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Rockport Reservoir Final Environmental Assessment and Finding of No Significant Impact PRO-06-004

Peter Crookston

U.S. Department of the Interior, Bureau of Reclamation

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RECLAMATION

Managing Water in the West

Rockport Reservoir Final Environmental Assessment and Finding of No Significant Impact PRO-06-004

**Weber Basin Project, Summit County, Utah
Upper Colorado Region
Provo Area Office**



**U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah**

February 2007

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.

Rockport Reservoir Final Environmental Assessment and Finding of No Significant Impact PRO-06-004

**Weber Basin Project, Summit County, Utah
Upper Colorado Region
Provo Area Office**

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**U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah**

February 2007

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Chapter 1 - Need for Proposed Action and Background

1.1 Introduction

This document is an environmental assessment (EA) for the delivery of up to 7,500 acre-feet of water per year from Rockport Reservoir and Smith & Morehouse Reservoir in Summit County, Utah, to the Mountain Regional Water Special Service District's (MRWSSD) Signal Hill water treatment plant, for distribution in the Park City and Snyderville Basin area of Utah. The Weber Basin Water Conservancy District (WBWCD) has requested Bureau of Reclamation (Reclamation) authorization for WBWCD to construct the necessary water intake structure(s) at Rockport Reservoir, a pumping station, and the necessary facilities to connect this water source to the existing Lost Creek Canyon Booster Pump Station and pipeline.

1.2 Background

Wanship Dam and Rockport Reservoir are located on the Weber River south of Wanship, Utah, and are features of the Weber Basin Project. The Weber Basin Project conserves and utilizes, for multiple purposes, stream flows in the natural drainage basin of the Weber River, including the basin of the Ogden River, its principal tributary. Other areas encompassed are those lying between the west slope of the Wasatch Mountains and the east shore of Great Salt Lake. Construction of the Weber Basin Project was authorized by Congress on August 29, 1949 (63 Stat. 677).

Water resources of the area were extensively developed before initiation of the Weber Basin Project. Prior Federal Reclamation developments include, the Weber River Project with Echo Reservoir on Weber River, and the Ogden River Project with Pineview Reservoir and conveyance facilities on the Ogden River. The Weber River and Provo River Projects diverted water from the high reaches of Weber River for multiple uses on the Weber and Provo Rivers. Numerous private developments preceded the Federal projects. The Weber Basin Project supplements all of these earlier undertakings and the project's operations are integrated with them in approaching full development of the area's water resources. In full operation, the project provides an average of 166,000 acre-feet of water annually for irrigation and 50,000 acre-feet for municipal and industrial (M&I) use in a heavily populated and industrialized area.

Rockport Reservoir has 62,100 acre-feet total capacity, and a surface area of 1,080 acres. Wanship Dam, located 1.5 miles south of Wanship, Utah, is a zoned earthfill structure. The dam is 156 feet high, has a crest length of 2,010 feet, and contains 3,183,000 cubic yards of material. The spillway is an uncontrolled open concrete chute with a capacity of 10,800 cubic feet per second (cfs). The outlet works tunnel provides for releases to the powerplant or to the river. The outlet works has a capacity of 1,000 cfs.

Smith & Morehouse Reservoir (a WBWCD funded reservoir) has 8,350 acre-feet total capacity, and a surface area of 44 acres. The narrow, north-facing reservoir is located in the upper reaches of the Weber River drainage east of Oakley, Utah.

1.3 Purpose and Need and Scope of Analysis

The purpose of the proposed action is to deliver water to the Park City/Snyderville Basin area. The need for the proposed action is a growing demand for water in the Park City/Snyderville Basin area due to population growth and increased development of recreation facilities and vacation homes.

The scope of analysis in this EA is limited to consideration of whether or not to authorize WBWCD to proceed with the proposed new intake structure. A number of studies over the years, most recently the Park City and Snyderville Basin Water Supply Study Special Report (special report), dated February 2006, published by the Bureau of Reclamation, Provo Area Office, have discussed and analyzed the broader issue of how to meet the growing demand for water in this area over the next 50 years. There are a number of possibilities for providing new sources of water for the Park City/Snyderville Basin area, which might involve Federal and/or state Government entities, or which could be developed by local Government and/or the private sector.

The specific project that is the subject of WBWCD's request for Reclamation authorization, as analyzed in this EA, was discussed and analyzed in the February 2006 special report as Option 7, the Lost Creek Canyon Pipeline option. This option and Option 5, the East Canyon Pipeline Project, were recommended in the special report as new water supply options that could be developed in the near term.

This EA is being prepared because of WBWCD's request for authorization by Reclamation. Should the East Canyon Pipeline Project or any other water supply option be initiated in a manner requiring action or authorization by Reclamation, Reclamation would prepare the necessary analysis for compliance with the National Environmental Policy Act (NEPA).

The proposed action does not include any changes to the operation of Wanship Dam. Construction activity would be limited to the immediate vicinity of Rockport Reservoir.

1.4 Authorizing Actions, Permits, and Licenses

Implementation of the proposed action could require a number of authorizations or permits from State and Federal agencies. These are summarized below.

- Reclamation authorization needed to construct and operate facilities on Reclamation lands.
- State of Utah (State Engineer) authorization needed for the new point of re-diversion.
- Permit from the Army Corps of Engineers in compliance with Section 404 of the Clean Water Act, as amended.
- Water purchase agreement with Park City and Mountain Regional Water Special Service District and possibly Summit Water Distribution Company.
- Weber Basin Water Conservancy District, if design alignment requires, would obtain the necessary easements or rights-of-way to connect the proposed pump station to the existing Lost Creek Canyon pipeline.

1.5 Relationship to Other Projects

- Park City and Snyderville Basin Water Supply Study Special Report. As discussed in Section 1.3 above, the proposed action analyzed in this EA was discussed as Option 7 in the February 2006 special report.
- Change of Water Use in Willard Reservoir Final Environmental Statement (EIS), January, 1989 (conversion over time of 30,000 acre-feet from agriculture water to M&I water). This EIS focused on conversion of water stored primarily in Willard Bay, but described how the WBWCD operates all Weber Basin Project facilities in a coordinated manner to assure that water rights are met and instream flows are maintained where applicable.
- Wanship Dam spillway repair was required following collapse of four wall panels on the right side of the spillway. Work was initiated in September 2006, and will be completed by June 2007 (CE # PRO-CE-06-015).

Chapter 2 - Proposed Action and Alternatives

2.1 Introduction

The proposed action analyzed in this EA is Reclamation's authorization for WBWCD to construct a proposed new water intake structure at Rockport Reservoir. The EA will be used to determine the potential effects to the human environment and will serve to guide Reclamation's decision, along with other pertinent information, whether to implement the proposed action.

If Reclamation decides to implement the proposed action to authorize WBWCD to proceed with its proposed project, a new water intake or diversion structure would be constructed in or near Rockport Reservoir, and the necessary pipeline(s) and pumping station would be constructed in order to convey this water to the existing Lost Creek Canyon pipeline.

Up to 7,500 acre-feet of water per year would be delivered via this pipeline to the Signal Hill water treatment plant. Of this water to be developed, 2,500 acre-feet are Weber Basin Project water and 2,500 acre-feet are private water. In addition, approximately 1,600 acre-feet of water currently diverted by Mountain Regional from shallow wells to their Lost Creek Canyon Pipeline may be moved to this proposed project and an additional 900 acre-feet could be delivered in the future.

If authorized to proceed, WBWCD would construct, operate and maintain this new system using non-Federal funds.

A range of action alternatives have been identified and analyzed in this EA, along with a no action alternative to facilitate comparison of potential effects of the proposed action.

2.2 No Action Alternative

Under the no action alternative Reclamation would not authorize WBWCD to construct the proposed water intake structure and pumping station at Rockport Reservoir. The no action alternative does not require any changes to project features.

2.3 Action Alternatives

The following action alternatives are intake structures that could be used to withdraw water. Both of the action alternatives would be designed with the

capacity to withdraw a continued water flow of 10 cfs with peak capacity of 21 cfs and both would include new pumping stations designed to blend in and reflect the style of the existing Lost Creek Canyon Booster Pump Station.

2.3.1 Collector Wells

The collector well consists of a caisson structure sunk into an aquifer at a predetermined depth with several well screens (or laterals) projecting radially out from the caisson structure. Before the well could be constructed a collector well consultant would investigate the site to determine if it is suitable. This type of well was first developed by the Ranney Corporation and is therefore commonly referred to as a “Ranney Well”. Laterals may extend beneath the reservoir basin area or may be parallel to the bank and shoreline.

Several collector wells would be required to obtain the desired peak flow of 21 cfs. Preliminary investigations estimate 3 to 5 wells would be required with laterals totaling 3,000 feet. Each well would require a separate pump station and access road. A collection system of approximately 2,700 feet of 24-inch pressure pipe would be required to convey the water to the existing Lost Creek Canyon Booster Pump Station. Approximately 5 acres of riparian habitat and 3 acres of upland habitat would be disturbed if 5 wells are required (see Figure 2.1).

2.3.2 Coanda Screen Intake

The Coanda screen intake would consist of a concrete structure in the Weber River to back up the water and create enough head to install and operate self-cleaning Coanda screens. A fish passage channel would be constructed adjacent to the concrete structure to ensure passage of fish upstream year round, although fish typically can pass over the Coanda screens unharmed.

Coanda screens are an evolution of several screen designs which utilize a tilted-wire screen panel. The tilted wires shear off a small amount of water and force it into a collection basin. In recent years Coanda screens have been applied to problems of debris and fish screening at irrigation and drinking water diversions and small hydropower intakes.

