BUREAU OF RECLAMATION

Lake Pueblo State Park and Pueblo Reservoir State Wildlife Area Resource Management Plan

Final Environmental Assessment

Project 2015-025
Fryingpan-Arkansas Project, Colorado
Eastern Colorado Area Office, Upper Colorado Basin Region

in cooperation with: Colorado Division of Parks and Wildlife
Southeast Region

Estimated Total Lead Agency Costs Associated with Developing and Producing this EA. $81,100.00

U.S. Department of Interior **July 2020**

Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

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

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Abbreviations and Acronyms

1981 Plan	Pueblo Reservoir Area Management Plan
ABA/ADA	Architectural Barriers Act/Americans with Disabilities Act
ANS	aquatic nuisance species
APE	area of potential effects
ATV	all-terrain vehicle
Early AVC	20th Century Arkansas Valley Conduit
BLM	Bureau of Land Management
BMPs	best management practices
CDPHE	Colorado Department of Public Health
CFR	Code of Federal Regulations
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
CNHP	Colorado Natural Heritage Program
DNR	Colorado Department of Natural Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FHWA	Federal Highway Administration
GIS	geographic information system
GSSP	Global Boundary Stratotype Section and Point
MBTA	Migratory Bird Treaty Act
MU	Management Unit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	Non-Point Discharge Elimination System
NRHP	National Register of Historic Places
Pueblo Water	Board of Water Work of Pueblo, Colorado
PFYC	potential fossil yield classification
Reclamation	U.S. Bureau of Reclamation
RMP	Resource Management Plan
RMP Planning Area	Resource Management Plan Planning Area

SDS	Southern Delivery System
SHPO	State Historic Preservation Office
SWA	Pueblo Reservoir State Wildlife Area
USFWS	U.S. Fish and Wildlife Service

Chapter 1-Purpose and Need

1.1 Introduction

Pueblo Reservoir is a feature of the Fryingpan-Arkansas (Fry-Ark) Project, authorized by Public Law 87-590 in 1962. The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) owns and operates the Fry-Ark Project, including Pueblo Reservoir. Reclamation is responsible for administering lands and resources associated with Pueblo Reservoir. Pueblo Reservoir is also known as Lake Pueblo.

With the execution of Contract No. 14-06-700-8018 in 1975 (Reclamation 1975), Reclamation assigned management of recreation, fish, wildlife, and associated resources for federal lands around Pueblo Reservoir to the State of Colorado through its Department of Natural Resources (DNR). Colorado Parks and Wildlife (CPW) manages these lands as Lake Pueblo State Park and Pueblo Reservoir State Wildlife Area (SWA). The 1975 contract expires in 2025. Section 4 of the 1975 contract outlines development of a Reservoir Area Management Plan, which DNR and Reclamation completed in 1981 (Reclamation 1981). Preparation of this plan was required where multiple uses on Reclamation lands were planned or occurred to achieve proper land use, recognized standards of proper land use, and aimed to achieve the highest utilization of said land.

In 2014 Reclamation began the process of preparing a Resource Management Plan (RMP). The RMP will replace the 1981 Reservoir Area Management Plan (1981 Plan) and direct future use, management, and development of Reclamation lands in Lake Pueblo State Park and the SWA. The RMP is intended to provide the management framework needed to balance the development, use, and protection of Reclamation lands and their associated natural, cultural, and recreation resources. The RMP is Reclamation's blueprint for future resource management decisions and guides Reclamation and its managing partners, as well as inform the public about the resource management policies and actions implemented over the life of the RMP.

The RMP process was put on hold in 2015 due to issues raised by the public and Reclamation concerning the 50 miles of unauthorized trails in Management Unit (MU) 4 South Shore. Safety became a concern due to erosion and degradation along various trails. Reclamation and CPW completed an assessment of the trails in the fall of 2015, which documented natural and cultural resource impacts from the unauthorized trails. Due to the extensive expansion of unauthorized trails during the past decade on both the north and south side of Pueblo Reservoir, a separate trail management plan was needed. Over the next three years, CPW collected additional natural resource data and developed a trail management plan through a public process with a final plan, Lake Pueblo State Park Trail Management Plan (CPW 2019a) in May 2019. See Appendix C for the final plan.

This environmental assessment (EA) for the RMP is prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508), and Department of the

Interior's regulations (43 CFR Part 46). The alternatives developed for the RMP are broad in nature to address a ten-year planning period, but provide sufficient detail to analyze potential environmental impacts for this EA. It is intended to help decision makers determine whether to issue a Finding of No Significant Impact or to proceed with preparation of an Environmental Impact Statement (EIS). The selected alternative would become the RMP.

1.2 Proposed Federal Action

Reclamation proposes to implement the RMP to comply with current Federal laws, regulations, policy, and guidelines, to address current management issues, and to develop a framework to guide future management of Reclamation lands surrounding Pueblo Reservoir. Once approved, the RMP will be reviewed and updated periodically as needed, but no sooner than every ten-years.

1.3 Purpose & Need

The purpose of the RMP is to establish a ten-year plan to provide decision-makers with consistent direction and guidance for successful resource management of Reclamation lands surrounding Pueblo Reservoir. The RMP would also develop and implement resource management goals, objectives, and management actions.

Since 1981, achieving balance between management for visitor recreation use and management of the natural resources has been an ongoing challenge. Since the 1981 Plan was written, recreation trends and demands have changed, resulting in new or changed management issues. For example, recreation interest and annual visitation increased to nearly 1.8 million in 2015, impacting existing infrastructure and resources. Some recreational uses (mountain biking and off leash dogs) have increased beyond original expectations or were never contemplated in the 1981 Plan. Also, the need for management of invasive species has increased and recreational facilities do not meet current standards for the Architectural Barriers Act of 1968 (ABA) and Americans with Disabilities Act (ADA). Finally, data, knowledge and tools for management of natural, cultural, and paleontological resources have increased since the 1981 Plan was written.

The RMP addresses issues and concerns regarding existing infrastructure and resources by providing a guide for future development, to maximize recreational benefits, to minimize resource use conflicts, and to manage and protect resources on Reclamation lands.

1.4 Authority for Resource Management Plans

Reclamation's authority to prepare RMPs is vested in the broad authority of the Reclamation Act of 1902 (Chapter 1093, 32 Stat. 388); the Reclamation Project Act of 1939 (Chapter 418, 53 Stat. 1187), the Federal Water Project Recreation Act (Public Law 89-72, 79 Stat. 213; and more specifically in the Reclamation Recreation Management Act of 1992 (Public Law 102-575, Title 28 [2805(c)(1)(A)]. The Reclamation Recreation Management Act authorized the preparation of RMPs to "provide for the development, use, conservation, protection, enhancement, and management of resources of

Reclamation lands in a manner that is compatible with the authorized purposes of the Reclamation Project associated with the Reclamation lands."

Reclamation's Recreation Management Policy (LND P04) further defines Reclamation's overall responsibilities and establishes the basic principles for planning, development, management, and protection of public recreation resources on Reclamation's lands and waters.

Chapter 2-RMP Development

2.1 Pueblo Reservoir & Fryingpan-Arkansas Project

Pueblo Reservoir is the terminal and principal storage feature of the federal Fry-Ark Project, a multipurpose transmountain, transbasin water diversion and delivery project in Colorado. It makes possible an average annual diversion of approximately 69,200 acre-feet of surplus water from the Fryingpan River and other tributaries of the Roaring Fork River, on the western slope of the Rocky Mountains, to the Arkansas River basin on the eastern slope. The Fry-Ark Project was authorized by Congress in 1962 (Public Law 87-590) and the construction of Pueblo Reservoir was completed in 1975. The reservoir is located on the Arkansas River, approximately six miles upstream of the city of Pueblo. The Fry-Ark Project's authorized purposes include supplying water for irrigation, municipal, domestic, and industrial uses, generating and transmitting hydroelectric power and energy, controlling floods and for other useful and beneficial incidental purposes thereto, including recreation and the conservation and development of fish and wildlife.

2.2 Description of RMP Planning Area

The Resource Management Plan Planning Area (RMP Planning Area) includes 13,483 federally owned acres, 4,002 surface acres of water, and about 60 miles of shoreline associated with both Lake Pueblo State Park and the SWA (Table 2.1 and Figure 1). Lake Pueblo State Park and the SWA are located about 4 miles upstream from Pueblo, Colorado and are bounded to the east by CPW and other State-owned lands, Pueblo West Metropolitan District (Pueblo West) to the north, and Highway 96 to the south.

The western boundary is about 13.7 miles upstream of Pueblo Dam. The RMP addresses all natural, cultural and paleontological resources within the RMP Planning Area

Formerly two divisions within DNR had resource management responsibilities: Colorado State Parks and Colorado Division of Wildlife. In 2013, The two divisions were combined into CPW and CPW administers recreation, fisheries, vegetation resources, and wildlife management activities in the RMP Planning Area. The lower portion of the RMP Planning Area is managed as a state park and the upper portion as a SWA. Figure 1 includes proposed MU used to develop the RMP.
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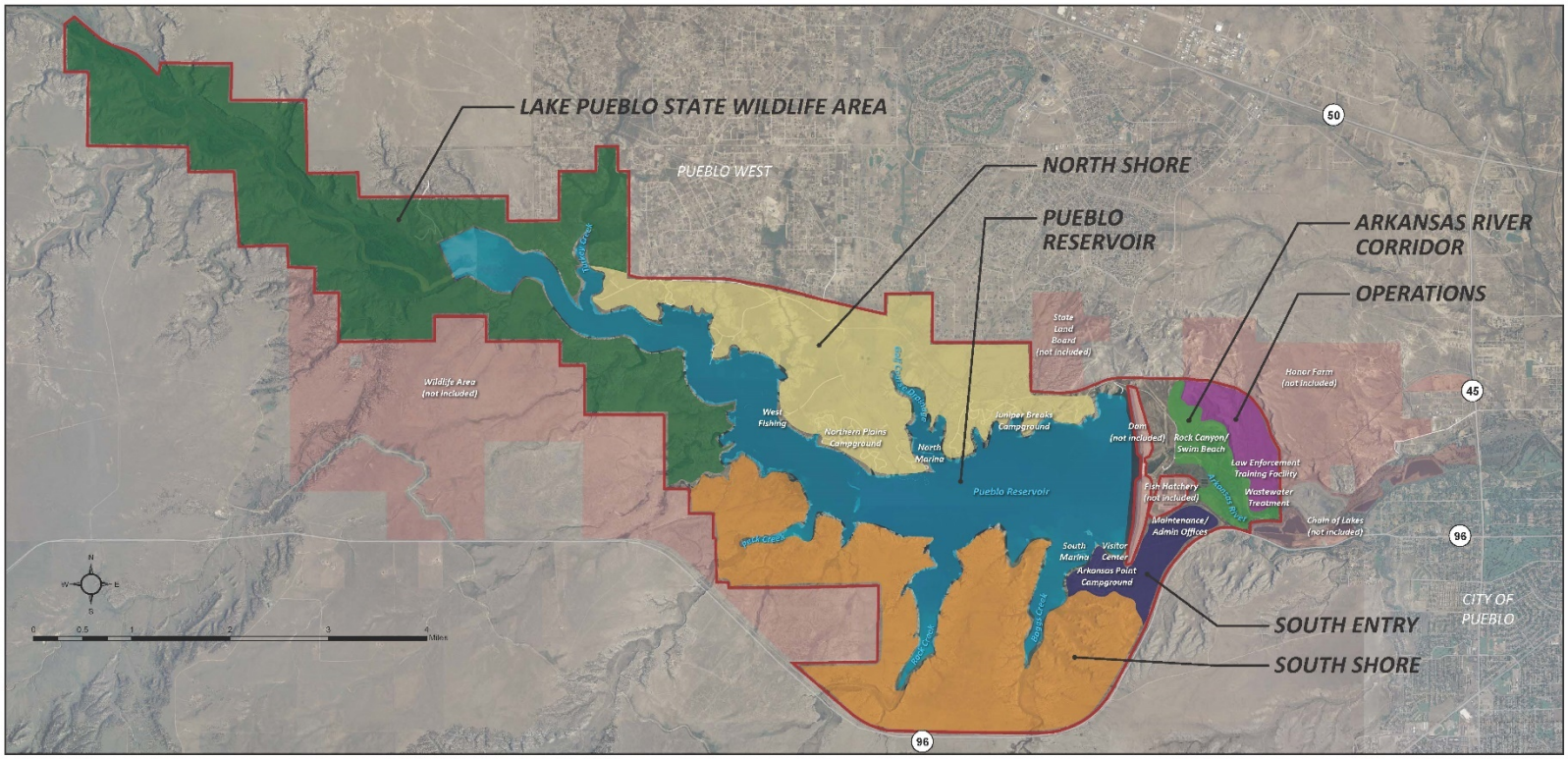

Maps are draft only. They are being updated to meet new required template

Figure 1.4 -Draft MUs

Table 2. 1-Land Ownership, Lake Pueblo State Park & SWA

Ownership	Current Designation	Area (acres)
Bureau of Reclamation	RMP Planning Area–Land Managed as State Park	7,298
	RMP Planning Area – Land Managed as SWA	6,185
	Total RMP Planning Area Lands	**13,483**
Bureau of Reclamation	RMP Planning Area – Surface water	4,002
	Total RMP Planning Area	**17,485**
State of Colorado	CPW-owned and managed lands in State Park (not in RMP Planning Area). These lands are the subject of the separate Supplemental Park Management Plan.	2,160
	Total Lake Pueblo State Park and SWA	**19,645**

2.2.1 CPW Lands Not Included in the RMP Planning Area

The 2,160 acres of adjacent lands owned and managed by CPW as part of Lake Pueblo State Park include State Land Board properties, CPW Honor Farm, and Chain of Lakes. Management of these lands are not included in 1981 Plan or RMP. CPW is preparing a separate Supplemental Park Management Plan to address these properties.

Fry-Ark Project facility operations (i.e. Pueblo Dam) and Pueblo Reservoir water levels are not part of the RMP. The Pueblo State Fish Hatchery is operated separately from the State Park and the SWA and expansion of the hatchery is included in the RMP. Lands associated with Reclamation issued use authorizations to construct and operate Southeastern Colorado Water Conservancy District's Pueblo Hydropower Project and Colorado Springs Utilities' Southern Delivery System (SDS) are also excluded from the RMP Planning Area.

2.3 General Setting

Lake Pueblo State Park and the SWA are located on the eastern slope of the Rocky Mountains of Colorado in a high semi-arid area in Pueblo County. The RMP Planning Area is located at a transition zone between the Great Plains to the east and the Southern Rocky Mountains to the west and transitions between the shortgrass prairie to the north and desert grasslands to the south. Views from Pueblo Reservoir include Pikes Peak to the north, the Wet Mountains to the west, and the Sangre de Cristo Mountains to the southwest. Lake Pueblo State Park's visitor center is located at 4,932 feet above mean sea level.

The RMP Planning Area is about six miles east of the City of Pueblo's historic Downtown Riverwalk. Pueblo West, an independent metropolitan district with a population of over 30,000, lies immediately north of the RMP Planning Area, and lands to the south are primarily undeveloped rangeland.

Interstate 25 is about ten miles east of the RMP Planning Area and connects the Cities of Colorado Springs and Denver with Pueblo which are about 45 and 110 miles to the north, respectively. Trinidad, Colorado is about 90 miles south of Pueblo and the RMP Planning Area is about 100 miles north of the Colorado-New Mexico border.

The general setting is high desert with light rainfall, high evaporation, moderate to high winds, and low humidity. Average high temperatures range from near 50°F in winter to 90°F during the summer. Average low temperatures are near 10°F in the winter to 60°F in the summer. Average annual precipitation is 13 inches and sunny days are typical.

2.4 Prior Planning Documents

In 1975, a recreation and general development plan was completed by Reclamation and the National Park Service and focused on the development of recreation and visitor services primarily on Pueblo Reservoir. The 1981 Plan is the current management plan for the RMP Planning Area. The "lake-centric" orientation of the 1981 Plan provided a framework for design and subsequent development.

Public input during a Lake Pueblo State Park facilities and operations assessment (CPW 2012) identified a need to develop new, non-lake-oriented uses. Physical constraints at the lake edge (i.e. steep sloped reservoir banks) have limited the potential number of park users. Sparsely vegetated sites and microclimates have resulted in very specific user trends, including "boats only" and extreme peaks in visitation. A common stakeholder feedback comment is the sense that the RMP Planning Area has untapped potential to increase visitation and expand activities and amenities.

2.5 Lake Pueblo State Park & SWA Access

Southeastern access to the RMP Planning Area is via Highway 96 (see Appendix A-MU: Reclamation Map). Visitors to Lake Pueblo State Park can enter at the South Entrance which connects to the Visitor Center, South Marina, and Arkansas Point Campground. Highway 96 continues along the southern edge of RMP Planning Area. Visitors can also access the SWA using Old Highway 90 from the south and Swallows Road from the north.

Visitors can also turn northward onto Juniper Road, cross the Arkansas River below Pueblo Dam, and access the Rock Canyon and Swim Beach areas to the east, or continue to the North Marina toward the west. Access to the RMP Planning Area from the north is via Highway 50 through Pueblo West on McCulloch Boulevard to Juniper Road.

2.6 Existing Recreational Opportunities

The primary purposes of the Fry-Ark Project are to supply water for irrigation, municipal, domestic, and industrial uses, generating and transmitting hydroelectric power and energy, and flood control. However, Public Law 87-590 also recognizes other useful and beneficial purposes incidental thereto, including recreation and conservation and development of fish and wildlife.

Pueblo Reservoir and the adjacent natural resources support and create a range of recreational opportunities. Water activities on Pueblo Reservoir include sailing, sailboarding, motor boating, paddle-sports, waterskiing, and fishing. Water activities on Arkansas River downstream of Pueblo Reservoir include paddle-sports, river turning and fishing. Recreation areas are identified in Appendix A. They include:

- two marinas and boat launch ramps;
- three campgrounds containing a total of 400 camp sites;
- three dump stations;
- 24 vault toilet facilities;
- 13 comfort stations with flush toilets and running water (12 with showers);
- five picnic areas, including four picnic shelters for large groups and day use;
- a swim beach, including developed facilities, adjacent to the Arkansas River; and
- trails for hiking, horseback riding, and off-road bicycling.

2.7 RMP Planning Area Management Units

There are seven different MUs within the RMP Planning Area, developed based on use, natural resources, and existing facilities (see Figure 1 and Appendix A-MU-1 through MU-7 maps). Management goals and objectives were developed for each resource and MU in a matrix style and used as the basis for development of the RMP. The MUs are:

1. South Entry
2. Arkansas River Corridor
3. Operations
4. South Shore
5. North Shore
6. Pueblo Reservoir
7. SWA

2.8 RMP Planning Area Visitation Trends

According to a report on Colorado's demographics and trends in outdoor recreation that was commissioned for the CPW 2015 Strategic Plan, Colorado's population is currently the fifth fastest growing in the country and will continue to grow by more than 40 percent between 2015 and 2040 (CPW 2015). Seventy-five percent of the growth is expected to occur on the Front Range. Because of growth has focused on the Front Range, visitation and demand for Front Range parks and natural resources are likely to increase as well.

Chapter 3-Alternatives

3.1 Public Scoping

A news release issued on January 14, 2014 announced the initiation of the 30-day public scoping period for development of the RMP, to identify issues, opportunities, and resources of concern that should be addressed in the RMP. An Open House was also held at the Lake Pueblo State Park Visitor Center on January 22, 2014. The announcement was also posted on the Reclamation web page and sent via email to potential stakeholders inviting them to take part in the public process.

Prior to the public scoping activities as described above, a facility and operation assessment were completed (CPW 2012). The assessment identified issues and opportunities concerning visitor experience, park management, and park facilities. These issues, opportunities, and concerns were combined with internal and public scoping and lumped into two major categories: resource management and recreation/visitor services, which are discussed in detail, below.

The RMP process was put on hold in 2015 due to issues raised by the public and Reclamation concerning the 50 miles of unauthorized trails in MU 4 South Shore. Safety became a concern due to erosion and degradation along various trails. Reclamation and CPW completed an assessment of the trails in the fall of 2015, which documented natural and cultural resource impacts from the unauthorized trails. Due to the extensive expansion of unauthorized trails during the past decade on both the north and south side of Pueblo Reservoir, a separate Trail Management Plan was needed. Over the next three years, CPW collected additional natural resource data and developed a Trail Management Plan through a public process with a final plan, the Lake Pueblo State Park Trail Management Plan in May 2019.

3.2 Resource Management

The purpose of natural resource management is to preserve, protect, and enhance natural resources, including vegetation and wildlife diversity and health, as well as protecting and preserving cultural and paleontological resources. Natural resource management includes the following key issues:

- Enhancement of the health, productivity, diversity, and integrity of native and other desirable plant communities.
- Protection of habitat for special status plant and wildlife species, and reduction of potential impacts of recreational use.
- Protection of wildlife security areas, habitat connectivity, habitat carrying capacity, movement corridors, breeding areas, and winter range.
- Compliance with and enforcement of federal regulations protecting all resources.
- The need for management of noxious weeds and aquatic invasive species.
- Protection of water quality in the reservoir, tributary drainages, and the Arkansas River from land use and management practices in the RMP Planning Area.
- Protection and preservation of known paleontological resources.
- Protection and preservation of cultural resources.
- Completing the items above while maintaining Project purposes.

3.3 Recreation and Visitor Services

This issue category includes the following key issues:

- Improvements to infrastructure, including ABA/ADA compliance, campground upgrades, parking, marina facilities, concessions, and disposition of existing administrative and utility areas and buildings.
- Travel management, including use of park roads by non-visitors, road maintenance needs, and potential road relocations.
- Trail management to address and resource protection and expansion in appropriate areas.
- Upgrades to wayfinding and signage.
- Improvement of fishing access and fish cleaning facilities.
- Decisions about swimming in the reservoir and management of the swim beach.

