STATE OF COLORADO

Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
Fax: (303) 866-4474
www.cwcb.state.co.us

TO: Colorado Water Conservation Board Members

FROM: Chris Sturm, Stream Restoration Coordinator
Watershed Protection & Flood Mitigation Section

DATE: May 10, 2010

SUBJECT: **Agenda Item 24, May 18 - 19, 2010 Board Meeting**
Southern Delivery System Fish and Wildlife Mitigation Plan

Introduction

The Southern Delivery System (SDS) is a proposed regional water delivery project (see attached map) designed to serve most of the future water needs of its Project Participants, which include: the City of Colorado Springs, City of Fountain, Security Water District, and Pueblo West Metro District. Phase I of the SDS project is scheduled for completion in 2016. The projected cost is $880 million. The primary components of Phase I are a 53 mile raw water pipeline, three pump stations, a 50 mgd water treatment plant, and ten miles of treated water pipelines. Phase II will include two reservoirs with a combined storage of 58,500 acre-feet, an expanded water treatment plant, expanded pump station, and expanded treated water system.

Discussion

The Project Participants have prepared a Fish and Wildlife Mitigation Plan (Plan) to satisfy the requirements of C.R.S. 37-60-122.2. The Plan has been conditionally approved by the Colorado Wildlife Commission at their March 2010 meeting. The condition is that the Project Participants enter into a signed Memorandum of Agreement (MOA) with the Colorado Division of Wildlife (DOW), which should be finalized in the near future. Mitigation measures in the Plan include fish stocking, fish habitat improvements, and fish retention structures in Pueblo Reservoir, Lake Henry, and/or Lake Meredith. The Plan also commits to aquatic research in Monument and Fountain Creeks to provide more information on selected fish species. The projected cost of the mitigation outlined in the Plan is $10.5 million. The Project Participants are also committed to project mitigation outlined in the Bureau of Reclamation's Record of Decision and Pueblo County's 1041 Permit. The projected costs for other mitigation measures are in the $10's of millions. This includes $50 million for Fountain Creek aquatic habitat improvements designed to improve water quality, mitigate flooding, and prevent erosion and sedimentation.

Staff Recommendation

The MOA between DOW and the Project Participants must be executed before the Board can approve the Plan. Staff recommends that the Board approve the Plan according to C.R.S. 37-60-122.2, but only if the MOA has been signed by DOW and the Project Participants.

FIGURE 1
SOUTHERN DELIVERY SYSTEM
PROJECT PLAN

FINISHED WATER CONVEYANCE

UNTREATED WATER CONVEYANCE

EXCHANGE FLOW CONVEYANCE

POWER CONVEYANCE

FIBER OPTICS

N

5 2.5 0 5

Miles

SDS WATER TREATMENT PLANT

WTP

CITY OF COLORADO SPRINGS

UPPER WILLIAMS CREEK RESERVOIR

BRADLEY PUMP STATION

SECURITY

WILLIAMS CREEK RESERVOIR

FOUNTAIN

WILLIAMS CREEK PUMP STATION

TELLER COUNTY

FREMONT COUNTY

Fort Carson Military Reservation

EL PASO COUNTY

PUEBLO COUNTY

Fountain Creek

FREMONT COUNTY

PENROSE

Arkansas River

PUEBLO WEST

JUNIPER PUMP STATION

PUEBLO

Pueblo Reservoir

37-60-122.2. Fish and wildlife resources - legislative declaration - fish and wildlife resources fund - authorization.

(1) (a) The general assembly hereby recognizes the responsibility of the state for fish and wildlife resources found in and around state waters which are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities. The general assembly hereby declares that such fish and wildlife resources are a matter of statewide concern and that impacts on such resources should be mitigated by the project applicants in a reasonable manner. It is the intent of the general assembly that fish and wildlife resources that are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities should be mitigated to the extent, and in a manner, that is economically reasonable and maintains a balance between the development of the state's water resources and the protection of the state's fish and wildlife resources.

(b) Except as provided in this paragraph (b), the applicant for any water diversion, delivery, or storage facility which requires an application for a permit, license, or other approval from the United States shall inform the Colorado water conservation board, wildlife commission, and division of wildlife of its application and submit a mitigation proposal pursuant to this section. Exempted from such requirement are the Animas-La Plata project, the Two Forks dam and reservoir project, and the Homestake water project for which definite plan reports and final environmental impact statements have been approved or which are awaiting approval of the same, applicants for site specific dredge and fill permits for operations not requiring construction of a reservoir, and applicants for section 404 federal nationwide permits. If an applicant that is subject to the provisions of this section and the commission agree upon a mitigation plan for the facility, the commission shall forward such agreement to the Colorado water conservation board, and the board shall adopt such agreement at its next meeting as the official state position on the mitigation actions required of the applicant. In all cases the commission shall proceed expeditiously and, no later than sixty days from the applicant's notice, unless extended in writing by the applicant, make its evaluation regarding the probable impact of the proposed facility on fish and wildlife resources and their habitat and to make its recommendation regarding such reasonable mitigation actions as may be needed.

(c) The commission's evaluation and proposed mitigation recommendation shall be transmitted to the Colorado water conservation board. The board within sixty days, unless extended in writing by the applicant, shall either affirm the mitigation recommendation of the commission as the official state position or shall make modifications or additions thereto supported by a memorandum that sets out the basis for any changes made. Whenever modifications or additions are made by the board in the commission's mitigation recommendation, the governor, within sixty days, shall affirm or modify the mitigation recommendation which shall then be the official state position with respect to mitigation. The official state position, established pursuant to this subsection (1) shall be communicated to each federal, state, or other governmental agency from which the applicant must obtain a permit, license, or other approval.

(2) (a) Moneys transferred to the fish and wildlife resources fund pursuant to the provisions of section 37-60-121 (6) are hereby continuously appropriated to the Colorado water conservation board for the purpose of making grants pursuant to this subsection (2) and for offsetting the direct and indirect costs of the board for administering the grants. The interest earned from the investment of the moneys in the fund shall be credited to the fund.

(b) To the extent that the cost of implementing the mitigation recommendation made pursuant to subsection (1) of this section exceeds five percent of the costs of a water diversion, delivery, or storage facility, the board shall, upon the application of the applicant, make a mitigation grant to the applicant. The amount of the grant shall be sufficient to pay for the mitigation recommendation as determined by this section to the extent required above the applicant's five percent share. Any additional enhancement shall be at the discretion and within the means of the board. Under no circumstance shall the total amount of the grant exceed five percent of the construction costs of the project, or be disbursed in installments that exceed seventy percent of the amount of the grant during any fiscal year. Any mitigation cost in excess of ten percent of the construction costs of a project shall be borne by the applicant.

(c) An applicant may apply for an enhancement grant by submitting to the commission and the board an enhancement proposal for enhancing fish and wildlife resources over and above the levels existing without such facilities. The commission shall submit its recommendations on the proposal to the board for its consideration. The board, with the concurrence of the commission, may award a grant for fish and wildlife enhancement. Any such enhancement grant will be shared equally by the Colorado water conservation board's fish and wildlife resources fund and the division of wildlife's wildlife cash funds and other funds available to the division.

(d) For the purpose of this subsection (2), construction costs means the best estimate of the physical construction costs as fixed by the Colorado water conservation board as of the date of the grant application. Costs should be limited to design, engineering and physical construction and will not include the costs of planning, financing, and environmental documentation, mitigation costs, legal expenses, site acquisition or water rights.

(e) Species recovery grants from the fish and wildlife resources fund may be made for the purpose of responding to needs of declining native species and to those species protected under the federal "Endangered Species Act of 1973", 16 U.S.C. sec. 1531, et seq., as amended, in a manner that will carry out the state water policy.

(f) (Deleted by amendment, L. 2001, p. 692, § 28, effective May 30, 2001.)

(3) Decisions relating to the official state mitigation position made pursuant to paragraph (c) of subsection (1) of this section shall not be subject to judicial review.

(4) The board shall distribute mitigation and enhancement grants reasonably and equitably among water basins toward the end that those projects sponsored by beneficiaries east of the continental divide receive fifty percent of the money granted and those projects sponsored by beneficiaries west of the continental divide receive fifty percent of the money granted under this section.

(5) The general assembly hereby recognizes the role instream flows and river restoration projects play in mitigating the effects of the construction, operation, and maintenance of water diversion, delivery, and storage facilities. Therefore, the Colorado water conservation board and the operators of existing water diversion, delivery, or storage facilities projects are hereby authorized to apply directly to the board for moneys for projects to carry out the purposes of this section. The board is authorized to grant such moneys if it finds that such projects will further the purposes of this section.

Source: L. 87: Entire section added, p. 1297, § 5, effective July 13. **L. 97:** (1)(a) and (2)(a) amended and (2)(e) added, p. 1600, § 1, effective June 4. **L. 98:** (2)(f) added, p. 1004, § 5, effective May 27. **L. 99:** (2)(a) amended, p. 628, § 36, effective August 4. **L. 2001:** (2)(a), (2)(c), (2)(e), and (2)(f) amended, p. 692, § 28, effective May 30. **L. 2002:** (5) added, p. 456, § 28, effective May 23.

Southern Delivery System

Draft Fish and Wildlife Mitigation Plan

Prepared for:

The Colorado Wildlife Commission
in accordance with C.R.S. 37-60-122.2

In Partnership:

Colorado Springs Utilities
City of Fountain
Security Water District
Pueblo West Metropolitan District
Colorado Division of Wildlife

March 11, 2010

Contents

Tables

Figures

Abbreviations

ac-ft	acre-feet
ARLFP	Arkansas River Low Flow Program
1041 Permit	Pueblo County 1041 Permit No. 2008-002
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
cfs	Cubic feet per second
CMP	Compensatory Mitigation Plan
C.R.S.	Colorado Revised Statute
CSR	Clear Spring Ranch
CWC	Colorado Wildlife Commission
CWCB	Colorado Water Conservation Board
District	Fountain Creek Watershed, Flood Control, and Greenway District
EIS	Environmental Impact Statement
FWMP	Fish and Wildlife Management Plan
FEIS	Final Environmental Impact Statement
Fry-Ark	Fryingpan-Arkansas
NEPA	National Environmental Policy Act
PFMP	Pueblo Flow Management Program
Project Participants	City of Colorado Springs, City of Fountain, Security Water District, and Pueblo West Metropolitan District
Reclamation	United States Bureau of Reclamation
ROD	Record of Decision
SDS	Southern Delivery System
Springs Utilities	Colorado Springs Utilities
UAVFMP	Upper Arkansas Voluntary Flow Management Program
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWCR	Upper Williams Creek Reservoir
WCR	Williams Creek Reservoir
WTP	Water Treatment Plant

Executive Summary

The Southern Delivery System Project (SDS Project) is a proposed regional water delivery system that will serve the City of Colorado Springs, the City of Fountain, Security Water District, and Pueblo West Metropolitan District (Project Participants). The SDS Project is designed to serve all or most of the future water needs of the citizens of Project Participants through the year 2046.