One Coanda screen structure extending across the width of the river upstream of Rockport State Park would be required to obtain the desired peak flow of 21 cfs. Approximately 350 feet of 36-inch pipe would gravity feed water to a new pump station and approximately 700 feet of 24-inch pressure pipe would convey the water to the existing Lost Creek Canyon Booster Pump Station. Potentially an additional 700 feet of 16-inch high pressure pipe would be installed within the same alignment of the 24-inch pressure pipe from the new pump station to the existing pump station. Eighty percent of the water would pass over the Coanda screen and 20 percent would pass through the fish passage channel. Approximately 1 acre of riparian habitat and 1 acre of upland habitat would be disturbed to install the structures (see Figure 2.2).

2.4 Alternatives Considered but Eliminated from Further Study

The following alternatives were considered but eliminated from further study because they are not economically feasible due to construction and maintenance costs.

2.4.1 Infiltration Gallery Intake

Land infiltration galleries are usually placed adjacent to a stream or river and are less often adjacent to a lake. A single screen would be placed parallel to the bank or shore. Burial depths are commonly at least 4 feet but not more than 25 feet deep.

The Infiltration Gallery Intake would be located either next to the Weber River or in the Reservoir Basin near a location where the Weber River enters the basin. The yield would drop over time as sedimentation reduces the hydraulic conductivity of the surrounding filter pack. Bed-mounted galleries generally require more maintenance due to sedimentation. One source recommends cleaning the system every two years; however, the same source recommends leaving the system alone if there is no perceptible change in flow.

Recent sediment samples from the Weber River indicate that the sediment is mostly sand and therefore may not cause a problem for infiltration.

2.4.2 Tap Into Dam Outlet Works

This alternative would tap into an existing 24-inch outlet pipe that is part of the Wanship Dam outlet works and route the pipeline either on the west side or the east side of the reservoir.

The east alignment consists of a pump station and a pipeline that would follow the east side of the reservoir starting from a location below the dam and ending at the Mountain Regional booster pump station on the south end of the reservoir. The maximum pumping head for this option is approximately 215 feet based on a historic reservoir low of 5970 feet. A river crossing for the pipeline would be required below the dam.

The west alignment consists of a pump station and a pipeline that would follow the west side of the reservoir along State Route 32 starting from a location below the dam and ending at the Mountain Regional booster pump station on the south end of the reservoir. The maximum pumping head for this option is approximately 110 feet based on a historic reservoir low of 5970 feet. A river crossing for the pipeline would be required at the upper end of the reservoir.

2.4.3 Lake Tap

This alternative would involve the construction of a large diameter vertical shaft that is connected to Rockport Reservoir with a lateral tunnel. A vertical shaft

with lateral inlet tunnels, commonly referred to as a “lake tap,” is an established construction method that has been successfully implemented for several water supply projects, including those in Lake Havasu City, Arizona, and Las Vegas, Nevada. The specific construction techniques that would be used for this alternative are described below.

The large diameter vertical shaft would be constructed by common excavation methods or by blind shaft drilling. As the excavation advances a caisson structure would be constructed to prevent the walls of the excavation from collapsing. After the shaft excavation is complete a tunnel would be excavated using a micro-tunneling machine. Typically, pressure is used behind the machine to keep the excavation relatively dry. Divers would be employed to recover the micro-tunneling machine and to construct a platform for the intake structure and screens to sit on. The intake structure and screens would be constructed offsite in modular units and installed by the divers.

In order to obtain a consistent supply of water, the intake should be located near the top of dead storage for Rockport Reservoir, which is at elevation 5930 feet. This elevation would place the intake structure on the east side of the reservoir within 1500 feet of the dam. A shallower location may be considered after studying historical reservoir elevations.

2.5 Preferred Action Alternative

As a result of the analysis presented in this EA, Reclamation considers the Coanda screen intake to be the preferred action alternative.

Chapter 3 - Affected Environment and Environmental Effects

3.1 Introduction

This chapter describes the environment potentially affected by the no action alternative and the action alternatives and the predicted impacts of the alternatives. These impacts are discussed under the following resource issues: recreation; water rights; water resources; water quality; system operations; public safety, access, and transportation; visual resources; socioeconomics; cultural resources; paleontological resources; wetlands and vegetation; wildlife resources; and threatened and endangered species. The present condition or characteristics of each resource is discussed first, followed by a discussion of the predicted impacts under the no action and action alternatives. The environmental effects are summarized in Table 3.3 at the end of this chapter.

3.2 Affected Environment

3.2.1 Recreation

Recreational facilities in Rockport State Park and those on the reservoir are managed by the Utah Division of Parks and Recreation under agreement with Reclamation. The reservoir is situated in an open setting, with limited shade, five miles south of Wanship, Utah. It rests at the 6037-foot elevation and has a 1,080 acre surface area. The managed season is all year with high use. The most preferred activities include fishing, camping, and motor boating. The greatest numbers of fish caught are Rainbow Trout, Smallmouth Bass and Brown Trout, respectively. The recreation area has a boat ramp, marina, some facilities for the disabled, camping, day and overnight facilities and a sewage dump station; fees are charged for use. Use in 2005 totaled 159,570 visitors and use in 1996 totaled 321,985 visitors. Access is available from all weather roads, I-80, SR66, and SR32. The majority of visitors come from the Wasatch Front (see Map 3.1 of the South End Management Area).

3.2.2 Water Rights

The annual 7,500 acre-feet diverted by both action alternatives would come from a combination of water stored at the Rockport Reservoir (a Bureau of Reclamation project) and the Smith & Morehouse Reservoir (a WBWCD funded reservoir). At least 5,000 acre-feet of the annual 7,500 acre-feet water diversion by the action alternatives, consists of existing unsubscribed WBWCD water. The remaining 2,500 acre-feet would consist of unsubscribed water or subscribed WBWCD water that would be moved from its current point of diversion to the new intake structure.

Water diverted from Rockport Reservoir would come from certificated Water Right No. 35-828 (A27609). This right allows up to 60,000 acre-feet of water annually to be stored in Rockport Reservoir for irrigation, M&I and power use.

Water storage in the Smith & Morehouse Reservoir occurs under four separate storage rights. WBWCD holds the title to three of these water rights, Water Right Nos. 35-832 (5,000 acre-feet), 35-5407 (1,860 acre-feet), and 35-5529 (450 acre-feet), for a combined storage of 7,310 acre-feet that can be used for municipal purposes within the WBWCD service area. Smith & Morehouse Reservoir Company holds the title to the remaining right, Water Right No. 35-8733, that allows for the storage of 1,040 acre-feet for irrigation purposes. Water diverted into the Snyderville Basin would occur under the WBWCD water rights in the reservoir.

3.2.3 Water Resources

Rockport Reservoir regulates the headwaters of the Weber River to meet project purposes downstream. In combination with Lost Creek, East Canyon, A.V. Watkins Reservoirs, and Echo Reservoir of the Weber River Project; the flow of the Weber River System is regulated. Causey and Pineview Reservoirs located in the Ogden River Basin, the principle tributary of the Weber River, also contribute water to the Weber Basin Project. Cooperative releases from each of these facilities provide irrigation and domestic water to lands along the Upper Weber and Ogden River Valleys and eastern slopes and lower valley lands of Weber and Davis Counties. Furthermore, releases from Wanship Dam are made to generate power to assist in providing the irrigation and drainage pumping requirements of the project and to supply power to several drinking water infiltration plants utilizing project water. Table 3.1 depicts the average annual water quantities for the Weber Basin Project.

In addition to the dams, there are seven project well sources that were drilled and equipped by Reclamation to be used by WBWCD as backup for M&I demand in the system. The maximum flow through the wells is 46.64 cfs with an annual capacity of 33,761 acre-feet (see Table 3.2).

In full operation, the Weber Basin Project provides an average of 206,900 acre-feet of water annually for irrigation and M&I use in heavily populated and industrialized areas. This water is supplied from WBWCD system capacity of 385,000 acre-feet. The additional 33,760 acre-feet capacity from project wells provides a total of 418,760 acre-feet of potential water capacity that can be utilized to meet project demands. Although the project wells are available for backup M&I purposes, they have never been fully utilized.

Table 3.1: Weber Basin Project Average Annual Water Quantities

	Active Capacity (Acre-feet)	WBWCD Capacity (Acre-feet)	April-July Inflow (Acre-feet)
Weber River Basin	408,720	312,028	371,600
East Canyon	48,110	20,110	32,000
Echo	73,940	6,288	180,000
Lost Creek	20,010	20,010	17,200
Rockport	60,860	60,860	138,000
Smith & Morehouse	7,600	6,560	4,400
Willard Bay	198,200	198,200	-
Ogden River Basin	117,020	73,098	135,300
Causey	6,870	6,870	2,300
Pineview	110,150	66,228	133,000
Total	525,740	385,126	506,900

Table 3.2: Weber Basin Project Wells

Well Name	Capacity (cfs)
Riverdale	6.64
S. Weber #1	10
S. Weber #2	10
Laytona	5
Clearfield #1	5
Clearfield #2	5
Bountiful 500 West	5
Total	46.64

3.2.4 Water Quality

Rockport Reservoir is classified and protected by the State of Utah for the following beneficial uses:

Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.

Class 2A - Protected for primary contact recreation such as swimming.

Class 2B - Protected for secondary contact recreation such as boating, wading, or similar uses.

Class 3A - Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.

The Weber River and tributaries, from Stoddard Diversion to headwaters, is classified for the following beneficial uses: 1C, 2B, 3A, and 4. The Utah Division of Water Quality's, "Weber River Watershed Management Water Quality Assessment Report" dated August 2000, indicates that with the exception of the segment between the Stoddard Diversion to Lost Creek confluence (high pH), all segments of the Weber River were assessed as supporting their designated beneficial uses. The Weber River between Rockport Reservoir and Echo Reservoir has elevated levels of total phosphorus, but not sufficient to identify it on the State's 303(d) List of Impaired Waters.

