon approval, such plans, specifications, and schedules, shall be deemed the "Plans and Specifications" as used in this Lease.

(2) Construction agreement between the Lessee and the contractor selected for construction of the Facility.

(3) Operations plans in harmony with the Lessee's contracts and agreements for the operation and maintenance of the Project.

(4) The Environmental Commitment Plan will include, but not be limited to, environmental commitments contained in the documentation completed under NEPA for execution of this Lease.

(5) Test Plan. Describes tests to be performed prior to Reclamation's acceptance of construction as complete.

(6) Emergency Action Plan. Developed in harmony with the current Emergency Action Plan for the Project, setting forth the procedures to be followed in case of accident to, or failure of, the Facility.

(7) Security Plan. The Lessee shall meet with representatives from Reclamation to develop a security plan that will be consistent with and integrated into Reclamation's security program for the Project. Security measures from the security plan will be included in construction of the Facility. The Lessee shall be responsible for any additional security costs incurred by Reclamation related to construction, operation and maintenance of the Facility.

The Lessee shall submit four (4) copies of the above documents to Reclamation, unless prohibited by Reclamation security procedures.

(b) The Lessee shall require all contractors to submit to the Lessee and Reclamation, prior to construction, evidence of the existence of payment bonds and performance bonds, as required by Article 12.(b) herein, and certificates of insurance as required by the construction agreement. Any such insurance certificate shall name the Lessee and United States as additional insured parties.

(c) The Lessee must receive written approval from Reclamation prior to beginning construction. Such approval shall be based upon approval of the documents identified in Article 11.(a) herein and in compliance with Article 12.(b) herein, and shall not be unreasonably withheld.

12. CONSTRUCTION

(a) The Lessee shall construct the Facility in accordance with the approved Plans and Specifications, construction agreement, and the approved Environmental Commitment Plan, as identified in Article 11.(a)(4) herein.

- (b) The Lessee shall provide evidence of payment bonds and performance bonds, held by the contractors constructing the Facility, for the benefit of the United States and the Lessee in the full amount of the applicable construction contract, securing the faithful performance of its contractual obligations under its construction agreement. The performance bond shall remain in effect a minimum of one (1) year after completion of construction of the Facility, or such additional warranty period as provided in the construction agreement. The date of completion of construction shall be as defined in Article 12.(l) herein. The bonds shall be issued by a Surety Company satisfactory to Reclamation.
- (c) In the event of an emergency at the Facility or Project, Reclamation, the Lessee, or the Lessee's agent(s) may take appropriate action pursuant to the Emergency Action Plan, or may take such further action as necessary to prevent or minimize damage to Project structures or Facility.
- (d) Reclamation shall have the right to inspect the construction of the Facility for compliance with the requirements of this Lease.
- (e) The Lessee shall obtain and comply with any and all necessary Federal, State, and local permits and licenses. The Lessee agrees to comply with all applicable codes, ordinances, and regulations.
- (f) The Lessee agrees to notify Reclamation of the Lessee's intent to begin construction at least ten (10) days before commencement of such work or delivery of materials. Reclamation shall have the right to post and maintain on the Leased Premises notices authorized under applicable law.
- (g) Reclamation shall have access to the Facility for the purpose of assuring compliance with the terms and conditions of this Lease and to monitor the effects of the Facility on the Ridgway Dam and Reservoir. The Lessee shall cooperate with Reclamation in such reviews and inspections. If during construction of the Facility Reclamation determines that such construction poses a threat to the structural and operational integrity of the Ridgway Dam, Reclamation may order corrective action be taken by the Lessee at the Lessee's sole cost and expense. If such action is not promptly undertaken by the Lessee, Reclamation may order the Lessee to stop work on or operation of the Facility and may perform the necessary work at the Lessee's expense notwithstanding the dispute resolution provisions of Article 24 herein.
- (h) Construction of the Facility includes site restoration. If, for any reason, site restoration is not completed by the Lessee in accordance with the Plans and Specifications, the work may be done by Reclamation at the Lessee's expense.
- (i) The Lessee shall exercise care to preserve the natural landscape and shall conduct its construction operations to prevent any unnecessary destruction or scarring or defacing of the natural surroundings in the vicinity of the work. Movement of crews and equipment shall be within the areas defined in the Plans and Specifications.
- (j) The Facility shall not interfere with reasonable and safe access to Project structures on the Ridgway Dam, including, but not limited to, the operation and maintenance road.
- (k) The Lessee shall require all contractors to accomplish onsite construction in accordance with all applicable Occupational Safety and Health Administration (OSHA) rules and regulations.
- (l) Absent circumstances beyond the control of the Lessee, construction shall commence within three (3) years from the date of this Lease. Once any work affecting the Project is begun, the Lessee shall, with diligence, pursue construction to completion of the Facility. The Facility shall be constructed as shown in the approved Plans and Specifications or as shown in written change orders approved by Reclamation in writing. The Lessee's failure to complete construction within five (5) years from the date of this Lease, in accordance with the terms and conditions of this Lease, shall be considered a default under Article 20 herein.
- (m) Unless otherwise agreed to, the Lessee shall give Reclamation no less than two (2) weeks notice prior to commencement of testing of the Facility. Testing will be harmonious with the approved Test Plan, operations plan and the Environmental Commitment Plan. Reclamation shall have the opportunity to review and observe the testing. If, because of the addition of the Facility, Reclamation believes additional tests are reasonably required to ensure that the structural and operational integrity of the Ridgway Dam is preserved, it shall outline such tests for the review and approval of the Lessee. If the Lessee approves of the additional testing, the Lessee shall provide such additional testing as Reclamation may prescribe. If the Lessee objects to the requested additional testing, the question over whether to conduct additional testing shall be resolved pursuant to Article 24 herein. The Lessee shall provide written official test reports within 30 days after

