BUREAU OF RECLAMATION

Arkansas Valley Conduit

Final Environmental Assessment

Fryingpan-Arkansas Project

Project No. 2011-04

Prepared by:
United States Department of the Interior
Bureau of Reclamation
Missouri Basin Region
Eastern Colorado Area Office

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Mission Statements

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

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

Table of Contents

List of Figures

List of Tables

Appendices

Appendix A-AVC Record of Decision and 2018 Temporary Program FONSI
Appendix B-Endangered Species Consultation Correspondence
Appendix C-Programmatic Agreement between Bureau of Reclamation, Eastern Colorado Area Office, and the Colorado State Historic Preservation Officer regarding the Arkansas Valley Conduit Project, Colorado.
Appendix D-Bessemer Ditch Revegetation and Dry-Up Exhibits

Acronyms

ac-ft	acre-feet
ACOE	Army Corps of Engineers
afy	acre-feet per year
APE	Area of Potential Effect
AVC	Arkansas Valley Conduit
AVC Project Water	AVC Project Participants Fry-Ark Project and non-project water delivered through the AVC
BIDC	Bessemer Irrigating Ditch Company
BMPs	Best Management Practices
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
cfs	cubic feet per second
Colorado 96	Colorado State Highway 96
CPW	Colorado Parks and Wildlife
Contract	Pueblo Water Service Contract for Treatment and Conveyance of AVC Project Water
CR	County Road
DOI	Department of the Interior
EIS	Environmental Impact Statement
ERO	ERO Resources Corporation
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
JUP	Joint Use Pipe
mgd	million gallons per day
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
O&M	operation and maintenance
PMP	Project Management Plan
Pueblo Water	Board of Water Works of Pueblo
Pueblo Water System	Pueblo Water Treatment Facilities and Delivery System
Reclamation	Bureau of Reclamation
Riverside	Riverside Water Company
ROD	AVC Record of Decision
SCADA	System Control and Data Acquisition
SEIS	Supplemental EIS
Service	U.S. Fish and Wildlife Service
Colorado SHPO	Colorado State Historic Preservation Officer
SIR	Supplemental Information Report
Southeastern	Southeastern Colorado Water Conservancy District
St. Charles Mesa	Saint Charles Mesa Water District
Temporary Program Programmatic EA	2018 Temporary Excess Capacity Program Programmatic EA
Triview	Triview Metropolitan District
U.S.	United States
U.S. 50	U.S. Highway 50
WTP	Water Treatment Plant

Chapter 1-Purpose and Need

1.1 Introduction

The Arkansas Valley Conduit (AVC), an authorized water conveyance feature of the Fryingpan-Arkansas Project (Fry-Ark), will deliver water for municipal and industrial use within the boundaries of the Southeastern Colorado Water Conservancy District (Southeastern). This water supply is needed to: (i) supplement or replace existing poor-quality groundwater sources, and (ii) help meet projected future water demands.

The AVC Project was authorized in the original Fry-Ark legislation in 1962 (Public Law 87-590). The AVC Project would not increase Fry-Ark Project water diversions; rather it was intended to improve drinking water quality. However, the AVC was not constructed with the original Project primarily because of the beneficiaries' inability to repay 100 percent of construction costs. In 2009, Congress amended the original Fry-Ark legislation in Public Law 111-11, which authorized annual federal funding, as necessary, for constructing the AVC, and provided that only 35 percent of total Project construction costs would be repaid over a period of no more than 50 years. An initial Value Planning (VP) study was completed in 2010. The Technical Service Center (TSC) issued an Appraisal Design Report in August 2012 which compared five action alternatives (pipeline alignments) for construction of the AVC. A supplemental report was issued in June 2013 for one additional alternative, for a total of six action alternatives. A Final Environmental Impact Statement (FEIS) was issued in August 2013. Seven alternatives (six action alternatives from the Appraisal Design Report plus no action) were analyzed under the FEIS. A Record of Decision (ROD) was signed by Reclamation's Great Plains (now known as the Missouri Basin Region) Regional Director in February 2014, which selected the "Comanche North Alternative" for implementation.

Through a collaborative effort between Reclamation, Southeastern, and Pueblo Water in 2018 and 2019, a revised AVC Project configuration was developed with the goal of reducing total estimated Project costs and requirements for Reclamation appropriations.

1.2 Supplemental Information Report

In June of 2021, Reclamation finalized a Supplemental Information Report (SIR)(Reclamation 2021). The SIR describes proposed changes in the AVC Project that make up the Proposed Action described in more detail in Chapter 2 of this environmental assessment (EA). Where noted in this EA, additional delivery pipeline alignment refinements have been made after issuance of the SIR. Figure 1 shows the general reconfigured AVC Project alignment.

Total estimated AVC Project cost was reduced to a range of $564 to $610 million (appraisal level, 2019 dollars) and through alternative funding sources, the estimated requirement for additional Reclamation appropriations was reduced to a range of $355 to $414 million (appraisal level, 2019 dollars).

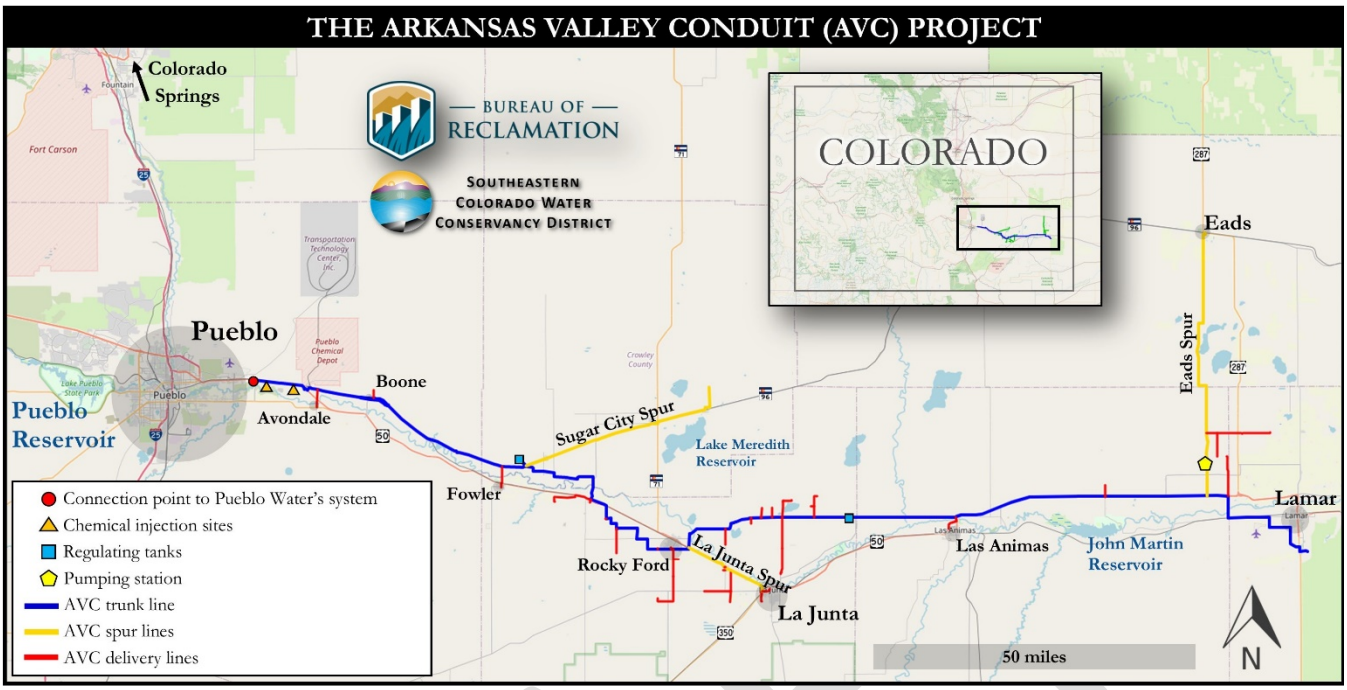

Figure 1: Reconfigured AVC Project showing division between trunk line and spur/delivery lines

Below is a summary of how the reconfigured AVC Project differs from what was described in the FEIS.

1. **Co-operative management and construction of the AVC Project.** Division of the project into two major sub-projects which will be co-operatively managed by both Reclamation and Southeastern. Reclamation will fund, construct, and own about 120 miles of "trunk line" and Southeastern will finance, construct, and own about 54.3 miles of spur pipelines and 58.7 miles delivery pipeline to AVC Project participants' delivery points.
2. **Changes in pipeline lengths.** The reconfigurations reduces the main trunk line by about 24.7 miles in length and increases the length of delivery pipelines needed by about 30.6 miles to AVC Project Participants connections.
3. **Changes in AVC Project Participants**. Changes in AVC Project Participants include the elimination of Saint Charles Mesa Water District (St. Charles Mesa) and addition of Riverside Water Company (Riverside). This has a net effect of reducing the total maximum annual water deliveries through the AVC from 10,256 acre-feet per year (afy) to 7,625 afy.
4. **Elimination of pipeline around Pueblo.** The reconfigured AVC Project utilizes existing infrastructure owned and operated by the Board of Water Works of Pueblo (Pueblo Water) to convey AVC Project water to a connection point east of Pueblo near Devine, Colorado (Pueblo Connection Point) which eliminates about 27 miles of pipeline around the south side of Pueblo. About 6.3 miles of pipeline is required to reach from the Pueblo Connection Point to the FEIS's Comanche North alignment. This change results in net reduction of about 20.7 miles of pipe.
5. **Contract with Pueblo Water.** The Pueblo Water Service Contract for Treatment and Conveyance of AVC Project water (Contract) is required to allow conveyance of AVC Project water through their existing treatment and distribution system (Pueblo Water System). Pueblo Water will treat and deliver a maximum of 13 million gallons per day (mgd) to meet the FEIS's 2070 projected AVC Project Participant demands. The contract will authorize continued use of excess storage capacity in

Pueblo Reservoir of between 10,000 and 25,000 afy for a period of 50 years when available pursuant to the spill priorities described in Contract No. 229F650016 between Southeastern and the United States. Pueblo Water is also requesting the ability to store Bessemer Irrigating Ditch Company (BIDC) water rights in excess capacity space in Pueblo Reservoir.

6. **Pueblo Water System upgrades.** Increasing the capacity of about 10 miles of Pueblo Water System by Pueblo Water will allow delivery of up to 13 mgd of the 2070 AVC Project Participants demand to the Pueblo Connection Point. Payments to Pueblo Water proposed as part of the Contract would make Pueblo Water responsible for increasing the capacity of their system to accommodate the increased demands.
7. **Chemical injection facilities.** Water treatment facilities will be constructed along the trunk line adjacent to U.S. 50. The facilities will remove chloramines from the water supply from Pueblo Water by injecting sodium hypochlorite and sodium bisulfite.
8. **Other feature relocations.** Regulating tank and pumping plant locations will be modified to facilitate gravity flow for most of the AVC Project.
9. **Delivery point changes.** Changes in delivery pipeline connections to AVC Project Participants' water systems are proposed as requested by the AVC Project Participants. Approximately 30.6 miles of additional pipeline constructed by Southeastern and AVC Project Participants will be needed to connect to existing and future AVC Project Participants delivery facilities (water tanks, pipelines, etc.).
10. **Fiber Optic Lines.** Dedicated fiber optic lines may be installed along the AVC trunk line, spurs and delivery pipelines, where appropriate, to provide communications between AVC Project facilities. Fiber optic lines may be installed within each pipeline's construction footprint, either within the pipeline trench or adjacent to it. Additional fiber optic conduits may also be installed during construction to facilitate rural broadband development by other entities, as long as, there are no additional costs to the AVC Project and within existing Reclamation authorities.

The Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Chapter V) provide direction regarding the review of an EIS and preparation of supplemental statements. The CEQ regulations state in 40 CFR § 1502.9(d) agencies shall "prepare supplements to either draft or final environmental impact statements if a major Federal action remains to occur, and: (i) The agency makes substantial changes to the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."

The SIR was prepared under the above circumstances to ensure Reclamation used the best possible information to make any necessary substantive changes in its decision regarding the proposed changes. In evaluating the proposed changes to the ROD's Selected Alternative (Comanche North), the criteria in 40 CFR § 1502.9(d) has been employed to determine if significant new circumstances or information relevant to the environmental concerns and bearing on the AVC Project or its impacts have occurred since completion of the FEIS in 2013. If Reclamation determines that Finding of No Significant Impacts (FONSI) is appropriate, a supplement EIS will not be required.

Reclamation reviewed the reconfigured AVC Project with the Environmental Review Team as identified in the 2014 ROD and determined that the preparation of an EA is the appropriate process to complete the additional environmental review under the National Environmental Policy Act (NEPA) and its implementing regulations. This EA is being prepared based on information provided in the SIR to conduct the supplemental analysis on the Proposed Action and discloses the environmental effects of the changes based on the environmental resources studied in the FEIS and SIR.

1.3 Purpose and Need

The FEIS identified needs to meet primary drinking water standards and to meet existing (2010) and future (2070) water demands and provide AVC Project Participants with 10,256 afy of Fry-Ark Project water. It estimated a total 2070 water demand for AVC Participants of 12,569 afy, with 10,256 afy of this demand being met with deliveries of water via the AVC Project and the balance from the AVC Project Participants' local supplies. However, with the withdrawal of St Charles Mesa (-2,651 afy) and the addition of Riverside (+20 afy), 2070 deliveries via the AVC Project are reduced from 10,256 afy to 7,625 afy. The water delivered by the AVC Project (AVC Project Water) will be a combination of Fry-Ark Project Water which is allocated to the AVC Project Participants by Southeastern and of non-project water resulting from the exercise of water rights held by individual AVC Project Participants.

With the departure of St. Charles Mesa and the addition of Riverside as AVC Project Participants, the AVC Project demand is reduced to 7,625 afy. Drinking water standards and water demands are discussed in greater detail in the FEIS and are summarized below.

1.3.1 Drinking Water Standards

The Colorado Department of Public Health and Environment (CDPHE) is responsible for enforcement of the EPA's National Primary Drinking Water Regulations (NPDWR). The NPDWR are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water.

AVC Project Participants are dependent on groundwater supplies that are in many cases contaminated by naturally occurring radionuclides such as radium and uranium, or by direct influence of surface water that contains harmful microorganisms and pollutants. These communities increasingly face expensive alternative remedies such as reverse-osmosis, ion exchange, filtration, and bottled water. A reliable source of clean, safe water is needed for the area's health and welfare.

During preparation of the FEIS, fourteen Participants using deep bedrock aquifers were placed under Drinking Water Enforcement Orders by CDPHE due to levels of combined radium and/or alpha particles in excess of the Maximum Contaminant Levels (MCLs) set by the EPA. Seven additional Participants had elevated levels of radionuclides, but did not consistently exceed maximum contaminant levels and, therefore, are not currently under an enforcement order. CPDHE continues to monitor Participants for compliance with the primary drinking water standards and will continue to issue enforcement orders, as necessary, to water providers. Seventeen AVC Project Participants are currently under CDPHE enforcement orders. Many of the enforcement orders cite AVC as the "preferred compliance alternative to achieve long-term compliance with the radionuclide MCLs."

1.3.2 AVC Project Participant Demands

The FEIS estimated a total 2070 water demand for AVC Project Participants of 12,569 afy as shown in Figure 2.

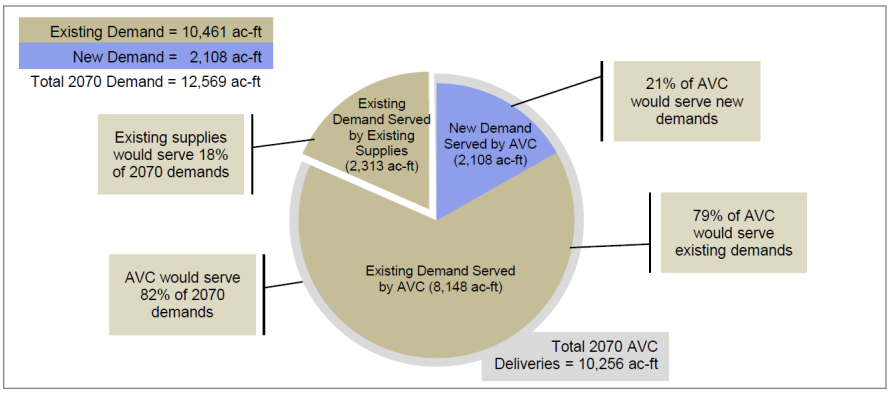

Figure 2: FEIS Existing (2010) and Future (2070) AVC Project Participant Water Demands

The FEIS estimated a total 2070 water demand for AVC Participants of 12,569 afy, with 10,256 afy of this demand being met with deliveries of water via the AVC Project and the balance from the AVC Project Participants' local supplies. However, with the withdrawal of St Charles Mesa (-2,651 afy) and the addition of Riverside (+20 afy), 2070 deliveries via the AVC Project are reduced from 10,256 afy to 7,625 afy. The water delivered by AVC Project Water will be a combination of Fry-Ark Project Water which is allocated to the AVC Project Participants by Southeastern and of non-project water resulting from the exercise of water rights held by individual AVC Project Participants.

1.3.2 Pueblo Water's Excess Capacity Storage Provisions of the Contract

Part B of the Contract addresses Pueblo Water's request to continue utilizing excess capacity storage space for an additional 50 years in Pueblo Reservoir, if and when available. The purpose and need for this portion of the Contract is to:

1) Increase the efficiency of Pueblo Water's water supply system, conserve water for municipal uses, and improve the quality of Pueblo Water's raw water supply;
2) Replace their existing 2000 contract, which expires in 2025;
3) Authorize the storage Pueblo Water's BDIC water rights acquired after the 2000 contract in Pueblo Water's excess capacity account; and
4) Increase flexibility in the volume of excess capacity used based on Pueblo Water's current and future demands. The Contract changes the storage volume for a flat 15,000 acre-feet per year to a range of 10,000 to 25,000 acre-feet over the 50 year period with Pueblo Water's water rights described in the EA.

Chapter 2-Alternatives

2.1 No Action Alternative (Comanche North Alignment)

For purposes of this EA, the No Action Alternative is defined as the Comanche North alignment (see Figure 3) as described in the FEIS/ROD. AVC Project Participants would receive water deliveries as described in the FEIS, except for St. Charles Mesa. The No Action Alternative moves water through the

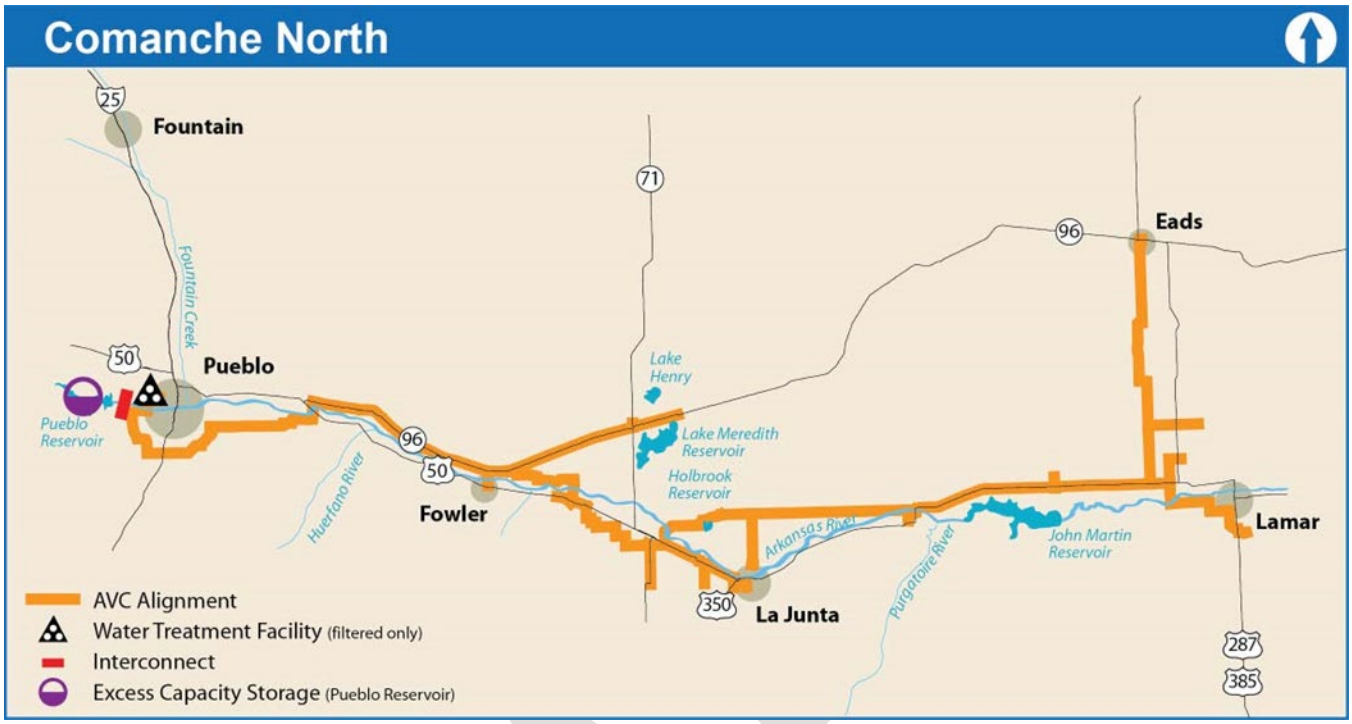

Figure 3: No Action Alternative (ROD Selected Comanche North Alignment)

existing Joint Use Pipe (JUP) immediately upstream from Pueblo Boulevard, located north of the Arkansas River. The JUP delivers Pueblo Water's raw water from Pueblo Reservoir to Whitlock Water Treatment Plant (WTP). Under the No Action Alternative, Reclamation would purchase excess capacity available in the JUP upstream of the JUP Wye from Pueblo Water as described in the FEIS and would construct a new pipeline downstream from the JUP Wye to the Whitlock WTP.