3.4 Alternative Matrix

Appendix B of the Draft EA included a comprehensive summary of management components for the Proposed Action and No Action Alternatives, goals, objectives, and components by alternative, resource, and MU. A general discussion of the Proposed Action and No Action Alternative follows below. The Alternative Matrix was replaced with the RMP Document in the Final EA.

3.5 Proposed Action-RMP

The RMP development process considered a range of alternatives to conserve, protect, enhance, develop, and use the natural and recreational resources within the RMP Planning Area. Impacts of general approaches to resource management were analyzed, and where identified, specific projects were analyzed in detail.

The RMP includes a range of possible actions for managing resources, and this EA focuses on the broad scale of impacts associated with implementing the RMP. **Additional site-specific environmental, cultural resource, and paleontological resource clearances would be obtained prior to any ground-disturbing activities.**

The main goal of the RMP is to balance resource protection and recreational use while providing additional recreational development based on current and future demand. Guided by the RMP, resources and facilities would be more actively managed, and additional progress would be made on deferred maintenance activities when compared to the No Action Alternative. The RMP focuses on identifying those improvements that will meet the most pressing needs and priorities identified during the RMP development process.

The RMP proposes to relocate the northern boundary between Lake Pueblo State Park and the SWA to incorporate SWA managed lands east of Turkey Creek into the State Park. The north boundary would be relocated north of the railroad tracks and the south boundary would be relocated to the west shoreline at Turkey Creek (see Appendix A-MU-7 Map). Areas within new (increased) park boundary would be managed as State Park. The RMP also incorporates the 2019 Lake Pueblo State Park Trail Management Plan developed to address existing resource issues and concerns associated with trails within the RMP Planning Area (Appendix C). Other specific management RMP actions to be included in the RMP (Appendix B).

3.6 No Action Alternative

The No Action Alternative represents a "status quo" and continuation of existing management practices within the RMP Planning Area. Management would continue to be guided by the 1981 Plan where applicable and would continue without additional direction provided by the RMP. Improvements would continue to be made on an "as needed" basis and to meet health, safety, accessibility, or other legal requirements. Under the No Action Alternative, some progress would be made on deferred maintenance of facilities, as funding becomes available.

Current MU boundaries between Lake Pueblo State Park and the SWA would be remain unchanged. Other specific management actions included in the No Action Alternative were illustrated in Alternative Matrix.

3.6.1 Proposed Management Actions Considered but Eliminated

Some scoping comments on possible management actions were considered for inclusion in the alternatives but were eliminated from further consideration. These comments summarized and addressed below in Table 3.1.

Table 3. 1-Proposed Management Actions Considered but Eliminated from Detailed Analysis	
Proposed Management Action	**Reason for Elimination from Consideration**
Close Lake Pueblo State Park until ABA/ADA compliant	It is not feasible to close Lake Pueblo State Park and is not compliant with the existing Lease Agreement. Specific ABA/ADA-compliance issues are addressed, by location, in the both the No Action and Proposed Action Alternatives.
Include more shade or rest stops on trails.	Siting, design, and installation of shade structures are not feasible based on estimated costs. Shade trees are not sustainable in the RMP Planning Area without irrigation. Trail designs do not generally include rest stops.
Install signs that note horse use on trails under wet conditions is not allowed.	All trail signage is addressed in the Trail Management Plan.
Provide a public gun range	Specific regulations prohibit and/or constrain the development of shooting ranges on Reclamation-owned lands, due to concerns with soil and groundwater contamination, and public safety in high-use recreation areas (such as Lake Pueblo State Park). Additional environmental studies and testing would be required, to ensure such activity would not violate environmental laws and Reclamation policy (i.e., Clean Water Act, RCRA, ENV 02-07, etc.). In addition, siting, design, construction, addressing safety precautions and mitigation, and additional environmental review would be cost-prohibitive.
Provide second restroom at the Anticline southeast parking lot.	The existing restroom facility was designed to serve the public/user demand and was cited in the optimum location to best meet requirements.

Table 3. 1-Proposed Management Actions Considered but Eliminated from Detailed Analysis	
Proposed Management Action	**Reason for Elimination from Consideration**
	Designing, siting and construction of a secondary restroom facility in such proximity to the existing facility does not meet existing public demand and use for the area and would be an obligation of funding only to serve a duplicative purpose.
Provide additional facilities including benches in Rock Canyon area.	Visitor amenities such as park benches, etc., may be considered as need, based on demand and funding available. This does not warrant inclusion as a stand-alone management action for consideration.
Allow equestrian use in Rock Canyon area. Provide horse hitches.	Long-standing Lake Pueblo State Park policy excludes equestrian use on, or in the vicinity of, paved trails.
Move gates at the SWA ramp to make hand-launching closer and easier.	The existing ramp is closed because of ANS inspection requirements.
Build more campgrounds, marinas, and boat ramps.	Additional facilities are addressed on a location-basis in the Proposed Action.
Expand or close Lake Pueblo State Park because it is crowded, unsafe, and embarrassing.	It is not feasible to close Lake Pueblo State Park, nor is that action compliant with the Lease Agreement. Additional or expanded facilities, updated and expanded access to facilities, and travel management are addressed in the Proposed Action Alternative.
Manage MU 7 for wildlife and plant preservation/conservation only. No power boats, no motorized vehicles, except cars in designated parking areas.	No power boat launching, or motorized vehicles, are currently allowed in MU 7; nor are these activities considered under any alternative. In addition, Motorboats are not permitted on the Arkansas River from the confluence of the East Fork/Lake Fork of the Arkansas River to the west end of Pueblo Reservoir. The SWA portion of Pueblo Reservoir is wakeless and is marked with buoy line.
Connect the north side with the south side by a bridge across the river.	This proposal is not an economically feasible means to access the south side of the reservoir area. A bridge of this size and magnitude is cost-prohibitive.

Table 3. 1-Proposed Management Actions Considered but Eliminated from Detailed Analysis	
Proposed Management Action	**Reason for Elimination from Consideration**
Build an All-Terrain Vehicle (ATV) trail system from Bogg's Cove to the old Highway 96 area.	Long-standing Lake Pueblo State Parks/SWA policy does not allow for ATV use in this area and would require additional planning and environmental study to comply with the requirements of 43 CFR Part 20.
Build camping facilities at the old Highway 96 area.	State regulations currently do not allow camping at SWA.

3.7 Best Management Practices

For all management actions considered in both alternatives, Reclamation would implement common Best Management Practices (BMPs) and implement appropriate mitigation measures to avoid or minimize adverse impacts to natural and cultural resources within the RMP Planning Area. Standard BMPs that may be employed are listed in Appendix D. Appendix D also incorporates management practices identified in the Draft Stewardship Plan for Lake Pueblo State Park (CPW 2017). Mitigation measures are for each resource, as appropriate, are discussed in Chapter 4 and incorporated as environmental commitments.

As technologies improve, new BMPs may also be developed and implemented. These could include a variety of measures to minimize impacts over both temporary and long term.
Examples include:

- Reduce the footprint of roads to the smallest safe standard;
- Implement dust suppression during construction and excavation activities to minimize impacts to air, water, vegetation, and wildlife;
- Use appropriate color, shape, size, and location of surface facilities to reduce visual impacts;
- Collocate utilities in common corridors and align them along roadways to reduce habitat loss and fragmentation; and
- Incorporate powerline and pole or tower designs, including burial, to minimize the risk of raptor electrocution as outlined in *Avian Protection Plan Guidelines* (APLIC 2012) developed by the U.S. Fish and Wildlife Service (USFWS) and industry.

In addition to these generally applicable measures, Reclamation may implement BMPs intended for specific resources and situations. Examples include requirements to:

- Install appropriately sized culverts at stream crossings to avoid creating barriers to in-stream movement of aquatic species or impeding water conveyance through the channel;
- Use gravel or other surface material on roads, or use other dust-suppression techniques for the abatement of particulate emissions;

- Use protective fencing to exclude foot or bike traffic from sensitive areas or areas being revegetated;
- Use biodegradable erosion blankets to stabilize disturbed soil and enhance revegetation;
- Seed with native species;
- Include native shrubs in seed mixes; and
- Plant containerized shrubs during revegetation.

3.8 Resource and Impacts Summary

Estimated impacts were summarized for specific resources, management actions, and uses. This was completed by using impact intensity summary categories to reduce the necessarily complex impact analysis process to readily understandable terms. The summary categories were further combined and summarized to allow for a comparison across alternatives and are presented in Table 3.2.

Table 3. 2-Summary of Impacts by Alternative[1]

Impact Topic	No Action Alternative (1981 Plan)	Proposed Action (RMP)
Paleontological Resources	Negligible, overall Minor (-), localized	Negligible, overall Moderate (-), localized
Soils Resources	Minor (+), overall Minor (-), localized	Moderate (+), overall Minor (-), localized
Water Resources	Minor (+), overall	Moderate (+), overall Moderate (+), localized
Vegetation Resources	Minor/moderate (-), overall Minor/moderate (-), localized	Minor/moderate (+), overall Minor (-), localized
Wildlife and Aquatic Resources	Minor (+), overall Minor (+), localized	Major (+), overall Minor (-), localized
Cultural Resources	Minor (-), overall Minor (-), localized	Major (+), overall Minor (-), localized
Travel Management	Minor (-), overall Moderate (+), localized	Moderate (+), overall Major (+), localized
Socioeconomic Conditions	Negligible, overall	Minor (-) to minor/moderate (+), depending on user group objectives
Environmental Justice	Negligible, overall	Same as No Action Alternative
Recreation and Visitor Services	Moderate (+), overall Minor (+), localized	Major (+), overall Major (+), localized

Visual Resources	Negligible, overall Negligible, localized	Negligible, overall Negligible, localized
Air Quality and Noise	Negligible, localized	Negligible, localized
Indian Trust Assets	No impacts	No impacts

Note:
[1]Overall impact level after combining adverse (-) and beneficial (+) effects of land uses and management actions and after incorporating BMPs described in Appendix D. Beneficial impacts are indicated as (+). Adverse impacts are indicated as (-). As necessary, a distinction is made between overall impacts across the Planning Area, versus localized impacts, due to specific actions in a particular location. Summarized impacts for each alterative comprise consideration of impacts to all MUs. Additional details of impact analysis are discussed in Chapter 4.

Chapter 4-Affected Environment and Environmental Consequences

This chapter discusses the affected environment within the RMP Planning Area and evaluates the environmental consequences of implementing the Proposed Action and No Action Alternatives. This chapter is organized by resource topic.

Chapter 4 provides information on the current condition of each resource and resource use in the RMP Planning Area that could be affected by the Proposed Action and No Action Alternatives described in Chapter 3. Existing conditions for each resource are used to describe the baseline which impacts of the Proposed Action are analyzed. The predicted environmental consequences from implementing management actions included in the Proposed Action and No Action Alternatives are also discussed in detail.

4.1 Approach to the Analysis

This EA identifies anticipated effects from implementing the No Action and Proposed Action Alternatives' management actions and discusses whether these actions would enhance or degrade each resource. The analysis describes the actions that have direct effects, as well as those that result in indirect effects. Impacts to resources are analyzed and discussed in detail, commensurate with resource issues and concerns identified throughout the planning process. Geographic Information System (GIS) analysis and data from research and field surveys were used to quantify effects when possible. For specific actions that involve the addition or removal of facilities, the Area of Potential Effect (APE) was estimated.

Each APE was analyzed using available GIS data including but not limited to paleontological resources, soils, cultural resources, vegetation classification, vegetation condition, weeds, rare plants, and special status species wildlife habitat. Impacts were quantified and in the absence of quantitative data, qualitative information and best professional judgement were used.

For each resource, potential environmental effects of managing that resource were analyzed. The effects of managing the other resources on the subject resource are also discussed. Table 4.1. This table summarizes estimates for both temporary and long-term disturbances for each site-specific management action, in each MU for each alternative.

Table 4.1 - Summary of Estimated Surface Disturbance from Site-Specific Management Actions, by Alternative				
	No Action (1981 Plan)		**Proposed Action (RMP)**	
	Short-term	**Long-term**	**Short-term**	**Long-term**
MU 1				
New Bogg's Creek Trail			0.2 ac	0.2 ac
New South Park entrance road, visitor center, maintenance office, aquatic nuisance species inspection station, CPW wildlife office relocations			44.0 ac	40.0 ac
Existing maintenance shop compound expanded; new shop building within expanded compound footprint; new security fence installed around perimeter of compound expansion			2.0 ac	1.5 ac
Fish hatchery expansion			20.0 ac	18.0 ac
New pedestrian bridge south of Anticline Pond and trail connection on south side of the river	*Addressed in MU 2*			
Construct fish cleaning station	*Assumes construction on previously disturbed surface, no new surface disturbance*			
New trail connection going west from existing Valco Parking upstream to provide access to Arkansas River			6.8 ac	5.3 ac
Formalize existing visitor parking at East Gate to include ABA/ADA trailhead amenities	*Included in estimate of redesign of South Entrance Facility*			
Modify Reservoir Road at approximately the location of Reclamation Headquarters/existing maintenance compound	*Included in estimate of redesign of South Entrance Facility*			
Close South Marina Road from Juniper Road to State Hwy 96. Improve intersection of Juniper Road and Reservoir Road				1.8 ac
MU 1 TOTAL	**2.0 ac**	**0.8 ac**	**73.0 ac**	**66.8 ac**

Table 4.1 - Summary of Estimated Surface Disturbance from Site-Specific Management Actions, by Alternative				
	No Action (1981 Plan)		**Proposed Action (RMP)**	
	Short-term	**Long-term**	**Short-term**	**Long-term**
MU 2				
Improve access to river on both sides from Cottonwood Picnic Area to Osprey Trailhead			6.5 ac	5.1 ac
Trail and ABA/ADA compliant access to river's edge at Cottonwood Picnic area, Anticline Pond, Osprey Trailhead, and picnic area			1.0 ac	0.4 ac
New trail connection going west from existing Valco parking lot to provide access to Arkansas River.			6.8 ac	5.3 ac
New pedestrian bridge south of Anticline Pond and trail connection on south side of the river				
MU 2 TOTAL	**0.0 ac**	**0.0 ac**	**14.3 ac**	**10.8 ac**
MU 3				
Expanded parking capacity			0.4 ac	0.3 ac
Remove woody debris pile				0.6 ac
MU 3 TOTAL	**0.0 ac**	**0.0 ac**	**0.4 ac**	**0.9 ac**
MU 4				
Develop Red Gate Trailhead amenities	0.2 ac	0.1 ac	0.2 ac	0.1 ac
New Bogg's Creek trail			3.2 ac	1.8 ac
New Red Gate Trailhead			4.4 ac	3.5 ac

Table 4.1 - Summary of Estimated Surface Disturbance from Site-Specific Management Actions, by Alternative				
	No Action (1981 Plan)		**Proposed Action (RMP)**	
	Short-term	**Long-term**	**Short-term**	**Long-term**
Close old Hwy 96 at intersection of the SWA access road. Remove asphalt east of terminus trailhead and rehab roadbed as natural surface ABA/ADA trail			0.3 ac	
Identify and construct formal administrative motorized access points into MU 4 for management and enforcement			0.9 ac	0.8 ac
MU 4 TOTAL	**0.2 ac**	**0.1 ac**	**9.0 ac**	**6.2 ac**
MU 5				
Improve paving and access to model airplane field if retained			1.5 ac	1.3 ac
Repurpose day use picnic sites at G-Loop to walk-in camp sites	*Assumes construction on previously disturbed surface, no new surface disturbance*			
Redevelop campground areas in place	*Assumes construction on previously disturbed surface, no new surface disturbance*			
Provide more day use parking at North Marina			9.5 ac	8.5 ac
Provide local loop, soft-surface trail connections off of North Bike Trail to Pueblo West and include grade-separated crossings at the railroad			2.2 ac	1.7 ac
Remove entrance off Juniper Road and relocate along North Marina Road			12 ac	11 ac
Widen 1.6 miles of North Marina Road from 22 feet to 28 feet			3.0 ac	1.5 ac
Extend North Shore/Wildlife Area Loop Connection from Pueblo West to the Lake; plus, administrative access			6.7 ac	5.3 ac
MU 5 TOTAL	**0.0**	**0.0**	**34.7 ac**	**29.3 ac**

Table 4.1 - Summary of Estimated Surface Disturbance from Site-Specific Management Actions, by Alternative				
	No Action (1981 Plan)		**Proposed Action (RMP)**	
	Short-term	**Long-term**	**Short-term**	**Long-term**
MU 7				
Provide local loop, soft-surface trail connections from North Bike Trial to Pueblo West and include grade-separated crossings at the railroad			0.9 ac	0.7 ac
Close old Hwy 96 at intersection of the SWA access road. Remove asphalt east of terminus trailhead and rehab road bed as natural surface trail			0.3 ac	
MU 7 TOTAL			**1.2 ac**	**0.7 ac**
TOTAL (acres)	**0.4 ac**	**0.9 ac**	**132.6 ac**	**114.7 ac**

4.2 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions are actions that may affect projected impacts of a proposal and are not remote or speculative. For this analysis, future actions likely to occur within the 10-year timeframe of the RMP are evaluated. Known future actions analyzed for impacts on resources include:

- Arkansas Valley Conduit
- Pueblo Dam North-South Outlet Works Interconnect
- Increasing growth of Pueblo West
- Continue population increases along the Colorado Front Range
- A supplemental RMP that is currently being prepared for State of Colorado-owned lands within Lake Pueblo State Park
- Continued population growth in the Colorado Springs and Denver metropolitan areas
- Development of Phase II of the SDS Project to meet future water demands

Potential effects associated with the reasonably foreseeable future actions are discussed in the Cumulative Section at the end of this Chapter. Where appropriate, cumulative effects are also discussed below for each resource.

4.3 Paleontological Resources

4.3.1 Affected Environment

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

The geology of the RMP Planning Area reveals about 128 million years of the earth's history. A notable feature captured in this snapshot is the shallow interior seaway, known as the Cretaceous Interior Seaway, which covered eastern Colorado intermittently from 100 to 80 million years ago. The bedrock geology from this time preserves numerous shellfish and other marine animals. One new genus and 20 new species of fossil mollusks that were not previously known have been discovered in the RMP Planning Area. The RMP Planning Area contains the Global Boundary Stratotype Section and Point (GSSP) for the Cenomanian and Turonian stages of the Cretaceous system. The GSSP is an internationally recognized reference point identifying the base of a geologic stage. There are only seven other GSSPs in the United States. The Pueblo GSSP is recognized as the best place to study the

transition between the Cenomanian and Turonian stages, and geologists and paleontologists from all over the world come to study the GSSP the RMP Planning Area (Glasgow 2016).

Reclamation contacted the Bureau of Land Management (BLM) to obtain information concerning the Potential Fossil Yield Classification (PFYC) for paleontological resources within the RMP Planning Area. The PFYC is a system used by the BLM to assess the potential for discovery of significant paleontological resources or the impact of surface disturbing activities on these resources. According to the BLM, the entire RMP Planning Area has a Class 3, or Moderate, PFYC classification.

The geologic formations within the APE are generally known to contain vertebrate fossils and scientifically significant non-vertebrate fossils. The general potential for the proposed actions to impact a significant fossil locality is low but the impact potential is somewhat higher for common fossils. Incorporating appropriate language into all construction contracts that require work stoppage in the event paleontological resources are discovered during ground disturbing activities, further reduces the potential for adverse impacts to paleontological resources. PRPA includes criminal and civil penalties for fossil theft and vandalism on federal lands.

4.3.2 Environmental Consequences

Direct and Indirect Impacts

Paleontological Resource Management

Under the No Action Alternative, there would be no foreseeable impacts to paleontological resources. The potential for impacts to significant paleontological resources as a result of the RMP is negligible. Some actions have a higher potential for impacts depending on location. Many of the proposed new facilities have not been precisely sited or designed at this time. As such, these actions may adversely affect paleontological resources.

Other Resource Management

The potential for impacts to paleontological resources as a result of most of the proposed actions is negligible. However, some actions have a higher potential for impacts depending on location. Many of the proposed new facilities have not been precisely sited or designed at this time. As such, these actions may adversely affect paleontological resources.

Impacts to paleontological resources under the RMP may be slightly greater than effects predicted for the No Action Alternative but would still be considered negligible. This is because of the additional surface disturbing management actions associated with the Proposed Action listed in Table 4.1.

Cumulative Impacts

The cumulative effects to paleontological resources under both alternatives are expected to be minor, positive, and long term as a result of increased management.

4.4 Soils Resources

4.4.1 Affected Environment

Underlying geology in the RMP Planning Area includes sandy clay residuum around Pueblo Reservoir with limestone chip loam along the steeper portions of the cliffs to the south along Rock Creek and Boggs Creek in MU 4. Alluvial deposits are present on the north side of the reservoir along North Marina Road, Juniper Road, and West Fishing Access Road in MU 5. Alluvial deposits are also seen east of Pueblo Dam.

Slope gradients within the RMP Planning Area vary from relatively flat to vertical limestone bluffs. Rock outcrops support special status plant and wildlife species (see Section 4.7 and 4.8) and are unique due to their representation of sedimentation during the Late Cretaceous period and associated paleontological records.

Twenty-three soil classifications are represented within the RMP Planning Area, excluding the SWA. No soils data has been compiled for MU 7. These units are listed in Table 4.2.