completion of the tests. Reclamation will accept or reject the test results, in writing, within 30 days after receipt of the test reports. Testing shall be considered complete upon acceptance of the test report by Reclamation. The Lessee may use or sell power generated during the test period.

(n) At such time as the Lessee determines that construction, testing, and site restoration of the Facility are complete, the Lessee shall arrange a joint inspection with Reclamation. Any remaining work, testing, or modification needed on the Facility, identified in writing by the parties during the inspection, will be completed as soon as practical by the Lessee. For the purpose of this Lease, construction of the Facility shall be complete as of the later date of either the date of the final inspection or the date the Lessee complete the tasks, if any, identified in the final inspection to the satisfaction of Reclamation. Within 180 days of completion of the Facility, the Lessee shall provide Reclamation with record (as-built) drawings; and operation and maintenance manuals for any Facility equipment that could have an impact on the operational and structural integrity of the Ridgway Dam, in a format acceptable to Reclamation.

(o) Revisions required to the Standing Operating Procedures (SOP) for the Project as a result of construction and operation of the Facility shall be recommended by the Lessee and submitted to Reclamation for its review and approval. Such revisions will be completed at the Lessee's expense. Final copies and revisions of the Project's SOP will be distributed by Reclamation to the Lessee.

13. OPERATION AND MAINTENANCE OF THE FACILITY

(a) Throughout the term of the Lease, the Lessee shall, at the Lessee's sole cost and expense, operate, and maintain the Facility in good condition and repair and in accordance with all applicable laws, rules, ordinances, orders, and regulations. The Facility shall be operated and maintained in accordance with the operations plans, the Emergency Action Plan, and the Environmental Commitment Plan as each may be amended. No material alterations in the Facility or its operation, as depicted in the record drawing and operations plan, shall be undertaken by the Lessee without the written approval of Reclamation, which shall not be unreasonably withheld. Reclamation will withhold such approval only to (i) ensure the structural and operational integrity of the Ridgway Dam, (ii) ensure that the operations of the Ridgway Dam are not otherwise interfered with or (iii) ensure compliance with the Environmental Commitment Plan. After modification to the Facility, the Lessee shall perform testing, related to such modification, as may be required by Reclamation to ensure the structural and operational integrity of the Ridgway Dam. The Lessee assumes full responsibility for any pollution caused by its operations of the Facility and agrees to indemnify the United States for damages caused by any such pollution.

(b) If the Facility or operation thereof interferes with or threatens to interfere with the operation of the Ridgway Dam, the Lessee shall correct the interference immediately and, if necessary, as determined by Reclamation, shut down the Facility notwithstanding the dispute resolution provision of Article 24 herein. Upon notice, the Lessee shall modify the Facility or its operation of the Facility to correct any problem and shall repair any damage in a manner acceptable to Reclamation, or the Lessee shall bear the complete cost for Reclamation to repair any damage to the Project caused by the Facility notwithstanding the dispute resolution provisions of Article 24 herein.