From the Whitlock WTP, a trunk line would be constructed along a route south of Pueblo to St. Charles Mesa and Avondale, crossing Interstate 25 southwest of the Xcel Energy Comanche Powerplant. East of Avondale, the pipeline would generally be located north of the Arkansas River except between Manzanola and Rocky Ford. The total length of the AVC, including spurs, would be about 227 miles.

Primary spurs would be constructed from Fowler north to Colorado 96, then east to Sugar City; between Rocky Ford and La Junta; and a spur to serve Eads. Shorter delivery pipelines located near the trunk line

and spurs would deliver water to AVC Project Participants. Spur crossings of the Arkansas River and perennial streams would be bored underneath. Pipeline sizes would range from 36 inches in diameter at the JUP Wye to 4 inches at some AVC Project Participants tie-in locations.

Pumping stations would be built with one located at the Whitlock WTP and one on the south end of the spur pipeline to Eads. A regulating tank site would be constructed southwest of the City of Pueblo, and two surge tanks would be constructed with one tank near Fowler and the other tank near La Junta.

New water treatment components would be integrated into the existing Whitlock WTP. The integrated WTP would provide filtered water; residual disinfection would be the responsibility of AVC Project Participants at their respective delivery points. All AVC Project Participants would receive filtered water.

AVC Project Participants also participating in the Southeastern's Master Contract would receive their non-Fryingpan-Arkansas Project water stored in excess capacity space in Pueblo Reservoir via AVC or other existing or future delivery systems, exchanged upstream to Pueblo Reservoir, or released to the Arkansas River, depending on the AVC Project Participants' needs.

2.2 Proposed Action

The Proposed Action shifts the AVC Project from a traditional Reclamation project, with all features funded, constructed, and owned by Reclamation, to a collaborative project executed by both Reclamation and Southeastern. Reclamation would fund, construct, and own the trunk line and appurtenant features such as the injection sites and regulating tanks. Southeastern would finance, construct, and own the spur and delivery pipelines and their appurtenant features such as the pumping station on the Eads Spur. Or alternatively, Southeastern may assist local communities in financing and constructing these features themselves.

Figure 1 provided a general overview of the AVC Project as described in the Proposed Action. A summary of the changes in AVC Project Participants, pipelines and associated facilities, and the proposed Contract with Pueblo Water follows and the SIR provides additional descriptions and details including maps for each AVC Project segment.

2.2.1 AVC Project Participants

St. Charles Mesa would have received up 2,651 afy of AVC Project water through the AVC Project. Instead, St. Charles Mesa Water District is pursuing other opportunities to meet their future water demands.

Riverside Water Company has requested to participate in the AVC Project. Riverside distributes water pumped to about 90 people from two groundwater wells located in Otero County southwest of Holbrook Reservoir. Riverside is currently under enforcement orders from CDPHE for excessive levels of radionuclides and bromate. Riverside has requested 20 afy to meet its projected 2070 water demand. The delivery pipeline for Riverside would head south from the truckline at Colorado Highway 366 and parallel Otero CR 24.5 to Riverside's existing facilities.

The FEIS estimated a total 2070 water demand for AVC Participants of 12,569 afy, with 10,256 afy of this demand being met with deliveries of water via the AVC Project and the balance from the AVC Project Participants' local supplies. However, with the withdrawal of St Charles Mesa (-2,651 afy) and the addition of Riverside (+20 afy), 2070 deliveries via the AVC Project are reduced from 10,256 afy to 7,625 afy. The water delivered by the AVC Project (AVC Project Water) will be a combination of Fry-Ark Project Water which is allocated to the AVC Project Participants by Southeastern and of non-project water resulting from the exercise of water rights held by individual AVC Project Participants.

2.2.2 Pipelines and Associated Facilities

Table 1 provides a general comparison of all pipeline construction alignments for the Proposed Action and No Action. Changes in pipeline alignments and facilities are discussed and summarized as follows by pipeline reach and facility.

Table 1: Reconfigured AVC Pipelines with ROD Alternative Selected Alternative

Pipeline Type	Proposed Action	No Action	Difference
Trunk Line	120.0 miles[1]	144.7 miles	-24.7 miles
Spur Pipelines	54.3 miles	54.4 miles	-0.1 miles
Delivery Pipelines	58.7 miles	28.2 miles	+30.6 miles

[1]Length includes about 6.3 miles of new trunk line from Pueblo Connection Point to North Avondale and elimination of about 1.2 miles of trunk line from JUP Wye to Whitlock WTP and about 35.1 miles of trunk line from WTP Treatment to St. Charles Mesa and Avondale.

2.2.3 Pueblo Reservoir to Pueblo Connection Point Trunk Line

Under the Proposed Action, Reclamation and Southeastern would enter into a contract with Pueblo Water (Contract) to convey AVC Project water from Pueblo Reservoir through the existing JUP and Pueblo Water's Raw Water Pipeline to the Whitlock WTP using existing pipeline capacity below the JUP Wye. AVC Project water will mix with other Pueblo Water sources and be treated at the Whitlock WTP and then delivered through the Pueblo Water System to a connection point along U.S. Highway 50 east of Pueblo Connection Point (aka Connection Point 1 in Contract). This change eliminates about 1.2 miles of trunk line from the JUP Wye to Whitlock WTP, 35.1 miles of trunk line south of Pueblo and through St. Charles Mesa, and a separate AVC Project water treatment facilities included in the No Action Alternative.

Segment 1 of the AVC will use the existing Pueblo Water System to treat and deliver about 3 mgd of treated AVC Project Water from Pueblo Reservoir to the Pueblo Connection Point without any additional improvements. Expanding Pueblo Water's existing pipeline capacities would occur as needed over time to increase delivery capability at the Pueblo Connection Point up to 13 mgd to meet AVC Project Participants' 2070 estimated demands. Pueblo Water will retain ownership of all facilities within their system and Reclamation's ownership of facilities will begin at the Pueblo Connection Point. Figure 4 includes a map of Pueblo Water System and anticipated pipelines that will be improved to provide the increased capacity needed to meet AVC Project's 2070 estimated water demands. Based on the current AVC Project construction schedule and estimated Project Participants demands, some of the Pueblo Water improvements may be needed around 2030. Actual AVC Project construction is subject to annual congressional appropriations.

Payment for AVC's portion of Pueblo Water's future increases in the capacity of its Pueblo Water System are addressed in the Contract.

In total, the Proposed Action eliminates about 24.7 miles of trunk line and adds about 1.2 miles of additional delivery pipeline to Avondale. The Avondale delivery pipeline is discussed later in this document.

2.2.4 Pueblo Connection Point

The Pueblo Connection Point will be located near the unincorporated community of Devine, Colorado. Initial designs place a small connection structure just south of Highway 50 and about 750 feet west of 36th Lane.

Pueblo Water will also require a backflow prevention device to ensure the AVC cannot backflow into the Pueblo Water System. It will be installed near the Pueblo Connection Point and Injection Site No. 1.

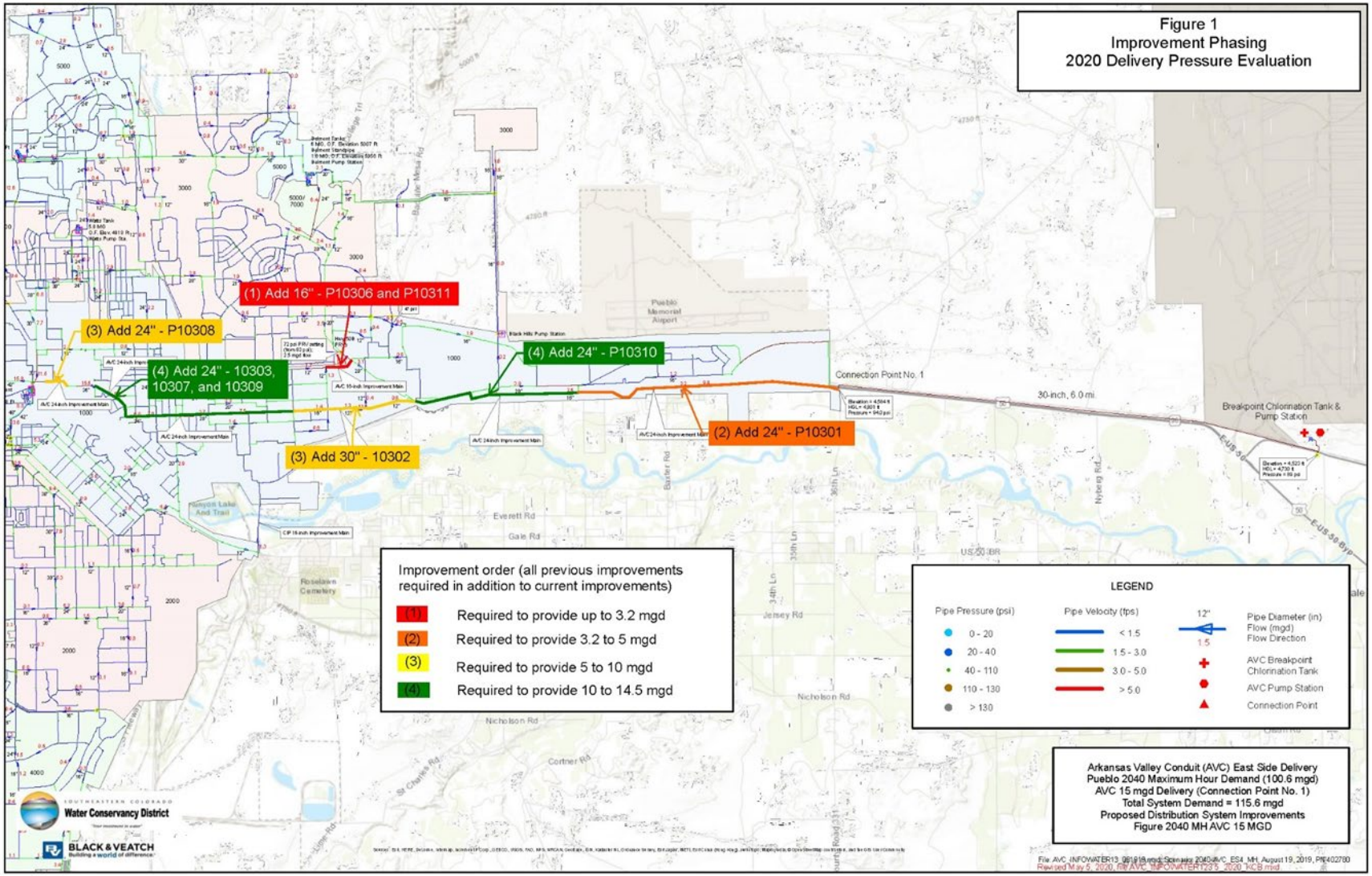

Figure 4: Pueblo Water Pipeline Improvements (from Black and Veatch 2020)

Additional design review and discussions with Pueblo Water are needed to determine the type and exact location of the backflow prevention device within the trunk line alignment.

2.2.5 Boone Reach Trunk Line

Under the Proposed Action, 6.3 miles of new trunk line is needed to connect to the existing Pueblo Water System at the Pueblo Connection Point. The trunk line parallels U.S. 50 before connecting to the FEIS's selected alignment along Colorado 96 west of Boone, Colorado. This alignment is within other alternatives analyzed in the FEIS, with the exception the portion of the trunk line that now follows Highway 50 southeast of Chico Wash and the PuebloPlex (Pueblo Chemical Depot) interchange. The trunk line then follows Hwy 50 southeast to Colorado 96 as shown in Figure 5.

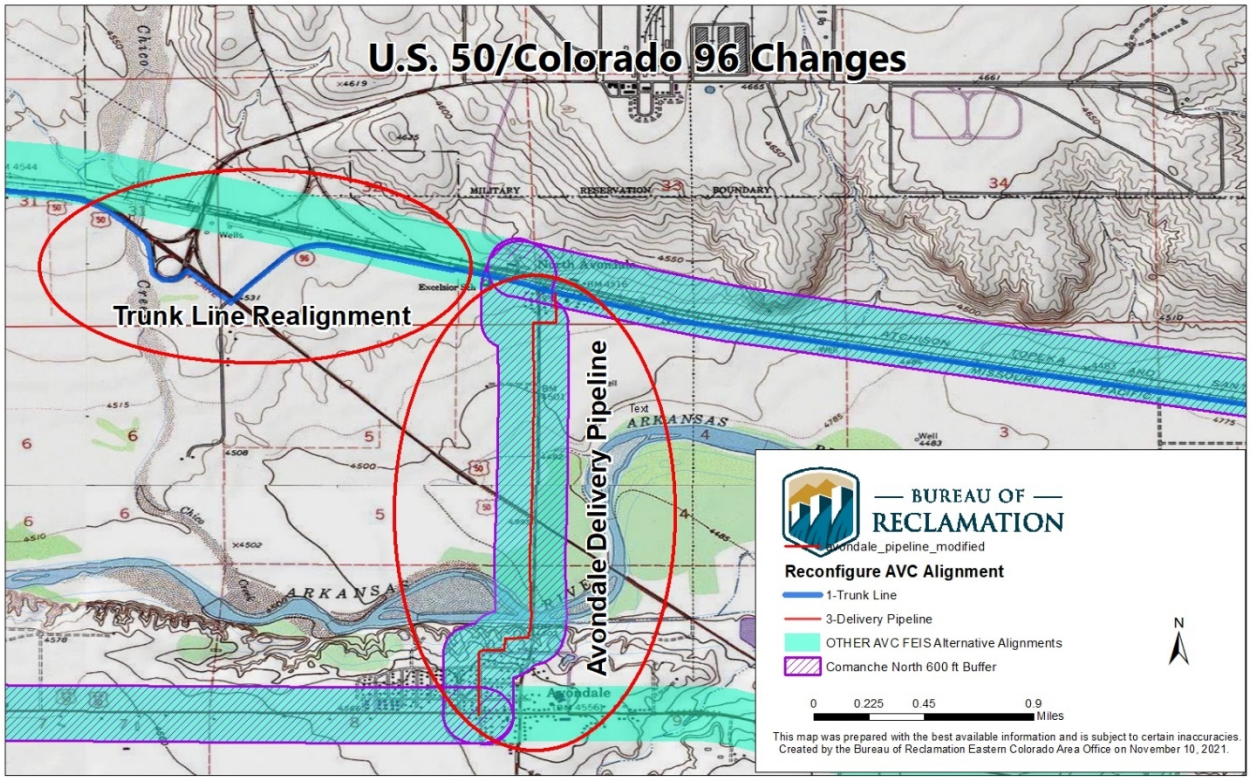

Figure 5: Hwy 50/96/Avondale Trunk Line and Delivery Pipeline Changes

The trunk line will also deviate from the FEIS alignment at Boone and parallels Colorado 96 and turns south along Church Street and then follows Main Street east before returning to Colorado 96 just east of Boone (Figure 6). The trunk line will cross the Colorado Canal and then follows Colorado 96 east and the connects to the No Action Alternative alignment.

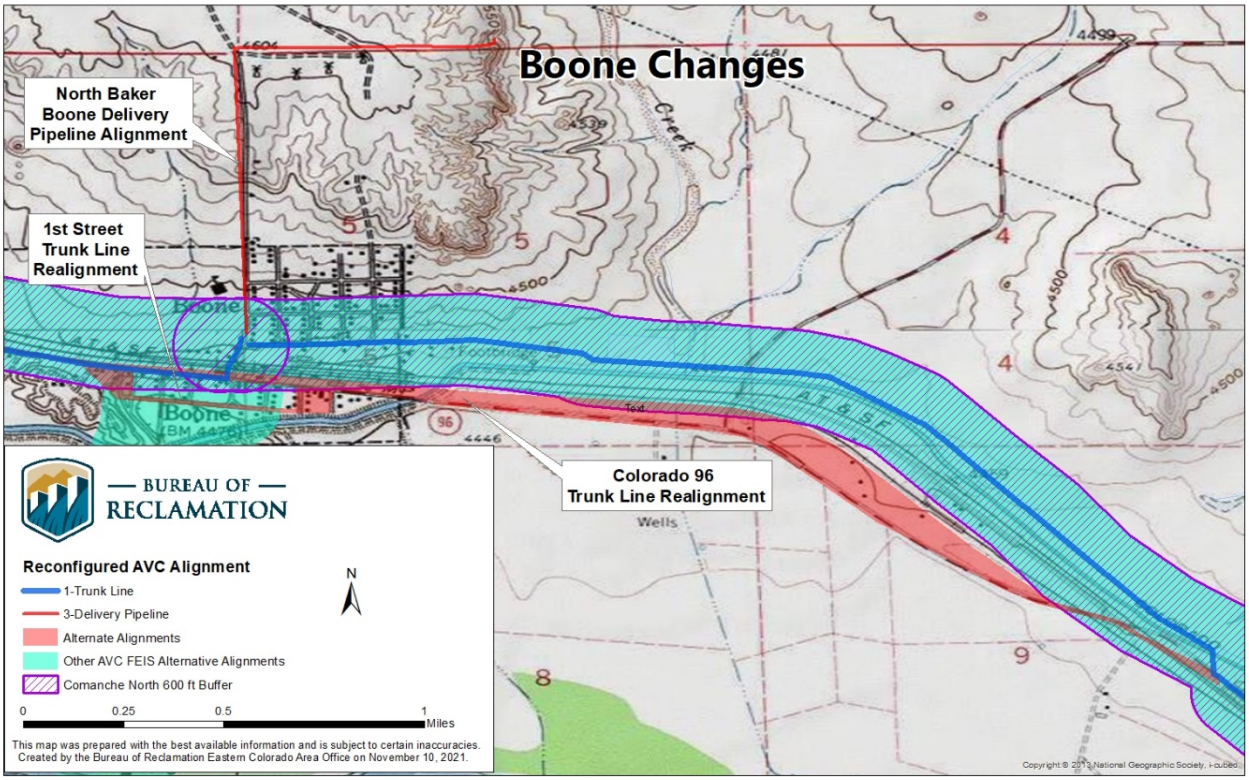

Figure 6: Boone Area Trunk Line and Delivery Pipeline Changes

2.2.6 Injection Sites

Water treatment facilities along the trunk line adjacent U.S. 50 will be constructed to remove chloramines that are added during water treatment process at Whitlock WTP. Chloramine can form harmful disinfectant biproducts in treated water pipelines that have long detention periods. Chloramines will be removed by injecting water treatment additives to produce filtered (non-potable) water. The general locations of Injection Sites No. 1 and 2 are shown in Figure 7 and will be obtained in fee title by Reclamation or Southeastern, subject to willing landowners. AVC Project Participants would be responsible for adding a disinfectant residual (likely free-chlorine) at the entry points to their distribution systems. Reclamation is also evaluating combining both injections sites into one at Injection Site No. 2 that would occupy approximately 7 acres.