Project Participants have prepared this Fish and Wildlife Mitigation Plan (FWMP) in collaboration with staff of the Colorado Division of Wildlife (CDOW). This draft FWMP summarizes the SDS Project's impacts on fish and wildlife, the Project Participants' plans to mitigate these impacts, and the benefits of the SDS Project to fish and wildlife. This draft FWMP also describes the timing of the impacts, mitigation activities, and benefits; presents initial cost estimates for mitigation; and explains the extensive avoidance and minimization actions taken by the Project Participants. This information is summarized using the following three specific mitigation categories:

- Fisheries and aquatic habitat mitigation
- Wetlands and riparian habitat mitigation
- Vegetation and wildlife mitigation

A Final Environmental Impact Statement (FEIS) was developed for the SDS Project by the U.S. Bureau of Reclamation (Reclamation). The FEIS identified the potential environmental impacts of the SDS Project, including those to fish and wildlife. Mitigations by the Project Participants for these impacts were identified as requirements in Reclamation's Record of Decision (ROD). The Project Participants have committed to other mitigation activities as requirements of both the United States Army Corps of Engineers' (USACE) Section 404 Individual Permit Application and the Pueblo County 1041 Permit No. 2008-002. This draft FWMP addresses the CDOW requested mitigations (summarized in **Table ES1** below, and in **Table 1**), potential benefits to fish and wildlife related recreation from the SDS Project (summarized in **Table ES2** below), and the mitigation activities required of the SDS Project by other agencies (see **Table 2**).

TABLE ES1
Mitigation Measures Requested by CDOW

Mitigation	Commitment
Fish Stocking	Offset potential losses of fishery stocks in Pueblo Reservoir, Lake Henry, and Lake Meredith due to SDS Project operations by stocking these and SDS Project reservoirs through cooperative funding for increased CDOW warm water fish production capability for fry and advanced fingerling fish.
Fish Habitat Improvement	Provide funding and/or materials to construct fish habitat improvement structures in Lake Henry, Lake Meredith, and Pueblo Reservoir.
Fish Retention Structures	Install fish screens at Lake Henry to support and maintain fish populations, and install walkways at existing Lake Meredith outlet screens to improve efficiency of screen cleaning and maintenance.

TABLE ES1
Mitigation Measures Requested by CDOW

Mitigation	Commitment
Aquatic Research	Research will be conducted on selected representative fish species to determine life history factors and the relationship to water flow, water quality, and habitat parameters most likely to be influenced by SDS Project operations.

In addition to the avoidance and minimization actions and mitigations described, this draft FWMP describes benefits included in the SDS Project through Project Participant s' commitments to enhance certain fish and wildlife, habitat, and recreational opportunities at several locations as presented in **Table ES2**.

TABLE ES2
Potential Benefits to Fish and Wildlife, Habitat, and Recreation from the SDS Project

Benefit	Description
Clear Spring Ranch	Develop small game hunting opportunities and trails/wildlife viewing.
Upper Williams Creek Reservoir	Develop angling (shore and boat) and other wildlife recreation opportunities, including construction of fish spawning habitat and two jetties.
Williams Creek Reservoir	Develop small game hunting opportunities and trails/wildlife viewing.
Improve Native Fish Habitat	Seek opportunities to preserve or develop Arkansas darter habitat along lower Fountain Creek and its tributaries.

This draft FWMP presents a summary of each of the SDS Project mitigation commitments and the habitat and recreation benefits, including the estimated cost and proposed schedule for each.

The Project Participants request that CDOW staff:

1. Approve this FWMP under Colorado Revised Statute (C.R.S.) 37-60-122.2.
2. Submit this FWMP on behalf of the Project Participants to the Colorado Wildlife Commission (CWC) for its review and acceptance.
3. Upon acceptance from the CWC, submit this FWMP on behalf of the Project Participants, along with a supporting letter of transmittal, to the Colorado Water Conservation Board (CWCB) for adoption.

1.0 Introduction

1.1 Southern Delivery System Project Overview

The SDS Project is a proposed regional water delivery project designed to serve most or all future water needs (through 2046) of the Project Participants. The first phase of the SDS Project has a projected cost of approximately $880 million and includes construction of the following facilities, which are scheduled for completion by 2016:

- A 53-mile raw water pipeline (66- and 72-inch diameter)
- Two 78-mgd raw water pump stations and one 50-mgd raw water pump station
- A water treatment plant (WTP) and finished water pump station with a capacity of 50 mgd (expandable in Phase 2)
- Ten miles of 30-inch to 96-inch diameter finished water pipelines

Phase 2 of the SDS Project includes the following:

- Addition of Upper Williams Creek Reservoir (UWCR), a 30,500 acre-feet (760 surface acres) terminal storage reservoir at a new dam site on upper Williams Creek.
- Expansion of the 50-mgd raw water pump station and WTP to 100-mgd capacity
- Expansion of the treated water system
- Addition of Williams Creek Reservoir (WCR), a 28,000 acre-feet (980 surface acres) exchange storage reservoir on lower Williams Creek, and exchange flow conveyance facilities to transfer exchange flow to and from Fountain Creek

UWCR is scheduled for completion in 2021, and the remainder of Phase 2 is scheduled for completion in 2025. The SDS Project facilities are shown on **Figure 1**.

1.2 Purpose of Document

This draft FWMP has been prepared in response to the requirements of C.R.S. 37-60-122.2 and outlines actions that the Project Participants will implement to mitigate impacts that the SDS Project may have on fish and wildlife.

1.3 Regulatory Process

The SDS Project has undergone, and continues to undergo, significant regulatory scrutiny at the federal, state, and local levels. At the federal level, Reclamation performed extensive and detailed environmental studies as a part of the National Environmental Policy Act (NEPA) process, the culmination of which was an FEIS and ROD.

The ROD was issued on March 20, 2009. It identified the SDS Project described in this draft FWMP as the Preferred Alternative. The SDS Project has been determined to cause "the least damage to the biological and physical environment" (Reclamation 2009).

The SDS Project will cross wetlands and other waters of the United States. The SDS Project requires a Clean Water Act Section 404 – Discharge of Dredged or Fill Material Permit from the USACE.

The SDS Project will result in permanent impacts to approximately 0.2 acres of jurisdictional wetlands, and permanent impacts to approximately 12.0 acres of non-jurisdictional wetlands. A Section 404 permit application has been submitted for the SDS Project. Project Participants are in the process of defining, in consultation with the CDOW and USACE, the wetlands that will be created as compensatory mitigation for the Section 404 permit application (Colorado Springs Utilities 2009).

This draft FWMP is prepared to satisfy the requirements of C.R.S. 37-60-122.2. The first portion of this statute states:

> (1)(a) The general assembly hereby recognizes the responsibility of the state for fish and wildlife resources found in and around state waters which are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities. The general assembly hereby declares that such fish and wildlife resources are a matter of state-wide concern and that impacts on such resources should be mitigated by the project applicants in a reasonable manner. It is the intent of the general assembly that fish and wildlife resources that are affected by the construction, operation, or maintenance of water diversion, delivery, or storage facilities should be mitigated to the extent, and in a manner, that is economically reasonable and maintains a balance between the development of the state's water resources and the protection of the state's fish and wildlife resources.

FWMPs for water projects considered under C.R.S. 37-60-122.2 are to be developed by the project applicant, working in cooperation with CDOW, and submitted to the CWC. Upon approval, the CWC forwards the mitigation plan to the CWCB for approval (CDOW 2009a). The FWMP, as approved by the CWCB and confirmed by the Governor, constitutes the official state position concerning a water project.

At the county and city levels, the SDS Project is subject to a variety of regulatory reviews and associated mitigations. Of these regulatory reviews, the Pueblo County 1041 Permit No. 2008-002 (1041 Permit) has notably comprehensive and extensive mitigation requirements. These mitigation requirements are detailed in the SDS 1041 Permit Terms and Conditions approved by the Pueblo Board of County Commissioners on March 18, 2009.

The extensive mitigations required under the permits described above are summarized in **Table 2**.

1.4 History of Partnership

The components outlined in this draft FWMP continue the strong history of partnership between Colorado Springs Utilities (Springs Utilities) and CDOW. Springs Utilities has worked with CDOW to use many of Springs Utilities' water supply facilities to promote habitat for fish and wildlife, and to provide recreational opportunities for the public, such as the greenback cutthroat trout recovery program, Pikeview Reservoir, and the North Slope Recreation Area.

1.4.1 Greenback Cutthroat Trout Recovery Program

The reservoirs and streams that make up Springs Utilities' South Slope Pikes Peak Collection System were developed as greenback cutthroat trout habitat. The program provides a feral broodstock and refugia population that is also a source of greenback cutthroat eggs.

1.4.2 Reservoirs and Recreation Areas

Springs Utilities has water supply reservoirs from which water is ultimately transported to its treatment plants for potable use. Some of these reservoirs (Rosemont, Rampart, Pikeview, Stanley, North Catamount, South Catamount, Crystal Creek, Prospect, Quail, and Nichols) are stocked by CDOW, with Springs Utilities allowing year-round fishing and recreation at many of them. In the North Slope Recreation Area, activities include bank and boat fishing, non-gasoline powered boating, mountain biking, picnicking, hiking, and scenic enjoyment.

1.5 Fish and Wildlife Mitigation Plan Partnership Goals

This draft FWMP was developed by the Project Participants working in close collaboration with the CDOW.