(c) Reclamation shall have access to the Facility for the purpose of assuring compliance with the terms and conditions of this Lease and to monitor the effects of the Facility on the Ridgway Dam. The Lessee shall cooperate with Reclamation in such reviews and inspections.

(d) Daily water flows and energy generation data shall be made available to Reclamation on a monthly basis or as otherwise reasonably specified by Reclamation to calculate annual payments.

14. RECLAMATION REVIEWS AND APPROVALS

Reclamation reserves the right to review and approve schedules, designs, specifications, inspections, inspection reports, tests and reports, and construction and construction reports of the Facility, but only for the express purpose of determining any impacts to the structural and operational integrity of the Project.

15. FUTURE WORK

(a) The implementation of this Lease does not in any way restrict Reclamation, in discussion with the Lessee, from making any future changes to the Project. For any proposed changes that may affect the Facility or its operation, Reclamation will first confer with the Lessee.

(b) The costs of any future changes to the Project shall be in accordance with the then existing contracts and agreements between Reclamation and the Lessee. The costs of any future structural or operational changes to the Facility necessitated as the result of changes to the Project or otherwise, will be assumed by the Lessee.

16. OWNERSHIP

Title to the Facility will remain in the name of the Lessee unless terms under Article 21 or Article 22 herein are invoked.

17. LIABILITY

(a) The Lessee hereby acknowledges that Reclamation will not be responsible for making sure the Facility is technically or economically feasible. Inspections, reviews, and approvals by Reclamation do not relieve the Lessee of its responsibilities under the terms of this Lease or otherwise.

(b) The Lessee agrees to indemnify the United States for any injury, loss or damage incurred by any person or entity, resulting from any action performed hereunder, and any negligent act or omission of the Lessee in connection with its performance under this Lease.

(c) The Lessee shall have no claim against the United States for loss of generation caused by the normal or extraordinary operation and maintenance of the Project including, but not limited to, the quantity or quality of water delivered through the Ridgway Dam.

18. INSURANCE

(a) Lessee or the operator of the facility shall maintain worker's compensation insurance on its own employees as may be necessary to comply with applicable law.

(b) Lessee shall, at its sole cost and expense, keep or cause the Facility to be kept insured for the mutual benefit of the United States and the Lessee, against loss or damage by fire, flood, and such other risks as are now or hereafter included in an extended coverage endorsement in common use for hydroelectric power plants. Insurance proceeds shall be used by the Lessee to replace or repair any compensated loss, subject to review and concurrence by Reclamation.

(c) Throughout the term of this Lease, the Lessee shall, at its sole cost and expense, keep or cause to be kept in force, for the benefit of the United States and the Lessee, comprehensive broad form general public liability insurance in the amount of at least \$2,000,000 against claims and liability for personal injury, death, or property damage arising from the use, occupancy, disuse, or conditions of the Facility and adjoining areas or ways, providing coverage for bodily injury or death to any person or persons for each accident or occurrence; and for property damage for each accident or occurrence.

(d) The amount of insurance coverage shall be adjusted annually by the insurance company based upon accepted standard adjustment practices to an amount sufficient to replace the Facility.

(e) For each policy or certificate evidencing insurance, the Lessee shall instruct the insurance company to notify Reclamation not less than 30 days prior to the effective date of any cancellation, termination, or assignment of the policy or certificate or any modification of the policy or certificate. The notice shall be sent to Reclamation and shall identify this Lease, the policy and the insured.

(f) Lessee agrees to maintain insurance coverage as stated in this Article herein throughout the term of this Lease in substantially the same form and amounts as are provided for in the attached certificates of insurance identified as and made a part thereof.

(g) Any insurance proceeds remaining after complying with the provisions of this Lease shall be the Lessee's sole property.

19. FAILURE TO MAKE PAYMENTS

Upon failure of the Lessee to pay any sum of money when due as provided in this Lease, that amount past due will be assessed the following:

- (1) Interest per annum on the unpaid balance from the due date of the bill through the date of the payment. The interest charged will be based on the "Treasury Current Value of Funds Rate" in effect at the time the debt becomes overdue.
- (2) An administrative charge of \$5.00 per month.
- (3) Penalty charge of 6% per annum on the unpaid balance computed after 90 days of delinquency, from the due date to the date of payment.

Further collection efforts will be consistent with the Debt Collection Improvement Act of 1996.