Preliminary details for each injection site (subject to final design) are as follows:

The Injection Site No. 1 will consist of a chemical building(s), a supervisory control and data acquisition (SCADA) building, yard piping and valving (buried and above ground), access roadway, various mechanical and electrical features, such as HVAC, lighting, engine generator, transformer, water analyzers, fiber wire, and various site features, such as gravel surfacing, fencing, guard posts and gates. Injection Site No. 1's size is assumed to be approximately 1.5 acres and will be purchased in fee title from an adjacent willing private landowner. Injection Site No. 1 will be used to inject both sodium hypochlorite and sodium bisulfite into the AVC trunk line to dechloraminate treated water delivered from Pueblo Water during the initial AVC

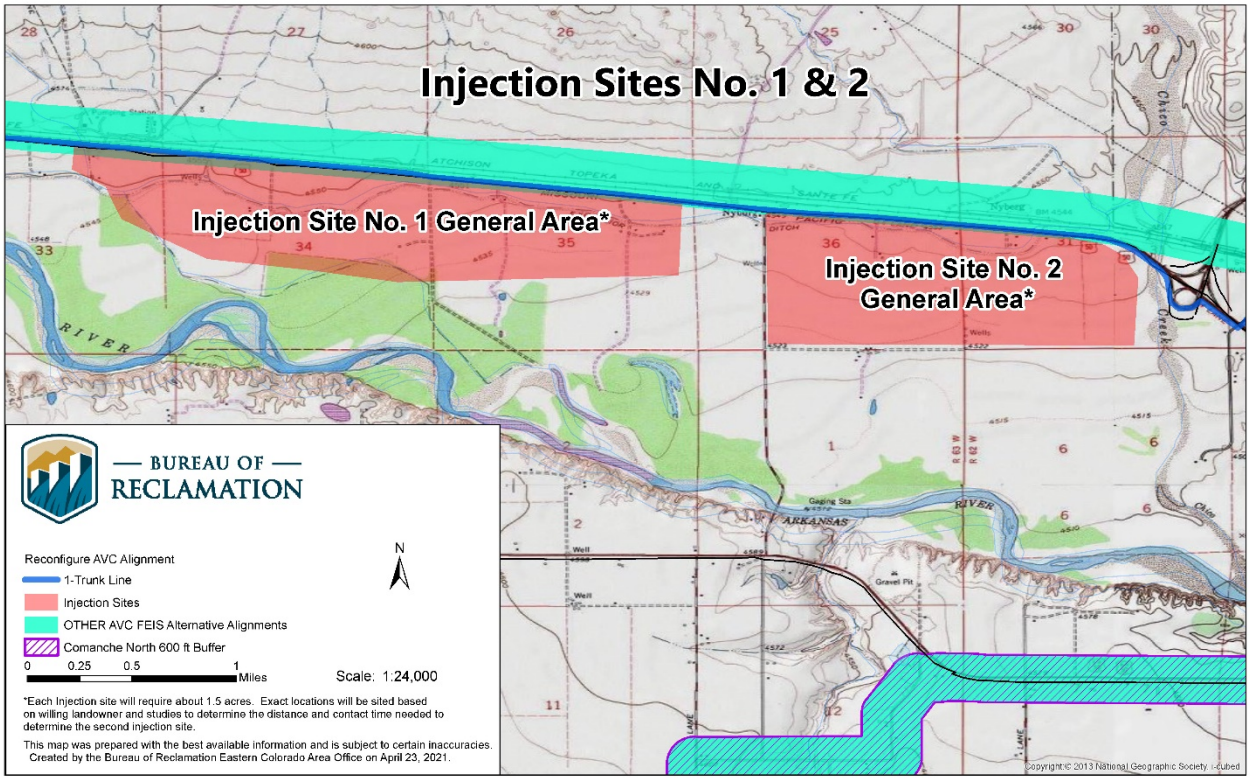

Figure 7: Planned Areas to Locate Injection Sites

Project deliveries. Sodium bisulfite would only be stored on-site for several years until Injection Site 2 is constructed. The chemical building will house these chemicals in tanks/totes and will require HVAC, lighting, and potable water from the trunk line prior to injection of additives. The SCADA building will house the controls equipment for Injection Site No. 1 and Injection Site No. 2. It will also house data read-out equipment for the entire AVC Project. To ensure communications from all AVC Project sites to Injection Site 1, fiber optic lines would be installed at AVC Project facilities and paralleling AVC pipelines or radio communication as described in the feasibility study report (Reclamation 2016). The trunk line will run along U.S. 50 to Site No. 1 and through a series of valves and pipes for chemical injection, flow measuring, and water analysis, before exiting the site and returning to the trunk line along U.S. 50.

Depending on the final site selection and land acquisition, Injection Site No. 1 will likely be accessed from 39th Lane south of U.S. 50 and need improvements with widening and slight realignment to allow for construction traffic. Culvert/bridge improvements over existing U.S. 50 drainage would also be needed. Construction work on the site would include excavation, concrete placement, masonry, pre-engineered building installation, material hauling (soil and gravel), steel work, and general construction.

Injection Site No. 2 will consist of a chemical building(s), yard piping and valving (buried and above ground), access roadway, various mechanical and electrical features, such as HVAC, lighting, engine generator, transformer, water analyzers, fiber wire, and various site features, such as gravel surfacing, fencing, guard posts and gates. The Injection Site 2 is also assumed to need approximately 1.0 acres.

Injection Site No. 2 will be used to inject sodium bisulfite in to the AVC trunk line to remove and free chlorine left in the water after the first chemical injection at Injection Site No. 1 for larger AVC Project deliveries that will occur after the downstream trunk line is constructed. The chemical building at Injection Site No. 2 will house sodium bisulfate in tanks/totes and will require HVAC, lighting, and potable water. The trunk line will continue along U.S. 50 to the site and through a series of valves and pipes for chemical injection, flow measuring, and water analysis, before exiting Injection Site No. 2 and returning to the main transmission line along U.S. 50.

Injection Site No. 2 will also need to be accessed from U.S. 50 and may use an existing access road for the Excelsior Ditch dependent on the final site selection and land acquisition. The road would be improved with widening and slight realignment to allow for construction traffic. A culvert/bridge over U.S. 50 drainage may need to be increased as well. Construction work on the site will include excavation, concrete placement, masonry, pre-engineered building installation, material hauling (soil and gravel), steel work, and general construction.

2.2.7 Pumping Plant and Regulating Tanks

The Proposed Action will facilitate gravity flow for most of the AVC Project by modifying Regulating Tank No. 1's elevation. Also, Pumping Plant No. 1 at Whitlock WTP will be eliminated based on the hydraulics analysis. General site locations for the two regulating tanks (referred to as surge tanks in the FEIS) and the remaining pumping plant are discussed below. Site-specific design details will be developed during final design and land acquisition for each facility.

Regulating Tank No. 1 will be located northwest of the Sugar City spur pipeline connection with the trunk line and will be constructed at a higher elevation than the No Action Alternative (Figure 8). About 0.6 miles of additional parallel pipelines will be needed (1.2 miles of total trunk line) and will cross the Colorado Canal. An existing powerline access road east of Crowley County Lane 3 will be improved to provide construction and year-round operation and maintenance (O&M) access to Regulating Tank No. 1.

Regulating Tank No. 2 will remain in the same general location as the No Action Alternative and tentatively be located on a Colorado State Land Board parcel about halfway between the cities of Rocky Ford and Las Animas, Colorado. Regulating Tank No. 2 will be accessed from Las Animas CR HH.

A single pumping plant on the Eads spur pipeline will be located along Bent CR 34 near the Fort Lyons Canal (referred to as Pumping Plant No. 2 in the FEIS). The pumping plant also remains in the same general location as identified in the No Action Alternative.

2.2.8 Spur Pipelines

Spur pipeline alignments remain relatively unchanged from the No Action Alternative, with a 0.15 mile reduction in total length of spur pipelines. Design, funding, and construction of all spur pipelines will be the responsibility of Southeastern and credited towards the 35 percent of AVC Project costs for which Southeastern is required to pay. Specific details for spur lines will be developed during final designs for each reach of spur pipeline. The Rocky Ford to La Junta portion of the trunk line is reclassified as a spur pipeline and will be constructed by Southeastern.

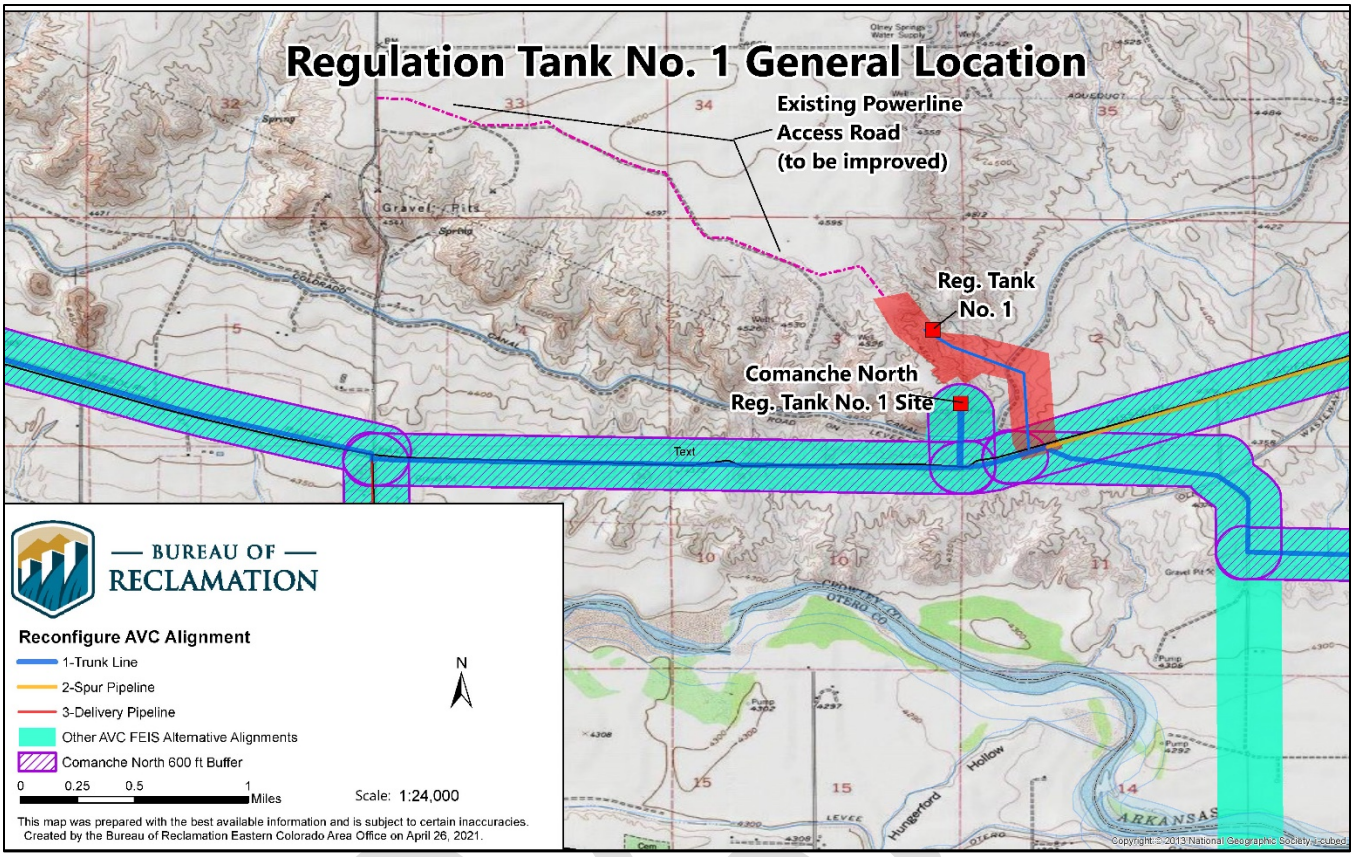

Figure 8: Regulation Tank No. 1 and Access Road

2.2.9 Delivery Pipelines

Under the Proposed Action, changes in delivery pipeline alignments have been made based on requests by Southeastern and AVC Project Participants. Approximately 30.6 miles of additional delivery pipelines will be needed to connect to AVC Project Participants' existing drinking water systems or other requested delivery points.

Table 2 provides a summary of proposed changes to delivery pipeline lengths by AVC Project Participants based on the 2016 Feasibility Design Report (Reclamation 2016) completed for the FEIS's Comanche North alignment. The SIR includes proposed alignments for all delivery pipelines which totals 58.4 miles in length.

Included in this EA are additional maps showing alignment changes proposed by Southeastern after finalization of the SIR. These additional delivery pipeline alignment changes are proposed for Avondale, Crowley County Water Association, Valley Water, and West Grand Valley. Final alignments for each delivery pipeline will be developed during the final design process. All delivery pipelines will be funded and constructed by Southeastern, AVC Project Participants, and/or others and credited towards the 35 percent AVC Project cost-share requirements.

Table 2: Proposed Action Additional Delivery Pipeline Lengths

AVC Project Participant/Delivery Point	Alignment Name*	Additional Pipeline (miles)
Boone Delivery	B DP	1.50
Avondale**	-	1.20
Fowler	F DP	0.40
Crowley County Water Assoc.	CCWA-DP	2.0***
Sugar City	SC DP	2.50
Valley Water	VW DP	1.6***
Patterson Valley	PV DP	2.25
Hilltop	HT DP	0.40
West Grand Valley	WGVW DP	1.1***
Riverside	DP RS	1.40
North Holbrook Water	NH DP	0.50
West Holbrook Water	WH DP	0.75
Holbrook Center Soft Water Assoc.	H CTR SWA DP	0.90
Cheraw	C DP	2.40
South Side Water Assoc.	SS WA DP	1.20
East End	EE DP	1.30
Swink – U.S. 50 Route	S50 DP	0.50
Swink – Fairview Delivery Point	SFV DP	2.40
Swink – Fairmont Delivery Point	SFM DP	0.90
Homestead Improvement Assoc.	H IA DP	0.40
La Junta	LJ DP	0.10
Wiley	W DP	1.30
May Valley Delivery Point 1	MV DP	1.00
May Valley Delivery Point 2	MV2 DP	2.10
	Avg	1.3
	Median	1.10
	Total	**30.6**

**Reference the 2016 Feasibility Design Report, Appendix I*
*** There was no Avondale delivery line in the 2016 Final Design Report as the main trunk line went directly through Avondale (alignment SCMB)*
****Alignment has changed from SIR description.*

2.2.10 Pueblo Water Contract

The FEIS contemplated agreements with Pueblo Water to: 1) utilize excess capacity in the JUP, and 2) filter AVC Project water delivered from Pueblo Reservoir at separate facilities to be constructed at the Whitlock WTP. The proposed Contract between Reclamation, Southeastern and Pueblo Water also addresses conveyance of AVC Project Water from Pueblo Reservoir to Whitlock WTP utilizing the JUP and Pueblo Water's Raw Pipeline, but also integrates AVC Project Water treatment with Pueblo Water's existing

operations. AVC Project Water will be released from Pueblo Reservoir and be mixed with Pueblo Water's other raw water sources in the JUP and delivered to the Whitlock WTP for treatment.

AVC Project Water supplies stored in Pueblo Reservoir would be delivered to the Whitlock WTP via the Arkansas River using the JUP and Pueblo Water's Raw Water Pipeline or Pueblo Water's existing northside and southside intakes. The northside intake has a maximum capacity of 57 mgd (88.2 cfs) and the southside intake has a flow capacity between 30 and 40 mgd (46.4 to 61.9 cfs). The first segment of the JUP is 84" in diameter and then reduces to 78". The 66" diameter Pueblo Water Raw Water Pipeline connects to the JUP. It currently has the capacity to deliver up to 140 mgd (216.6 cfs) to the Whitlock WTP. Whitlock WTP can currently treat about 84 mgd (130 cfs) as determined by Black and Veatch (2017). Whitlock WTP currently has adequate unused capacity to meet the full AVC Project demands. However, Pueblo Water will need to make future improvement to its system to meet AVC Project Participant's 2070 estimated maximum monthly demand of 13.0 mgd at the Pueblo Connection Point. Pueblo Water System improvements would be phased in concert with its 2040 Water Plan and will be based on future demands within Pueblo Water's service area. Pueblo Water currently estimates upsizing, replacement, and/or installation approximately 1.5 miles of 30-inch, 8.5 miles of 24-inch, and 0.25 miles of 16-inch pipeline within the current city limits would be needed to meet and deliver 2070 AVC Project Water demands (as previously shown in Figure 4). Any improvement or additional facilities will be provided by Pueblo Water as detailed in the Contract to meet the Contract's flow rates and water pressure requirements at the Pueblo Connection Point.

In addition, payments to Pueblo Water to make future increases in the capacity of its Pueblo Water System are included in the proposed Contract to ensure Pueblo Water's capability to treat and deliver up to 13.0 mgd of AVC Project Water to meet the AVC Project Participants' 2070 maximum month demands.

2.2.11 Fiber Optic Lines

Dedicated fiber optic lines may be installed along AVC pipelines to provide communications between AVC Project facilities and features. The fiber optic lines may be installed within pipeline construction footprints, either within the pipeline trench or adjacent to it. Use of radio communication, as described in the feasibility study report (Reclamation 2016) are also still being evaluated. Additional fiber optic conduits for others may also be installed during pipeline construction to facilitate rural broadband development, as long as there are no additional costs to the AVC Project.

2.2.12 Final Design and Construction

Reclamation and Southeastern intend to design and construct the AVC trunk line and spur pipelines in no greater time than shown in the tentative schedule in Table 3. However, the recent passage of the Bipartisan Infrastructure Law may provide opportunities to shorten this schedule significantly. Delivery pipelines connecting to the AVC constructed by Southeastern and AVC Project Participants will follow the same general schedule. Design and construction contract awards are subject to congressional appropriations and availability of other funding sources.

Table 3: Tentative Design and Construction Schedule

Segment/Reach	Final Designs Complete	Construction Start	Construction Complete
Segment 2, Boone Reach 1	February 2022	Oct 2022	Oct 2024
Segment 2,	Feb 2023	Oct 2023	Nov 2024

Segment/Reach	Final Designs Complete	Construction Start	Construction Complete
Boone Reach 2			
Segment 2, Injection Facility No. 1	March 2022	TBD	TBD
Segment 2, Injection Facility No. 2	TBD	TBD	TBD
Segment 2, Crowley Reach 1	Feb 2024	Oct 2024	May 2026
Segment 2, Crowley Reach 2	Dec 2024	Aug 2025	Mar 2027
Segment 2, Regulating Tank #1	June 2025	Mar 2026	Feb 2027
Segment 2, Sugar City Spur and Delivery Lines	July 2022	Apr 2023	Dec 2024
Segment 2, Manzanola Reach	Oct 2025	June 2026	Apr 2028
Segment 2, Rocky Ford Reach 1	Oct 2026	Apr 2027	June 2028
Segment 2, Rocky Ford Reach 2	June 2027	Mar 2028	Sept 2029
Segment 3, La Junta Spur and Delivery Lines	March 2025	July 2026	July 2028
Segment 3, Regulating Tank #2 Reach 1	Apr 2028	Dec 2028	July 2030
Segment 3, Regulating Tank #2 Reach 2	Apr 2029	Dec 2029	July 2031
Segment 3, Regulating Tank #2	Oct 2029	Nov 2030	June 2031
Segment 3, Las Animas Reach	Mar 2029	Nov 2030	Feb 2033
Segment 4, Hasty Reach	Mar 2031	Nov 2031	Oct 2034
Segment 4, Wiley Reach	Mar 2032	Nov 2032	Mar 2035
Segment 4, Eads Spur and Delivery Lines	Sept 2028	Apr 2032	Mar 2033
Segment 4, Lamar Reach	July 2032	Apr 2033	Sept 2035

Chapter 3-Affected Environment and Environmental Consequences

The discussion of affected environment focuses on only those portions of the Proposed Action that differ from the No Action Alternative. Where portions of Proposed Action are within other alternatives described in the FEIS, Reclamation relies on the affected environment descriptions and effects analysis contained in the FEIS, if applicable. When the affected environment falls outside the FEIS analysis area or there is potential for additional environmental effects, the affected environment is described and discussed for the affected resource. All AVC pipeline and appurtenant features are subject to final engineering design and may require additional site specific environmental and National Historic Preservation Act (NHPA) compliance.

The FEIS assumed a 150-foot disturbance area width for pipeline corridors and defined buffer areas for each resource that varied by location. For this EA, all trunk line, spurs, and delivery pipelines are generally assumed that pipeline realignments have a 150-foot disturbance area that may occur on either side of the adjacent highway, CR or other roadway. Buffer areas to evaluate impacts to resources generally utilize a 300-foot buffer along the centerline of each roadway or proposed facility footprint. Where buffers areas are expanded or reduced are discussed within each resource topic.

Power for each AVC Project facility is assumed to be available from existing power lines adjacent to the pipeline corridor but will be defined during the final design processes for each facility. If final designs identify new service lines, transmission lines, transformers, etc. that are proposed outside the AVC pipeline and facility footprints, additional NEPA, cultural, and other resource review will be needed. Additional environmental review will be required if AVC pipelines and/or facilities are relocated outside the anticipated construction easement or privately-owned parcels acquired by Reclamation or Southeastern.

Resources evaluated in this EA were also analyzed in the ROD and are listed below

- Surface Water Hydrology
- Water Rights
- Water Quality
- Geomorphology
- Aquatic Life
- Recreation
- Vegetation and Wetlands
- Wildlife
- Human Environment
- Socioeconomics
- Environmental Justice
- Historic Resources
- Indian Trust Assets
- Other Resources

Groundwater resources were eliminated from further analysis in this EA because the Proposed Action and No Action alternative's effects would be identical those described in the FEIS. No changes to the AVC Project are being proposed that would result in additional effects to groundwater resources. For a detailed description of the AVC Project's environmental and hydrologic setting, refer to Chapter 3 of the FEIS.

3.1 Surface Water Hydrology

Both the Proposed Action and No Action alternatives generally decrease streamflow in the Arkansas River downstream of Pueblo Reservoir by conveying water supplies in the pipeline rather than in the Arkansas River.