Project Participants intend, through the planning process for the SDS Project, to work in collaboration with federal, state, and local agencies, as well as non-profit groups. To date, the Project Participants have worked with a broad range of entities concerned with fish and wildlife protection. These include, among others:

- **Federal:** Reclamation, USACE, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service (USFWS), and the U.S. Geological Survey (USGS)
- **State:** CDOW, Colorado Department of Public Health and Environment (CDPHE), and CWCB
- **Local:** Pueblo County, El Paso County, and the Fountain Creek Watershed, Flood Control, and Greenway District (District)
- **Non-profit groups:** Fountain Creek Visioning Task Force, Trout Unlimited, and the National Audubon Society

2.0 Avoidance and Minimization

Throughout the SDS Project development process, the Project Participants maintained a goal of building an environmentally responsible project by avoiding and minimizing impacts of the project. As project impacts were identified during development of the Environmental Impact Statement (EIS) and analyses for the Section 404 permit application, the Project Participants took necessary steps to avoid and offset adverse impacts to aquatic and wildlife resources, including making the following changes to the original Proposed Action to avoid, and thus reduce, impacts of the SDS Project:

- Avoid impacts to 6.2 acres of jurisdictional wetlands (6.1 acres of permanently affected wetlands and 0.1 acres of temporarily affected wetlands) and the existing population of Arkansas darter by changing the terminal storage component of the SDS Project from Jimmy Camp Creek Reservoir to UWCR.
- Avoid impacts to wetlands in Williams Creek by routing return flows from WCR to Fountain Creek through a pipeline, instead of modifying the existing stream channel to convey these flows. This change avoids impacting 9.4 acres of jurisdictional wetlands (4.9 acres of permanent impacts and 4.5 acres of temporary impacts). This change also avoids affecting Arkansas darter habitat. The Arkansas darter is a state-listed and federal-candidate threatened species. Arkansas darter habitat was found in the area of Fountain Creek near the confluence of Williams Creek and Fountain Creek.
- Relocation of the proposed alignment of Bradley Road near the UWCR site provides an ancillary benefit by avoiding impacts to a pair of nesting golden eagles, ensuring the relocated Bradley Road is no closer than ½-mile to the nest.
- Avoid locations of the Needle and Threadgrass—Blue Grama grassland community at the north end of the Jimmy Camp Creek Reservoir site. Exclusion of this reservoir from the project avoids interference with the Sand Creek Ridge Potential Conservation Area (CNHP 2005a).

The avoidance and minimization efforts by the Project Participants are further detailed in the Section 404 permit application prepared for the USACE, which also documents that the SDS Project is the Least Environmentally Damaging Practicable Alternative under the Section 404 program.

As the final design progresses, the Project Participants will undertake the following efforts to avoid environmental impacts:

- Design final alignments and facilities to avoid or minimize wetland impacts.
- Assess alternative construction methods for pipeline crossings (e.g., directional drilling versus open cut) to minimize wetland and stream impacts.
- Review locations of high-quality grasslands, shrublands and woodlands, and other areas with desirable vegetation to determine design changes to the extent practical within the current NEPA study area that will avoid and minimize impacts. This includes pre-construction surveys for areas with known populations of dwarf milkweed and other plant species of concern to locate areas where impacts can be avoided and minimized.

- Construction planning will include conducting wildlife surveys, (e.g., burrowing owls, swift fox, prairie dogs, raptors, and mountain plover), in accordance with standard protocols (CDOW) to minimize disturbance and/or temporarily restrict construction in areas of seasonally sensitive habitat. When habitat disturbance is unavoidable, the Project Participants will develop mitigation plans, construction schedules, and reseeding/reclamation programs to optimize habitat recovery.

3.0 Fish and Wildlife Mitigation

The CDOW and the Project Participants have worked together to ensure reasonable mitigation measures are in place for the SDS Project. These measures address impacts to fisheries and aquatic habitat, wetland and riparian habitat, and wildlife habitat. Sections 3.1 through 3.3 summarize the relevant project impacts identified in the FEIS, identify the specific mitigations proposed as part of this CDOW mitigation plan, and provide a schedule for completing the mitigation measures. A summary of the proposed mitigation components is provided in **Table 1**.

3.1 Fisheries and Aquatic Habitat

3.1.1 Aquatic Life in Streams and Rivers

The key stream and river resources affected by the SDS Project are the upper Arkansas River (above Pueblo Reservoir), the lower Arkansas River (below Pueblo Reservoir), Fountain Creek below the confluence with Monument Creek, and Monument Creek downstream of Garden of the Gods Road. The upper Arkansas River is characterized by steep-gradient, high-velocity flows that are confined to a relatively narrow rock and cobble stream channel. The upper Arkansas River supports cold water fisheries, with brown trout being the most abundant species. As the Arkansas River progresses downstream, it becomes characterized by flatter gradients, with the stream channel changing to a shifting sand channel that meanders along the alluvial flood plain. The lower Arkansas River and Fountain Creek primarily support warm water native fish communities. Fountain Creek is inherently an unstable aquatic system that is routinely subject to flash flooding, high variation in flow due to existing conditions, and agricultural use and related impacts.

Impact

Upper Arkansas River

The FEIS found that upstream of Cañon City, the SDS Project would not change the hydrology from existing conditions and would therefore have negligible effects on aquatic life. Downstream of Cañon City, the analysis found that there would be lower minimum stream flows and more fluctuation of flows as compared to existing conditions, which could result in a minor adverse impact to aquatic life (Reclamation 2008, FEIS Section 3.10.9.1).

Arkansas River Downstream of Pueblo Reservoir

The FEIS found that the SDS Project will cause slightly more frequent daily fluctuations in Arkansas River stream flow than existing conditions due to compliance with the City of Pueblo Flow Management Program (PFMP) in the reach from Pueblo Reservoir to Wildhorse Creek. The impact from this change on aquatic life will be negligible (Reclamation 2008, FEIS Section 3.10.9.1); however, impacts to recreational fishing are expected.

The SDS Project impacts to angling recreation on the Arkansas River downstream of Pueblo Reservoir were based on the number of days that flows will meet the PFMP targets. The SDS Project will positively increase the number of days that the PFMP targets are met (Reclamation 2008, FEIS Section 3.14.5). The impact of the SDS Project on the fishery that is

stocked and managed by CDOW in this reach of the Arkansas River is expected to result in negligible permanent effects to angling opportunities. There will be temporary adverse effects due to interruptions in angling access caused by the construction of the Pueblo Dam Connection (water intake) facilities.

In the reach from Wildhorse Creek to Fountain Creek, the FEIS determined that there would be moderate adverse effects from the SDS Project due to lower stream flows in winter months (Reclamation 2008, FEIS Section 3.10.9.1).

Fountain Creek

The SDS Project would result in higher minimum stream flows, higher average stream flows, higher maximum stream flows, more fluctuations, and lower fish habitat availability for most species in Fountain Creek, although habitat availability for adult flathead chub would be higher in typical and dry years. These differences would be unfavorable to most fish and invertebrates, resulting in minor adverse effects (Reclamation 2008, FEIS Section 3.10.5.1) that may result in alterations of fish composition, distribution, and abundance.

Mitigation – Flow Management

Changes to stream flow due to the operation of water collection and conveyance systems can affect native fish communities and their habitats, as well as recreational angling.

One way to protect aquatic life and recreational angling is through flow management programs. Springs Utilities is committed to continued participation in the flow management programs for which they have existing agreements, including the Upper Arkansas Voluntary Flow Management Program (UAVFMP), the PFMP, the Arkansas River Low Flow Program (ARLFP), and the Flow Management Committee for the PFMP.

The UAVFMP was designed to provide water for fisheries and recreation in the upper Arkansas River by providing target flows from Twin Lakes and Turquoise Lake to Pueblo Reservoir. Components of the UAVFMP include maintenance of minimum year-round flow, maintenance of minimum stream flow stage during spawning season and throughout the winter incubation period, maintenance of minimum flows during spring for egg hatching and fry emergence, augmentation of summer flows for recreational purposes, limitation of daily stream flow changes, and reductions in early fall flows if benefits warrant. Springs Utilities has participated in this voluntary program with 99 percent compliance since 1990.

The PFMP, which sets target flows on the Arkansas River through the City of Pueblo, is based on a 2004 Intergovernmental Agreement between Colorado Springs, the Board of Water Works of Pueblo, the City of Aurora, and the Southeastern Colorado Water Conservation District. Springs Utilities has participated in the PFMP since March 2004.

The ARLFP's goal is to promote the biological health of the Arkansas River and the success of the Corridor Legacy Project. The ARLFP is an agreement in which the Board of Water Works of Pueblo and Springs Utilities each make 1,500 ac-ft of water stored in Pueblo Reservoir available to be released during times when the flow in the river at the Above Pueblo Location (defined as Above Pueblo Gage plus hatchery return flows) is less than 50 cfs. Springs Utilities' participation in this program will begin when the SDS Project begins water delivery, which is scheduled for 2016.

Springs Utilities will be required to adhere to flow management programs as described above as part of their long-term contracts with Reclamation.

Mitigation – Aquatic Habitat

Springs Utilities will support CDOW efforts to preserve and enhance fishery and occupied Arkansas darter habitat as a component of projects developed through the District, or other agencies, insofar as the efforts meet the requirements of the 1041 Permit. An example includes the use of channel realignment projects to control water flow and sediment distribution on lower Fountain Creek to improve fish habitat and riparian habitats.

Mitigation – Aquatic Life

Springs Utilities will implement the following aquatic life monitoring and mitigation activities. These mitigation measures are included in the ROD. Reclamation will oversee these mitigation measures:

- The effects of the operation of the SDS Project upon aquatic life in Fountain Creek will be monitored. Aquatic sampling will be conducted once per year at up to 13 locations. Information obtained from this monitoring effort will be incorporated into the adaptive management program for the SDS Project.
- Research will be conducted on selected representative fish species, but with an emphasis on flathead chub, to determine life history factors (such as migration, spawning, and dispersal patterns; spawning timing and location; egg deposition/movement, fry distribution and habitat utilization; rearing and adult habitat selection; and species interactions) and the relationship to water flow, water quality, and habitat parameters most likely to be influenced by SDS Project operations. Support of this research project will be conducted initially in the years 2011 through 2013, and for one year in the 2020 to 2025 timeframe.
- The ROD also directs Springs Utilities to monitor aquatic life in the Arkansas River from Pueblo Dam to the Las Animas Gage. As stated, effects on aquatic life in the segment from the Fountain Creek confluence to the Las Animas gage are predicted to be negligible to minimal based on hydrologic models. This includes monitoring the effects of the operation of the project upon aquatic life in Fountain Creek and the Arkansas River, and coordinating these efforts to meet goals stated in the ROD, 1041, and FWMP. Aquatic monitoring will be conducted annually in collaboration with the USGS and CDOW. Information obtained from this monitoring effort will be incorporated into the adaptive management program for the SDS Project.
- Project impacts on the Arkansas River between Pueblo Dam and the Fountain Creek confluence are expected to be minimal, however, changes in flow may have a more direct effect upon fishing recreation. Due to the high visibility and angler use within this segment of the river through the City of Pueblo, an assessment of SDS Project operations on fishing recreation flows is appropriate. The CDOW will conduct studies to determine angling use as related to flows. This may include creel surveys and fishery monitoring completed as part of regular CDOW fishery management activities. Springs Utilities will comply with flow management agreements and programs as described above, and consider necessary changes under the adaptive management plan.