Table 4.2-Soil Classifications in the RMP Planning Area*

Soil Classification Units	Area (acres)	Portion of Planning Area (%)
Apishapa silty clay	12	0.09
Arvada-Keyner association	39	0.31
Baca silty clay loam	1	0.01
Bankard sand	185	1.45
Bloom silt loam	51	0.40
Cascajo very gravelly sandy loam, 5 to 25 percent slopes	1,114	8.75
Cascajo-Shale outcrop complex, 5 to 30 percent slopes	75	0.59
Unknown	9	0.07
Glenberg-Haverson complex	239	1.88
Haverson silt loam	88	0.69
Keyner loamy sand, wet	43	0.33
Kim fine sandy loam	251	1.97
Las Animas fine sandy loam	92	0.72
Limon silty clay loam, 0 to 2 percent slopes	67	0.52
Manvel silt loam, 1 to 5 percent slopes	1,923	15.11

Table 4.2-Soil Classifications in the RMP Planning Area*

Soil Classification Units	Area (acres)	Portion of Planning Area (%)
Midway-Shale outcrop complex, 1 to 9 percent slopes	231	1.82
Minnequa-Manvel loams	44	0.35
Otero sandy loam, 1 to 5 percent slopes	319	2.51
Penrose-Minnequa complex, 1 to 15 percent slopes	3,726	29.26
Penrose-Rock outcrop complex, 25 to 65 percent slopes	4,199	32.97
Rocky Ford silty clay loam, wet	7	0.06
Shingle silty clay loam, 1 to 9 percent slopes	13	0.10
Travessilla-Rock outcrop complex, 30 to 9 percent slopes	5	0.04
Total	12,733*	100

*No data available for the SWA (MU 7)
(Source: NRCS 1979)

Erosion potential varies among soil types within each MU and depends on soil type, slope, amount and type of vegetative cover, and the rate of runoff. Typically, soils found on steeper slopes and unvegetated areas have a higher erosion potential. The Penrose-Minnequa complex, 1 to 15 percent slope, and Penrose-Rock outcrop complex, 25 to 65 percent slope, comprise approximately 8,000 acres on the limestone and shale cliffs and slopes. Other potentially high erosion areas include the Travessilla-Rock outcrop complex, but the percentage of this soils type is only in a very small percentage of the RMP Planning Area.

Throughout the RMP Planning Area, soil erosion and loss of vegetation has resulted from both improved and unimproved trails and roads (CPW 2019a). Severe and very severe erosion hazards occur throughout the RMP Planning area. Appendix A includes a map that shows soil erosion hazard classifications within Lake Pueblo State Park (CPW 2019a). Steep slopes cutting through erosive soils in the Liberty Point East (MU 2) and Rock Creek (MU 4) areas have created ongoing maintenance and water quality issues for Lake Pueblo State Park.

The remaining soil types (approximately 1,400 acres) have lower erosion potential. Many are downstream of Pueblo Dam, but some low erosion potential soils are present near the South Marina in MU 1.

4.4.2 Environmental Consequences

Direct and Indirect Impacts

Soil Resources Management

Under the No Action Alternative, soil resources would be generally monitored for erosion. Construction and maintenance activities, as well as existing recreational facilities in erosion prone areas, and drainages would also be specifically monitored for soil erosion issues. Although this monitoring would not have any direct impact on soils, these actions are expected to have indirect minor to moderate beneficial temporary effect on soil resources, if BMPs and other protective actions would be taken in response to noted erosion.

Under the RMP, soil resources would be more specifically monitored for erosion throughout the RMP Planning Area, with an emphasis on high-priority areas. Construction and maintenance activities, as well as existing recreational facilities in erosion prone areas, and drainages would also be specifically monitored for soil erosion issues. Unlike in the No Action Alternative, erosion-control BMPs would be implemented for site-specific construction and maintenance activities and are expected to have indirect and direct moderate beneficial mid-term impacts on soil resources.

Table 4.1, shown previously, estimates temporary and long-term surface disturbance associated with the No Action and Proposed Action Alternatives. Predicted soil resource impacts by MU immediately follows the discussions impacts to soil resources from the management of other resources.

Water Resources Management

Under the No Action Alternative, indirect impacts to soil resources would be minor and beneficial as a result of water resource management actions, in terms of monitoring and maintaining existing grade controls in drainages, assessing unauthorized routes, and maintaining trails.

For the Proposed Action, indirect impacts to soil resources would be moderate and beneficial as a result of water resource management actions. Monitoring and maintaining existing grade controls in drainages, assessing unauthorized routes, and maintaining trails would also continue. Addition beneficial impacts would be expected under the Proposed Action from continuing to develop and implement BMPs and Low Impact Development design elements for storm water controls when developing upgraded facility designs and new public use areas and reclaiming former public use areas. In addition, grade controls to reduce erosion at drainages, including access for maintenance, would continue to be designed and implemented.

Vegetation Resource Management

For the No Action Alternative, direct beneficial impacts would be expected to soil resources as user-created routes and other trails would be assessed for negative impacts to this resource; and if such impacts were addressed through temporary closure or repair. Indirect beneficial impacts to soil resources would be localized and minor, as a result of managing vegetation resources to improve native vegetation cover.

Direct beneficial impacts would be expected to soil resources under the Proposed Action as user-created routes and other trails would be assessed for negative impacts to this resource. If impacts were noted, such routes and trails would be modified or closed to address the impacts. Project-specific plans to minimize impacts to desirable vegetation, as well as project-specific revegetation plans, would provide indirect beneficial impacts to soil resources that would be localized and minor. Use of buffers and riverbank erosion control improvements would also minimize impacts from construction activities. CPW's Lake Pueblo State Park Trail Management Plan (Appendix C) would guide trail management within Lake Pueblo State Park.

Soil Resource Impacts by Management Unit

MU 1 – South Entry

Under the No Action Alternative, only minimal road and trail improvements are expected to occur in MU 1. An estimated 2.0 acres of temporary disturbance and permanent impact of 0.8 acres of soil resources would be affected from associated surface disturbances. Monitoring and maintenance of riverbank erosion control improvements and revegetation and monitoring of disturbed areas are included in the No Action Alternative, which could result in indirect, localized beneficial impacts to soil resources in these areas.

Approximately 73.0 acres of temporary and 66.8 acres of permanent impacts to soil resources are predicted to occur in MU 1 under the Proposed Action. Expansion of the Pueblo State Fish Hatchery and Rearing Facility would permanently affect about 20 acres of soils resources. Construction of a new Fish Cleaning Station on previously disturbed soils and expansion of the maintenance compound would affect a total of 3.5 acres of soil resource including 3 acres of highly erosive soils. Construction of a new South Entrance, redevelopment of campground areas, a new Bogg's Creek trail, and a Valco parking lot connecting trail would affect an additional 38 acres of moderately erosive soils. Revegetation of 1.8 acres would also occur under the Proposed Action in conjunction with closure of a segment of South Marina Road. Additional long-term impacts occur with modification of the Reservoir Road and consolidation of the Park Entry.

MU 2 – Arkansas River Corridor

Under the No Action Alternative, no temporary or permanent construction related impacts are anticipated.

Under the Proposed Action would have long-term effects on approximately 17.8 acres of moderately and/or highly erosive soil resources. Improved trail access to the Arkansas River from Cottonwood Picnic area would disturb 5.1 acres; Anticline Pond, Osprey Trailhead, and picnic area, 0.4 acres; and Valco parking lot connecting trail, 5.3 acres.

MU 3 – Operations

Implementation of the Proposed Action would result in 3.6 acres of permanent impacts from expanding Law Enforcement Weapon range parking and creating additional road access areas. Also, approximately 0.6 acres of soils would benefit from relocation of a woody debris disposal area.

MU 4 – South Shore

Improvements to the Red Gate trailhead would be the only infrastructure improvements under the No Action Alternative. These improvements would result in less than 0.1 acres of soil disturbance.

Under the Proposed Action, implementation of the Lake Pueblo State Park Trail Management Plan (CPW 2019a) would address existing soil erosion problems associated with existing trails. Soil resources would also benefit from revegetation and monitoring success in disturbed areas. New user-created routes and other trails would also be assessed for negative impacts; and addressed through temporary closures or repairs.

About 6.1 acres would also be disturbed under the Proposed Action with construction of a new Bogg's Creek Trail–including a small area of moderately erosive soils. Construction of the Red Gate South Shore trailhead and parking would impact about 30 acres of moderately erosive soils. In addition, construction of recreation access areas, improvements to existing road access; and closure/reclamation of old Highway 96 and conversion to a natural surface ABA/ADA trail, would affect a total of about 0.42 acres of highly erosive and moderately erosive soils.

MU 5 – North Shore
No construction-related surface-disturbing impacts in MU 5 are anticipated under the No Action Alternative.

Approximately 34.7 acres of soil resources in MU 5 under the Proposed Action. This alternative would be affected from removal or paving or removal of the Model Airplane field–comprising 1.3 acres of highly erosive soils; re-purposing existing day use picnic sites at G-Loop and Wagon Wheel Day Use areas as walk-in camp sites; redevelopment of campground areas; additional parking at the North Marina–this area includes 7 acres of moderately erosive soils; relocation of entrance from Juniper Road–this area included almost 10 acres of highly erosive soils; new soft-surface trail connections; addition of soft-surface trail; reconstruction of road and culvert at Kettle Creek Loop; Marina Road widening; and additional recreation access areas. Short-term impacts from construction zones and buffers would be minimized by application of a revegetation plan and project-specific reclamation plan for all planned infrastructure construction and improvements.

Some areas of long term, direct beneficial impacts to soil resources in MU 5 would be expected from elimination and reclamation of the remaining picnic sites at G-Loop and Wagon Wheel Day Use areas; signage and enforcing prohibited parking on shoreline above high-water mark.

MU 6 – Pueblo Reservoir Water Body
Under both the Proposed Action and the No Action Alternatives, minor and indirect beneficial impacts to soil resources would be expected to soil resources in MU 6 due to planned monitoring of bank stability and vegetation along the Arkansas River corridor.

MU 7 – Pueblo Reservoir State Wildlife Area
Under the No Action Alternative, planned monitoring of bank stability and vegetation along the Arkansas River corridor would result in minor beneficial affects to soil resources. User-created routes and other trails would also be assessed for negative impacts to this resource; and if such impacts were addressed through temporary closure or repair, additional beneficial impacts would be expected.

Under the Proposed Action, approximately 0.7 acres of soil resources in MU 7 would be affected as a result of new soft-surface trail connections to Pueblo West; improved existing road access; and re-opening and improvement of wildlife ramps.

Rehabilitating roadbed to a natural surface trail along Old Highway 96 is also expected to result in some benefits to soil resources, although it may comprise areas of highly and moderately erosive soils.

Cumulative Impacts

Cumulative impacts to soil resources under both the Proposed Action and No Action Alternative are anticipated to be negative with some limited increased erosion potential in erosion hazard area. Long-term impacts from loss of soil resource related to ongoing development in the Pueblo West area as well as the recent construction of the Colorado Springs Utilities SDS Project and Pueblo Dam Hydroelectric Project are also predicted. Implementation of BMPs, continued monitoring of high erosion areas, and implementing corrective action when needed would reduce potential impacts to a non-significant level.

4.5 Water Resources

4.5.1 Affected Environment

Water resources within the RMP Planning Area included in this analysis are discussed below and include the following water features and tributaries:

- Arkansas River
- Pueblo Reservoir
- Anticline Pond
- Drainages with confluence with the Arkansas River and Pueblo Reservoir
  - Peck Creek
  - Rock Creek
  - Bogg's Creek
  - Golf course drainage
  - Unnamed drainage swales.

Arkansas River

The Arkansas River flows east through Colorado, Kansas, Oklahoma, and Arkansas to its confluence with the Mississippi River. In Colorado, the native flow in the Arkansas River is augmented with transmountain diversions from the Fry-Ark Project (see Chapter 2), Independence Pass Transmountain Diversion System, Homestake Project, Busk-Ivanhoe project, Blue River Project, and Columbine, Wurtz, Ewing and Larkspur ditches. Approximately 129,000 acre-feet is annually imported into the Arkansas River Basin (Water Education Colorado 2017).

The Fry-Ark Project diverts water from the west slope through the Boustead Tunnel and delivers it to Turquoise Lake. Water from Turquoise Lake is then delivered through the Mt. Elbert conduit to the Mt. Elbert hydropower plant, which discharges into Twin Lakes Reservoir. Water released from

Twin Lakes Dam travels downstream to the Arkansas River via Lake Creek, and then on to Pueblo Reservoir.

Immediately upstream of Pueblo Reservoir, the Arkansas River corridor is the center of the SWA (MU 7). As such, it is a source of surface water and fisheries and supports extensive riparian wildlife habitat. Below Pueblo Reservoir, the Arkansas River corridor again provides aquatic wildlife habitat and supports riparian areas that provide terrestrial wildlife habitat (MU 2). This MU provides recreational opportunities such as an existing swimming beach, fishing, water sports, and a contiguous bike path.

Pueblo Reservoir

Completed in 1974, Pueblo Reservoir is the terminal water storage facility for the Fry-Ark Project. Pueblo Reservoir also stores water for downstream farmers under the Winter Water Program administered by the State of Colorado (during the period November 1st to March 15th). Releases from Pueblo Dam are typically at their lowest during the Winter Water storage period.

Excess capacity storage and exchange contracts also allow for the storage of non-Fry-Ark Project water in Pueblo Reservoir when space is available.

Water levels in Pueblo Reservoir can fluctuate as much as 97 feet based on the Active Conservation Pool to the top of Joint Use Pool storage as shown in Figure 4.5. Storage space for flood control from April 15th to October 31st follows the Army Corps of Engineers Water Control Diagram (ACOE 1994) when the reservoir is lowered to an elevation of 4,880.46 ft.

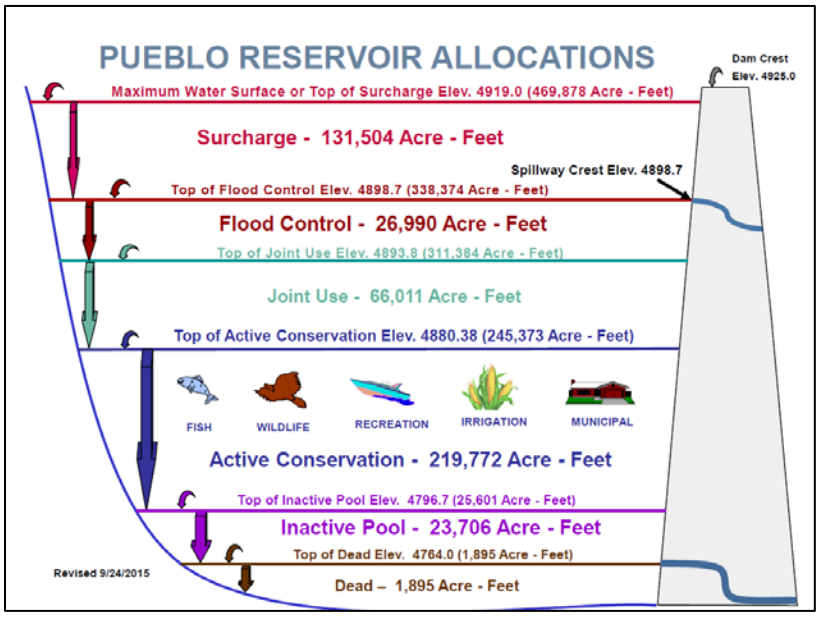

Figure 4.5. Pueblo Reservoir Allocations

Rapid changes in water levels are experienced during seasonal runoff, flood events, and during joint use pool drawdown to meet the April 15 flood storage requirements. Fry-Ark Project operations including Pueblo Reservoir management of Fry-Ark Project and Non-Project water are not subject to the 1981 Plan or the proposed RMP. Reservoir operations are addressed separately through the Fry-Ark Project Annual Operating Plan developed by Reclamation's Pueblo Field Office.

Arkansas River Tributaries

The mainstem of the Arkansas River conveys water to Pueblo Reservoir. However, Bogg's Creek, Rock Creek, and Peck Creek (on the south shore), and Turkey Creek (on the north shore), as well as several unnamed intermittent drainages, also contribute surface water inflow to Pueblo Reservoir (Appendix A). Since Pueblo Reservoir was created, the corridors for these creeks are now back-filled with standing surface water, often forming steep-sided canyons.

Pueblo State Fish Hatchery Return Flows

One of the main features of the fish and wildlife component of the Fry-Ark Project is the fish hatchery below Pueblo Dam. Pueblo State Fish Hatchery has the capability of hatching and raising cold-water, and warm-water fish species for stocking water in Colorado. The State of Colorado directed the design of this state-of-the art facility and assumed the operation, maintenance and replacement costs associated with the hatchery. Through a multi-level outlet system, water for the hatchery is provided from Pueblo Reservoir allowing year-round fish production. Pueblo State Fish Hatchery became operational in Fiscal Year 1998 (Reclamation 1993). The fish Hatchery's return flows play an import role in meeting downstream Arkansas River flow targets below Pueblo Dam during low flow periods.

4.5.2 Environmental Consequences

Direct and Indirect Impacts

Water Resources Management

Both the No Action and Proposed Action Alternative have no effect on Water Resources. Contract No. 14-06-700-8018, the 1981 Plan, and the proposed RMP do not give CPW authority to manage Fry-Ark Project operations, Pueblo Reservoir water levels and reservoir releases. No Action and Proposed Action effects on water quality are discussed in Section 4.6 of this EA.

4.6 Water Quality

4.6.1 Affected Environment

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

Pueblo Reservoir typically stratifies during the summer months, reducing mixing and can lead to periods of low dissolved oxygen near the bottom. When this occurs, manganese, other materials and nutrients will be very soluble and leach out of the sediments.

Downstream of Pueblo Reservoir, the Arkansas River also experiences degraded water quality. Portions of the downstream Arkansas River and associated tributaries are either on Colorado's impaired list or are of concern (CDPHE 2018). Constituents include selenium, sulfate, iron, uranium, as well as E. coli. The presences of radionucleotides are a concern for some Lower Arkansas municipal ground water supplies.

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

In addition, Section 402 of the CWA states that any person who proposes to discharge pollutants from a point source to waters of the United States must apply for a Non-Point Source Discharge Elimination System (NPDES) 402 Permit. In Colorado, the Colorado Department of Public Health (CDPHE) Water Quality Control Division has been delegated to administer the NPDES program for non-federal facilities. CWA 402 permits are also typically required when construction activities require dewatering or discharges into waters of the United States.

4.6.2 Environmental Consequences

Direct and Indirect Impacts

Water Quality

Under the No Action Alternative, existing concession operations, storm water controls, and grade controls would be monitored. Although this monitoring would not have any direct impact on water quality, these actions are expected to have beneficial temporary effects on water quality, if protective actions are taken in response to identified problems.

Under the Proposed Action, implementation of BMPs and Low Impact Development stormwater management and constructing grade controls to reduce erosion in drainages would result in minor to moderate beneficial effects to water quality. Additional indirect beneficial impacts would be expected under the Proposed Action from site-specific trail maintenance activities.

Soil Resources Management

Indirect impacts to water resources under the No Action Alternative would be minor, beneficial, and short to mid-term as a result of monitoring for soil erosion, which can have a detrimental effect on water quality.

Indirect impacts to water resources under the Proposed Action would be moderate, beneficial, and mid- to long-term as a result of inventorying and assessing soil erosion problems in high priority

areas; implementing erosion control strategies; identifying and mitigating erosion issues as a result of recreation facilities; assessing all drainages to identify erosion issues; and, implementing BMPs for site-specific construction and maintenance activities.

Vegetation Resource Management

Indirect impacts to water resources under the No Action Alternative would be minor, beneficial, and short- to mid-term as a result of managing vegetation resources to improve native vegetation cover. This is because increased vegetation cover helps to protect and hold soils in place, reducing soil erosion.

Indirect impacts to water resources under the Proposed Action would be minor, beneficial, and long-term as a result of managing vegetation to enhance native cover, thereby protecting soils from erosion.

Travel Management

Implementation of the No Action Alternative would have indirect minor temporary benefits to water resources due to issuance of a moratorium on special activity requests on unpaved trails and continued assessment the resource impacts of unauthorized trails and possible temporary closures. Implementation of BMPs for special activity requests on unpaved trails and site-specific trail maintenance under the Proposed Action are expected to result in indirect minor beneficial short- to mid-term impacts to water resources.

Recreation and Visitor Services

Indirect impacts to water resources under both alternatives would be minor, beneficial, and long term as a result of providing adequate sanitation and waste management facilities at all improved recreation sites.

Water Quality Impacts by Management Unit

MU 1 – South Entry

No impacts to water quality are expected under both alternatives.

MU 2 – Arkansas River Corridor

Direct impacts to water resources under the No Action Alternative would be minor, beneficial, and short- to mid-term as a result of maintaining riverbank erosion control improvements and monitoring for shoreline erosion.

Direct impacts to water resources under the Proposed Action would be minor, beneficial, and long-term as a result of maintaining riverbank erosion control improvements and developing and implementing a plan for riverbank stability, vegetation, and access. Assessment of impacts of unauthorized uses on resources would be expected to have an indirect minor beneficial mid-term impact on water resources.

MU 3 – Operations

Direct and indirect impacts to water resources under either alternative are expected.

MU 4 – South Shore
Direct minor short- to mid-term beneficial impacts would be expected to water resources in MU 4 under the No Action. User-created routes and other trails would be assessed for negative impacts to the soil and vegetation; and if such impacts were addressed through temporary closure or repair, indirect beneficial impacts would be expected as a result of reduced soil erosion.

Indirect minor long-term beneficial impacts to water resources under the Proposed Action would be expected due to enforcement of dog waste removal and off-leash use; and development and implementation of a revegetation plan and a comprehensive vegetation management plan.

MU 5 – North Shore
In MU 5 under the No Action, user-created routes and other trails would be assessed for negative impacts to soils and vegetation; and if such impacts were addressed through temporary closure or repair, indirect beneficial temporary impacts would be expected as a result of reduced soil erosion. Impacts to water resources under the Proposed Action would be indirect, negligible, and beneficial due to including a project-specific revegetation plan in all planned infrastructure improvement projects.