20. DEFAULT

(a) Each or any of the following events shall constitute default under this Lease:

- (1) Failure of the Lessee to comply with each and every material condition of this Lease.
- (2) Abandonment of the Facility by the Lessee.

(b) In the event of default by the Lessee, Reclamation will give written notice to the Lessee and the Lessee shall then have 60 days to correct the default condition specified in the notice. However, in the event action to correct a default requires more than 60 days, the Lessee shall have a reasonable time to correct the default if the Lessee commences the action within 30 days after written notice and diligently pursues it to full correction in a manner satisfactory to Reclamation.

(c) Failure of the Lessee, without just cause, to initiate construction of the Facility within three (3) years of the date of this Lease or to complete construction within five (5) years of the date of this Lease shall be considered to be abandonment of the Facility. Failure to operate the Facility, without just cause, for a period of six (6) consecutive months or to maintain the Facility in good condition and repair shall be considered to be abandonment of the Facility. Failure of the Lessee to generate electricity with the Facility, in and of itself, shall not constitute a failure to operate the Facility, provided that the Lessee maintains the Facility in good condition and repair and provides justification to Reclamation for Lessee's failure to generate electricity.

(d) Any prevention, delay, nonperformance, or stoppage due to an act of nature or inability to obtain labor or materials or reasonable substitutes or any court or regulatory order enjoining, or restricting performance under this Lease shall excuse nonperformance, or stoppage, except obligations imposed by this Lease for the payment of monies due under this Lease.

(e) Each party hereto may use any remedy available either at law or in equity against a party in default hereof. The waiver of a default or a provision of this Lease shall not be deemed to be a waiver of any other provision, or of a subsequent default of the same provision.

(f) Any excessive delay resulting from compliance with the provisions of Federal environmental laws or administrative review by a Federal agency, pertaining to the Facility, may extend the time periods provided in this Article and Article 4 herein for a period equal to that of the delay. In the event of judicial review of environmental studies prepared in compliance with NEPA, or litigation arising out of this Lease, time periods provided in this Article and Article 4 herein will be extended for a period equal to that of the delay, provided such review or litigation was initiated by parties other than the Lessee.

21. CANCELLATION

(a) In the event of any default by the Lessee that is not corrected as provided in Article 20 herein, Reclamation shall have the right to cancel this Lease and pursue either of the following actions:

- (1) Assume possession of the Facility for its own use, or lease the Facility to someone other than the Lessee. In either event, all right to use the Leased Premises and water rights necessary for hydroelectric power purposes shall automatically revert to the United States and the Lessee shall be compensated for any un-depreciated value remaining in the Facility and hydropower water rights necessary for its operation, based upon a 40-year straight line depreciation method of the construction cost of the Facility. Any new lessee assuming possession of the Facility will be required to enter into a

contract with Tri-County Water Conservancy District to coordinate operation and maintenance of the Facility with the Project. The water rights may be used only so as not to conflict with any other purposes of the Project.

(2) Within six months after such cancellation, Reclamation may require the Lessee to remove all or part of the Facility and restore the surface of the Leased Premises to its original condition at the Lessee's expense. In this event, the Lessee shall be entitled to salvage, for its own benefit, any features or equipment so removed. Any features or equipment left in place under this Article shall automatically become the property of the United States. After restoration, all ownership and responsibility for the site will revert to the United States.

(b) Lessee may cancel this lease upon 60 days notice to Reclamation. Upon such cancellation, the Facility and the hydropower water rights necessary for its operation shall become the property of the United States, and within six months after such cancellation, Reclamation may require the Lessee to remove all or part of the Facility and restore the surface of the Leased Premises to its original condition at the Lessee's expense. In this event, the Lessee shall be entitled to salvage, for its own benefit, any features or equipment so removed. After restoration, all ownership and responsibility for the site will revert to the United States.

(c) Lessee shall pay all amounts due Reclamation under this Lease as of the date of cancellation within 60 days after cancellation. The Lessee shall be responsible for any other debts associated with the Facility unless otherwise provided in this Lease.

