Crow Tribe Municipal, Rural, and Industrial Water Supply: Pilot Water Treatment Plant Project, Montana

Crow Tribe Water Rights Settlement Act (Section 406, P.L. 111-291)

Finding of No Significant Impact

U.S. Department of the Interior
Bureau of Reclamation

July 2015

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.

Contents

Page

For further information regarding this Finding of No Significant Impact, contact:

Christina Gomer
2021 4th Avenue North
Phone: (406) 247-7753
Fax: (406) 247-7680
cmgomer@usbr.gov

Introduction

The Crow (Apsàalooke) Reservation (Reservation) spans approximately 2,300,000 acres in south-central Montana. The Reservation is primarily rural with a number of dispersed small towns, including Crow Agency (Reservation headquarters), Fort Smith, Hardin, Lodge Grass, Pryor, St. Xavier, and Wyola. Currently, communities on the Reservation meet their drinking water needs via surface water or ground water wells and rural residents are served by individual ground water wells. Many of these ground water sources have deficiencies, including noncompliance with regulatory drinking water standards and a lack of water quantity to serve existing populations.

As a step to correct these deficiencies, Title IV of the Claims Resolution Act of 2010 (Act) (Public Law 111-291) authorized $246,381,000 for the design and construction of a Municipal, Rural, and Industrial Water System (MR&I System) on the Reservation. In order to facilitate the design of the MR&I System, the Crow Tribe (Tribe) has proposed to undertake a pilot water treatment plant study (Pilot Plant Project) to gather additional information on the effectiveness of various water treatment methods.

In implementing the Act, the U.S. Department of the Interior (DOI), Bureau of Reclamation (Reclamation) has been designated the lead federal agency responsibility for making a decision regarding the MR&I System under the National Environmental Policy Act (NEPA) of 1969 (as Amended, 42 U.S.C. Sections 4221-4347). The Regional Director for Reclamation's Great Plains Region is the Responsible Official for matters pertaining to the MR&I System, including the currently proposed Pilot Plant Project. Because the proposed study will cross lands held in trust by the federal government for the Tribe, the DOI's Bureau of Indian Affairs (BIA), the agency responsible for decision-making related to these trust lands, is a cooperating federal agency.

Environmental effects of the proposed Pilot Plant Project were evaluated under the provisions of NEPA and are documented in the final *Crow MR&I System: Pilot Water Treatment Plant Environmental Assessment* (Final EA), dated July 2015. Reclamation has independently reviewed the Final EA, prepared by the Tribe and their consultants, Bartlett & West and Wenck Associates, Inc., and has determined that the document meets the quality and requirements for an EA under 40 CFR 1508.9. Pursuant to DOI's NEPA regulations under 43 CFR 46.320, Reclamation has utilized the Final EA to reach an environmental conclusion regarding the proposed Pilot Plant Project.

Coordination

Planning activities for the MR&I System, including interagency coordination, have been underway since 2014. Initial public scoping began in earnest in September of 2014, with the

development of a project website, distribution of mailings, posting of community notices, and hosting several public scoping meetings. In addition, Reclamation and the Tribe entered into an agreement to cooperatively plan and review the proposed activities and the Tribe has a comprehensive role with the Project Management Committee created under the Act. While no formal cooperating agency agreement was implemented beyond the procedures described in a 2012 Memorandum of Understanding (R12MU60037) between Reclamation and BIA, for all practical purposes, the BIA has participated in NEPA activities as a cooperating agency.

The Tribe's consultants, Bartlett & West and Wenck Associates, Inc., prepared a Draft EA and provided a two week public review and comment period based on the scope and nature of the proposal. The comment period for the Draft EA closed on July 10th, 2015. No comments were received. Reclamation received the Final EA from the Tribe's consultants on July 20th, 2015. Public notification materials can be found in Appendix D of the Final EA.

Purpose and Need for the Project

In order to help facilitate the design of the MR&I System, information is needed on the ability of various water treatment techniques to effectively treat the proposed source water and produce water which will meet the water quality needs of the Tribe.

The Tribe has identified a need to design a system which will produce water that can:

1) Meet EPA drinking water quality standards (both primary and secondary);
2) Be produced at a rate of 4.5 million gallons per day (MGD) with the option to expand to 6.7 MGD;
3) Be cost effective to the Tribe and, ultimately, the water users.

The purpose of the proposed Pilot Plant Project is to gather this needed information. By gathering the needed information, the Tribe would be able to more thoroughly compare the available treatment methods in order to select a preferred treatment process for full-scale operations which would meet their needs, and provide the Tribe an opportunity to optimize equipment and minimize costs.