Rockport Reservoir is generally good quality water. It was placed on the State's Category 5D (Utah's 2006 Integrated Report) list of lakes not fully supporting their designated beneficial uses for 2004, but will not be listed until two consecutive assessment cycles demonstrate impairment. The pollutant of concern is low dissolved oxygen (DO). Low DO is often one of the first signs of eutrophication. Expanding human populations upstream of Rockport Reservoir and the current eutrophication problem downstream requiring a Total Maximum Daily Load (TMDL) analysis for Echo Reservoir are all signs that development is beginning to stress water quality in the Weber River Basin. Additional water quality planning will be needed in the Weber River Basin to avoid reservoir eutrophication which will impair most of the designated water uses.

Echo Reservoir, downstream from Rockport Reservoir, is included on Utah's 303(d) List of Impaired Waters due to being impaired for Class 3A, cold water fishery. Parameters of concern are total phosphorus concentrations, low DO concentrations, and nuisance algal blooms. The State of Utah is in the process of completing a TMDL analysis for Echo Reservoir, but it has been delayed due the need to develop more complex load reductions for future conditions that include significant growth in point sources (treated domestic wastewater).

3.2.5 System Operations

The operation of Wanship Dam is integrated with the entire Weber River system to satisfy the overall project requirements. Water users receive their project water directly or by exchange, delivered through Reclamation structures and facilities. Water exchange agreements have been executed between the WBWCD and downstream direct flow users. Storage and distribution of project waters are regulated in accordance with the Weber Basin Project Operating Criteria. Under the provision of these agreements and criteria and in accordance with the Corps of Engineers Flood Criteria plan, releases are made under the direction of the State Engineer through the representative River Commissioner. The River

Commissioner determines the limitation, amount, and status of all reservoir exchanges, releases, and storage rights.

Releases are generally determined in the following manner:

1. The WBWCD provides authorization for water deliveries of its storage rights prior to the irrigation season or whenever changes are required pursuant to its contract obligations.
2. The River Commissioner takes delivery orders on a demand basis.
3. The River Commissioner ascertains the maximum anticipated needs, including the minimum release requirement of 25 cfs from Wanship Dam, on a demand basis, and directs these releases to be made accordingly.

The right to store water in Rockport Reservoir does not occur until after high runoff in the spring, after downstream prior rights have been satisfied. Although Echo Reservoir downstream has an earlier storage right through an agreement with the Weber River Water User's Association for water conservation purposes, Rockport Reservoir is allowed to fill first to prevent spills at Echo Reservoir. Should Echo Reservoir fail to fill, the amount of space available is released from Rockport Reservoir for use by the WRWUA. Thus, storage usually begins following the start of the irrigation season and continues until Rockport Reservoir is either full or the flood control criteria dictates the bypassing of inflow and a late filling from spring runoff.

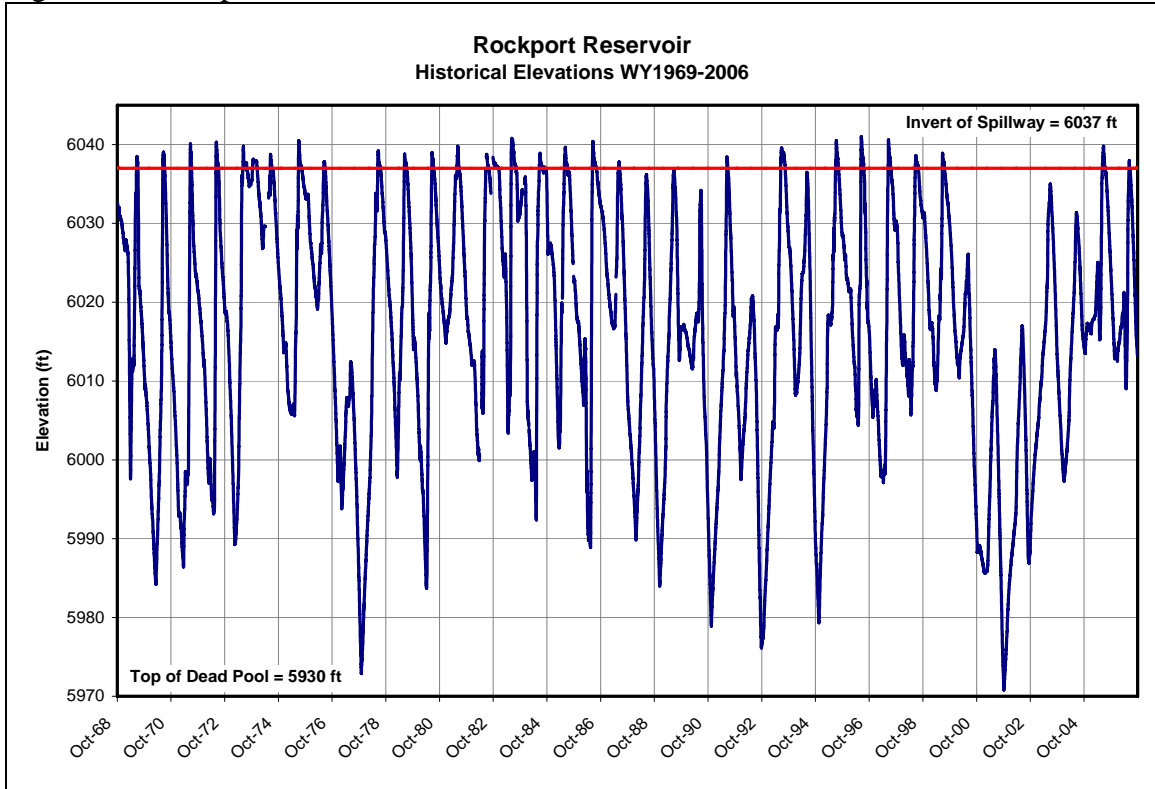
Flood control regulations for Rockport Reservoir have been developed by the Bureau of Reclamation and approved and issued by the Corps of Engineers as a comprehensive plan for flood control operation of the Weber Basin. Rockport Reservoir, operated jointly with Echo Reservoir, has a maximum flood control reservation of 135,000 acre-feet. When water is stored within the portion of the joint-use flood control pool that the Flood Control Diagram indicates is required for flood control, releases will be made from one or both reservoirs as rapidly as possible without causing flows in Weber River at Coalville to exceed 1,700 cfs or the flows below Echo Dam to exceed 2,000 cfs.

Inflow forecasts are provided jointly by the National Weather Service and the Natural Resources Conservation Service. The forecasts are published as of the first of each month from January to June. The forecast numbers provide a basis for planning reservoir and project operations prior to and during the flood season and permit optimization and coordination of water supply and other reservoir functions. The forecasts also assist in planning operating procedures consistent with the operating criteria to protect the dams against failure caused by excessive reservoir levels and releases.

Normal operations at Wanship Dam fill the reservoir annually and commonly generate spillway releases. Historical elevations and annual spills shown as daily

flows in cfs and total annual volume in acre-feet, are shown in Figures 3.1, 3.2, and 3.3.

Figure 3.1: Rockport Reservoir Historic Water Elevations



3.2.6 Public Safety, Access, and Transportation

Towns and communities of Summit County are tucked away between the Uinta and Wasatch Mountains and are located in high mountain valleys along the Weber River or its tributaries. In addition to Park City, area towns include Henefer, Coalville, Wanship, Kamas, and other small communities. Major Highways serving the county include I-80 and U S Highway 40 and State Route 32. State Route 32, from its junction with I-80 at the town of Wanship, extends in a southerly direction along the western edge of Rockport Reservoir and past the proposed project construction site.

3.2.7 Visual Resources

Rockport Reservoir is located in the Middle Rocky Mountain geologic sub-province. The back valleys of the Wasatch are characterized by a number of discontinuous valleys and display mixed rugged topography. The narrow three-mile long reservoir is one mile wide, extending generally southeast from the dam. The reservoir and the natural appearing river valley and mountain enclosure are strong visual elements of the beautiful viewshed. The prominent reservoir introduces large lake character, which is scarce in the Middle Rocky Mountain sub-province. Adjacent mountains are steep, and visually enclose the viewshed with ridges and peaks silhouetted on the skyline.

Figure 3.2: Wanship Dam Annual Spillway Releases (Cubic Feet Per Second)