MU 6 – Pueblo Reservoir Water Body
Minor, direct temporary beneficial impacts to water quality would be expected under both alternatives due to monitoring bank stability, access, and vegetation along the Arkansas River corridor and monitoring for and removing debris as necessary.

MU 7 – Pueblo Reservoir Wildlife Area
Minor, direct beneficial temporary impacts to water resources would be expected under the No Action due to monitoring bank stability, access, and vegetation along the Arkansas River corridor.

Minor, direct beneficial temporary impacts to water resources would be expected under the Proposed Action due to monitoring bank stability, access, and vegetation along the Arkansas River corridor. Minor, indirect long-term beneficial impacts would be expected from development of a comprehensive vegetation management plan and enforcement of recreation vehicle waste dumping and leash regulations.

Cumulative Impacts
Both alternatives are predicted to have little to no cumulative impacts to water resources within the RMP Planning Area. Direct and cumulative effects of Fry-Ark Project operations resources are evaluated and discussed in other sections of this Chapter for each affected resource.

4.7 Vegetation Resources

4.7.1 Affected Environment
The RMP Planning Area is situated at a natural ecotone, in the Arkansas Valley west of Pueblo, which marks the convergence of many singular ecological elements. These include the north-south overlap of shortgrass prairie and desert grassland zones and along the east-west transition between

the plains and the foothills ecosystems. The resulting ecological complex, in combination with the large park area, supports a variety of soil types and topography as well as several regionally rare natural habitats such as riparian, open water, and juniper forests. This results in a higher level of biodiversity than that typically found at other Colorado State Parks (CPW 2017). Rock outcrop features in the RMP Planning Area support abundant wildlife, including rare bird species, and have high educational value due to their representation of sedimentation that occurred during the Late Cretaceous period and the paleontological records they contain.

Ecological transitions, topographic and climatic factors, as well as a wide range of soil types (previously discussed in Section 4.4) are key physical factors that result in the diverse vegetation communities and habitats found within the RMP Planning Area. Regionally rare natural habitats occur in both Lake Pueblo State Park and the SWA.

Vegetation resources were assessed and mapped in the RMP Planning Area in 2010 (Ecotone 2010). Further assessment of vegetation resources for the RMP Planning Area were conducted in 2011 by Land Stewardship Consulting, Inc. and Biohabitats, Inc. Vegetation mapping and assessment did not include the MU 7, small areas on the north side of MU 5, and the western edge of MU 3. Data for these areas were obtained from the National Land Cover Dataset (NLCD 2011). General vegetation types within the RMP Planning Area are illustrated in Appendix A- Vegetation Map and presented below in Table 4.3.

Desert, prairie, foothills, and riparian shrublands account for approximately 24 percent of the RMP Planning Area. The distinctions between different shrubland communities are based on the relative dominance of representative shrub species. Foothills shrublands are distinguished by mountain mahogany and Gambel oak, with infrequent, scattered juniper trees. Juniper woodlands represent about 7 percent of the RMP Planning Area and are dominated by oneseed juniper, smaller amounts of piñon pine and mountain mahogany, and a sparse shortgrass prairie type understory. This community occurs primarily along canyon rims and is especially common on south-facing slopes. Piñon pine density within this community generally increases with elevation.

The condition of upland grasslands, shrublands, and woodlands varies considerably throughout the RMP Planning Area. Some areas of desert shrubland and shortgrass prairie remain relatively undisturbed and are vegetated with a diversity of primarily native species, and so are assessed as in excellent condition. Nearly all other upland vegetation types were assessed as in good or fair condition, although localized areas dominated by weeds were classified as in poor condition.

Riparian and Wetland Vegetation

Riparian and wetland communities occur in areas of elevated soil moisture typically associated with water, most often adjacent to surface water. However, a few seeps of subsurface water do support small wetland pockets. These areas include the banks of the Arkansas River; several creeks, including Bogg's Creek, Rock Creek, Peck Creek, and Turkey Creek; and unnamed drainages, recreation pond shorelines, ditch banks, seep areas, the Pueblo Reservoir shoreline, and the drawdown zone (Appendix A-Vegetation Map).

Riparian shrublands, largely dominated by coyote willow, with far smaller amounts of other willows, represent 17 percent of the RMP Planning Area. The understory of these shrublands includes a sparse cover of grasses such as bluegrasses and slender wheatgrass. Riparian woodlands are

Table 4.3-RMP Planning Area Vegetation Communities, Facilities, and Surface Disturbance Areas

Community	Area* (acres)	Portion of Planning Area (%)
Barren lands	38	<1
Desert grassland	423	2
Prairie grassland	11,180	54
Desert shrubland	330	2
Foothills shrubland	24	<1
Prairie shrubland	1,002	5
Riparian shrubland	3,525	17
Juniper woodland	1,529	7
Riparian woodland	724	4
Emergent herbaceous wetlands	294	1
Non-native/weedy	264	1
Surface disturbance	1,024	5
Facilities	299	1
Total	20,656	100

*includes equivalent community types delineated in the SWA (MU 7) and other areas noted in text.

distinguished by the presence of trees, including plains and narrowleaf cottonwood and peachleaf willow, with far fewer individuals of Siberian elm, white mulberry, hackberry, honey locust, and green ash. A sparse herbaceous understory in these tree stands includes the riparian shrublands species noted above. Some small, localized areas of these woodlands also comprise a more complex understory with a complement of riparian shrubs.

The wetland and riparian communities in the RMP Planning Area appear to be in fair condition but are affected by changes in flood magnitude and frequency that may jeopardize the long-term viability of this resource (CSP 2006). Historically, frequent flood events on the Arkansas River supported regeneration of native willows and cottonwoods by depositing seeds in newly exposed sediments along the floodplain. The availability of substrate at the time of seed release in spring and early summer contributed to seed germination and sapling establishment. Cottonwoods and willows are less successful now because the dam regulates water flow and prevents natural flooding. This is reflected in the skewed age class of trees in the riparian woodland communities where few, if any, sapling and young trees growing to replace older individuals. The lack of flooding has also allowed

tamarisk (salt cedar), an invasive exotic species that cannot survive long periods of inundation, to establish in riparian and wetland communities (CPW 2017).

The total acres and percentages of RMP Planning Area vegetation condition classes are shown in Table 4.4. Vegetation conditions are based on a 2010 vegetation assessment and 2012 weed inventory (of Lake Pueblo State Park. Additional detail can be found in the Draft Lake Pueblo State Park Stewardship Plan (CPW 2017).

Table 4.4- RMP Planning Area Vegetation Condition Class*

Condition Class	Area* (acres)	Portion of Planning Area (%)
Excellent	125.4	1.3
Good	3,927.7	42.1
Fair	1,752.4	18.8
Poor	601.7	6.4
Unclassified	2,931.9	31.4

*does not include the SWA (MU 7) and other areas noted in text.

Special Status Vegetation Species

No federally listed Endangered Species Act (ESA) plant species are known to occur in Pueblo County. However, the Colorado Natural Heritage Program (CNHP) identified six rare plant species and five significant natural communities known to occur within the RMP Planning Area (Table 4.5). Three of these plant species—golden blazing star (*Mentzelia chrysantha*), Arkansas River feverfew (*Bolophyta tetraneuris*), and Pueblo goldenweed (*Oonopsis puebloensis*)—are adapted to the same type of habitat and are therefore often found in proximity. Suitable habitats include barren slopes and road cuts in limestone, shale, or alkaline clay above the Arkansas River (CSU 2019). In general, the SWA (MU 7) is considered one of the best sites in Colorado for these Arkansas River-endemic plants (Dr. Sylvia Kelso, pers. comm.; in Colorado State Parks 2006).

Table 4.5- Rare Plants and Significant Plant Communities Present in RMP Planning Area

Common Name	Scientific Name	Global Status[1]	Present in Planning Area
Golden Blazinstar	*Mentzelia chrysantha*	Imperiled	Yes
Pueblo Goldenweed	*Oonopsis puebloensis*	Imperiled	Yes
Round-leaf Four-o'clock	*Oxybaphus rotundifolius*	Imperiled	Yes
Arkansas River Feverfew	*Parthenium tetraneuris*	Vulnerable	Yes

Table 4.5- Rare Plants and Significant Plant Communities Present in RMP Planning Area

Common Name	Scientific Name	Global Status[1]	Present in Planning Area
Dwarf Milkweed	*Asclepias uncialis* subsp. *uncialis*	Imperiled	Yes
Showy Prairie Gentian	*Eustoma grandiflorum*	Vulnerable/ Apparently Secure	Yes
Community Type	Associated Species	Global Status	
Foothills Shrubland	*Frankenia jamesii/Achnatherum hymenoides*	Imperiled	Yes
Plains Escarpment Prairie	*Artemisia bigelovii/Achnatherum hymenoides*	Imperiled	Yes
Great Plains Mixed-grass Prairie	*Hesperostipa neomexicana*	Imperiled	Yes
Shortgrass Prairie	*Bouteloua gracilis/Pleuraphis (Hilaria) jamesii*	Imperiled	Yes
Foothills Piñon-juniper Woodlands	*Juniperus monosperma/Bouteloua gracilis*	Critically Imperiled	Yes

[1]CNHP (2016) status only. No plant species listed under ESA are known to occur in Pueblo County, nor the RMP Planning Area.

These species and plant community occurrences are currently in good condition, but because they are restricted to limited habitat types and ranges, these ecological resources are continually threatened by potential disruption by encroachment of noxious weeds as well as physical disturbance or destruction of their restricted habitat substrates.

Golden Blazingstar

This forb is Colorado endemic and member of the loosestrife family. Known occurrences are limited to Fremont and Pueblo Counties, in the Arkansas River Valley between Cañon City and Pueblo. Known populations are restricted to barren slopes of limestone, shale, or clay, primarily on the Smoky Hill member of the Niobrara shale, at elevations of 4,751 to 6,854 feet. The habitat of golden blazing star consists of moderately disturbed, wasting slopes such as those above the Arkansas River. Slopes are usually moderately steep in the shale barrens; no particular aspect is favored. This species occupies slopes and road cuts, where it grows prolifically and is often the only plant species growing in large numbers (CNHP 2016).

Pueblo Goldenweed

A perennial subshrub, Pueblo goldenweed, is endemic to Colorado, known only from occurrences in Fremont and Pueblo counties at elevations of 4,800 to 5,500 feet. This member of the sunflower

family was identified as a distinct taxon in 1982 (CNHP 2007). It occurs in outwash deposits adjacent to Niobrara shale outcrops, especially the Smoky Hill shale member (CNHP 2016). Population sizes range from less than one hundred to thousands of individuals. It colonizes small washes or barren areas on toe-slopes associated with shale bedrock and adjacent alluvium. It can be quite weedy when associated with roads and tends to establish well in moderately disturbed roadside habitat (CNHP 2016).

Round-leaf Four- o'clock

This perennial forb is a member of the four-o'clock family. Round-leaf four- o'clock is endemic to Fremont and Pueblo counties, with a single disjunct occurrence in Las Animas County, Colorado. It is restricted to barren, shale-rock habitat between 4,800 to 5,600 feet in elevation. It is primarily found on the Smoky Hill shale member of the Niobrara Formation, although several occurrences have been noted in Carlile and Pierre shales (CNHP 2016). It does not tend to occur on road cuts, although it is found in areas adjacent to roads that were not impacted during construction.

Arkansas River Feverfew

This perennial species is a member of the sunflower family. As with the three species above, it is a narrow endemic, limited to known occurrences in the Cañon City-Fort Carson-Pueblo area of Colorado, with a single disjunct location in Salida (CNHP 2016). Arkansas River feverfew occurs primarily on the Niobrara Formation although it has also been documented to occur on various shale layers, including Pierre and Graneros. A notably large population, consisting of tens of thousands of individuals of Arkansas River feverfew occurs in the SWA (MU 7). This population was first observed more than 50 years ago, indicating excellent viability within the population.

Dwarf Milkweed

Dwarf milkweed is a member of the milkweed family. Historically, this species appears to have been found in two or three disjunct geographical areas: 1) the western Great Plains of eastern Colorado, northeastern New Mexico, and the adjacent Oklahoma panhandle; 2) central to southwestern New Mexico and scattered locations in Arizona; and 3) Sweetwater County in southwestern Wyoming. This small plant is found in small populations throughout most of its range. The known population within the RMP Planning Area is one of the largest (Decker 2006). This species occurs in shortgrass prairie, often on well-draining sandstone-derived soils and gravelly or rocky slopes at elevations of 4,000 to 6,500 feet.

Showy Prairie Gentian

This very large-flowered perennial species is a member of the gentian family. Like dwarf milkweed, this species has a much larger geographical range, found in South Dakota to Texas and Mexico. In Colorado, known populations occur in Adams, Arapahoe, Boulder, Denver, Fremont, Jefferson, Kiowa, Larimer, Logan, Morgan, Prowers, Pueblo, Sedgwick, Weld and Yuma counties.
Unlike the other plant species described above, this species is found associated with mesic habitat along streams, in wet meadows, pastures, and fields, near old stream meanders or at the margins of lakes or ponds. These populations often occur in alkaline soils. The elevation range of showy prairie gentian is 3,500 to 6,000 feet.

Foothills Shrubland Community

This community is characterized by an unusual association of James' seaheath and Indian ricegrass on cliffs and outcrops from the shortgrass prairie of the Middle and Upper Chalk members of the Smokey Hills Member of the Niobrara Formation (CNHP 2016). These outcrops support four of the rare plant species (golden blazingstar, Pueblo goldenweed, Arkansas River feverfew, and round-leaf four o'clock) described above.

Plains Escarpment Prairie Community
This association of sparse Bigelow sagebrush and Indian ricegrass is found in southeastern Colorado on breaks and shale plains in shortgrass prairie. Soils are typically shallow, well-drained, calcareous loams and clay loams, derived from limestone, sandstone, shale, and alluvium. The soil surface has high cover of bare soil and rock (CNHP 2016).

Great Plains Mixed-grass Prairie Community
This grassland community, dominated by New Mexico feathergrass, occurs in small areas within the RMP Planning Area and represents a prairie species community more common farther north in Colorado and up into Wyoming, Montana, and the Dakotas. This community is dominated by grasses, including New Mexico feathergrass, which prefer well-drained rocky soils.

Shortgrass Prairie Community
Although the most common vegetation community within the RMP Planning Area, this grassland is considered much reduced from historic distributions and is not considered secure within Colorado. Once widespread, this vegetation community occurs throughout the intermountain western U.S. on dry plains and mesas. These grasslands occur in lowland and upland areas and may occupy swales, playas, mesa tops, plateau parks, alluvial flats, and plains. Sites are typically xeric. Substrates are often well-drained sandy- or loamy-textured soils derived from sedimentary parent materials but are quite variable and may include fine-textured soils derived from igneous and metamorphic rocks. When they occur near foothills grasslands they are at lower elevations. The dominant perennial bunchgrasses, including blue gramma and galleta grass, within this community are all very drought-resistant plants (CNHP 2016).

Foothills Piñon-juniper Woodlands Community
Oneseed juniper is the dominant tree species in this local woodland community, where blue gramma grass is the dominant herbaceous species in the understory. This southern Rocky Mountain ecological system occurs on dry mountains and foothills in southern Colorado, in mountains and plateaus of northern New Mexico and Arizona, and extends out onto breaks in the Great Plains. In Colorado, the southern Rocky Mountain pinyon-juniper woodlands are found in the south-central part of the state, around the San Luis Valley, southern mountain front east to Mesa de Maya, and north to the Arkansas River Valley and Palmer Divide (CNHP 2016).

These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of pinyon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay.

Noxious Weeds

Noxious weeds are designated under the Federal Noxious Weed Act, Plant Protection Act of 2000 (7 USC 7701 et seq.), and Colorado Noxious Weed Act of 1996 and include the most invasive and most problematic species. As noxious weeds increase, they reduce the diversity of surrounding native plant communities, alter species composition and community structure, reduce wildlife habitat quality, and affect the aesthetic quality of the landscape. Noxious weeds can also displace desirable plant species in rangeland (Usher 1988, USFS 1998, Weiss and Murphy 1998, CNAP 2000) and can adversely affect forage quality and quantity for livestock.

Noxious weeds at Lake Pueblo State Park were mapped by Land Stewardship Consulting and Biohabitats (2011) but did not included the SWA. Noxious weeds known to occur in the RMP Planning Area are listed in Table 4.6. Their distributions are illustrated in Appendix A-Noxious Weed Map.

Table 4. 6-State Listed Noxious Weeds Mapped in the RMP Planning Area

Common Name	Scientific Name	State Weed List[1]
Blue mustard	*Chorispora tenella*	NL[2]
Bull thistle	*Cirsium vulgare*	B
Burdock	*Arctium minus**	C
Canada thistle	*Breea arvensis**	B
Cheatgrass	*Anisantha tectorum*	C
Crane's bill	*Erodium cicutarium*	C
Field bindweed	*Convolvulus arvensis*	C
Flixweed	*Descurainia sophia*	NL
Hoary cress	*Cardaria draba**	B
Houndstongue	*Cynoglossum officinale**	B
Kochia	*Kochia sieversiana*	NL
Mullein	*Verbascum thapsus*	C
Musk thistle	*Carduus nutans**	B
Perennial pepperweed	*Lepidium latifolium*	B
Plumeless thistle	*Carduus acanthoides**	B
Puncturevine	*Tribulus terrestris*	C
Quackgrass	*Elytrigia repens*	NL
Redstem filaree	*Erodium cicutarium*	C
Russian thistle	*Salsola iberica*	NL
Russian olive	*Elaeagnus angustifolia*	B
Tamarisk	*Tamarix ramosissima*	B

*on Pueblo County priority weed list

[1]Colorado weed list definitions:

A - designated for eradication

B - state management plans, designed to stop continued spread

C - jurisdictions may choose to require management

[2]NL - species no longer on Colorado noxious weed list, but mapped during weed surveys

Cheatgrass and hoary cress (whitetop) were introduced and are well established in the RMP Planning Area. Hoary cress spreads by creeping underground stems, making it difficult to control. Canada thistle, Russian-olive, and tamarisk in wetland and riparian areas are also problematic.

Russian knapweed, a very aggressive Colorado B-list noxious weed is not currently present in the RMP Planning Area. However, it has been in gravel pits outside the RMP Planning Area boundary (Carpenter, 2011). Yellow star thistle (Colorado A-list) has infested millions of acres in California but is still rare in Colorado. This species has recently been found and removed from an area just south of the town of Pueblo (Scott Cotton, pers. comm.; in Colorado State Parks 2006). Both of these weeds have the potential to profoundly impact natural resources if they become established in the RMP Planning Area.

4.7.2 Environmental Consequences

Direct and Indirect Impacts

Impacts to upland vegetation can occur by the disruption or removal of roots which can result in: 1) reductions in areas of native vegetation; 2) reductions of total numbers of plant species (species richness); and/or 3) reductions or losses of total area, diversity, structure, and/or function of wildlife habitat.

Impacts to riparian/wetland vegetation can also increase sedimentation and soil and bank erosion, resulting in changes to stream channel morphology. In general, the larger the area disturbed, the greater the potential for direct and indirect impacts.

A number of other impacts are also possible under both the No Action and Proposed Action alternatives impacts including: 1) disruption or reduction of pollinator populations; 2) loss of habitat suitable for colonization due to surface disturbance; 3) introduction of noxious weeds by various vectors or conditions that enhance the spread of weeds; and 3) general loss of habitat due to surface occupancy, surface compaction, or trampling. Upgradient disturbances can also result in sediment deposition in occupied habitat and/or potential habitat for sensitive plant species. Failed revegetation efforts can also impact this resource.

Impacts to riparian/wetland areas include: 1) disruption of hydrological processes; 2) decreased ability to trap sediments and nutrients and moderate surface flow, 3) decreased infiltration for groundwater recharge; 4) increased run-off; and 5) concentrate wildlife use in less-impacted riparian/wetland areas.

Vegetation Resource Management

Under the No Action Alternative, approximately 264 acres of non-native/weedy upland vegetation; 1,752 acres of vegetation classified as fair condition; and, 602 acres classified as poor condition are expected to continue. Existing populations of the 16 State-listed noxious weed species in Table 4.6 would continue to expand. New infestations may also occur.

Under the Proposed Action, minor to moderate beneficial impacts are predicted. Project-specific plans would be required to minimize disturbances to native and other desirable vegetation communities during planning and implementation of all surface-disturbing activities. Project-

specific restoration plans would specify re-seeding requirements with native plant species and interim/long-term noxious weed control. In addition, control of off-leash dog use would provide indirect and beneficial impacts to vegetation resources.

Taken together, enhancement of noxious weed management through Reclamation's Integrated Pest Management Plan (Reclamation 2015), opportunities for partnerships to fund and/or collaboratively conduct noxious weed control projects, application of specific BMPs to eliminate/reduce the spread of noxious weeds species, and requirements for use of weed-free seed and mulch for revegetation of surface-disturbing activities would be expected to reduce existing areas of noxious weed populations, as well as prevent introduction of new species.

Special status plant species and significant plant communities would likely experience negligible impacts under the No Action Alternative. An exception would be if these populations, or their habitat, were invaded by new or expanding noxious weed populations which would result in minor to moderate, localized adverse impacts to vegetation resources.

Under the Proposed Action, special status plant species and significant plant communities would benefit from the development and implementation of special status species management plans.

Soil Resources Management
Under the No Action Alternative, soil resources would be generally monitored for erosion. These actions are expected to have a minor to moderate beneficial impacts to vegetation resources, if BMPs and other protective actions are taken in response to any noted soil erosion.

Under the Proposed Action, indirect, moderate beneficial impacts would be expected to vegetation resources from assessments for soil erosion issues and implementation of control strategies and BMPs; implementation of BMPs for site-specific construction and maintenance activities; and, evaluation of all drainages to identify stability and erosion issues, causes and solutions.