3.1.2 Reservoir Fisheries

Pueblo Reservoir is a large storage reservoir located on the Arkansas River in Pueblo County, about 6 miles upstream and west of the City of Pueblo, as shown in **Figure 2**. Pueblo Dam was built by Reclamation between 1964 and the mid-1980s as part of the

Fryingpan-Arkansas (Fry-Ark) project and is a multipurpose, trans-mountain water diversion and delivery project in southern and central Colorado. The Fry-Ark Project makes available water diverted from the Western Slope and, together with available water supplies in the Arkansas River Basin, provides an average annual water supply of 73,300 ac-ft primarily for the supplemental irrigation of 280,600 acres in the Arkansas Valley, as well as municipal and industrial use (Reclamation 2008, FEIS Section 1.4.1). The SDS Project is seeking contracts to use 42,000 ac-ft of excess storage capacity in Pueblo Reservoir. Excess capacity contracts would allow the Project Participants to store non-Fry-Ark Project water in excess Fry-Ark storage space. Pueblo Reservoir is located within Pueblo State Park and is a key fishing recreation resource along the Front Range. The lake is both a warm- and cool-water fishery (for black and white bass, wipers, walleye, catfish, crappie, and bluegill) and also affords a cold-water fishery for rainbow trout due to the diverse thermal regime.

Lake Henry and Lake Meredith are off-channel reservoirs along the lower Arkansas River that are part of the Colorado Canal System, as shown in **Figure 2**. These reservoirs are used to exchange flows from the Colorado Canal to the upper Arkansas River Basin, and have storage volumes of approximately 10,000 ac-ft and 40,000 ac-ft, respectively. Both lakes are warm-water fisheries for numerous species, especially stocked catfish, saugeye, and wipers, and they are habitat for invertebrates typical of reservoirs in the area.

Impact

The SDS Project would use WCR to exchange reusable return flows from Fountain Creek to Pueblo Reservoir, reducing the potential to exchange Colorado Canal System water into Pueblo Reservoir. At full capacity (in the 2050 timeframe), the SDS Project would reduce average water surface elevations and depths from 0.3 to 1.2 feet in Lake Henry and Lake Meredith, and up to 6.0 feet in Pueblo Reservoir (Reclamation 2008, FEIS Section 3.5.5.1). This reflects a reduction in water surface area of at least 257 acres at Pueblo Reservoir, 161 acres at Lake Meredith, and 86 acres at Lake Henry. Generally, lower reservoir water levels may be expected to decrease available spawning/rearing habitat, increase water flushing rates and the potential for fish emigration out of the reservoirs, and impair productivity and feeding, as characterized in the FEIS as minor adverse impacts at Pueblo Reservoir and moderate adverse impacts at Lake Henry and Lake Meredith. Decreases in water surface area of these project reservoirs may result in a decline in recreational fishing use.

The overall decline in water levels in Pueblo Reservoir may increase the potential for invasion by non-native vegetation species at the upper end of the reservoir (which is part of the CDOW Pueblo State Wildlife Area). Mitigation for vegetation impacts is discussed in Section 3.2.1 of this draft FWMP.

Mitigation – Fish Stocking

Increased stocking of advanced fingerlings is one mitigation option, along with others listed below, to offset potential losses of fishery stocks in Pueblo Reservoir, Lake Henry, and Lake Meredith due to SDS Project operations by stocking these and SDS Project reservoirs through cooperative funding for increased CDOW production capability for fry and advanced fingerling fish (in addition, fish stocking is also being proposed for fishery enhancement at UWCR). Current CDOW warm water fish production is inadequate to compensate for the additional fish stocking that may be needed. Fish hatchery facilities could be built at new or existing hatchery locations commensurate with the required fish stocking as determined by CDOW. An additional 3.76 million fry and advanced fingerling

warm-water fish are contemplated to be required with full build out of the SDS Project (CDOW Fish Stocking and Production White Paper, 2009).

Mitigation – Fish Retention Structures

Proposed mitigation for increased water level fluctuations and fish emigration is to install fish screens at the outlet works at Lake Henry. These screens would prevent fish passage out of the lake when flow is released, while also preventing vegetation from blocking or impeding flows out of the reservoir. Based on communication with CDOW personnel, adequate screens and control facilities are currently in place at Lake Meredith to prevent fish emigration. However, an improved access structure would provide by Project Participants to improve access for manual vegetation removal from existing screens.

Mitigation – Fish Habitat Improvement

CDOW will place habitat structures in Lake Henry, Lake Meredith, and Pueblo Reservoir to provide for increased survival of juvenile fish and for refugia that will enable fish to utilize structure during drawdown periods. Project Participants will provide mitigation funding to purchase habitat structure materials that will be placed by CDOW, and will also support these improvements by providing materials (e.g., recycled construction material).

3.1.3 Invasive Species

Aquatic nuisance species control associated with operations at Pueblo Reservoir and SDS Project reservoirs is of high importance to the CDOW fisheries management and regional municipal water users, especially regarding control of the zebra mussel (*Dreissena polymorpha*) and quagga mussel (*Dreissena bugensis*). Zebra and quagga mussels are present in Pueblo Reservoir and could spread to new and existing facilities through raw pipeline water delivery systems (Reclamation 2008, FEIS Section 3.10.5.1).

Impact

The mussel larval stage (veliger) could be transported through the untreated water pipeline to the terminal storage reservoir and other facilities where these invasive species may become established. The SDS Project will not impact invasive mussels in Pueblo Reservoir.

Mitigation

Mitigation for mussels will be aimed at preventing their spread through the SDS Project pipeline. This will not include any measures to reduce populations in Pueblo Reservoir.

A "T" connection to the River Outlet Works piping will be installed during construction of the intake for the SDS Project. This connection will allow for a mussel control system to be implemented in the future if it is deemed necessary.

3.2 Wildlife Habitat

3.2.1 Vegetation

Impact

The project would have major permanent effects on Upland and Mesic Native Grasslands largely as a result of reservoir construction and minor permanent effects on Shrublands and Woodlands. Other types of vegetation could be expected to experience negligible to minor

impacts (Reclamation 2008, FEIS Section 3.12.5.1). Additionally, lowering of water levels and water surface area at Pueblo Reservoir may indirectly increase the spread of tamarisk.

Mitigation

Springs Utilities will implement the following vegetation mitigations to maintain and improve wildlife habitat as specified in the ROD. Reclamation will oversee these mitigation measures:

- Replace mature trees (diameter at breast height of 12 inches or greater) within construction areas at a 1:1 ratio with the same or similar native species with available nursery container stock or pole plantings as soon as practicable after construction activities have ended.
- For 1 year after construction, monitor the construction areas to determine if appropriate native vegetation is establishing. If native vegetation is not establishing, the site will be reseeded with appropriate species.
- After identifying vegetation populations to avoid, mark populations within or nearby the construction easement as environmentally sensitive so that workers avoid inadvertent impacts.
- During construction, wash major construction equipment entering the site so that noxious weeds are not spread from other construction sites.
- Use certified weed-free mulch after seeding construction areas.
- Reseed construction areas with comparable native vegetation as soon as practicable after disturbance, using seed that does not contain any noxious weed seed.
- Monitor construction areas for 3 years after construction to assess whether noxious weeds have invaded the site. If noxious weeds are present, weed control plans will be formulated and implemented.
- Because the project may indirectly increase the spread of tamarisk, the Project Participants will work with the Colorado Department of Agriculture's Colorado Noxious Weed Management Team on high priority tamarisk infestation areas in the Arkansas Valley, including submitting a Request for Partnership Evaluation. Due to its topography, the inlet area of Pueblo Reservoir may potentially be one of the special areas of interest. CDOW would be a cooperator in these efforts because of its management of the Pueblo State Wildlife Area in that vicinity.

3.2.2 Wildlife

Impact

The project would have negligible effects on federally listed species or critical habitat. Impacts to other wildlife species and habitat were found to be negligible to moderate (Reclamation 2008, FEIS Section 3.13.5.1).

Mitigation

In addition to submitting this FWMP, Springs Utilities will implement the following wildlife mitigation measures. These measures were specified in the ROD and will be overseen by Reclamation.

- Promptly revegetate all disturbed areas with native species that provide species diversity, and food and cover for large game and wildlife.

- Conduct clearance surveys in suitable habitat for state-listed species following standard protocols, as available, prior to construction (e.g., prairie dogs, burrowing owls, and mountain plover).
- Conduct raptor nest surveys prior to construction and impose seasonal restrictions to surface activity within recommended buffers (generally ¼ to ½ mile) around active raptor nest sites and heron rookeries during construction.
- Consult with CDOW and the USFWS Migratory Bird Permit Office to develop mitigation for unavoidable loss of raptor nests. Options may include constructing artificial nests in suitable habitat or enhancing prey habitat.
- Develop construction schedules to avoid impacts to nesting migratory birds. If construction is scheduled to occur during the nesting season (April 1 through August 31) in areas where migratory birds may nest, a qualified biologist will conduct a nesting bird survey prior to the commencement of construction activities to determine the presence of migratory birds and their nests. If an active nest is detected, a buffer zone between the nest and the limit of construction will be flagged and avoided during the nesting season, or construction will be scheduled outside of the nesting season.
- Conduct pre-construction surveys for swift fox den sites within appropriate habitat along the pipeline corridor and proposed reservoir sites. Avoid surface disturbance within ¼-mile of active den sites while young are den-dependent (March 15 through June 15).
- Restrict pesticides for rodent control within swift fox overall range.
- Impose seasonal restrictions on construction to avoid sensitive big game winter range habitat (from first large snowfall to summer green-up).
- Install wildlife crossovers (trench plugs) during pipeline construction with ramps on each side at a maximum of ¼-mile intervals and at well-defined game trails.
- Create additional nesting habitat or nest boxes in nearby trees for the Lewis' woodpecker when nest trees are destroyed.

