

RECLAMATION

Managing Water in the West

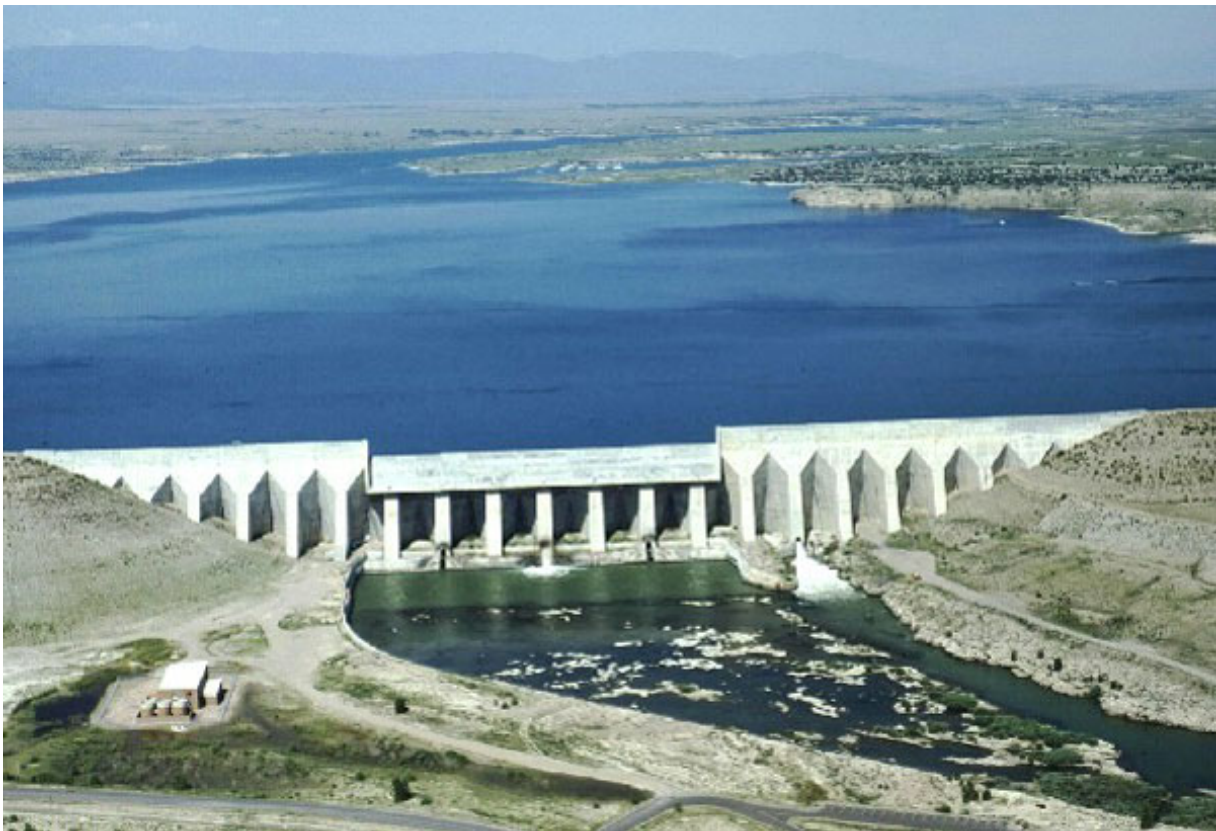
Final Environmental Assessment

Project 2015-001

Pueblo Hydropower Project

Eastern Colorado Area Office

Great Plains Region



May 2016

MISSION STATEMENTS

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Abbreviations

APE	area of potential effects
AVC	Arkansas Valley Conduit
BIA	Bureau of Indian Affairs
Black Hills	Black Hills Corporation
BLM	Bureau of Land Management
BMP	best management practice
CCR	Code of Colorado Regulations
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
cfs	cubic feet per second
CPW	Colorado Division of Parks and Wildlife
CSU	Colorado Springs Utilities
CWA	Clean Water Act
db	decibels
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
Fry-Ark Project	Fryingpan-Arkansas Project
ft/sec	feet per second
FVA	Fountain Valley Authority
GIS	Geographic Information Systems
Interconnect	Pueblo Dam North-South Outlet Works Interconnect
kV	kilovolt
kW	kilowatt
lbs	pounds
LOPP	Lease of Power Privilege
M&I	municipal and industrial
MW	megawatt
MWh	megawatt hour
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NOW	north outlet works
NWP	nationwide permit
PBWW	Board of Water Works of Pueblo
PFYC	Potential Fossil Yield Classification
Project Partners	SEWCD, PBWW & CSU
PRPA	Paleontological Resource Protection Act

Pueblo West	Pueblo West Metropolitan District
Reclamation	Bureau of Reclamation
RMP	Resource Management Plan
SDS	Southern Delivery System
SECWCD	Southeastern Colorado Water Conservancy District
SHPO	State Historic Preservation Officer
SOW	south outlet works
U.S.C.	United States Code
WECC	Western Electric Coordination Council
Service	U.S. Forest Service

CHAPTER 1 – INTRODUCTION

PROPOSED ACTION

Southeastern Colorado Water Conservancy District (SECWCD), Board of Water Works of Pueblo (PBWW), and Colorado Springs Utilities (CSU) (collectively referred to as “Project Partners”) have requested approval to develop hydropower at the federally-owned Pueblo Dam. Under the Proposed Action, the Bureau of Reclamation would execute a Lease of Power Privilege (LOPP) with the Project Partners. The LOPP would authorize the use of federal lands, facilities, and Fryingpan-Arkansas (Fry-Ark) Project water to construct, operate, and maintain a 7 megawatt (MW) hydropower plant and associated facilities at Pueblo Dam (Pueblo Hydropower Project).

Proposed power and fiber-optic lines would connect the hydropower plant to the Black Hills Corporation (Black Hills) Pueblo Reservoir Substation. The substation was constructed in 2014 to provide electrical power and improve reliability for facilities near Pueblo Reservoir, including Pueblo Dam, Pueblo Fish Hatchery, Southern Delivery System’s (SDS) Juniper Pump Station, Pueblo West Metropolitan District’s (Pueblo West) Pump Station, and various state and federal buildings and infrastructure (Reclamation 2014a).

The hydropower plant and associated facilities would be owned, operated, and maintained by the Project Partners.

This environmental assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), and Department of the Interior’s regulations (43 CFR Part 46). This EA identifies and evaluates potential effects on the human environment associated with the issuance of the LOPP for the construction and operation of the Pueblo Hydropower Project.

NEED FOR AND PURPOSE OF ACTION

A LOPP is needed to authorize non-federal entities to utilize Reclamation facilities for hydroelectric power generation. The proposed LOPP would ensure that the development of hydropower at Pueblo Dam is implemented consistent with established authorities, purposes, and water operations of the Fry-Ark Project.

The purpose of the Pueblo Hydropower Project is to develop a 7 MW hydropower plant and associated facilities at Pueblo Dam to provide a clean, renewable energy source that is locally controlled. Current federal policies encourage non-federal development of environmentally sustainable hydropower potential for federal water resource related projects. The proposed project increases hydropower generation. The electricity generated by the Pueblo Hydropower

Project provides a beneficial offset of emissions of carbon dioxide and other greenhouse gases and provides Project Partners with an additional source of revenue.

BACKGROUND INFORMATION

Fryingpan-Arkansas Project

Reclamation constructed the Fry-Ark Project as a multipurpose transmountain, transbasin water diversion, and delivery project in Colorado. The Fry-Ark Project is divided into West-Slope and East-Slope components separated by the Continental Divide. Pueblo Reservoir provides terminal East-Slope storage for the Fry-Ark Project (see the Fry-Ark Project Map in Attachment A).

The SECWCD was established in 1958 and assumed the responsibility to repay reimbursable costs associated with the construction, operation, and maintenance of the Fry-Ark Project. SECWCD holds most of the water rights for the Fry-Ark Project and annually allocates supplemental water from the Fry-Ark Project for use by:

- 1) Municipal and domestic water suppliers on the Eastern-Slope of Colorado, and
- 2) Various private and mutual ditch companies.

Reclamation owns and operates all Fry-Ark Project facilities. The U.S. Forest Service manages recreation, fish and wildlife facilities, and resources at Ruedi Reservoir, Turquoise Lake, and Twin Lakes. At Pueblo Reservoir, fish and wildlife, recreation and land-based resources are managed by the Colorado Division of Parks and Wildlife (CPW) under agreements between the State of Colorado and Reclamation.

Lease of Power Privilege

The LOPP is a contract between a non-federal entity and the United States to use federal facilities for hydroelectric power generation consistent with Reclamation Project purposes. The LOPP must not impair the efficiency of Reclamation's existing obligations to generate power and deliver water, jeopardize public safety or negatively affect any other Reclamation Project purpose. The LOPP has a term of 40 years, and general authorities include: 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)). The Fry-Ark Project authorization (Public Law 87-590 (76 Stat. 389) includes development of hydropower.

On August 3, 2013, Congress passed the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act. This act requires that Reclamation first offer a LOPP to the irrigation district or water users association operating the federal project, or to the irrigation district or water users association receiving water from the federal project.

On February 27, 2012, a Preliminary Permit for Lease of Power Privilege (Preliminary LOPP) between Reclamation and the Project Partners was executed to formally recognize their priority for a LOPP while they conducted investigations and secured data to determine the feasibility of the Pueblo Hydropower Project (see Attachment B). The Preliminary LOPP also provided for

cost-reimbursement to Reclamation for NEPA compliance, engineering review, and development of the LOPP. The LOPP must accommodate existing contractual, water delivery, power generation, and environmental commitments associated with operations of Pueblo Dam and the Fry-Ark Project. The Preliminary Permit has been amended several times, most recently extended to August 27, 2016.

SCOPING

Reclamation and the Project Partners conducted internal scoping and considered issues and concerns previously identified during similar LOPP processes for other hydropower development at Reclamation facilities. Reclamation also utilized information and analyses contained in two environmental impact statements (EISs) and one environmental assessment (Reclamation 2008, 2013 & 2014a). Reclamation has coordinated all analyses with other federal, state and local agencies. Issues identified during the scoping process are addressed in Chapter 3 and include:

- Visual impacts associated with the construction of new power lines (Visual Resources),
- Potential impacts to existing water deliveries (Operations and Water Deliveries),
- Potential impacts to fisheries in the Arkansas River (Fisheries Resources),
- General public support for renewable energy (Energy and Socioeconomic Conditions),
- Potential impacts to local wildlife (Wildlife and Vegetation),
- Potential impacts to wetland and riparian resources (Water Quality and Wetlands), and
- Protection of historic properties (Historic Properties).

During scoping, the following resources were eliminated from further analysis based on limited potential to affect these resources.

- Geology and Soils-Native soils below Pueblo Dam are mapped as belonging to the Cascajo Series consisting of deep-excessively drained soils comprised of very gravelly sandy loam, 5 to 25 percent slope. Excavation for the hydropower plant and penstock would occur within the Cascajo soils whose parent material is sandy and gravelly alluvium (NRCS 2015). A review by Reclamation's Technical Service Center Embankment Dams and Geotechnical Engineering Group identified no safety of dam issues associated with the proposed location of the hydropower facility. The Southern Delivery System (SDS) risk verification and report of findings was determined adequate for the proposed hydropower facility (Reclamation 2015).

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

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

NO ACTION ALTERNATIVE

Under the No Action Alternative, Reclamation would not issue a LOPP and hydropower development at Pueblo Dam would not occur at this time.

PROPOSED ACTION

Under the Proposed Action, Reclamation would execute a LOPP to permit the Project Partners to construct a 7 MW hydropower plant and associated facilities at Pueblo Dam. Project Partners also propose to execute an operations and maintenance contract with CSU to provide all necessary personnel for operation, maintenance activities, and facilitate coordination between Reclamation and the Project Partners. The hydropower plant would use flows as they are released from Pueblo Dam's north outlet works, generate power, and immediately return these flows to Arkansas River downstream of the dam. The hydropower plant and associated facilities would be constructed along the north bank of the Arkansas River approximately 500 feet (ft) downstream of Pueblo Dam, as shown in Figure 1. About 1.4 miles of new power and fiber-optic lines would be constructed to connect the hydropower plant to the existing Black Hill's Pueblo Reservoir Substation.

Pueblo Dam and Reservoir

Pueblo Reservoir is the terminal storage feature of the Fry-Ark Project. The dam is located on the Arkansas River about 6 miles upstream of the City of Pueblo. The reservoir stores both Project and non-Project water. Project water includes flows diverted from Hunter Creek and the Fryingpan River on the West-Slope of Colorado, and East-Slope native Arkansas River flows, when in priority.

Pueblo Dam is a 10,200-foot long composite concrete and earth fill structure. The concrete dam consists of 23 massive head-buttresses totaling 1,750 feet in length with a 550-foot long uncontrolled spillway section. The dam has a maximum structural height of 250 feet and a hydraulic height of 191 feet.

Based on a 2012 sediment survey (Reclamation 2014b), the area capacity tables for Pueblo Reservoir are anticipated to be updated and be used for water operations which began October 1, 2015. The reservoir has an active conservation capacity of 311,384 acre-feet (ac-ft), including 65,522 ac-ft of the seasonally-available joint-use pool, with additional flood control storage of 26,990 ac-ft. The top of flood control capacity is 338,374 ac-ft.

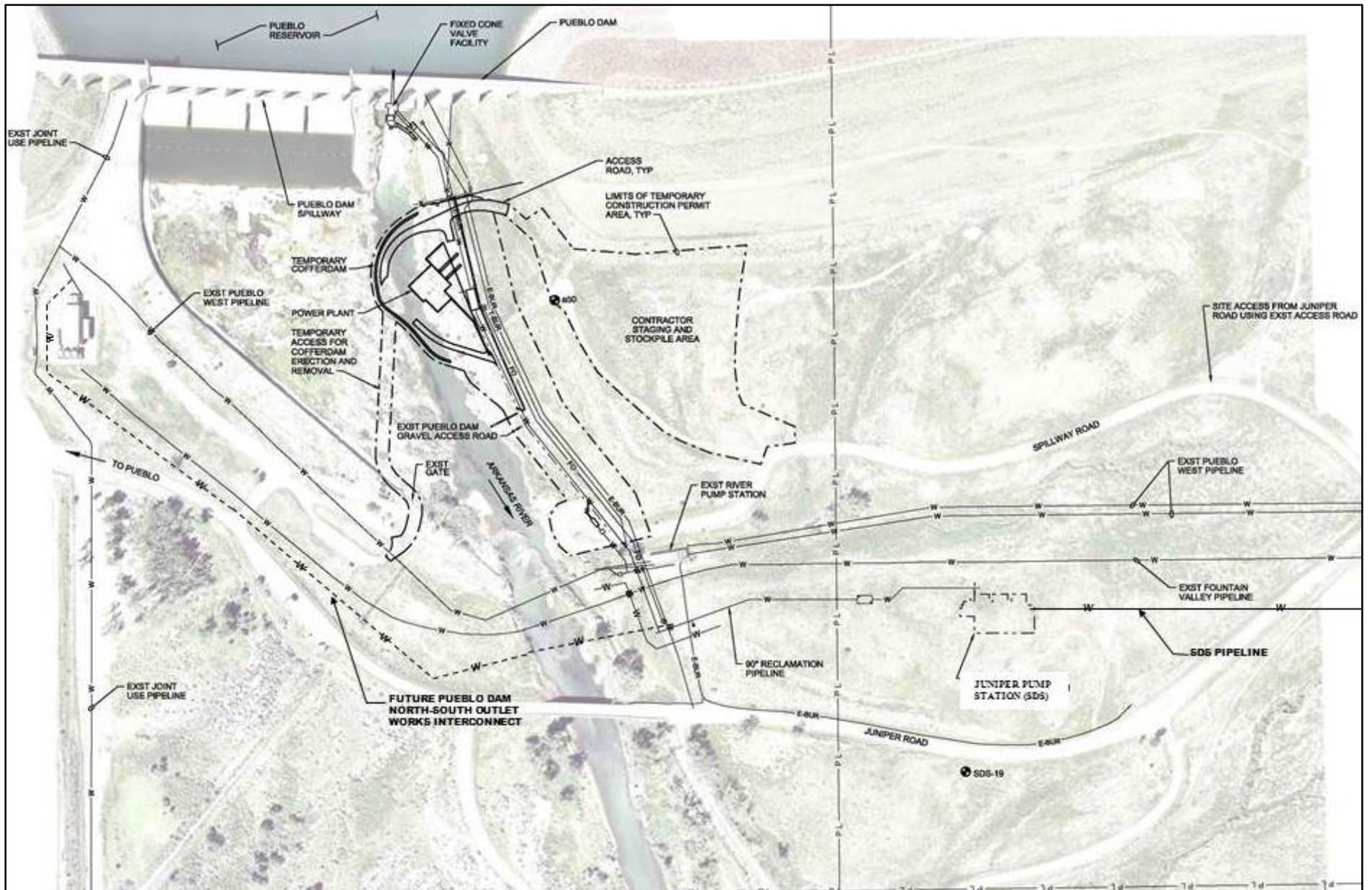


Figure 1-Pueblo Hydropower Project Site Plan

The dam has outlet works on both sides of the spillway structure; commonly referred to as the north outlet works (NOW) and south outlet works (SOW). The NOW replaced Reclamation's river outlet works which was designed to discharge a maximum of 1,120 cubic feet per second (cfs) to the Arkansas River. The SOW is a multi-level intake structure that supplies a maximum discharge of 345 cfs to municipal and industrial users. Additional outlet works through the dam's southern earthen embankment serve the Bessemer Ditch (393 cfs) and the Pueblo Fish Hatchery (30 cfs). Three spillway gates allow a combined maximum discharge of 8,190 cfs.

North Outlet Works

The NOW (see Figure 1) is used to release water directly to the Arkansas River immediately downstream of Pueblo Dam. The SDS Project constructed the NOW to provide the connection to deliver SDS Project water to a new pipeline to service the Pueblo West Metropolitan District (Pueblo West), the City of Fountain (Fountain), Security Water District (Security) and City of Colorado Springs (Colorado Springs). The connection is a 90-inch pipeline approximately 1,560 feet in length that was sized at Reclamation's request to accommodate SDS deliveries, other potential projects (i.e. the Pueblo Dam North-South Outlet Works Interconnect), and releases to the Arkansas River through the proposed hydropower plant. Once the SDS Project construction and title transfer process are completed, ownership of the NOW and the 90-inch pipeline will be transferred to Reclamation.

South Outlet Works

The SOW consists of a multi-level intake structure capable of taking water from the reservoir at different levels, thus providing a degree of control over water temperature and quality. The SOW delivers municipal and industrial (M&I) water through the Fountain Valley Authority (FVA) Conduit, Joint Use Pipeline, and Pueblo West Pipeline. The FVA pipeline delivers Fry-Ark Project M&I water to Colorado Springs, Fountain, Widefield, Security and Stratmoor Hills. The Joint-Use Pipeline is used to deliver non-Project water to PBWW under separate contracts with Reclamation.

Reclamation operates Pueblo Reservoir to store and release Fry-Ark Project water for M&I and Agricultural uses. If and when space is available, Pueblo Reservoir is also used to store non-Project water through excess capacity storage and exchange contracts.

Southern Delivery System

The SDS Project will deliver both Project and non-Project water stored in Pueblo Reservoir through long-term excess capacity contracts with Colorado Springs, acting through its utility enterprise (CSU), Fountain, Security and Pueblo West to meet M&I demands for the SDS participants. As part of the SDS Project, Reclamation also authorized construction of the NOW and the 90-inch pipeline that connects to river outlet works at Pueblo Dam. Construction of the 90-inch and SDS pipelines is complete, and SDS is scheduled to begin delivering water in 2016. More information on SDS can be found at: <http://www.sdswater.org/home.aspx>. Reclamation is in the process of completing the title transfer process to take ownership of the NOW and the 90-

inch pipeline. This includes possible connections for the future Interconnect and the Pueblo Hydropower Project.

Hydropower Project Design

Pueblo Hydropower Project designs will be reviewed and approved by Reclamation as required in the LOPP prior to authorizing construction. Existing dam operations would remain unchanged and flows in the Arkansas River downstream of Pueblo Dam would be maintained to meet ongoing operational, contractual and environmental commitments. Power produced by the Pueblo Hydropower Project would be distributed by Black Hills. Project design (see Attachment C) utilizes the 90-inch pipeline connecting to the NOW under SDS Project Work Package 1A¹. The hydropower plant and associated facilities would consist of:

- A. **Intake Structure** – The Pueblo Hydropower Project would use the NOW and connect to the 90-inch pipeline. Pueblo Dam releases would flow through the 90-inch pipeline instead of being released directly to the Arkansas River using the rotary cone valve at the Fixed-Cone Valve Facility. The Pueblo Hydropower Project would use two 66-inch diameter turnouts already constructed in the 90-inch pipeline to supply flows to twin penstocks.
- B. **Penstocks** – Two parallel penstocks would be installed at the 66-inch diameter turnouts in the 90-inch pipeline to deliver flows to the power plant. The Unit 1 penstock would consist of a 72-inch diameter steel pipe about 105 ft in length. The Unit 2 penstock would be a 48-inch diameter steel pipe about 90 ft in length.
- C. **Hydropower Plant** – The proposed hydropower plant would be a two-level, cast-in-place concrete and metal structure located approximately 500 ft downstream from the Pueblo Dam Fixed-Cone Valve Facility and would discharge directly into the Arkansas River. The exterior appearance will be required to blend in with rock and the dam and will be consistent with the look of the facilities approved by Reclamation, and CPW for the SDS Juniper Pump Station. Construction standards would meet or exceed the Pueblo County building code. A copy of Pueblo County's building codes can be found at <http://www.prbd.com/bcodes.php>.