Summary of the Proposed Action

The Proposed Action (Section 2.2 of the Final EA, pg. 4) combines theoretical modeling (graphical/flow chart modeling) and laboratory studies (jar tests and bench scale testing) with a three month, on-the-ground pilot plant study. The entire project area encompasses 55 acres in the NE ¼ of Section 23, Township 4 South, Range 32 East on lands owned by the Tribe. The location is approximately ¼ mile west and ¾ mile north of St. Xavier, in Big Horn County, Montana. The pilot plant study includes the following components and associated construction work activities:

- Aquifer test wells: including one intake well, seven observation wells, two streambed piezometers, and one stilling well.
- Intake well: to be located along the east bank of the Bighorn River and pumping water from approximately 30 feet below the ground surface.
- Supply pipeline: slightly over 4,100 feet of three inch diameter pipeline following the preferred pipeline route (Figure 2-1 of the Final EA, pg. 6) and, with the exception of three portions suspended above-ground, resting on the surface of the ground.
- Power supply: either buried or overhead electrical service provided by Big Horn County Electric, or on-site generators.
- Treatment plant: enclosed building to house equipment needed to test five treatment methods and technologies (oxidation, coagulation/flocculation and settlement, ultrafiltration, low pressure reverse osmosis membranes, and biological media filtration), parking and staging areas, and buffer areas totaling 4.5 acres.
- Discharge pipeline and outlet: slightly over 4,100 feet of two inch diameter pipe, following the same route as the supply pipeline and discharging treated water back to the Bighorn River, and
- Sludge ponds: 2.1 acres of temporary outdoor lagoons, used to collect backwash and sediment.

Summary of Environmental Impacts

The effects of implementing the Proposed Action have been analyzed and are summarized below.

Soil Resources

The Proposed Action will have minimal impacts on soils in the project area. The supply and discharge pipelines will be laid on the surface of the soil or suspended above ground, rather than buried, thus avoiding impacts to soils.

Disturbance and compaction of soils is almost certain to occur during construction activities, although, these activities will be limited to eight acres of land which has been previously disturbed by agricultural, grazing, and other human activities. Disturbed soils will be more susceptible to erosion, especially during precipitation events. Reclamation has incorporated conservation measures into the project decision in order to minimize potential impacts (see Conservation Measures). These measures include the use of erosion control structures, reuse of topsoil, and seeding and mulching..

No significant adverse impacts to soil resources are expected as a result of the Proposed Action.

Water Resources and Wetlands

Water resources in the project area include the Bighorn River, Rottengrass Creek (a perennial stream), and an unnamed wetland/intermittent stream. Several temporary impacts to these water resources may occur as a result of the proposed action.

Approximately 500-1,000 gallons per minute (GPM) of water will be required during the development of the intake and aquifer test wells, which is expected to take one day per well. The local aquifer may see a decrease in the water table due to these water demands, but the water table is expected to rebound to pre-construction levels; thus, the drawdown impacts to local groundwater aquifers will be short term and temporary.

Operation of the pilot plant will result in extraction of groundwater at a rate of 60 GPM and discharge of treated water into the Bighorn River at a rate of 26 GPM. Flows in the Bighorn River during the time when the pilot plant study will be in operation are conservatively estimated at 753,086 GPM.

The supply and discharge pipeline routes will be suspended across Rottengrass Creek and the unnamed wetland, thus avoiding direct impacts to these resources. If a leak were to occur in either the supply (carrying Bighorn River water) or discharge (carrying treated water) pipelines, no adverse impacts are expected owing to the fact that the leaked water would be of an equal or greater quality than the current water resources.

Due to the relatively minor amount of water being withdrawn, the discharge of only treated water, avoidance of wetland areas, and the temporary nature of the project, no significant impacts are expected to water resources or wetlands.

Vegetation and Land Use

Soil stripping, excavation, and vegetation removal activities are expected to occur in a small (eight acre) area as a result of construction of the pilot plant, sludge lagoon, intake well, aquifer testing facilities, and the Mission Loop road crossing. Vegetation disturbances such as compaction and leveling of individual plants, but not direct removal of vegetation, could occur throughout the remainder of the project area (55 acres) as a result of other project activities, including placement of the supply and discharge pipeline.

Project facilities are located on lands which are intermittently used for agricultural and cattle grazing purposes. The Proposed Action will temporarily limit the agricultural production capabilities of these lands for one growing season but there will be no long-term change in the land use.

Although there are no plants listed as threatened or endangered under the Endangered Species Act (ESA) present within the project area, culturally significant plants could potentially be found in grassland or wetland habitats within the project area. Impacts to culturally significant vegetation are unlikely due to the previously disturbed nature of grasslands in the area, the

avoidance of wetland habitats via suspension of pipelines over such areas, and the non-destructive nature of project activities within potential habitat. .