By replacing native vegetation and improving natural population diversity in certain areas, the long-term effects on wildlife should be reduced by allowing wildlife to return to disturbed areas. Pre-construction surveys will identify wildlife use at the time of construction and allow for planning for avoidance and minimization. Imposing seasonal or other restrictions on construction should enable wildlife to use important habitat, especially during breeding and other critical periods. Wildlife crossovers installed within the pipeline trench should facilitate wildlife passage and provide escape routes for wildlife trapped within the trench, thereby reducing mortality (Reclamation 2009).

3.3 Wetlands and Riparian Habitat

Impact

Wetland impacts are described in detail in the Section 404 Individual Permit application prepared for the SDS Project (CH2M HILL 2009). Approximately 0.2 acres of Section 404 jurisdictional wetlands and approximately 12.0 acres of non-jurisdictional wetlands are affected.

Mitigation – Commitments in the ROD

Springs Utilities will implement the following wetland, water, and riparian mitigations to maintain and improve fish and wildlife habitat as specified in the ROD. Reclamation will oversee these mitigation measures:

- Mitigate impacts to jurisdictional and non-jurisdictional wetlands at the place of disturbance where possible. Construct compensatory wetlands to replace existing wetland functions and values. Compensatory wetland mitigation will likely occur at the Clear Spring Ranch (CSR) site on Fountain Creek downstream of the City of Fountain.
- Evaluate and consider a strategy to increase the sinuosity of Fountain Creek at appropriate locations so that wetlands areas can be created.

Mitigation – Commitments at Clear Spring Ranch

Springs Utilities' CSR, located just south of the City of Fountain, was selected as the site for mitigation of the 0.2 acres of jurisdictional wetland impacts. A Compensatory Mitigation Plan (CMP) is being developed with the Section 404 permit application to address the 0.2 acres of jurisdictional wetland impacts. The 12.0 acres of non-jurisdictional wetland impacts will be mitigated in the future per Reclamation requirements.

The CMP addresses the mitigation of wetland impacts at a 1:1 ratio and fits into the larger watershed vision of the Strategic Plan for the Fountain Creek Watershed (Fountain Creek Vision Task Force 2009). This vision was developed by a large stakeholder group, including government agencies, local municipalities, businesses, non-profit groups, and private citizens, with a long-term goal to restore and revitalize the Fountain Creek ecosystem for wildlife habitat, fishing, and recreation. Mitigation goals proposed in the CMP at CSR include:

- Creation of over 12 acres of high-function wetland and riparian habitat
- Restoration and stabilization of the Fountain Creek channel at select locations
- Enhancement and revitalization of portions of the ecosystem at CSR
- Improvement of water quality by reduction of erosion and sediment
- Protection of habitat through a conservation easement

3.4 Water Quality and Geomorphology

3.4.1 Water Quality

Fountain Creek is an aquatic system that is routinely subject to flash flooding, erosion, high variation in flow, and agricultural practices and related impacts. Water quality concerns in Fountain Creek include:

- Increased bacterial concentrations, particularly *E. coli*, associated with urban and agricultural runoff that have created a potential hazard to recreational users of the creek
- Salinity levels that are elevated are of some concern, although they do not impact agricultural water uses nor do they require extraordinary treatment for domestic use

Mitigation – Water Quality

In accordance with the Recommended Terms and Conditions and Mitigation of Project Impacts developed for the 1041 Permit, the following mitigation measures will be implemented by the Project Participants:

- Sampling will be conducted monthly for dissolved selenium, *E. coli*, ammonia, and salinity at 13 monitoring locations within the Fountain Creek Basin and Arkansas River, beginning with project construction, then quarterly once the SDS Project is online.
- The inlet and outlet to WCR will be monitored for methyl mercury on a quarterly basis following the start of reservoir operations for a period of one year, then annually for 4 years thereafter.

Project Participants will likely combine the FEIS/ROD and Pueblo County 1041 monitoring programs into one program that meets the adaptive management objectives stated in Appendix F of the FEIS (Reclamation 2008).

3.4.2 Geomorphology of Fountain Creek

Fountain Creek has relatively stable and healthy sections, as well as areas of extreme instability. These instabilities cause the channel banks and bottom to move and erode, generating significant amounts of sediment that are often deposited farther downstream, creating a muddy appearance. Geomorphic processes along Fountain Creek can impact wetlands, riparian vegetation, water quality, and species habitat.

Impact

The SDS Project could cause minor erosion in the upstream reach of Fountain Creek because of an increase in movement of larger sediment due to increased base flow (Reclamation 2008, FEIS Section 3.9.5.1). Long-term effects may increase erosion and negatively affect stream sinuosity and/or slope. The SDS Project could also cause moderate adverse effects due to sedimentation in the lower reach of Fountain Creek (Reclamation 2008, FEIS Figure 81).

Mitigation

Springs Utilities will implement the following geomorphic mitigation measures that are included in the ROD. Reclamation will oversee these mitigation measures:

- Develop a geomorphic mitigation plan that may contain the components outlined below:
  - Evaluate and consider strategies to remove sediments that reduce the effectiveness of USACE levees located near Fountain Creek at its confluence with the Arkansas River.
  - Evaluate and consider strategies to increase the sinuosity of Fountain Creek at appropriate locations on CSR to reduce undesirable erosion and sedimentation.
  - Evaluate and consider strategies at appropriate locations along Fountain Creek to reduce undesirable erosion and sedimentation.
- Complete geomorphic mitigation, including channel stabilization projects and non-structural options such as conservation easements, before the project is operational.
- Design and construct an energy dissipation structure that will protect against erosion at the outlet of the pipeline from WCR to Fountain Creek.

- Evaluate and implement appropriate future geomorphic stabilization projects, if such future projects are determined to be necessary after the project is operational.

In accordance with the Recommended Terms and Conditions and Mitigation of Project Impacts developed for the Pueblo County 1041 Permit No. 2008-002, the following mitigation measures will be implemented by the Project Participants:

- Reduce the sediment load in lower Fountain Creek through dredging and the construction of sediment collection devices. The project will assist the City of Pueblo in preserving the flood protection of the Fountain Creek levees at or above the 100-year flood level.
- Conduct geomorphic monitoring at ten cross-sections along Fountain Creek to monitor degradation, aggradation, and other changes to the geomorphologic surface. Each cross-section will be surveyed once per year during low stream flow.
- Implement a monitoring program to provide information on the current water quality and geomorphology (including erosion, sediment loading, and channel stability conditions) in Fountain Creek and the Arkansas River, and to track changes over time. The monitoring will assist in the selection of SDS Project mitigation measures and in the assessment of the effectiveness of mitigation measures on Fountain Creek and the Arkansas River.

3.5 Adaptive Management Plan

The SDS Project will implement an approved Environmental Management System, which will be a condition of the long-term contracts with Reclamation, to establish procedures for compliance with laws, regulations, permit requirements, and mitigation measures (Reclamation 2009). As part of the Environmental Management System, adaptive management principles will be used to address unforeseen conditions. Adaptive management is defined as "a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood" (Department of the Interior 2008). The mitigation measures implemented for the SDS Project will be monitored and modified as needed to ensure effective environmental stewardship.

The data generated through monitoring programs for aquatic life, water quality, and flow will be used to respond to changes in environmental conditions, adjust to unanticipated impacts of project implementation, or modify mitigation measures to improve effectiveness. If required, additional mitigation responses will be conducted in accordance with the adaptive management plan.

In the event that operation of the SDS Project causes, or threatens to cause, stream flows in Fountain Creek or the Arkansas River to diminish to low levels that could contribute significantly to the impairment of aquatic life, Springs Utilities will coordinate with Reclamation, CDPHE, CDOW, and other interested parties to evaluate and select measures to mitigate adverse effects. Actions will be conducted in accordance with the SDS Project adaptive management plan approved by Reclamation.

4.0 Benefits and Enhancements

In addition to the fish and wildlife impact avoidance actions described in Section 2 and the mitigation components discussed in Section 3, the SDS Project will provide substantial recreational benefits to the region. The Project Participants are committed to working with CDOW and other interested parties to enhance the recreational opportunities associated with the SDS Project facilities. As stated in the ROD, Project Participants will "seek opportunities to enhance angling, boating, or other recreation opportunities" (Reclamation 2009). Meetings with the CDOW during early to mid-2009 resulted in the identification of priority projects and the areas selected for recreation planning include CSR on Fountain Creek, UWCR, and WCR, as detailed below.

4.1 Clear Spring Ranch

The following recreational opportunities for CSR are being evaluated by Project Participants and CDOW as potential SDS Project enhancements.

Clear Spring Ranch is a biologically diverse property owned by Springs Utilities. While Springs Utilities currently allows hiking and wildlife viewing at CSR, additional multi-use recreation and environmental education opportunities are planned for this location. Recreational features may include hunting access and upgrades to the current trail system with environmental interpretative signage and wildlife observation points.

Hunting was allowed previously at CSR; CDOW is interested in restoring that opportunity and has requested that the Project Participants offer a new lease agreement to allow limited and controlled hunting access for species such as turkey, deer, doves, and water fowl. Other programs may include hunting and fishing outreach, and skills training activities.

4.2 Upper Williams Creek Reservoir

The following wildlife recreational benefits will be provided by Project Participants as SDS Project enhancements:

- A recreational fishery will be developed and managed by CDOW by stocking warm water species and trout (See Section 3.1.2, Mitigation – Fish Stocking). Discussions with CDOW personnel have indicated that warm water hatchery production is currently inadequate to provide the needed fish for stocking of UWCR, and CDOW has requested that the Project Participants help address this issue. The CDOW will accommodate the costs of increased trout production and stocking at UWCR.
- Project Participants will develop aquatic habitat at UWCR through the construction and placement of habitat structures within the reservoir. Enhancements could also potentially include water level manipulation for the benefit of certain species. Given the current plant and soil conditions at the proposed reservoir site, ample opportunities exist for aquatic habitat improvements and enhancements. The lack of existing large woody debris (trees, shrubs, etc.) can be mitigated with the placement of artificial fish habitat.

- To provide for dispersed fishing recreation and wildlife viewing at UWCR, the Project Participants will work, through a public process, toward construction of appropriately planned trails, roads, and parking lots around the reservoir. This construction will address access, security, and safety issues at the dam site.
- In an effort to minimize sedimentation/erosion of spawning areas, and to allow shore angler access, two rock jetties will be constructed. These rock jetties should be located in the wakeless area of the reservoir.

4.3 Williams Creek Reservoir

The following recreational facilities are being proposed by Project Participants at WCR as potential SDS Project enhancements.