The structure would have lighting, heating, cooling, and drainage systems, and an overhead crane. It would also house the turbines and generators which would be located below grade. A supervisory control and data acquisition (SCADA) system would be installed to operate and monitor the hydropower plants operations. A 28 ft-deep excavation in the outlet channel will be required for construction of the hydropower plant structure and afterbay to accommodate hydropower plant flows up to 734 cfs. Retaining walls would also be constructed and will extend from the eastern and western edges of the hydropower plant structure.

¹ For the SDS Project, Reclamation issued a Special Use Permit authorizing the construction of the 90-inch pipeline on Reclamation lands from the existing river outlet structure (now the North Outlet Works) to the SDS pipeline. Bifurcation of the outlet structure was included in SDS Work Package 1A.

Table 1 - Turbine and Generator Summary

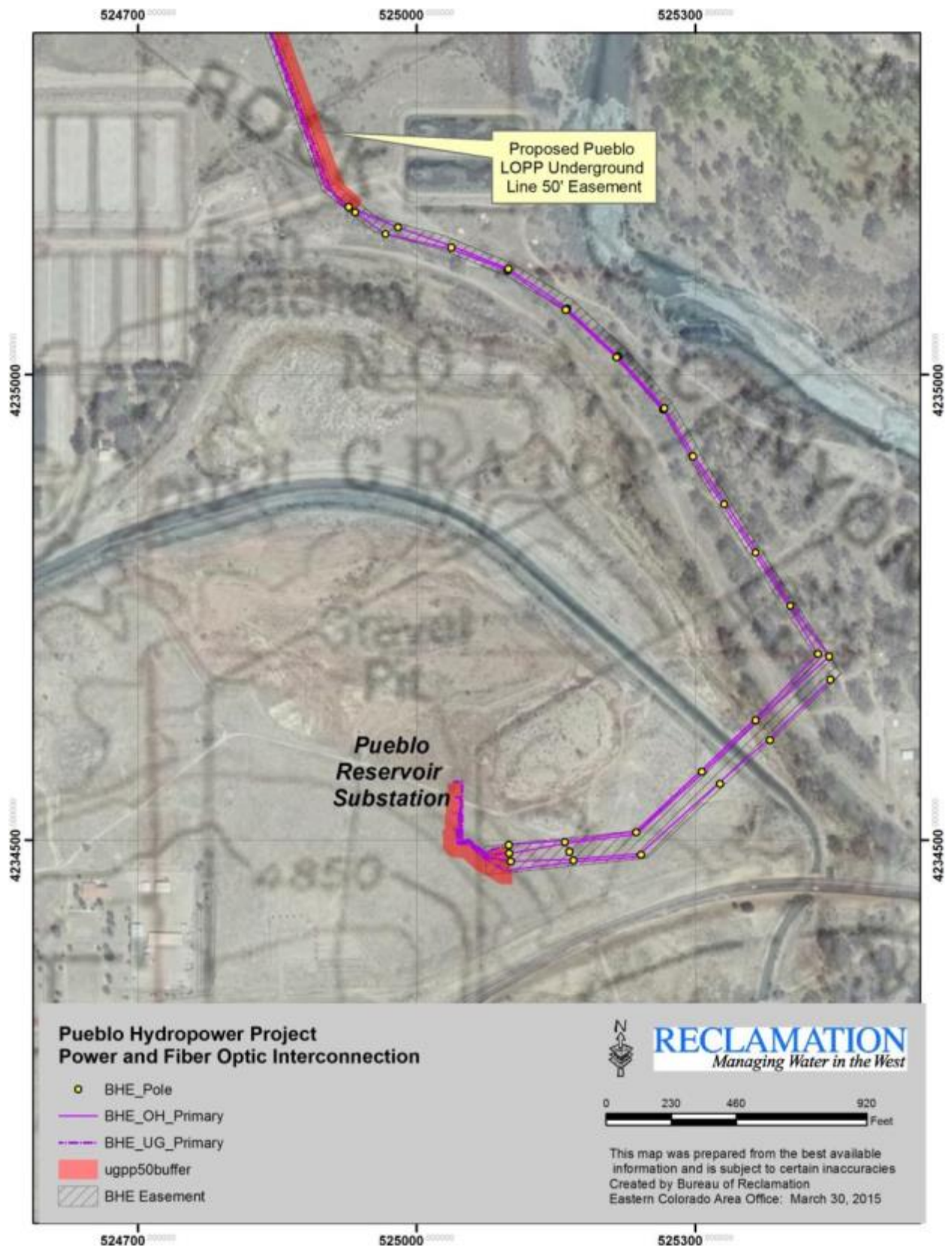
Description	Criteria	
	Unit 1	Unit 2
Turbines	540/189 cfs	194/68 cfs
Rated Flow (Max/Min)	110 ft	110 ft
Rated Head	300 revolutions per minute (rpm)	514 rpm
Rated Speed	4.3 ft	4.3 ft
Maximum Setting above Tailwater	Synchronous, 5,550 kilowatt (kW)	Synchronous, 1,500 kW
Generator Type and Rating	94%	94%
Maximum Turbine-generator Efficiency	~8 months	8-12 months
Operating Period		

Lengths of retaining walls would be approximately 200 ft and 75 ft, respectively. A parking area between the retaining walls, the hydropower plant, and existing access road would be developed and surfaced with gravel. Storm-drains would also be installed to direct stormwater flows back to the Arkansas River. A drainage sump with oil/water separation equipment is also proposed to collect and discharge any water from inside the hydropower plant structure. See Attachment C for additional details.

- D. **Turbines** – The turbines would consist of two horizontal shafts Francis type turbines with synchronous generators. A summary of equipment is provided below in Table 1.
- E. **Power and Communication Lines** –The interconnection of the hydropower plant to the transmission/distribution system will be through a 4160-volt (V) to 12.47-kilovolt (kV) transformer located adjacent to the power plant and new 12.47 kV underground and overhead transmission lines to connect to the existing Black Hill’s Pueblo Reservoir Substation (see Figures 2 and 3). From the substation, approximately 1.4 miles of new power and fiber-optic lines would parallel existing Black Hills’ lines. The new lines would transition from overhead to underground and would be off-set 50 ft from the Black Hills’ existing power line Special Use Permit (SUP) area. The new lines would cross the Arkansas River at the existing Juniper Road Bridge before traveling west to the hydropower plant. The new lines would be maintained by the Project Partners.

Construction of the proposed hydropower plant and associated facilities is anticipated to begin in the fall of 2016 and is expected to take about 18 months to complete at a cost of approximately \$21 million. The project would use low-interest hydroelectric project financing available through the Colorado Water Conservation Board, and cash equity from Project Partners.

Construction activities would be staged to avoid impacts to existing Fry-Ark Project and Pueblo Dam operations. A temporary cofferdam would be constructed to dewater and protect the hydropower plant area from higher flows during construction (see Attachment C). Excavation of a temporary channel in the tailrace may be needed to allow for continued connection to the river without significant increases in water surface elevations upstream of the temporary cofferdam. Reclamation will need to evaluate the selected construction contractor’s dewatering plans to determine if additional permits are required.



**Figure 2-Pueblo Hydropower Project Power Line and Fiber-Optic Route
(continued on Figure 3)**

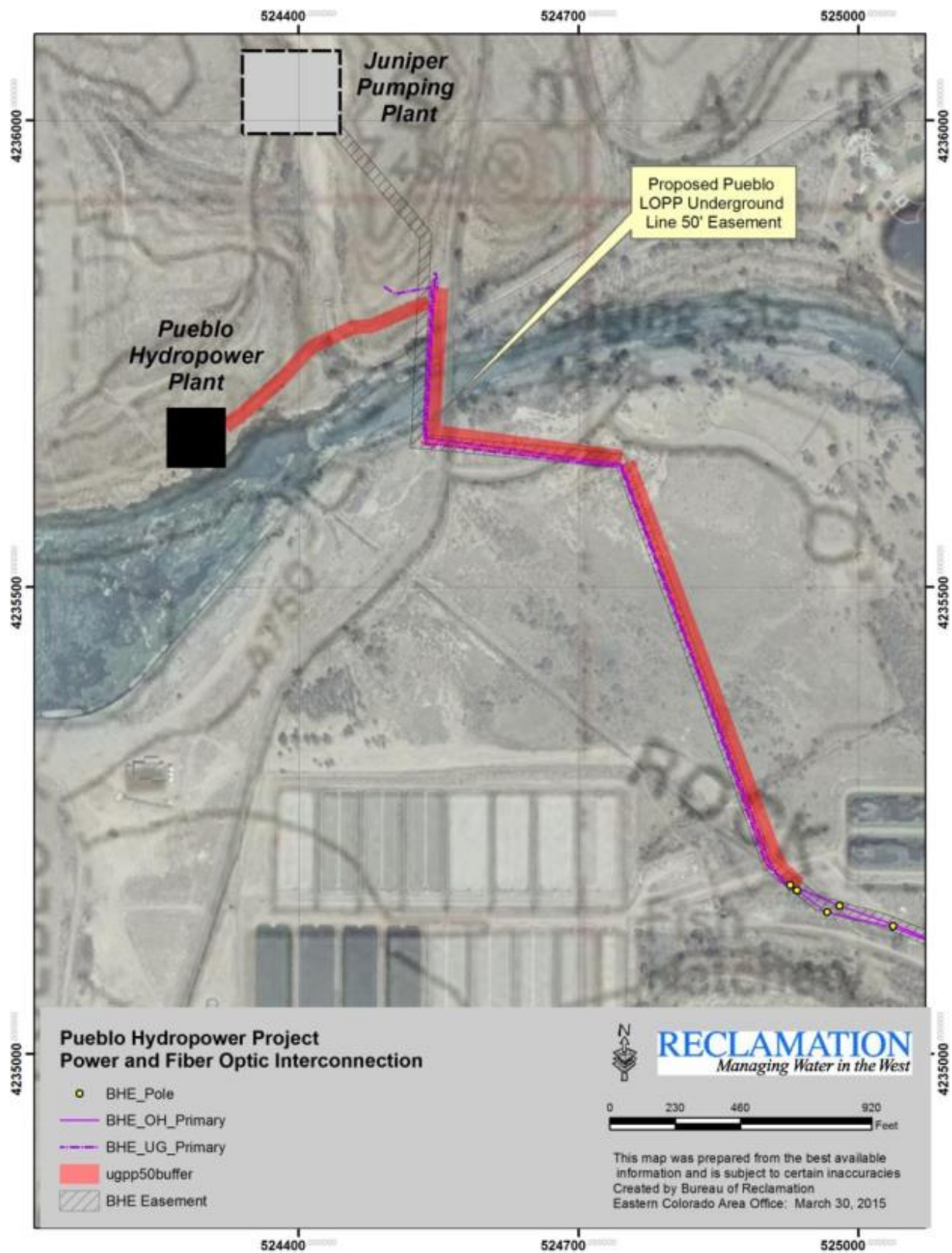


Figure 3- Pueblo Hydropower Project Power Line and Fiber-Optic Route (continued from Figure 2)

An area previously used during construction of the 90-inch pipeline and other SDS Project features would be utilized for construction storage and staging. These areas are previously shown in Figure 1 and construction access would use existing roads. Material excavated during construction of the power plant would be removed from site and stockpiled at an existing gravel pit about 1.7 miles downstream of Pueblo Dam off Reclamation Lands. This site was used to waste excavated material during construction of the SDS Project and is shown in Figure 4.

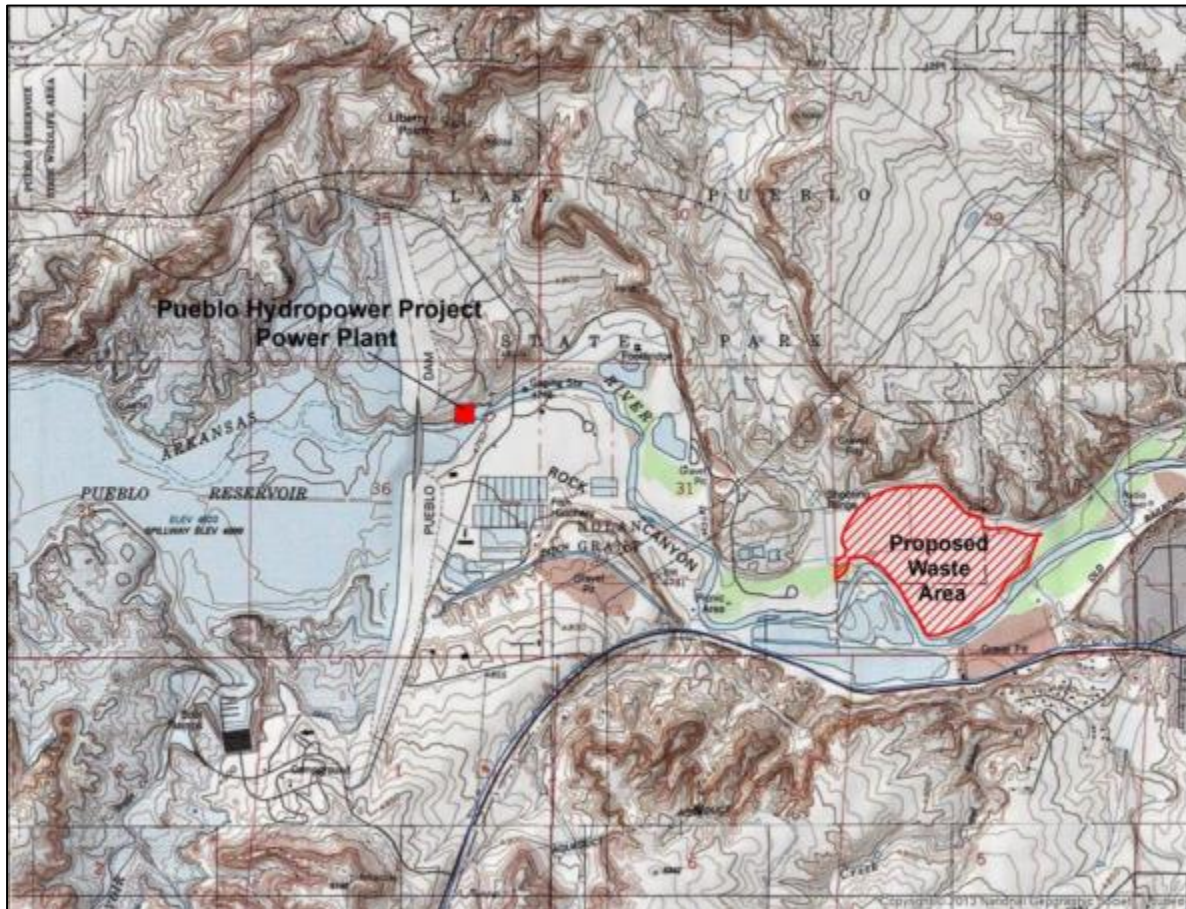


Figure 4-Proposed Waste Area for Excavated Material

SECWCD has obtained authorization for the Pueblo Hydropower Project from the Army Corps of Engineers under Nationwide Permit (NWP) Number 17, Hydropower Projects (See Attachment D). Project partners will be responsible for obtaining any other required federal, state, or local permits to construct and operate the project, including any other permits required under the Clean Water Act (CWA) (Section 402 and 404 permits). Project dewatering including the temporary cofferdam and stormwater discharge may not be covered under NWP 17 and could require additional CWA permits.

All disturbed lands would be contoured to prevent erosion, and topsoil stockpiled for later use in re-vegetation. The Pueblo Hydropower Project would use a seeding mix specifically designed for the impacted area, and implement a long-term weed control plan. Additional information is found in Chapter 3 under Environmental Commitments.

Operation

The Pueblo Hydropower Project would be operated as a “run-of-dam²”, meaning that with the hydropower plant in place; the volume, frequency and timing of releases from Pueblo Dam to the Arkansas River would not change. Reclamation previously approved a maximum velocity of 20 feet per second (ft/sec) in the 90-inch pipeline and limited the maximum allowable flow to the hydropower plant at 883 cfs. Flows through the 90-inch pipeline to meet SDS participants’ demands total 399 cfs. Of the 399 cfs, SDS and Pueblo West demands total 148 cfs. It is assumed that normal operating capacity reserves in the 90-inch pipeline only need to consider SDS and non-redundant Pueblo West demands. Redundant demands would be supplied solely during emergency conditions in the event the SOW experiences an outage and were not considered factors in sizing the hydroelectric equipment. Therefore, the maximum allowable flow to the hydropower plant is 735 cfs. See Table 4 in Chapter 3 for additional detail.

The hydropower plant’s design includes features to assure non-interrupted releases from Pueblo Dam to the Arkansas River. Whenever the hydropower facilities go off-line, flows through the power plant would be released through the fixed-cone valve and/or spillway gates at Pueblo Dam. Releases from Pueblo Dam would be made in accordance with demands from stakeholders exercising existing water rights, contracts and agreements, and are discussed in greater detail in Chapter 3.

Western Area Power Administration will have the first opportunity to purchase and/or market the power generated by the Pueblo Hydropower Project. If Western Area Power Administration declines to purchase the power generated, it may be purchased by Black Hills or transported over transmission lines owned by Black Hills to Midway Substation for purchase by CSU or other power provider.

SUMMARY

Table 2 provides a summary of the impacts for each resource analyzed in this EA.

Table 2 - Summary of Potential Impacts for Alternatives

Resource	No Action Alternative	Pueblo Hydropower Project
Fryingpan-Arkansas Project Operations and Water Resources	No effect.	No effect.
Energy and Socioeconomic Conditions	No effect.	Provides a new source of renewable energy; temporary increases in construction jobs, increases in employment/tax revenues, and provides long-term benefits to Project Partners resulting from the sale of power. Average 19,053 MWh of energy per year.

² Run-of-dam is a modified of “Run-of-River” hydroelectric generation whereby no water storage is used for hydropower generation and hydropower generation is incidental to normal operations of the dam. Power generation is also subject to seasonal river flows and minimum flow requirements.

Resource	No Action Alternative	Pueblo Hydropower Project
Water Quality and Wetlands	No effect.	A temporary cofferdam is needed in the Arkansas River to dewater the hydropower plant site during construction.
Water Quality and Wetlands (cont.)	No effect.	The Army Corps of Engineers has authorized the Pueblo Hydropower Project under NWP #17. NPDES permitting would also be required for construction activities and possibly for sump and stormwater discharges to the Arkansas River. Compliance with permit conditions and implementation of BMPs would minimize and/or eliminate any temporary changes to water quality. Project Partners would monitor dissolved oxygen concentrations before and after construction of the hydropower plant. If hydropower plant operations cause a decrease in dissolved oxygen (DO) concentrations immediately downstream of the hydropower plant, Project Proponents would install and operation an aeration system to mitigate decreased DO after additional consultation with CPW.
Fisheries Resources	No effect.	Temporary effect during construction dewatering. Fish mortality associated with the hydropower turbines would be similar to but not greater that experienced with releases through the fixed-cone valve.
Wildlife and Vegetation	No effect.	Temporary disturbances associated with construction of the hydropower plant and associated facilities.
Threatened and Endangered Species	No effect.	No effect.
Recreation	No effect.	No long-term effects, negligible short-term affects during construction.
Historic Properties	No effect.	No historic properties affected.
Paleontological Resources	No effect.	No known paleontological resources affected.
Indian Trust Assets	No effect.	No effect.
Air Quality and Noise	No effect.	Minor changes in air quality during construction associated with fugitive dust. Active dust abatement program would be implemented to keep changes in air quality to an insignificant level. Offset emissions of carbon dioxide are estimated between 39,439,710 to 41,345,010 lbs. per year) and other greenhouse gases. Temporary increase of noise levels during construction; distance from any nearby structures and recreational facilities combined with enclosure of project equipment would result in no significant long-term effect.
Visual Resources	No effect.	Minor effects.

CHAPTER 3 – AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter discusses resources that may be affected by actions taken to construct and operate a hydropower plant and associated facilities at Pueblo Dam. For each resource, existing conditions and impacts of alternatives are described. This chapter is concluded with a list of environmental commitments.

FRYINGPAN-ARKANSAS PROJECT OPERATIONS AND WATER RESOURCES

Existing Conditions: The Fry-Ark Project was authorized as a multi-purpose project. Supplying water for irrigation, municipal, domestic, and industrial uses, generating and transmitting hydroelectric power and energy, and controlling floods are all authorized Fry-Ark Project purposes (Public Law. 87-590). Recreation and the conservation and development of fish and wildlife are identified as other useful and beneficial purposes and are incidental to the other authorized Project purposes. The Fry-Ark Project is a trans-mountain diversion that stores and delivers water collected on the West-Slope of Colorado and delivers it to the East-Slope. Direct flows from the Fryingpan River and Hunter Creek watersheds are diverted and stored in the Arkansas River watershed for distribution to East-Slope users.