22. EXPIRATION OF LEASE

(a) Upon expiration of the lease term pursuant to Article 4 herein, Reclamation shall have the right to:

(1) Enter into a new lease with the Lessee;

(2) Assume title and possession of the Facility for its own use;

(3) Assume title and possession and thereafter transfer ownership of the Facility and use the hydropower water rights for the hydroelectric power generation to any other party subject to terms and conditions of a new lease of power privilege; or

(4) Discontinue operation of the Facility. In the event Reclamation determines the Facility should no longer be operated, Reclamation may require the Lessee, at its expense, to remove the Facility and restore the Leased Premises to their original condition, as far as practical. Such features and equipment, or parts thereof, including piping and control devices installed on Ridgway Dam that are necessary for the unimpaired operation of the Project, shall be left in place and shall become the property of the United States.

(b) If the United States elects to assume title possession of the Facility or assume possession and transfer its ownership to another party, the United States shall either compensate the Lessee, or obligate a new lessee to compensate the Lessee, in an amount equal to the value of the Facility on the date of expiration as determined by an independent appraiser and appraisal methods to be jointly selected and determined by the Lessee and Reclamation. The appraiser will be instructed to assume that this Lease would continue for an additional 40 year period, and that the facility will continue to generate revenues. This assumption is strictly for the purpose of establishing value to the Facility and does not constitute a renewal of this Lease following the 40-year initial period of this Lease. Reclamation shall not transfer ownership of the Facility to any third party until such compensation has been paid pursuant to a new contract. Any new lessee assuming possession of the Facility will be required to enter into a contract with the Lessee to coordinate operation and maintenance of the Facility with the Project.

23. RESERVE FUND

(a) During the first six years of operation of the Facility and continuing during the life of this Lease, the Lessee shall establish a reserve fund equal to one year's anticipated operation and maintenance expenses and one year's annual lease expense to Reclamation, for use in the manner, purposes and the circumstances agreed upon by Reclamation and the Lessee. The reserve fund will be established and maintained through annual deposits in the amounts stated to a segregated account created by the Lessee. Deposits shall be derived from funds obtained from revenues received pursuant to Article 8 herein or from other revenues of

the Lessee. The annual deposit shall be made no later than August 31 of each year. The reserve fund shall be used for the following purposes:

- (1) To cure any financial default under this Lease to Reclamation.
 - (2) For extraordinary repair or replacement of the Facility, subject to agreement by Reclamation.
 - (3) To reimburse the Lessee for annual operation and maintenance costs for the Facility to the extent that power revenues are not sufficient therefore and to reimburse the costs encountered or created by emergency conditions.
- (b) The Lessee shall deposit its reserve fund in an account in accordance with the Lessee's investment policy and practices, provided, any interest paid on the reserve funds shall be and become a part of the fund from which interest was accrued. Interest that caused the fund to exceed the reserve fund maximum may be withdrawn by the Lessee to bring the fund balance back down to the maximum or disbursed in accordance with Article 8 herein, at the sole discretion of the Lessee.
- (c) Upon expiration of the term of this Lease, any amounts then remaining in a reserve fund shall be disbursed and applied in accordance with Article 8 herein.
- (d) The maximum annual deposits and reserve fund amounts may be adjusted from time to time as mutually agreed to by both Reclamation and the Lessee.

24. DISPUTE RESOLUTION

- (a) In the event of a dispute between the parties, the decision of Reclamation must be appealed to the Commissioner of Reclamation for his/her determination prior to review by the federal court. The decision of the Commissioner will be final for Reclamation and will be binding upon all parties hereto unless determined otherwise by a federal court. In the event that any action is filed in federal court, following a determination of the Commissioner, in relation to this Lease, and notwithstanding the provisions of paragraph 7.(a), the unsuccessful party in the action shall pay to the successful party, in addition to all sums that either party may be ordered to pay, a reasonable sum, as determined by the court, for the successful party's attorney's fees and court costs. This provision shall not waive any right of the Lessee or Reclamation under Federal Law.
- (b) This article shall not apply to any action or inaction by the Lessee during construction, operation and maintenance of the Facility which may impair the structural integrity of Ridgway Dam.

25. AUDIT

- (a) The Lessee and Reclamation shall maintain accurate records and books of account in accordance with generally accepted accounting principles and consistent with this Lease. Said books and records shall present fairly all costs and expenses utilized either directly or indirectly in computing any charges or payments to the other parties to this Lease.
- (b) Upon 30 days written notice each party to this Lease shall afford the other party or its independent auditor's reasonable access to the relevant records and books of account during the term of the Lease, and for a period of twenty-four months thereafter.
- (c) The party to this Lease that requests the audit under this Article will be solely responsible for its own costs incurred to perform the audit.