Wildlife and Aquatic Resource Management
Impacts to vegetation resources from management of wildlife resources under both alternatives would largely be negligible. However, some additional localized benefits to riparian/wetland vegetation could be expected from management of shoreline areas to protect avian habitat under the Proposed Action.

Travel Management
Because adverse impacts to vegetation resources from unauthorized user-created routes and trails would be assessed, but not corrected under both the No Action and Proposed Action Alternatives, some localized adverse impacts to vegetation resources, including special status plant species, would continue.

Design and implementation of xeriscape landscaping under the Proposed Action, with an emphasis on native plants in medians and parking areas, and at trailheads would moderately benefit vegetation resources.

Recreation and Visitor Services

Impacts to vegetation resources from the management of recreation and visitor services under the No Action and Proposed Action Alternatives are discussed below by each MU.

Vegetation Resource Impacts by Management Unit

MU 1 – South Entry

Under the No Action Alternative, no changes to existing infrastructure such as buildings, and minimal road and trail improvements are included in MU 1. About 1.9 acres of temporary disturbance and less than an acre of permanent impacts to vegetation resources from associated surface disturbances would be expected. In addition, the monitoring and maintenance of existing riverbank erosion control improvements, revegetation efforts, and the monitoring of previously disturbed areas are included in the No Action Alternative, which all would benefit riparian and wetland vegetation.

Under the Proposed Action, long-term, adverse impacts would be expected to about 64 acres of vegetation from the expansion of the Fish Hatchery–including four acres of good condition grassland; Fish Cleaning Station, and Maintenance Shop Compound; new South Entrance–this area is comprised of 32 acres of vegetation classified as in good condition; redeveloped campground areas; a new Bogg's Creek Trail; a new pedestrian bridge, in an area of good condition prairie shrubland and riparian woodland; and new trail connection from Valco Parking. This would be offset by approximately 1.8 acres of revegetation due to the closure of a segment of South Marina Road. Additional long-term impacts would be expected from the completion of the widening of South Marina Road; modification of the Reservoir Road, and consolidation of the Park Entry. Short-term impacts from construction zones and buffers would be minimized by application of a revegetation plan and riverbank erosion control improvements. These impacts are expected to be moderate.

MU 2 – Arkansas River Corridor

Under the No Action Alternative, Federal Highway Administration (FHWA) road and trail improvements would result in 1.7 acres of temporary impacts to vegetation resources. About 1 acre of vegetation resources would be permanently affected.

Under the Proposed Action, approximately 15.5 acres of vegetation resources would permanently be impacted from the Rock Canyon Swim beach renovation; improved trail access to the Arkansas River from Cottonwood Picnic area–this area includes good condition riparian shrubland and riparian woodland; Anticline Pond, Osprey Trailhead, and picnic area; new trail connection at Valco parking lot; and, additional road access areas. Short-term impacts from construction zones and buffers would be minimized by application of a revegetation plan and riverbank erosion control improvements. These impacts are expected to be moderate.

MU 3 – Operations

Management actions under the No Action Alternative would result in negligible impacts to vegetation resources.

Beneficial impacts to vegetation resources would be expected to approximately 0.6 acres under the Proposed Action from relocation of current woody debris disposal area. Approximately 3.6 acres vegetation resources would be adversely impacted from expanding parking at the Law Enforcement

Weapon range; developing trail connection to the CPW Honor Farm property; and additional road access areas. Temporary impacts to vegetation resources would occur in construction zones. Project-specific revegetation and restoration plans would be designed for all planned infrastructure construction and improvements to minimize impacts to vegetation resources.

MU 4 – South Shore
Under the No Action Alternative, improvements to the Red Gate trailhead would result in 0.2 acres of temporary impacts and 0.1 acres of permanent impacts. Adverse impacts to vegetation resources would also likely continue because from unauthorized user-created routes and trails. Revegetation and monitoring revegetation success in disturbed areas would also benefit vegetation resources.

Under the Proposed Action, approximately 6.1 acres of vegetation would be adversely affected from construction of a new Bogg's Creek Trail–this area includes prairie shrubland in good condition; the Red Gate South Shore trailhead and parking–including 2.6 acres of grassland and 3 acres of shrubland, both in good condition; construction of recreation access areas; and improvements to existing road access. Short-term impacts from construction zones and buffers would be minimized by application of a revegetation plan and comprehensive vegetation management plan. These impacts are not expected to be significant.

MU 5 – North Shore
FHWA road and trail improvements would be the only surface-disturbing impacts in MU 5, under the No Action Alternative. Temporary impacts to 1.9 acres and permanent impacts to 0.8 acres of vegetation resources are predicted.

For the Proposed Action Alternative, moderate adverse impacts 25.8 acres of vegetation are predicted from: 1) paving the Model Airplane field–comprising 1 acres of good condition grassland; 2) re-purposing existing day use picnic sites at G-Loop and Wagon Wheel Day Use areas as walk-in camp sites; 3) redevelopment of campground areas; 4) additional parking at the North Marina–including 5 acres of grassland and shrubland; 5) a new soft-surface trail connection; 6) reconstruction of road and culvert at Kettle Creek Loop; 7) Marina Road widening; 8) relocation of the entrance from Juniper road to along North Marina Road–this area included over 10 acres of good condition grassland and shrublands; and 9) development of additional recreation access areas. Short-term impacts from construction zones and buffers would be lessened with the implementation of revegetation plans and project-specific restoration plans for all ground disturbing activities.

In addition, the closure and restoration of picnic sites at G-Loop and Wagon Wheel Day Use areas and signing and enforcing prohibited parking on shoreline above high-water mark are expected to result in beneficial impacts to vegetation in MU 5 under the Proposed Action.

MU 6 – Pueblo Reservoir Water Body
Under both the No Action and Proposed Action Alternatives, monitoring of bank stability and vegetation along the Arkansas River corridor would benefit both vegetation and soil resources.

MU 7 – Pueblo Reservoir SWA

Under the No Action Alternative, no changes to existing buildings, roads or trail would occur with the SWA.

Impacts to soil resources under the Proposed Action would be minor, resulting in less than an acre of vegetation resource impacts from new soft-surface trail connections to Pueblo West, improved existing road access, and re-opening and improvement of wildlife ramps. Impacts from construction zones and buffers would be minimized by development and implementation of revegetation plans.

Some long-term beneficial effects on soil resources are expected to occur from rehabilitating the roadbed to a natural surface trail along Old Highway 96 and the development and implementation of bank stability, vegetation and access plan to the Arkansas River.

Cumulative Impacts

Cumulative impacts to vegetation resources under both the No Action and Proposed Action Alternatives are expected from disruption or removal of vegetation associated with Pueblo West expansion and adjacent State of Colorado-owned lands within RMP Planning Area. The implementation of vegetation BMPs included in Appendix D would assist in reducing and/or mitigating potential impacts to vegetation resources to an acceptable level.

4.8 Aquatic and Wildlife Resources

Title 33 of Colorado Revised Statues 33-1-101 declares that 1) it is the policy of the State of Colorado that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of Colorado and its visitors, and 2) all wildlife not lawfully acquired and held by private ownership are property of the state.
Wildlife resources within the RMP Planning Area are discussed in the following sections, grouped by type—aquatic, terrestrial and special status.

4.8.1 Affected Environment

Aquatic Resources

Anglers are attracted by the warm- and cold-water fishing opportunities along the Arkansas River and in Pueblo Reservoir. Fisheries species include walleye, wiper, large and smallmouth bass, black crappie, channel catfish, and rainbow trout. CPW manages fisheries and collects aquatic resource data. Reservoir species include black crappie, blue catfish, channel catfish, common carp, cutbow, flathead catfish, largemouth bass, rainbow trout, walleye, wiper, white sucker (CPW 2019b). Fish species found in the Arkansas River include brown trout, rainbow trout Snake River cutthroat trout, cutbow, and saugeye (CPW 2019c).

CPW is responsible for operation, maintenance and replacement of the Pueblo State Fish Hatchery constructed by Reclamation as part of the Fry-Ark Project under the lease. The hatchery rears both warm- and cold-water species for stocking in Pueblo Reservoir and other waters in Colorado. The fish hatchery was constructed in two phases. Phase I was completed in 1988 and consists of the constructed fish hatchery building and complex. Phase II facilities were designed by the State of

Colorado, completed in 1994 and consist of 3 micro screens, a solar pond, 4 concrete raceways, 32 fish rearing ponds, 2 effluent ponds, pipelines, monitoring equipment, and fencing (Reclamation 2017).

Aquatic Nuisance Species

Lake Pueblo State Park conducts inspections for aquatic nuisance species in compliance with the State of Colorado Aquatic Nuisance Species (ANS) Act. ANS are defined as exotic or nonnative aquatic wildlife or any plant species that have been determined to pose a significant threat to the Colorado aquatic resources or water infrastructure. The Act makes it illegal to possess, import, export, ship, transport, release, plant, place, or cause an ANS to be released. The rules require mandatory watercraft inspection, and if necessary, decontamination of all boats coming in from out of state, leaving known positive waters in Colorado, and those boats entering a high-risk water where inspections and decontaminations are required by the managing agency. Two ANS inspection units are in the RMP Planning Area, at the north and south shore marinas. There is an additional boat ramp at the SWA. This boat ramp was closed in 2007 but may be opened in the future based on demand and CPW's ability to inspect all boats for ANS at this location.

Pueblo Reservoir has previously tested positive for zebra and quagga mussel larvae (veligers) through microscopic analysis of water samples. Previous detections confirmed zebra mussel veligers (Dreissena polymorpha) in 2007 and quagga mussel veligers (D. bugensis) in 2007, 2008, 2009 and 2011. No adult phases of either species have been detected. Pueblo Reservoir was de-listed for zebra mussels in January 2014 and for quagga mussels in January 2017 under the western regional standards for listing and de-listing water bodies following five years of negative sampling and inspection results.

Eurasian watermilfoil (Myriophyllum spicatum) is another ANS species known to occur in Pueblo Reservoir. The plant forms dense mats on the water surface. The Colorado Department of Agriculture requires management of this species, per the Colorado Noxious Weed Act. Watercraft inspection and decontamination containment programs are in place and existing populations of Eurasian milfoil in Pueblo Reservoir are controlled with herbicides.

Waterflea (Daphnia lumholtzi) was detected by CPW at the Pueblo Hatchery in 2013. CPW is currently reviewing past records to determine relative statewide distribution and working with the Fish Health Board to evaluate this species.

Terrestrial Wildlife Resources

Terrestrial wildlife resources in the RMP Planning Area are in fair to good condition, with relatively high diversity overall due to the combined presence of prairie grassland, prairie shrubland, juniper woodland, and riparian shrubland.

The RMP Planning Area supports several populations of large mammals, including bighorn sheep, pronghorn, mule deer, white-tailed deer, elk, mountain lion, black bear, coyote, and bobcat (CPW 2017). Big game GIS data show the mule deer winter range extends over the entire RMP Planning Area (CPW 2019d). The general range for white-tailed deer is all along the riparian corridor of the Arkansas River and the edges of Pueblo Reservoir. Bighorn sheep and elk utilize portions of the

RMP Planning Area south of the Arkansas River and Pueblo Reservoir as part of their overall range. Small mammals present include pocket gopher, deer mouse, vole, and ground squirrel.

The RMP Planning Area is in the central flyway for migratory birds, and in early spring and late fall is utilized by many different species of water birds, shorebirds, and waterfowl. Common species include Canada goose, snow goose, mallard, blue and green-winged teal, northern shoveler, gadwall, northern pintail, and lesser scaup. Non-game species, such as Great blue heron and American white pelican, are known to utilize open water within the RMP Planning Area.

Hunting is excluded in the developed areas of Lake Pueblo State Park in MU 1, 2 and 5 from the Tuesday after Labor Day through the Friday prior to Memorial Day. Within the SWA, CPW manages hunting for deer, rabbit, turkey, dove, waterfowl and scaled quail. Hunting methods are limited to shotguns and archery for all area within the RMP Planning Area that are open to hunting.

The RMP Planning Area is popular for bird watching. The SWA has been nominated as an Important Bird Area by the Audubon Society due to special physical features such as open water, the presence of two heronries, and limestone bluffs, as well as the documented high level of bird species diversity. Non-game birds readily observed include turkey vulture, harrier, red-tailed hawk, American kestrel, magpie, meadowlark, American robin, red-winged blackbird, killdeer, and American avocet. In addition, raptor nests can be found throughout Lake Pueblo State Park and the SWA with a majority occurring along the Arkansas River below Pueblo Dam and upstream tributaries that drain into Pueblo Reservoir (CPW 2017, CPW 2019d). Active raptor nests include bald eagle, golden eagle, osprey, red-tail and Cooper's hawks, prairie falcon, American kestrel, and great-horned and burrow owls.

Common reptile species in the RMP Planning Area include bullsnakes, rattlesnakes, sagebrush lizards, western terrestrial garter snakes, blackneck garter snakes, and the triploid checkered whiptail. Amphibians include bullfrogs, which are an introduced species, are common, which may preclude the presence of northern leopard frogs, a special status species.

Special Status Species

Reclamation informally consulted with U.S. Fish and Wildlife Service and requested a list of federally threatened, endangered, and candidate species (USFWS 2019). A total of fourteen federal and state special status wildlife species were identified as having potential to occur within the RMP Planning Area are listed in Table 4.7. Reclamation determined potential for these species to occur within the RMP Planning Area based on the habitat requirements for each species obtained from the U.S. Fish and Wildlife Service's Environmental Conservation Online System accessed at: https://ecos.fws.gov/ecp/.

Some special status species are relatively common species, such as the black-tailed prairie dog, and occur where prairie grassland is present. Other special status species are limited to one or a few observations. The southern redbelly dace and the northern leopard frog were documented historically in the RMP Planning Area but no recent records of occurrence for these species exist, and they no longer occur in the RMP Planning Area. Six special status species are known to occur in the RMP Planning Area or regionally, are briefly described below.

Table 4. 7-Special Status Species

Common Name	Binomial	Status[1]	Habitat Present in RMP Planning Area
Black-footed ferret	*Mustela nigripes*	Federal Endangered	No
Canada lynx	*Lynx canadensis*	Federal Threatened	No
Mexican spotted owl	*Strix occidentalis lucida*	Federal Threatened	No
American peregrine falcon	*Falco peregrinus anatum*	CO Special Concern	Yes
Bald eagle	*Haliaeetus leucocephalus*	CO Special Concern	Yes
Black-tailed prairie dog	*Cynomys ludovicianus*	CO Special Concern	Yes
North American wolverine	*Gulco luscus*	Federal Proposed Threatened	No
Burrowing owl	*Athene cunicularia*	CO Threatened	Yes
Mountain plover	*Charadrius montanus*	CO Special Concern	Yes
Triploid checkered whiptail	*Cnemidophorus neotesselatus*	CO State Concern	Yes
Species with Historic Records Only			
Northern leopard frog	*Rana pipiens*	CO Special Concern	No
Southern redbelly dace	*Phoxinus erythrogaster*	CO Endangered	No
Greenback cutthroat trout	*Oncorhynchus clarkia stomias*	Threatened	No
Arkansas Darter	*Etheostoma cragini*	CO Threatened	No

[1] State of Colorado status follows CPW (2019e); for ESA-list, follows USFWS (2019).

American Peregrine Falcon

The American peregrine falcon is a Colorado species of concern and is also protected under the Migratory Bird Treaty Act (MBTA) (16 USC Code §703). It nests in high cliffs where there is nearby riparian habitat and open areas. The species is not documented nesting in the RMP Planning Area to date but is sometimes observed in the RMP Planning Area during migration and occurs regionally (Colorado State Parks 2006). The proximity of the cliffs and riparian habitat at the RMP Planning Area provide suitable habitat for this species.

Bald Eagle

Bald eagles concentrate and winter in the RMP Planning Area, especially at the west end of Pueblo Reservoir and the Arkansas River upstream. Individual eagles have also been observed around the South Marina, the Bogg's Creek area, and the Arkansas River corridor below Pueblo Dam. The State of Colorado lists the bald eagle as a species of concern. It also has special protections under the Bald and Golden Eagle Protection Act (16 USC §668) and the MBTA. Eagles take advantage of the relatively mild local winter temperature and consistent fish prey base offered by the reservoir, as well as the large cottonwood trees that provide roosting habitat. Eagles also scavenge and use any available roadkill, hunting or fishing gut-piles, and even accessible garbage. The eagles' wintertime presence is celebrated in the annual Eagle Days Festival at Lake Pueblo State Park. There is one known bald eagle nest located in the SWA, north of Pueblo Reservoir. The nests current status is unknown (CPW 2019e).

Black-tailed Prairie Dog
Black-tailed prairie dogs are listed as a state species of concern. It is common in prairie grasslands and Eastern Colorado is nearly the center of the species' distribution in North America. They are adaptable and readily occupy prairie grassland. Black-tailed prairie dog numbers have dropped substantially throughout their range, including Colorado. There are seven mapped prairie dog colonies within the RMP Planning Area, all occurring on the north side of the reservoir in MU 5. Prairie dog burrows also provide habitat for additional species, such as burrowing owls and mountain plovers. Prairie dogs play an important role as prey base for several other wildlife species, including eagle and hawk species.

Burrowing owl
Burrowing owls, also protected under MBTA, prefer treeless areas of prairie grassland and use abandoned burrows for nesting and cover. They are often found in association with prairie dogs. Burrowing owl have experienced a substantial decline in population numbers in Colorado and regionally. Nesting burrowing owls have been documented in MU 5.

Mountain plover
Mountain plover is a Colorado species of concern and protected under the MBTA. It is native to the shortgrass prairie and occurs in open, dry areas. Mountain plover also favors prairie dog colonies for breeding and nest on the ground and in prairie dog burrows. Suitable mountain plover habitat within the RMP Planning Area overlaps with prairie dog habitat in MU 5.

Triploid checkered whiptail
Triploid checkered whiptail is a lizard listed as a Colorado species of concern. It inhabits transitional areas in juniper and pinyon-juniper woodlands, rocky canyons, rocky hillsides, shrubby areas, and open savannahs along the Arkansas, Huerfano, Apishapa, and Purgatoire river and their tributaries. Triploid checkered whiptail habitat occurs in the RMP Planning Area in portions of MUs 1, 2, 3 and 5.

Endangered Species Act Compliance
For the purposes of compliance with Section 7 of ESA, this EA also serves as the biological assessment. Reclamation has determined that both the No Action and Proposed Action Alternatives would have no effect on federally endangered, threatened, or candidate species and their designated critical habitats. During implementation of the selected alternative, site specific threatened and endangered species review and surveys, as appropriate, would be conducted prior to implementation of surface disturbing activities. If federally-listed ESA species are identified during these reviews including new species added to the ESA list, Reclamation would determine if planned management actions have potential to affect the federally listed species or their designated critical habitat and complete Section 7 consultation with USFWS prior to implementing the management action.

4.8.2 Environmental Consequences

Direct and Indirect Impacts
Under the No Action Alternative, current enforcement of off-leash dog use, monitoring of special status wildlife species, and coordination to prevent invasive aquatic species would be expected to have minor benefits to wildlife.

Under the Proposed Action Alternative, development of a plan to control off-leash dog use, special status wildlife species management, and fisheries management, and management of shoreline areas to protect avian habitat would have moderate to major benefits to wildlife resources.

Wildlife resources would also receive minor benefits from improved native vegetation cover under the No Action Alternative. Under the Proposed Action, vegetation management (i.e. minimizing physical disruption to native vegetation communities, implementation of project-specific restoration plans, and prevention of aquatic invasive species) would have minor to moderate beneficial effects on wildlife resources. Environmental commitments included in Section 4.16.2 and wildlife BMPs are also included in Appendix D avoid, reduce and/or mitigate potential impacts to aquatic and wildlife resources.

Aquatic and Wildlife Resource Impacts by Management Unit

MU 1 – South Entry

A new South Entrance and Visitor Services Area would result in the loss of approximately 8.5 acres of grassland habitat and 16 acres of shrubland habitat currently available for wildlife use.

MU 2 – Arkansas River Corridor

Under the Proposed Action, improvements in trout habitat in the Arkansas River and development and implementation of a program for succession planting of native cottonwood trees would benefit wildlife resources. In addition, development of new trails would adversely impact wildlife resources by removing approximately 0.05 acres of riparian shrubland habitat and approximately 0.1 acres of riparian woodland habitat in MU 2.

MU 5 – North Shore

Under both the No Action and Proposed Action Alternatives, wildlife may temporarily avoid construction areas during FHWA road and trail improvements.

Under the Proposed Action, redevelopment of North Marina Road to improve visitor services would permanently impact approximately 9 acres of grassland habitat that includes habitat for black-tailed prairie dogs and occupied burrowing owl habitat. Vegetation removal restrictions and avoidance or active nests are included as environmental commitments to comply with the MBTA.

MU 6 – Pueblo Reservoir Water Body

Under both alternatives, continuation of aquatic invasive species management would likely benefit wildlife resources by reducing potential for positive testing and introduction of zebra and quagga mussels in Pueblo Reservoir.

Under the Proposed Action, developing and implementing a bank stability, vegetation, and access plan in MU 6; and managing shoreline areas to protect habitat for avian species would also benefit wildlife resources.

MU 7 – Pueblo Reservoir State Wildlife Area

Under the No Action Alternative wildlife resources in MU 7 would benefit from and maintaining existing food plots for deer and turkeys.

Under the Proposed Action Alternative, additional benefits to wildlife resources include enlarging food plots for deer and turkeys; and establishing six new quail covey areas.