The Fry-Ark Project is divided into West-Slope and East-Slope components separated by the Continental Divide. West-Slope water is collected and transferred via the Boustead Tunnel to Turquoise Lake on the East-Slope. Turquoise Lake waters can be released to Lake Fork Creek or the Mount Elbert Conduit. The Mount Elbert Conduit conveys water from Turquoise Lake and is used to generate power at the Mt. Elbert Pumped-Storage Power Plant. The power plant discharges into Twin Lakes. From Twin Lakes, water is released to Lake Creek and the Arkansas River for delivery to Fry-Ark Project water users and for storage in Pueblo Reservoir.

Fry-Ark Project

Under Contract No. 5-07-70-W0086 with the United States, SECWCD assumed responsibility to repay reimbursable costs of the Fry-Ark Project. SECWCD distributes the water to users on the East-Slope pursuant to the Fryingpan Arkansas Project Operating Principles described in House Document 130, 87th Congress. Reclamation operates and maintains the Fry-Ark Project facilities, including Pueblo Dam and Reservoir.

CPW manages recreation at Pueblo Reservoir under agreements with Reclamation.

More information on the Fry-Ark Project can be found at:
http://www.usbr.gov/projects/Project.jsp?proj_Name=Fryingpan-Arkansas+Project.

Pueblo Dam Operation & Maintenance Access

As mentioned, Reclamation operates and maintains Pueblo Dam and Reservoir. Reclamation accesses the NOW and base of the north dam abutment using both Juniper and Spillway roads. Service vehicle access must be maintained at all times.

Fry-Ark Project Excess Capacity Storage and Exchange Contracts

Reclamation enters into both temporary and long-term excess contracts with various entities to utilize excess capacity in Fry-Ark Project Facilities. These contracts are commonly referred to as “if and when” contracts and allow for storage of non-Project water in Fry-Ark Project reservoirs if and when space is available.

Reclamation has entered into long-term excess capacity storage and exchange contracts with six municipalities. In addition, NEPA compliance for a Master Contract between SECWCD and Reclamation was completed (Reclamation 2014C), but Master Contract remains under negotiations. If a Master Contract is awarded, SECWCD will issue third-party contracts to entities within the SECWCD boundaries. Long-term excess capacity contracts are summarized below in Table 3.

Table 3-Fry-Ark Project Long-Term Excess Capacity Contracts

Entity		Contract No.	Contract Period	Fry-Ark Reservoirs	Maximum Volume of Storage (af)	Within SECWCD District	Within Arkansas River Basin
PBWW		00XX6C0049	2001-2025	Pueblo	15,000	Yes	Yes
Aurora		07XX6C0010	2007-2047	Turquoise, Twin Lakes & Pueblo	10,000	No	No
SDS Participants	Pueblo West	11XX6C0006	2011-2049	Pueblo	10,000	Yes	Yes
	Colorado Springs	11XX6C0002	2011-2049	Pueblo	28,000	Yes	Yes
	Fountain	11XX6C0004	2011-2049	Pueblo	2,500	Yes	Yes
	Security	11XX6C0003	2011-2049	Pueblo	1,500	Yes	Yes
Master Contract ¹		TBD	2016-2056 ¹	Pueblo	29,938	Yes	Yes

Temporary excess capacity contracts can range from 1 to 5 years, but are usually requested on an annual basis. These contracts enable contractors to efficiently use their non-Project water, by providing temporary storage of non-Project water for use at a later date and/or by providing an opportunity to exchange non-project water for Fry-Ark Project water.

Historically, excess capacity contracts have been issued for both agricultural and M&I uses. PBWW, Aurora, and SDS Participants currently have long-term excess capacity contracts, but these entities began utilizing storage in Pueblo Reservoir through temporary excess capacity contracts. Long-term storage contracts provide assurance and convenience not found in

temporary contracts. When executed, the Master Contract provides excess capacity storage to help secure a reliable water supply that helps participants meet projected demands for a 40-year period (Reclamation 2013).

As of June 6, 2015, Reclamation has executed twenty annual excess capacity contracts (see Attachment J) ranging from 50 ac-ft to 4,000 ac-ft for a combined potential of 15,284 ac-ft of temporary excess capacity storage.

Winter Water Storage Program

The Winter Water Storage Program was initiated 1990 and allows agricultural water users to store winter native Arkansas River flows, that would otherwise be diverted to frozen fields, in Pueblo Reservoir, John Martin Reservoir, and other off-channel reservoirs below Pueblo Reservoir from November 15th to March 14th. Administered by the State of Colorado, the Winter Water Storage Program annually stores between 30,000 and 50,000 ac-ft of water in Pueblo Reservoir and delivers that water for later use during the peak agricultural demand season (Reclamation 2013).

The principal entities that divert native Arkansas River flow under the Winter Water storage Program include Bessemer Irrigating Ditch Company, High Line Canal Company, Oxford Farmers Ditch and Canal Company, Catlin Canal Company, Colorado Canal System, Holbrook Mutual Irrigation Company, Fort Lyon Canal Company, and Amity Canal and Reservoir Company. CSU and Aurora also use the Winter Water Storage Program through their ownership of shares in the Colorado Canal System (Reclamation 2008).

Pueblo Dam North-South Outlet Works Interconnect

The Pueblo Dam NOW/SOW Interconnect (Interconnect) will be a short section of pipeline that will convey water between the NOW by virtue of the 90-inch pipeline and the SOW at Pueblo Dam. The Interconnect will provide a redundant water delivery option that can be used during short-term maintenance and emergency outages. Construction of the Interconnect and issuance of a 40-year conveyance contract are included in the AVC /Master Contract EIS (Reclamation 2013) and Record of Decision dated February 27, 2014, (Reclamation 2014c).

The Interconnect would be constructed as part of AVC. More information on the Interconnect can be found at <http://www.usbr.gov/avceis/>.

No Action Alternative: Under the No Action Alternative, the Pueblo LOPP would not occur, a power plant would not be constructed, and there would be no changes to current water deliveries or Fry-Ark Project operations.

Proposed Action: Under the Proposed Action, water typically released to the Arkansas River from Pueblo Dam would be routed and used for hydropower production. There would be no change in Fry-Ark Project or Pueblo Dam operations, or in the timing or the amount of water released from Pueblo Reservoir Dam. The Pueblo Hydropower Project would be operated as a

“run-of-dam³” facility, and existing Fry-Ark Project supplies, water deliveries, and contracts would not be affected. All releases would continue to be made from the NOW to meet downstream Arkansas River flow requirements and contract deliveries, but these releases would first be routed to generate power as the flow passes through the proposed hydropower plant. The maximum capacity of the NOW through the Pueblo Dam Fixed Cone Valve is 1,120 cfs. Downstream river demands greater than 1,120 cfs would require the use of at least one of Pueblo Dam’s three spillway gates.

The Pueblo Hydropower Project does not have a water right and will operate subject to space availability in the 90-inch pipeline and downstream Arkansas River demands. The space needed in the 90-inch pipeline to meet contract demands including redundancies is shown in Table 4 (CH2MHill 2014). SDS deliveries require 148 cfs. Only normal SDS operating capacity reserves in the 90-inch pipeline were considered when sizing the hydroelectric equipment.

Table 4-System Demand by Contract Entity

Demand Description	Demand		Comments
	(mgd)	(cfs)	
SDS-CSU, Fountain & Security	78	120	SDS Flow to Juniper Pump Station Turnout, Regular Capacity to be maintained in NOW 90-inch pipeline.
SDS-Pueblo West	18	28	SDS Flow to Pueblo West Turnout, Regular Capacity to be maintained in NOW 90-inch pipeline.
Pueblo West	12	19	Joint-Use Manifold Flow Redundancy to Pueblo West Turnout, Regular Capacity delivered from SOW.
FVA	20	32	Interconnect Redundancy, Regular Capacity delivered from SOW.
AVC	20	32	Interconnect Redundancy, Regular Capacity delivered from SOW.
PBWW-Comanche Power	40	64	Interconnect Redundancy, Regular Capacity delivered from SOW.
PBWW-Whitlock Water Treatment Plant	40	64	Interconnect Redundancy, Regular Capacity delivered from SOW.
Pueblo Fish Hatchery	26	40	Interconnect Redundancy, Regular Capacity delivered from SOW.
Total	254	399	
Maximum Power Plant Flow	N/A	734	Maximum flow through Turbines 1 and 2.
Maximum 90-inch Pipeline	N/A	883	Maximum flow capacity through the 90-inch pipeline.

Reclamation’s Pueblo Field office has expressed concerns related to maintaining service vehicle access along the north river bank near the Reclamation vault. The current Pueblo Hydropower Project drawings (see Attachment C) show this access to be restricted by a retaining wall and chain link fence. Access to the Fixed-Cone Valve Facility and Buttress 16 north dam entry could be affected because access to Reclamation’s vault is constrained by the proposed retaining wall and a chain link fence. The Project Partners have committed to redesign the access road around the Reclamation vault to allow for easy access past the hydropower facility. Changes in design would be incorporated into the final designs to address this concern. The environmental commitments include maintaining Reclamation’s unrestricted access to the dam during both

³ Run-of-dam is a modified of “Run-of-River” hydroelectric generation whereby no water storage is used for hydropower generation and hydropower generation is incidental to normal operations of the dam. Power generation is also subject to seasonal river flows and minimum flow requirements.

construction and operation. Project partners will also be required to coordinate construction and maintenance activities with Pueblo Lake State Park staff to minimize potential conflicts with recreational users.

Redundant demands would be supplied using the Interconnect during emergency conditions if the SOW experiences an outage and were not considered a factor in determining specifications of the hydroelectric equipment. CH2MHill (2014) estimated that 90-inch pipeline could accommodate up to a total of 883 cfs of flow based upon the Reclamation approved 20 ft/sec maximum velocity. The maximum flow through the hydropower plant would be 734 cfs based on sizing of the hydroelectric equipment.

An analysis of average daily flows from Pueblo Dam releases to the Arkansas River shows that releases equal to or greater than 734 cfs occurred 16.8 percent of the time after January 1, 2002, (CH2MHill 2014). Downstream releases greater than 734 cfs would be made through the fixed-cone valve, spillway gates, or some combination of Pueblo Dam outlets, depending on the volume of the releases.

Because the Pueblo Hydropower Project has no water right, it cannot call for releases from Pueblo Reservoir and will not affect existing water rights. All releases through the hydropower plant would continue to be subject to Colorado water rights, administered by the State of Colorado and would be made subject to the downstream demand. The Proposed Action would also have no effect on Arkansas River Compact deliveries to Kansas.

ENERGY AND SOCIOECONOMIC CONDITIONS

Existing Conditions: The Fry-Ark Project includes a 200 MW pump-back storage hydroelectric power plant at Mt. Elbert in the Upper Arkansas River Basin. In addition, a 3 MW hydroelectric power plant was permitted in 1982 by the Federal Energy Regulatory Commission (License No. 21 FERC 62,274) and utilizes Sugarloaf Dam and the Mt. Elbert Conduit. The Sugarloaf Hydroelectric Plant is owned and operated by STS Hydropower Ltd. and is not considered a Fry-Ark Project facility. The Pueblo Hydropower Project would be located in the Rocky Mountain Power Area of the Western Electric Coordination Council (WECC) Region of the North American Electric Reliability Corporation. WECC promotes bulk electric system reliability in the Western Interconnect which extends from Canada to Mexico, and all or portions of the 14 Western states (WECC 2015).

The Pueblo Hydropower Project could be used to meet a portion of the electricity demand in Black Hills' Energy's service territory with a renewable energy resource. Black Hills Energy is a subsidiary of Black Hills Corporation and provides service to more than 600,000 customers in hundreds of communities throughout Colorado, Iowa, Kansas, and Nebraska (Black Hills 2015).

Amendment 37 (Colorado Revised Statutes 40-2-124) to the Colorado Constitution established a Renewable Energy Standard which requires each retail electric service provider within the State of Colorado that serves over 40,000 customers to provide at least minimum percentage of electricity (10 percent of retail electrical sales by 2015) from renewable energy sources, including hydroelectricity. Additional Colorado executive orders and regulations (Executive

Orders B 2013-005 and B 2013-006, and 4 Code of Colorado Regulation (CCR) 723-3-3650] require electric cooperatives and municipal utilities serving more than 40,000, but less than 100,000 customers to provide 6 percent of retail electric sales in Colorado for the years 2015-2019, and 10 percent of retail electric sales for year 2020 and each following year.

The Fry-Ark Project is critical to the economies of numerous counties in Colorado. The Fry-Ark Project supports over 265,000 acres of irrigated agriculture in 12 counties in southeastern Colorado and provides water to cities and towns with an estimated population of 650,000. Principle crops include alfalfa, corn and sorghum. Specialty crops such as onions, beans, tomatoes, melons, and seed crops are also grown in the Arkansas River Valley.

No Action Alternative: Under the No Action Alternative, the Project Partners would not build a hydropower plant and associated facility at Pueblo Dam and economic opportunities associated with the hydropower project would be forgone.

Proposed Action: The Pueblo Hydropower Project would produce an estimated average of 19,053 MWh of energy per year based on run-of-dam flows, and would help meet regional power demands in the future. Energy production is based on historical Arkansas River flow and Pueblo Reservoir water elevation daily data from 1984 to 2013 (CH2MHill 2014). Power from the proposed Pueblo Hydropower Project would be distributed through Black Hills' Pueblo Reservoir Substation and the Project Partners anticipate selling the power produced by the Pueblo Hydropower Project to Black Hills or another regional power provider. The Project Partners would enter into a power purchase contract where power is purchased on a per-kilowatt-hour basis. The term of the power purchase contract is anticipated to be 20 years with a renewal clause.

The Pueblo Hydropower Project life is expected to extend beyond 50 years and anticipated to provide Project partners with a long-term, reliable revenue stream. Revenue projections are based on historical releases through the outlet works as well as loan terms, operational costs, and other maintenance obligations. Depending on annual releases during wet or dry year periods the revenues and associated cash flows may vary significantly each year. However, the power plant is anticipated to produce positive cash flow once operations start. All revenues will be used initially to repay debt obligations. Once the Pueblo Hydropower Project debt is paid, Project partners can use the Pueblo Hydropower Project power revenues to reinvest in hydropower plant equipment and help pay for Fry-Ark Project operation, maintenance and improvement costs.

The Pueblo Hydropower Project would provide an additional source of renewable energy to market throughout Colorado and surrounding states. The Pueblo Hydropower Project qualifies as a renewable energy source as defined under Colorado Revised Statute 40-2-124. Retail electric service providers can use power generated from this Pueblo Hydropower Project to meet Renewable Energy Standard targets. Estimated reductions in carbon dioxide and other greenhouse gases are discussed in the Air Quality and Noise Section of this chapter.

There would also be short-term employment and spending on goods, services, and materials during the construction phase. This would benefit local communities and businesses, as well as increase tax revenues from taxes collected on these purchases.

The transport and delivery of irrigation or municipal and industrial water in the Fry-Ark Project would not be affected by the proposed Pueblo Hydropower Project during construction, operation, or any future maintenance activities associated with the projects.

WATER QUALITY AND WETLANDS

Existing Conditions:

Pueblo Reservoir

Pueblo Reservoir incurs long cycles between reservoir fills due to climate variability and Fry-Ark Project operations which keep storage in the higher mountain reservoirs to reduce evaporation. West and East-Slope Fry-Ark Project yields are not enough to completely fill the Pueblo Reservoir annually. By design, Pueblo Reservoir stores excess water during wetter years and delivers this water during drier years. This results in higher contents during and immediately after wet years and lower contents during and immediately after dry years (Reclamation 2013). Pueblo Reservoir also stores water during winter months as part of the Winter Water Storage Program as previously described.

Pueblo Reservoir typically stratifies during the summer months, which can cause manganese and other metals, and nutrients to dissolve out of the sediments. Stratification reduces mixing and can lead to periods of low dissolved oxygen near the bottom of the reservoir leading to metal and nutrient dissolution.

Arkansas River

The Arkansas River above Pueblo is not included on Colorado's 303D list of impaired waters. However, the Colorado-Arkansas Headwaters and Upper Arkansas watersheds include impaired tributary reaches listed on the 303D list primarily due to historic mining operations. Constituents of concern include: lead, cadmium, zinc, copper, aluminum, pH, and dissolved oxygen (CDPHE 2012).

Constituents including selenium, sulfate, iron, uranium and E. coli are either on Colorado's impaired list or are of concern in the Lower Arkansas River downstream from Pueblo Reservoir (CDPHE 2012).

The Clean Water Act (CWA) establishes the basic structure for regulating discharges into the waters of the United States. Section 404 of the CWA requires permits for the discharge of dredged or fill material into waters of the United States. Wetland areas adjacent to waters of the United States may also be subject to permit requirements. Authorization can either be issued under nationwide, general, or individual permits and are site specific. Nationwide permits include entire groups of activities. Pueblo Reservoir and the Arkansas River are waters of the United States and regulated by the CWA.

In addition, Section 402 of the CWA states that any person who proposes to discharge pollutants from a point source to waters of the United States must apply for a Non-Point Discharge Elimination System (NPDES) Permit (402 Permit). In Colorado, the Colorado Department of

Public Health (CDPHE) Water Quality Control Division has been delegated to administer the NPDES program for non-federal facilities. CWA 402 permits are also typically required when construction activities require dewatering or discharges into waters of the United States.

No Action Alternative: Under the No Action Alternative, there will be no changes in wetlands or water quality in Pueblo Reservoir or the Arkansas River.

Proposed Action:

The operation of Pueblo Dam would not change; therefore, the Proposed Action is predicted to have no effect on water quality to Pueblo Reservoir. Downstream releases from Pueblo Dam would be diverted through the 90-inch pipeline attached to the NOW and passed through the hydropower plant before returning to the Arkansas River downstream of the dam. The location of reservoir withdraws would not change; therefore, no changes in downstream temperatures are predicted.

Project designs include a drainage sump located inside the hydropower plant. The sump would collect and deliver water collected from inside the hydropower plant to an oil water separator before discharging into a common storm drain to the Arkansas River (see Attachment C). The proposed sump and stormwater discharges may require additional permitting through Colorado Water Quality Control Division.

The construction contractor will be required to obtain authorization from the State of Colorado under the Colorado Discharge Permit System. The State regulation (5 CCR 1002-61) covers discharges from specific types of industries including construction sites, and storm sewer systems for certain municipalities. Construction activities refers to ground surface disturbing activities, which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction sites that disturb 1 acre or greater, or are part of a larger common plan of development disturbing one acre or greater, are covered under Colorado's stormwater permitting requirements. Additional information can be found at: <https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits>.

It is also anticipated that dewatering will be needed for construction. Construction dewatering water cannot be discharged to surface waters or to storm sewer systems without separate permit coverage. If groundwater is encountered during construction and dewatering becomes necessary, the Project partners may be required to obtain additional CWA 402 permits from the Water Quality Control Division of CDPHE. Additional information can be found at the CDPHE's website provided above.

No wetlands have been identified within the Pueblo Hydropower Project's footprint. However, a review of the National Wetland Inventory (Service 2015a) identified two palustrine wetlands along the Arkansas River approximately ½ mile downstream of the project site. These wetlands are freshwater ponds approximately 6.8 and 8 acres in size and would not be affected by the Pueblo Hydropower Project. The proposed power and fiber-optic lines crosses a small patch of Western Great Plain Floodplain and Wetlands land cover type (Lowry 2005). However, this

classification is not jurisdictional wetlands delineation. This land cover type is discussed in the Wildlife and Vegetation Resources Section.

The Arkansas River below Pueblo Dam is considered a Water of the United States subject to Section 404 of the Clean Water Act. Permanent discharges into these waters for construction of the hydropower plant have been authorized by the Army Corps of Engineers under Nationwide Permit (NWP) No. 17-Hydropower Projects (see Attachment D). A copy of Nationwide Permit No. 17 is included in Attachment D and more information on NWPs can be found at: <http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits/NWP.aspx>.

In addition, Regional Conditions for NWPs in Colorado also apply. The conditions can be found at: <http://www.spa.usace.army.mil/Portals/16/docs/civilworks/regulatory/Regional%20Conditions/CO%20Regional%20Conditions%20Revision%2020140509.pdf>

All NWP requirements and Regional Conditions are incorporated as environmental commitments. Once a construction contractor is selected, a construction dewatering plan will be finalized and submitted to Reclamation for approval. Reclamation will review the plan and consult with the Army Corps of Engineers to determine if additional authorizations are needed under NWP 33-Temporary Construction, Access, and Dewatering. The use of best management practices (BMPs) is also incorporated as an environmental commitment and examples are described in Attachment H.

Project Partners would monitor dissolved oxygen (DO) concentrations immediately downstream of the hydropower plant before and after construction. In the event, hydropower plant operations cause a decrease in DO concentrations immediately downstream of the hydropower plant, Project Proponents would install and operation an aeration system to mitigate decreased DO after additional consultation with CPW.

Construction of the power and fiber-optic lines from the hydropower facility will cross the Arkansas River in existing conduit at the Juniper Bridge and parallel existing line back to the substation (see Attachment E). The power and fiber-optic lines will have no effect on wetlands or Waters of the United States.

FISHERIES RESOURCES

Existing Conditions: Pueblo Reservoir and the Arkansas River are important fisheries to the State of Colorado and Pueblo County.