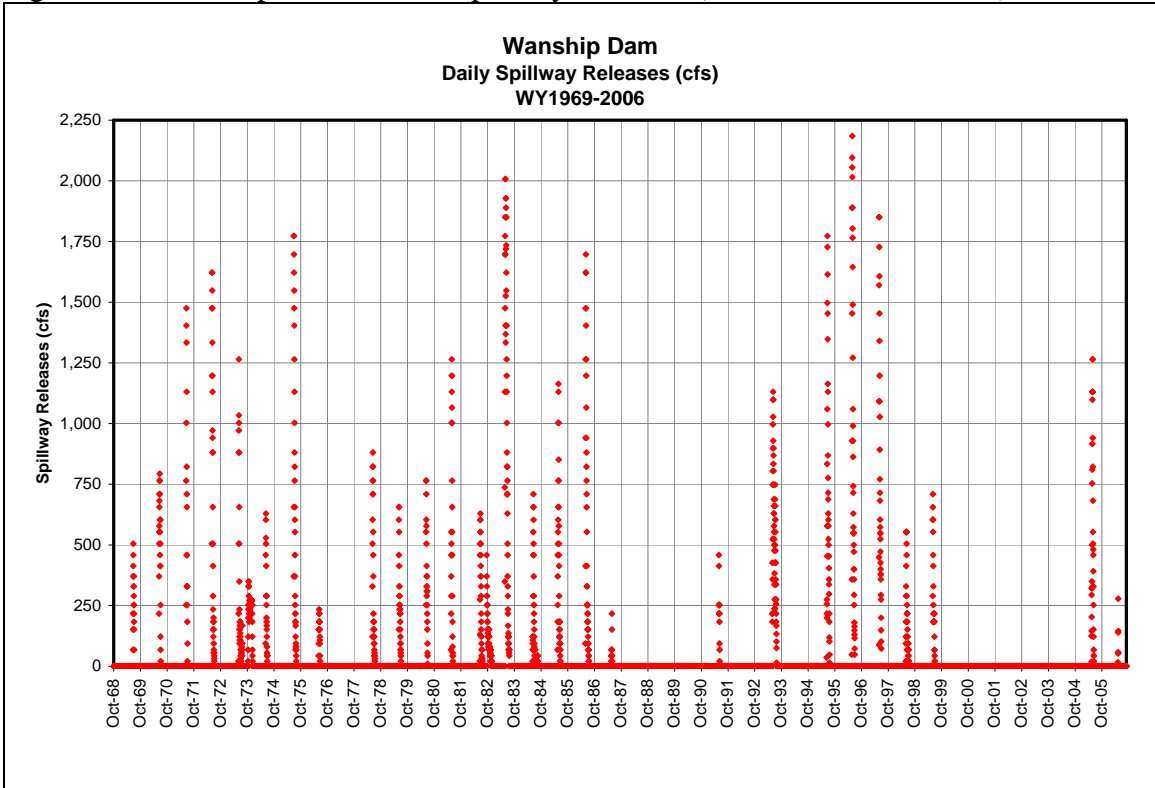
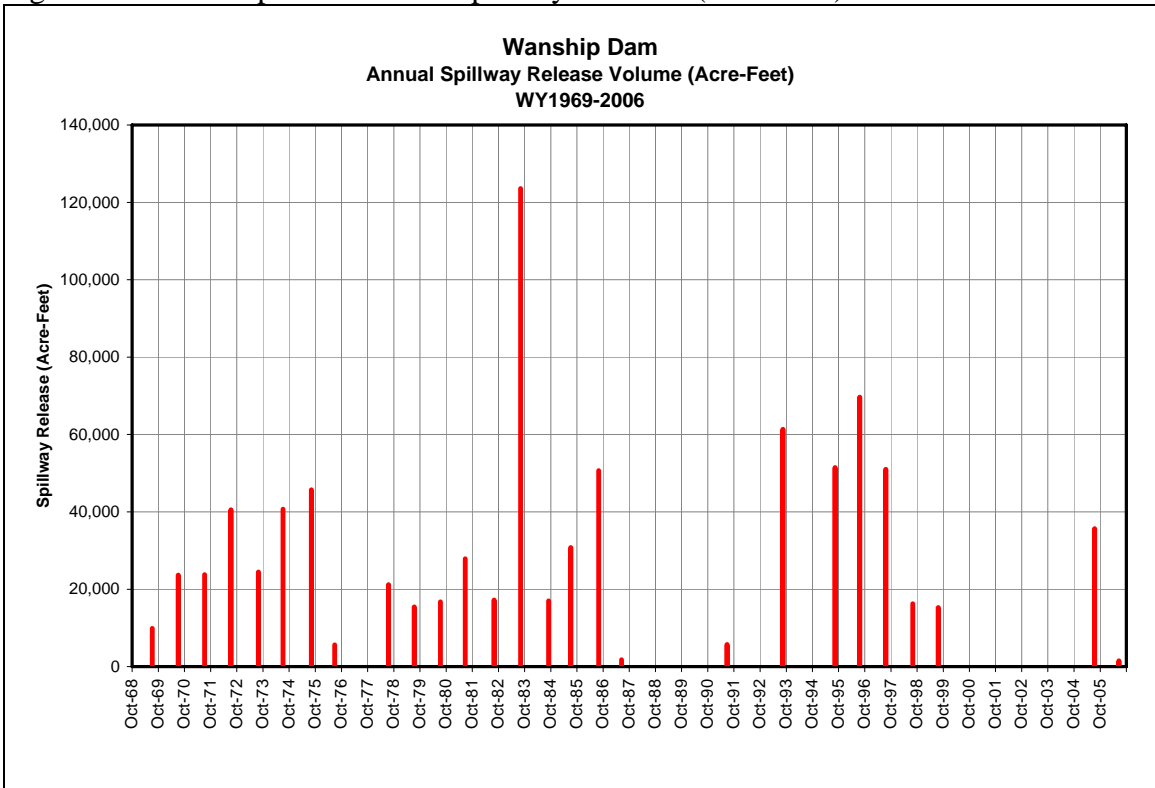


Figure 3.3: Wanship Dam Annual Spillway Releases (Acre-Feet)



Visual Integrity Levels

Visual integrity objectives serve as the base to monitor future visual changes associated with land and resource use. Possible visual levels include the following:

Very High Integrity

Generally management allows for ecological changes only.

High Integrity

Management allows for man-made facilities and disturbances which are not evident to the casual visitor.

Moderate Integrity

Management allows for man-made facilities and disturbance which would appear visually subordinate to the natural landscape and should blend with or complement it.

Low Integrity

Management allows for man-made facilities and disturbances which visually dominate the natural landscape when viewed from up to a five-mile distance. The result of the activity should, however, blend with or compliment the natural landscape.

Very Low Integrity

Management allows for man-made facilities and disturbances which visually dominate the natural landscape and may not blend with or compliment the natural landscape when viewed from up to a five-mile distance.

The entire reservoir area, except the dam and recreational development, is classified as a Moderate Integrity Level. Land, water, or vegetation disturbances by man appear minor and remain visually subordinate in the natural appearing landscape of those areas.

Recreation developments, the cultivated area east of Cottonwood Campground, and the flat below the dam are classified at a Low Integrity Level. These areas visually dominate the natural appearing landscape, but borrow naturally established line, form, color, and texture.

The dam is classified at a Very Low Integrity Level. Viewed from downstream, the dam and spillway structure are foreground dominant to the natural appearing landscape. These areas visually dominate the natural appearing landscape and contrast naturally established line, form, color, and texture when viewed from foreground observer positions.

Both the collector wells construction site and Coanda screen intake construction site are classified as Moderate Integrity Level.

3.2.8 Socioeconomics

As a water resource, Rockport Reservoir has an active capacity of 60,900 acre-feet of project water for use by irrigators, municipalities, and other users in Summit County and other areas within the Weber Basin Project. As stated in the special report, the population of the Park City/Snyderville Basin area is expected to grow from 23,859 to 86,327 by the year 2050. This represents a projected future demand of approximately 30,600 acre-feet by the year 2050. The proposed action was one of two options in the special report recommended for implementation to meet M&I needs in the immediate and near future.

Rockport Reservoir serves as a major source of recreation with the majority of visitors coming from the Wasatch front. Based upon visitation information provided by the Division of Parks and Recreation and consumer surplus values from Kaval and Loomis (2003), the annual benefit from recreation associated with Rockport Reservoir is calculated at approximately \$7 million.

3.2.9 Cultural Resources

Cultural resources are defined as the expressions of human culture and history in the physical environment, including culturally significant landscapes, historic and archaeological sites, Native American and other sacred places, and artifacts and documents of cultural and historic significance.

The National Historic Preservation Act stipulates that Reclamation must take into consideration possible effects of a proposed action on historic properties. This stipulation falls within the broad definition of cultural resources reviewed for NEPA compliance and within the Archaeological and Historic Preservation Act, as these relate to Reclamation undertakings. Historic properties are defined as historic or prehistoric sites, structures, buildings, districts or objects that are listed in or are eligible for listing in the National Register of Historic Places (NRHP). Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

3.2.9.1 Cultural History

Planning of the Weber Basin Project began in 1942, and was discontinued during World War II. It was resumed in 1946, when it became apparent that the marked increase of population drawn to the area by military installations during the war became permanent. An acute demand for M&I and irrigation water precipitated congressional authorization of the project in August 1949. Wanship Dam and Reservoir (later known as Rockport Reservoir) was built between 1954 and 1957.

3.2.9.2 Cultural Resources Status

The affected environment for cultural resources is identified as the APE (area of potential effects), in compliance with the National Historic Preservation Act (36 CFR 800). The APE is the geographic area within which Federal actions may directly or indirectly cause alterations in the character or use of historic properties. Known prehistoric properties are located around Rockport Reservoir. The APE defined in the action alternatives analyzed for the proposed action have

been the subject of 100 percent pedestrian Class I and Class III cultural resource inventories by the Provo Area Office archaeologist in 2005 and 2006. A total of 101 acres were inventoried. No historic properties were located. In compliance with 36 CFR 800.11(d), a cultural resource report (U-06-BE-1553w) and determination of effect for the APE has been submitted to the Utah State Historic Preservation Office for consultation and concurrence.

3.2.10 Paleontological Resources

A paleontological file search was conducted for the project area by the Utah Geological Survey (UGS). Martha Hayden, Paleontological Assistant with the UGS, was consulted regarding the potential for encountering previously documented and presently unknown paleontological resources in the vicinity of the project area.

The UGS reply, dated October 5, 2006, on file at the Provo Area Office, Bureau of Reclamation, stated that the Aspen Shale and Frontier Sandstone Formations have low potential for yielding significant fossil localities. However, the Kelvin Formation is present in the Rockport Reservoir area and this formation does have the potential for yielding vertebrate fossils.

3.2.11 Wetlands and Vegetation

Riparian Habitat

A riparian strip exists on both sides of the Weber River upstream of Rockport Reservoir. This strip varies from approximately 50 to several hundred feet in width and consists mostly of young willow (*Salix spp*), some Nebraska sedge (*Carex nebrascensis*) and in places an overstory of narrow leaf cottonwood. Smooth brome (*Bromus inermis*), timothy (*Phleum pratense*) as well as several other introduced and native grass species (mostly wheat grasses) exist in and above the riparian corridor. Canada thistle (*Cirsium arvense*) has invaded the area in small patches. This riparian habitat extends through the project area. The proposed construction would occur along this reach of the river which has been previously disturbed by road, reservoir, and recreation (camp sites) construction and maintenance activities. Riprap has been placed along the river corridor for approximately 50 feet upstream from the bridge. Below this bridge, the riparian habitat widens to between 50 and 200 yards in width consisting mostly of willow dominated habitat.