Enhancements could involve similar recreational features planned for CSR, including small game hunting and establishment of a trail system with environmental interpretative signage and wildlife observation points. While hunting access has not been conducted in this area historically, similar agreements to those proposed for CSR may be proposed that include similar opportunities and restrictions.

4.4 Additional Reservoir Benefits

The Project Participants will seek opportunities to enhance angling, boating, or other recreation opportunities at Lake Henry, Lake Meredith, and Holbrook Reservoir (Reclamation 2009). One approach is to look for ways to make these water bodies less vulnerable to water level fluctuations. In addition, Project Participants will work with CDOW on placement of fish habitat structures (See Section 3.1.2, Mitigation – Fish Habitat Improvement).

5.0 Cost and Schedule of Mitigation Components

As discussed previously, the SDS Project is to be constructed in two main phases. Phase 1, includes the Pueblo Dam outlet works modifications, raw and finished water pipelines, pump stations, and WTP, and is currently scheduled for completion in 2016. Phase 2, which includes construction of the terminal storage reservoir at UWCR and the exchange flow system and reservoir at WCR, is estimated to occur in the 2020 to 2025 timeframe. The fact that the SDS Project will be constructed in these two phases over an extended period of time, with some impacts not occurring for many years, lends itself to a framework that recognizes the environmental benefits of consolidating and developing certain mitigation plans in advance of SDS Project completion.

Table 1 includes a summary of Project Participant mitigation and benefit commitments specific to this CDOW Fish and Wildlife Mitigation Plan and covering the initial 40 year term of the BOR contract period.

Table 2 includes a summary of the mitigation activities required of the SDS Project by other agencies including the estimated cost and schedule associated with each commitment.

Once approved by the Colorado Wildlife Commission and Colorado Water Conservation Board, CDOW and Springs Utilities will enter into a formal Memorandum of Understanding that describes the agreements and commitments for implementation of this Fish and Wildlife Mitigation Plan as outlined in Table 1.

6.0 Conclusions

The studies completed by Reclamation for the FEIS have documented the impacts of the SDS Project on fish and wildlife resources. This draft FWMP presents a broad range of avoidance, minimization, and mitigation actions to address these anticipated impacts. These actions have largely been required as conditions of Reclamation's ROD or as conditions of Pueblo County's 1041 permit, with compliance enforced by those agencies.

In compliance with C.R.S. 37-60-122.2, this draft FWMP also identifies additional actions by the Project Participants that provide benefits of the SDS Project to fish and wildlife above and beyond mitigating the SDS Project's impacts. The timing of the mitigations has been proposed to coincide, to the degree possible, with the commencement of the impact. **Table 1** summarizes the various CDOW-specific mitigation commitments and the SDS Project benefits, including the estimated cost and proposed schedule for each.

The Project Participants request that CDOW staff:

1. Approve this FWMP under C.R.S. 37-60-122.2.
2. Submit this FWMP on behalf of the Project Participants to the CWC for its review and acceptance.
3. Upon acceptance from the CWC, submit this FWMP on behalf of the Project Participants, along with a supporting letter of transmittal, to the CWCB for adoption.

7.0 References

Bureau of Reclamation. 2008. Southern Delivery System Final Environmental Impact Statement. December.

———. 2009. Record of Decision for the Southern Delivery System Project Final Environmental Impact Statement. Record of Decision Reference No. GP-2009-01.

CDOW. 2009. Fish Stocking and Production Whitepaper.

CH2M HILL. 2009. Southern Delivery System Clean Water Act Section 404 Individual Permit Application. April 24.

———. 2009. Section 404 Individual Permit Application.

Department of the Interior. 2008. Departmental Manual, Environmental Quality Programs. February 1.

Fountain Creek Vision Task Force. 2009. Strategic Plan for the Fountain Creek Watershed. Finalized by the Fountain Creek Vision Task Force on March 10, 2009.

Tables

TABLE 1
CDOW Summary of Proposed Mitigation Components

Category		Agency (Reclamation, Pueblo County, USACE, CDOW)	Commitment	Project Phase	Schedule for Implementation	Cost*
FISH AND WILDLIFE MITIGATION						
1. Fisheries and Aquatic Habitat						
	Fish Stocking	CDOW	• Project participants agree to provide capital funds and/or construct additional warmwater hatchery ponds for production of fish needed to offset potential losses of fishery stocks in Pueblo Reservoir, Lake Henry, and Lake Meredith due to SDS Project operations, and also support stocking UWCR, a new terminal storage reservoir for the SDS Project. The capital funds will be used for construction of 7.5 acres of fish production ponds at a CDOW fish hatchery. • Project participants agree to provide O&M funds that will be used for ongoing hatchery operations for those ponds.	1 and/or 2	2016-2025	$7.5M Capital $2.5M O&M
	Fish Habitat Improvement	CDOW	• Project Participants will provide mitigation funding to purchase habitat structure materials that will be placed by CDOW, and will also support these improvements by providing materials. • CDOW will place habitat structures in Lake Henry, Lake Meredith, and Pueblo Reservoir to provide for increased survival of juvenile fish and for refugia that will enable fish to utilize structure during drawdown periods.	2	2016-2025	$100K
	Fish Retention Structures	CDOW	• Project participants agree to install fish screens at Lake Henry to support and maintain fish populations, and install a walkway at the existing Lake Meredith outlet to improve efficiency of screen cleaning and maintenance. Cost estimates are preliminary to design. Springs Utilities will install fish screens in cooperation with CDOW and the Colorado Canal Company.	End of 1	2016	$150K
	Aquatic Research	CDOW	• Research will be conducted in Monument and Fountain Creeks on selected representative fish species to determine life history factors and the relationship to water flow, water quality, and habitat parameters most likely to be influenced by SDS Project operations. Baseline research will be conducted for three years prior to completion of Phase I and then for one additional year subsequent to completion of Phase II. • Springs Utilities will pay for a Colorado State University student to conduct the approved research studies. CDOW will help define the scope of work for this research.	1 and 2	2011-2016 2020-2025	$225K $75K

* Note – The costs in this table are in 2010 US dollars and will be indexed annually at an agreed upon rate to preserve their 2010 values. Mitigation that is paid for or implemented between 2010 and 2014 will not be indexed; for mitigation paid for or implemented after 2014, annual indexing will be applied from 2011 forward..

BENEFITS AND ENHANCEMENTS						
	Clear Spring Ranch	CDOW	• Develop potential hunting opportunities and trails/wildlife viewing.	1	2012-2016	Cooperative venture. No monetary exchange between CDOW and SDS necessary for this item
	WCR	CDOW	• Develop potential hunting opportunities and trails/wildlife viewing.	2	Approx. 2025	Cooperative venture. No monetary exchange between CDOW and SDS necessary for this item
	UWCR	CDOW	• Develop angling (shore and boat), and other wildlife recreation opportunities at UWCR; including fish spawning habitat and two jetties. • Provide for dispersed fishing recreation and wildlife viewing at UWCR. The Project Participants will work, through a public process, toward construction of appropriately planned trails, roads and parking lots around the reservoir. This construction will address access, security, and safety issues at the dam site.	2	2016	Cooperative venture. No monetary exchange between CDOW and SDS necessary for this item
	Improve Native Fish Habitat	CDOW	• Seek opportunities to preserve or develop Arkansas darter habitat along lower Fountain Creek and its tributaries.	2	2016 - 2046	Cooperative venture. No monetary exchange between CDOW and SDS necessary for this item

TABLE 2
Summary of Proposed Mitigation Components

Category		Agency (Reclamation, Pueblo County, USACE, CDOW)	Commitment	Project Phase	Schedule for Implementation	Estimated Cost
AVOIDANCE & MINIMIZATION						
	Relocate terminal storage	Reclamation	Avoid impacts to jurisdictional wetlands and the existing population of Arkansas darter by changing terminal storage from Jimmy Camp Creek to Upper Williams Creek. Avoid locations of Needle and Threadgrass – Blue Grama grassland community at north end of Jimmy Camp Creek Reservoir site.	Design		$12M *
	Discharge WCR return flows to Fountain Creek	Reclamation	Avoid impacts to jurisdictional wetlands on Williams Creek and Arkansas darter habitat by routing return flows from WCR to Fountain Creek through a pipeline instead of releasing them to Williams Creek.	Design		$22M *
	Bradley Road realignment	Reclamation	Bradley Road realignment provides ancillary benefit by avoiding impacts to a pair of nesting golden eagles.	Design		TBD
	Design review for vegetation impacts	Reclamation	Prior to final design, review locations of grasslands, high quality shrublands, woodlands, and other areas with desirable vegetation to determine design changes within the current study area that will avoid and minimize impacts.	Design		TBD
	Design review for wetland and/or stream impacts	Reclamation	Design final pipeline alignments and facilities to avoid and minimize wetland impacts. Assess alternative construction methods for pipeline crossings.	Design		TBD
	Construction planning for minimum wildlife habitat disturbance	Reclamation	Wildlife surveys will be conducted in accordance with CDOW standard protocols to minimize disturbance and/or temporarily restrict construction in areas of seasonally sensitive habitat.			
FISH AND WILDLIFE MITIGATION						
1. Fisheries and Aquatic Habitat						
	Flow Management					
	UAVFMP	Reclamation	• Participation in the Upper Arkansas Voluntary Flow Management Program.	1 and 2	In place	NA
	PFMP	Reclamation, Pueblo County	• Participation in the Pueblo Flow Management Program, which includes maintenance of target flows on the Arkansas River downstream of Pueblo Reservoir.	1 and 2	In place	NA
	ARLFP	Reclamation, Pueblo County	• Participate in the Arkansas River Low Flow Program, which is intended to minimize the possibility of flows less than 50 cfs below Pueblo Reservoir.	1 and 2	Begins 2016	NA
	Aquatic Habitat					
	Fountain Creek mitigation	Reclamation, Pueblo County, CDOW	• Provide monetary mitigation to the District for specific projects to improve water quality, flood control, or prevent erosion and sedimentation. • Support CDOW efforts to preserve and enhance fishery and occupied Arkansas darter habitat as a component of projects developed through the District, or other agencies, insofar as the these efforts meet the requirements of the 1041 Permit	1		• $50 M • Cooperative venture. No monetary exchange between CDOW and SDS necessary for this item
	Aquatic Life					
	Aquatic Life Monitoring	Reclamation, Pueblo County, CDOW	• Monitor the effects of the operation of the project on aquatic life in Fountain Creek and the Arkansas River. Coordinate monitoring efforts to meet goals stated in the ROD, 1041, and FWMP. • Aquatic monitoring will be conducted once per year at up to 13 locations. Information obtained from this monitoring effort will be incorporated into the adaptive management plan for the SDS Project.	1 and 2	2010-2046	$20K/yr
	Invasive Species					
	Aquatic Invasive Species Control	Reclamation	• Potential future mussel control if needed.	1 and 2	2010-2046	TBD