26. NOTICES

Until further notice, any notice authorized or required to be given to the Lessee shall be delivered to or mailed postage prepaid or electronically transmitted to the Manager, Tri-County Water Conservancy District, P.O. Box 347, Montrose, Colorado 81402. Any notice authorized or required to be given to the United States shall be delivered to or mailed postage prepaid or electronically transferred to the Area Manager, Bureau of Reclamation, 2764 Compass Drive Suite 106, Grand Junction, Colorado 81506. Notice shall be effective on the date of delivery or mailing.

27. ASSIGNMENT LIMITED – SUCCESSORS IN INTEREST OBLIGATED

The provisions of this Lease shall apply to and bind the successors and assigns of the parties to this Lease, but no assignment or transfer of this Lease or any right or interest therein shall be valid until approved in writing by Reclamation. Lessee shall have the right to assign this lease as collateral for loans for construction or other uses of the Project, on terms approved by Reclamation. Lessee shall have the right to transfer the operation and maintenance to a third party, on terms approved by Reclamation.

28. RULES, REGULATIONS AND DETERMINATIONS

(a) The parties to this Lease agree that the delivery of water or the use of Federal facilities pursuant to this Lease is subject to Reclamation law, as presently amended and supplemented, and the rules and regulations promulgated by the Secretary of the Interior under Reclamation law.

(b) Reclamation shall have the right to make determinations necessary to administer this Lease that are consistent with the laws of the United States of America and the State of Colorado, and the express and implied provisions of this Lease, and the rules and regulations promulgated by the Secretary of the Interior. Such determinations shall be made in consultation with the parties to this Lease.

29. OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or Resident Commissioner or officer of the District shall be admitted to any share or part of this Lease or to any benefit that may arise herefrom, other than as a water user or landowner in the same manner as other water users or landowners or as a shareholder in the company.

30. COVENANT AGAINST CONTINGENT FEES

The Lessee warrants that no person selling agency has been employed or retained to solicit or secure this Lease upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Lessee for the purpose of securing business. For breach or violation of the warranty, Reclamation shall have the right to cancel this Lease without liability.

31. AMENDMENT

This Lease may be amended, altered, or modified only in writing and signed by all of the parties.

IN WITNESS WHEREOF, the parties to this Lease have caused this Lease to be duly executed as the day and year first written above.