Upland Habitat

Both nonnative and native species of vegetation are found within the project area. Upland habitat consist mainly of big sagebrush (*Artemisia tridentata*), rabbit brush (*Chrysothamnus spp.*), and snowberry (*Symphoricarpos oreophilus*) with an overstory of juniper (*Juniperus spp.*). Other species present include yellow sweet clover (*Melilotus officinalis*), houndstongue (*Cynoglossum officinale*), broom snakeweed (*Gutierrezia sarothrae*), golden currant (*Ribes aureum*), wild rose (*Rosa woodsii*), basin wildrye (*Elymus cinereus*), Rocky Mountain aster (*Aster adscendens*), Indian paintbrush (*Castilleja angustifolia*), curlycup gumweed

(*Grindelia squarrosa*). Crested wheatgrass (*Agropyron cristatum*) has been seeded in previously disturbed area.

Reservoir Habitat

Wetlands occur in several locations around the perimeter of Rockport Reservoir. Jurisdictional waters include the area defined by the high waterline of the reservoir and streams feeding the reservoir.

Most of the reservoir's perimeter consists of sagebrush, rock, or bare ground. Relatively small sections of the reservoir's shoreline consist of willow dominated habitats. These habitats occur mainly along shallower areas where intermittent and perennial creek drainages convey fine textured sediment to the reservoir. A few areas of cottonwood trees exist along the shoreline. The Weber River entering the reservoir has developed a delta of willow habitat. These areas require relatively stable reservoir levels that provide sufficient hydrology to support these habitats.

Exposed reservoir bottom (existing during seasonally low reservoir levels) consists of muddy and rocky substrates depending on the topography of the exposed shoreline. Large expanses of muddy exposed reservoir bottom typically occur where perennial creek drainages deposit fine textured sediment into the reservoir.

3.2.12 Wildlife Resources

Wildlife resources within the general area of the project include fish, big game, smaller mammals, raptors, water birds, and upland game birds, with a variety of other birds, reptiles, and amphibians.

Fish

Rockport Reservoir supports a significant fishery resource. It has traditionally provided game fish of desirable quantity and size for both boat and shore anglers. These fish species are able to survive within normal fluctuations of the reservoir's water surface elevation.

The reservoir is managed by the state of Utah as a put-grow-and-take fishery for rainbow trout (*Oncorhynchus mykiss*). Other trout species that occur in the reservoir include brown trout (*Salmo trutta*), and a hybrid tiger trout. Other species that inhabited the reservoir are smallmouth bass (*Micropterus dolomieu*) and yellow perch (*Perca flavescens*).

Non-game fish, including carp (*Cyprinus carpio*), Utah chub (*Gila atraria*) and redbreast shiner (*Richardsonius balteatus*) reproduce in the reservoir and serve as forage fish for game species.

Big Game

The foothills and mountains surrounding the reservoir are covered mostly with sagebrush, grassland, and juniper communities. This area provides big game

habitat for both summer and winter use for deer (*Odocoileus hemionus*) and elk (*Cervus elaphus nelsoni*). Herds of deer and elk are seen wintering in the general area. Moose (*Alces alces*) are occasionally observed along stream drainages near the reservoir. Mountain lion (*Felis concolor*), black bear (*Ursus americanus*), and coyote (*Canis latrans*) are present in the area.

Other Mammals

Other mammals common within the area include: yellow-bellied marmot (*Marmota flaviventris*), badger (*Taxidea taxus*), least chipmunk (*Eutamias minimus*), meadow vole (*Microtus montanus*), northern pocket gopher (*Thomomys talpoides*), deer mouse (*Peromyscus maniculatus*), porcupine (*Erethizon dorsatum*), and striped skunk (*Mephitis mephitis*). Furbearers such as beaver (*Castor canadensis*), mink (*Mustela vison*), and muskrat (*Ondatra zibethicus*), ringtail cat (*Bassariscus astutus*), and River otter (*Lutra canadensis*) use the wetland and riparian habitat around the reservoir and embankments of the river. Bobcat (*Lynx rufus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), Uinta ground squirrel (*Spermophilus armatus*), mountain cottontail (*Sylvilagus nuttallii*), and various species of shrews (*Sorex spp.*), voles (*Microtus spp.*), and bats (e.g. *Myotis spp.*, *Eptesicus fuscus*) occupy the area.

Raptors

Birds of prey (raptors) have been observed within or adjacent to the project area. Cottonwood trees along the river and the edge of the reservoir provide nesting habitat for raptors such as the golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and roosting sites for the great horned owl (*Bubo virginianus*) and bald eagle (*Haliaeetus leucocephalus*). Winter months are the best time to view bald eagles near the reservoir. Other raptors observed in the area are the American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), western screech owl (*Otus kennicottii*), great horned owl (*Bubo virginianus*), and turkey vulture (*Cathartes aura*).

Water Birds

Numerous water birds occur in the project area such as waterfowl, shore birds, and other wading birds typically associated with wetlands and open water. The reservoir provides high quality habitat for water birds due to the prevalence of emergent wetlands near the mouth of small drainages around the reservoir. These areas provide important forage and cover sites for waterfowl and wading birds.

Rockport Reservoir serves as an important migratory stopover for birds in the fall and spring. Emergent vegetation around the reservoir provides nesting habitat for a variety of waterfowl from mid-March to mid-July. Brood rearing begins mid-July to Mid-August. Mud flats exposed in late summer and fall provide foraging areas for shore and wading birds.

Water birds commonly observed include the pied-billed (*Podilymbus podiceps*), eared (*Podiceps caspicus*), and western grebes (*Aechmophorus occidentalis*),

gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), northern shoveler (*Spatula clypeata*), lesser scaup (*Aythya affinis*), green-winged teal (*Anas carolinensis*), northern pintail (*Anas acuta*), common loon (*Gavia immer*), American white pelican (*Pelecanus erythrorhynchos*), double crested cormorant (*Phalacrocorax auritus*), American coot (*Fulica Americana*), ring billed gull (*Larus delawarensis*), California gull (*Larus californicus*), great blue heron (*Ardea herodias*), killdeer (*Charadrius vociferous*), and Canada goose (*Branta canadensis*).

Upland Game Birds

Upland game birds occurring in the area include the ring-necked pheasant (*Phasianus colchicus*), mourning dove (*Zenaida macroura*), and California quail (*Lophortyx californicus*). The surrounding area may serve as breeding habitat for sage grouse (*Centrocercus urophasianus*) because of the prevalence of sagebrush habitat.

Other Birds

Probably the most common birds at Rockport Reservoir are songbirds. Western kingbirds (*Tyrannus verticalis*), yellow warbler (*Dendroica petechia*) and mountain bluebird (*Sialia currucoides*) are among the various species of songbirds that use the riparian and wetland habitat.

Corvids, including jays (*Cyanocitta spp.*), the black-billed magpie (*Pica pica*), and the common raven (*Corvus corax*), are common. Tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassia*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and cliff swallows (*Hirundo pyrrhonota*) all occur within the area. Of these, the most abundant are the cliff swallows. In open, shrub-dominated habitats goldfinch (*Carduelis tristis*), western meadowlark (*Sturnella neglecta*), common nighthawk (*Chordeiles minor*) sage thrasher (*Oreoscoptes montanus*), green-tailed towhee (*Pipilo chlorurus*), and rufous-sided towhee (*P. erythrophthalmus*) occur.

Reptiles and Amphibians

Reptiles and amphibians with potential to occur in the project area include the tiger salamander (*Ambystoma tigrinum*), boreal chorus frog (*Pseudacris triseriata*), great plains toad (*Bufo cognatus*), northern leopard frog (*Rana pipiens*), Great Basin gopher snake (*Pituophis melanoleucus deserticola*), and the Great Basin rattlesnake (*Crotalus viridis*). Historically, boreal toad (*Bufo boreas*) and Columbia spotted frog (*Rana lutieventris*) occurred in the area but have not been documented within the project area.

3.2.13 Threatened and Endangered Species

Federal agencies are required to ensure that any action federally authorized or funded would not adversely affect a federally listed threatened or endangered species. Several species listed as threatened or endangered occur within Summit County or within the Weber River Drainage. These species are discussed below.

The bald eagle (*Haliaeetus leucocephalus*) (Threatened) is a winter resident of the area. This species roosts primarily in forested canyons or tall cottonwoods along streams and reservoirs. Migration of bald eagles from breeding areas generally takes place between September and December. These eagles use cottonwood trees and snags near open water as winter roosting sites.

The whooping crane (*Grus americanus*) (Endangered) migrates through Utah during the spring and fall. There are no resident populations in Utah. Canada Lynx (*Lynx canadensis*) (Threatened), although they have not been seen, could possibly use forested areas and wetlands within or near the project area. Black-footed ferret (*Mustela nigripes*) (Endangered) occurred historically in the area but are not known to occur presently. The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) (Candidate) may use the area during their breeding season.

The State of Utah maintains a list of sensitive species (species of special concern). These species that may occur within the project area and are managed under conservation agreements for the Bonneville cutthroat trout (*Oncorhynchus clarkii utah*), Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*), Columbia spotted frog (*Rana luteiventris*), bluehead sucker (*Catostomus discobolus*), and northern goshawk (*Accipiter gentilis*).

3.3 Environmental Effects of Alternatives

Assumptions applied in analyzing the effects of both the no action and the action alternatives in this EA include the following: (a) work would occur within close proximity to the south end (upstream) of the reservoir; and (b) normal dam operations would continue during construction.

3.3.1 Recreation

3.3.1.1 No Action Alternative

The no action alternative would have no effect on recreation.

3.3.1.2 Action Alternatives

Collector Wells

There would be temporary impacts to recreational benefits from construction activity. Use of the Hawthorn group campground and Cottonwood single family campground adjacent to the well site would be curtailed or disrupted during construction (see Map 3.1 of the South End Management Area). No significant long term impacts to recreation are likely to occur from this action alternative.