TABLE 2
Summary of Proposed Mitigation Components

Category		Agency (Reclamation, Pueblo County, USACE, CDOW)	Commitment	Project Phase	Schedule for Implementation	Estimated Cost
2. Wildlife Habitat						
	Vegetation					
	Vegetation	Reclamation, CDOW, Pueblo County	• Mark environmentally sensitive vegetation within or near construction easements to avoid inadvertent impacts. • Replace mature trees (diameter at breast height of 12 inches or greater) within construction areas at a 1:1ratio with the same or similar native species with available nursery container stock or pole plantings as soon as practicable after construction activities have ended. • For 1 year after construction, monitor the construction areas to determine if appropriate native vegetation is establishing. If native vegetation is not establishing, the site will be reseeded with appropriate species. • During construction, wash major construction equipment before it enters the site so that noxious weeds are not spread from other construction sites. • Use certified weed-free mulch after seeding construction areas. • Reseed construction areas with comparable native vegetation as soon as practicable after disturbance, using seed that does not contain any noxious weed seed. • Monitor construction areas for 3 years after construction to assess if noxious weeds have invaded the site. If noxious weeds are present, weed control plans will be formulated and completed. • The project may indirectly increase the spread of tamarisk, therefore; the Project Participants will work with the Colorado Department of Agriculture's Colorado Noxious Weed Management Team on high priority tamarisk infestation areas in the Arkansas Valley, including submitting a Request for Partnership Evaluation. Due to its topography, the inlet area of Pueblo Reservoir may potentially be one of the special areas of interest. CDOW would be a cooperator in these efforts because of their management of the Pueblo State Wildlife Area in that vicinity.	1 and 2	2010-2025	Included in construction costs
	Wildlife					
	Wildlife	Reclamation	• Promptly revegetate all disturbed areas with native species that provide species diversity and food and cover for large game and wildlife habitat. • Conduct clearance surveys in suitable habitat for state-listed species following standard protocols, as available, prior to construction. • Conduct pre-construction surveys for swift fox den sites within appropriate habitat along the pipeline corridor and proposed reservoir sites. Avoid surface disturbance within 1/4 mile of active den sites while young are den-dependent (March 15 to June 15). • Restrict pesticides for rodent control within swift fox overall range. • Conduct raptor nest surveys prior to construction and impose seasonal restrictions to surface activity within recommended buffers (generally 1/4 to 1/2 mile) around active raptor nest sites and heron rookeries during construction. • Consult with CDOW and USFWS Migratory Bird Permit Office to develop mitigation for unavoidable loss of raptor nests. • Develop construction schedules to avoid impacts to nesting migratory birds. If an active nest is detected, a buffer zone will be flagged to avoid the nest, or construction will be rescheduled. • Impose seasonal restrictions on construction to avoid sensitive large game winter habitat (from first large snowfall to summer green-up). • Install wildlife crossovers (trench plugs) during pipeline construction with ramps on each side at a maximum of ¼-mile intervals and at well-defined game trails. • Create additional nesting habitat or nest boxes in nearby trees for the Lewis' woodpecker if nest trees are destroyed.	1 and 2	2010-2025	TBD

TABLE 2
Summary of Proposed Mitigation Components

Category		Agency (Reclamation, Pueblo County, USACE, CDOW)	Commitment	Project Phase	Schedule for Implementation	Estimated Cost
3. Wetlands and Riparian Habitat						
	Wetland, water and riparian habitat	Reclamation	• Evaluate and consider a strategy to increase Fountain Creek sinuosity to assist in wetlands creation.	1		
	Clear Spring Ranch	Reclamation, USACE	• Mitigate all unavoidable, permanent impacts to < 0.25 acres of jurisdictional wetlands with compensatory wetlands that replace existing wetland functions and values. Compensatory wetland mitigation will occur at the CSR site. • Mitigate all unavoidable, permanent impacts to non-jurisdictional wetlands with compensatory wetlands that replace existing wetland functions and values. Approximately 12 acres of compensatory wetland mitigation will likely occur at the CSR site. • Restoration and stabilization of select locations of Fountain Creek. • Potential habitat protection through a conservation easement. • Water quality improvement through erosion and sediment reduction.	1	2010 TBD	$300K (0.2 acres - USACE wetland construction) $3M (12 acres - Reclamation wetland construction)
4. Water Quality and Geomorphology						
	Water Quality					
	Water Quality	Reclamation, Pueblo County	• Conduct monthly sampling for dissolved selenium, *E. coli* , ammonia, and salinity at 13 Fountain Creek Basin and Arkansas River monitoring locations. Sampling will begin with project construction and continue quarterly once the SDS Project is online. • WCR inlet and outlet will be monitored quarterly for methyl mercury at the beginning of reservoir operations for one year, and will continue annually for 4 years.	1		TBD
	Fountain Creek Geomorphology					
	Geomorphic mitigation	Reclamation, USACE, Pueblo County	• Prepare a geomorphic monitoring plan – includes removing sediment that reduces the effectiveness of USACE levees near the confluence of Fountain Creek and the Arkansas River, increasing sinuosity on Fountain Creek near CSR, and reducing erosion and sedimentation in appropriate locations along Fountain Creek. • Prior to project operation, channel stabilization projects will be completed, which may include non-structural options such as conservation easements. • Evaluate and implement future geomorphic stabilization projects if necessary.	1		
	Sediment load reduction	Reclamation, Pueblo County	• Project Participants will implement dredging and sediment collection devices in lower Fountain Creek that will assist the City of Pueblo in preserving Fountain Creek levee flood protection at or above the 100-year flood level. • Project Participants will conduct geomorphic monitoring at ten cross-sections along Fountain Creek to monitor degradation, aggradation and other changes to the geomorphologic surface. These surveys will be done annually during low stream flow conditions.	1		
• **Adaptive Management Plan**						
	Adaptive Management Plan	Reclamation	• The Project Participants will implement an Environmental Management System to establish procedures for compliance with laws, regulations, permit requirements, and mitigation measures. The Environmental Management System will use adaptive management principles to address unforeseen conditions directly associated with SDS operations.	1 and 2		
BENEFITS AND ENHANCEMENTS						
	UWCR	Reclamation, CDOW	• Develop opportunities to enhance angling, boating, or other recreation opportunities at UWCR;	2	2019-2020	$2.3M
	Lake Henry, Lake Meredith, and Holbrook Reservoir	Reclamation	• Seek opportunities to enhance angling, boating, or other recreation opportunities at Lake Henry, Lake Meredith, and Holbrook Reservoir so that they are less vulnerable to water level fluctuations.	2	2012-2016	TBD

* Note – The estimated costs in this table are in 2010 US dollars.

Abbreviations:

TBD = To be determined

Figures

MEMORANDUM OF AGREEMENT

This MEMORANDUM of AGREEMENT ("MOA") by and between the STATE OF COLORADO, acting by and through the DEPARTMENT OF NATURAL RESOURCES, for the use and benefit of the DIVISION OF WILDLIFE (hereinafter "DOW"), and COLORADO SPRINGS UTILITIES, an enterprise of the City of Colorado Springs, a Colorado home rule city and municipal corporation, acting as the Project Manager for the Southern Delivery System, on behalf of itself and its Project Partners, the City of Fountain, the Security Water District and the Pueblo West Metropolitan District (hereinafter collectively "CSU"), is dated this 18th day of May, 2010.

RECITALS

1. In accordance with the provisions of C.R.S. 37-60-122.2, DOW and CSU have been discussing the appropriate fish and wildlife mitigation actions necessary to mitigate the impacts of CSU's proposed water delivery and storage system called the Southern Delivery System ("SDS").

2. The U.S. Bureau of Reclamation ("BOR"), with support from CSU, investigated the impacts of the SDS in accordance with the provisions of the National Environmental Policy Act. The Environmental Impact Statement ("EIS") that was developed as the result of this effort produced a Record of Decision ("ROD") which outlined the mitigation requirements that would be necessary to compensate for the environmental consequences of the SDS. The ROD specifically refers to the completion of the mitigation process outlined in C.R.S. 37-60-122.2 and both DOW and CSU, through their respective staffs, have worked diligently to accomplish that purpose. The ROD is attached hereto as Exhibit A and constitutes the conditions of approval of the BOR for the SDS which the BOR will insure are met. In addition, CSU is also subject to

environmental mitigation requirements as part of Pueblo County's 1041 permit process and other permits and permissions required for the SDS.

3. DOW and CSU have developed a "Fish & Wildlife Mitigation Plan" which outlines all of the mitigation activities that will be undertaken by CSU in order to provide the necessary mitigation for the potential impacts of SDS. The Fish & Wildlife Mitigation Plan is attached hereto as Exhibit B and was developed in accordance with the requirements of CRS 37-60-122.2 which is a separate requirement from any that is contained in the ROD, the Pueblo County 1041 Permit and the other permits and permissions for the SDS.

4. DOW staff, primarily utilizing information from the EIS, prepared a SDS Reservoir Fishery Impacts and Mitigation white paper, which describes the impacts that are anticipated to occur between the present time and the year 2046 as the result of projected operations of the SDS. The Reservoir Fishery Impacts and Mitigation white paper is attached hereto as Exhibit C.

5. DOW and CSU have participated in extensive negotiations in order to permit CSU to provide appropriate fish and wildlife mitigation for the effects of the SDS.

AGREEMENTS AND COMMITMENT

1. DOW and CSU agree that compliance with the Fish and Wildlife Mitigation Plan, including the following specific mitigation actions and timeline will constitute adequate fish and wildlife mitigation necessary to satisfy any requirements imposed by C.R.S. § 37-60-122.2, upon CSU for the initial term of the SDS Project. The term of this MOA shall extend for 40 years after CSU's execution of storage and conveyance contracts with the U.S. Bureau of Reclamation (BOR Contract). DOW and CSU agree that the Fish and Wildlife Mitigation Plan addresses the anticipated impacts of the SDS at full build out and, in the absence of additional actions agreed to pursuant to paragraph 10, changes to the impacts of the SDS project itself, or changes to

applicable law, including C.R.S. 37-60-122.2, the agreed upon mitigation will satisfy mitigation requirements for any subsequent terms of the SDS Project.