Pueblo Reservoir contains a mix of many different species of fish including both cold water and warm water species. Between 2011 and 2013, CPW stocked Pueblo Reservoir with blue catfish, channel catfish, cutbow, largemouth bass, rainbow trout, walleye, wiper, and black crappie. Pueblo Reservoir also contains fishable populations of white crappie, bluegill, flathead catfish and yellow perch. Common carp, gizzard shad, and white sucker are also present (CPW 2015a).

The 9 mile stretch of the Arkansas River downstream of Pueblo Dam provides excellent habitat for rainbow and brown trout. Between 2010 and 2013, CPW stocked brown trout, rainbow trout, cutbow, and saugeye in this stretch of river (CPW 2015b). This river stretch also includes black bullhead, fathead minnow, red shiner, plains minnow, speckled chub, and Pueblo Reservoir fish that have moved downstream with dam releases (USBR 2013).

CDPHE classifies the Arkansas River from Pueblo Reservoir downstream to Wildhorse Creek as Coldwater Class 1. Coldwater Class 1 is defined as capable of sustaining or could be capable of sustaining, a wide variety of coldwater aquatic biota, including sensitive species. In 2013, the City of Pueblo, Trout Unlimited, and CPW constructed in-stream habitat improvements and bank stabilization between the Valco Bridge area and Dutch Clark Stadium (CPW 2015b).

No Action Alternative: Under the No Action Alternative, current fishery conditions in Pueblo Reservoir and the Arkansas River would remain unchanged.

Proposed Action: Volume of releases from Pueblo Dam would not change due to operation of the hydropower project and habitat conditions on the Arkansas River downstream of the hydropower plant and associated facility would not change.

A temporary cofferdam would be needed to dewater the hydropower plant site during construction. The cofferdam would be installed and removed during the Winter Water Storage Program (November 15th through March 14th) when Arkansas River flows through Pueblo Dam are reduced. Construction dewatering plans would incorporate relocation of any stranded fish downstream of the construction site and would be coordinated with local CPW staff.

The Pueblo Hydropower Project would use the NOW intake and connection with the 90 inch pipeline. Impacts to fish passing through the hydropower facility turbines would be less or similar to those experienced by fish passing through the fixed-cone valve. Neither the proposed Francis turbines nor the existing fixed-cone valve dam outlet structure are particularly fish friendly. Studies for a similar hydropower project in Oregon documented fish mortality rates from similar tube valve as high as 86.3 percent for both direct and indirect mortality (Symbiotics 2012). Fish mortality rates for Francis-type turbines have been estimated to between as high as 40 to 60 percent depending on hydropower facility and design (Duncan 2011 and EPRI 1987). Fish mortality is predicted to occur with releases from either structure and fish escapement from Pueblo Reservoir is also possible when Pueblo Dam's spillway gates are utilized. Any reduction in fish mortality resulting from changes in releases from the fixed-cone valve through the hydropower turbines may benefit the downstream fisheries.

As a "run of dam" operation, the hydropower facilities would utilize the existing Pueblo Dam outlet structure and draw water at the same location. Therefore, no significant changes in water temperature of the Arkansas River are anticipated.

When the hydropower plant is the sole discharge downstream, water would back up in the outlet channel and fluctuate based on the water surface elevations in the hydropower facility afterbay. Under these conditions, available aquatic and riparian habitat upstream of the power plant would fluctuate based the changes in water surface elevation. The range of hydropower plant operating

elevations and flows are 4,738.57 ft to 4,740.74 ft and 65 cfs to 734 cfs. There would be no changes in available habitat that would occur downstream of the Juniper Road Bridge.

The Pueblo Hydropower Project would have no effect on fisheries resources in Pueblo Reservoir. Construction and operations of the hydropower plant would decrease available habitat immediately downstream between Pueblo Dam to the hydropower plant at lower flows. This reduction of available habitat would not significantly impact fisheries resources downstream of Pueblo Dam. As previously discussed, no change in fish mortality is predicted in association with releases through the NOW.

WILDLIFE AND VEGETATION

Existing Conditions: The general Pueblo Hydropower Project area below Pueblo Dam is within the Arkansas River floodplain and is classified as Western Great Plains Riparian Woodland and Shrubland, and Invasive Southwestern Riparian Woodland and Shrubland land cover types (Lowry et al. 2005). Figure 5 shows land cover types within the project area. Riparian areas are dominated by cottonwood, willow, sagebrush, western wheatgrass, sand dropseed, and little bluestem. Tamarisk and Russian olive are the dominant invasive species. Above the floodplain, the dominant land cover type is Western Great Plains Shortgrass Prairie and Inter-Mountain Mixed Salt Desert Scrub. Dominant prairie grasses include blue grama, purple threeawn, sideoats grama, buffalograss, needle and thread grass, western wheatgrass, alkali sacaton, and sand dropseed. The dominant shrub is sagebrush but it is sparsely scattered throughout these land cover types.

Two small patches of Western Great Plains Floodplain land cover type also occur within the project area. In this land cover type, only the herbaceous vegetation associated with the Western Great Plains Riparian Woodland and Shrubland occur.

The Pueblo Hydropower Project area elevation below Pueblo Dam ranges between 4,730 and 4,800 ft. Pueblo Dam construction in the 1970s disturbed the majority of the native vegetation within the project area. Over the years, dam construction, maintenance of access roads and storage areas, disposal of spoil material, and development of borrow areas have disturbed land near Pueblo Dam. Uplands surrounding the proposed hydropower plant were also recently disturbed during construction of the 90-inch pipeline as part of the SDS Project.

The Pueblo Hydropower Project area provides summer range for mule deer. In addition, Pueblo Reservoir also provides habitat for white pelican. There are no prairie dog towns or known active raptor nests in the Pueblo Hydropower Project construction footprint. The Arkansas River downstream of Pueblo Dam offers foraging habitat for osprey and winter range for bald eagle (CPW 2014). Waterfowl also occasionally use low velocity sections of the Arkansas River. Other wildlife that potentially occurs within the analysis area includes songbirds, raptors, reptiles, and large and small mammals such as coyote, bobcat, pronghorn, and white-tailed deer.

No Action Alternative: Under the No Action Alternative, a proposed hydropower facility would not be developed and there would be no changes to the existing wildlife and vegetation conditions.

Proposed Action: Original construction of Pueblo Dam disturbed much of the adjacent project area with significant earth moving. Construction activities for the power plant and penstock would occur about 500 ft downstream of Pueblo Dam adjacent to the Arkansas River.

Approximately 12 acres of vegetation and wildlife habitat would be temporarily disturbed during construction of the hydropower plant and associated facility and result in the permanent loss of about 1 acre for structures and other related facilities (see Figure 5). All impacts associated with the hydropower plant and associated facility occur within the Western Great Plains Shortgrass Prairie land cover type and includes areas previously disturbed during construction of the SDS Project.

Construction of the power and fiber-optic line would also temporarily disturb an additional 8.5 acres. This line will parallel, for a majority of its alignment, the existing Black Hill's Pueblo Reservoir Substation to Juniper Substation power line constructed in 2014, as shown in Figure 5.

Land cover types to be crossed include Western Great Plains Shortgrass Prairie, Invasive Southwestern Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetlands, Great Plains Riparian Woodlands and Shrubland, and Inter-Mountain Basins Mixed Salt Desert Scrub. The new power and fiber-optic line will be off-set 50 ft from the existing line is shown in Attachment E. To the extent practicable, all ground disturbing activities associated with the lines would be limited to this existing developed utility corridor.

A review of CPW geographic information systems (GIS) data (CPW 2014) identified one historic osprey nest site within 0.5 miles of the power and fiber optic lines. The data shows that this nest site was not active in 2013. Discussions with local CPW staff also confirmed that the nest site was also not active in 2014 or 2015. If the osprey nest remains inactive, no restrictions would be required. Reclamation and the Project Partners would coordinate activities with the CPW biologist to determine if the osprey nest is active prior to commencing with construction of the underground power and fiber-optic line and determine if timing restrictions are appropriate. Typical timing restrictions include no construction within 0.25 miles of an active osprey nest between May 1st and September 1st (CPW 2008).

Wildlife habitat assessments previously conducted for the Black Hill's Pueblo Reservoir Substation (Reclamation 2014a) identified a permanent impact to 4.72 acres wildlife habitat associated with Black Hill's Pueblo Reservoir Substation and the power line (see Table 5). For purposes of analysis, it was assumed that the Pueblo Hydropower Project impacts associated with the parallel power and fiber-optic line would be similar, if not reduced when compared to the Black Hill's Pueblo Reservoir Substation analysis.

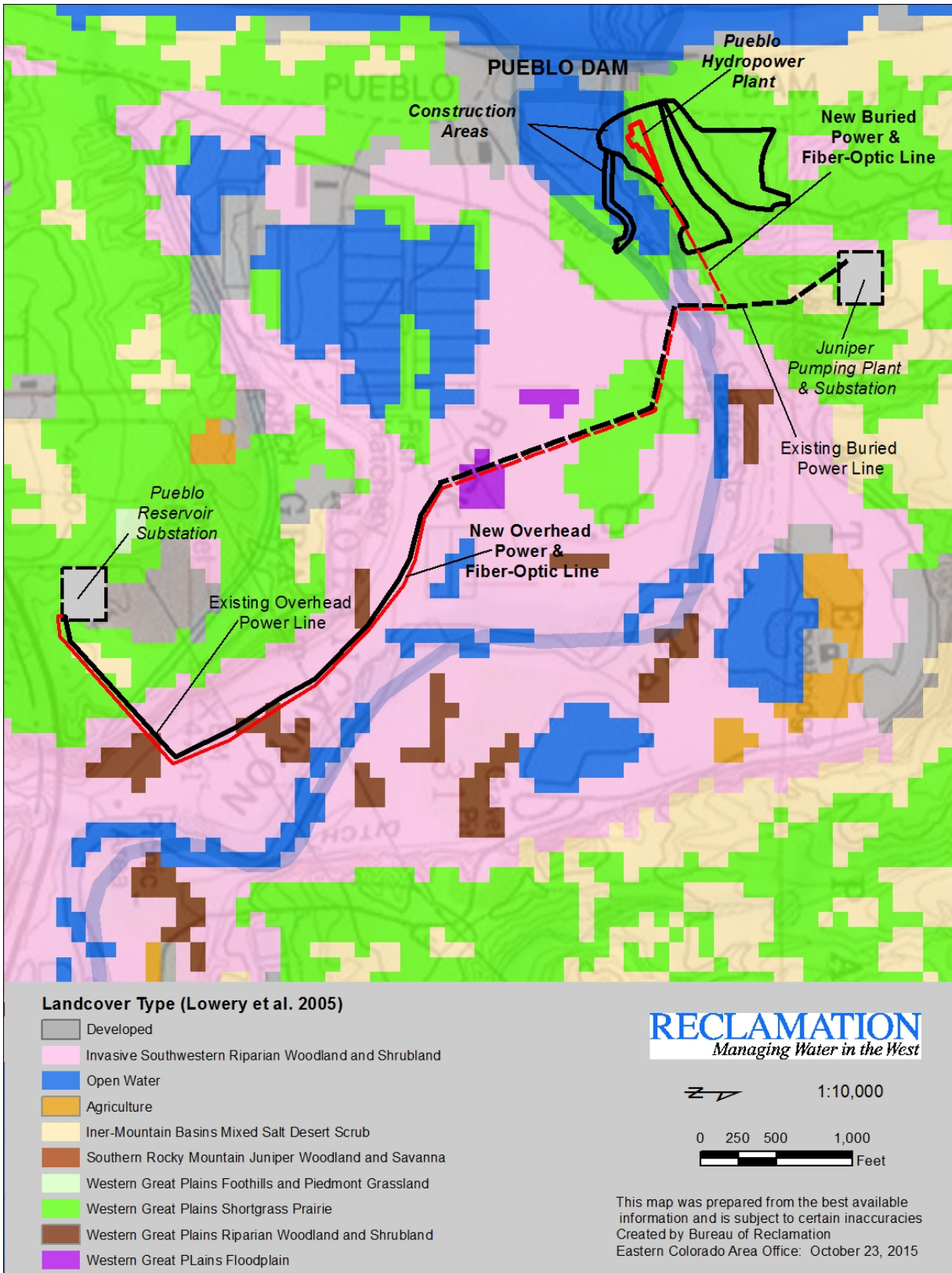


Figure 5-Land Cover Types within the Project Area

Table 5-Temporary Wildlife Impacts associated with the Pueblo Reservoir Substation Project.

Effect	Habitat Type	Habitat Impact (acres)	Habitat Available* (acres)	Percent Impact/Habitat Available
Temporary	Mule Deer Overall Range	22.10	100,252	0.02%
Temporary	Pronghorn Overall Range	13.91	172,695	0.01%
Temporary	Swift Fox Overall Range	22.10	165,183	0.01%
Temporary	White-tail Deer Overall Range	22.10	207,788	0.01%
Temporary	Bald Eagle Winter Range	7.33	11,751	0.06%
Temporary	Triploid Checkered Whiptail	9.76	438.1	2.23%

(Data from Reclamation 2014a)

As a condition of the LOPP, Project Partners would also be required to control invasive plant species such as tamarisk, Russian olive, Canada thistle, musk thistle, cheatgrass and houndstongue within the project area for the life of the Pueblo Hydropower Project. Weed control would benefit native plant and animal species that utilize the area. Project Partners would consult with Reclamation and Pueblo Lake State Park for acceptable weed control measures, including pesticides/herbicides approved for use on Reclamation land.

Any use of herbicides must comply with the applicable federal and state laws, and would be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Pueblo State Park and Pueblo County both have active noxious and invasive weed control programs. Pueblo County's Program is managed by the Turkey Creek Conservation District. Reclamation would coordinate with CPW prior to approving use of herbicides on lands managed by CPW.

All construction equipment would be power-washed and free of soil and debris prior to entering construction sites to reduce the spread of noxious and unwanted weeds. Topsoil, where available, would be stockpiled during construction for later use in re-vegetation. Disturbed areas would be contoured to reduce erosion and facilitate re-vegetation and re-seeding. Plans for re-vegetation and related erosion control/re-contouring and implementation would require approval by Reclamation. Project Partners would work directly with Reclamation and CPW to revegetate disturbed areas and develop appropriate seed mixtures.

All above-ground power line and power poles would be designed to meet recommended standards as outlined in the *Avian Protection Plan Guidelines* developed by the US Fish and Wildlife Service and Industry (APLIC 2005). A copy of these standards can be viewed at: http://www.aplic.org/uploads/files/2634/APPguidelines_final-draft_Apr12005.pdf.

In addition, guy markers would be installed on the outer down guy at each anchor to maximize visibility. Where possible, the new power and fiber-optic line would be placed on existing poles.

THREATENED, ENDANGERED & SENSITIVE SPECIES

Existing Conditions: No federally listed species occur within the Pueblo Hydropower Project area. Table 6 includes species which are either a candidate for listing or a Colorado species of special concern, and potentially occurring downstream along the Arkansas River in Pueblo County.

No Action Alternative: Under the no action alternative, there would be no change in effect to any threatened, endangered, or candidate species in project area.

Proposed Action: Under the Proposed Action, there would be no new effects on endangered or threatened species or their habitat from the development of any features of the Pueblo Hydropower Project. No listed species are present in areas that would be affected by construction or operations. Water depletions associated with the Fry-Ark Project were consulted on and addressed in the programmatic biological opinion for Reclamation operations and water depletions in the upper Colorado River upstream of the confluence with the Gunnison River (Service 1999) and no additional consultation is needed. The Pueblo Hydropower Project would have no effect on threatened and/or endangered species.

Table 6 - Special Status Species in Pueblo County or Potentially Affected Downstream.

Common Name	Scientific Name	Status	General Habitat
Arkansas darter	<i>Etheostoma cragini</i>	Federal Candidate	Arkansas River tributaries downstream of Pueblo Dam
Plains Leopard Frog	<i>Rana Lithobates blairi</i>	Colorado Special Concern	Great Plains portion of the Arkansas River drainage in southeastern Colorado.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Colorado Special Concern	In Colorado, near reservoirs and along major river during both summer and winter.
Triploid Checkered Whiptail	<i>Cnemidophorus neotesselatus</i>	Colorado Special Concern	Endemic to southeastern Colorado below 7,000 ft.

(Service 2015b, CPW 2015c)

Sensitive species potentially affected by the Pueblo Hydropower Project are included in Table 6. The Arkansas darter is not known to occur within the Pueblo Hydropower Project footprint. Operations of the hydropower facility will not alter flows downstream and will not affect the Arkansas darter. Plains leopard frogs occur throughout much of the Great Plains and into the central Midwest. The plains leopard frog is more drought tolerant and heat resistant than northern leopard frogs (Lannoo 2005). Disturbances below the dam associated with construction and removal of the cofferdam could temporarily reduce available habitat for the plain leopard frog. Implementation of environmental commitments include following BMPs (Attachment H and NWP #17 General Conditions (Attachment D) during construction and operations would assure potential impacts to the plains leopard frog would be insignificant.

CPW GIS data also identifies the project area as winter range, winter foraging habitat, and a winter concentration area for bald eagle (CPW 2014). Winter range is defined by CPW as those areas where bald eagles have been observed between November 15th and April 1st. The project

area is within an existing winter range where eagles concentrate between November 15th and April 1st, however no identified roost trees will be impacted by the proposed construction. About 1.5 miles of riparian habitat along the Arkansas River floodplain just downstream of the Juniper Road Bridge is also classified as a roost site for bald eagles. Roost sites are defined as groups of or individual trees that provide diurnal and/or nocturnal perches for less than 15 wintering bald eagles (CPW 2014). These trees are usually the tallest available trees in the wintering area and are primarily located in riparian habitats. No bald eagle nests are known to occur within the project area. Wintering bald eagles may avoid portions of the project area during construction, but it is anticipated that eagles have adapted to routine dam operations and would continue to utilize roost sites downstream of the Pueblo Hydropower Project.

Triploid checkered whiptail is endemic to southeastern Colorado with a spotty distribution below 7,000 ft (CPW 2015b). It occurs in valleys, arroyos, canyons and hillsides, in areas dominated by plains grasslands or juniper woodland, including areas such as parks with frequent human use and habitat disturbance (Walker et al. 1997). Habitat analysis completed in 2014 associated with the Black Hill's Pueblo Reservoir Substation Project (Reclamation 2014) identified 9.76 acres of suitable triploid checkered whiptail habitat that may be temporarily affected during construction of the power and fiber-optic line (see Table 6). To the extent practicable, all new power and fiber-optic line will be constructed within the existing utility corridor.

In the event of discovery of threatened or endangered species, Project Partners would immediately cease all ground-disturbing activities in the vicinity and notify Reclamation when building the Pueblo Hydropower Project. Work would not resume until approved by Reclamation.

RECREATION

Existing Conditions: Lands surrounding Pueblo Reservoir are within Lake Pueblo State Park and are managed by CPW under agreements with Reclamation. Lake Pueblo State Park is comprised of approximately 10,000 acres in Pueblo County, Colorado. Pueblo Reservoir provides about 5,400 surface acres that support water recreation including sailing, motor-boating, waterskiing, river tubing, swimming and fishing. CPW operates two boat ramps, two concession marinas, three campgrounds with 400 camp sites, 212 picnic sites, and 53 miles of hiking trails. Mountain biking and hunting are also popular land based recreation activities.

Lands downstream of Pueblo Reservoir are also part of Lake Pueblo State Park and are managed by CPW as shown in Figure 6. The Pueblo Reservoir Area Management Plan (RMP) (Reclamation 1981) guides both Reclamation's and CPW land management activities. The RMP ensures Reclamation lands are managed according to current laws and regulations, while ensuring protection of the basic authorized purposes of the Fry-Ark Project. Reclamation and CPW are currently in the process of updating the RMP.

No Action Alternative: The No Action Alternative would not affect recreation resources.

MU-2: Arkansas River Corridor

Access - Uses - Resources

Access

From City of Pueblo

- Off HWY 96

(as shown on map)

1. LPSP Parking Area

2. Reservoir Rd.

- Arkansas River Trail

From Pueblo West / LPSP Through Traffic

- Via Juniper Road

to Rock Canyon Access Road

Resources

Water Resources

- Arkansas River

- Anticline Pond

- Swim Beach

Natural Resources

- Historic Floodplain

- Anticline Natural Area

- Trout / Aquatic Habitat

- Wildlife / Birds

- Desert/Prairie Grassland

- Prairie Shrubland

Uses

Recreation

- Fishing

- Kayaking and Tubing on

Arkansas River

- Biking

- Hiking/Walking/Running

- Wildlife/Bird Viewing

- Dogs Off-Leash (unauthorized)

- Picnicking

- Special events

Facilities

- Swim Beach

Other

- Water Delivery System for

Irrigation for Municipal and

Industrial Purposes

- Commuter Traffic

Municipal & Industrial

- North Outlet Works

- Pueblo West Metropolitan District

Pump Station

- Juniper Pump Station

- Pueblo Board of Water Works

(PBWW) Joint Use Pipeline

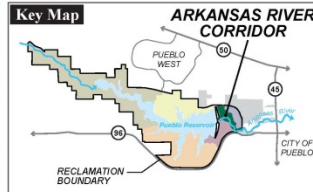
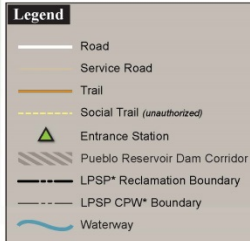
- PDWW Pump Station

- Black Hills Energy

- Southern Delivery System

- Fountain Valley Conduit

- Tri-State



*Acronyms: LPSP = Lake Pueblo State Park
CPW = Colorado Parks & Wildlife



Lake Pueblo State Park
Resource Management Plan + Environmental Assessment
National Environmental Policy Act Scoping Meeting - January 22, 2014

RECLAMATION
Managing Water in the West



U.S. Department of the Interior
Bureau of Reclamation



Figure 6-Arkansas River Corridor Downstream of Pueblo Dam

Proposed Action: Under the Proposed Action, the hydropower plant and associated facilities would be constructed below Pueblo Dam. Public access immediately downstream of the dam is currently restricted and would continue to be restricted under the Proposed Action. The NOW and outlet channel downstream to Juniper Bridge would be closed to public access during construction when necessary for public safety. All construction closures would be coordinated with CPW and incorporate signage as appropriate. Once construction is complete, public access to areas adjacent the power plant would resume. Final fence designs and facility finish colors would be coordinated with CPW to minimize any impacts to visual resources (see Visual Resources Section).