Simulated annual deliveries through AVC Project in the FEIS were estimated to be approximately 10,300 ac-ft. per year or about 2 percent of the annual average streamflow at the Arkansas River above Pueblo gauge. The FEIS assumed all AVC Project deliveries would be made through Pueblo Dam's South outlet works or the proposed interconnect. The interconnect was one of three separate Proposed Actions evaluated in the FEIS. AVC and Southeastern's Master Contract were the other Proposed Actions. The interconnect is a short section of pipeline that would be constructed to convey water between the North and South outlet works at Pueblo Dam during short term maintenance and emergency outages. Refer to the FEIS for additional detail.

Under the No Action Alternative, all AVC Project deliveries would be made through the South Outlet Works, using the JUP to deliver AVC Project Water to separate facilities constructed at Whitlock WTP.

Under the Proposed Action, AVC Project Water will be delivered to existing Whitlock WTP from Pueblo Dam via the following:

1) South Outlet Works releases to JUP and Pueblo Water's Raw Water Pipeline (primary method);
2) Direct releases to the Arkansas River[1] to either:
   a) Pueblo Water's Arkansas River North intake structure
   b) Pueblo Water's Arkansas River South intake structure; and/or
3) North Outlet Works to Interconnect to JUP and Pueblo Water's Raw Water Pipeline (if constructed in the future).

3.1.1 Arkansas River

AVC Project raw water deliveries via the Arkansas River would result in minor increased river flows when compared to the No Action Alternative. Increases would occur at times when AVC Project Water is delivered to either of Pueblo Water's Arkansas River intakes. Pueblo Water's intakes are approximately 4.3 miles (Northside) and 5.2 miles (Southside) downstream of Pueblo Dam (Figure 7) and have diversion capacities of 57 mgd (88.2 cfs) and between 30 and 40 mgd (46.4 to 61.9 cfs), respectively.

Pueblo Water has considerable flexibility in how it delivers its existing water supplies stored in or bypassed through Pueblo Reservoir. Minor increases in flows of up to 16 cfs (annual average) from Pueblo Dam to Pueblo Water's intakes under the Proposed Action, are considered to be beneficial for both fisheries and recreation. This would occur primarily during periods of low flow below the dam, when river flows are at or near 50 cfs and AVC Project Water is being taken at Pueblo Water's Arkansas River intakes. The FEIS predicted annual average decreases of 16 cfs at the Above Pueblo stream gage under the Comanche North Alternative when compared to the FEIS's No Action Alternative (see FEIS Table 4-8).

[1] Controlled release to the Arkansas River would be made through Pueblo Dam's North Outlet Works via the Fixed Cone Valve or through James W. Broderick Hydropower Plant.

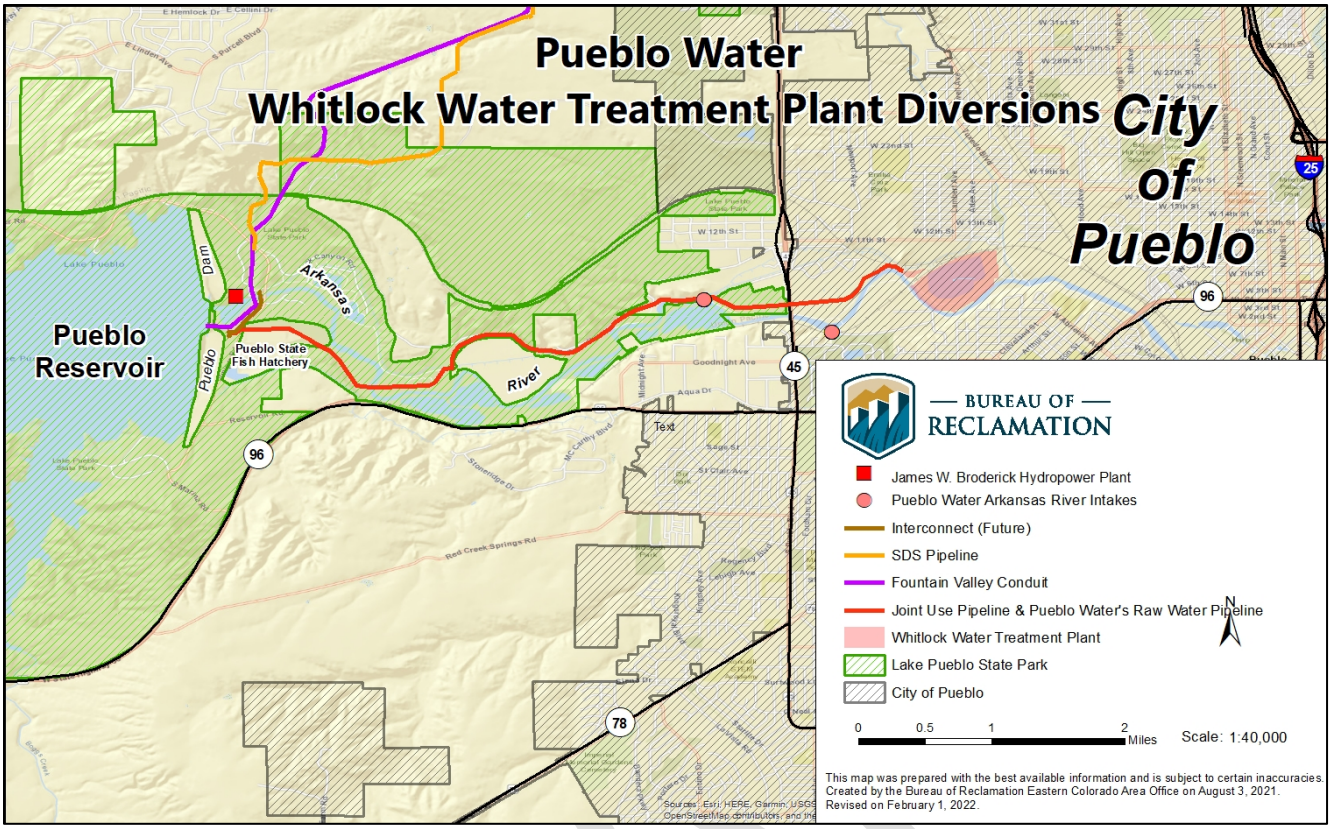

Figure 7: Pueblo Water's Arkansas River Intakes

These periods of low flows are discussed in greater detail in the FEIS and Reclamation's 2018 Temporary Excess Capacity Program Programmatic EA (Temporary Program Programmatic EA) (Reclamation 2018). The ROD and 2018 Temporary Program FONSI's environmental commitments include mitigation measures to address moderate effects of occasional low streamflow below Pueblo Reservoir and effects of low streamflow on water quality and aquatic life. Both the No Action and Proposed Action alternatives include Reclamation's commitment to limit excess capacity contract operations when streamflow is less than 50 cfs at the Above Pueblo gauge when combined with Pueblo Fish Hatchery return flows. The beneficial effects of increased flows under the Proposed Action are discussed in greater detail in the appropriate Resource sections of this Chapter.

3.1.2 Pueblo Reservoir

Pueblo Reservoir was constructed as the terminal storage reservoir for the Fry-Ark Project. It has a total active storage capacity of 256,949 ac-ft, a dedicated flood control space of 26,991 ac-ft, and a joint-use pool of 66,011 ac-ft.

Pueblo Reservoir stores both west slope and native east slope Fry-Ark Project water. It can also store Non-Fry-Ark Project water in the Conservation Pool and in the Joint-Use Pool if and when space is available pursuant to contractual arrangements with Reclamation. These contractual arrangements are primarily the excess capacity storage contracts listed in Table 4.

Table 4: Long and Short Term Pueblo Reservoir Excess Capacity Contracts

Contractors	No Action (ac-ft)	Proposed Action (ac-ft)
Board of Water Works of Pueblo	15,000	*10,000 to 25,000*[2]
City of Aurora	10,000	10,000
Southern Delivery System Contracts[3]	42,000	42,000
Southeastern's Master Contract	29,938	29,938
Donala Water and Sanitation District	499	499
BLM	500	500
Triview Metropolitan District	999	999
Sub-Total	98,936	*93,936 to 108,936*
Proposed Continuation of Temporary Program	Up to 21,517	*11,517 to 26,517*
Total Excess Capacity	Up to 120,453	**Up to 120,453**

Arkansas River native flows can also be stored in available Conservation and Joint-Use pools under the decreed Winter Water Storage Program from November 15 to March 15 administered by the State of Colorado. However, during the flood control period (April 15 to November 1 of each year), the Joint-Use Pool and Flood Control space must be evacuated by April 15 at a rate not to exceed the safe channel capacity of the Arkansas River, or 5,000 cfs. Water is evacuated or "spilled" from Pueblo Reservoir based on the spill priority language included in Article 11 of Contract No. 229F650016.

Fry-Ark Project Water is released from Pueblo Reservoir to:

1) the Arkansas River for irrigation and municipal use by entities in the Arkansas River east of Pueblo;
2) to the Fountain Valley Conduit for Fountain Valley Authority (FVA) members (CSU, Fountain, Security, Stratmoor Hills, and Widefield);
3) to Pueblo West Metropolitan Water District for municipal use;
4) to Pueblo Water for municipal use;
5) BIDC for irrigation and municipal use; and
6) Pueblo Fish Hatchery.

Under the Proposed Action, Pueblo Water's contracted excess capacity storage volume would change from 15,000 afy, to a minimum of 10,000 afy and maximum of 25,000 afy. Pueblo Water's current excess capacity contract was issued in 2000 for a 25-year period.

The maximum available excess capacity storage volume available in Pueblo Reservoir would remain at 120,453 afy under both the No Action and Proposed Action alternatives as analyzed in the Temporary Program Programmatic EA. Table 4 shows the temporary and long-term excess capacity storage contract

[2] The proposed Contract with Pueblo Water would start with a minimum contracted storage volume of 10,000 afy, and could be increased up to the maximum of 25,000 afy. When increased, the increased volume would become the new contract minimum and reduce the amount available for contracting under the Temporary Excess Capacity Program.
[3] SDS excess capacity storage contracts with Colorado Spring Utilities (11XX6C0002), City of Fountain (11XX6C0004), Pueblo West Metropolitan District (1XX6C0006, and Security Water District (11XX6C0003).

volumes. As Pueblo Water requests increases in excess capacity storage, up to the 25,000 afy contract maximum, the amount available for the Temporary Excess Capacity Storage Program would be reduced by an equal amount to keep the total excess capacity storage volume within the 120,453 afy analyzed in the 2018 Programmatic EA.

In 2020, Triview Metropolitan District (Triview) requested a long-term contract for excess capacity storage in Pueblo Reservoir and conveyance through Pueblo Dam's North Outlet works to the Southern Delivery System. The amount of contract storage requested was 999 afy. A final environmental assessment was prepared and a FONSI signed on October 28, 2021.

In 2021, Reclamation also entered into contracts for a total of 5,240 ac-ft of excess capacity storage under the Temporary Excess Capacity Contracting Program. The 2021 annual contractors and their contracted storage volumes are shown in Table 5. Long-term and temporary excess capacity storage contracts in 2021 totaled 101,692 afy (96,452 afy long-term + 5,240 afy short-term) and are well below the 120,453 afy analyzed under the Temporary Program Programmatic EA. If and when Pueblo Water requests increases the proposed Contract storage to the maximum contract volume of 25,000 afy, 13,002 afy of storage would still be available for use by the Temporary Excess Capacity Contracting Program as analyzed in the 2018 EA.

Table 5: 2021 Temporary Excess Capacity Contracts

Contractor	**Contracted Volume (ac-ft)**
Arkansas Groundwater Users	1,500
Arkansas River Farms Group	650
Catlin Augmentation Association, Inc.	400
Colorado Department of Corrections	140
Colorado Parks and Wildlife (CPW)	1,000
CO Water Protective and Development Assoc. (M&I)	1,500
Upper Arkansas Water Conservancy District (Out of District)	50
Total	**5,240**

Pueblo Water has requested ability to store its BIDC water rights in Pueblo Reservoir under the proposed Contract. Pueblo Water's BIDC water rights were acquired after its 2000 contract and were not included in the Temporary Excess Capacity Contracting Program's Programmatic EA. Pueblo Water's BIDC, as well as Pueblo Water's other water rights, are discussed in the next section.

The Temporary Program Programmatic EA predicted mean monthly reservoir elevation for Pueblo Reservoir would increase by up to 1.40 feet by 2032 and 1.66 feet by 2058 under hydrologic modeling when compared to existing conditions. Because the total excess capacity storage space of 120,453 afy modeled as shown in Table 4 does not change, the Pueblo Reservoir elevation under the Proposed Action is predicted to be similar to the No Action Alternative.

3.2 Water Rights

Water rights in Colorado are adjudicated by the Colorado Water Court and administered by the State Engineer within the Colorado Division of Water Resources. AVC Project will utilize water supplies from decrees associated with the following sources as identified and evaluated in the FEIS:

- **Fry-Ark Project East and West Slope** including "East of Pueblo" allocations and not previously allocated non-irrigation water (NPANIW) supplies allocated to AVC Project Participants by Southeastern.
- **Fry-Ark Return Flows** exchanged under Southeastern's 1939 exchange decree or 01CW151 decree.
- **Existing Agricultural Water Rights** using existing decreed agricultural-to-municipal water rights transfers.
- **New Agricultural Water Right Transfers** proposed by several AVC Project and Southeastern's Master Contract participants.
- **Water Rights Made Available by Lower Arkansas Valley Water Conservancy District** through Southeastern's Master Contract.

With the departure of St. Charles Mesa and the addition of Riverside as an AVC Project participant, 2070 AVC Project estimated demands are reduced by 2,601 afy for the Proposed Action (2,651 afy for St. Charles Mesa minus 50 afy for Riverside). Fry-Ark Project water that would have been delivered to St. Charles Mesa through the AVC will continue to be available to St. Charles Mesa's through its existing diversions or for augmentation releases. In addition, St. Charles Mesa's 2,000 afy of Southeastern's Master Contract excess capacity storage as identified in the FEIS would remain available to St. Charles Mesa, subject to their contract terms with Southeastern's Master Contract. All Fry-Ark Project water including AVC Project Participants' water would continue to be allocated by Southeastern under its existing allocating policies and procedures.

There are no proposed changes in water rights for AVC Project Participants used under the Proposed Action. See the FEIS's Appendix A for additional discussion of AVC Project Participants' supply and demand and water rights.

As previously discussed, Pueblo Water has requested to include its BIDC water rights for storage in its excess capacity storage account in Pueblo Reservoir. Table 6 provides a detailed list of water rights identified by Pueblo Water's as potential sources for the Contract.

Table: 6-Pueblo Water's Proposed Water Rights for Storage in Pueblo Reservoir

Case No.	Water Right Name	Description	Priority Date(s)	Basin Source
W-3965	Twin Lakes Reservoir (Priority 3 and 4)	Pueblo Water's rights to Arkansas River. Basin native water (all Div. 2)	1896, 1897	Arkansas River
90CW53	Clear Creek Reservoir (Reservoir & 1st Enlargement)		1902, 1910	
90CW55	West Pueblo Ditch		1872 1874 1878 1883 1887	
04CW130	Clear Creek Reservoir 2nd Enlargement		2000	
12CW102	Hamp-Bell Ditch		1870, 1878 1888	

Case No.	Water Right Name	Description	Priority Date(s)	Basin Source
W-1901, 80CW505, 90CW340 (all Div. 5)	Independence Pass Transmountain Diversion System, Wurtz Ditch Extension, Busk Ivanhoe System, Columbine Ditch, Ewing Placer Ditch, Warren E. Wurtz Ditch	Pueblo Water's rights in the Eagle, Roaring Fork, & Fryingpan Rivers	1930, 1953 1921, 1924, 1927, 1930, 1906, 1929	Eagle, Roaring Fork, & Fryingpan Rivers
84CW177A&B and 06CW120 (Div. 2 reuse exchanges)	Transmountain Sources, Return Flows, Exchanges, and Ark River FMP Arkansas Gravel Pit Reservoir Exchanges	Reuse of Eagle, Roaring Fork, & Fryingpan River exports to the East Slope	1976, 2004	Eagle, Roaring Fork, & Fryingpan Rivers
Reservoir Trades		Trades of water in Turquoise & Twin Lakes Reservoirs with C. Springs, Aurora, and others		
1967 Agreement between PBWW and City of Aurora		2,500 AF of water from the Eagle R. drainage obtained annually from the City of Aurora	1952	Eagle River
Fry-Ark Project Return Flows		Pueblo Water Contract Administration Letter dated May 14, 2015	1939	Fry-Ark Project Return Flows
16CW3103 and 17CW3050	BIDC Huerfano Exchange, BIDC Ditch	Pueblo Water's BIDC Shares including reuse and other exchanges	2016 1861, 1864, 1866, 1867, 1870, 1873, 1876, 1878, 1881, 1882, 1887	Arkansas River Basin

Pueblo Water purchased 5,540.890 shares in the BIDC and filed application in Colorado Water Court to changes of use, a change from direct flow to storage and subsequent release, change of place of use, and change of point of diversion. On December 19, 2019, a water rights decree was issued for Case No. 17CW3050 for Pueblo Water's BIDC water rights.

The decree for Case No. 17CW3050 in Section 5.4 and 6.4.2 states the following and the decree can be viewed at: https://dwr.state.co.us/Tools/WaterRights/Transactions/298865.

> "**5.4 Change in Time of Use.** Historically, the Subject Water Rights have been used as farming operations dictated, and as water was available. In the future, Pueblo Water will take delivery of the Subject Water Rights for the Changed Uses whenever the BIDC delivers water to its shareholders at the same pro-rata amount per share as other BIDC shareholders. Pueblo Water, however, will store a portion of this water in Pueblo Reservoir pursuant to its contract with the U.S. Bureau of Reclamation for later use, so that Pueblo Water may use the Subject Water Rights year round. The Subject Water Rights may also be stored by exchange to the extent allowed by and pursuant to the terms and conditions of the Exchange Case in Clear Creek Reservoir, Twin Lakes Reservoir and Turquoise Reservoir and then used year round."

"**6.4.2 Storage in Pueblo Reservoir for Designated Changed Shares.** In order to remain in compliance with the contract between SECWCD and the United States governing the use of Fryingpan-Arkansas Project facilities, including any amendment thereof and any renewal or replacement contract ("the Repayment Contract"), the portion of the Winter Water attributable to Pueblo Water's Designated Changed Shares will be stored in an excess capacity storage account in Pueblo Reservoir, as opposed to the WWSP account for the BIDC. Such water will be labeled as "Pueblo's Changed BIDC Winter Water" and accounted for separately from other sources of water that Pueblo Water has stored in Pueblo Reservoir. By contract with the U.S. Bureau of Reclamation, Pueblo Water will endeavor to maintain an excess capacity storage account that allows storage of Pueblo's Changed BIDC Winter Water. If Pueblo Water does not have space available in an excess capacity account in a given year, Pueblo Water will not store Pueblo's Changed BIDC Winter Water during that year. If the WWSP described in the decree in Case No. 84CW179 terminates, the return flows owed on Pueblo's Changed BIDC Winter Water shall continue to be calculated as set forth herein, unless modified by the Water Court by subsequent order or decree."

Section 6.2 of the decree addresses Pueblo Water's requirements for the dry-up of lands irrigated by BIDC and Pueblo County's requirement under Title 17 of the Pueblo County Code (Land Use). Additional discussion of land use changes associated with decreed change in use associated with Pueblo Water's BIDC water rights is included the Section 3.14-Other Resources.

3.3 Water Quality

Water quality examined the FEIS were determined based on known areas of concern and included the following constituents:

Total dissolved solids (salinity)
Dissolved selenium
Sulfate
Radionuclides
Bacteria (*E. coli)*
Total recoverable iron
Suspended sediment (muddy water)
Temperature
Nutrients
Emerging contaminants

The FEIS affected environment included surface water stream segments, reservoir, and groundwater aquifers and predicted negligible to minor adverse effects to water quality for streams and water bodies within the scope of the FEIS.

Under the Proposed Action, negligible changes in water quality for these resources are predicted with the implementation of water quality best management practices included in the ROD. The elimination of about 24.7 miles of trunk line (large diameter pipe) and addition of 30.6 miles of additional delivery pipeline (small diameter pipe), results in approximately 5.9 miles of additional pipeline disturbance associated with construction of delivery pipelines.

Beneficial effects described in the FEIS from reducing total dissolved solids concentrations in AVC Project Participants' water supplies would remain the same for both the No Action and Proposed Action alternatives. Both alternatives also address current CDPHE enforcement orders for radionuclides.