Cumulative Impacts

Under both the No Action and Proposed Action Alternatives, increased development in the Pueblo West area is likely to adversely impact wildlife resources. With increased development comes predicted increases in disturbances associated with human interactions and the reduction of available habitat within and adjacent to the RMP Planning Area. Undisturbed and natural areas will become more important to wildlife resources.

4.9 Cultural and Historic Resources

4.9.1 Affected Environment

Reclamation manages cultural resources at Pueblo Reservoir in accordance with Section 106 and Section 110 of the National Historic Preservation Act (NHPA) and other applicable laws and regulations. Section 106 of the NHPA requires Reclamation to consider effects on historic properties when planning and implementing actions. The actions identified in this RMP have the potential to affect historic properties. Under Section 110 of the NHPA, Reclamation has completed cultural resource inventories of Pueblo Reservoir and has conducted evaluations to identify historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

Cultural resources within the RMP Planning Area were identified by conducting a Class I file and literature review with the Colorado Office of Archaeology and Historic Preservation to identify previous surveys and documented cultural resources within the analysis area. Cultural resources are evaluated for their eligibility to be listed on the National and State Registers of Historic. The federal agency determines cultural resources that are historic properties (eligible for listing on the NRHP) in consultation with the SHPO/Tribal Historic Preservation Office and appropriate tribes. Cultural resources qualified with the term "Needs Data" have not been formally evaluated but are considered potentially eligible for the NRHP. Unevaluated sites are those that may conform to the eligibility criteria but require further work to determine their significance. In most cases, these are prehistoric sites with suspected buried cultural material, or historic sites where additional archival research is needed to determine historical context and overall significance. Resources that do not meet any of the eligibility criteria and/or have lost physical integrity are recommended as not eligible for inclusion on the NRHP.

A total of 31 intensive cultural resource inventories have been conducted within the RMP Planning Area and 300 cultural resource sites and isolated finds have been identified. Sites that have officially been determined eligible for inclusion in the NRHP include two prehistoric camp sites and the early 20th Century Arkansas Valley Conduit (Early AVC). Another 19 sites have official "Needs Data" determinations and are considered potentially eligible for the NRHP. These sites include the Bessemer Ditch; a segment of Old Highway 96, the town of Swallows, and several historic artifact scatters and prehistoric sites.

Other historic properties include segments of the Denver and Rio Grande, Atchison, Topeka, and Santa Fe railroads. These historic properties are considered to support the NRHP eligibility of other linear resources located outside the RMP Planning Area.

The entire reservoir area was inventoried at a Class III level by Cultural Resource Analysts, Inc. from 2006-2009 (Brant et al. 2010). Sixty-one of previously recorded sites could not be evaluated because are they within the minimum pool level of the reservoir or could not be relocated because of dense vegetation, inaccurate location information, or lack of visible artifacts.

Prehistoric resources at Pueblo Reservoir include open camp sites, isolated artifacts, open lithic sites, and rock art. Archeological evidence indicates that Native American occupation of the RMP Planning Area extended from at least the Early Archaic period (7,800 years before present) until the mid-19th century. Euro-American settlement in the RMP Planning Area was sporadic from the 1660s to the 1860s when gold was discovered in Colorado. The Homestead Act of 1862, the Desert Land Act of 1877, and relocation of Native American populations also contributed to the increase in permanent Euro-American settlement of the area after 1860.

General information on known historic sites within each MU are discussed below.

MU 1 – South Entry
Seven sites and two site segments haven been recorded and evaluated within MU 1. The site segments (5PE.486.3 and 5PE.486.4) are both part of the Bessemer Ditch (5PE.486). None of the sites are eligible for inclusion in the NRHP and both segments of ditch have been determined to not support the eligibility of the Bessemer Ditch.

MU 2 – Arkansas River Corridor
Five site segments and eight isolated finds have been recorded and evaluated in MU 2. None of the sites or finds have been determined eligible for inclusion in the NRHP.

MU 3 – Operations
Three sites and six isolated finds have been recorded and evaluated in MU 3. None of the sites have been determined eligible for inclusion in the NRHP.

MU 4 – South Shore
Sixty-seven sites, and forty isolated finds have been recorded and evaluated in MU 4. Two sites, a prehistoric camp and a segment of the early 20th century Early AVC, been officially determined to be eligible for inclusion in the NRHP. In addition, a segment of the Early AVC is also located in MU 4 and is considered to support the eligibility of the entire linear resource. Three sites in MU 4 unit have "needs data" determinations (a prehistoric open camp, another is a historic stone quarry, and the third is a segment of Old Highway 96). All other recorded sites in MU 4 are not eligible for inclusion in the NRHP.

MU 5 – North Shore
Seventeen sites and ten isolated finds have been recorded and evaluated in MU 5. A prehistoric open camp has a "needs data" determination and all other recorded sites have been determined not eligible for inclusion in the NRHP.

MU 6 – Pueblo Reservoir Water Body
Fourteen sites have been recorded within the normal pool volume of the reservoir in MU 6. Ten of these sites have never been evaluated because they are below the minimal pool level. Three sites are not eligible for the NRHP and one site has a "needs data" determination.

MU 7 – Pueblo Reservoir State Wildlife Area
Seventy-six sites and fifty isolated finds have been recorded and evaluated within MU 7. A prehistoric camp has been officially determined eligible for the NRHP and fourteen have official "needs data" determinations. The "needs data" sites include the historic town of Swallows, a segment of Old Highway 96, a rock art panel, historic foundations, historic trash dumps, prehistoric camp sites, a possible rock shelter, and sites with both historic and prehistoric artifacts. All other recorded sites in MU 7 been determined not eligible for inclusion in the NRHP.

4.9.2 Environmental Consequences

Direct and Indirect Impacts
Effects on cultural and historic resources are discussed below for each MU.

MU 1 – South Entry
No eligible historic properties have been identified within MU 1.

MU 2 – Arkansas River Corridor
No eligible historic properties have been identified in MU 2.

MU 3 – Operations
No eligible historic properties have been identified in MU 3.

MU 4 – South Shore
Existing unauthorized user-created trails are having direct, adverse effects on historic properties in MU 4. Trail assessments, temporary closures and/or mitigation proposed in both alternatives would benefit historic properties in MU 4. Historic properties are also expected to benefit from revegetation of disturbed areas and increased monitoring of undesignated uses.

Under the Proposed Action, alterations to Old Highway 96 would directly affect this historic property. Removing the asphalt on the highway could be considered an adverse effect on the resource. The effect could be considered minor or major depending on the significance of the road. Reclamation will need to further evaluate the historical significance of Old Highway 96 and consult with the SHPO on determinations of eligibility and effects in accordance with Section 106 of the NHPA. Any adverse effects to this historic property would be resolved through consultation with the SHPO, tribes, and local preservation groups.

Under the Proposed Action, relocation of the boundary between Lake Pueblo State Park and the SWA would also have a beneficial effect on historic properties from increased monitoring and presence by Lake Pueblo State Park staff. In addition, development and implementation of a comprehensive vegetation management would benefit historic properties in MU 4 through

decreased erosion. Most of the other management actions under the Proposed Action in MU 4 are predicted to have negligible effects on historic properties.

MU 5 – North Shore
Under both alternatives, major beneficial effects to historic properties would occur when implementing the Lake Pueblo State Park Trail Management Plan and addressing ongoing negative impacts from unauthorized trails through temporary closure or mitigation. Minor beneficial effects to historic properties are also expected to occur from revegetation of disturbed areas and increased monitoring of undesignated uses.

Additional minor benefits to historic properties under the Proposed Action are expected to occur from increased monitoring and erosion control associated with implementing the RMP.

MU 6 – Pueblo Reservoir Water Body
Management actions in MU 6 under the No Action Alternative would result in negligible impacts on historic properties.

Development and implementation of a bank stability plan under the Proposed Action would have minor beneficial effects on historic properties through the prevention of erosion at historic properties affected by fluctuating water levels. Other management actions in MU 6 under the Proposed Action would result in negligible impacts to historic properties.

MU 7 – Pueblo Reservoir State Wildlife Area
Existing unauthorized user-created trails have direct, adverse effects on historic properties under the No Action and Proposed Action Alternatives. Major beneficial impacts on historic properties would be expected when the Lake Pueblo State Park Trail Management Plan is implemented to address ongoing negative impacts through temporary closure or mitigation. Minor beneficial impacts on historic properties would be expected due to vegetation of disturbed areas and increased monitoring of undesignated uses.

Under the Proposed Action, development and implementation of a comprehensive vegetation management plan is expected to have a minor beneficial impact on historic properties.

The alterations to Old Highway 96 proposed included in the Proposed Action would directly affect this historic property. Removing the asphalt on the highway could be considered an adverse effect on the resource. The effect could be considered minor or major depending on the eligibility of the road.

Cumulative Impacts

Cumulative impacts on historic properties under the No Action Alternative would continue to occur from ongoing unauthorized uses in undesignated areas. The negative impacts are expected to be minor to moderate. Under the Proposed Action, cumulative impacts on historic properties are anticipated to be minor to moderately beneficial from increased monitoring and protection of park resources and through collaborative efforts with stakeholders.

4.10 Travel Management

4.10.1 Affected Environment

The RMP Planning Area has 23.8 miles of paved road. In 2011, paved roads were evaluated for 12 specific defects to develop an overall condition rating (CPW 2012). The conditions of the roads were lumped into five condition categories and are reported as follows:

- Excellent: none
- Good: 11%
- Fair 62%
- Poor: 19%
- Critical: 7%

The study noted that most of the roads rated as fair condition scored very low in that range and that any new defects could quickly reduce the road condition to the poor category. Since the 2011 assessment was completed, approximately 13.2 miles of roads and 13 miles of trail have been repaired. Lake Pueblo State Park secured FHWA funding which was used to remove and replace at total of 6.5 miles of road in MU 1 and MU 4 which was completed in 2016.

MU 1 – South Entry

Major roads in MU 1 are bound on the south by Highway 96 and includes South Marina and Reservoir roads, and the southern segment of Juniper Road. Lake Pueblo State Park entrance stations are situated on South Marina Road and on Juniper Road south of the Arkansas River (Appendix A-MU-1 Map). CPW is concerned that two entrance gates on Juniper Road creates confusion and detracts from the "main entry" concept. The entrance south of the Arkansas River has an emphasis on transportation and access, but detracts from the natural setting.

The condition of all paved roads in MU 1 in 2012 were rated as fair except the eastern 0.5-mile segment of South Marina Road. This road was rated as poor. The remaining portion of South Marina Road was rated as being in good condition. On peak use days, the number of parking spaces at the boat launch does not meet the demand. A 0.62-mile length of Reservoir Road was paved and 3.0 mile of road in MU1 were removed and replaced using the FHWA funding.

There is one main paved bike trail that runs throughout the RMP Planning Area. In MU 1, a segment of the trail runs adjacent to Juniper Road and another segment follows South Marina Road. These trail segments have been upgraded since the 2011 assessment (CPW 2012) to meet all design standards and park visitor needs.

MU 2 – Arkansas River Corridor

MU 2 includes the northern portion of Juniper Road and adjacent main bike trail below Pueblo Dam. This unit also includes the Rock Canyon/Osprey Access Road, which extends nearly the entire length of MU 2. The paved Arkansas River Trail which connects the RMP Planning Area to the City of Pueblo parallels the Arkansas River on its north side (Appendix A-MU-2 Map). Paved

trail connections from Rock Canyon to North Shore and the South Entry above Pueblo Dam to the west are poor in terms of both design and condition.

MU 3 – Operations
The roads within MU 3 are unpaved and used for maintenance and law enforcement access only.

MU 4 – South Shore
MU 4 is bounded by Highway 96 on the south and Pueblo Reservoir on the north. There are no paved roads within the MU 4 except for a segment of Old Highway 96, which forms the western boundary of MU 4. One unpaved trail, the Arkansas Point Bike Trail, extends in a north-south direction, starting at Highway 96 and then turning westward near Arkansas Point, terminating at an overlook. An unofficial trail network of approximately 50 miles of mountain bike trails has been developed along the rims and in drainages by mountain bike organizations. These trails are not sanctioned by Lake Pueblo State Park staff and are considered unauthorized. They begin at an unauthorized entrance referred to locally as "Red Gate," which is also the trailhead for the Arkansas Point Bike Trail. A second, unauthorized, trailhead has been developed along Highway 96 approximately 1.3 miles west of Red Gate (Appendix A-MU-4). There is no formal parking, and trail users park their vehicles along the shoulders of Highway 96.

In 2015 Reclamation and CPW started assessments of the unauthorized surface trails and additional collected data for analysis. The assessments identified where surface trails intersected with sensitive natural and cultural resources. In 2019 CPW completed a Lake Pueblo State Park Trail Management Plan involving public input. It proposes to close portions of trails impacting sensitive natural and cultural resources, rerouting trails around resources, and keeping trails that need maintenance to create a sustainable trail system. The Lake Pueblo State Park Trail Management Plan can be found in Appendix C. Reclamation will formally approve the Lake Pueblo State Park Trail Management Plan as part of the RMP process by incorporating it into both alternatives

MU 5 – North Shore
Juniper Road begins in MU 1 and extends through MU 5. Juniper Road connects with South Nichols Road just of north of the RMP Planning Area in Pueblo West. There are four spur roads south of Juniper Road: North Marina Road links Juniper Road with the West Fishing Access parking area, Northern Plains Campground to North Marina; an unnamed spur road that leads to the Juniper Breaks Campground; and Hobie Cat Road, which provides access to two group picnic areas just south of the North Marina. At the western end of MU 5 near the West Entrance Station, Juniper Road forks. The northern branch leads into Pueblo West and the western branch continues into MU 7 (Appendix A-MU-5 Map).

The RMP Planning Area Facilities and Operations Assessment report (CPW 2012) indicated that Juniper Road through MU 5 is in critical condition (1.7 miles) and poor condition (approximately 2.8 miles). The campground roads are in fair condition and roads near the North Marina boat ramp are in good condition. In 2012, the portion of Juniper Road classified as "critical" was re-constructed and in 2016, a total of 3.5 miles of Juniper and North Marina Roads were improved using FHWA funding.
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The amount of parking at the boat launch fluctuates with the water surface level in Pueblo Reservoir. When the reservoir level is lower, visitors are able to park along the shoreline below the high-water line on peak use days. This occurs at the South Fishing, Sailboard, and N-1 areas in MU5. Parking in these areas is limited to below the reservoir's high-water line in unvegetated areas, and parking along the shoreline in the North Picnic Area is not permitted. When the reservoir level is higher and the shoreline is not available for overflow parking, the demand for parking exceeds the supply on peak use days.

Juniper Road is part of a larger, urban loop. Juniper Road provides access to recreation areas on the north side of Pueblo Reservoir but also functions as an urban arterial road that connects Pueblo West to downtown Pueblo (Appendix A-MU-5 Map). Urban commuter traffic confuses actual "visitor" counts to the RMP Planning Area and contributes to the wear and tear of Juniper Road. Although all Juniper Road users have paid an entry fee or purchased an annual state park pass, there are no clear data about who is using the road and for what purpose.

The North Bike Trail is adjacent to Juniper Road, and the North Shore Marina Bike Trail connects the marina complex to Juniper Road. The originally installed trail system extended only as far west as the West Fishing Access parking area. Subsequently, social trails along the cliffs have been extended and developed by mountain bicycle riders and by residents of Pueblo West. Off-road, bicycle, and off-leash dog use at the West Fishing Access along the western side of MU 5 is prevalent (Appendix A-MU-5 Map). "Off-leash" dog walking is creating additional unauthorized trails and contributing to management problems for Planning Area staff. The off-leash dogs are damaging existing resources and negatively affect the visitor experience (CPW 2012). CPW currently has a regulation to keep pets on a six foot or shorter leash at all times. Also, that pet owners are to pick up after pets.

Pueblo West has secured FHWA funding to construct about 1.6 miles of paved connecting trail along Nicholls Road just north of the RMP Planning in Pueblo West. The new trail will include a pedestrian bridge on Nicholls Road over the railroad. The trail will connect with the existing Lake Pueblo State Parks trail network on Reclamation lands. Reclamation will issue any necessary land use authorization after review of final design.

MU 6 – Pueblo Reservoir

MU 6 includes the surface of Pueblo Reservoir. The two boat ramps are provided at the South Marina and the North Marina.

MU 7 – Pueblo Reservoir State Wildlife Area

MU 7 comprises of the westernmost Reclamation lands, both north and south of the Arkansas River upstream of the reservoir and western portions of the Pueblo Reservoir (Appendix A-MU-7 Map). Three unpaved river-access roads are north of the river. On the south side of the river, an unpaved road extends from Old Highway 96 for approximately 8 miles upstream and provides access to the river.

4.10.2 Environmental Consequences

Direct and Indirect Impacts

Travel Management

Under the No Action Alternative, management actions would have minor adverse effects on travel management and include temporary trail temporary closures for maintenance and a moratorium on special activities (i.e. running and mountain bike events) on unpaved trails. Road widening and trail improvement proposed in the No Action Alternative would provide long-term benefits to travel management in MU 1, 2, and 5.

Under the Proposed Action, management actions would have minor to moderate long-term beneficial effects on travel management from the addition of recreational access for motorized and non-motorized travel to help meet public demand. Development of public outreach and information programs to promote trail etiquette and travel ethics would benefit trail management.

MU 1 – South Entry

The Proposed Action also includes road realignments, consolidated park entry and visitor services; and construction of a new Bogg's Creek trail which would benefit travel management in MU 1.

MU 2 – Arkansas River Corridor

The Proposed Action would result in moderate to major long-term benefits to travel management in MU 2 from construction of new river access trails in three areas; and a new trail connection going west from the existing Valco parking lot to provide access to the Arkansas River.

MU 4 – South Shore

Development of amenities at the Red Gate Trailhead and potential closure of some trails temporarily for repairs in MU 4 under the No Action Alternative would be beneficial to travel management.

The Proposed Action would result in moderate to major long-term benefits in MU 4 from a new Bogg's Creek Trail; conversion of Old Highway 96 to a trail; construction of a trailhead and parking at Red Gate; and implementation of additional recreational access areas to help meet public demand for additional use areas.

MU 5 – North Shore

The Proposed Action would result in moderate to major long-term benefit from the addition of soft-surface trail connections off of the North Bike Trail to Pueblo West; the addition of a soft-surface trail adjacent to designated paved trails; organization and consolidation of visitor services along North Marina Road; and widening of North Marina Road.

Under the Proposed Action, the boundary of Lake Pueblo State Park and the SWA north of Pueblo Reservoir and east of Turkey Creek would move to Turkey Creek. The existing West Entrance Station would be move to somewhere in the vicinity of the model airplane strip. Between ¼ and ½ of a mile of new road would be constructed from Juniper Road to the relocated West Entrance. In

addition, a small parking lot along Pueblo Reservoir currently within the SWA would be removed and the area restored.

Cumulative Impacts

Under both alternatives, potential increased growth of Pueblo West leading to an increase in traffic on Juniper Road would have minor to moderate adverse cumulative impacts to travel management in MU 1, 2, 5.

4.11 Socioeconomic Conditions and Environmental Justice

4.11.1 Affected Environment

Social Conditions and Environmental Justice

Visitation patterns in the RMP Planning Area, summarized in Section 4.12 reflect the social importance of Lake Pueblo State Park and the SWA to the local community and Colorado residents. Ninety-six percent of visitors to the RMP Planning Area are from Colorado with 52% being local visitors driving less than 50 miles. Seventy-five percent arrive by car.

Among Colorado State Parks, Lake Pueblo ranked first for use by Hispanic visitors with 14%, compared with 6% in all other parks. Lake Pueblo State Park also has a slightly higher than average percentage of African Americans visiting Lake Pueblo State Park (2% as opposed to 1% in all other parks). Lake Pueblo State Park has a slightly lower than average number of Caucasian visitors (81%) compared with 83% for all other Colorado State Parks. Eighty-eight percent of Lake Pueblo State Park visitors are under the age of 65 and 7% are 65 years and older. (Corona Insight 2009; PricewaterhouseCoopers, LLP 2002).

The Arkansas River corridor downstream of the RMP Planning Area has been developed by the City of Pueblo as an urban park amenity and provides additional opportunities for recreation and outdoor experiences. A bike trail through this corridor provides additional access to Lake Pueblo State Park and the public can currently park at the parking area in MU 1 below Pueblo Dam without a State Park pass or fee.

All Colorado State Parks provide the following accommodations to economically disadvantaged citizens, veterans, and senior and disabled citizens:

- Free park admission on Veteran's Day for veterans and active duty personnel.
- Free park admission for active and retired military during the month of August.
- Free park admission to veterans with a current Colorado Disabled Veterans license plate.
- Senior citizen discount entrance pass and discounted camping fee.
- Centennial Pass – reduced fee annual pass for low income individuals and families.
- Columbine Pass – reduced fee annual pass for disabled Colorado residents.

- Colorado residents on active duty and permanently stationed outside of the state can fish without a license while in Colorado.

Economic Conditions

Pueblo Reservoir provides an economic stimulus to the Pueblo area through both direct spending for recreational services and indirect spending for services to support those activities. The APE is defined as Pueblo County and Front Range communities of Pueblo, Colorado Springs, Trinidad and the Denver Metro previously discussed in Section 2.3.

Social and economic trends affect management of Lake Pueblo State Park. Table 4.8 presents demographic and economic trends and data within the RMP Planning area. The affected area used for the environmental justice analysis is Pueblo County. The population estimate for Pueblo county is 167,529 (U.S. Census Bureau, 2019), with 5.3 percent growth since 2010. Pueblo County and Colorado will likely continue to grow and influence the demand for recreational opportunities and access to public lands in the area. See Section 4.12 for visitation data and trends for the RMP Planning Area.

Table 4. 8-Demographics and Economic Data for RMP Planning Area.