Coanda Screen Intake

Temporary impacts during construction would be less than the collector wells alternative because of less construction activity and the location of the intake

structures. No significant long term impacts to recreation are likely to occur from this alternative.

3.3.2 Water Rights

3.3.2.1 No Action Alternative

Under this alternative, the proposed project would not be constructed. Therefore, no effects would occur to the existing water rights.

3.3.2.2 Action Alternatives

The impact to water rights of the collector wells and Coanda screen alternatives are identical. Both of the action alternatives would require a change application to be filed with the Utah State Engineer's Office. This change application would add the location of the new intake structure as a point of re-diversion for Water Right Nos. 35-828, 35-832, 35-5407, and 35-5529.

No significant impacts to downstream water right holders are anticipated for the action alternatives. During high flow periods when the reservoir water rights are in priority, the water deliveries to Snyderville Basin would be deducted from the allowable storage of the Rockport and Smith & Morehouse Reservoirs. During periods when the reservoir water rights are not in priority, the Snyderville Basin water deliveries would come from water that has been previously stored. In the case of Smith & Morehouse Reservoir, water would be released and delivered directly to the new intake structure. In the case of Rockport Reservoir water would be released to mitigate downstream water right holders for diversions at the intake structure.

Potential impact of the action alternatives to the water right holders upstream of Rockport Reservoir is negligible. The most notable result to the upstream water users would be an increase in the Weber River flows as water is delivered from Smith & Morehouse Reservoir to the new intake structure.

Other WBWCD water rights may be indirectly affected by the action alternatives. The Weber Basin Project and many water users have the flexibility of using different reservoirs to deliver water to the same point. A prime example of this flexibility in this system is at the Slaterville Diversion Dam. Water from Smith & Morehouse, Rockport, Echo, Lost Creek, East Canyon, Causey, Pineview, and Willard Bay reservoirs can be delivered directly to this major diversion structure. Therefore, if the action alternatives reduce the storage of Rockport or Smith & Morehouse Reservoir WBWCD may divert more water out of other reservoirs to make their water deliveries.

3.3.3 Water Resources

3.3.3.1 No Action Alternative

The no action alternative would have no effect on water resources.

3.3.3.2 Action Alternatives

The 7,500 acre-feet of water to be diverted to Park City and Snyderville Basin under either action alternative represents 1.8% of WBWCD total project storage right. Smith & Morehouse Reservoir would provide 2,500 acre-feet of Weber Basin water directly and the additional 5,000 acre-feet would be Federal project water. Due to the number of storage facilities and the flexibility of operations within the project to meet demand, reducing the project inflows to Rockport Reservoir by 5,000 acre-feet annually would not generate shortages for WBWCD and its water users on a project-wide basis.

3.3.4 Water Quality

3.3.4.1 No Action Alternative

Since no construction would occur, there would be no temporary construction-related water quality impacts. However, as development occurs in the Weber River basin, waters currently unused to meet existing water rights would no longer be stored in the existing reservoirs, but could be used upstream or downstream from Rockport Reservoir, resulting in future long-term water quality impacts in Rockport Reservoir and downstream, with or without the proposed action.

3.3.4.2 Action Alternatives

Under both action alternatives, best management practices would be employed during construction activities to minimize temporary impacts to water quality in Rockport Reservoir and in the Weber River downstream.

The diversion of up to 7,500 acre-feet of water per year from Rockport Reservoir or immediately upstream could have measurable impacts upon water quality in Rockport Reservoir and possibly downstream. Rockport Reservoir could operate at a lower level and consequently have less detention time and greater flushing rate, higher water temperature levels, and potentially higher phosphate levels from different nutrient processing in the reservoir and downstream. There would be a decrease in total volume and seasonal flow rate of water released from Wanship Dam, which could change temperatures in the Weber River downstream, and possibly temperatures in Echo Reservoir. The State of Utah is developing a TMDL analysis for Echo Reservoir, and Reclamation has recommended they include a TMDL analysis for Rockport Reservoir in the analysis for Echo Reservoir. However, the State has indicated that Rockport presently meets its designated beneficial uses.

Diverting up to 7,500 acre-feet of water per year from the Weber River above Rockport Reservoir to Park City and the Snyderville Basin would result in new return flows, including additional treated M&I wastewater, and would contribute additional flows to both Silver Creek and to East Canyon Creek. Return flows to Silver Creek and Echo Reservoir could reduce stream flow reductions resulting from the proposed action, but could contribute to phosphorus loading to Echo Reservoir. Increased return flows to East Canyon Creek could also affect water

quality in both East Canyon Creek and East Canyon Reservoir. However, these new return flows resulting from meeting future growth demands, would occur with the same effects upon future water quality with or without the proposed action. Since in the future the currently unused water would be diverted from the system either upstream or downstream to meet other future water demands, any resulting water quality impacts would be expected to occur in Rockport and Echo Reservoirs, with or without the proposed action. The only difference could be upon stream flow between and below Rockport and Echo Reservoirs, and flushing rates from these same reservoirs.

Due to the system operation flexibility of the Weber River system (including 8 reservoirs) available to the WBWCD, Reclamation believes there may be some effect upon water quality but doesn't expect a significant effect. Any potential adverse water quality impacts from the proposed action could be offset by appropriate system operation modifications. WBWCD will develop an appropriate water quality monitoring program of the Weber River system, which includes an assessment of water quality conditions and trends. If monitoring identifies significant water quality impacts resulting from implementation of the proposed action, WBWCD would take appropriate steps to offset project impacts.

3.3.5 System Operations

3.3.5.1 No Action Alternative

The no action alternative would not affect the existing Weber River system operations.

3.3.5.2 Action Alternatives

The impact to system operations of either action alternative is identical.

Wanship Dam

The diversion of water to Park City and Snyderville Basin upstream of Rockport Reservoir is anticipated to range from 5 to 15 cfs with a maximum flow rate of 21 cfs. The total volume of 7,500 acre-feet that would be diverted would not significantly impact the operations of Wanship Dam. Inflows into Rockport Reservoir would be reduced by 5,000 acre-feet of Federal project water. The additional space available each spring in the reservoir would benefit flood control operations in an average year. In dry years, the 5,000 acre-feet of water would be compensated to Weber Basin water users by other project facilities within the Weber River system.

Echo Dam

On average, Rockport Reservoir sees an April-July inflow volume 138,000 acre-feet. Historically, this volume of water has caused Rockport Reservoir to fill and spill nearly every year (Figure 3.2). Immediately downstream, Echo Reservoir normally observes an additional 42,000 acre-feet of inflow during the April-July period from Chalk Creek and other side inflows. With releases from Wanship Dam and the additional inflow from Chalk Creek, Echo Reservoir historically has

filled and spilled nearly every year and should not be significantly impacted by the proposed Synderville Basin diversion.

3.3.6 Public Safety, Access, and Transportation

3.3.6.1 No Action Alternative

The no action alternative would have no effect on access, transportation or public safety.

3.3.6.2 Action Alternatives

Collector Wells

This alternative would require the transport of heavy equipment and the delivery of both pipe and significant quantities of gravel material to the construction site. Because of the quantity of gravel required and for safety reasons, flagmen would be required as trucks enter and exit the construction site at the intersection of the turnoff from the state parks road to the construction site. The Hawthorn group campground would be closed during construction. However, there would be little interference with the flow of traffic and any delay of traffic would be negligible.

Coanda Screen Intake

For this alternative, the transport of construction equipment and the delivery of both pipe and concrete to the construction site would be required. The additional traffic to the site would be similar to traffic required for home construction and delays would not be expected.

3.3.7 Visual Resources

3.3.7.1 No Action Alternative

The no action alternative would not affect visual resources.

3.3.7.2 Action Alternatives

Collector Wells

The five well pads and pumping station at each pad and new access roads would be permanent and would change the existing Moderate Integrity Level to a Low Integrity Level classification at the construction site. There is potential for significant impacts to visual resources under this alternative.

Coanda Screen Intake

The temporary impacts such as the staging area and surface disturbance from equipment during construction would heal and improve in appearance over time. Long term impacts would be much less than the collector wells alternative because the Coanda screen is smaller and requires less surface disturbance and construction materials. Following construction, the classification would remain at the Moderate Integrity Level at the construction site. No significant impacts on visual resources are likely to occur from this alternative.

3.3.8 Socioeconomics

The potential socioeconomic effects focus upon the changes in water supply, water quality, water use, and recreation.

3.3.8.1 No Action Alternative

The no action alternative would not significantly affect the existing socioeconomic conditions in the short term. However, with available water supplies already behind the projected demand curve, the no action alternative would lessen the likelihood of meeting time constraints imposed by rapid growth in the Park City/Snyderville Basin area. Without sufficient water supply, future development may be limited, and in the broad sense may indirectly affect conditions of the regional economy.

3.3.8.2 Action Alternatives

Collector Wells

There would be temporary impacts to recreational benefits from construction activity. Construction would also cause a minor increase in temporary employment. As detailed in Section 3.3.4, water quality would be affected, but with only minor socioeconomic impacts. No significant impacts on socioeconomic conditions are likely to occur from this action alternative.

Coanda Screen Intake

Impacts from this alternative would be similar to the collector wells alternative, except that temporary impacts to recreational benefits and employment would be less.

3.3.9 Cultural Resources

3.3.9.1 No Action Alternative

Under the no action alternative, there would be no effect to historic properties. Reclamation would not construct any of the alternatives, and there would be no need for ground disturbance for any potential borrow or staging areas, spoils deposit areas, or new roads. The existing conditions would remain intact and would not be affected.