Under the Proposed Action, Pueblo Water will deliver AVC Project Water to the Pueblo Connection Point that has been treated with chloramine at the Whitlock WTP. Chloramines are of concern as they can form

harmful disinfectant biproducts in treated water pipelines if there are long detention periods. To address this concern, Reclamation has committed to design and construct water treatment facilities as part of the AVC Project to remove chloramines once the treated water enters the AVC. Chloramines will be removed by injecting water treatment additives to produce filtered (non-potable) water and Southeastern will operate and maintain these facilities. General locations of Injection Sites No. 1 and 2 were previously discussed in Chapter 2. AVC Project Participants would be responsible for adding a disinfectant residual (likely free-chlorine) at the entry points to their distribution systems.

3.4 Geomorphology

The FEIS estimated the geomorphic effects of the AVC Project would be negligible when compared to the FEIS's No Action. Effects on Fountain Creek geomorphic processes, where erosion in Upper Fountain Creek causes sedimentation in Lower Fountain Creek and the Arkansas River, were predicted to be negligible (FEIS Table 4–20).

Under the Proposed Action, multiple trunk line crossings of rivers and streams are eliminated in AVC Project's Segment 1 in Pueblo County by utilizing the Pueblo Water System. These include: 1) Arkansas River crossing south of the Whitlock WTP, 2) Salt Creek crossing near Interstate 25, 3) St. Charles River crossing at South Road, and 4) Six Mile Creek at Grant Road.

The Proposed Action also requires a trunk line crossing of Chico Wash near U.S. 50. Chico Wash is an ephemeral stream. The crossing will use an open trench construction method during periods when the wash bottom is dry. The following additional delivery pipelines as identified in the SIR would cross the following river, streams and lakes: Patterson Hollow (Patterson Valley pipeline), Cheraw Lake (Cheraw pipeline), and Anderson Arroyo (La Junta pipeline).

The Proposed Action is predicted to result in short geomorphic impacts associated with disturbances during construction at these crossings. The reduction of trunk line crossings across rivers and streams associated with the AVC Project's Segment 1 are considered beneficial to geomorphic resources. In addition, with implementation of best management practices and compliance with general conditions for Clean Water Act Section 404 (dredge and fill) permits, any geomorphic effects the Chico Wash and delivery pipelines are predicted to be negligible. See Section 3.7-Vegetation Resources for additional discussion.

3.5 Aquatic Life

The FEIS predicted the effects of the AVC Project on aquatic life, including macroinvertebrates, in the Arkansas River between Pueblo Reservoir and the Fountain Creek confluence would be negligible. The FEIS also predicted negligible effects to aquatic resources in the Upper and Lower Arkansas River.

The Proposed Action would be similar to the No Action Alternative. However, the Arkansas River downstream of Pueblo Dam will receive up to an additional 16 cfs when Pueblo Water is using its river intakes to take Fry-Ark Project water for the AVC Project, instead of using the JUP. Although it may be infrequent, the additional flow would be beneficial to aquatic resources when Arkansas River flows would otherwise be less than 50 cfs downstream of the Pueblo Fish Hatchery return.

In the AVC ROD, Reclamation also committed to limit excess capacity contract operations when streamflow is less than 50 cfs, as measured by adding streamflow at the Arkansas River above Pueblo gauge to fish hatchery return flows from the current hatchery discharge point, to mitigate moderate effects of occasional low streamflow immediately below Pueblo Reservoir, and the effects of this low streamflow on water quality and aquatic life. This commitment is applied to all existing and future excess capacity contracts that utilize Pueblo Reservoir.

The AVC ROD also include the following aquatic resource commitments:

- Reclamation will provide coordination assistance with participants in managing storage and water releases in a manner that will assist in augmenting occasional moderate low streamflow effects in the Arkansas River downstream from Pueblo Reservoir to the Fountain Creek confluence. Reclamation will not modify operations that would impact Fry-Ark Project yield.

- Reclamation will provide $50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of the Comanche North Alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife, including site-specific NEPA compliance.

In addition, the 2000 FONSI for Pueblo Water's existing excess capacity contract included a commitment when flows in the Arkansas River downstream of Pueblo fall below 50 cfs, Pueblo Water agreed to take up to 17 cfs of its raw water flow at either the Northside or Southside diversions rather than through the municipal outlet at the South Outlet Works.

These environmental commitments will continue and be incorporated into the Contract with Pueblo Water. Therefore, the Proposed Action is also predicted to result in negligible impacts to aquatic resources other than those identified in the FEIS.

3.6 Recreation

Applicable effects to recreation disclosed in the FEIS included recreation opportunities based on three factors:

(1) Effects on the fishery from hydrologic changes,
(2) Physical effects on or impediment to use of areas for angling access, such as boat ramps or shoreline access, and
(3) Effects on public parks, trails, or other facilities used for recreation were quantified based on the area of short-term effects of pipeline construction and long-term effects from above ground facilities for each alternative intersecting those resources.

Pueblo Reservoir surface water elevation changes are predicted to be similar under both the No Action and Proposed Action Alternatives. Effects of elevated surface water levels on recreational activities are predicted to be negligible. Under both alternatives the frequency of higher water levels would be low and higher water levels when compared to existing conditions would likely occur in winter when recreational use, access, and parking needs are reduced.

Compared to existing conditions, both the No Action and Proposed Action alternatives would meet Pueblo Flow Management Program target flows for four fewer days during the summer recreation season as described in the FEIS. Both alternatives are predicted to result negligible affects to fishing and boating along the Arkansas River downstream from Pueblo Reservoir and through Pueblo. However, as previously discussed, the Proposed Action may increase flows by up to 16 cfs when Pueblo Water is utilizing its river intakes to receive AVC Project Water for treatment. This could result in negligible beneficial effects to fishing and boating when compared to the No Action Alternative.

The Proposed Action will also reduce effects on public parks, trails, or other facilities used for recreation when compared the No Action Alternative. It utilizes the Pueblo Water System and eliminates construction impacts to the Pueblo Boulevard Trail and Arkansas River Trail that would occur under the No Action Alternative. Both alternative otherwise are predicted to have negligible effects on parks and golf courses. Measures to protect important features and characteristics of the Mountain Route of the Santa Fe Trail will be implemented under both alternatives in accordance with a programmatic agreement between Reclamation, the National Park Service, Colorado State Historic Preservation Office, and other concurring parties. The Historic Properties section of the FEIS provides additional discussion on the Santa Fe Trail and potential impacts.

Implementation of Best Management Practices (BMPs) identified in the ROD further reduced potential adverse effects to recreation resources. The BMP states:

- Construction will be timed to minimize effects and disruption to parks and trails during the peak recreation season (May through September) where feasible.

3.7 Vegetation and Wetlands

Impacts analysis conducted for the FEIS assumed a 150-foot disturbance width within the project area corridor and stipulated that the actual disturbance area and associated resource affected may vary following final design and construction, depending on pipeline placement within the corridor. The FEIS analyzed effects on four vegetation resources – upland vegetation, wetland and riparian areas, sensitive plants (federally listed threatened and endangered and Colorado species of concern), and noxious weeds.

3.7.1 Upland Vegetation

The FEIS predicted that AVC Project would have negligible to moderate effects on vegetation resources. FEIS Table 4–37 predicted a total pipeline construction disturbance area of 3,128 acres. Pipeline construction activities would have short-term minor effects (not affect plant community viability) on upland vegetation present in eastern Colorado following restoration of disturbed areas. Effects on upland plant communities from constructing aboveground structures would be negligible.

Under the Proposed Action, approximately 448 acres of ground disturbance associated construction of the trunkline would be avoided by using the existing Pueblo Water System. This assumes a 150-foot disturbance width that was used in the FEIS. About 176 acres of additional ground disturbance will occur associated with construction of delivery pipelines, assuming a 50-foot construction corridor for these smaller diameter pipelines. The portion of the trunk line that will be constructed along U.S. 50 is within the general corridor described in other alternatives described in the FEIS with exceptions for an area near the U.S. 50/Colorado 96 Junction. Under the Proposed Action, the trunk line remains entirely within the U.S.

50/Colorado 96 right-of-way but follows the existing PuebloPlex ramp and deviates from Colorado 96 through the Town of Boone (see Figures 5 and 6 in Section 2). East of Boone, the trunk line crosses the Colorado Canal and follows Colorado 96 east for approximately 2 miles before it crosses the railroad tracks and Colorado 96. At this point, the trunkline connects to the No Action Alternative alignment along Colorado 96.

Total estimated pipeline construction disturbances under the Proposed Action is 2,856 acres or about nine percent less than estimated for the No Action Alternative.

The FEIS also predicted permanent effects to about two acres of upland vegetation resulting from the construction AVC Project aboveground structures. Under the Proposed Action, up to three acres of additional permanent disturbance will occur associated construction and operation of Injection Site No. 1 and No. 2.

Figure 8 shows the general locations for Injection Site No. 1. There are four main property owners and land use ranges for gravel extraction, irrigated agriculture associated sprinkler irrigation, and a single residence. GIS data obtained from the Colorado Decision Support System (CWCB 2021) shows a majority of this area was flood irrigated from either the Excelsior Ditch or the Booth Orchard Ditch in 1954. Water rights associated with the Booth Orchard Ditch were purchase by Pueblo Water in the 1970s and converted to municipal uses.

The Excelsior Ditch provides water to some of the irrigated parcels in the area. The Arkansas Groundwater and Reservoir Association (formerly Arkansas Ground Water Users Association and Colorado Water Protective and Development Association) provides augmentation water for irrigation and municipal uses to other parcels that were historically irrigated with water from either the Booth Orchard Ditch or the Excelsior Ditch. Depending on the final site location for Injection Site No. 1 within the general site location area, the Proposed Action will permanently disturb up to 1.5 acres of either lands formerly irrigated, lands currently irrigated, or some combination. No native upland, wetland or riparian vegetation are anticipated to be affected during the construction and operation of Injection Site No 1.

The general site location for Injection Site No. 2 encompasses two parcels acquired in 2020 by Triview from the Stonewall Spring Quarry for the Stonewall Spring Reservoir Project unrelated to the AVC Project (Figure 9). Injection Site No. 2 will permanently disturb about 1.5 acres although the final location will be determined after construction, operations, and testing associated with Injection Site No. 1. See Section 2 for design requirements for Injection Site No. 2. The major portions of the two parcels are currently irrigated using sprinkler and flood irrigation on lands south the Excelsior Ditch.

Triview and others intend to excavate and construct the Central and East Reservoirs, as part of the Stonewall Springs Reservoir Complex and shown in Figure 10 and described in the water rights decree (Case No. 16CW3093 issued in January 2020).

Under the Proposed Action, an AVC Project pumping plant at the Whitlock WTP is no longer needed because of adequate pressure at the Pueblo Connection Point. Two regulating tanks (referred to as surge tanks in the FEIS) are required for both the No Action and Proposed Action alternatives and will permanently collectively disturb about an acre. Regulating Tank No. 1 continues to be located northwest of the Sugar City spur pipeline connection with the trunk line, but will constructed at a higher elevation than

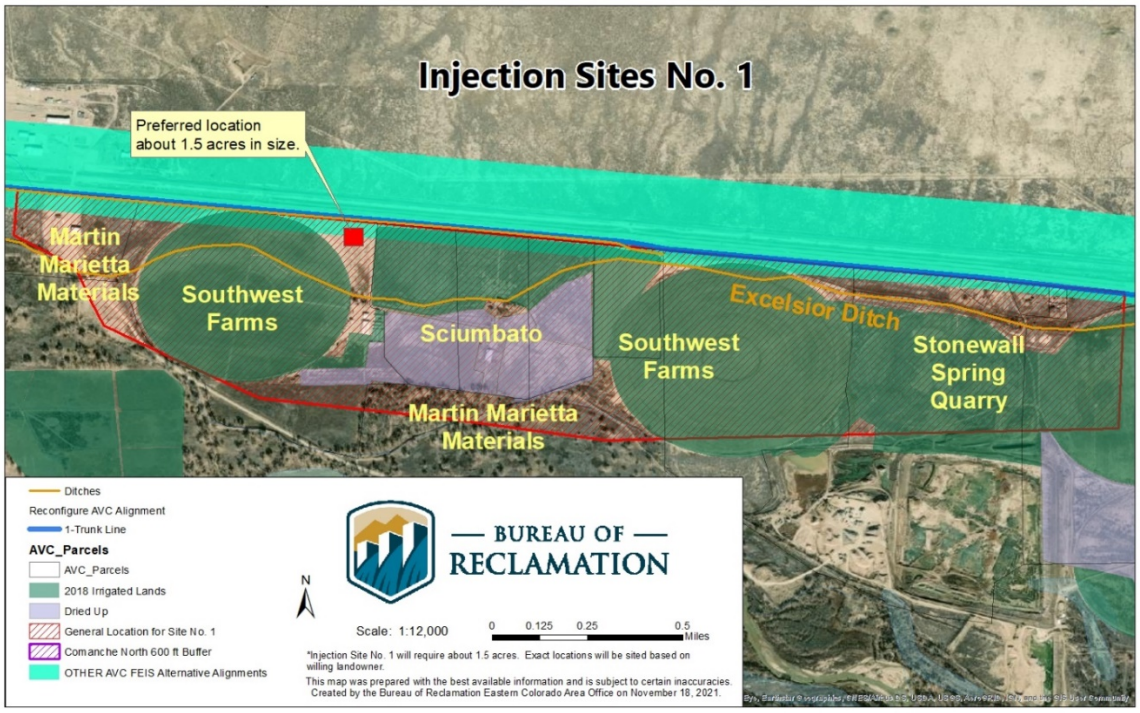

Figure: 8-General Locations of Injection Sites No. 1

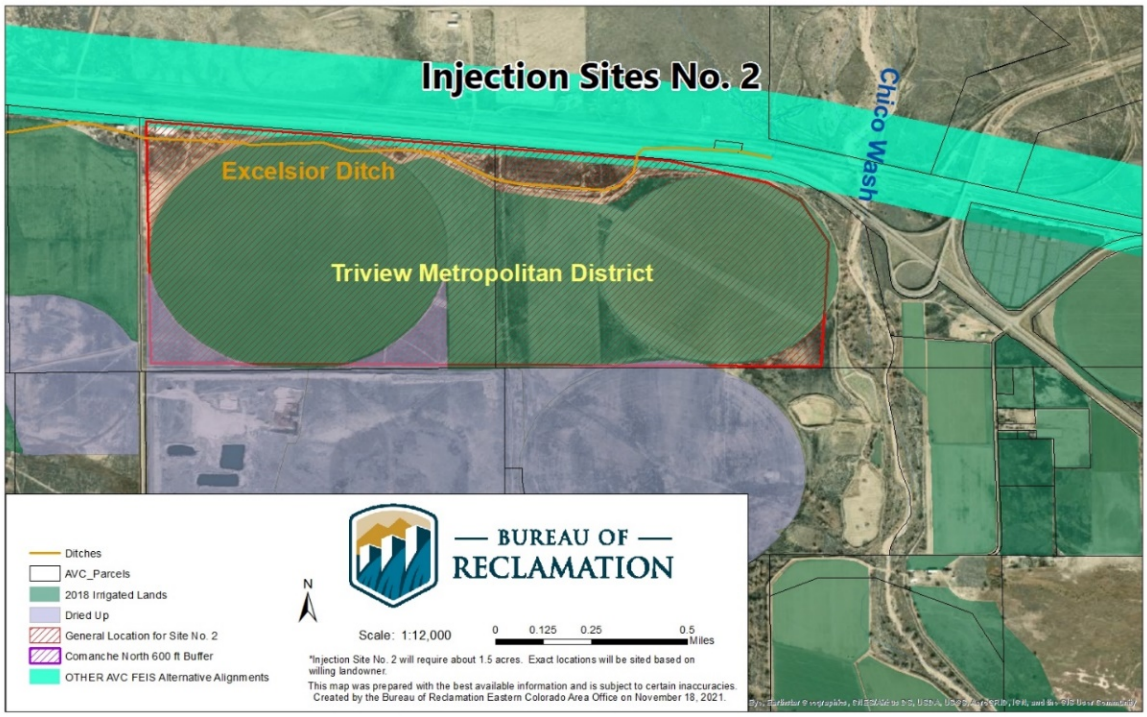

Figure: 9-General Locations of Injection Sites No. 2

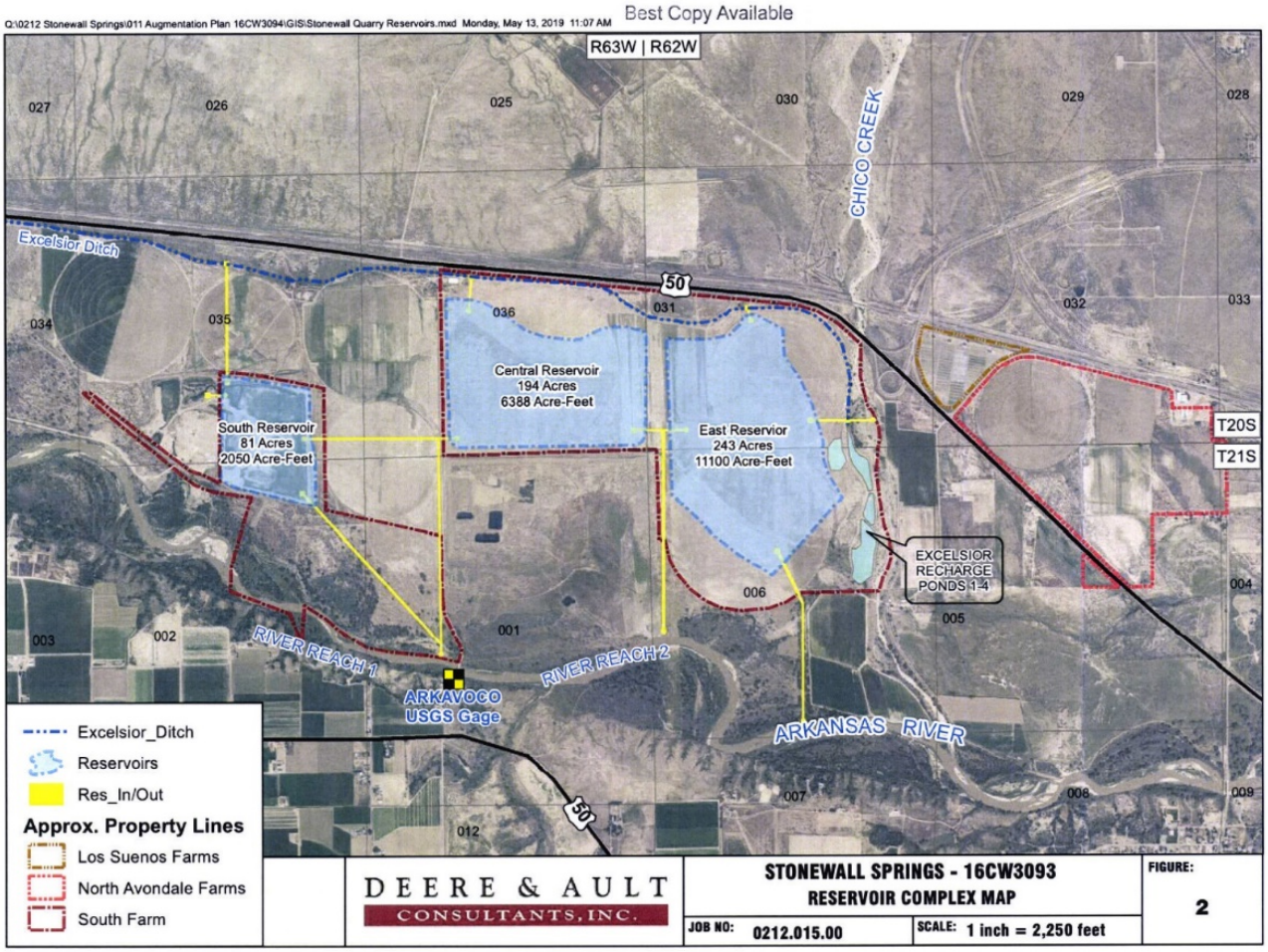

Figure: 10- Stonewall Springs Reservoir Complex

the No Action Alternative (refer back to Figure 7). An existing powerline access road east of Crowley County Lane 3 will be improved to provide construction and year-round operation and maintenance (O&M) access to the Regulating Tank No. 1.

Under the Proposed Action, five acres of vegetation is assumed to be permanently removed for permanent facilities compared to two acres identified in the FEIS as discussed above. The permanent removal of up to five acres of upland vegetation under the Proposed Action will have negligible impact vegetation resources.

3.7.2 Wetland and Riparian Areas

Wetland and riparian effects from pipeline construction described in the FEIS would be mostly minor. No permanent effect on wetlands were predicted. Wetland effects for both the Proposed Action and No Action alternatives would be minimized by boring under wetland vegetation adjacent to perennial streams. Changes in perennial stream crossings were previously discussed in Section 3.4-Geomorphology.