2. The agreed-upon actions and commitments for the SDS Project are contained in the Fish & Wildlife Mitigation Plan with the additional explanation and commitments set forth below. To the extent the commitments set forth below contain a requirement for adjusting payments to account for inflation the parties agree that the applicable index will be the Producer Price Index for Finished Goods Less Foods and Energy (hereinafter "PPI") as calculated by the U.S. Bureau of Labor Statistics. The PPI will be used to calculate the appropriate inflation value for each year by using the average PPI value for the previous 3 years as a continuous running average. In no event may the average PPI thus determined exceed 2.75% or fall below 1.75% for purposes of a value to be used in determining the rate of inflation.

3. CSU agrees and commits to construct 7.5 acres of fish rearing ponds of a design acceptable to and approved by DOW for the raising of warm water fish species. The construction of four (4) acres of these ponds shall be completed no later than three years prior to the date Upper Williams Creek Reservoir is placed in service by CSU as part of Phase 2 of the SDS Project. Upper Williams Creek Reservoir is currently anticipated to be in service between years 2020-2025. The construction of the remaining 3.5 acres of rearing ponds shall be completed no later than five (5) years after Upper Williams Creek Reservoir is in service. At its option, CSU may construct all or a portion of these 7.5 acres of fish rearing ponds itself or provide funding to the DOW to construct the ponds. If such funding is provided to the DOW, it shall not exceed $7.5 million in 2010 dollars inflated at the rate determined in the manner specified in paragraph 2 above on any unpaid balance until paid. At CSU's option, during the term of this MOA title to the physical structures consisting of the 7.5 acres of fish rearing ponds may be retained by CSU as a capital asset but only if an adequate lease or license, acceptable to

DOW, is first executed granting DOW the right to operate and maintain those facilities. In the event steps approved by DOW are taken to extend the life of the ponds for use as mitigation for the SDS through upgrades or rehabilitation funded by CSU, then during subsequent terms CSU may continue to treat them as capitol assets for the useful life of those upgrades or rehabilitations and any subsequent upgrades or rehabilitations. If, during the term of this MOA or subsequent terms, DOW demonstrates that a properly maintained fish rearing pond or ponds has reached its useful life, CSU agrees to fund the necessary rehabilitation.

4. CSU agrees and commits to provide operation and maintenance funding (O&M) to the DOW in the amount of $2.5 million in 2010 dollars inflated as described in paragraph 2 above per year until paid. Such O&M shall be paid in the manner described in Exhibit D. CSU will commence funding its O&M responsibilities under this MOA beginning one year prior to the date the first four (4) acres of fish rearing ponds are completed.

5. CSU also agrees to perform the other mitigation activities described in Table 1 of the Fish & Wildlife Mitigation Plan including the funding of the fish retention structures, the fish habitat improvements, and scientific investigations as fully described in the Plan. Any mitigation paid for or implemented between 2010 and 2014 will not be adjusted for inflation but any mitigation paid for or implemented after 2014 will be inflated as described in paragraph 2 above each year beginning in 2011. In addition, CSU acknowledges that the Fish and Wildlife Mitigation Plan was completed after the ROD, the Pueblo County 1041 permit and several other permits and permissions for the SDS had been issued and agrees that it is obligated to comply with such other environmental mitigation requirements contained in those permits and permissions in accordance with their terms.

6. DOW, having studied the potential impacts of the SDS on the State's fish and wildlife resources agrees, accepts and commits to participate in this mitigation plan at the level and in the manner described in this MOA.

7. During the term of this MOA and any extensions thereof DOW commits to stock fish in Pueblo Reservoir, Lake Meredith, Lake Henry and, when constructed, Upper Williams Creek Reservoir using fish produced from the 7.5 acres of ponds constructed pursuant to this MOA, or from equivalent acreage within the DOW hatchery system.

8. Nothing herein shall limit CSU from prepaying all or a portion of its obligations related to this MOA.

9. CSU's obligation to construct the ponds is contingent upon the first phase of SDS becoming operational, which is currently anticipated to be in the year 2016. In the event it is determined that CSU is not going to construct SDS, CSU's obligations to perform these mitigation activities shall cease and CSU will not be required to pay any unpaid obligations under this MOA.

10. CSU has agreed to utilize an adaptive management plan to address many impacts arising from the SDS as part of the ROD. This is a different concept than the one authorized in the statute calling for a Fish and Wildlife Mitigation Plan. However, the Parties hereto agree that if, as the result of the studies that will be conducted under the Plan, or if other unforeseen, or not reasonably foreseeable, impacts arise, they will meet and negotiate in good faith to develop means to reasonably address those impacts, including the potential sources for funding of any mitigation actions.

11. In paragraph 16 of its Pueblo County 1041 permit there is reference to a lake level management program for Pueblo Reservoir. The Parties acknowledge that such a program, if it is to be developed, will be the responsibility of third parties not signatories to this Agreement,

but that CSU is required to participate in that process. If a process to develop such a program is initiated, CSU agrees to request and support DOW's participation as well. If DOW is not permitted to participate in such program development CSU will consult with and seek input from the DOW and otherwise keep DOW informed of the progress of the Program development.

MISCELLANEOUS

1. Financial obligations of the DOW, payable after the current fiscal year, are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available. Financial obligations of CSU payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

2. NOTICE and REPRESENTATIVES

A. Notice

All notices required to be given hereunder shall be sent by certified or registered mail to such Party's principal representative at the address set forth below. In addition to hard-copy notice, notice also may be sent by e-mail to the e-mail addresses, if any, set forth below. Either Party may from time to time designate by written notice substitute addresses or persons to whom such notices shall be sent. Unless otherwise provided herein, all notices shall be effective upon receipt.

B. Representatives

The individuals listed below are the principal representatives of the respective Parties. For the purposes of this MOA, the official representative(s) and addresses of the Parties are:

CSU:

SDS Project Manager
121 S. Tejon St, 3rd Floor
Colorado Springs, CO 80903

DOW:

Regional Manager

Southeast Region
Colorado Division of Wildlife
4255 Sinton Road
Colorado Springs, CO 80907

3. Dispute Resolution:

If a dispute arises between the parties relating to this MOA, the following procedure shall be followed:

1. The parties shall hold a meeting attended by persons with decision-making authority regarding the dispute to attempt in good faith to negotiate a resolution. The meeting shall be held promptly but in no event later than thirty (30) calendar days from initial written notice of the dispute. Such meeting shall not be deemed to reduce or eliminate the obligations and liabilities of the parties under this MOA or be deemed a waiver by a party of any remedies to which such party would otherwise be entitled, unless otherwise agreed to by the parties in writing.

2. If, within 30 days after such meeting, the parties have not succeeded in negotiating a resolution of the dispute, they agree to submit the dispute to non-binding mediation and to bear equally the costs of mediation.

3. The parties will jointly appoint a mutually acceptable mediator. If they shall fail to do so within 20 days from the conclusion of the negotiation period, they shall each select a mediator. The two mediators will then appoint, within 10 days of their selection, a third mediator who shall, as the sole mediator, conduct mediation for the parties.

The parties agree to participate in good faith in mediation and related negotiations for a 30-day period. The substantive and procedural law of the State of Colorado shall apply to the proceedings. If the parties are not successful in resolving the dispute through mediation, then the parties shall be free to litigate the matter In the event of litigation, this MOA shall be enforceable by or against the City of Colorado Springs on behalf of CSU as provided in §12.1.108 of the Code of the City of Colorado Springs, 2001 as amended.

4. Assignment: The Parties' rights and obligations hereunder are personal and may not be transferred, assigned or subcontracted, without the prior, written consent of the other

Party. Any attempt at assignment, transfer, subcontracting without such consent shall be void. Any assignments, subcontracts/subcontractors shall be subject to the provisions hereof.

5. Binding Effect: Unless otherwise provided herein, all provisions herein contained, including the benefits and burdens, shall extend to and be binding upon the Parties' respective heirs, legal representatives, successors, and assigns.

6. Captions: The captions and headings in this MOA are for convenience of reference only, and shall not be used to interpret, define, or limit its provisions.

7. Counterparts: This MOA may be executed in multiple identical original counterparts, all of which shall constitute one MOA.

8. Entire Understanding: This MOA represents the complete integration of all understandings between the Parties with regard to the Fish & Wildlife Mitigation Plan and all prior representations and understandings, oral or written, are merged herein. Prior or contemporaneous addition, deletion, or other amendment hereto shall not have any force or effect whatsoever, unless embodied herein.

9. Modification by the Parties: Except as specifically provided in this MOA, no modification of this MOA shall be effective unless agreed to in writing by both parties in an amendment to this MOA, properly executed.

10. Severability: Provided this MOA can be executed and performance of the obligations of the Parties accomplished within its intent, the provisions hereof are severable and any provision that is declared invalid or becomes inoperable for any reason shall not affect the validity of any other provision hereof.

11. Survival of Certain MOA Terms: Notwithstanding anything herein to the contrary, provisions of this MOA requiring continued performance, compliance, or effect after termination hereof, shall survive such termination and shall be enforceable by the Parties.

12. Third Party Beneficiaries: Enforcement of this MOA and all rights and obligations hereunder are reserved solely to the Parties and not to any third party. Any services or benefits which third parties receive as a result of this MOA are incidental to the MOA, and do not create any rights for such third parties.

13. Waiver: Waiver of any breach of a term, provision, or requirement of this MOA or any right or remedy hereunder, whether explicitly or by lack of enforcement, shall not be construed or deemed as a waiver of any subsequent breach of such term, provision or requirement, or of any other term, provision, or requirement.

14. GOVERNMENTAL IMMUNITY: No term or condition of this MOA shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, of the Colorado Governmental Immunity Act, CRS §24-10-101 et seq., or the Federal Tort Claims Act, 28 U.S.C. §§1346(b) and 2671 et seq., as applicable now or hereafter amended.

15. The signatories to this MOA warrant that each has the authority to enter into this MOA on behalf of the party represented.

COLORADO SPRINGS UTILITIES

By: Bruce McCormick

Name: Bruce McCormick

Title: Water Services Officer

COLORADO DEPARTMENT OF NATURAL RESOURCES, DIVISION OF WILDLIFE

By: Thomas E. Remington

Name: Thomas E. Remington

Title: Director