	Pueblo County	**State of Colorado[2]**
2019 Population Estimates	167,529	5,758,736
% Change 2010-2019	5.3%	14.5%
% Age 65 and Over	18.5%	14.2%
% White (not Hispanic)	52.0%	67.9%
% Hispanic or Latino	41.3%	21.7%
% Black or African American	2.6%	4.6%
% American Indian or Alaska Native	3.1%	1.6%
% Asian	1.1%	3.5%
% High School Graduate or Higher	89.4%	91.4%
% Bachelor's Degree or Higher	22.0%	40.1%
Mean Household Income	$44,634	$68,811
% Persons Below Poverty Level	17.2%	9.6%

[1]Source: U.S. Census Bureau, 2019
[2]Included for comparison purposes

Major sectors/industries that contribute to the economy and business in Pueblo County include Steel, Alternative Energy, Manufacturing, Healthcare, Service Industry and Recreation/Tourism (Pueblo County 2014).

In many cases, social effects are described in terms of quality of life, which could include the quantity and quality of access to recreational opportunities and natural resources. About 92 percent of Colorado residents recreate in the outdoors at least once every few weeks (CPW 2018). The

statewide (Colorado) trends in outdoor activities indicate that groups and individuals enjoy walking, hiking, jogging, camping and wildlife viewing. Most popular in Colorado is walking, closely followed by hiking/backpacking, picnicking and tent camping.

In 2016 with 1.7 percent of the U.S. population, Colorado had 7.7 percent of the nation's tourism jobs. Tourism is one of the strongest economic drivers of Colorado's economy with 82.4 million visitors spending over $19 billion in the State (COEDIT 2020). A large portion of Colorado's tourism economy relies on outdoor recreation resources and public lands.

Environmental Justice

Executive Order 12898 on Environmental Justice requires Federal agencies to analyze programs to assure that they do not disproportionately adversely affect minority or low-income population or Indian Tribes. Pueblo County has almost twice the percentages of Hispanic or Latino (41.3% vs. 21.7%) and American Indian (3.1% vs. 1.6%) populations when compared to the State of Colorado as shown in Table 4.8. The estimated percentage of individuals living below the poverty level living in Pueblo County in 2019 was 17.2% compared to 9.6% for the entire State (U.S. Census Bureau 2020).

4.11.2 Environmental Consequences

Socio-Economic Conditions Methods and Assumptions

Impacts to social and economic conditions are characterized by impacts to population, demographics, and the local economy. Primary indicators of change to quality of life can be characterized by access to and availability of recreation opportunities and diversity of recreation experiences and opportunities. For purposes of this analysis, it is assumed that visitation to the RMP Planning Area would continue to increase over the long-term and local and national populations would continue to increase following the current population trends.

Direct and Indirect Effects

Both alternatives have potential to affect local businesses and individuals and incremental changes proposed in each alternative are predicted to only result in minor to moderate effects. These changes are not enough to trigger measurable effects to the economic diversity (number of economic sectors) or dependency to the study area, thereby resulting in negligible impacts.

Each alternative would emphasize recreation opportunities and access, with increased intensity and level of development under the Proposed Action. Both alternatives provide diverse experiences which result in beneficial effects and quality experience to multiple user groups. Even with minor to moderate shifts in emphasis on types of recreation opportunity and visitor services for each alternative, quality recreation experiences and public access would continue to be provided.

The No Action Alternative would continue at the same level of recreation opportunities, access and management to the area, resulting in negligible impacts to current conditions. Some opportunities to enhance visitor amenities and future trail opportunities would be foregone resulting in lost revenue potential from construction and development activities as well as long-term sustainable economic contributions from increased visitor services. Under the No Action Alternative, there

would be no pro-active management for, or opportunity to address user-conflicts associated with user-created social trails/routes. User-created routes and other trails would be assessed for negative impacts on a case-by-case basis resulting in impacts to quality trail experiences for interested trail user groups. This would negatively impact user groups, quality of experience, and likely increase user conflicts over the long-term.

The Proposed Action would emphasize a balance between recreation opportunities, development, and resource protection. Increase in access and space for casual, dispersed activities, such as wildlife viewing, day-hikes, etc., would have long-term benefit to user groups who value open space. Limited motorized use of designated roads and trails and development of additional access would meet predicted demand for this type of experience. The Proposed Action would separate uses and minimize user conflicts by offering more access points. Most user groups would benefit as opportunities and access to trails would still be available. However, user groups who enjoy unconstrained trail riding experiences would also experience negligible to minor negative impacts associated with the additional restrictions.

The Proposed Action would establish MUs, with defined objectives and actions. MU's would result in beneficial impacts to user groups by creating niche zones for targeted objective/use areas and minimize user conflicts.

Opportunities to improve and enhance visitor amenities and recreation facilities/infrastructure under the Proposed Action would provide positive impacts to visitor experiences and beneficial impacts to all user groups. Upgraded facilities and structures would accommodate a diversity of recreation-related amenities ranging from expanded areas to accommodate larger vehicles and trails to playgrounds and day use shelters. These improvements would have beneficial impacts to a diversity of user and age groups.

In addition, there would be temporary economic contributions to local economies and surrounding communities under the Proposed Action from jobs created during construction activities. Providing additional visitor services and amenities is also expected to create or result in: 1) additional service-related jobs; 2) opportunities for concession businesses; and 3) an influx of local economic benefits from tourism and visitors. Overall, the Proposed Action would offer a spectrum of opportunities for a variety of user groups seeking diverse experiences. Over the long-term, beneficial impacts to a diverse number of user groups and the local economy are anticipated.

Cumulative Effects

Impacts to socioeconomic resources in the study area are closely tied to changes in economic impacts including employment, earnings, changes in quality of life and access to recreational opportunities. As the population continues to increase in Pueblo County and the Front Range Communities, demand for diverse recreation activities and access to opportunities to enjoy natural resources would continue to increase. Under the No Action Alternative, State Park and the SWA boundaries would remain unchanged and improvements would be identified and implemented on an as-needed basis with no proactive management. Unmet demand for recreation would result in moderate to major negative impacts on quality of experience for individuals and groups and would increase user conflicts of resources. Unauthorized social trails would continue to have moderate,

negative impacts on user groups and visitors who place a high priority on habitat, wildlife viewing and related resources, and would not feel these areas would be adequately maintained.

The Proposed Action offers a balance between natural resource protection and providing recreation access and opportunities. This alternative would accommodate increased demands to access and use public lands as population and visitation continues to increase. Under the boundary adjustments, the size of Lake Pueblo State Park would be slightly increased and the SWA would be slightly reduced. Recreational facilities and amenities currently managed by the SWA would then be managed by Lake Pueblo State Park, resulting in beneficial impacts to recreationists. Focused attention to trails management and improving access points would benefit all user groups and minimize user conflicts by separating and buffer facilities. The Proposed Action would also have temporary, positive effects to the local economy during construction activities, and moderate benefits to the local economy and improved quality of life from improved and expanded recreation services and amenities.

Both alternatives provide consideration for group use events and activities, special activity agreements and both alternatives that would be free or have low-cost access and opportunities through existing CPW-regulated programs. While minority and low-income populations exist in the study area, neither alternatives would result in any identifiable disproportionate impacts to any minority or low-income population or community within the study area.

4.12 Recreation and Visitor Services

4.12.1 Affected Environment

Visitation Patterns

In 2014 and 2015, the RMP Planning Area had approximately 1.8 million visitors annually. In 2019 CPW reports that the visitation is 2.4 million annually at Lake Pueblo State Park. The most recent available descriptive data for visitor use comes from two market assessments (CPW 2012). Highlights from these assessments include the following:

- A car or recreational vehicle was the most common form of transportation to the Lake Pueblo State Park.
- Visitors drove an average of 71 miles one-way.
- 96 percent of visitors are from Colorado.
- The RMP Planning Area ranked the third highest of all 42 state parks for multiple visits in a one-month period. Visitors returned an average of 4 times in one month. Annual repeat visitation was also high compared with other state parks, ranking eighth in the number of visitors making multiple return trips in a one-year period.
- Most visitors use the RMP Planning Area for day use.
- 88 percent of visitors are under the age of 65 and seven percent are 65 years and older.
- 14 percent of the RMP Planning Area visitors are Hispanic.

Recreational Uses

The 1975 Recreation and General Development Plan for the Pueblo Reservoir State Recreation Area (Reclamation et al. 1975) placed the focus of recreation and visitor services primarily on Pueblo Reservoir. CPW's goals for the RMP Planning Area included modifying the 1975 Plan from a "Lake-Centric" perspective to accommodate redevelopment alternatives that recognize and build on new, non-lake-oriented uses, and on recreation initiatives in adjacent jurisdictions (CPW 2012).

The "lake-centric" orientation of the original recreation and general management plan for Lake Pueblo State Park (Reclamation et al. 1975) provided a framework for design and the subsequent development of successful recreation facilities (CPW 2012). But this framework and the inherent challenges to resource management in a lake setting has impeded long-term management. Physical constraints at the lake edge limit the potential number of park users by necessitating use of a car, boat, bicycle, and camping equipment. The exposed site and microclimates at the lake edge result in very specific user trends, including "boats only" and extreme peaks in usage. There are few opportunities for impromptu or informal activities such as walking, picnicking in the shade, or simply enjoying the views. A common theme that permeates most, if not all, of the stakeholder interviews, is the sense that the RMP Planning Area has untapped potential to increase visitation and expand activities and amenities (CPW 2012).

At Reclamation's request, Lake Pueblo State Parks prepared a trail management plan to address current and future trail management issues within Lake Pueblo State Park portion of the RMP Planning Area. Of particular concern, are the informal trails developed over the past few decades from social trails by mountain bikers, equestrian riders, and hikers. Many of the trails lack formal designation by CPW or Reclamation Lake Pueblo State Park is currently lacking a Reclamation-approved trail management plan. The Lake Pueblo State Park Trail Management Plan was developed by CPW and submitted to Reclamation for approval in 2019 (Appendix C). Reclamation will formally approve the Lake Pueblo Trail Management Plan as part of the RMP process.

Recreation and visitor services and facilities at each MU are described below and illustrated in Appendix A-MU-1 through MU-7 maps.

MU 1 – South Entry

MU 1 contains the south entrance station, visitor center, fishing access, a group picnic area, and the Arkansas Point Campground. The campground has 93 campsites with electrical hookups, centrally located water hydrants, showers, flush toilets, and a dump station. Four of the campsites are ABA/ADA-accessible. The South Marina has two, six-lane public boat launching ramps. The South Marina offers 400 boat slips, includes a store and café, and is operated year-round by a concessionaire. CPW and Reclamation offices and maintenance buildings, a public archery range, and Pueblo State Fish Hatchery are also located in MU 1.

The visitor center building is aging but is in generally sound condition and ABA/ADA-compliant. The maintenance building entrance stations are not fully ABA/ADA-compliant.

An asset inventory completed in 2010 (Colorado State Parks 2010) assessed individual campsites at Lake Pueblo State Park. Most of the campsites at the Arkansas Point Campground were rated in good condition. In recent years, ABA/ADA-compliant campsites have been added at each camp

loop. Comfort station buildings are also ABA/ADA-compliant and the sanitary sewer and water systems at the campground have been upgraded.

The size, weight, and number of vehicles at any given campsite in MU 1 commonly exceed its design and have adversely impacted site drainage, roadways, and landscape.

MU 2 – Arkansas River Corridor
MU 2 includes a reach of the Arkansas River immediately below Pueblo Dam with river fishing access and paved trails, Anticline Pond and fishing pier, Rock Canyon Swim Beach with restroom and shower facilities, and Cottonwood and Osprey picnic areas. The Rock Canyon swim beach complex buildings were renovated in 2017 and are now ABA/ADA-compliant.

MU 3 – Operations
MU 3 does not contain any recreation or visitor services facilities. It includes Lake Pueblo State Park's sanitary sewer treatment facility and the Law Enforcement Training Facility and is closed to public access. The Law Enforcement Training Facility consists of a shooting range and as well as other outdoor training facilities.

MU 4 – South Shore
With the exception of a segment of Old Highway 96, which forms the western boundary of MU 4, there are no additional authorized roads in MU 4. One unpaved trail, the Arkansas Point bike trail and extends in a north-south direction between Highway 96 and Arkansas Point. A total of 53 miles of undesignated trail and 4.9 miles of two roads in MU 4 were mapped and evaluated as part of the Lake Pueblo State Park Trail Management Plan (CPW 2019a). There are unauthorized gates (known as Red Gate and 2nd Red Gate) with two-track roads that leading from Highway 96 to a reservoir overlook between Rock and Bogg's creeks and to the South Shore Campground. Most of the undesignated trails have been constructed by mountain bike organizations.

There are unauthorized park access points all along the length of Highway 96 and are used for gatherings at the side canyon rims, walking dogs "off –leash," and off-road biking or trail running. Vehicles typically park on the shoulder of Highway 96 to access the trails. The bike trail system at Lake Pueblo State Park is well-known among off-road bicycle enthusiasts throughout the region.

MU 5 – North Shore
MU 5 includes the North Entrance Station, North Marina, Juniper Breaks and Northern Plains campgrounds, North Plains Ranger Station, and the West Fishing, North Picnic, and two group day-use areas. North Marina includes one, six-lane public boat launching ramp and an aquatic nuisance inspection station. The North Marina offers 608 boat slips, includes a store and café, and is operated year-round by a concessionaire. A sailboard day-use area and a model airplane field are also included in MU 5.

Juniper Breaks Campground is divided into 4 loops (D, E, F & G) and has 74 non-electric campsites and 5 vault toilets. Four of its campsites are ABA/ADA-accessible sites. Northern Plains Campground has four loops (Kettle Creek, Eagle View, Yucca Flats, and Prairie Ridge). Northern Plains Campground has a total of 334 camp sites. Thirteen of these campsites are ABA/ADA-accessible. Eagle View, Yucca Flats and Prairie Ridge loops have electrical service and shower

restrooms. Kettle Creek Loop is more primitive and was designed primarily for tent camping. All its campsites are non-electric and services with vault toilets; seven of the campsites are walk-in only, however, CPW reports that the walk-in campsites have been removed. The restroom buildings in Kettle Creek and comfort stations in Yucca Flats, Prairie, and Eagle were updated in 2015 and are ABA/ADA-compliant. Northern Plains Campground is serviced by water hydrants scattered throughout the campground, two dump stations and two playgrounds. The sanitary sewer and water systems at both campgrounds were upgraded in 2011.

MU 6 – Pueblo Reservoir
MU 6 encompasses the water surface on Pueblo Reservoir. Water is the main attraction in the RMP Planning Area and temperature makes Pueblo Reservoir ideal for water-skiing and fishing. Regular winds provide excellent conditions for sail boating and sailboarding, and the reservoir is open to all types of boating activities. Swimming, cliff-diving, and rock jumping are not permitted in MU6.

Pueblo Reservoir is an excellent fishery and provides one of the top walleye, wiper, and bass fisheries in the State (see Section 4.8). Fishing is permitted anywhere with a valid fishing license, except from boat docks, boat ramps, along the face of Pueblo Dam, and areas closed to public access.

MU 7 – Pueblo Reservoir State Wildlife Area
MU 7 comprises the westernmost portion of the RMP Planning Area, including land on both sides of the Arkansas River upstream of the Pueblo Reservoir and including the western portion of Pueblo Reservoir. MU 7 is designated as a SWA and CPW manages the unit for public hunting and fishing. Deer, turkey, dove, waterfowl and scaled quail hunting and cold-water stream and lake fishing are the primary recreation activities in this unit. Discharging firearms or bows are prohibited except for shotguns and bows while hunting. Bowfishing is also allowed. Other recreation activities include picnicking, hiking, and wildlife viewing. Camping, fires, and target practice are prohibited. Jumping, diving, swinging from cliffs, ledges or man-made structures are also prohibited.

4.12.2 Environmental Consequences

Direct and Indirect Impacts

Recreation and Visitor Services
In general, benefits to recreation and visitor services under the No Action Alternative would continue and be moderate, due to existing concession contracts, signage, and sanitation and waste management facilities. Moderate adverse effects would likely occur from limited recreational opportunities outside the current "lake-centric" focus.

Minor temporary adverse impacts to recreation may occur under the No Action Alternative. These impacts would be localized and occur when some trails are temporarily closed for repairs. In addition, minor long-term benefits to recreation would occur from continued maintenance and other improvements to trails, roads, and facilities in MU 1, 2, 5, and 7, as needed for public safety.

The Proposed Action Alternative would result in moderate to major long-term beneficial effects to recreation by incorporating funding requests for RMP actions to improve the visitor experience into

CPW annual funding plans. Providing "non-lake centric" recreational opportunities is also considered to have major beneficial impacts to recreation.

Reservoir fluctuations and high-water elevations could result in temporary recreation facility closures. These temporary closures would result in temporary, negative impacts to visitor access and enjoyment of the area and would occur under both the No Action and Proposed Action Alternatives.

Travel Management
Under the Proposed Action, minor to moderate and long-term benefits from designing and implementing additional recreational access for motorized and non-motorized travel to help meet public demand in areas with increased use would occur under the Proposed Action.

Impacts to Recreation and Visitor Services by Management Unit

MU 1 – South Entry
The Proposed Action Alternative is predicted to result in major long-term beneficial impacts to recreation in MU 1. The Proposed Action includes consolidating South Park Entry/Point of Contact, redevelopment and updating the Arkansas Point Campground, addition of a new Bogg's Creek trail, and widening of South Marina Road.

MU 2 – Arkansas River Corridor
The Proposed Action Alternative would result in major long-term beneficial effects to recreation from construction of ABA/ADA-compliant access when out of compliance; a new trail connection between MU 1 and 2, and development of other additional recreational access areas to help meet public demand.

MU 4 – South Shore
Development of amenities at the Red Gate Trailhead under the No Action Alternative would result in minor long-term benefits to recreation use in MU 4.

The Proposed Action Alternative would result in major long-term benefits to recreation with construction of a new Bogg's Creek Trail, formalizing a trailhead and parking at Red Gate; and, developing of additional recreation access areas to help meet public demand.

MU 5 – North Shore
The Proposed Action Alternative would result in major long-term beneficial impacts from relocation of West Entry Station and improved access to the Model Airplane Field (if not removed); additional picnic tables at the North Picnic Area, conversion of some day-use sites to walk-in camp sites at the Juniper Breaks Campground, redevelopment and updating of Northern Plains and Juniper Breaks campgrounds, North Marina Road widening; and development of additional recreational access areas to help meet public demand.

MU 7 – Pueblo Reservoir State Wildlife Area
The Proposed Action Alternative would result in moderate long-term benefits to recreation in MU 7 from construction of soft-surface trail connections to Pueblo West; rehabilitation of Old Highway

96 roadbed to a natural surface trail and development of trailhead amenities; and upgrading restrooms to ABA/ADA-compliant vault toilets.

Cumulative Impacts

Cumulative impacts to recreation and visitor services are not anticipated under both the No Action and Proposed Action Alternatives for the known future actions analyzed.

4.13 Visual Resources

4.13.1 Affected Environment

Although not specifically mentioned in the 1981 RMP, visual resources in the RMP Planning Area are an important resource.

Below Pueblo Dam, a visual resource analysis was conducted for the Black Hill's Pueblo Reservoir Substation Project (Reclamation 2014) which identified observation points with unobstructed views of the RMP Planning Area including Pueblo Dam, Pueblo Fish Hatchery, Lake Pueblo State Park entrance stations, the archery range, and other public agency buildings. Single-family homes, vehicular traffic on some local roads and mountains in the background were also visible.

Other water delivery facilities including Fountain Valley Authority, Pueblo Water, and SDS Project are also within the viewshed. In addition, construction of a hydropower plant and associated power lines below Pueblo Dam was completed in 2019 and is owned and operated by the Southeastern Colorado Water Conservancy District under a Lease of Power Privilege with Reclamation.

4.13.2 Environmental Consequences

Direct and Indirect Impacts

Other Resource Management

Visual resources are passively managed at Lake Pueblo State Park. Under the No Action Alternative, resource management actions would have negligible to minor temporary to long-term beneficial impacts to visual resources. Examples of such management actions include revegetating previously disturbed or weedy areas with native vegetation and required review and approval of all facility designs and signage within the RMP Planning.

All new recreation facilities would be designed and constructed following Reclamation's (2013) Recreation Facility Design Guidelines. The guidelines incorporate aesthetics, as well as ABA/ADA and safety requirements. All new facilities will complement the natural setting by using neutral colors and natural materials where practicable. Views and vistas in and around the RMP Planning Area will be maintained under both alternatives. The No Action and Proposed Action Alternatives are predicted to have negligible long-term impacts to visual resource impacts.

Under the Proposed Action, new facilities and road improvements may adversely impact visual resources in the RMP Planning Area. Visual resources may be temporarily impacted during

construction activities including site prep, grading, staging, and other construction activities and impacts are predicted to be minor.

Cumulative Impacts

While numerous management actions can impact visual values, most impacts result from large-scale or cumulative ground disturbing activities that alter the existing form, line, color, and texture that characterize the existing landscape. While topography can allow for some landscape modifications, many types of disturbance, such as roads and artificial structures, can dominate the landscape depending on their size, distance, topographic position, presence/absence of screening, and contrast with surrounding conditions.

Known future actions analyzed including AVC, Pueblo Dam North-South Outlet Works Interconnect, and future development at Pueblo West could all potentially result in minor to moderate adverse long-term impacts to certain views from Lake Pueblo State Park.

4.14 Air Quality and Noise

4.14.1 Affected Environment

CPDHE has the authority to under the Clean Air Act (42 U.S.C. §7401 et. seq. (1970)) to regulate air quality standards, except in Indian Country where EPA Region 8 retains permitting authority. The RMP Planning Area is within the South-Central Region monitoring area for the Colorado Department of Public Health and Environment. The South-Central Region comprises Pueblo, Huerfano, Las Animas, and Custer Counties with urban centers in Pueblo, Trinidad and Walsenburg. Air quality is good within this monitoring area. The RMP Planning complies with the National Ambient Air Quality Standards (CDPHE 2019). In 2018, two particulate monitors (PM_{10} and $PM_{2.5}$) were operated at a site located in the city of Pueblo.