Reclamation's issuance of the LOPP to the Project Partners would have no long-term effects on recreation resources and short-term effects would be negligible. Project Partners will also be required to coordinate construction and maintenance activities with Pueblo Lake State Park staff to minimize potential conflicts with recreational users.

HISTORIC PROPERTIES

Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places. Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

The affected environment for historic properties corresponds to the area of potential effects (APE), as defined in the regulations implementing Section 106 of the NHPA (36 CFR Part 800). The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR Part 800.16(d)). The APE for direct effects for the Proposed Action includes the total area of potential ground disturbance, including construction areas, staging areas, and access associated with the Proposed Action. The APE for indirect effects includes the total area where new visual impacts to cultural resources may occur as a result of the Proposed Action.

Existing Conditions: Reclamation completed a Class I file search of the APE for direct effects through the Colorado Office of Archaeology and Historic Preservation on June 15, 2015. The file search revealed that the entire APE for direct effects was previously inventoried at a Class III level during three previous cultural resource inventories. As a result of these inventories, no historic properties were identified.

In compliance with 36 CFR Part 800.4(d)(1), a determination of no historic properties affected was submitted to the Colorado State Historic Preservation Office (SHPO), the Arapaho Tribe of the Wind River Reservation, the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, the Cheyenne and Arapaho Tribes, the Comanche Nation, and the Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation in August 2015.

No Action Alternative: Under the No Action Alternative, there are no foreseeable impacts to historic resources. Further, there are no known historic properties within the APE.

Proposed Action: Under the Proposed Action, there would be no foreseeable impacts to historic properties. On September 1, 2015, SHPO concurred with Reclamation's finding of no historic properties affected (Attachment G).

PALEONTOLOGICAL RESOURCES

Paleontological resources are defined as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interests and that provide information about the history of life on earth except those associated with archaeological resources or cultural items associated with the Native American Graves Protection and Repatriation Act (Paleontological Resources Preservation Act (PRPA) of 2009 (Public Law 111-011)). The PRPA mandates that Reclamation manage and protect paleontological resources on Federal land using scientific principles and expertise. Potential effects of the described alternatives on paleontological resources are the primary focus of this analysis. The affected environment for paleontological resources corresponds to the APE for direct effects for cultural resources.

Existing Conditions: Reclamation contacted the Bureau of Land Management (BLM) to obtain information concerning the Potential Fossil Yield Classification (PFYC) for paleontological resources within the APE. The PFYC is a system used by the BLM to assess the potential for discovery of significant paleontological resources or the impact of surface disturbing activities on these resources.

According to the BLM, the entire APE has a Class 3, or Moderate, PFYC classification. The geologic formations within the APE are generally known to contain vertebrate fossils or scientifically significant non-vertebrate fossils, but these occurrences are widely scattered. The potential for the Proposed Action to impact a significant fossil locality is low, but is somewhat higher for common fossils.

No Action Alternative: Under the No Action Alternative, there would be no foreseeable impacts to paleontological resources. Further, there are no known significant paleontological resources within the APE.

Proposed Action: Under the Proposed Action, there would be no known potential impacts to paleontological resources. The potential for impacts to significant paleontological resources as a result of the Proposed Action, however, is low.

INDIAN TRUST ASSETS

Indian Trust Assets (ITAs) are legal interests in property held by the United States for Indian Tribes or individuals. ITAs include, but are not limited to lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. The Department of the Interior's policy is to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members, and to consult with the tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal health and safety (512 DM 2).

Under the Department of the Interior's policy, Reclamation is responsible for identifying any potential effects to ITAs as part of the planning process for the Proposed Action. Further, any effect to ITAs as a result of the Proposed Action must be addressed within this EA. When an effect to ITAs cannot be avoided, Reclamation will provide appropriate mitigation or compensation to the federally recognized Indian tribes or individuals. The affected environment for ITAs corresponds to the APE for direct effects for cultural resources.

Existing Conditions: Reclamation contacted the Bureau of Indian Affairs (BIA), Anadarko, Concho, Fort Peck, Northern Cheyenne, and Wind River Agencies in August 2015 to identify any potential impacts to ITAs within the APE. The BIA Southern Plains Region, Branch of Natural Resources responded in a letter dated September 15, 2015 (see Attachment G).

No Action Alternative: Under the No Action Alternative, there would be no foreseeable impacts to ITAs. No ITAs have been identified within the APE.

Proposed Action: Under the Proposed Action, there would be no foreseeable impacts to ITAs. No ITAs have been identified within the APE.

ENVIRONMENTAL JUSTICE

In addition, Executive Order 12898 on Environmental Justice requires Federal agencies to analyze programs to assure that they do not disproportionately adversely affect minority or low income populations or Indian Tribes.

No Action Alternative: The No Action Alternative would have no effect on environmental justice populations in the project area.

Proposed Action: While a minority population may exist in the general project area, implementation of the Action Alternative would not disproportionately affect low-income or minority populations. The Proposed Action will not involve population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. The Action Alternative would therefore have no adverse effects to human health or the environment and would not disproportionately affect minority and low-income populations.

AIR QUALITY AND NOISE

Existing Conditions: The project area is within the South Central Region monitoring area for the Colorado Department of Public Health and Environment (CDPHE 2014). The South Central Region is comprised of Pueblo, Huerfano, Las Animas, and Custer Counties with urban centers in Pueblo, Trinidad and Walsenburg. Air quality is good within this monitoring area. All of the area complies with National Ambient Air Quality Standards (CDPHE 2014). The Pueblo City-County Health Department has authority to deal with fugitive dust control and related permitting issues.

Colorado Noise Statue 25-12-103 establishes maximum permissible noise levels in Colorado. Table 7 shows the established sound levels for time periods and zones, which if exceeded,

constitute prima facie evidence that such noise is a public nuisance. Construction sites are subject to the maximum permissible noise levels specified for industrial zones.

Table 7-State of Colorado Maximum Permissible Noise Levels

Zone	Maximum Decibels (db)A*	
	7:00 a.m. to 7:00 p.m.	7:00 p.m. to 7:00 a.m.
Residential	55 dbA	50 dbA
Commercial	60 dbA	55 dbA
Light Industrial	70 dbA	65 dbA
Industrial	80 dbA	75 dbA

*Decibels are a measurement of sound intensity over the standard threshold of hearing. dbA is sound intensity with an “A” contour filter. The filter adjusts the measurement to account for the way in which the ear responds to different frequencies of sound (Georgia State University 2015).

There are no significant noise sources or problems in the project area. The primary source of noise in the project area are noises associated with flowing water released from Pueblo Dam and the operations of associated water delivery systems for the Fry-Ark Project, PBWW, Pueblo West, and SDS.

No Action Alternative: Under the No Action Alternative, no hydropower plant or associated facilities would be constructed at Pueblo Dam and there would be no change in air quality and noise.

Proposed Action: Under the Proposed Action, a hydropower plant and associated facilities would be constructed at Pueblo Dam.

There would be minor noise impacts during excavation for the hydropower plant and from construction traffic. Noise associated with construction activities for the Pueblo Hydropower Project would be similar to those experienced during construction of the NOW at Pueblo Dam’s river outlet for the SDS Project and would be kept below the maximum permissible noise level. During operation, the turbines and generators would produce machinery noise, representing a new potential noise source. However, such equipment would be fully enclosed and is located a considerable distance from recreation areas. Once construction of the Pueblo Hydropower Project is complete, any changes in noise generated from hydropower plant operations would be below detectable levels.

Excavation work would contribute to short-term dust impacts. Construction and facility operation would include dust abatement BMPs and would have no significant effects. Reclamation would require watering to minimize/control dust from cleared areas and along roadways.

There would be no long-term adverse impacts on air quality due to operation and maintenance of the hydropower plant and associated facilities. As with other hydropower projects, there would be a beneficial offset of emissions of carbon dioxide (CO₂) and other greenhouse gases. According the U.S. Energy Information Administration (EIA 2015), “the average annual electricity consumption for a U.S. residential customer was 10,837 kWh.” With an average annual energy generation of 19,053 MWh, the Pueblo Hydropower Project would provide enough clean energy to power about 1,758 homes each year. Table 8 has been modified to demonstrate

the number of pounds of CO₂ that could be removed annually for the average U.S. household utilizing steam-electric generators in 2012 for the specific fuels identified (EIA 2015). Reclamation estimates that Carbon dioxide emissions would be reduced by 39,439,710 to 41,345,010 pounds per year based on the size of the hydropower project and the Energy Information Administration's reduction numbers.

Table 8 – Pueblo Hydropower Project Development Associated Carbon Reduction

Fuel Type: Coal	Lbs. of CO ₂ per Million Btu	Heat Rate (Btu per kWh)	Lbs. CO ₂ per kWh	Lbs. of CO ₂ removed when using clean energy
Bituminous	205.300	10,089	2.07	39,439,710
Sub-bituminous	212.700	10,089	2.15	40,963,950
Lignite	215.400	10,089	2.17	41,345,010

VISUAL RESOURCES

Existing Conditions: Although not specifically mentioned in the 1981 RMP (Reclamation 1981), visual resources at Pueblo Reservoir are an important resource. Below Pueblo Dam, a previous visual resource analysis conducted for the recently constructed Black Hill's Pueblo Reservoir Substation Project (Reclamation 2014a) identified observation points with unobstructed views of the project area and Pueblo Dam, single-family homes, vehicular traffic on some local roads, public agency office buildings, Pueblo Fish Hatchery, Lake Pueblo State Park entrance station, a recreational archery range, and mountains in the background. Facilities related to water delivery through the FVA Conduit, PBWW Joint Use Manifold, and SDS Project are all also within the viewshed.

No Action Alternative: Under the No Action Alternative, no hydropower plant or associated facilities would be constructed at Pueblo Dam. There would be no changes to visual resources.

Proposed Action: Under the Proposed Action, the hydropower plant and associated facilities and approximately 1.4 miles of power and fiber optic lines would be constructed across Reclamation lands managed by CPW as part of Lake Pueblo State Park.

Visual resources from Pueblo Reservoir and adjacent developed recreation areas would not be affected. Pueblo Hydropower Project effects on visual resources would be negligible due to the relatively small size of the construction activities in the view, and the presence of other existing facilities and activities previously discussed. A majority of the hydropower plant would be below grade, blend in with the background, and would not significantly impact views of Pueblo Dam.

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.

Cumulative impacts associated with continued operations and actions associated with Pueblo Dam, the Fry-Ark Project, and SDS were included in this analysis. This includes contracts and actions associated with the Fry-Ark Excess Capacity, Winter Water Storage, Upper Arkansas Voluntary Flow Management, and Pueblo Flow Management programs. Reasonably foreseeable future actions include execution of the Master Contract with SECWCD and construction of the AVC Project as described in the AVC/Master Contract EIS (Reclamation 2014) and Record of Decision. The AVC Project includes the Pueblo Dam North-South Outlet Works Interconnect Conveyance Contract. To the extent existing information is available, Reclamation has analyzed the cumulative effects of these projects.

Implementation of the No Action Alternative would result in no cumulative impacts.

It is predicted that the Proposed Action when added to these existing and future actions would not result in significant environmental effects. Construction, operation, and maintenance of the Pueblo Hydropower Project would not result in significant cumulative impacts.

SUMMARY AND ENVIRONMENTAL COMMITMENTS

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, the Project Partners would benefit from income generated from the Pueblo Hydropower Project.

Mitigation Measures and Environmental Commitments

The following measures would be implemented and followed by Project Partners and their contractors. The LOPP will require that these commitments be followed and met. An environmental commitment plan will be prepared by Reclamation and the Project Partners to document how environmental commitments and mitigation measures will be implemented during design, construction, and operation of the Pueblo Hydropower Project.

General Commitments

1. There will be no changes in water releases from the Pueblo Dam solely for hydropower uses permitted under the LOPP. The hydropower plant and associated facilities will be operated as a “run of dam” facility based on dam release requirements and operations.
2. Existing access roads will be used to access the construction areas. No new access roads will be constructed.
3. Pueblo County Stipulations contained in the January 7, 2015, 1041 Permit FONSI (Attachment I) are incorporated as environmental commitments. Any material change in the construction, use, or operation of the Project may require reconsideration of Pueblo County’s FONSI and a determination that a 1041 Permit is required.

4. Project Partners will request and receive permission from Reclamation a minimum of 5 working days prior to any earth disturbing activities to ensure that all environmental commitments have been met or are in compliance.

Fryingpan-Arkansas Project Operations and Water Resources

5. The construction and operation of the Pueblo Hydropower Project is required to be operated in a manner that does not interfere with operation and maintenance of Pueblo Dam, the Fry-Ark Project and its operating principles, and other existing contract obligations.
6. The Pueblo Hydropower Project is required to maintain Reclamation's existing unrestricted access to the dam during both construction and operation.
7. Water released to deliver irrigation and M&I supplies, dam releases and dam maintenance access will be maintained during construction at all times.

Water Quality & Wetlands

8. Erosion-control BMPs for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution during and following construction. Examples are included in Attachment H.
9. Fuel storage, equipment maintenance, and fueling procedures will be developed to minimize the risk of spills and the impacts from these incidents. No fuel storage, equipment maintenance, or fueling will occur within 100 ft of wetlands or waters of the U.S. A Spill Prevention Control and Countermeasure Plan will be prepared prior to construction.
10. Prior to construction, Project Partners will be responsible for obtaining all 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 and other discharge activities during construction and operations.
11. Project Partners will install and operate a monitoring station in the Arkansas River immediately downstream of the hydropower plant. The station will monitor DO concentrations before and after construction. If hydropower plant operations cause DO concentrations to drop below baseline conditions, Project Proponents would install and operate an aeration system to mitigate decreased DO concentrations, after additional consultation with Reclamation and CPW.

Wildlife & Vegetation

12. Project Partners will be responsible for noxious weed control within the limits of the facility for the life of the project. Project Partners are responsible for consultation with Reclamation for acceptable weed control methods, including pesticides/herbicides approved for use on public land. Use of herbicides will comply with the applicable federal and state laws. Herbicides will be used only in accordance with their registered uses and within limitations imposed by the Secretaries of the Interior and Agriculture.

Disturbance to nearby shrubs and other ground cover will be kept to a minimum, with disturbance occurring only in those areas which are absolutely necessary for project construction. Project Partners will provide a report to Reclamation on the brands and quantities of pesticides/herbicides used. The Project Partners will submit copies of State of Colorado pesticide/herbicide application forms to Reclamation on a quarterly basis, after initiation of construction.

13. All construction equipment shall be power-washed and free of soil and debris prior to entering the construction site to reduce the spread of noxious and unwanted weeds.
14. Topsoil, where available, will be stockpiled during construction for later use in re-vegetation. Disturbed areas will be contoured to reduce erosion and facilitate re-vegetation. Disturbed areas will be re-seeded. The plan for re-vegetation and related erosion control/re-contouring will be coordinated with CPW and require approval by Reclamation.
15. All new power lines and power poles will follow the recommended standards as outlined in the *Avian Protection Plan Guidelines* developed by the U.S. Fish and Wildlife Service and Industry (Edison Electric Institute 2005).
16. Reclamation and the Project partners will coordinate activities with the CPW biologist to determine if any identified osprey nest is active prior to commencing with construction of the underground power and fiber-optic line and determine if timing restrictions are appropriate. Typical timing restrictions include no construction within 0.25 miles of an active osprey nest between May 1st and September 1st.

Threatened & Endangered Species

17. In the event of discovery of threatened or endangered species, Project Partners and their contractors will immediately cease all ground-disturbing activities in the vicinity and notify Reclamation. Work will not be resumed until approved by Reclamation.

Recreation

18. Project partners will coordinate construction and maintenance activities with Pueblo Lake State Park staff to minimize potential conflicts between recreational users.

Historic Properties

19. In the event that possible human remains or cultural/paleontological resources are discovered during ground-disturbing activities associated with the Proposed Action, whether on the surface or subsurface, all ground-disturbing activities in the vicinity of the discovery shall cease and Reclamation's Eastern Colorado Area Office archaeologist shall be notified immediately. Ground-disturbing activities in the vicinity of the discovery shall not be resumed until approved by Reclamation.
20. If any additional areas of impact (for example: borrow pits or waste areas) are identified during the course of construction, additional NHPA compliance may be required prior to the approval of any ground-disturbing activities.

Air Quality & Noise

21. Dust abatement BMPs will be undertaken in all areas disturbed during construction (See Attachment H).

Visual Resources

22. Powerhouses and substations will be non-reflective and painted to blend with the project area background and meet Reclamation and CPW requirements.

CHAPTER 4 – CONSULTATION & COORDINATION

GENERAL

Reclamation and Project Partners conducted informal discussions with federal, state, and local agencies to identify issues and concerns associated with the Proposed Action (See Agency Coordination).

SECWCD requested and received a 1041 FONSI from Pueblo County for the Pueblo Hydropower Project on January 7, 2015, (Attachment I).

Reclamation also relied on issues identified previously during planning and NEPA compliance completed for SDS (Reclamation 2008), AVC/Master Contract (Reclamation 2014c), and Black Hill's Pueblo Reservoir Substation (Reclamation 2014a) projects.

COMMENTS RECEIVED ON DRAFT EA

On January 7, 2016, Reclamation issued a news release announcing the availability of the Draft EA for public review and comment. The Draft EA was available on Reclamation's website at: http://www.usbr.gov/gp/eca/nepa/pueblo_hydropower.html. Reclamation also sent the news release to 170 individuals and entities included in the Pueblo Distribution List.

Reclamation requested comments on the Draft EA by January 30, 2016. Comments from CPW dated January 27, 2016, were the only comments received. A copy of the letter is included in Attachment K and comments are summarized below.

Comment 1: The Draft EA states, "Impacts to fish passing through the hydropower facility would be similar to those experienced through the fixed-cone valve. Neither the proposed Francis turbines nor the fixed-cone valve are particularly fish friendly"...A great deal of our research findings indicate that fish mortality through hydropower facilities and turbines is significant. However, there is very little if any research on fish mortality through fixed-cone valves indicating to CPW that passage through these valves is less of a concern.

Duncan 2011 compared 48-hour fish mortality through a Francis turbine and regulation outlet. Results indicate 48-hour fish mortality occurs approximately 60 percent of the time through turbines compared to 12 percent through the regulating outlet. Assuming the regulation outlet in this study is similar to the existing fixed-cone valve at Pueblo Reservoir; fish mortality is likely to increase dramatically when the hydropower facility becomes operational.

We do know that current releases from Pueblo Reservoir allow fish to pass through the dam and into the river below with results in some populations establishing in the river and providing

angling recreation. CPW is very concerned about the impacts to the fishery and angling recreation if the proposed hydropower facility becomes operational.

Response 1: Additional language was added to the Fisheries Section indicating that mortality studies on a similar hydropower project permitted by the Federal Energy Regulatory Agency documented mortality from tube valve outlet structures as high as 86.3 percent for both direct and indirect mortality. Releases through a hydropower plant with Francis-type turbines may actually reduce mortality by 20 percent or greater. Additional improvements in design may decrease the mortality rate further.

Reclamation discussed this data with CPW and committed to share the Project Partners' turbine designs. Where possible, improvement may be made to make the hydropower project even more fish friendly, although the Proposed Action is predicted to not result in increased fish mortality.

Comment 2: Since it is necessary for Hydroelectric Powerhouse employees, agents, contractors, and subcontractors, to enter upon the State Park to prepare for and build, the proposed Powerhouse, a significant level of consultation and coordination with CPW will be needed. Therefore, prior to construction activities, CPW strongly suggests that developers of the Pueblo Dam hydropower facility consult and coordinate directly with CPW to minimize impacts to the State Parks and enter into a Memorandum of Understanding (MOU) for access and activities related to the construction of the powerhouse. This MOU is in addition to the required permitting issued by Reclamation, and addresses issues, such as revegetation standards, access within the Park, impacts on the Park roads, trails and bridge, as well as impacts on Park operations.

Response 2: Language was added in Final EA and environmental commitments that requires coordination between Project Partners and CPW for construction and maintenance activities with to minimize potential conflicts between with recreational users and park resources. Reclamation recognizes that a MOU developed between the CPW and Project Proponents may be appropriate.

AGENCY CONSULTATIONS

Reclamation and the Project Partners have consulted with the U.S. Army Corps of Engineers under Section 404 of the CWA and the U.S. Fish and Wildlife Service under the ESA and Fish and Wildlife Coordination Act. Results and discussion are included in project analysis and discussions in Chapter 3.