A review of National Wetlands Inventory (Service 2021) indicates that wetlands and/or riparian vegetation occur within or adjacent to additional delivery pipeline alignments associated with Cheraw, Crowley County

Water Associations delivery pipelines near Olney Springs and Ordway, May Valley 2, Patterson Valley, and Wiley. Any wetlands permanently lost would be replaced and temporary disturbances to wetland and riparian vegetation would be minimized as described in best management practices (BMPs) included in the ROD (Appendix A). When crossing wetlands and/or other Waters of the U.S., Reclamation will request Clean Water Act authorization for the discharge of dredge or fill under Nationwide Permit (NWP) 58 - Utility Line Activities for Water and Other Substances. A copy of NWP 58 can be viewed at: https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Nationwide-Permits/.

NWP 58 covers activities required for the construction, maintenance, repair, and removal of utility lines for water and other substances, excluding oil, natural gas, products derived from oil or natural gas, and electricity. Construction and/or relocation of natural gas pipeline activities or electric utility line and telecommunications activities may be authorized by NWPs 12 or 57, respectively. NWP 58 also authorizes associated utility line facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

NWP 58 also includes the following requirement:

> "Material resulting from trench excavation may be temporarily side cast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a French drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody."

Each stream crossing is considered a single and complete project. As required by NWP 58, Reclamation will submit a pre-construction notification for each stream crossing or wetland to the district engineer prior to commencing the activity if the discharge will result in the loss of greater than 1/10-acre of waters of the United States. Reclamation will conduct site specific wetland evaluations and develop preconstruction notification documents for each crossing during each AVC Project reach's final design process. In addition, the ROD includes commitments to develop a compensatory mitigation plan for any loss of any wetlands and will include methods to replace specific functions of affected wetlands. Any permanent loss of non-jurisdictional wetlands will be replaced.

The FEIS identified a long-term moderate impact to 24 acres of riparian vegetation, although no permanent effects were predicted. Under the Proposed Action, impacts to riparian resources would be considerably less with the elimination of trunk line construction in Segment 1 along the Arkansas River.

Implementation of ROD BMPs (Appendix A) and NWP No. 58 requirements are predicted to result in less impacts to wetland and riparian vegetation resources, when compared to the No Action Alternative. The Proposed Action will have negligible effects on wetland and riparian resources.

The FEIS estimated about 138 acres of potential habitat for Colorado plant species of concern. Species included dwarf milkweed, golden blazingstar, Pueblo goldenweed, roundleaf four-o'clock, and sandhills goosefoot. Under the Proposed Action, potential impacts to potential habitat will be reduced to between 20

and 23 acres based on other alternatives analyzed in the FEIS. Plant surveys completed per AVC Project reach, prior to construction, will be used to determine if these areas support populations of sensitive plant species. If plants are present, transplanting or other measures would be considered to minimize effects.

3.8 Wildlife

3.8.1 Upland Wildlife Species

The FEIS predicted negligible effects on upland habitat for game animals, migratory birds, small mammals and reptiles associated with AVC pipeline construction, and negligible direct, long-term effects from constructing aboveground facilities, such as pump stations, water treatment plants and access roads, would be negligible on upland wildlife habitat.

Under the Proposed Action, effects to game animals, migratory birds, small mammals, and reptiles will be similar to the No Action Alternative. However, some temporary impacts associated with Proposed Action have shifted from the trunk line in Segment 1 to extended delivery pipelines. In other words, temporary construction impacts associated with 24.7 miles of trunk line have been avoided on the west end of AVC Project, and 30.6 miles added to the east end of AVC Project.

2020 Wildlife Species Activity data (CPW 2021) was obtained from Colorado Parks and Wildlife (CPW) and used to identify sensitive wildlife and big game species habitat that may occur within or adjacent to portions of the modified AVC footprint. Table 7 lists species analyzed in the FEIS and shows their potential to occur within or adjacent to the realigned trunk line, new delivery pipelines, or new facilities.

Table 7: Sensitive Wildlife Species and Big Game Habitats within or adjacent to AVC SIR Pipelines or Facilities

Additional Pipeline or Facility	MD CA	MD WR	MD SW	MD SR	WT CA	PH CA	PH WR	TC WR	BT PD	WB BR	MS OR	MP BR	LC BR	TH LR	FH BR	CK SR	UR BA
Injection Sites No. 1 & 2	n	n	n	n	y	n	n	y	n	y	n	y	n	n	y	n	n
Relocated Regulating Tank No. 1 and Trunk Line	y	n	n	n	y	n	n	y	n	y	y	y	n	n	y	y	n
Boone Delivery Pipeline	n	n	n	n	y	n	n	y	n	y	y	y	n	n	y	n	y
Fowler Delivery Pipeline	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	y
Crowley County Delivery Pipelines	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
Sugar City Delivery Pipeline	n	n	n	n	n	n	n	n	n	y	y	y	y	n	y	n	n
Valley Water Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	n	y	y	y	n
Patterson Valley Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	y	y	y	n
Hilltop Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	y	y	y	n

Pipeline or Facility	MD CA	MD WR	MD SW	MD SR	WT CA	PH CA	PH WR	TC WR	TB BR	WB OR	MR OR	MP BR	LC BR	TH LR	FH BR	CK SR	UR BA
West Grand Valley Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	y	y	y	n
Riverside Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
North Holbrook Water Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
West Holbrook Water Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
Holbrook Center Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
Cheraw Delivery Pipeline	y	n	n	n	y	n	n	y	n	y	y	y	y	n	y	y	n
South Side Delivery Pipeline	n	n	n	n	y	n	n	n	n	y	y	n	y	n	y	n	n
East End Delivery Pipeline	y	n	n	n	y	n	n	n	n	y	y	y	n	n	y	n	n
Swink Delivery Pipelines	y	n	n	n	y	n	n	y	n	y	y	y	y	y	y	y	n
Homestead Delivery Pipeline	n	n	n	n	n	n	n	n	n	y	y	n	y	y	y	y	n
La Junta Delivery Pipeline	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	n	y
Wiley Delivery Pipeline	y	n	n	n	n	n	n	n	n	y	y	y	y	y	y	n	n
May Valley Delivery Pipeline	y	n	n	n	n	n	n	n	n	y	y	y	y	n	y	n	n
May Valley 2 Delivery Pipeline	n	n	n	n	n	n	n	n	n	y	y	y	y	n	y	n	n
U.S. 50/Colorado 96 Trunk Line	n	n	n	n	y	n	n	y	n	y	n	y	n	n	y	n	n

MDCA=Mule Deer Concentration Area, MDWR=Mule Deer Winter Range, MDSW=Mule Deer Severe Winter Range, WTCA= Whitetail Deer Concentration Area, PHCA=Pronghorn Concentration Area, PHWR=Pronghorn Winter Range, TCWR=Triploid Checkered Whiptail Overall Range, TBBR=Thompson Big-eared Bat Overall Range, WBOR=Western Burrowing Owl Breeding Range, MROR=Massasauga Rattlesnake Overall Range, MPBR=Mountain Plover Breeding Range, LCBR=Long-Beaked Curlew Breeding Range, THLR=Texas Horned Lizard Overall Range, FHBR=Ferruginous Hawk Breeding Range, CKSR=Common Kingsnake Overall Range, URBA=Urban Area

Data Source: CPW 2021

Wildlife habitat value varies with location, plant cover, availability of nearby water, and other variables. Lands affected by both the Proposed Action and No Action alternatives, except developed areas, are assumed to have some wildlife value. Where practical, the additional delivery pipelines will be constructed within existing road rights-of-way and will minimize ground disturbance to native vegetation.

3.8.2 Riparian and Wetland Wildlife Species

The FEIS identified temporary disturbance of riparian and wetland habitat (including open water) which could affect northern and plains leopard frogs, Couch's spadefoot, and bald eagle. The No Action Alternative would have negligible effects on the northern and plains leopard frogs and Couch's spadefoot with restoration of disturbed wetland and riparian habitat. Additionally, effects on wetland habitat at perennial rivers and stream crossings would be avoided by boring under wetlands. Pipeline construction near reservoirs could indirectly disturb nesting snowy plovers; however, the effects would be negligible. Both No Action and Proposed Action alternatives include the same pipeline routes west of Neesopah Reservoir, more than one mile from any known or potential snowy plover breeding areas at the Great Plains reservoirs.

The FEIS predicted AVC Project construction effects on bald eagles would be negligible with temporary disturbances of up to eight acres of winter concentration areas and 211 acres of winter range. The FEIS stated that all construction activities would be at least a 1/2 mile from known nest sites. There is plentiful foraging and winter habitat in the region and most disturbances would be short-term, and best management practices, including seasonal avoidance and construction buffer areas would be used. A review of CPW 2020 Wildlife Species Activity data shows an active bald eagle nest near the Kicking Bird Canal east of the Eads Spur and that spur pipeline construction activities may be within 1/2 a mile of the active nest. Wildlife Species Activity data from prior years appears to indicate that this is a new nest as it was not recorded in 2013, 2016, or 2019.

Under the Proposed Action, the bald eagle winter concentration along the Arkansas River in Segment 1 would be avoided but additional delivery pipeline construction near Cheraw Lake has the potential to affect a known concentration of wintering bald eagles in that area. Acres affected under the Proposed Action are predicted to be comparable to the No Action Alternative. Proposed Action effects on bald eagles, other raptors and migratory birds would be negligible as a result of best management practices, including preconstruction surveys, seasonal restrictions, use of Colorado Parks and Wildlife raptor nest buffers, restoration of temporarily disturbed areas, and implementation of a migratory bird management plan. The bald eagle nest located near the Kicking Bird Canal as discussed above would be monitored, evaluated and addressed in the migratory bird management plan developed for the AVC Project. Tentative construction schedules presented previously in Table 2 estimate construction of the Eads Spur will not occur until around 2032.

3.8.3 Endangered Species Act

Reclamation completed a biological assessment and initiated informal consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the AVC Project on June 28, 2013. Based on the information provided in the June 28, 2013, letter and an August 9, 2013, ACOE's email, the Service (2013) concluded that the proposed AVC Project may affect but is not likely to adversely affect the interior least tern and piping plover. Furthermore, the Service concluded that the AVC Project will not jeopardize the continued existence of the lesser prairie-chicken. The Service's concurrence also included a statement "Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered." A copy of the 2013 informal consultation is included in Appendix B and a copy of the biological assessment can be found in Appendix O.1 of the FEIS.

Reclamation requested updated species lists from the Service on March 11, 2020 and November 29, 2021. Copies of the lists are in included in the Project files and available upon request. Since completion of the

2013 informal consultation, the Eastern black rail was listed as a threatened species under the ESA and the least term was delisted due to recovery by the Service on January 13, 2021. The listing of the Eastern black rail is considered new information. The 2021 species list includes the following species and their current ESA status:

Endangered Species
Black-footed Ferret (*Mustela nigripes*)

Threatened Species
Eastern Black Rail (*Laterallus jamaicensis* ssp. *jamaicensis*)
Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*)
Greenback Cutthroat Trout (*Oncorhynchus clarkii stomias*)
Mexican Spotted Owl (*Strix occidentalis lucida*)
Canada Lynx (*Lynx canadensis*)

With exceptions for the Eastern black rail, the 2013 biological assessment remains appropriate for the Proposed Action and the Proposed Action will have no effect to black-footed ferret, Mexican spotted owl, Preble's meadow jumping mouse, Canada lynx, and greenback cutthroat trout. This EA serves as the biological assessment effects of the Proposed Action on the threatened Eastern black rail.

Eastern Black Rail
The Eastern black rail was listed as a federally threatened species on October 7, 2020 and included an ESA Section 4(d) rule. The ESA 4(d) rule is as follows:

> "The primary goals of this 4(d) rule are to minimize incidental take of eastern black rails and ensure that the dense overhead cover that the eastern black rail needs is maintained. The Service has defined dense overhead cover as "the cover that exists in excess of the height of an eastern black rail and is assessed from above in terms of herbaceous persistent emergent wetland plant cover (as defined by Cowardin et al. 1979) versus non-vegetative cover of the ground, including bare ground itself." Eastern black rails typically occupy areas with overhead cover that permits little or no view of bare ground. Three different means for assessing this type of cover are outlined in the Service's final rule."

In Colorado, Eastern black rail have been reliably located within the Arkansas River Valley of Colorado and are presumed breeder in the state (Service 2019). Suitable habitat has dense or thick emergent vegetation with high vegetation density (interspersion), as well as a mixture of new and residual growth. The species are known to use shallow wetlands dominated by cattails, hardstem bulrush, soft-stemmed bulrush, and willow in the overstory. Eastern black rails were also detected exclusively in extensive cattail marshes with standing water. Critical habitat has not been designated for this species. According to the final listing rule, the species is encountered in spring and summer at Fort Lyon Wildlife Area, Bent's Old Fort, Oxbow State Wildlife Area, Bristol, and John Martin Reservoir State Park. In addition, surveys conducted between April 15 and June 15, 2018, in southeastern Colorado detected at least one black rail during repeat surveys at 39 of 115 points and 17 of 66 marshes surveyed (Service 2019).

Potential habitat may occur within or adjacent to the AVC Project construction footprint in the Arkansas River Valley and at pipeline crossings of the Lower Arkansas River and tributaries, wetlands, and canals primarily along existing federal, state and county highway with the highway right of ways.

The Proposed Action would implement best management practices identified in the ROD including, but not limited to:

1) To the extent practicable, construction will avoid wetlands; federal, state, and local wildlife areas and refuges; designated critical habitats; and migratory bird habitat during nesting brood-rearing season;
2) Identified perennial river or stream crossings will be performed by trenchless construction operations, which will not disturb the stream channel or the adjacent wetlands;
3) Preserve, if feasible, existing trees along the stream bank;
4) Stabilize, control erosion, restore, and re-vegetate streambeds and embankments as soon as a stream crossing is completed, following vegetation best management practices, and maintain until stable;
5) Replant riparian, as necessary, woody shrubs and trees appropriate to ecological characteristics of the site to preserve watercourse shading characteristics and the aesthetic nature of the stream bank;
6) All temporarily disturbed jurisdictional and non-jurisdictional wetlands and riparian areas will be reestablished following construction by doing the following:

- Restore contours to previous elevations
- Compact trenches sufficiently to prevent drainage along the trench or via bottom seepage
- Salvage and replace topsoil
- Backfill in such a manner as to not drain wetland or stream
- Reestablish wetlands to similar type of wetland and wetland function
- Monitor for success of reestablishment annually for a period of 3 years and take remedial actions as necessary until successful;

7) Permanent and temporary effects on wetlands and riparian areas will be avoided to the extent practicable in compliance with Section 404 of the Clean Water Act;
8) Construction will be prohibited within ½ mile of designated piping plover or Interior least tern breeding areas during the breeding season (April 15 through August 31) when these species are present;
9) Effects on migratory birds will be avoided and minimized by implementing a Migratory Bird Management Plan. The management plan will include a number of measures, including removal of vegetation before migratory bird breeding season (which is typically between April 1 and August 15 in Colorado) or conducting clearance surveys immediately before construction;
10) If threatened or endangered species are identified and encountered during construction, all ground-disturbing activities in the immediate area will be stopped to consult with the U.S. Fish and Wildlife Service and determine appropriate steps to avoid affecting the species.

Mitigation in the ROD applicable to Eastern black rail and other listed or sensitive species includes the following:

"Effects on jurisdictional wetlands and waters of the U.S. will require authorization from the Corps. A compensatory mitigation plan may be required for the loss of any wetlands and will include methods to replace specific functions of affected wetlands. Any permanent loss of non-jurisdictional wetlands will be replaced."; and

"Preconstruction surveys by trained observers will identify sensitive habitats and wildlife use before construction to allow implementing best management practices, temporal and spatial restrictions, and implementation of a migratory bird management plan. Pipelines, water treatment plants, and pump station facilities will be realigned during final design, where feasible, to avoid sensitive wildlife habitat."

Preconstruction surveys completed for the Boone Reach in 2020 and 2021 did not identify any potential Eastern black rail habitat within or adjacent to the AVC construction corridor between the Pueblo Connection Point and the Town of Boone. No wetlands will be temporarily or permanently affected within the Boone Reach. Proposed truck line crossings at Chico Wash, Boone Creek, and the Colorado Canal east of Boone do not affect suitable habitat for Eastern Black rail.

Based on implementation of BMPs and mitigation measures described above, Reclamation determined that the Proposed Action "may affect, but is not likely to adversely affect" Eastern black rail. Reclamation initiated informal Section 7 consultation with the Service on February 2, 2022. Reclamation has requested the Service's concurrence with its determination that the reconfigured AVC may affect, but is not likely to adversely affect the Eastern black rail and the 2013 informal consultation address all other listed and proposed species (See Appendix B).

3.8.4 Fish and Wildlife Coordination Act

Reclamation consulted with Service and the State of Colorado in compliance with the Fish and Wildlife Coordination Act (FWCA). The Service finalized a FWCA report (Service 2013) after the publication of the FEIS but before finalizing the ROD. A copy of FWCA report is available upon request. The Service's recommended conservation measures and Reclamation response and ROD commitments are summarized below.

- **FWCA Recommendation 1**-Develop and implement a migratory bird management plan to minimize construction related adverse impacts to migratory birds. Service recommended Reclamation finalize a migratory bird management plan before issuing any AVC Project land acquisition or construction-related contracts. A draft migratory bird management plan should be provided to the Service and CPW for timely review and comment.

- **Reclamation Response 1**-Effects on migratory birds will be avoided and minimized by implementing a Migratory Bird Management Plan. The management plan will include a number of measures, including removal of vegetation before migratory bird breeding season (which is typically between April 1 and August 15 in Colorado) or conducting clearance surveys immediately before construction. A draft migratory bird management plan will be developed but a final plan will likely not be completed prior to issuance of Boone Reach Contract 1. Because of the 12 year plus anticipated construction schedule as shown Table 3 in Section 2, the plan will need to be reviewed and updated during final design for each construction segment or feature.

- **FWCA Recommendation 2**-Require the participants to implement the mitigation determined to be warranted by the Environmental Review Team.

- **Reclamation Response 2-**Reclamation has established the Environmental Review Team as described in the ROD.

- **FWCA Recommendation 3**-Require participants to annually reserve water in Pueblo Reservoir or upstream storage facilities that can be released to maintain flows in the Arkansas River downstream from Pueblo Reservoir when the flow drops below 100cfs, measured immediately below the hatchery outflow (being the sum of the flows at the existing Above Pueblo Gauge and the hatchery return flow). Reclamation should work and coordinate with CPW to develop criteria and a schedule for such releases. In lieu of providing reserve water to maintain adequate flows, provide $150,000

for habitat improvements downstream from Pueblo Reservoir for purposes of narrowing the channel and creating deeper run/pool habitat to mitigate moderate streamflow and aquatic life effects of the action alternative during low-flow periods in the Arkansas River.

- **Reclamation Response 3**-Reclamation will limit excess capacity contract operations when streamflow is less than 50 cfs, as measured by adding streamflow at the Arkansas River above Pueblo gauge to fish hatchery return flows from the current hatchery discharge point, to mitigate moderate effects of occasional low streamflow immediately below Pueblo Reservoir, and the effects of this low streamflow on water quality and aquatic life. Reclamation will provide $50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of the Comanche North Alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife, including site-specific NEPA compliance.

- **FWCA Recommendation 4**- The Environmental Review Team establishes a comprehensive surface water quality monitoring program to assess potential hazards to fish and wildlife. Water quality constituents will be determined by the Environmental Review Team, but should include those evaluated in the AVC FEIS (Table 1, Appendix F .1) along with pharmaceuticals and personal care products and others determined by the Environmental Review Team. We suggest that monitoring sites be established throughout the aquatic resource analysis area (page 9). This includes the Arkansas River from its headwaters to Kansas, including reservoirs and potentially affected tributaries (i.e., Fountain Creek).

- **Reclamation Response 4-** The negligible to minor adverse effects of AVC Project described in the FEIS on aquatic resources and water quality would be too small to be detected by a monitoring program.

- **FWCA Recommendation 5**-Recommend that selenium in surface water, sediments, and waterfowl eggs from Lakes Meredith and Henry be initially monitored to assess its presence and potential hazards according to Lemly (1995). If it is determined that a substantive risk to fish and wildlife resources exists, the scope of this effort should be expanded to evaluate the extent of the threat. Sampling eggs from a bird species that utilizes the local feeding area is recommended. These include American coots (Fulica americana) or dabbling ducks, such as mallards (Anas platyrhynchos).

- **Reclamation Response 5**-Surface and groundwater in Southeastern Colorado contains naturally occurring radium and uranium, as well as high salinity, selenium, sulfate, hardness, and manganese that exceeds water quality standards year-round. Historically under the National Irrigation Water Quality Program (NIWQP) of the U.S. Department of the Interior, researchers investigated contamination caused by irrigation drainage in 26 areas in the Western United States from 1986 to 1993. From 1992 to 1995, a comprehensive relational data base was built to organize data collected during the 26-area investigations. This included the Middle Arkansas River Basin in Colorado and Kansas. The data base provided the basis for analysis and synthesis of these data to identify common features of contaminated areas and hence dominant biologic, geologic, climatic, chemical, and physiographic factors that have resulted in contamination of water and biota in irrigated areas in the Western United States (Seiler and Skorupa 2001). The NIWQP was removed from the Department of the Interior's annual budget and has not functioned for approximately 10 years.