Colorado Noise Statute 25-12-103 establishes maximum permissible noise levels in Colorado. Table 4.9 details established sound levels for time periods and zones, which if exceeded, constitute prima facie evidence that such noise is a public nuisance. Under Pueblo County regulations, construction sites are subject to the maximum permissible noise levels specified for industrial zones.

Table 4. 9-State of Colorado Maximum Permissible Noise Levels

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

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

There are no noise sources or problems in the RMP Planning Area that register above the maximum permissible noise levels. Primary sources of noise are associated with flowing water released from Pueblo Dam and the operations of associated water delivery systems for the Fryingpan-Arkansas Project, Pueblo Water, Pueblo West, and SDS. Vehicle traffic on Park roads, boating on Pueblo Reservoir, and generator use in campgrounds are also sources for noise.

4.14.2 Environmental Consequences

Direct and Indirect Impacts

Air quality and noise are passively managed within the RMP Planning Area. Under both the No Action and Proposed Alternative, resource management actions would have negligible temporary adverse impacts to air quality and noise. Examples of management actions include new facility construction, road maintenance and mowing. With appropriate implementation of BMPs, air quality and noise are not predicted to exceed existing standards.

Under the No Action Alternative, anticipated impacts to noise and air quality would stem primarily from road and trail construction projects. These impacts would be temporary and negligible to minor, with the application of appropriate BMPs.

Cumulative Impacts

With known future actions for both alternatives, no cumulative impacts to air quality and noise are anticipated.

4.15 Indian Trust Assets

4.15.1 Affected Environment

Indian trust assets (ITAs) are legal interests in assets held in trust by the United States for Indian tribes and the Secretary of the Interior acts as the trustee. ITAs can include, but are not limited to, land resources, water rights, minerals, and hunting and fishing rights. The United States has a fiduciary responsibility to protect and maintain rights reserved by or granted to Indian tribes or tribal members by treaties, statutes, and Executive Orders. Secretarial Order 3175 requires that the potential impacts of U.S. Department of the Interior bureau actions on Indian trust assets must be addressed in planning and decision documents, such as this EA.

Indian trust assets were assessed in consultation with the Bureau of Indian Affairs, the Northern Arapaho Tribe, the Cheyenne and Arapaho Tribes of Oklahoma, the Comanche Nation of Oklahoma, the Northern Cheyenne Tribe, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the Apache Tribe of Oklahoma, the Kiowa Tribe of Oklahoma, and the Jicarilla Apache Nation. Chapter 5-Consultation and Coordination provides additional detail.

4.15.2 Environmental Consequences

To date, no Indian trust assets have been identified in the RMP Planning Area. Therefore, no Indian trust assets are predicted under the No Action and Proposed Action Alternatives.

4.16 Summary and Environmental Commitments

The Proposed Action would implement an updated RMP to address current management issues, and guide future management of the RMP Planning Area, and comply with current Federal and state laws, regulations, policy, and guidelines.

4.16.1 Summary of Impacts

A summary of the predicted environmental consequences of implementing the No Action and Proposed Action were shown previously in Table 3.2. Implementation of the Proposed Action Alternative is predicted to result in negligible to minor beneficial and negative localized and overall effects on paleontological and visual resources, air quality, noise, and socioeconomic conditions. Moderate beneficial effects were predicted for soil, water and vegetation resources. Major beneficial effects are predicted for wildlife, aquatic and cultural resources. Implementation of the Proposed Alternative would have no effect on Indian Trust Assets and would not result in disproportionate adverse impacts to minority and low-income populations.

4.16.2 Mitigation Measures and Environmental Commitments

The following measures would be implemented and followed by Reclamation, CPW, and selected contractors during implementation of the Proposed Action Alternative. The RMP will require these environmental commitments be followed and met.

1. Incorporate and implement BMPs included as Appendix D as part of the RMP.
2. Proper regulatory and informational signage will be posted and maintained throughout the RMP Planning Area.
3. During final selection of facilities or trails, all efforts will be made to avoid wetlands, riparian areas, cliffs, and steep and/or rocky slopes.
4. Temporary recreational closures may be necessary when construction poses a risk to visitor safety or resource damage.
5. Minimize the area disturbed during construction.
6. As much as possible, onsite materials will be used for construction.
7. Recreation facility development will complement the surrounding landscape as much as practical.
8. Consult the Reclamation manuals and guidelines for signs and recreation facility design. More information can be found at: http://www.usbr.gov/recreation/publications/RecreationFacilitiesDesignGuidelines.pdf
9. Maintain compliance with the Federal, State and local noxious weed laws.
10. Reduce competition of undesirable plants with native and/or vegetation.

11. Clean all heavy equipment before entering and existing construction sites to minimize transporting weeds.
12. Reseed with native/local mix after construction, heavy maintenance, and other soil disturbing activities. Use clean fill material form weed-free sources. If straw or mulch is used for stabilization and erosion control, it must be certified weed-free or weed-seed free.
13. Revegetate areas within 10-days of final grading after construction based on suitable site conditions and irrigate as appropriate.
14. Control runoff from disturbed areas during construction; build erosion resistance into project design to reduce costly maintenance and restoration; mitigate concurrently with construction.
15. Disturbances of more than 1 acre require a state stormwater discharge permit. More information can be found at: https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits
16. Minimize construction disturbance in areas where soils are thin.
17. Avoid soil-disturbing actions during periods of heavy rain or wet soils. Periods of heavy snowmelt should also be considered.
18. Design catchment basins, wetlands, or other Reclamation approved stormwater control measures to detain and treat runoff from campgrounds and parking lots.
19. Utilize vegetative swales with catchment basins or oil/water separator systems to treat runoff from campgrounds and parking lots. Stormwater systems would be designed to meet or exceed Pueblo County Stormwater Quality Ordinance requirements (Chapter 8.26) and comply with Pueblo County's Municipal Stormwater Separate Sewer System (MS4) permit.
20. No ground disturbing activities associated with the Proposed Action shall begin prior to the completion of NHPA compliance.
21. Any adverse effects on historic properties associated with the Proposed Action will be resolved through consultations with the SHPO, tribes, and local historic preservation groups per 36 CFR 800.6.
22. If human remains or cultural/paleontological resources are discovered during ground-disturbing activities associated with the Proposed Action, whether on the surface or subsurface, all ground-disturbing activities in the vicinity of the discovery shall cease and Reclamation's Eastern Colorado Area Office archaeologist shall be notified immediately. Ground-disturbing activities in the vicinity of the discovery shall not be resumed until approved by Reclamation.
23. If any additional areas of impact are identified during implementation of the RMP, additional NHPA compliance may be required prior to the approval of any ground-disturbing activities.
24. In the event of discovery of threatened or endangered species, CPW and its contractors shall immediately cease all ground-disturbing activities in the vicinity and notify Reclamation. Work will not be resumed until approved by Reclamation and additional consultation under Section 7 of ESA is complete.

25. Effects on migratory birds will be avoided and minimized during construction, including completing pre-construction surveys and limiting vegetation clearing activities between April 15 and July 15, as appropriate, including seasonal restrictions. For raptor species, Reclamation and CPW will utilize CPW's (2008) Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors when developing buffer zones and seasonal restrictions for active raptor nests.
26. If an active MBTA species nest is detected, a buffer zone between the nest and the limits of construction will be flagged and avoided during the nesting season, or construction will be scheduled outside the nesting season.
27. In the event new species are added to Federal Endangered Species List during implementation of the RMP, Reclamation will consult with CPW and evaluate the potential for newly listed species to occur with the RMP Planning Area and be affected by RMP management actions. Reclamation will complete the additional Section 7 consultation as appropriate.

Chapter 5- Consultation and Coordination

5.1 Resource Management Plan Development

A news release dated January 14, 2014 was issued announcing a 30-day comment period for public input to assist in the development of a RMP for Reclamation lands managed by CPW as Lake Pueblo State Park and the SWA. An Open House was held at the Lake Pueblo State Park Visitor Center in Pueblo, Colorado on January 22, 2014 from 5:30 to 8:30 p.m. Public comments were accepted through February 21, 2014 with a total of 116 comments received.

From 2014 to 2016, CPW, Studio CPG and Walsh Engineering worked to develop a range of management actions that set forth different priorities or actions to emphasize certain uses or resource values to achieve management goals and objectives for each resource. Management actions ranged "status quo", a "minimum management", and "intensive management" strategy goals and objectives.

The "status quo" management strategy was guided by the 1981 Plan, where applicable, with improvements made on an "as needed basis" to meet health, safety, ABA/ADA, and other legal requirements. Deferred maintenance of existing facilities would be addressed as funding became available and determination of need and compliance for future proposed projects would be handled on an individual basis.

The "minimum management" strategy balances resource protection and recreational use while providing some additional recreation development. Resources and facilities would be more actively managed with additional emphasis on completing deferred maintenance. This strategy focuses on meeting the most pressing needs and priorities identified during public involvement and prior

facilities and operations assessments. Under this strategy, lands currently managed as SWA north of Pueblo Reservoir and east of Turkey Creek, would be added to Lake Pueblo State Park.

The "intensive management" strategy also balanced resource protection and recreation use but included additional measures of resource protection and recreation facility upgrades. This strategy includes all the "minimal management" actions, but also included additional boundary changes south of Pueblo Reservoir. The SWA eastern boundary would be moved east from Old Highway 96 to include Peck Creek to No Name Cove.

The RMP process was put on hold in 2015 due to issues raised by the public and Reclamation concerning the 50 miles of unauthorized trails in MU 4 South Shore. Safety became a concern due to erosion and degradation along various trails. Reclamation and CPW completed an assessment of the trails in the fall of 2015, which documented natural and cultural resource impacts from the unauthorized trails. Due to the extensive expansion of unauthorized trails during the past decade on both the north and south side of Pueblo Reservoir, a separate trail management plan was needed. Over the next three years, CPW collected additional natural resource data and developed a trail management plan through a public process with a final plan in May 2019.

Appendix B lists the goals and objectives developed by resource and MU during development of the RMP.

5.2 Trail Management Plan

In 2016, Reclamation determined it was necessary to develop a trail management plan prior to finalizing the RMP to address existing needed resource protection. Distribution of a draft EA of the RMP was delayed pending CPW's mapping and evaluation of the current trail system at Lake Pueblo State Park. A public draft of the Lake Pueblo State Park was prepared by CPW and made available for public comment on April 17, 2019. CPW and Reclamation requested public comments on the draft document and held an open house at Lake Pueblo State Park's Visitor Center on April 29, 2019. CPW submitted to Reclamation a Final Internal Draft dated May 24, 2019 for inclusion into the RMP, which is included as Appendix C.

5.3 Scoping Distribution

RMP scoping letters were sent to the following agencies, tribes, and tribal organizations:

State

State Historic Preservation Office, Office of Archaeology and Historic Preservation
Colorado Division of Water Resources
Colorado Northwest Council of Governments
Colorado Department of Transportation
Colorado Department of Natural Resources
Colorado Department of Public Health and Environment

Federal

Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Air Force
National Park Service
Natural Resources Conservation Service
U.S. Department of Agriculture
U.S. Forest Service

Tribal

Apache Tribe of Oklahoma
Cheyenne and Arapaho Tribes
Arapaho Cultural Heritage Program
Comanche Nation
Crow Creek Sioux Tribe of the Crow Creek Reservation
Crow Tribe of Montana
Shoshone Tribe of the Wind River Reservation
Fort Sill Apache Tribe of Oklahoma
Jicarilla Apache Nation
Kiowa Indian Tribe of Oklahoma
Mescalero Apache Tribe of the Mescalero Reservation
Arapaho Tribe of the Wind River Reservation
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation
Oglala Sioux Tribe
Ohkay Owingeh
Pawnee Nation of Oklahoma
Pueblo of Cochiti
Pueblo of San Ildefonso
Pueblo of Santa Ana
Pueblo of Santa Clara
Pueblo of Zuni
Rosebud Sioux Tribe of the Rosebud Indian Reservation
Shoshone-Bannock Tribes of the Fort Hall Reservation
Southern Ute Indian Tribe of the Southern Ute Reservation
Standing Rock Sioux Tribe of North & South Dakota
Three Affiliated Tribes of the Fort Berthold Reservation
Ute Mountain Tribe of the Ute Mountain Reservation
Ute Indian Tribe of the Uintah & Ouray Reservation
Wichita and Affiliated Tribes

5.5 Comments on the Draft EA

On April 17, 2020, Reclamation issued a news release announcing the availability of the Draft EA for public review and comment. The Draft EA was available on Reclamation's website at:

https://www.usbr.gov/gp/ecao/nepa/pueblo_rmp.html. Reclamation also sent a news release to individuals and entities included in Reclamation's Eastern Colorado Area Office Pueblo Distribution List. A printed copy of the Draft EA distribution list is available upon request.

Reclamation requested comment on the Draft EA by May 11, 2020. Reclamation received six emails including four with general or specific comments on the Draft EA. Copies of comment received are included as Appendix E. Appendix E also includes Reclamation's responses to each comment and a description of any changes made to the Final EA.

5.4 Agency Consultation

During the RMP development process, Reclamation has had multiple meetings and site visits with CPW staff from the Lake Pueblo State Park, SWA, and CPW's Southwest Regional Office.

The US Fish and Wildlife Mountain-Prairie Region ECOS-IPAC website was reviewed multiple times during RMP development for the presence of ESA-listed species in Pueblo County. Reclamation obtained an official species list on November 12, 2019. See Section 4.8.1 for additional information.

References

ACOE. 1994. Pueblo Dam Water Control Manual, Water Control Diagram. Pueblo Dam and Reservoir. Albuquerque District, Army Corps of Engineers. Revised August 1994.

APLIC. 2012. Reducing Avian Collisions with Power Lines. Avian Power Line Interaction Committee. October. Available at: http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf Accessed November 2015.

Brant, Suzanne, Christina Kester-Tallman, Tosh McKetta, and Ted Hoefer. 2010. Class III Cultural Resource Inventory of the Pueblo Reservoir, Pueblo County, Colorado. Cultural Resource Analysts, Inc, Longmont, Colorado. Report prepared for United States Bureau of Reclamation, Eastern Colorado Area Office, Loveland, Colorado.

CDPHE. 2018. Colorado's Section 303(D) List of Impaired Waters and Monitoring and Evaluation List, 5 CCR 1002-93, Regulation #93. Colorado Department of Public Health and Environment, Water Quality Control Commission, Denver, CO. March 30.

CDPHE. 2019. Colorado 2018 Air Quality Data Report. Colorado Department of Public Health, Air Pollution Control Division, Denver, CO. October 21, 2019.

CGS. 2015. Physiographic Provinces of Colorado. Colorado Geological Survey. Available at: http://coloradogeologicalsurvey.org/colorado-geology/topography/physiographic/. Accessed June 2015.

CNAP. 2000. Creating an integrated weed management plan: a handbook for owners and managers of lands with natural values. Colorado Natural Areas Program, Colorado State Parks, Colorado Department of Natural Resources; and Division of Plant Industry, Colorado Department of Agriculture. Denver, Colorado.

CNHP. 2007. Rare Plant Surveys on Fort Carson 2006-2007. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO. December 21.

CNHP. 2016. Biodiversity Tracking and Conservation System (BIOTICS). Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO. Available: http://www.cnhp.colostate.edu/projects/eco_systems/. Accessed January 2016.

COEDIT. 2020. Tourism, Where Wander Meets Wonder. Colorado Office of Economic Development and International Trade. Website: https://choosecolorado.com/key-industries/tourism/ accessed on January 3, 2020.

CPW. 2008. Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors. Colorado Division of Wildlife. February 2008.

CPW. 2012. Facilities and Operations Assessment, Lake Pueblo State Park. Colorado Division of Parks and Wildlife. October 2012.

CPW. 2015. State Wildlife Action Plan, A Strategy for Conserving Wildlife in Colorado. Colorado Division of Parks and Wildlife. Denver, CO.

CPW. 2017. Lake Pueblo State Park Resource Stewardship Plan Draft. Colorado Division of Parks and Wildlife.

CPW. 2018. 2019-2023 Statewide Comprehensive Outdoor Recreation Plan. Colorado Division of Parks and Wildlife. December 11, 2019. Accessed at: https://cpw.state.co.us/aboutus/Pages/SCORP.aspx.

CPW. 2019a. Lake Pueblo State Park, Trail Management Plan. Final Internal Draft. Colorado Division of Parks and Wildlife. May 24, 2019.

CPW. 2019b. Pueblo Reservoir, Fish Survey and Management Data. Accessed at: https://cpw.state.co.us/thingstodo/Fishery%20Survey%20Summaries/PuebloReservoir.pdf, on November 18, 2019.

CPW. 2019c. Arkansas River at Pueblo, Fish Survey and Management Data. Accessed at: http://cpw.state.co.us/thingstodo/Fishery%20Survey%20Summaries/ArkansasRiverPueblo.pdf, Access on November 18, 2019.

CPW. 2019d. CPW All Species Activity Mapping Data. Colorado Division of Parks and Wildlife, GIS Unit. Updated October 8, 2019. Accessed at: https://www.arcgis.com/home/item.html?id=190573c5aba643a0bc058e6f7f0510b7 on November 18, 2019.

CPW. 2019e. Threatened and Endangered Species List. Colorado Division of Parks and Wildlife. Website: http://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx. Colorado Division of Parks and Wildlife. Accessed: November 18, 2019.

CSP. 2010. Lake Pueblo State Park, Asset Inventory. Colorado State Parks.

Corona Insight. 2009. Marketing Assessment Study. Corona Insight Marketing.

CSU. 2019. Colorado Rare Plant Guide. Colorado State University Website: https://cnhp.colostate.edu/rareplants/guide.asp?id=19348 accessed November 12, 2019.

Decker, K. 2006. *Asclepias uncialis* Greene (wheel milkweed): a technical conservation assessment. [Online]. U.S, Department of Agriculture, Forest Service, Rocky Mountain Region. April 24, 2006. Available: http://www.fs.fed.us/r2/projects/scp/assessments/asclepiasuncialis.pdf. Accessed January 2016.

GSU. 2015. HyperPhysics. Georgia State University, Department of Physics and Astronomy. Available: http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html. Accessed June 25.

Glasgow, A. 2016. Colorado Parks and Wildlife. (2016). Personal communication on February 1, 2016 providing information about paleontological resources.

Land Stewardship Consulting and Biohabitats, Inc. 2011. Lake Pueblo State Park Weed and Mapping Inventory.

NLCD. 2011. 2011 National Land Cover Data (2011 Edition). Available: http://www.mrlc.gov/. Accessed January 26, 2016.

NRCS. 1979. Soil Survey of Pueblo Area, Parts of Pueblo and Custer Counties. United States Department of Agriculture, Natural Resource Conservation Service. Soil Conservation Service.

PricewaterhouseCooper, LLP. 2002. Market Assessment.

Pueblo County. 2014. Business in Pueblo County-Major Industries. Pueblo County, Colorado. Accessed at: http://pueblo.org/living-in-pueblo/community/business-pueblo-county-major-industries, January 2, 2020.

Reclamation. 1975. Lease (Contract No. 14-06-0700-8018) between the United States and the State of Colorado for the administration of recreation by the Division of Parks and Outdoor recreation and the Management of fish and wildlife resources by the Division of Wildlife on Pueblo Reservoir, Colorado. January 15, 1975.

Reclamation. 1981. Pueblo Reservoir Area Management Plan. Fryingpan-Arkansas Project. Pueblo, Colorado. May 15, 1981.

Reclamation. 1993. Fryingpan-Arkansas Project Final Cost Allocation Narrative. U.S. Department of the Interior, Bureau of Reclamation, Denver, CO. May 7, 1993.

Reclamation. 2013. Recreation Facility Design Guidelines. U.S. Department of the Interior, Bureau of Reclamation, Denver, CO. April 2013

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

Reclamation. 2015. Integrated Pest Management Plan and Pesticide Discharge Management Plan. Bureau of Reclamation, Eastern Colorado Area Office, Loveland, CO, December 2015.

Reclamation. 2017. 2017 Associated Facility Review Report, Pueblo Fish Hatchery. U.S. Department of the Interior, Bureau of Reclamation, Eastern Colorado Area Office. October 2017.

Reclamation et al. 1975. Recreation and General Development Plan for the Pueblo Reservoir State Recreation Area. U.S. Department of the Interior, Bureau of Reclamation and National Park Service, with the State of Colorado Division of Parks and Outdoor Recreation. September 1975.

U.S. Census. 2019. QuickFacts, Pueblo County Colorado. U.S. Census Bureau. Accessed at: https://www.census.gov/quickfacts/fact/table/CO,pueblocountycolorado/PST045219 on January 2, 2020.

USFWS. 2019. List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project, November 12, 2019. Consultation Code: 06E24000-2020-SLI-0267. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Colorado Ecological Services Field Office. Denver, CO.

USFS. 1998. Stemming the invasive tide: Forest Service strategy for noxious and nonnative plant management. Washington, D.C. U.S. Department of Agriculture, Forest Service.

Usher, M.B. 1988. Biological invasions of nature reserves: A search for generalizations. Biological Conservation 44:119-135.

Water Education Colorado. 2017. Citizen's Guide to Colorado's Transbasin Diversions. Water Education Colorado. Denver, Colorado.

Weiss, S. and D.D. Murphy. 1998. A control strategy for invasive species. Endangered Species Update 7 (3 and 4):6.

Appendix A- RMP Planning Area Maps

Appendix B-Lake Pueblo RMP

Appendix C-Lake Pueblo Trail Management Plan

Appendix D-Best Management Practices