Reclamation consulted with the Colorado SHPO, the Arapaho Tribe of the Wind River Reservation, the Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, the Cheyenne and Arapaho Tribes, the Comanche Nation, and the Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation in August 2015. This consultation was completed pursuant to Section 106 of the NHPA.

Reclamation consulted with the BIA Anadarko, Concho, Fort Peck, Northern Cheyenne, and Wind River Agencies in August 2015. This consultation was completed pursuant to the Department of the Interior Departmental Manual (512 DM 2).

Reclamation consulted with the Bureau of Land Management to determine the PFYC for paleontological resources within the APE in August 2015. This consultation was completed pursuant to the PRPA of 2009.

Reclamation also accessed the U.S. Fish and Wildlife Service website to develop a trust resource list on June 1, 2015, (Attachment F). The Service identified listed species, national refuges, migratory birds of concern, and potential wetlands via the National Wetlands Inventory. Listed species, migratory birds and wetlands are discussed in Chapter 3. In addition, when SECWCD consulted with the Service by letter dated September 15, 2014, the Service identified no concerns with the proposed Pueblo Hydropower Project (Attachment F).

AGENCY COORDINATION

Federal Agencies

Joshua Carpenter, U.S. Army Corps of Engineers, Pueblo, CO.
Harley Armstrong, Bureau of Land Management, Lakewood Colorado
Betty Tippeconnie, Bureau of Indian Affairs, El Reno, OK.
George Beatty, Bureau of Indian Affairs, Anadarko, OK.
Norman Gourneau, Bureau of Indian Affairs, Fort Washakie, WY.
Michael Addy, Bureau of Indian Affairs, Lame Deer, MT.
Howard Bemmer, Bureau of Indian Affairs, Poplar, MT.
Roy Vaughan, Bureau of Reclamation, Pueblo, CO.
Valda Terauds, Bureau of Reclamation, Pueblo, CO.

State Agencies

Brett Ackerman, Colorado Division of Parks and Wildlife, Colorado Springs, CO
Monique Mullis, Colorado Division Parks and Wildlife, Pueblo, CO
Josh Nehring, Colorado Division of Parks and Wildlife, Colorado Springs, CO
Gretchen Holschuh, Colorado Division of Parks and Wildlife, Pueblo, CO

Carrie Tucker, Colorado Division of Parks and Wildlife, Pueblo, CO
Mike Trujillo, Colorado Division of Parks and Wildlife, Pueblo, CO
John Hranac, Colorado Department of Public Health and Environment, Denver, CO
Edward Nichols, Colorado State Historic Preservation Office, Denver, CO

Local Agencies

Kevin Meador, Southeastern Colorado Water Conservancy District, Pueblo, CO
Joan Armstrong, Pueblo County, CO
Christopher Burke, Black Hills Energy, Pueblo, CO
Allison Mosser, Colorado Springs Utilities, Colorado Springs, CO
Terry Book, Board of Water Works of Pueblo, Pueblo, CO

REFERENCES

Black Hills. 2015. About Black Hills Corporation. Website: <http://www.blackhillscorp.com/about> accessed on June 1, 2015.

CH2MHill. 2014. Technical Memorandum, Hydropower Feasibility Update, Pueblo Dam Hydroelectric Project. Prepared by CH2M Hill Engineers, Inc. for Southeastern Colorado Water Conservancy District. March 21, 2014.

CPW. 2015a. Pueblo Reservoir Fish Survey and Management Data. Colorado Division of Parks and Wildlife Website accessed on May 20, 2015. <https://cpw.state.co.us/Documents/Fishing/FisheryWaterSummaries/Summaries/Southeast/PuebloReservoir.pdf>

_____. 2015b. Arkansas River at Pueblo Fish Survey and Management Data. Colorado Division of Parks and Wildlife Website accessed on May 20, 2015. <https://cpw.state.co.us/Documents/Fishing/FisheryWaterSummaries/Summaries/Southeast/ArkansasRiverPueblo.pdf>

_____. 2015c. Species Profiles. Colorado Division of Parks and Wildlife Website: <http://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx> accessed on June 1, 2015.

_____. 2014. Colorado Division of Parks and Wildlife—Species Activity Data. Shapefiles dated October 24, 2014. Colorado Department of Natural Resources, Colorado Division of Parks and Wildlife. Denver, Colorado. Downloaded from website: <http://www.arcgis.com/home/group.html?Owner=rsacco&title=Colorado%20Parks%20and%20Wildlife%20-%20Species%20Activity%20Data> on December 2, 2014.

_____. 2008. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors. Colorado Division of Wildlife, Downloaded from Website: <https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/RaptorBufferGuidelines2008.pdf> on June 8, 2015.

CPDHE. 2014. Colorado 2013 Air Quality Data Report. Colorado Department of Public Health, Air Pollution Control Division, Denver, CO. November 2014.

_____. 2012. Colorado's Section 303(D) List of Impaired Waters and Monitoring and Evaluation List, 5 CCR 1002-93, Regulation #93. Colorado Department of Public Health and Environment, Water Quality Control Commission, Denver, CO. March 30, 2012.

Duncan, J.P. 2011. Characterization of Fish Passage Conditions through a Francis Turbine and Regulating Outlet at Cougar Dam, Oregon, Using Sensor Fish, 2009-2010. PNNL-20408, Pacific Northwest National Laboratory, Richland, WA.

EIA 2015. U.S. Energy Information Administration. Website: <http://www.eia.gov/tools/faqs/faq.cfm?id=74&t=11> accessed on June 8, 2015.

EPRI. 1987. Turbine-Related Fish Mortality: Review and Evaluation of Studies. EPRI AP-5480, Project 2694-4 Final Report. Electric Power Research Institute. Portland, OR. November 1987.

Georgia State University. 2015. HyperPhysics. Georgia State University, Department of Physics and Astronomy. Website: <http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html> accessed on June 25, 2015.

Lannoo, M. 2005. *Amphibian Declines, The Conservation Status of the United States Species*. Michael Lannoo (Editor), University of California Press, Berkeley. 1115 pages.

Lowry, J.H, R.D Ramsey, K. Boykin, D. Bradford, P. Comer, S. Falzarano, W. Kepner, J. Kirby, L. Lands, J. Prior-Magee, G. Manis, L. O'Brien, T. Sajwaj, K.A. Thomas, W. Rieth, S. Schrader, D. Schrupp, K. Schulz, B. Thompson, C. Velasquez, C. Wallace, E. Walker and B. Wolk. 2005. *Southwestern Regional Gap Analysis Project: Final Report on Land Cover Mapping Methods*, RS/GIS Laboratory, Utah State University, Logan, Utah.

NRCS. 2015. Web Soil Survey, United States Department of Agriculture, Natural Resources Conservation Service. Website: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx%20> accessed January 30, 2015.

Reclamation. 2015. SOD Decision Document for Pueblo LOPP email dated January 14, 2015 from Karen Weghorst, Great Plains Region Dam Safety Office, to Paula O'Brien, Eastern Colorado Area Office.

_____. 2014A. Environmental Assessment, Black Hills Corporation, Pueblo Reservoir Substation, EA No. EC-2014-001. U.S. Department of the Interior, Bureau of Reclamation, Eastern Colorado Area Office, Loveland, CO, March 2014.

_____. 2014B. Pueblo Reservoir, 2012 Bathymetric Survey. U.S. Department of the Interior, Bureau of Reclamation, Technical Service Center, Denver, CO. September 2014.

_____. 2013C. Record of Decision for the Arkansas Valley Conduit and Long-term Excess Capacity Master Contract, Final Environmental Impact Statement. U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, Eastern Colorado Area Office. February 27, 2014

_____. 2013. Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Final Environmental Impact Statement. U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, Eastern Colorado Area Office. August 2013.

_____. 2008. Southern Delivery System Final Environmental Impact Statement. U.S. Department of the Interior, Bureau of Reclamation, Great Plains Region, Eastern Colorado Area Office. December 2008.

_____. 1981. Pueblo Reservoir Area Management Plan. U.S. Department of the Interior, Bureau of Reclamation, Lower Missouri Region, Fryingpan-Arkansas Project, Pueblo, CO. Service. 2015a. National Wetlands Inventory website accessed on May 19, 2015. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>.

_____. 2015b. IPaC Trust Resource Report. U.S. Fish and Wildlife Service, Colorado Ecological Services Field Office, Denver, CO. Generated from IPac Information for Planning and Conservation Website: <https://ecos.fws.gov/ipac/gettingStarted/map> on June 1, 2015.

Service. 1999. Final Programmatic Biological Opinion for the Bureau of Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of Recovery Program Actions in the Upper Colorado River above the Confluence with the Gunnison River. Department of the Interior, U.S. Fish and Wildlife Service, Denver, CO. December 1999.

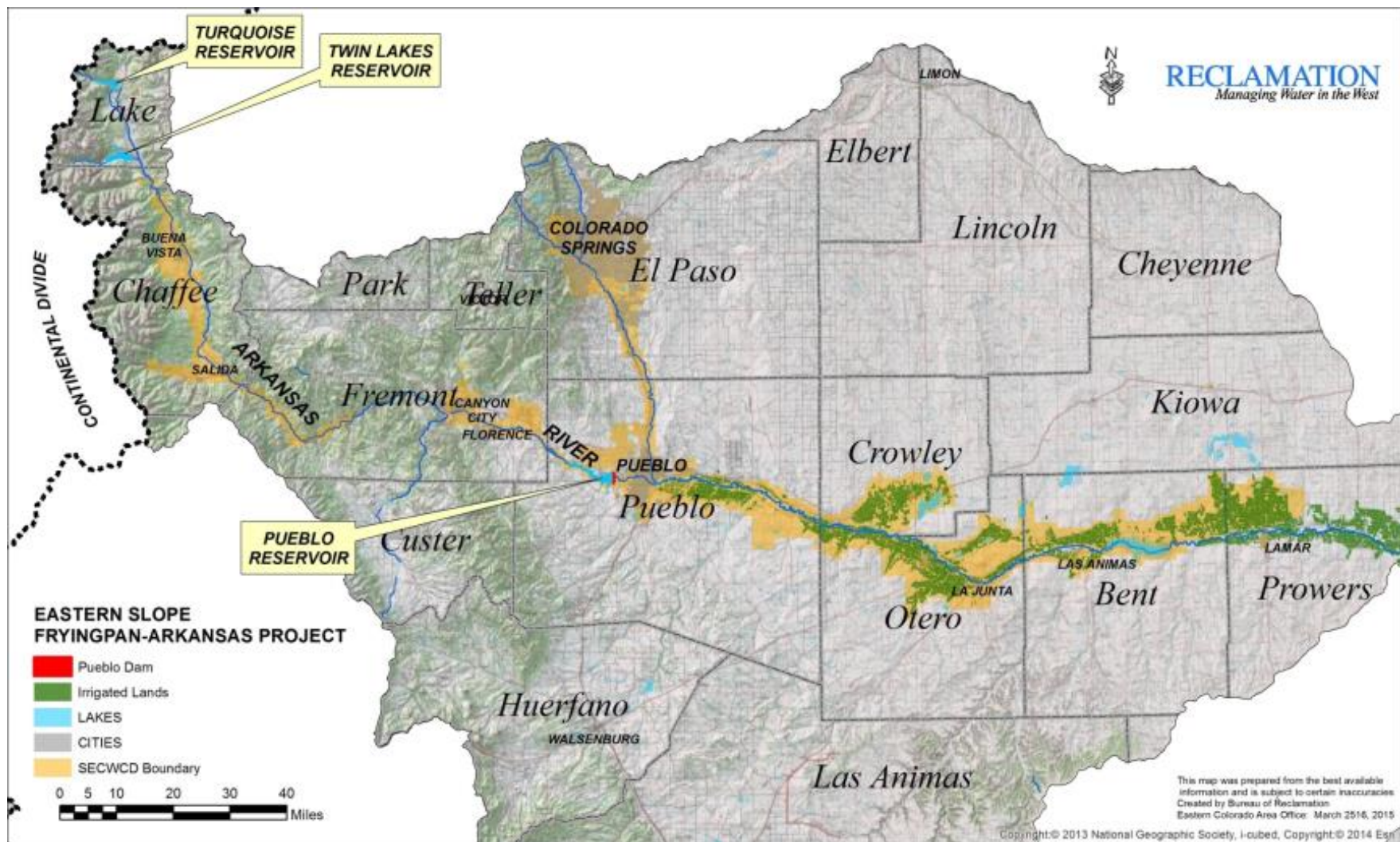
Symbiotic. 2010. Revised Initial Study Report, Wickiup Dam Hydroelectric Project, FERC No. 12965. Prepared by Symbiotic LLC on behalf of Wickiup Hydro Group LLC. Portland, OR. April 2010.

Walker, J.M., Taylor, H.L., Cordes, J.E. and Paulissen, M.A. 1997. Distributional relationships and community assemblages of three members of the parthenogenetic lizard *Cnemidophorus tesselatus* from historically significant in Pueblo County, Colorado. *Herpetological Review* 27: 16-17

WECC. 2015. Western Electricity Coordinating Council. Website: <https://www.wecc.biz/Pages/About.aspx> accessed on June 8, 2015

ATTACHMENT A

Fryingpan-Arkansas Project Map



ATTACHMENT B

Preliminary Lease of Power Privilege



United States Department of the Interior

BUREAU OF RECLAMATION
Great Plains Regional Office
P.O. Box 36900
Billings, MT 59107-6900

IN REPLY REFER TO:

GP-2200
PRJ-18.00

FEB 22 2016

Mr. James Broderick
Executive Director
Southeastern Colorado Water Conservancy District
31717 United Avenue
Pueblo, CO 81001

Subject: Amended Preliminary Permit, Lease of Power Privilege (LOPP),
Pueblo Dam River Outlet, Fryingpan-Arkansas Project, Colorado

Mr. Broderick,

We received your letter dated February 18, 2016, requesting a six-month time extension for the referenced LOPP preliminary permit, so that a power purchase agreement and final LOPP submittal can be completed. The LOPP preliminary permit which became effective on February 27, 2012, and was effective for two years, was previously extended to February 27, 2016. The Reclamation LOPP process allows for extension for just cause resulting from actions and/or circumstances beyond control of the lessee.

The Bureau of Reclamation is amending the preliminary permit to allow for a six-month time extension until August 27, 2016, for the LOPP at the Pueblo Dam River Outlet. Enclosed is an amended preliminary permit for the Pueblo Dam River Outlet LOPP. Please ensure all parties sign the amended Permit and return it to:

Ms. Signe Snortland
Area Manager
Eastern Colorado Area Office
11056 W. County Road 18E
Loveland, CO 80537-9711

The amended preliminary permit is effective upon Regional Director's signature and will be valid until August 27, 2016. Reclamation looks forward to continuing work with you on this project.

If you have any questions concerning the amended Permit, please contact Ms. Monica Griffitt at 970-962-4386 or MGriffitt@usbr.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Ryan", with a long horizontal flourish extending to the left.

Michael J. Ryan
Regional Director

Enclosure

cc: Mr. Terry Book
Executive Director
Board of Water Works of Pueblo, Colorado
319 West 4th Street
PO Box 400
Pueblo, CO 81002

Mr. Gary Bostrom
Chief Water Services Officer
Colorado Springs Utilities
PO Box 1103
Colorado Springs, CO 80947



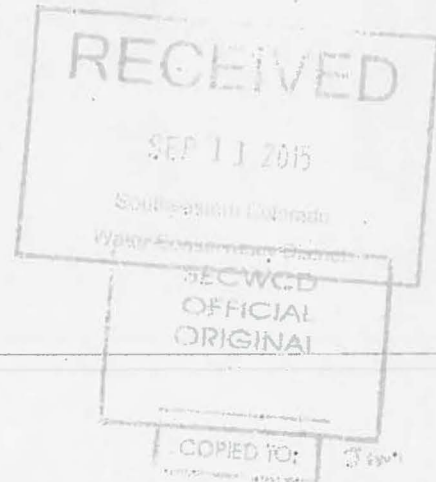
United States Department of the Interior

BUREAU OF RECLAMATION
Great Plains Regional Office
P.O. Box 36900
Billings, MT 59107-6900

IN REPLY REFER TO:

GP-2200
PRJ-18.00

SEP 08 2015



Mr. James Broderick
Executive Director
Southeastern Colorado Water Conservancy District
31717 United Avenue
Pueblo, CO 81001

Subject: Amended Preliminary Permit, Lease of Power Privilege (LOPP), Pueblo Dam River Outlet, Fryingspan-Arkansas Project, Colorado

Mr. Broderick,

We received your letter dated August 17, 2015, requesting a six-month time extension for the referenced LOPP preliminary permit so that environmental reviews and power purchase agreement preparations can be completed. The LOPP preliminary permit which became effective on February 27, 2012, and was effective for two years, was previously extended to August 27, 2015. The Bureau of Reclamation LOPP process allows for extension for just cause resulting from actions and/or circumstances beyond control of the lessee.

The Bureau of Reclamation is amending the preliminary permit to allow for a six-month time extension until February 27, 2016, for the LOPP at the Pueblo Dam River Outlet. Enclosed is an amended preliminary permit for the Pueblo Dam River Outlet LOPP. Please ensure all parties sign the amended Permit and return it to Jaci Gould, Area Manager, Eastern Colorado Area Office, 11056 W. County Road 18E, Loveland, Colorado, 80537-9711. The amended preliminary permit is effective upon Regional Director signature and will be valid until February 27, 2016. Reclamation looks forward to continuing work with you on this project.

If you have any questions concerning the amended Permit, please contact Michael Rauh at 970-962-4413 or mdrauh@usbr.gov.

Sincerely,

Michael J. Ryan
Regional Director

Enclosure

cc: Continued on next page

**Subject: Amended Preliminary Permit, Lease of Power Privilege (LOPP), Pueblo Dam River
Outlet, Fryingpan-Arkansas Project, Colorado**

**cc: Mr. Terry Book
Executive Director
Board of Water Works of Pueblo, Colorado
319 West 4th Street
PO Box 400
Pueblo, CO 81002**

**Mr. Gary Bostrom
Chief Water Services Officer
Colorado Springs Utilities
PO Box 1103
Colorado Springs, CO 80947
(w/ encl to all)**

**UNITED STATES OF AMERICA
DEPARTMENT OF INTERIOR
BUREAU OF RECLAMATION, GREAT PLAINS REGION**

**AMENDED PRELIMINARY PERMIT
PUEBLO DAM RIVER OUTLET, FRYINGPAN-ARKANSAS PROJECT**

On April 20, 2011, the Bureau of Reclamation (Reclamation) published a request in the Federal Register for proposals for hydropower generation at Pueblo Dam River Outlet. Proposals were due and were received on or before October 21, 2011, and subsequently evaluated. Based upon this evaluation process, a partnership consisting of the Southeastern Colorado Water Conservancy District (SECWCD), the Board of Water Works of Pueblo, Colorado (PBWW), and Colorado Springs Utilities (CSU) has been issued this Preliminary Permit to plan and study the proposed project.

The proposed hydroelectric power plant would be located on the Pueblo Dam River Outlet. SECWCD/PBWW/CSU proposes to locate a powerhouse at the downstream end of the existing outlet works that supplies water to the Arkansas River and to use the dam's releases which are made for authorized Reclamation purposes.

The Fryingpan-Arkansas Project, located in south-central Colorado, was authorized for construction, including hydroelectric power, by Public Law 87-590; 76 stat. 389. Specifically, the act authorizes the Secretary of the Interior to construct, operate and maintain the Fryingpan-Arkansas Project, Colorado, in substantial accordance with House Document 187. House Document 187 states in several sections (Page 29, Section 45; Page 31, Section 49) that a project power system will be included as project features (including Pueblo Powerplant to be located at Pueblo Dam and Reservoir) and is authorized to be constructed, operated, and maintained. Reclamation operates and maintains Pueblo Dam and Reservoir.

The original preliminary permit was signed on February 27, 2012. Three six-month extensions have been granted in response to your requests dated August 13, 2013, August 6, 2014, and December 18, 2014. Pursuant to your request dated August 17, 2015, Reclamation is granting a six-month extension to the original preliminary permit. The original preliminary permit, and all rights and obligations created by it, are hereby terminated and superseded and replaced in its entirety by this amended preliminary permit.

The purpose of this preliminary permit is to formally recognize SECWCD/PBWW/CSU's (Permittee) priority for a lease of power privilege (LOPP) while the Permittee conducts investigations and secures data necessary to determine the feasibility of the proposed project, and if the project is found to be feasible, prepares an acceptable development application. This permit confers no authority on the Permittee to undertake construction of the proposed project or any part thereof, or to occupy or use lands or other property of the United States or of any other entity or individual.

A preliminary permit is not transferable. The named permittee is the only entity entitled to the rights afforded by this preliminary permit. This amended preliminary permit is valid until February 27, 2016. This permit is subject to Articles 1 through 3, listed below.

**TERMS AND CONDITIONS OF
PRELIMINARY PERMIT**

Article 1. The purpose of this preliminary permit is to formally recognize SECWCD/PBWW/CSU's priority for a LOPP while the Permittee conducts investigations and secures data necessary to determine the feasibility of the proposed project, and if the project is found to be feasible, prepares an acceptable development application. In the course of whatever field studies the Permittee undertakes, the Permittee shall at all times, exercise appropriate measures to prevent irreparable damage to the environment of the proposed project. All test sites shall be approved in advance and shall be restored as closely as possible to their original condition and the satisfaction of Reclamation's Eastern Colorado Area Manager.