The Department of Agriculture's National Water Quality Initiative has identified Limestone and Graveyard Creeks in the Lower Arkansas River Basin for inclusion in 2022 as an Implementation Watershed. Limestone and Graveyard Creeks are tributaries to the Arkansas River east Lakes Meredith and Henry near McClave, Colorado. The Natural Resources Conservation Service, Environmental Protection Agency and state water quality agencies are assessing in-stream water quality progress by monitoring in at least one NWQI watershed per state using EPA Clean Water Act Section 319 or other funds. The objective is to assess whether water quality and/or biological condition related to nutrients, sediments, or livestock-related pathogens have changed since the start of the NWQI in the watershed, and if so, whether this can be associated with voluntary conservation implemented on agricultural lands (NRCS 2021). This may be an appropriate avenue to assess and address selenium concerns in surface water, sediments, and waterfowl eggs from the non-Reclamation Lakes Meredith and Henry.

3.9 Human Environment

The FEIS analyzed AVC Project effects on the human environment, including noise and vibration, visual resources, traffic, and utility services. Negligible effects were predicted to result from the No Action Alternative (Comanche North alignment) with implementation of mitigation measures.

Several mitigation measures were identified in the FEIS for effects on the human environment and if additional adverse effects are identified during final design or construction, additional appropriate measures will be developed. Mitigation measures include:

- Provide landowners sufficient advance notice of land use disruptions before construction or maintenance activities.
- Reroute construction traffic away from noise-sensitive streets, where feasible. Conduct noisy operations during the same time period, since combined noise levels would not be significantly greater than the level produced if the operations were performed separately.
- Employ construction methods with the minimum vibratory disturbance near sensitive structures.
- Place vibration monitors near sensitive structures to monitor and correct potential effects.
- Announce traffic delays or detours from construction activities in advance of work to minimize disruption in traffic patterns.
- Maintain residential, business, and emergency vehicles access at all times.
- Provide incentives and disincentives for construction contractors to quickly complete work in areas where traffic effects would be greatest.

Effects to the human environment under the Proposed Action Alternative would be similar to the No Action Alternative. However, the elimination of AVC Project construction activities in Segment 1 further reduce effects on the human environment in urban areas, while construction of additional delivery pipelines will result in increased short-term construction disturbances in rural areas. Pueblo Water delivery System

improvements to provide additional pipeline capacity to delivery AVC Project 2070 demands would occur independent of AVC Project construction activities. Pueblo Water would make improvement to its system when needed by replacing and/or when repairing pipelines as part of Pueblo Water's ongoing operation, maintenance and replacement program. With implementation of the mitigation measures, the Proposed Action Alternative is predicted to have negligible effects on the human environment.

3.10 Socioeconomics

Socioeconomic effects as analyzed in the FEIS predicted that constructing, operating, and maintaining pipelines and facilities could directly and indirectly affect socioeconomics because of expenditures in the regional economy. Other socioeconomic resources, such as municipal water quality, agriculture, and recreation, could also be directly and indirectly affected by the alternatives.

Construction expenditures associated with the AVC Project will have minor short-term beneficial effects to the regional economy, based on construction period, will decline once construction ends and the regional economy readjust to the loss of these direct expenditures. Benefits of construction expenditures on local communities could vary, and could exceed regional benefits on a percent basis, depending on where expenditures occur in the regional economy. OM&R expenditures would be similar under both alternatives and will have a minor adverse effect on the local economy as described in the FEIS.

In addition, both alternatives allow Participants to affordably meet radionuclide drinking water standards and provide a valuable benefit to communities currently under CDPHE enforcement actions.

Reclamation's Technical Service Center issued a Feasibility Design Report for the FEIS Preferred Alternative in September 2016 (Reclamation 2016) and a Project Cost Summary Report in October 2017. Total Estimated Cost (TEC) to construct the preferred alternative was $640 million in 2016 dollars (approximately $700 million in 2019 dollars).

Through a collaborative effort between Reclamation and Southeastern in 2018 and 2019, the Proposed Action was developed with the goal of reducing AVC Project's total estimated cost and requirements for Reclamation appropriations. Total Estimated Cost was reduced to a range of $564 to $610 million and through alternative funding sources, the estimated requirement for additional Reclamation appropriations was reduced to a range of $355 to $414 million. Federal appropriations for AVC Project through Fiscal Year (FY) 2019 totaled approximately $29.5 million. Additional appropriation of $28 million in 2020 and $11.05 million in 2021 have been made towards AVC Project design and construction.

3.11 Environmental Justice

Environmental justice addresses the fair treatment of people of all races and incomes with respect to federal actions that affect the environment. Where effects to a minority or low-income population were identified in the FEIS, the analysis addressed whether the populations could be disproportionately affected by the proposed alternatives. The No Action Alternative (FEIS Comanche North alignment) was predicted to have negligible effects because the affected minority and low-income populations (on a percent basis) would not exceed by five percent the minority and low-income populations affected by the FEIS's No Action and are not disproportionate. See the Environmental Justice sections of the FEIS for more detail.

In July 2021, the White House established the Justice40 Initiative which is a whole-of-government effort to ensure federal agencies work with state and local communities to deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities. Interim guidance from the Office of Management and Budget identified examples of covered programs that include "Development of Critical Clean Water Infrastructure". More information on the Justice40 Initiative can be found at: https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf.

The Proposed Action Alternative further reduces AVC Project construction-related impacts to minority or low-income populations by eliminating construction of 24.7 miles of trunk line through Southern Pueblo and St. Charles Mesa. Proposed Action Alternative effects on environment justice would also be negligible and improvements to the Pueblo Water System to expand its service would occur independent of the AVC Project.

3.12 Historic Resources

Both the Proposed Action and the No Action alternatives would both have minor impacts on historic properties. Historic properties identified in the FEIS included 14 historic sites, one historic district, and two archaeological sites within the area of potential effect (APE). Resources include six structures; segments of six linear properties including portions of the Otero Canal, Bessemer Ditch, Santa Fe National Historic Trail, and Missouri Pacific Railroad; one segment of the Fort Lyon Canal; and the Atchison Topeka & Santa Fe Railroad. Of the six historic structures, three are listed on either the national or state registers, including the Boone and Manzanola Santa Fe Railroad depots and the Avondale Bridge. The San Juan Avenue Historic District in La Junta is also listed on the National Register of Historic Places.

Archaeological resources also include two prehistoric sites. Pipelines would be constructed mostly in roads or within road easements in urban areas; therefore, impacts on buildings and structures would be temporary and indirect, such as from vibration. Stream crossings would not damage bridges.

Reclamation and the Colorado State Historic Preservation Officer (SHPO) entered into a programmatic agreement (PA) under the provisions of Section 106 of the National Historic Preservation Act. The PA (Agreement No. R13MU60034, included as FEIS Appendix N.1) was executed on July 31, 2013 and filed with the Advisory Council on Historic Preservation. PA consulting parties, including all invited Indian Tribes, are as follows:

National Park Service
Kiowa County Historic Preservation Committee
Apache Tribe of Oklahoma
Comanche Nation
Cheyenne-Arapaho Tribe of Oklahoma
Fort Sill Apache
Kiowa Tribe of Oklahoma
Jicarilla Apache
Pueblo of Cochiti
Rosebud Sioux
Standing Rock Sioux
Zuni Pueblo
Santa Clara Pueblo
Bent County Historic Preservation Advisory Board
Otero County Historic Preservation Advisory Board
Northern Cheyenne Tribe
Oglala Sioux
Crow Nation
Crow Creek Sioux
Eastern Shoshone
Mescalero Apache
Arapaho Tribe of the Wind River
Ohkay Owingeh
Pawnee Nation of Oklahoma
Santa Ana Pueblo
Southern Ute

Pueblo de San Illdefonso
Ute Mountain Ute
Assiniboine and Sioux Tribe of the Fork Peck Indian Reservation
Arapaho Tribe of the Wind River
Northern Arapaho Tribe
Ohkay Owingeh Tribe
Pueblo of Santa Ana

The APE, as defined in the PA, encompasses an area sufficient to accommodate all the proposed undertakings as of the date of execution of the PA. Section 1B of the PA states the APE may be modified by Reclamation in consultation with the Colorado SHPO when Tribal consultation, additional field research or literature review, consultation with consulting parties, or other factors indicate that qualities and values of historic properties that lie outside the boundaries of the current defined APE may be affected directly, indirectly, or cumulatively. Agreement to modify the APE under the Proposed Action Alternative will not require an amendment to the PA but consulting parties and affected land management agencies will be notified.

A Class I Literature Review was completed by ERO Resources Corporation (ERO)(2011) that included a one-mile buffer of all five alternative AVC Project configurations evaluated in the FEIS. The purpose of the Class I analysis was to compile all existing cultural resource data previously documented within the study area. Data gathered was used in three ways: 1) to evaluate the anticipated effects to potential historic properties for the six pipeline alternatives under consideration; 2) to empirically assess the potential for unknown cultural resources within the project area using environmental variables; and 3) to provide background data required under Section 106 of the National Historic Preservation Act (NHPA, 1966, as amended) compliance that was completed for the FEIS's selected Comanche North alignment.

The ERO report stated: "AVC, once completed, will include a pipeline corridor including both construction and permanent easements, associated facilities such as water treatment plants and pumping stations, new access roads, and the maximum pool limits of Pueblo and John Martin reservoirs, the levels of which will be affected by the distribution of AVC water."

All changes associated with the Proposed Action Alternative's trunk line, spur lines and associated facilities will be located within the one-mile buffered Class I analysis area in the ERO 2011 report. However, Regulating Tank No. 2's access road and portions of delivery pipeline extensions for Sugar City, Patterson Valley, West Grand Valley, Riverside, Cheraw, South Side Water Assoc., East End, Wiley, and May Valley 2 will be outside the 2011 Class I analysis area or need additional Class I analyses to maintain the one-mile buffer around the APE.

ERO (2014) completed a sample intensive survey of over 37.5 miles within a variable-width corridor of 200, 400, and 600 feet of the No Action Alternative (FEIS Comanche North alignment), depending on where the pipeline was situated with respect to land status, access, and existing rights-of-way, such as state highways and active railroads. However, right of entry was not granted for all requested properties. No surveys took place within Colorado Department of Transportation (CDOT) right-of-way in 2014.

Additional Class I for Proposed Action alignments outside the ERO 2011 inventory will need to be completed. Several Class III inventories (intensive field surveys) of CDOT right-of-way and adjacent private parcels within the Boone Reach have either been completed or contracted and underway. Additional inventories of all other AVC Project reaches and consultations with the Colorado SHPO, as described in the PA, will also need to be completed for the Proposed Action.

Previously disturbed utility rights-of-way will be used for placement of pipelines and facilities, where feasible, to diminish the probability of encountering any undisturbed historic properties. Based on inventory results and Tribal and Colorado SHPO consultations, pipeline alignments could be shifted to avoid known sites, or specific mitigation developed and implement following the PA.

All known burials or cemeteries will be avoided to the extent possible. If a burial or cemetery cannot be avoided or is encountered during construction, Reclamation will comply with the Native American Graves Protection and Repatriation Act if graves are discovered on Federal or trust lands or within reservation boundaries. If on state or private land, Reclamation will comply with the State unmarked burial law and the Section 106 programmatic agreement.

Finally, if unrecorded cultural resources are encountered during construction, all ground disturbing activity within the area will be stopped, Reclamation and appropriate authorities will be notified, and all applicable stipulations of the Section 106 programmatic agreement will be followed. Activities in the area will resume only when compliance has been completed.

3.13 Indian Trust Assets

Reclamation is responsible for government-to-government consultation with Indian tribes in accordance with all applicable mandates. Tribal consultations address:

- Observance of specific planning coordination authorities, including section 101(d)(6) of the NHPA;
- Executive Order 12898 (Environmental Justice);
- Executive Order 13007 (Indian Sacred Sites);
- Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments);
- Presidential Memorandum on Government to Government Consultation with Native American Tribal Governments issued on April 29, 1994; and
- Presidential Memorandum on Tribal Consultation issued on November 5, 2009. Other Resources

No Indian Trust Assets were identified in the FEIS study area and both the No Action and Proposed Action alternative are predicted to result in no effects to Indian Trust Assets. Coordination on tribal issues would continue among Reclamation, the State Historic Preservation Office, and interested tribes under the PA as described in Section 3.12-Historic Resources of this EA.

3.14 Other Resources

Other resources considered includes prime and unique farmlands, wild and scenic rivers, compliance with the Arkansas River Compact, and land use. No prime and unique farmlands or wild and scenic rivers will be affected by the No Action and Proposed Action alternatives.

The Arkansas River Compact apportioned the available water supply and John Martin Reservoir conservation benefits by its provisions. Fryingpan-Arkansas Project operations would remain the same under both alternatives and Proposed Action Alternative changes in the AVC Project construction footprint would not affect the Arkansas River Compact. In addition, the States of Colorado and Kansas participate as members of the AVC Environmental Review Team that makes recommendations regarding warranted

additional NEPA or Arkansas River Compact compliance review, adaptive management, mitigation, or other environmental compliance.

In the FEIS, effects on land use was evaluated as part of the human environment. Temporary changes in land use will occur during pipeline construction and permanent changes associated with the construction and operation of Injection Sites No. 1 and 2 as previously discussed in Section 3.7-Vegetation and Wetlands. County and municipal land use and zoning requirements vary by county within the AVC Project construction footprint and each county participates in the Environmental Review Team to assist with local land use issues and pipeline alignments in county right-of way.

The Proposed Action Alternative includes approximately 6.3 miles of additional trunk line that was included in other FEIS alternatives. The additional trunk line will be located within the CDOT right-of-way along US 50 east of Pueblo near Devine, Colorado and extends east to North Avondale. The Proposed Action eliminates about 27 miles of trunk line from the Whitlock WTP to North Avondale. Both trunk line alignments are within Pueblo County. The ROD includes an environmental commitment when final engineering is complete that Reclamation will meet with Pueblo County to enter into an agreement to address specific construction effects in accordance with best management practices and mitigation measures in the ROD. Pueblo County is a member of the Environmental Review Team. In addition, Reclamation has been working closely with CDOT during the design process for Boone Contract No. 1. Reclamation will continue to utilize Environmental Review Team members to review designs as when developed for each reach of AVC.

The Proposed Action also includes Pueblo Water storing its BIDC water rights in Pueblo Reservoir under the long-term excess capacity contract provisions in the Contract. Change in use and dry-up and revegetation of irrigated lands associated Pueblo Water's BIDC water rights will over time affect up to 6,468.1 acres associated with Pueblo Water's 5,488.368 shares of BIDC. Appendix D includes the 17CW3050 decree's exhibits which shows the location BIDC with Headgates and sellers' farms. Until Pueblo Water's BIDC Water Rights are needed for the changed uses, they will continue to be used for the irrigation of lands served by the Bessemer Ditch. As the demand for the changed uses matures, Pueblo Water will use an increasing portion of the water for changed uses, and the correspondingly decreasing remainder for the irrigation of lands served by the Bessemer Ditch.

The number of acres of irrigated lands that must be revegetated and dried up on each of the sellers' farms pursuant to Pueblo Water' s dry -up covenants in order for Pueblo Water to convert its shares associated with that farm to designated changed shares available for changed uses is listed in the Exhibit 8 of the decree which is included in Appendix D.

It is important to note that Pueblo Water can utilize its BIDC changed use water rights within the Southeastern District's boundaries without storing them in Pueblo Reservoir, using direct deliveries to the Arkansas River or by exchanges into Clear Creek Reservoir, Twin Lakes and Turquoise Reservoir (private portions), or other non-Reclamation facilities. Changes in land use associated with Pueblo Water's BIDC water rights are not dependent on the Contract but will be subject to Pueblo County's revegetation and other requirements of Title 17 of the Pueblo County Code and other provision included in the decree.

However, Pueblo Water will need an excess capacity contract with Reclamation to store its changed use BIDC water rights in Pueblo Reservoir for later use. Reclamation will require Pueblo Water to notify Reclamation prior to allowing storage of the changed use water rights in excess capacity space in Pueblo Reservoir. Pueblo Water will also be responsible for tracking and reporting that requirements associated

with the dry-up and revegetation of its BIDC water rights. The Contract will contain language that requires Pueblo Water's BIDC changed water rights cannot be stored in Pueblo Reservoir prior to State and Pueblo County requirements being successfully met. Pueblo Water's other water rights listed in Table 6 (in Section 3.2-Water Rights) will not be affected by this requirement and can stored under the Contract if in compliance with all other portions of the Contract. Additional discussion can be found in Section 3.2-Water Rights and within decrees issued for Case Nos. 16CW3103 and 17CW3050.

3.15 Climate Change and Cumulative Effects Analysis

3.15.1 Climate Change

This EA relies on the AVC Project Climate Change analysis completed prior to the 2016 Final Guidance as discussed in Chapter 4 of the FEIS and included in FEIS Appendix C. Two aspects of climate change are applicable to Proposed Action and No Action alternatives. The FEIS evaluated 1) whether an action could contribute to climate change, particularly project-generated greenhouse gas emissions and 2) whether climate change could affect an action alternative.

Greenhouse Gas Emissions

Pursuant to Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, CEQ rescinded its 2019 Draft NEPA Guidance on Consideration of Greenhouse Gas Emissions and is reviewing, for revision and update, the 2016 Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews.

The No Action Alternative (Comanche North alignment) was predicted to result in 4,220 metric tons/year of estimated carbon emissions and long-term emissions would primarily result from energy needs of pumping plants and water treatment plant operations.

The Proposed Action is predicted to result in similar or less green gas emissions; however, no new estimate was calculated. This prediction is supported by the following when comparing the Proposed Action to the No Action Alternative.

1) The total length of AVC pipeline construction will be approximately 233 miles under the Proposed Action Alternative and 227 miles for the No Action Alternative;
2) The Proposed Action significantly reduces the distance of large diameter trunk line construction (24.7 miles), which requires larger areas of excavations for pipeline placement;
3) The Proposed Action's trunk line and spurs are designed to provide gravity flow to maintain adequate pipeline pressures from the Pueblo Connection Point to the Eads Spur,
4) An additional one pumping station at Whitlock WTP needed in the No Action Alternative has been deleted;
5) The maximum estimated 2070 AVC Project deliveries is reduced from 10,256 afy to 7,625 afy,
6) Efficiencies in utilizing the Pueblo Water System; and
7) Nominal increase energy requirement for operation of the Injection Sites No. 1 and No. 2.

Both alternatives are predicted to have negligible effects on climate change as described in the FEIS.

Climate Changes Effects on the Proposed Action and No Action Alternatives

Climate change may have cumulative effects on streamflow, water quality, geomorphology, wildlife habitat, wetlands, vegetation, aquatic life, recreation, cultural resources, and socioeconomics, and effects are individually assessed for each resource as described in the FEIS.

The sensitivity of future AVC Project Water supplies to climate change was investigated as part of this FEIS. Various runoff projections representing different climate change levels were converted to streamflow and used to investigate key water supplies for AVC Project and the ability of AVC Project to meet water demands in the future. FEIS AVC Project Water supplies and simulated annual AVC Project deliveries and shortages hydraulic scenarios under current (at the time of the FEIS), and 7%, 14% and 21% reductions were evaluated. Less water, or shortages, in either the FEIS's No Action or AVC Project alternatives would likely require AVC Project Participants to secure additional non-Fry-Ark supplies sometime in the future to meet full AVC Project deliveries. These additional water supplies would likely combine additional permanent agricultural transfers, additional use of reusable return flows, or temporary leases from a leasing program or other AVC Project Participants with excess supply. For scenarios in which shortages would occur in only a few years (7% Reduced and 14% Reduced scenarios), temporary leases would be more appropriate. For the 21% Reduced scenario, shortages would occur more frequently, and a more permanent supplemental supply would be appropriate. Southeastern's Master Contract would be important to hold excess long-term supplies for severe dry conditions. The extra storage allows non-Fry-Ark supplies to be available to AVC Project Participants when Fry-Ark supply is depleted and there is no exchange potential in the river.

The FEIS predicted that climate change may have cumulative effects on streamflow, water quality, geomorphology, wildlife habitat, wetlands, vegetation, aquatic life, recreation, cultural resources, and socioeconomics, effects are individually assessed for each resource. Although new climate assessments for the Arkansas and Colorado River Basins were not updated specifically for this EA, the climate change effects on water supply under both the Proposed Action and No Action alternatives effect are predicted to be similar those described in the FEIS.

3.15.2 Cumulative Effects

The FEIS disclosed anticipated cumulative effects of its three proposed actions (construction and operation of the AVC Project, Interconnect, and Southeastern's Master Contract) for each of the resources. A cumulative effect is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Cumulative effects could result from individually minor actions taking place over a period of time that collectively become significant actions.