Bare ground and disturbed soils, which are common in construction work areas, present an excellent opportunity for noxious weeds to become established and thrive. If populations of noxious weeds or invasive plants are present at a specific work site, those populations are likely to spread unless sensible precautions are taken. The effects of noxious weeds or invasive species infestations are likely long-term.

Conservation measures meant to minimize impacts to vegetation were included in the project decision (see Conservation Measures). These measures include requirements for the inspection and cleaning of equipment for noxious weeds, pre-construction surveys, and appropriate reseeding of disturbed areas. As such, no significant impacts to lands and vegetation are expected as a result of the Proposed Action.

Fish and Wildlife

During construction and reclamation activities, there is potential for sediment-laden runoff to reach drainages within or adjacent to the project area, and ultimately, increased sedimentation could affect fisheries and aquatic life. The small volume of water removed from the groundwater aquifer and Bighorn River will not measurably reduce instream flow and is not expected to affect existing fisheries. Neither the quantity nor quality of water discharged back into the Bighorn River is expected to affect fisheries or other aquatic life.

Construction activities and increased human presence could result in temporary impacts to wildlife such as displacement, nest abandonment, decreased reproductive rates, or other behavioral or stress responses. Increased vehicle traffic could also result in increased collisions, causing mortality or injury to wildlife. Project activities will occur outside of the typical breeding and nesting season (April 15th to July 15th) for migratory birds in Montana. Bald and golden eagles are year-round residents in Montana, but a preliminary survey of the project area did not identify any bald or golden eagle nests.

Pre-construction surveys, timing restrictions, and other conservation measures are included in the project decision to minimize or avoid adverse impacts to fish and wildlife species and their habitat areas (including nesting locations), as well as culturally important wildlife resources (see Conservation Measures). Because the project location is generally in areas where farming, ranching, and other human activities occur regularly, it is not expected that population level impacts to wildlife populations or individual species will occur as a result of the Proposed Action.

No significant impacts to fisheries or wildlife are anticipated as a result of the Proposed Action.

Threatened and Endangered Wildlife Species

Although certain areas within Big Horn County have potential to support black-footed ferret populations, the agricultural cropland and riparian woodland habitats within the project area do not support the prairie dog complexes upon which ferrets are heavily dependent. Due to a lack

of suitable habitat and the historic absence of black-footed ferret sightings in the area, it is unlikely that black-footed ferrets are present in the project area. Reclamation has determined that the Proposed Action will have no effect on black-footed ferrets. Because there is no ESA-designated critical habitat in the project area, Reclamation has also determined that the Proposed Action will not destroy or adversely modify designated critical habitat of any ESA-listed species.

Historic Properties and Culturally Sensitive Areas

Three cultural resource inventories were completed in order to identify any cultural, historical, or sacred sites within the proposed area of disturbance. The inventories identified eleven features, three of which are within the project location; two features were located near the pilot plant site and the pipeline route will cross one feature. The pipeline route will be placed above ground, with no construction disturbance to avoid impacts to the feature. The three features were considered insignificant and ineligible for the National Register of Historic Places, and the Tribal Historic Preservation Office provided concurrence with Reclamation's finding of no adverse effects to the features.

Disturbance or destruction of previously undiscovered cultural resources could occur during construction related soil disturbance or excavation. Should a previously unknown cultural resource be discovered during construction activities, work will cease and Reclamation's archeologist will be notified immediately. Project workers are prohibited from collecting artifacts or disturbing cultural resources in any area, under any circumstances.

The Proposed Action will have no adverse impact to historic properties, cultural resources, or inhibit the access or use of ceremonial or sacred sites.

Environmental Justice

The Reservation consists of a minority population (American Indian) at an economic disadvantage compared to surrounding communities. Implementation of the Proposed Action will generate sludge waste which will be disposed of by incorporation into the soil or at an approved landfill, in accordance with all federal, state, and local laws and regulations. No negative health or environmental effects to minority or low income populations are anticipated as a result of the Proposed Action.

Trust Assets

The Proposed Action will indirectly benefit the Tribe and their assets by enabling the Tribe to make better informed project choices and planning decisions, which often results in cost savings and reduced impacts to resources. Construction of the Proposed Action may benefit Tribal members by providing short term employment opportunities for workers of Indian preference.

Paleontological resources on the Reservation are treated as a trust asset due to their potential commercial value. Soil disturbing activities have potential to disturb paleontological materials;

however, the project area has been classified as having "low fossil potential." The likelihood of disturbing paleontological resources is low and no significant impacts are expected as a result of the Proposed Action.