Article 2. This permit is not transferable and may, after notice and opportunity for hearing, be canceled by the order of Reclamation's Great Plains Regional Director upon failure of the Permittee to prosecute diligently the activities for which the permit is issued, or for any other good cause shown.

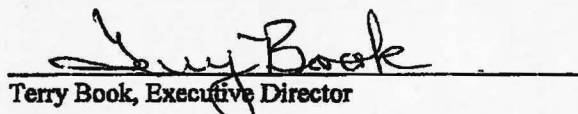
Article 3. At the close of each six-month period from the effective date of this permit, the Permittee shall file a progress report with the Bureau of Reclamation, Great Plains Regional Office (ATTN: LOPP Coordinator), P.O. Box 36900, Billings, Montana 59107-6900. The report shall describe, in detail, for that report period, the nature and timing of what the Permittee has completed and the anticipated activities for the upcoming reporting period.

SOUTHEASTERN COLORADO WATER CONSERVANCY DISTRICT


James W. Broderick, Executive Director

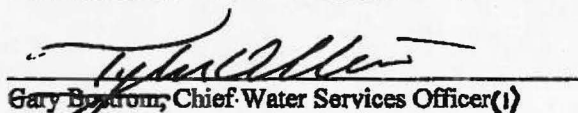
9-17-15
Date

BOARD OF WATER WORKS OF PUEBLO, COLORADO


Terry Book, Executive Director

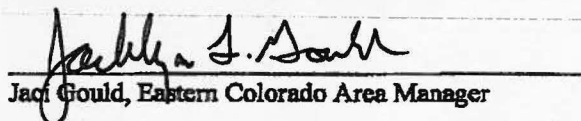
9-17-15
Date

COLORADO SPRINGS UTILITIES


Gary Bradford, Chief Water Services Officer(1)

9-22-2015
Date

**UNITED STATES OF AMERICA
BUREAU OF RECLAMATION**


Jack Gould, Eastern Colorado Area Manager

12/15/2015
Date

Mike Ryan, Great Plains Regional Director

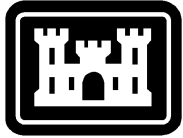
Date

ATTACHMENT C

Overall Grading Plan

ATTACHMENT D

Nationwide Permit Authorization



**US Army Corps
of Engineers®**
Albuquerque District

Nationwide Permit Summary

NATIONWIDE PERMIT 17 Hydropower Projects

Effective Date: March 19, 2012

Expiration Date: March 18, 2017

(NWP Final Notice, 77 FR 10273, para. 17)

Hydropower Projects. Discharges of dredged or fill material associated with hydropower projects having: (a) Less than 5000 kW of total generating capacity at existing reservoirs, where the project, including the fill, is licensed by the Federal Energy Regulatory Commission (FERC) under the Federal Power Act of 1920, as amended; or (b) a licensing exemption granted by the FERC pursuant to Section 408 of the Energy Security Act of 1980 (16 U.S.C. 2705 and 2708) and Section 30 of the Federal Power Act, as amended.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Section 404)

NATIONWIDE PERMIT GENERAL CONDITIONS

General Conditions: The following general conditions must be followed in order for any authorization by a NWP to be valid:

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.
(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects from Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/>, or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html>, respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by

a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2)–(14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in

writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
- (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
- (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
- (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and
- (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs(b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these

agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWP, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior

approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed federal project.

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-

linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent—meaning bordering, contiguous, or neighboring—to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)–(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

ADDITIONAL INFORMATION

For additional information concerning the nationwide permits or for a written determination regarding a specific project, please contact the office below:

In New Mexico:

Chief, Regulatory Division
Albuquerque District, US Army Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435
Telephone: (505) 342-3282

In Southeastern Colorado:

Southern Colorado Regulatory Office
200 S. Santa Fe Avenue, Suite 301
Pueblo, CO 81003
Telephone: (719) 543-9459

In Southern New Mexico and Western Texas:

Las Cruces Regulatory Office
505 S. Main St., Suite 142
Las Cruces, NM 88001
Telephone: (575) 556-9939

In Northwestern New Mexico and within the San Luis Valley of Colorado:

Durango Regulatory Office
1970 E. 3rd Avenue, Suite 109
Durango, CO 81301
Telephone: (970) 259-1582

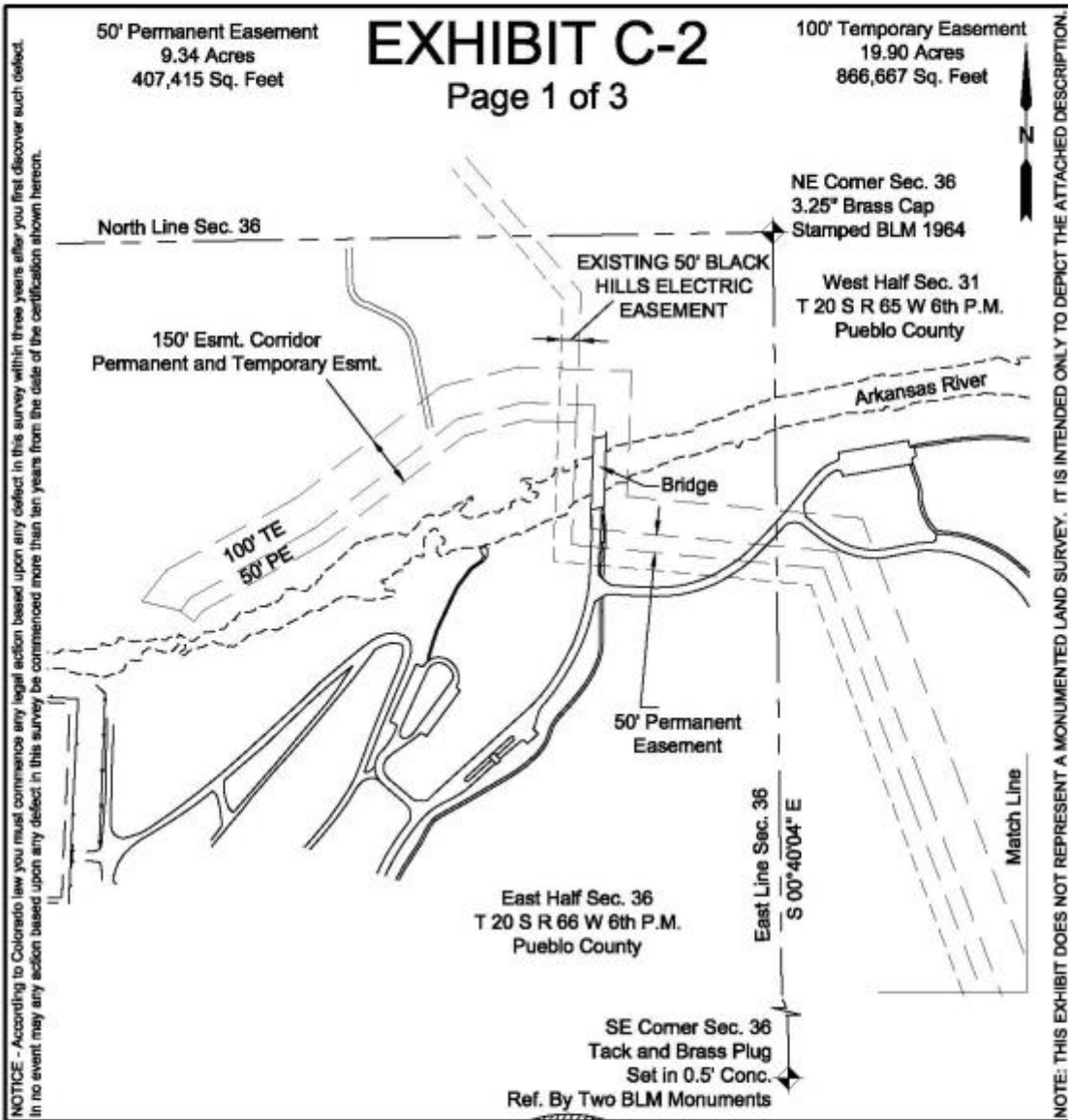
Information about the U.S. Army Corps of Engineers regulatory program, including nationwide permits, may also be accessed on our Internet page: <http://www.spa.usace.army.mil/reg/>

This nationwide permit is effective March 19, 2012, and expires on March 18, 2017.

Summary Version: March 19, 2012

ATTACHMENT E

Proposed Power and Fiber-Optic Easement



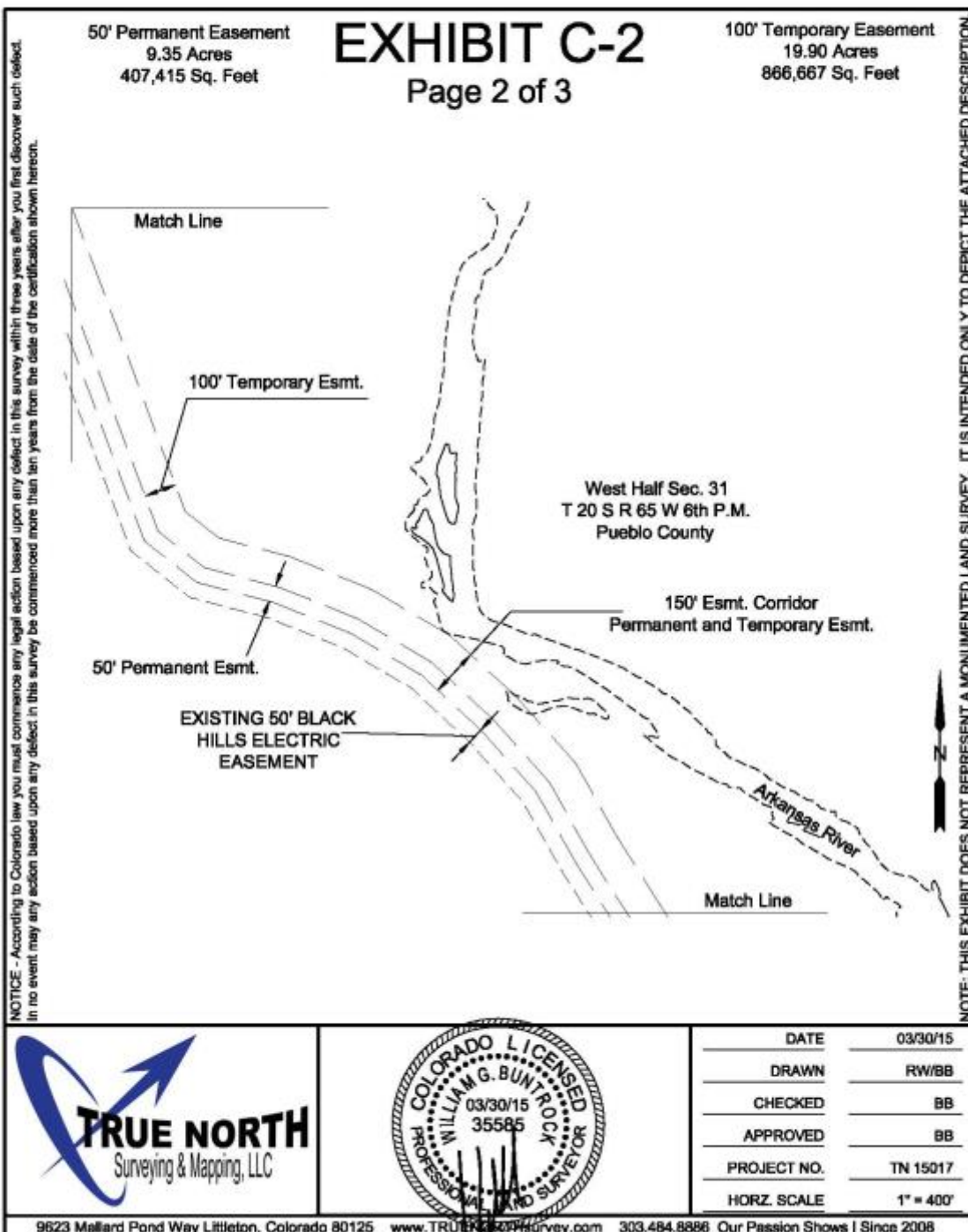
TRUE NORTH
Surveying & Mapping, LLC

DATE	03/30/15
DRAWN	RW/BB
CHECKED	BB
APPROVED	BB
PROJECT NO.	TN 15017
HORZ. SCALE	1" = 400'

9623 Mallard Pond Way Littleton, Colorado 80125

www.TRUE-NORTH-SURVEYING.com

303.484.8886 Our Passion Shows | Since 2008



NOTICE - According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

NOTE: THIS EXHIBIT DOES NOT REPRESENT A MONUMENTED LAND SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.

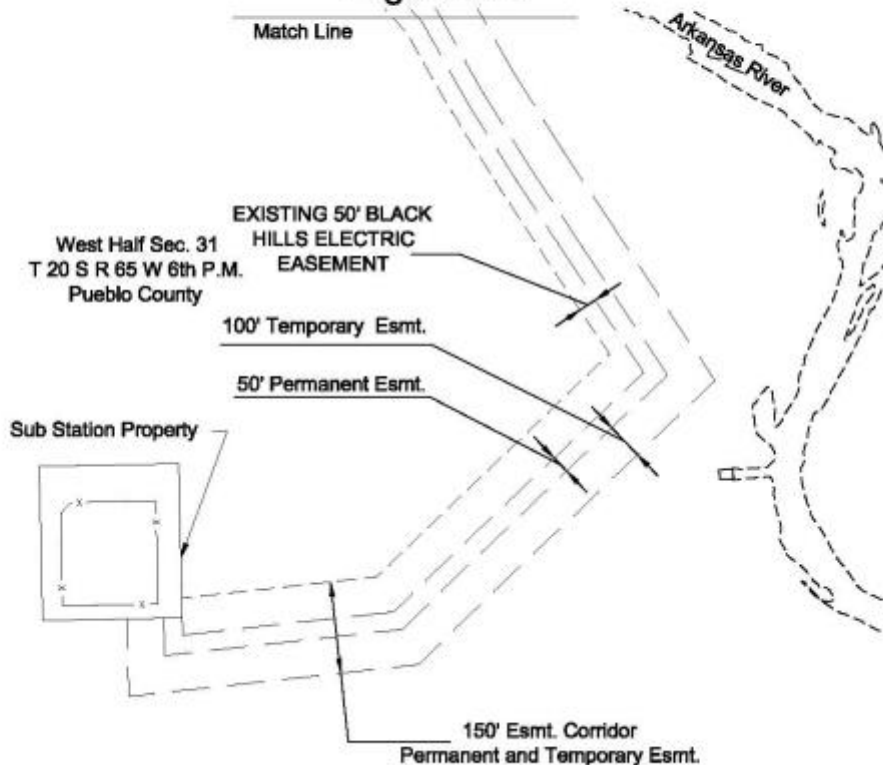
NOTICE - According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

50' Permanent Easement
9.35 Acres
407,415 Sq. Feet

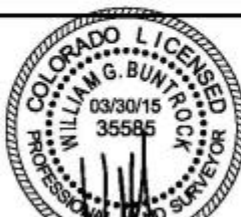
EXHIBIT C-2

Page 3 of 3

100' Temporary Easement
19.90 Acres
866,667 Sq. Feet



NOTE: THIS EXHIBIT DOES NOT REPRESENT A MONUMENTED LAND SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.



DATE	03/30/15
DRAWN	RW/BB
CHECKED	BB
APPROVED	BB
PROJECT NO.	TN 15017
HORZ. SCALE	1" = 400'

ATTACHMENT F

U.S. Fish and Wildlife Service Trust Resource List & Correspondence

My project

IPaC Trust Resource Report

Generated June 01, 2015 09:51 AM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

My project

PROJECT CODE

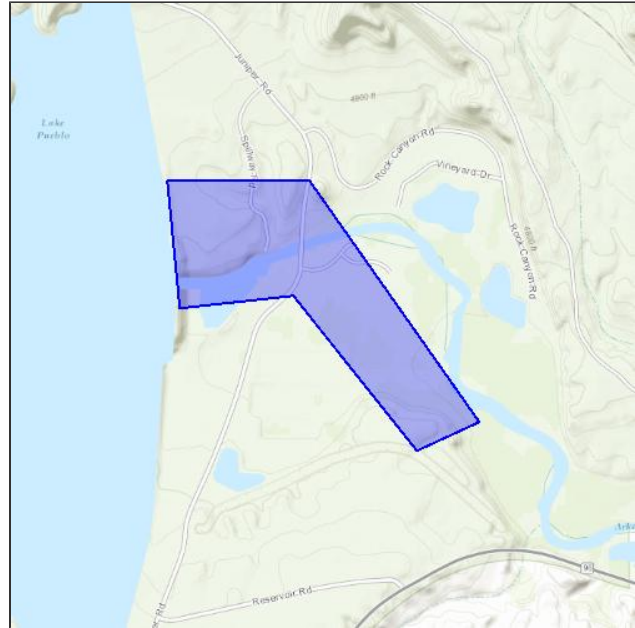
VCHUE-S6V5V-C7ZCJ-MHU6X-5AGJCA

LOCATION

Pueblo County, Colorado

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Colorado Ecological Services Field Office

Denver Federal Center

P.O. BOX 25486

Denver, CO 80225-486

(303) 236-4773

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

Birds

Mexican Spotted Owl *Strix occidentalis lucida***Threatened**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B074>

Fishes

Arkansas Darter *Etheostoma cragini*

Candidate

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E06H>

Greenback Cutthroat Trout *Oncorhynchus clarki stomias*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E00F>

Mammals

Black-footed Ferret *Mustela nigripes*

Experimental Population, Non-Essential

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A004>

Canada Lynx *Lynx canadensis*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073>

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Bittern *Botaurus lentiginosus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3>

Bird of conservation concern

Bald Eagle *Haliaeetus leucocephalus*

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008>

Bird of conservation concern

Burrowing Owl *Athene cunicularia*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NC>

Bird of conservation concern

Ferruginous Hawk *Buteo regalis*

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06X>

Bird of conservation concern

Golden Eagle *Aquila chrysaetos*

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DV>

Bird of conservation concern

Lark Bunting *Calamospiza melanocorys*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IV>

Bird of conservation concern

Lewis's Woodpecker *Melanerpes lewis*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HQ>

Bird of conservation concern

Loggerhead Shrike *Lanius ludovicianus*

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY>

Bird of conservation concern

Long-billed Curlew *Numenius americanus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S>

Bird of conservation concern

Mountain Plover *Charadrius montanus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B078>

Bird of conservation concern

Peregrine Falcon *Falco peregrinus***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU>**Pinyon Jay** *Gymnorhinus cyanocephalus***Bird of conservation concern**

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0I0>**Prairie Falcon** *Falco mexicanus***Bird of conservation concern**

Year-round

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0ER>**Short-eared Owl** *Asio flammeus***Bird of conservation concern**

Season: Wintering

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD>**Snowy Plover** *Charadrius alexandrinus***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L6>**Swainson's Hawk** *Buteo swainsoni***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070>**Williamson's Sapsucker** *Sphyrapicus thyroideus***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX>

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Freshwater Emergent Wetland

PEMA

65.6 acres

Freshwater Forested/shrub Wetland

PFOA

14 acres

Freshwater Pond

PUBHx

15.4 acres

Lake

L1UBHx

1,260 acres

Riverine

R2UBH

493 acres

R4SBCx

35.4 acres

ATTACHMENT E

Colorado State Historic Preservation Office Concurrence Letter



OFFICIAL FILE COPY RECLAMATION ECAO	
DATE: <u>SEP 04 2015</u>	
ROUTE TO:	DEPT
<i>TCurtis</i>	<i>1300</i>
ROUTE COPY TO:	
<i>ABurke</i>	<i>1310</i>

September 1, 2015

Anthony C. Curtis
Acting Chief, Resources Division
Bureau of Reclamation
Great Plains Region
Eastern Colorado Area Office
11056 West County Road 18E
Loveland, Colorado 80537-9711

Official File Copy	
File Code	<i>ENV3.00</i>
Project	<i>382-FA</i>
Control No.	<i>15023065</i>
Order I.D.	<i>1333623</i>

Re: Consultation Regarding the Proposed Pueblo Hydropower Project, Pueblo County, Colorado –
Fryingpan-Arkansas Project, Colorado (HC #68829)

Dear Mr. Curtis:

Thank you for your correspondence that we received on August 31, 2015 regarding the above referenced undertaking.

After review of the documentation provided, we concur that a finding of no historic properties affected is appropriate for the proposed undertaking pursuant to 36 CFR 800.4(d)(1).

Please remember that the consultation process does involve other consulting parties such as local governments and Tribes, which as stipulated in 36 CFR 800.3 are required to be notified of the undertaking. Additional information provided by the local government, Tribes or other consulting parties may cause our office to re-evaluate our comments and recommendations.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4) in consultation with our office.

Thank you for the opportunity to comment. If we may be of further assistance please contact Mark Tobias, Section 106 Compliance Manager, at (303) 866-4674 or mark.tobias@state.co.us.