3.3.9.2 Action Alternatives

For the APE included in the collector wells and the Coanda screen alternatives, a 100 percent survey for cultural resources has been completed by the Provo Area Office archaeologist. Documentation of the APE for both action alternatives, including maps and photographs, and a determination of effect to cultural resources is included in a report *Rockport-Snyderville Basin Water Conveyance Project* (#U-06-BE-1553w) which has been sent to the Utah State Historic Preservation Office (SHPO). There were no historic or archaeological sites located within those boundaries. Therefore, there would be no effect to historic properties from the construction of any of these structures.

3.3.10 Paleontological Resources

3.3.10.1 No Action Alternative

Under the no action alternative, there would be no effect to paleontological resources. Reclamation would not construct any of the alternatives, and there would be no need for ground disturbance for any potential borrow or staging areas, spoils deposit areas, or new roads. The existing conditions would remain intact and would not be affected.

3.3.10.2 Action Alternatives

A file search for the APE, as presently designed, of both the action alternatives by the Utah Geological Survey Office in Salt Lake City was completed October 5, 2006. The Reclamation geologist and geological maps have been consulted to determine if the Kelvin Formation is within the proposed APE. The formation is not present at the proposed construction sites, therefore no effect is anticipated.

If the design for the collector wells and Coanda screen intake alternatives were changed to include a different locale, the geological maps analyzed for location of the possible Kelvin formation areas would be reviewed to cover the new APE.

3.3.11 Wetlands and Vegetation

Riparian Habitat

No impacts to riparian habitat below the dam would occur since no alternative is expected to alter dam operations or alter releases from the dam. Riparian habitats would be affected above the dam. These effects are described below.

3.3.11.1 No Action Alternative

Under this alternative, the proposed project would not be constructed. Therefore, no effects would occur to riparian, upland, or reservoir habitats.

3.3.11.2 Action Alternatives

Collector Wells

This structure would be constructed outside the bank of the river. Approximately 5 acres of riparian vegetation would be directly disturbed by construction activities. A small reduction in water supplied from the aquifer to the river may occur from the location of the caisson to the mouth of the river in the reservoir basin. Over time most disturbed areas would revegetate and provide riparian habitat again.

An underground pipeline would be placed from the well to the new pump station. Approximately 3 acres of upland habitat consisting mostly of sagebrush and rabbitbrush would be disturbed.

All disturbed habitats would be recontoured and reseeded with appropriate vegetation during the final stages of construction activities.

Coanda Screen Intake

Riparian and riverine habitats would be temporarily disturbed by construction activities under this alternative. The extent of the area disturbed would be approximately 1 acre. The area would naturally revegetate adjacent to the diversion structure over the course of years. This new diversion structure would raise the water level within an area of approximately 2 acres of stream bottom and thus, raise and extend the riparian habitat proportionally. The construction of a fish passage channel around the diversion structure has the potential to increase riverine habitat.

An underground pipeline would be placed along and within the road from the screen to the new pump station. Approximately 1 acre of upland habitat consisting mostly of sagebrush and rabbitbrush would be disturbed. Most of the upland habitat disturbance would be along the existing road as a result of placing the pipeline in the road.

The Coanda screen would be installed above the reservoir's high water line; therefore no effects to reservoir habitat would occur.

The entire course of the pipeline and areas disturbed from the installation of the screen would be recontoured and reseeded with appropriate species for the various habitats impacted by the proposed construction activities. These areas would return to useful habitat over time.

3.3.12 Wildlife Resources

3.3.12.1 No Action Alternative

Under this alternative, the proposed project would not be constructed; therefore, no effects would occur to wildlife resources.

3.3.12.2 Action Alternatives

Collector Wells

This alternative may temporarily disturb trout spawning beds above and below the bridge from possible sediment released by construction activities. These beds should be restored naturally to their previous condition after spring runoff following construction of the collector wells.

A relatively small area of upland habitat used would be disturbed (3 acres). Big game would be able to obtain water and any other needs provided by riparian habitat in areas near the areas of riparian disturbance. Big game may be temporarily displaced from small areas during actual construction activities, but would move back in a short period of time. Due to the small extent of disturbance big game would not be measurably affected. Other mammals existing in riparian areas where construction occurs would be temporarily excluded from these areas.

Osprey use cottonwood trees in the area for roost, nest, and observation perches. Removal of these trees either living or dead should be avoided. However loss of a

tree would only move these birds to other nearby trees and not reduce the capacity of the area to support the current population.

Construction activities could disturb other bird species from preferred breeding, nesting, or foraging habitat. These effects would be limited to a relatively small area, and birds would be capable of moving to very similar habitat nearby. This would also be true for any sage grouse that may use the area.

Construction associated with this alternative could disturb reptiles and amphibians from preferred habitat. These effects would be limited to a relatively small area and these animals would be capable of moving to very similar habitat nearby.

After construction disturbed areas would be recontoured and revegetated with native plants. A process of vegetative succession would also begin. This process would eventually establish a vegetative community favorable to native species.

Coanda Screen Intake

This alternative would disturb spawning and feeding beds in the river where the Coanda screen is installed, and downstream sedimentation from this construction would also affect the bed of the river until these sediments are flushed by spring runoff flows. Fish would need to use the proposed fish passage channel to move upstream during construction and in perpetuity after construction. Downstream movement could occur over the diversion structure without significant harm to fish. This structure and diversion channel would be continually maintained to insure their proper functioning so that no added affects to fish or their habitat occurs.

A relatively small area of upland habitat would be disturbed (1 acre). Effects would be similar to the collector wells alternative, and due to the small extent of disturbance big game and other mammals would not be measurably affected.

Effects to raptors, other birds, reptiles, and amphibians would be the same as those described under the collector wells alternative.

3.3.13 Threatened and Endangered Species

3.3.13.1 No Action Alternative

Under this alternative, the proposed project would not be constructed. Therefore, no effects would occur to any threatened, endangered, candidate, or state sensitive species.

3.3.13.2 Action Alternatives

Collector Wells

Bald eagles are winter residents of this area and may be displaced by construction activities (noise and habitat disturbance). Cottonwood trees and dead snags should be avoided during construction. However, loss of one or several trees may occur. This could displace eagles. These effects would be short term or very

limited in extent and would have no significant negative effects since these birds would be able to use very similar roost sites or other habitat elements in the immediate vicinity of the project.

Whooping cranes, Canada lynx, and black-footed ferrets are not known to occur within the area affected by this alternative and have not regularly been seen in the area for years. Therefore, no effects would occur to them.

Western yellow-billed cuckoo are not known to occur within the area affected by this alternative. However, a few individuals may migrate through the area or even possibly use the area for some segment of their life cycle. The extent of disturbance associated by this project would leave a large area of suitable habitat unaffected allowing any possible use by these birds to occur in these adjacent areas.

Fish species managed under conservation agreements (i.e., Bluehead sucker, Bonneville cutthroat trout, and Colorado River cutthroat trout) would be disturbed within areas where construction activities affect riparian or riverine habitats. These species would need to migrate to areas unaffected by the proposed project, either upstream or downstream to the reservoir. Sedimentation of the river below constriction areas would disturb spawning and feeding beds until flushing flows restore these habitats.

Spotted frogs have not been found in the area. Any frogs that are present would be displaced by construction activities in riparian and wetland habitats.

Northern goshawk would not likely use habitats within the area of disturbance to any significant degree. Therefore, affects to them would be negligible.

Coanda Screen Intake

Effects to Columbia spotted frogs, northern goshawk or any threatened or endangered species from this alternative would be the same as those described under the collector wells alternative.

This alternative would also affect fish species managed under conservation agreements (i.e., Bonneville cutthroat trout, Colorado River cutthroat trout, blue head sucker) in a manner similar to the collector wells alternative. In addition to temporary effects from instream construction activities, the proposed diversion structure would introduce sediment into the stream between the location of the structure and the reservoir. The associated sedimentation of the river bed would reduce the area's usefulness to all fish species. These sediments should be flushed from the stream bed after the first spring high flows. All fish species would need to use the proposed fish passage (constructed as part of this proposal) permanently once the screen is in place.

Under either action alternative a No Effect determination is made for all species except the bald eagle, and a May Effect, Not Likely to Adversely Effect determination is made for the bald eagle. Informal Section 7 consultation with the U.S. Fish and Wildlife Service pursuant to The Endangered Species Act has been completed.

3.4 Summary of Environmental Effects

Table 3.3 describes environmental effects under the no action alternative and the action alternatives.

Table 3.3
Summary of Environmental Effects

Resource Issue	Alternatives	
	No Action Alternative	Action Alternatives
Recreation	No effect	Minimal impacts are expected during construction.
Water Rights	No effect	No significant impacts to downstream water right holders .
Water Resources	No effect	No significant impacts under either alternative.
Water Quality	Potential effects from future use of this same project water when used elsewhere.	Minimal temporary effects during construction. Potential undetermined long-term effects, some similar to the no action alternative. Mitigation would be implemented if necessary to minimize project impacts.
System Operations	No effect	The impact to system operations of either action alternative is identical. The total volume of 7,500 acre-feet that would be diverted would not significantly impact the operations of Wanship Dam.
Public Safety, Access, and Transportation	No effect	Minor traffic delay if the collector wells are constructed and no effect if the Coanda screen is constructed.
Visual Resources	No effect	There is potential for significant impacts on visual resources under the collector wells alternative. No significant impacts on visual resources are likely to occur under the Coanda screen alternative.
Socioeconomics	Potential impacts continue to exist in the long term because available water supplies are already behind the projected demand.	Minimal temporary impacts to socioeconomics are expected in the short term. No significant impacts on socioeconomics beyond those described for the no action alternative.
Cultural Resources	No effect	Potential effect to subsurface cultural material during construction.
Paleontological Resources	No effect	No effect to paleontological resources is expected.
Wetlands and Vegetation	No effect	Minimal effects during construction. A very small amount of wetland would be permanently impacted for the intake structure and pumping station.
Wildlife Resources	No effect	Minimal temporary effects during construction.
Threatened and Endangered Species	No effect	May affect, not likely to adversely effect bald eagles. No effect to all other species.