Other Resources

The Final EA did not evaluate effects to socioeconomic factors, air quality, climate change, or floodplains because the relatively small footprint of the project, short duration, and timing (late summer-fall) did not indicate the potential to have measurable effects upon these resources.

Executive Orders

The Proposed Action is in compliance with Executive Orders 11593 (Protection and Enhancement of the Cultural Environment), 11988 (Floodplain Management), 11990 (Protection of Wetlands), 12898 (Environmental Justice), 13007 (Indian Sacred Sites), 13112 (Invasive Species Control), and 13186 (Protection of Migratory Birds).

No significant impacts are expected to the resources covered in each.

Cumulative Impacts

Chapter 3 of the Final EA included analysis of cumulative effects or impacts from past, present, and reasonably foreseeable future actions. No significant cumulative impacts were identified.

Conservation Measures

The following section presents conservation measures which have been developed to minimize environmental impacts. These measures shall be implemented as a part of the Proposed Action.

Resource Area	Conservation Measure
Soil Resources	Preparation of a site-specific Storm Water Pollution Prevention Plan (SWPPP) is required. The SWPPP shall detail additional measures to minimize and mitigate construction storm water runoff, sediment discharge, and erosion and spill prevention.
	Equipment refueling shall occur in designated areas, away from sensitive features.
	Topsoil shall be retained for reclamation and seedbed preparation.
Water Resources & Wetlands	Intermittent streams will be crossed during low-flow periods and, preferably, when streambeds are dry.
	Erosion and sediment control structures such as silt fences, earth berms, fiber rolls, and straw wattles will be implemented as

	necessary, both during and after construction, in accordance with the SWPPP.
	All discharged water shall meet the requirements set forth in the Tribe's approved NPDES permit.
Vegetation & Land Use	Pre-construction surveys shall be performed to identify any culturally significant and/or noxious vegetation in the project area. The BIA and Reclamation shall be notified of survey results.
	Seeding and mulching of disturbed areas shall occur promptly after construction is complete. Seed mixtures will be determined through consultation with the BIA Natural Resources Group.
	Native prairie will be avoided to the maximum extent possible. If native prairie sod is broken during construction, existing topsoil shall be salvaged and replanted in a timely manner.
	Contractors are required to follow the procedures described in Reclamation's *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species* (DiVittorio et al. 2012).
Fish & Wildlife	Pre-construction surveys shall be performed to identify the presence of any protected species or habitats, such as migratory bird nests, bald or golden eagle nests, and ESA-listed species within the project area.
	If active bald or golden eagle nests are observed within 0.5 miles of project activity, all project work in the area will be halted and Reclamation will be contacted for instructions on how to proceed.
	Project work will be performed outside of the typically migratory bird nesting season of April 1st – July 15th.
	Buried power lines are preferred, but if overhead powerlines are utilized, all designs shall incorporate standard industry techniques to minimize electrocution and collision hazards to avian species, such as those described in *Reducing Avian Collisions with Power Lines: State of the Art in 2010* (APLIC 2012) and the U.S. Fish and Wildlife Service's (Service) *Avian Protection Plan Guidelines* (USFWS 2005).
	If ESA-listed threatened or endangered species are encountered during construction, all work activities in the immediate area will be stopped until Reclamation can consult with the Service to determine the appropriate course of action.
Historic Properties & Culturally Sensitive Areas	If unrecorded cultural resources are encountered during construction, all ground disturbing activity within the area will be halted, Reclamation will be notified, and work will resume only when compliance activities have been completed.
	Collection of cultural resources is prohibited in all areas, under all circumstances.

Finding

Based on the analysis of the environmental impacts and the implementation of the conservation measures contained above, Reclamation has determined that the Proposed Action, as described in the Final EA and in the preceding sections of this document, will not have significant or highly uncertain impacts on the quality of the human environment (40 CFR 1508.27). Consequently, Reclamation has prepared this Finding of No Significant Impacts (FONSI) and will not prepare an Environmental Impact Statement.

Decision

Reclamation has selected the Proposed Action for implementation. Conservation measures contained in this FONSI are incorporated into this decision. The conservation measures are reasonable, appropriate, and based on recommendations commonly used for resource protection.

With the application of conservation measures, a FONSI has been made for the Proposed Action. Implementation of this federal action may proceed following approval of this document.

This concludes Reclamation's decision to implement the Proposed Action for the *Pilot Water Treatment Plant Project*.

Responsible Official: _____ 7/24/15

Michael J. Ryan
Regional Director, Great Plains Region,
Bureau of Reclamation

Date