Sincerely,

Edward C. Nichols
State Historic Preservation Officer
ECN/mt



UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS
SOUTHERN PLAINS REGION
BRANCH OF NATURAL RESOURCES
P.O. BOX 368
ANADARKO, OKLAHOMA 73005

IN REPLY REFER TO:
NATURAL RESOURCES (405) 247-6873

SEP 15 2015

Jacklynn L. Gould, P.E.
Bureau of Reclamation
Eastern Colorado Area Office
11056 West County RD ISE
Loveland, Colorado 80537-9711

Official File Copy
File Code <i>ENV 3.00</i>
Project <i>382-FA</i>
Control No. <i>15024372</i>
Folder I.D. <i>1333623</i>

OFFICIAL FILE COPY - RECLAMATION ECAO	
DATE: SEP 21 2015	
ROUTE TO:	DEPT
<i>T. Curtis</i>	<i>300</i>
ROUTE COPY TO:	
<i>Coarri</i>	<i>1310</i>
<i>L. Harger</i>	<i>Adm</i>

Dear Jacklynn L. Gould, P.E.:

2015-001

Thank you for the opportunity to comment on the Proposed Pueblo Hydropower Project, Fryingpan-Arkansas Project. From your description the proposed project is located within Pueblo County, Colorado.

A review of the Bureau of Indian Affairs (BIA), Southern Plains Regional maps of the project locations indicate that there are no tribal or Individual Indian trust lands within the proposed improvement areas. The Southern Plains Region has no jurisdiction within the project areas and there are no concerns that the proposed projects will impact Indian trust lands within the Southern Plains Region jurisdiction.

This project lies within the Southwest Regional Office of the BIA. It is recommended that the Bureau of Reclamation coordinate directly with them for information regarding this project.

If any additional information is required, please contact Crystal Keys, Water Program Manager, at 405.247.1549.

Sincerely,

ACTING Regional Director

ATTACHMENT H

Suggested Best Management Practices

Suggested Best Management Practices for BOR Hydroelectric Project

1. Obtain CWA 404 permit coverage from the U.S. Army Corps of Engineers when dredge or fill material will be discharged to waters of the United States.
2. Use the following measures, when applicable, to protect all streams and riparian areas when preparing the site for construction or maintenance activities
 - a. Clearly delineate the work zone. Establish and maintain construction area limits to the minimum area necessary for completing the project and confine disturbance to within this area
 - b. Locate access and staging areas outside of work area boundaries, aquatic management zones, wetlands, and sensitive soil areas.
 - c. Refuel and service equipment only in designated staging areas and/or in construction
 - d. Maintain the natural drainage pattern of the area wherever practicable.
3. Develop and implement an erosion control and sediment plan that covers all disturbed areas, including borrow, stockpile, fueling, and staging areas used during construction activities.
 - a. Erosion control products must be made from 100% biodegradable non-plastic materials that either does not contain netting, or netting is non-plastic and loose-weave. Erosion control blankets and wattles must be manufactured of wood fiber.
 - b. Erosion and sediment control plan must include measures for removal of erosion control/sediment products upon successful revegetation
4. Provide for solid waste disposal and worksite sanitation.
5. Use the following measures to avoid or minimize impacts to sensitive aquatic management zones during construction:
 - a. Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable
 - b. Maintain erosion and stormwater controls as necessary to ensure proper and effective functioning
 - c. Prepare for unexpected failures of erosion control measures; implement corrective actions without delay when failures are discovered to prevent pollutant discharge to nearby waterbodies
 - d. Routinely inspect construction sites to verify that erosion and stormwater controls are implemented and functioning as designed
 - e. Apply soil protective cover on disturbed areas where natural revegetation is inadequate to prevent accelerated erosion during construction or before the next growing season.
 - f. Promptly install and appropriately maintain spill prevention and containment measures

- g. Minimize bank and riparian area excavation during construction to the extent practicable
- h. Limit operation of equipment when ground conditions could result in excessive rutting, soil puddling, or runoff of sediments directly into waterbodies
- i. Keep excavated materials out of streams and riparian areas
- j. Properly compact fills to avoid or minimize erosion
- k. Divert surface runoff around bare areas with appropriate energy dissipation and sediment filters.
- l. Control, collect, detain, treat, and disperse stormwater runoff from the site.
- m. Stabilize steep excavated slopes
- n. Balance cuts and fills to minimize disposal needs
- o. Remove all project debris from streams and riparian areas in a manner that will cause the least disturbance
- p. Identify suitable areas offsite or away from streams and riparian areas for disposal site before beginning operations
- q. Contour site to disperse runoff, minimize erosion, stabilize slopes, and provide a favorable environment for plant growth
- r. Establish designated areas for equipment staging, stockpiling materials, and parking to minimize the area of ground disturbance

ATTACHMENT I

Pueblo County 1041 Permit FONSI

TERRY A. HART
CHAIRMAN
DISTRICT 1

LIANE "BUFFIE"
MCFADYEN
CHAIR PRO TEM
DISTRICT 2



SAL PACE
COMMISSIONER
DISTRICT 3

JOAN ARMSTRONG
DIRECTOR
planning@co.pueblo.co.us

**PUEBLO COUNTY
DEPARTMENT OF PLANNING AND DEVELOPMENT**

January 7, 2015

Mr. Kevin Meador, P.E., Project Manager
Southeastern Colorado Water Conservancy District (SECWCD)
31717 United Avenue
Pueblo, CO 81001

RE: Determination, Request for a Finding of No Significant Impact (FONSI)
Pueblo Dam Hydroelectric Project
(1041 No. 2014-005)

Dear Mr. Meador:

First, please note the content of this letter below is unchanged from the similar letter dated December 18, 2014, other than the cost figure at the bottom of page 3, and the attachment which reflects a slightly revised cost total. The amount on the December 18 letter was \$5,069.05, and is now \$5,066.98, due to a minor difference in the attorney fee calculation.

We have processed your request for a Finding of No Significant Impact (FONSI) for the Pueblo Dam Hydroelectric Project (Project) in unincorporated Pueblo County. Issuance of a FONSI is a determination that the Project does not require approval of a permit under Pueblo County's Regulations for Areas and Activities of State and Local Interest under Title 17, Division II of the *Pueblo County Code* (1041 Regulations).

According to the information submitted to this department, the Project for which a FONSI is requested involves constructing a hydroelectric powerhouse adjacent to the existing Pueblo Dam River Outlet, adjacent to and approximately 500 feet downstream of the dam. The Project is intended to generate seven megawatts (7 MW) of electricity.

The Project meets definitions and criteria to require Permit review under two chapters within the *Pueblo County Code's* 1041 Regulations: Chapters 17.168, Site Selection and Construction of Major Facilities of Public Utilities, and Chapter 17.172 Efficient Utilization of Municipal and Industrial Water Projects.

Per Section 17.148.240 A. of the *Pueblo County Code*, the FONSI Determination process is applicable to all areas or activities within the County's 1041 Regulations, which includes the proposed Project. The FONSI procedure is set forth in Section 17.172.090 of the *Pueblo County Code*. A FONSI may be determined and issued "...if the construction or operation of the Project, without mitigation, in its proposed location is unlikely to have any significant adverse impact to the County in consideration of the Permit Application Approval Criteria..." of the applicable chapter or chapters of the 1041 Regulations.

After review and consideration of the potential impacts of the proposed Project, with respect to the Approval Guidelines/Criteria within Sections 17.168.040 and 17.172.030 of the *Pueblo County Code*, it is my opinion that it is unlikely that construction or operation of the Project will have any significant adverse impact to the County, and therefore the project does qualify for a FONSI under the Pueblo County regulations. Please note this determination is made based on the following stipulations:

1. This FONSI is contingent on the applicant's compliance with any and all requirements imposed by the Bureau of Reclamation, as well as by Colorado Parks and Wildlife.
2. The Project and the determination was discussed with the Pueblo Board of County Commissioners (1041 Permit Authority) at work sessions on November 10 and November 24, 2014. The Board expressed concern with the possibility of an electric utility using their purchase of electricity generated by the Pueblo Dam Hydroelectric Project as a basis for a rate increase. A rate increase could be seen as causing a significant impact with respect to the following:
 - Approval Criterion, under Subsection 17.172.130 (9)
"The Project will not create an undue financial burden on existing or future residents of the County."
 - Approval Guideline, under Subsection 17.168.040 B.
"The facility will not adversely impact the physical, economic, or social environment of this jurisdiction, except as permitted in Section 17.168.040 (C)."

The Board of County Commissioners has advised staff that should the Project be attributed to a future increase in electric rates, this FONSI Determination may be reopened in order to determine whether to apply additional 1041 Permitting requirements.

3. This FONSI determination is based upon the applicant's submittals to the Administrator, and it is valid only for the development or activity described in those submittals together with applicant's commitments of record and conditions of approval herein. Any material change in the construction, use, or operation of the Project may require reconsideration of this FONSI and a determination that a Permit is required. Any change in impacts as represented in the application may require reconsideration of this FONSI and a determination that a Permit is required.

Please be advised that this FONSI does not constitute an exemption from any other applicable regulations. The Project is subject to approval by any regulatory agency where required by regulation or statute.

As set forth in Section 17.172.090 of the *Pueblo County Code*, a FONSI determination notice was published in the County newspaper (*Pueblo Chieftain*). Within 14 days of that publication, the Board of County Commissioners had the opportunity to decide to reconsider the determination. Also within the 14 day period, any affected party seeking reconsideration could file a written request with the Board of County Commissioners.

The determination notice was published in the *Pueblo Chieftain* on November 29, 2014. The 14 day period expired December 13, 2014, and this Department is aware of no such reconsideration or written requests being made during that time.

This department's costs in making this determination total \$5,066.98 (see attachment). Please submit a check for this amount, payable to Pueblo County.

Please contact me with any further questions or comments.

Sincerely,



Joan Armstrong, Director
Pueblo County Department of Planning and Development

JMW

Attachment, Cost Report

c: Pueblo Board of County Commissioners
Greg Styduhar, County Attorney
Marci Day, Assistant County Attorney
Gary Raso, Attorney
Bret Jones, Black Hills Energy
Michael Trujillo, CPW
Tara Piper, Bureau of Reclamation

DEPARTMENT OF PLANNING AND DEVELOPMENT

1041 2014-005

CASE COST REPORT

September 1, 2014 to December 18, 2014

STAFF SALARIES

Sandy Blanco	\$ 12.80
Louella Salazar	\$ 100.85
Sandra Smith	\$ 16.60
Jeffrey Woeber	<u>\$1,598.94</u>

\$1,729.19

PHOTOCOPIES \$ 24.49

ADVERTISING (Pueblo Chieftain Public Notice) \$ 67.20

POSTAGE \$ 10.29

ATTORNEY FEES (TOTAL) \$3,235.81

--Gary Raso (2.5 hours @ \$133/hour) \$ 332.50

--Ray Petros (8 hours x \$275 = \$2,200;
2.75 hours x \$225 = \$618.75; and
3% in administrative costs or
\$2,818.75 x 3% = \$84.56
\$2,818.75 + \$84.56 = \$2,903.31) \$2,903.31
=====

GRAND TOTAL \$5,066.98

LRS
1-6-2015

ATTACHMENT J

2015 Fry-Ark Temporary Excess Capacity Contracts

2015 Fry-Ark Temporary Excess Capacity Contracts

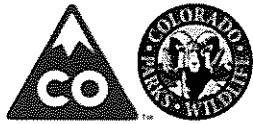
Contractor	Max Storage Requested	Contracted Amount	Contract Amendment	Pueblo Storage	Volume in acre-feet													Total
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Arkansas Groundwater Users	2000	1600		In	1600	0	0	0	200	300	300	0	0	0	0	0	2400	
				Out	0	0	450	450	0	0	0	250	250	0	0	0	1400	
				In	350	350	275	0	0	0	0	300	0	0	470	395	2140	
Bureau of Land Management	350	350		Out	0	0	0	700	700	700	0	0	0	200	200	0	2500	
				In	0	0	650	600	700	700	300	300	150	0	0	4100		
Catlin Augmentation Association, Inc.	1000	100		Out	80	80	80	100	200	200	200	200	200	100	80	80		
				In	300	0	0	0	0	0	0	0	0	0	0	0	300	
Colorado Department of Corrections	400	300		Out	0	0	0	40	40	40	40	40	40	0	0	0	240	
				In	930	0	0	0	0	70	0	0	0	0	0	0	1000	
				Out	0	0	0	0	0	0	500	500	0	0	0	0	0	1000
Colorado Parks and Wildlife	1250	1000		In	300	0	0	0	0	200	100	100	0	0	0	700		
				Out	0	0	0	100	100	100	100	100	100	0	0	0	700	
CO Water Protective and Development Assoc. (M&I)	1200	700		In	2000	0	0	0	0	800	800	400	0	0	0	4000		
				Out	0	1000	1000	0	0	0	0	1000	1000	0	0	0	4000	
CO Water Protective and Development Assoc. (IRR)	6000	4000		In	0	0	0	0	170	207	172	143	0	0	0	0	692	
				Out	0	0	0	0	0	0	0	0	0	0	0	0	0	
				In	0	0	28	78	232	92	109	90	160	122	22	0	933	
Donala Water and Sanitation District ¹	499	499		Out	0	0	0	0	0	0	0	0	0	0	0	0		
				In	0	0	0	100	150	120	120	120	120	43	40	933		
Fountain, City of	100	100		In	0	0	0	0	0	0	0	0	200	0	0	200		
				Out	0	0	0	0	50	50	50	50	0	0	0	0	200	
Fowler, Town of	400	200		In	1000	0	2	8	38	61	599	991	57	21	7	1	2785	
				Out	0	0	2	8	238	161	259	401	437	121	7	1	1635	
Lower Arkansas Valley Water Conservancy District and Super Ditch (IRR)	2500	2500		In	50	0	2	8	38	61	249	291	57	21	7	1	785	
				Out	2	2	5	8	38	61	59	51	37	21	7	1	292	
Lower Arkansas Valley Water Conservancy District and Super Ditch (M&I)	500	500		In	0	0	0	0	25	50	50	75	50	0	0	0	250	
				Out	0	0	0	0	0	25	25	25	25	25	25		150	
Ordway, Town of	200	100		In	0	0	0	0	0	20	14	10	6	0	0	0	50	
				Out	0	0	0	0	0	0	0	0	0	17	17	16	50	
Penrose	50	50		In	0	0	100	0	0	0	0	0	0	0	0	0	100	
				Out	33.3	33.4	0	0	0	0	0	0	0	0	0	33.3	100	
Rocky Ford, City of	100	100		In	0	0	0	163	245	219	179	160	92	30	0	0	1088	
				Out	184	136	130	125	0	50	0	0	0	0	0	0	625	
Salida, City of	625	625		In	15	15	30	100	135	110	115	100	75	80	25	15	815	
				Out	15	15	30	100	135	110	115	100	75	80	25	15	815	
Security Water District	250	150		In	0	0	450	0	0	0	0	0	0	0	0	0	450	
				Out	0	0	0	50	50	75	125	100	50	0	0	0	450	
St. Charles Mesa Water District	600	600		In	0	0	9	10	20	25	25	25	12	12	12	0	150	
				Out	0	0	6	10	10	12	20	20	20	20	20	12	150	
Stratmoor Hills Water District	150	150		In	0	0	50	100	100	100	100	50	50	50	50	700		
				Out	8	8	8	20	55	80	80	50	25	20	8	8	370	
Upper Arkansas Water Conservancy District	1000	700		In	0	0	5	10	10	10	10	10	5	5	5	5	75	
				Out	4	4	4	4	20	20	20	20	10	10	4	4	124	
Upper Arkansas Water Conservancy District	100	50		In	330	0		0	0	0	0	0	0	0	0	0	330	
				Out	0	0	0	0	100	100	100	100	0	0	0	0	400	
Victor, City of	1000	510		In	100	100	100	100	300	100	100	100	200	200	100	100	1600	
				Out	100	100	100	100	160	160	170	170	170	100	100	1600		
Widefield Water and Sanitation District	600	400		In	6975	465	1701	1177	2213	3125	3622	3145	1264	691	698	567	25643	
				Out	426.3	1378.4	1815	1915	2046	2064	1983	2297	2559	2004	536	310.3	19334	

Note: Monthly sequence of requested inflows and outflows may not comply with maximum storage requested. Actual implementation will be modified, if necessary, to comply.

¹ Will not be releases out of Pueblo. 508 ac-ft is exchanged into CSU storage account and delivered to Donala via Otero or by paper exchange.

ATTACHMENT J

Comments on Draft EA



COLORADO

Parks and Wildlife

Department of Natural Resources

Pueblo Office
600 Reservoir Road
Pueblo, Colorado 81005
P 719.561.5300 | F 719.561.5321

January 27, 2016

Bureau of Reclamation
Attn: Terence Stroh
11056 West County Road 18E
Loveland, CO 80537

Official File Copy
File Code <i>ENVL6.00</i>
Project <i>382-FA</i>
Control No. <i>16002623</i>
Folder I.D. <i>1343408</i>

AW 2/4/2016

OFFICIAL FILE COPY RECLAMATION ECAO	
DATE <i>FEB 04 2016</i>	
ROUTE TO:	DEPT
<i>T. Stroh</i>	<i>1310</i>
ROUTE COPY TO:	
<i>T. Curtis</i>	<i>1300</i>
<i>A. Hager</i>	<i>1310</i>
<i>- Acting</i>	

RE: Pueblo Hydropower Project Draft Environmental Assessment (Project 2015-001)

Dear Mr. Stroh,

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA) for the Pueblo Reservoir Hydropower Project. Colorado Parks and Wildlife (CPW) has reviewed the document and would like to offer the following comments.

The Draft EA states, "Impacts to fish passing through the hydropower facility would be similar to those experience by fish passing through the fixed cone valve. Neither the proposed Francis turbines nor the fixed cone valve are particularly fish friendly." We conducted a relatively thorough literature search regarding fish mortality through fixed-cone valves and through turbines. A great deal of our research findings indicate that fish mortality through hydropower facilities and turbines is significant. However, there is very little if any research on fish mortality through "fixed-cone" valves indicating to us that passage through these valves is less of a concern.

One of the most recent and relevant studies was completed by the US Army Corps of Engineers in May of 2011 (Duncan 2011) in which they compared fish mortality through a Francis Turbine and a Regulating Outlet. Results indicate 48-hour fish mortality occurs approximately 60% of the time through turbines compared to approximately 12% through the Regulating Outlet. Assuming the Regulating Outlet in this study is similar to the existing fixed-cone valve at Pueblo Reservoir, fish mortality is likely to increase dramatically when the hydropower facility is operational.

We do know that current releases from Pueblo Reservoir allow fish to pass through the dam and into the river below which results in some populations establishing in the river and providing angling recreation. CPW is very concerned about the impacts to the fishery and angling recreation if the proposed hydropower facility becomes operational.



Since it will be necessary for Hydroelectric Powerhouse employees, agents, contractors, and subcontractors, to enter upon the State Park to prepare for and build, the proposed Powerhouse, a significant level of consultation and coordination with CPW will be needed. Therefore, prior to construction activities, CPW strongly suggests that developers of the Pueblo Dam hydropower facility consult and coordinate directly with CPW to minimize impacts to the State Park and enter into a Memorandum of Understanding (MOU) for access and activities related to the construction of the Powerhouse. This MOU is in addition to the required permitting issued by Reclamation, and addresses issues, such as revegetation standards, access within the Park, impacts on the Parks roads, trails and bridge, as well as impacts on Parks operations.

Once again, thank you for the opportunity to comment on this issue. Please feel free to contact our office, 719-227-5200, if you have any additional comments regarding this or any other wildlife matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dan Prenzl', with a stylized flourish at the end.

Dan Prenzl
Southeast Regional Manager
Colorado Parks and Wildlife

References

Duncan JP. 2011. Characterization of Fish Passage Conditions through a Francis Turbine and Regulating Outlet at Cougar Dam, Oregon, Using Sensor Fish, 2009-2010. PNNL-20408, Pacific Northwest National Laboratory, Richland, WA.



Pueblo County Office
200 W. 1st Street, Suite 303
Pueblo, CO 81003

719-447-5012
fountainckdist@aol.com
www.fountain-crk.org

El Paso County Office
975 S. Union Blvd, Suite 219
Colorado Springs, CO 80910

3 February 2016

Jacklynn L. Gould, P.E.
Area Manager
Bureau of Reclamation
Great Plains Region
Eastern Colorado Area Office
11056 West County Road 18E
Loveland, CO 80537-9711

Ref: ENV-6.00, EC-1310

Official File Copy	
File Code	ENV-6.00
Project	382-FA-SDS
Control No.	16002984
Folder I.D.	1301072

OFFICIAL FILE COPY RECLAMATION ECAO	
DATE: FEB 08 2016	
ROUTE TO:	DEPT
T. Stroh	1310
ROUTE COPY TO:	
T. Curtis	1300

Dear Mr. Gould:

This letter serves to confirm that the Colorado Springs Utilities (CSU) Southern Delivery System (SDS) project is meeting its commitments relative to all Fountain Creek Watershed, Flood Control and Greenway District permits, approvals and agreements as described in the ROD and relative to our review of implementation progress reported by CSU in the 2015 PCAR. The SDS project has provided us regular update briefings relative to its progress and compliance with our permits, approvals and agreements. We fully support CSU in its desire to commence operations and begin water deliveries in April 2016, subject to meeting the terms of the ROD and SDS contracts.

Respectfully submitted,

Larry Small,
Executive Director