3.5 Cumulative Effects

In addition to project-specific impacts, Reclamation analyzed the potential for significant cumulative impacts to resources affected by the project and by other past, present, and reasonably foreseeable activities in the watershed. According to the Council on Environmental Quality's regulations for implementing NEPA (50 CFR §1508.7), a "cumulative impact" is an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. It focuses on whether the proposed action, considered together with any known or reasonable foreseeable actions by Reclamation, other Federal or state agencies, or some other entity combined to cause an effect. There is no defined area for potential cumulative effects.

Based on Reclamation resource specialists' review of the proposed action alternatives, Reclamation has determined that this action would not have a significant adverse cumulative effect on any resources.

3.6 Indian Trust Assets

Indian Trust Assets are legal interests in property held in trust by the United States for Federally recognized Indian tribes or Indian individuals. Assets can be real property, physical assets, or intangible property rights, such as lands, minerals, hunting and fishing rights, and water rights. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to such tribes or individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that all Federal agencies take all actions reasonably necessary to protect trust assets. Reclamation would carry out its activities in a manner which protects these assets and avoids adverse impacts when possible. When impacts cannot be avoided, Reclamation would provide appropriate mitigation or compensation. Implementation of the proposed action would have no foreseeable negative impacts on Indian Trust Assets.

3.7 Environmental Justice

Implementation of the proposed action would not disproportionately (unequally) affect any low-income or minority communities within the project area. The reason for this is that the proposed project would not involve major facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. This action would therefore have no adverse human health or environmental effects on minority and low-income populations as defined by environmental justice policies and directives.

Executive Order 12898, established environmental justice as a Federal agency priority to ensure that minority and low-income groups are not disproportionately affected by Federal actions. Rockport Reservoir is located in Summit County. As of 2000, the population of Summit County was 29,736 consisting of 1,609 individuals living below poverty level and 3,128 individuals belonging to various minority groups. Statistics for the year 2000 are the most recent available (Utah Governor's Office of Planning and Budget).

Chapter 4 - Environmental Commitments

The following environmental commitments would be implemented as an integral part of the proposed action.

1. Standard Reclamation Management Practices--Standard Reclamation management practices would be applied during construction activities to minimize environmental effects and would be implemented by Reclamation construction forces or included in construction specifications. Such practices or specifications include sections in the present report on public safety, dust abatement, air pollution, noise abatement, water pollution abatement, waste material disposal, erosion control, archaeological and historical resources, vegetation, and wildlife.
2. Additional Analyses--If the proposed action were to change significantly from that described in the EA because of additional or new information, such as drawing down the reservoir to low levels (beyond normal operations), or if other spoil, gravel pit, or work areas are required outside the construction site, additional environmental analysis including cultural and paleontological analyses may be necessary.
3. The 404 Permit or State Stream Alteration Permit (or both) Required--Before beginning construction activities, WBWCD would obtain from the U.S. Army Corps of Engineers a 404 Permit, Clean Water Act of 1977 (P.L. 217), or from the Department of Natural Resources a State Stream Alteration Permit. These permits would include discharges of dredged or fill material into the waters of the United States. Such activities associated with this project could include cofferdams, disposal sites for excavated material or construction material sources, and rebuilding dam embankments. The conditions and requirements of the 404 Permit would be strictly adhered to by Reclamation and WBWCD. Reclamation would fully mitigate any loss of jurisdictional wetland with appropriate in-basin, in-kind mitigation as determined in consultation with the U.S. Army Corps of Engineers and the State of Utah, and as required for obtaining a Corps 404 Permit or a State Stream Alteration Permit.
4. A Utah Pollutant Discharge Elimination System Permit may be required--A Utah Pollutant Discharge Elimination System Permit would be required from the State of Utah before any discharges of water, if such water is to be discharged as a point source into the Weber River. Appropriate measures would be taken to ensure that construction related sediments would not enter the stream either during or after construction.

5. A Water Quality Certification and a Storm Water Discharge Permit may be required--Under authority of the Clean Water Act, construction would be required from the Utah Division of Water Quality a Section 401 Water Quality Certification and a Section 402 Storm Water Discharge Permit.
6. Water Quality Monitoring--WBWCD has a well defined, ongoing water quality monitoring program of the Weber River system, which includes an assessment of water quality conditions and trends upstream and downstream of Rockport Reservoir. If monitoring identifies significant water quality impacts resulting from implementation of the proposed action, WBWCD would take appropriate steps to offset project impacts.
7. Cultural Resources--Any person who knows or has reason to know that he/she has inadvertently discovered possible human remains on Federal land, must provide immediate telephone notification of the discovery to Reclamation's Provo Area Office archaeologist. Work would stop until the proper authorities were able to assess the situation onsite. This action would promptly be followed by written confirmation to the responsible Federal agency official with respect to Federal lands. The Utah State Historic Preservation Office and interested Native American tribal representatives, in this case the Northern Ute Tribe of Fort Duchesne, Utah, and the Northwest Band Shoshone of Brigham City, Utah, would be promptly notified. Consultation would begin immediately. This requirement is prescribed under the Native American Graves Protection and Repatriation Act (43 CFR Part 10); and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470).

The above process is listed on a "yellow card," to be placed in the cabs of heavy equipment used during construction of the proposed project. This card would be distributed to the equipment operators and verbal direction and description of possible inadvertent discovery scenarios would be given at a preconstruction meeting by the Provo Area Office archaeologist prior to any ground-disturbing activity.

8. Construction Activities Confined to Previously Disturbed Areas--Construction activities would be confined to previously disturbed areas, to the extent practicable, for such activities as work, staging, and storage; gravel pit; waste areas; and vehicle and equipment parking areas.
9. Construction Activities--All winter construction activities occurring within ½ mile of any bald eagle roost site would be restricted to hours between 9:00 a.m. and 4:00 p.m. from November 1st to March 31st and into April, if necessary until all bald eagles have left the area.
10. Fish Passage Design--The fish passage channel would be designed built by Reclamation on site. The Utah Division of Wildlife Resources could provide

design input. The WBWCD would be responsible to ensure the channel allows fish passage year round.

11. Public Access--Construction sites would be closed to public access. Temporary fencing, along with signs, would be installed to prevent public access. Reclamation and WBWCD would coordinate with landowners or those holding special permits and other authorized parties regarding access to or through the project area.
12. Disturbed Areas--All disturbed areas resulting from the project would be smoothed, shaped, seeded, contoured, and rehabilitated to as near their pre-project construction condition as practicable. After completion of the construction and restoration activities, disturbed areas would be seeded at appropriate times with weed-free seed mixes. The composition of seed mixes would be coordinated with wildlife habitat specialists. Weed control on all disturbed areas would be required.
13. Environmental Commitment Plan (ECP) and Environmental Commitment Checklist (ECC)--An ECP and an ECC would be prepared and used by the Provo Area Office to ensure compliance with the environmental commitments and the environmental quality protection requirements. A post-construction environmental summary (PCES) would be completed within 1 year after completion of the project to assess the effectiveness of the mitigation measures.

Chapter 5 - Consultation and Coordination

5.1 Introduction

This chapter details the consultation and coordination between Reclamation and other Federal, state, and local government agencies, Native American Tribes, and the public during the preparation of this EA. Compliance with NEPA is a Federal responsibility that involves the participation of all of these entities in the planning process. NEPA requires full disclosure about major actions taken by Federal agencies and accompanying alternatives, impacts, and potential mitigation of impacts.

5.2 Public Involvement

A public scoping period to provide to the interested public an opportunity to provide input regarding the scope of this EA was initiated on July 25, 2006, with a scoping letter mailed to over 100 municipalities, organizations or agencies considered to have an interest in the proposed action. The scoping period ended on September 1, 2006, with two comment letters received. Those comments were given full consideration in defining issues to be analyzed in this EA.

The draft EA was made available for a 30-day public comment period from November 24, 2006 to December 29, 2006. It was mailed to over 100 municipalities, organizations and agencies, and also made available on the internet at www.usbr.gov/uc/endocs/index.html. Reclamation received three response letters on the draft EA. All comments received on the draft EA were reviewed and considered in preparing the final EA, and revisions were made to the EA as appropriate.

Interested parties may receive a copy of the final EA by written request to Mr. Peter Crookston, Bureau of Reclamation, Provo Area Office. The address is 302 East 1860 South, Provo, Utah 84606-7317, or e-mail, pcrookston@uc.usbr.gov.

5.3 Native American Consultation

Reclamation has conducted Native American consultation throughout the public information process. In November 2006, letters describing the proposed project, including maps were sent by the Provo Area Office archaeologist to Ms. Betsy Chappoose, director of the Cultural Rights and Protection Department for the Uintah and Ouray Ute Tribe, Fort Duchesne, Utah; and Ms. Patty Timbimboo,

Cultural Director for the Northwest Band Shoshone Tribe, Brigham City, Utah. This consultation was conducted in compliance with 36 CFR 800.2(c)(2), on a government-to-government basis. Through this effort, the tribe is given a reasonable opportunity to (1) identify any concerns about historic properties; (2) advise on the identification of historic properties, including those of traditional religious and cultural importance; (3) express their views on the undertaking's effects on such properties; and (4) participate in the resolution of adverse effects.

5.4 Coordination with Other Agencies

A paleontological report was requested from the Utah State Geological Survey and received in October 2006. One geological formation, the Kelvin Formation, was identified as having potential to contain vertebrate fossil resources. The procedures to be followed for protection and preservation of paleontological resources are described in Section 3.2.9 of this document.

Informal consultation with the Fish and Wildlife Service pursuant to Section 7, of the Endangered Species Act has been completed.

Chapter 6 - Preparers

The following contributors to the EA are part of the U.S. Department of the Interior, Bureau of Reclamation, Provo Area Office.

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