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

APPROVED

Office of the Regional Solicitor

By: _____
Regional Director

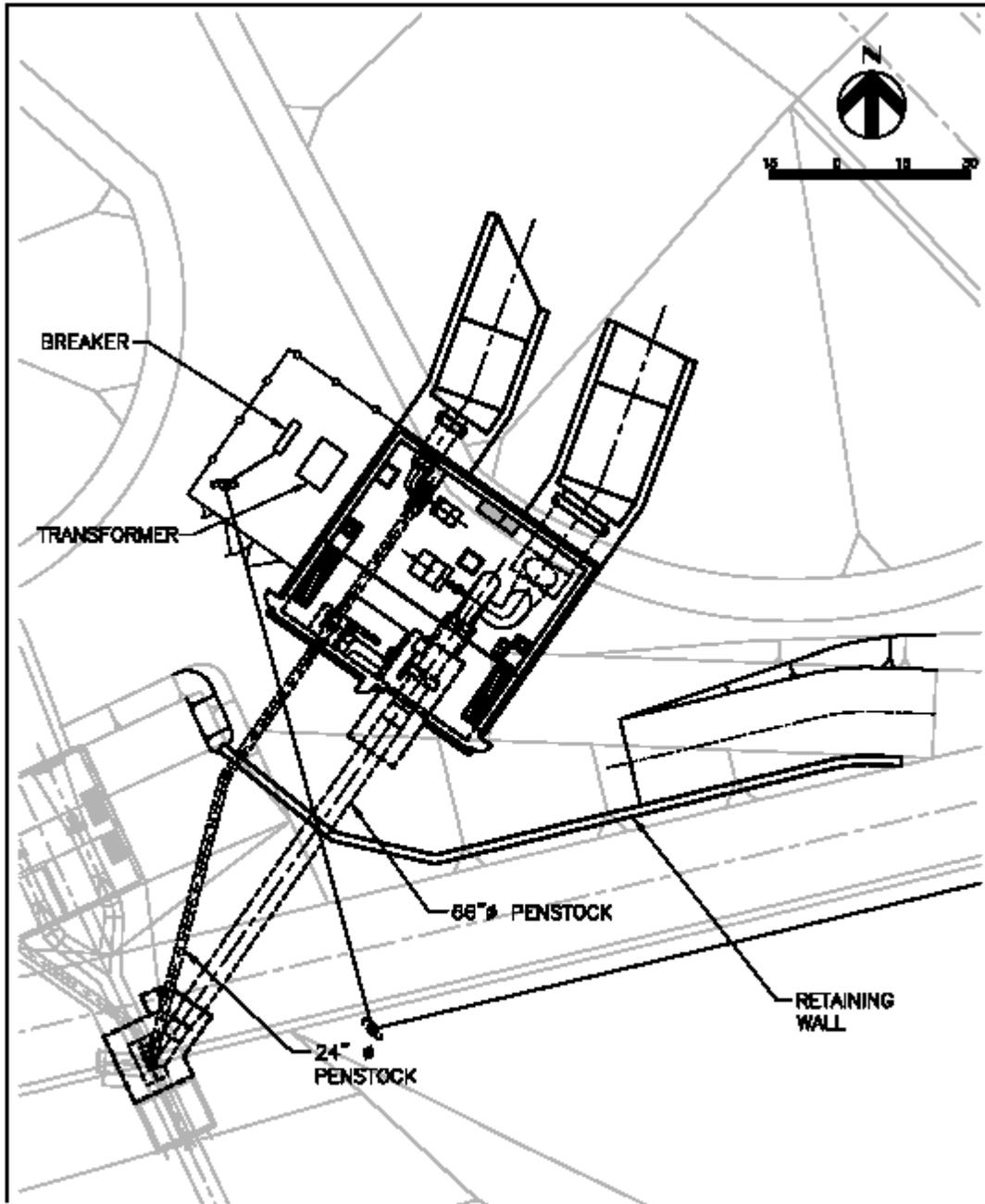
ATTEST:

TRI-COUNTY WATER CONSERVANCY DISTRICT

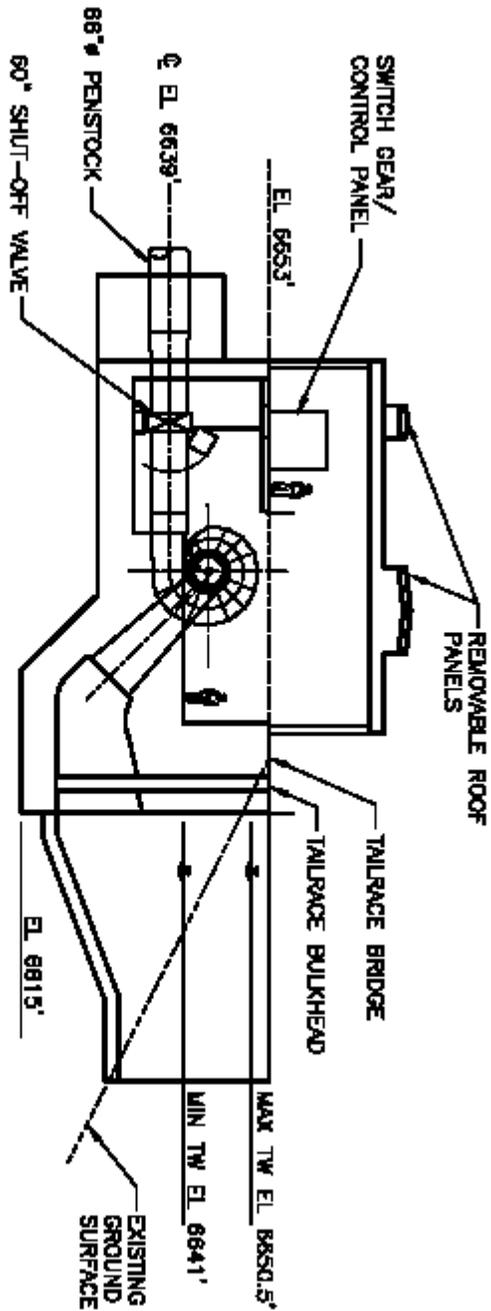
Secretary

By: _____
President

Attachment B-Drawings

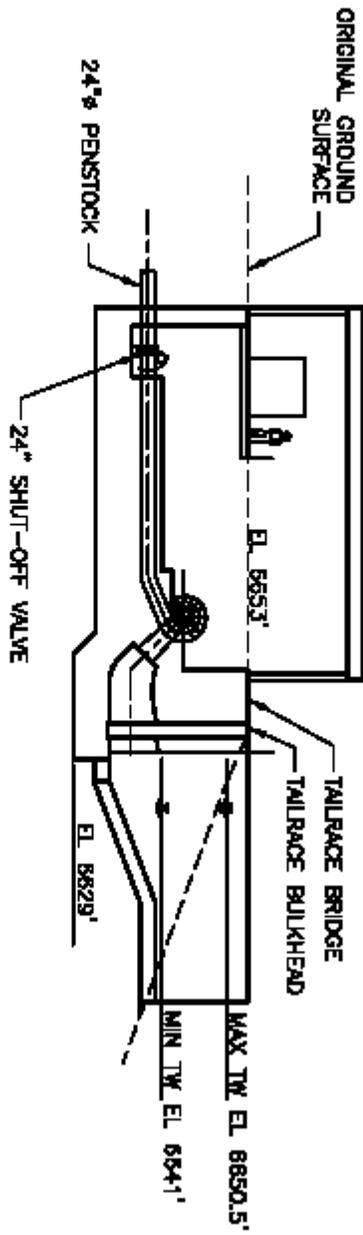


HDR	Site Plan	<small>DATE</small> April 2011
	Ridgway Dam Hydropower Project Tri-County Water Conservancy District Near Ridgway, Colorado	<small>FIGURE</small> 2



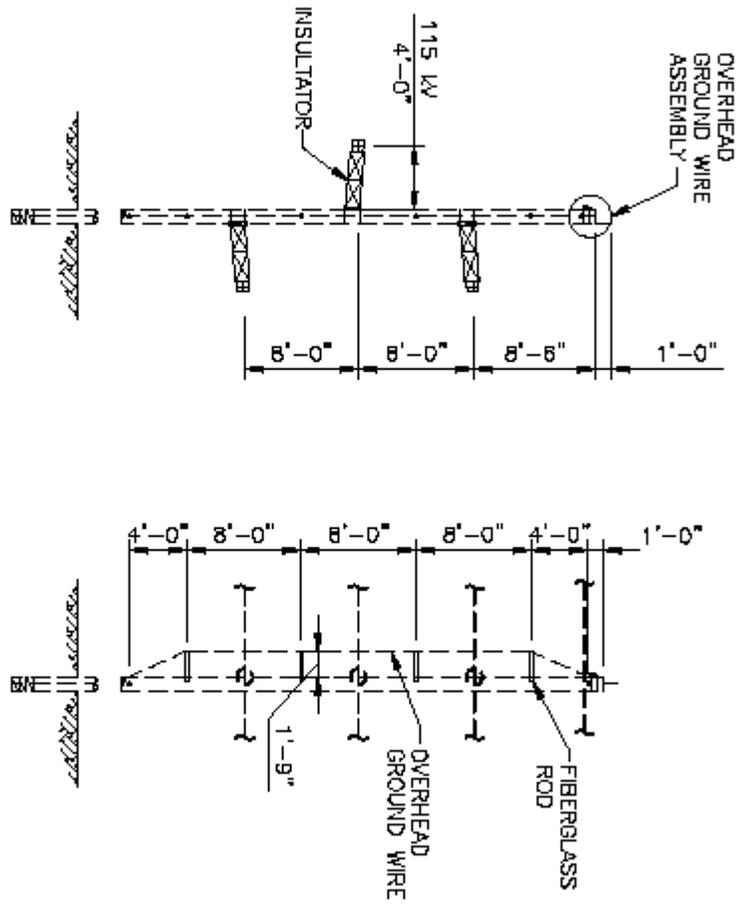
SECTION - LARGE TURBINE
 1" = 20'

HRR	Section	Ridgeway Dam Hydropower Project Tri-County Water Conservancy District Near Ridgeway, Colorado
	DATE	
	April 2011	
	PAGE	4



SECTION - SMALL TURBINE
 1" = 20'

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	DATE April 2011 NUMBER 5	



HTR

TRANSMISSION LINE STRUCTURE

TANGENT HORIZONTAL LINE POST

Ridgway Dam Hydropower Project
Tri-County Water Conservancy District
Near Ridgway, Colorado

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August 2011

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