The FEIS's cumulative effects analysis timeframe generally extended to 2070. Each resource section's cumulative effects analysis evaluated the reasonably foreseeable future actions combined with the alternatives. The cumulative effects geographic area in the FEIS was defined broadly to incorporate actions that could potentially affect this EIS study area.

The list of potential reasonably foreseeable actions used (FEIS Table 4–1) was developed for the cumulative effects analysis in consultation with FEIS cooperating agencies. The following criteria defined the reasonably foreseeable actions:

- Actions expected to be implemented or to occur between 2010 and 2070.

- A known sources of funding has been identified or is reasonably certain.
- Actions were judged to contribute measurably to cumulative effects in the FEIS study area and on resources affected by the alternatives.
- Sufficient information was available to define the action and conduct a meaningful analysis.
- A permit application would be submitted to a federal, state, or local agency with jurisdiction over the action, if applicable.

Reclamation has reviewed the reasonably foreseeable future actions identified and evaluated in the FEIS and determined that they are still appropriate for use in this EA.

Cumulative effects on the average monthly Pueblo Reservoir storage contents and annual Arkansas River streamflow would be negligible to minor (greater than 2 percent change) under both the Proposed Action and No Action Alternatives. Reclamation anticipated in the FEIS cumulative effects analysis that Pueblo Water would continue to utilize excess capacity storage in Pueblo Reservoir past the year 2025 as reasonably foreseeable action. The addition of the Pueblo Water excess capacity storage provisions in the Contract will not change the FEIS cumulative effect analysis in any measurable way.

The changes in the AVC Project construction footprint under the Proposed Action, when considered with the reasonably foreseeable future actions identified in the FEIS, are predicted to result in negligible beneficial effects to most other resources analyzed. This is primarily based on approximately 448 acres of trunk line ground disturbance avoided and an additional 179 acres of delivery pipelines and injection sites ground disturbance that will occur associated with construction of the Proposed Action.

In addition, Reclamation's response in ROD to an EPA comment on the FEIS adequately sums AVC Project cumulative effects under both the No Action and Proposed Action alternatives. The ROD stated:

> "The negligible to minor adverse effects of AVC Project on aquatic resources and water quality would be too small to be detected by a monitoring program. There are so many other variables in the basin that affect water resources from other diversions, reservoir operations, variations in water years, wastewater discharges, and agricultural runoff that it is unlikely that any AVC Project impacts would show a cause and effect relationship. Any potential effects to a resource would be cumulative, and AVC Project's contribution would be very small. Given the above information and that effects to aquatic habitat would be negligible to minor (less than 10% for most species), Reclamation does not believe the effort to develop and implement detailed measures and associated monitoring and adaptive management is warranted or would be meaningful."

Chapter 4-Summary and Environmental Commitments

This EA evaluated direct, indirect, and cumulative impacts of the Proposed Action, and identified whether the impacts for each resource area were negligible, minor, moderate or major. BMPs and mitigation measures included the ROD (Appendix A) will continue to be implemented under the Proposed Action. Additional environmental commitments associated with the Contract were also identified and are discussed in Section 4.2.

4.1 Summary of Project Impacts

Impacts under the Proposed Action and No Action alternatives are summarized in Table 8 resource.

Table 8: Summary of Impacts for Proposed Action and No Action Alternative

Resource	Proposed Action Impacts*	Notes:
Surface Water Hydrology	Negligible (beneficial)	Under the Proposed Action, Pueblo Water's contracted excess capacity storage volume would continue and will change from 15,000 afy, to a minimum of 10,000 afy and maximum of 25,000 afy. The increase does not result in exceeding 120,453 afy total for temporary and long-term contract storage in Pueblo Reservoir as analyzed in the Temporary Program Programmatic EA. Surface water elevations in Pueblo Reservoir under the Proposed Action are predicted to be similar to the No Action Alternative. Also, minor increases in flows of up to 16 cfs (annual average) from Pueblo Dam to Pueblo Water's [river] intakes under the Proposed Action, are considered to be beneficial.
Water Rights	Negligible (beneficial)	The Proposed Action will allow Pueblo Water to utilize its BIDC water rights more efficiently. No other water rights would be affected.
Water Quality	Negligible (beneficial)	The reduced construction footprint and reduced stream crossings under the Proposed Action will result in negligible improvement in water quality to water quality impacts predicted in the FEIS. Additional facilities to remove chloramine is included in the Proposed Action to prevent formation of harmful disinfectant biproducts.
Geomorphology	Negligible (beneficial)	Stream crossings at Arkansas River crossing south of the Whitlock WTP, Salt Creek crossing near Interstate 25, St. Charles River crossing at South Road, and Six Mile Creek at Grant Road are not needed.
Aquatic Life	Negligible (beneficial)	Under the Proposed Action the Arkansas River downstream of Pueblo Dam will receive up to an additional 16 cfs when Pueblo Water uses its river intakes for AVC Project. In addition, the existing commitment of when flows in the Arkansas River downstream of Pueblo Dam fall below 50 cfs, Pueblo Water will take up to 17 cfs of its raw water flow at river intakes.
Recreation	Negligible (beneficial)	The additional flows below Pueblo Dam (see above) will benefit recreation. The Proposed Action also results in reduce effects on public parks, trails, or other facilities used for recreation.
Vegetation and Wetlands	Negligible	Under the Proposed Action, approximately 448 acres of ground disturbance associated construction of the trunkline would be avoided by using the existing Pueblo Water System. However, about 176 acres of additional ground disturbance will occur associated with construction of delivery pipelines, assuming a 50-foot construction corridor for these smaller diameter pipelines. Up to three acres of additional permanent disturbance will occur from construction and operation of the injection sites.
Wildlife	Negligible	Temporary impacts to wildlife would be similar under both the Proposed Action and No Action alternatives. The Proposed Action may affect, but is not likely to adversely affect the newly-listed threatened Eastern black rail.
Human Environment	Negligible	Effects on the human environment, including noise and vibration, visual resources, traffic, and utility services would be negligible with implementation of BMPs and mitigation measures included in the ROD.

Resource	Proposed Action Impacts*	Notes:
Socioeconomics	Beneficial Effects	Total Estimated Cost under the Proposed Action was reduced to a range of $564 to $610 million and through alternative funding sources. The estimated requirement for additional Reclamation appropriations was reduced to a range of $355 to $414 million.
Environmental Justice	Negligible	No change.
Historic Resources	Negligible	Under both Alternatives, Reclamation would follow the PA, complete additional Class III surveys of final alignments, and consult with the Colorado SHPO and other parties to the PA.
Indian Trust Assets	Negligible	See above.
Other Resources	Negligible	Change in land use associated with Pueblo Water's BIDC water rights is not dependent on the Contract but is subject to Pueblo County's revegetation and other requirements of Title 17 of the Pueblo County Code and other provision included in the decree for 17CW3050.
Climate Change	Negligible (beneficial)	The Proposed Action is predicted to result in similar or less greenhouse gas emissions. Climate change effect to other resources is predicted to be similar to the No Action Alternative.
Cumulative Impacts	Negligible (beneficial)	Approximately 448 acres of trunk line ground disturbance will be avoided and 179 acres of additional ground disturbance for delivery pipelines and AVC Project facilities will occur under the Proposed Action.

*When compared to the FEIS Selected Alternative (Comanche North alignment)

4.2 Environmental Commitments

Environmental commitments incorporate BMPs and mitigation measures included in the ROD. Environmental commitments included in the Temporary Program Programmatic EA and FONSI (Appendix A) are also incorporated as environmental commitments and summarized below. Additional specific environmental commitments associated with the Contract with Pueblo Water for excess capacity storage in Pueblo Reservoir are also included.

These commitments in addition to the ROD will be implemented by Reclamation, Southeastern, and Pueblo Water, where appropriate to help avoid negative impacts from occurring to the above-described resources in Section 3 of this EA in the Lower Arkansas River and Pueblo Reservoir.

Reclamation Commitments

1. The amount of storage allowable under temporary excess capacity contracts will not exceed 26,517 AF, or when combined with all long-term excess capacity contracts will not exceed 120,453 AF, consistent with mitigation measures numbers 3 and 8 included in the 2018 Temporary Program Programmatic EA and FONSI NO. EC-2019-01.
2. Reclamation will monitor excess capacity operations including daily storage and release data for Contractors' accounts, to better understand real-time use of contracted storage. This will aid in understanding how excess capacity is used and present the opportunity to manage adaptively future temporary excess capacity contract operations.
3. Reclamation will not execute contract exchanges until the Natural Resource Conservation Service makes its annual May 1st water supply forecast and Reclamation determines whether or not contract exchanges will affect its ability to operate in accordance with the Upper Arkansas River Voluntary

Flow Management Program recommendations, or impair the ability of the Fremont Sanitation District Wastewater Treatment Plant or Salida Wastewater Treatment Plant to meet their Colorado Discharge Permit System permit limits.

4. Reclamation will limit excess capacity contract operations from Pueblo Reservoir to upstream locations against releases made by Reclamation in support of the Upper Arkansas River Voluntary Flow Management Program or make exchanges from Pueblo Reservoir that would require Reclamation to release additional water to meet objectives and recommendations of the Upper Arkansas Voluntary Flow Management Program.
5. Reclamation will limit excess capacity contract operations that will affect the Arkansas River below Pueblo Reservoir when flows are ≤ 500 cfs and > 50 cfs to a decrease of no more than 50% of the average daily flow as measured by adding the flow at the Above Pueblo Gauge to fish hatchery return flows.
6. Reclamation will limit excess capacity contract operations that will affect the Arkansas River below Pueblo Reservoir when flows are ≤ 50 cfs, as measured by adding the flow at the Above Pueblo Gauge to fish hatchery return flows.

Southeastern Commitments

1. Southeastern and AVC Project Participants will implement the BMPs and mitigation measures included in the ROD for construction of all AVC spur and delivery pipeline alignments.
2. Southeastern will coordinate all cultural and environmental surveys with Reclamation for all spur and delivery pipelines. Reclamation will consult with the Colorado SHPO under the PA for NHPA compliance.
3. Southeastern and AVC Project Participants will comply with all applicable federal, state and local laws and regulations, including but not limited to, NHPA, ESA, Clean Water Act and applicable local 1041 permit regulations.

Pueblo Water Commitments

1. Pueblo Water's non-Fry-Ark Project water will be transported, stored, and released in accordance with the laws of the State of Colorado. Only water from sources owned or by leased by Pueblo Water, as described in this EA, may be stored and conveyed under the Contract.
2. By entering into an excess capacity contract with Reclamation for the use and distribution of Waters of United States, Pueblo Water's project operations shall comply with all sections of the Clean Water Act.
3. When flows in the Arkansas River downstream of Pueblo fall below 50 cfs, Pueblo Water agrees to continue to take up to 17 cfs of its raw water flow and/or AVC Project Water delivered from Pueblo Reservoir to either the Northside or Southside diversions rather than through the municipal outlet at the South Outlet Works.
4. If Pueblo Water's excess capacity contract operations are anticipated to change such that potential effects would be outside of the range of conditions evaluated in 2018 Temporary Program Programmatic EA and its hydrologic modeling, additional environmental compliance will be completed as required.
5. Regarding Pueblo Water's BIDC water rights, Pueblo Water commits to comply with revegetation and other requirements included in the water rights decrees and Title 17 of the Pueblo County Code.
6. The United States Bureau of Reclamation currently operates Twin Lakes and Turquoise Reservoirs so as to manage flows in the Arkansas River above Pueblo Reservoir for recreational and fishery purposes, while fully satisfying the primary purposes of the Project and other existing contractual obligations (including renewals of existing contractual obligations), pursuant to its concurrence with

recommendations of the Colorado Department of Natural Resources made after CDNR's consultation with Southeastern Water Conservancy District. At times that such an Upper Arkansas River Voluntary Flow Management Program is in effect, and so long as the Memorandum of Understanding executed on July 24, 2006, and attached as Exhibit C to the decree entered in Division 2 Case No. 04CW129 remains in effect, the following limits shall apply to Pueblo Water's operation of exchanges from Pueblo Reservoir to upstream locations:

A. Pueblo Water shall not exercise exchanges from Pueblo Reservoir to upstream locations against Fry-Ark Project water released from Twin Lakes or Turquoise Reservoir pursuant to the Voluntary Flow Management Program.
B. Pueblo Water shall not operate exchanges from Pueblo Reservoir to upstream locations in a manner so as to trigger releases of Fry-Ark Project water from either Twin Lakes or Turquoise Reservoir pursuant to the Upper Arkansas Voluntary Flow Management Program.
C. When Pueblo Water operates exchanges from Pueblo Reservoir to upstream locations, to the extent practicable and required by the 2006 MOU, its exchange operations during the period from October 15 to November 15 will be conducted in a manner that maintains flows between 250 and 500 cfs at Wellsville consistent with the Upper Arkansas Voluntary Flow Management Program while allowing greater exchange potential from November 16 to April 30; and conducted in a manner to help maintain higher incubation flows between November 16 and April 30 if spawning flows from October 15 to November 15 are between 501 and 700 cfs.

7. Comply with the Pueblo Flow Management Program pursuant to existing intergovernmental agreements. If Reclamation and the Participants receive credible information that project operations are impairing physical diversion of a senior water right, contrary to Colorado water law, the Participants will immediately initiate discussions among the parties, including the party alleging the impairment and Reclamation, to develop a solution and remedy the impairment in compliance with Colorado water law.

Chapter 5-Consultation and Coordination

5.1 Environmental Review Team

The ROD anticipated the potential need for review of proposed AVC Project changes (e.g., pipeline routing, new Participants, new water supplies, changes in water rights administration) and identified an Environmental Review Team to make recommendations regarding any warranted additional NEPA or Arkansas River Compact compliance review, adaptive management, mitigation, or other environmental compliance.

Reclamation invited and assembled the Environmental Review Team in 2021, which includes the following agencies:

Reclamation
ACOE
Service
Southeastern

CDOT
CPW
CDPHE
Colorado SHPO
Kansas Division of Water Resources
City of Pueblo
Pueblo, Otero, Crowley, Bent, Kiowa, and Prowers counties
Pueblo Water

The Environmental Review Team was asked to review the Draft SIR and to participate as cooperating agencies in the preparation this EA to evaluate changes associated with the reconfigured AVC Project. The Colorado SHPO declined to participate in the Environmental Review Team and will continue to participate in all other aspects of the AVC Project pursuant to the PA (Appendix C) for compliance with the NHPA.

Reclamation held meetings with the Environmental Review Team on June 2 and 7, 2021 and has met with individual agencies on numerous occasions through the development and refinement of the Proposed Action. The Environmental Review Team concurred with Reclamation's recommendation to prepare this environmental assessment as the appropriate process to analyze and disclose environmental effects associated with the SIR.

If Reclamation determines that proposed changes result in significant effect to the quality of the human environment, a supplemental EIS will be prepared. Otherwise, Reclamation will complete a Finding of No Significant Impacts (FONSI) for the Reconfigured AVC Project.

5.2 Public Review FEIS and Draft EA

Chapter 5 of the FEIS describes public involvement activities, agency consultation and coordination, and acknowledges the people involved with the NEPA process. Three newsletters were distributed during the EIS phase to more than 490 entities on the mailing list and made available on the AVC EIS website.

Since issuance of the ROD, Reclamation developed three additional newsletters (October 2020 and January and April 2021). Southeastern has also continued to provide public relations support through contacts and meetings with AVC Project Participants, affected landowners, and the general public.

Reclamation requested Environmental Review Team members, other federal, state and local agencies, and the public review and comment of the Draft EA. Reclamation utilized the AVC Project website at https://www.usbr.gov/gp/ecao/avc/ to post the Draft EA and associated appendices for public review. A news release was published on Reclamation's webpage on December 21, 2022, requesting comments on the Draft EA by January 21, 2022. On January 7, 2022, Reclamation updated the news release, requesting comments be submitted to Reclamation by January 30, 2022. The news release was distributed via email to approximately 1,000 agencies, organizations and individuals included in Reclamation's AVC Project, Pueblo Reservoir and Fry-Ark Project distribution lists. Copy of the distribution lists are available upon request.

5.3 Comments on the Draft EA

Reclamation received comments on the draft EA from 4 agencies, organizations and individuals. Comment letters are summarized below. All comment letters received by Reclamation are included in the

Administrative Record. Reclamation's response follows each comment and changes made to the Final EA, follow each summarized comment.

5.3.1 Southeastern Comment Letter dated January 31, 2022

Comment 1: The District believes that the EA clearly supports a FONSI for the reconfigured AVC and that a supplemental EIS is not needed.
Response 1: No response needed.

Comment 2: Certain terms used in the draft EA are not worded the same as in the pending 3-party contract (Contract with Pueblo Water). The District thinks it would be best if the terms used in both documents are identical.
Response 2: Reclamation agreed and updated the terms used to be consistent with the Contract. However, when the EA discusses specifically the trunk line, spurs pipelines, and delivery pipelines, the EA continues to use "AVC" as the abbreviation for Arkansas Valley Conduit. Reclamation also added a reference regarding the "Pueblo Connection Point" being "Connection Point 1" as described in the Contract. The Pueblo Connection Point is the only connection described and evaluated in the EA.

Comment 3: Figure 1 and item numbered 1 below the figure (p. 2) are based on the La Junta spur being constructed. As you know, consideration is being given to eliminating this spur. Should item numbered 1 include language which acknowledges that this spur may be eliminated?
Response 3: Other alternative alignments or proposed changes to the La Junta spur were not ripe for analysis or evaluation in the EA. If changes are proposed in the future, they will be reviewed by the Environmental Review Team as described in the FEIS and then Reclamation will determine if additional environmental review is warranted.

Comment 4: In this same item numbered 1 (p. 2), suggest wording the second sentence to read as follows (new language in italics): "Reclamation will *fund,* construct*, and own* about 120 miles of "trunk line" and Southeastern will *finance,* construct*, and own* about … 58.7 miles *of* delivery pipeline …". This is the language used in section 2.2 of the draft EA.
Response 4: Suggested change was made.

Comment 5: Contract No. 5-07-70-W0086 was superseded in December by the execution of a new repayment contract. Thus, spill priorities are now addressed in the new contract. The new contract should, therefore, now be cited Contract No. 229F650016.
Response 5: The Final EA has been updated to reference the new contract which was executed on December 28, 2022.

Comment 6: Item numbered 6 on p. 3 be reworded as follows: "**Pueblo Water System upgrades.** Future upsizing of about 10 miles of delivery pipelines in the Pueblo Water System will allow delivery of up to 13 mgd of the 2070 AVC Participants' demand to Connection Point 1. Payments to Pueblo Water proposed as part of the Contract would make Pueblo Water responsible for increasing the capacity of their system to accommodate the increased demands." The last sentence uses the wording that ended up in the 3-party contract at Reclamation's request.
Response 6: The last sentence was updated using the Contract language.

Comment 7: The paragraph at the very bottom of p. 4 carrying over to page 5 is incorrect insofar as it states how much Fry-Ark Project Water will be used. The water which will be delivered by the AVC will be a

combination of Fry-Ark Project Water and water derived from water rights held by the individual AVC Project Participants. We suggest that this paragraph be revised to read as follows and that figure 2 be deleted.

> "The FEIS estimated a total 2070 water demand for AVC Participants of 12,569 afy, with 10,256 afy of this demand being met with deliveries of water via the AVC Project and the balance from the AVC Project Participants' local supplies. However, with the withdrawal of St Charles Mesa (-2,651 afy) and the addition of Riverside (+20 afy), 2070 deliveries via the AVC Project are reduced from 10,256 afy to 7,625 afy. The water delivered by the AVC Project (AVC Project Water) will be a combination of Fry-Ark Project Water which is allocated to the AVC Project Participants by Southeastern and of non-project water resulting from the exercise of water rights held by individual AVC Project Participants."

Response 7: The paragraph was revised in the Final EA. Figure 2 was included in the FEIS and has not been deleted.

Comment 8: In section 2.2.1 (p. 6), revise the first sentence to read: "St. Charles Mesa Water District would have received up to 2,651 afy of AVC Project Water through the AVC Project.".
Response 8: Suggested change was made.

Comment 9: In section 2.2.1 (p. 7), either delete the last paragraph, which is inaccurate, or replace it with the paragraph suggested in #7 above.
Response 9: Suggested replacement was made.

Comment 10: In the second to the last paragraph in section 2.2.3 (p. 7), suggest rewording this paragraph to read: "Payment for AVC's portion of Pueblo Water's future increases in the capacity of its Pueblo Water System would be addressed in the Contract.".
Response 10: Suggested change was made.

Comment 11: In the second sentence in section 2.2.8 (p. 12), delete the phrase "and credited towards the 35 percent AVC cost-share requirements" and replace it with "and credited towards the 35 percent of AVC Project costs for which the District is required to pay.".
Response 11: Suggested change was made.

Comment 12: Revise the last paragraph of section 2.2.9 (p. 15) to read: "In addition, payments to Pueblo Water to make future increases in the capacity of its Pueblo Water System will be included in the Contract to ensure Pueblo Water's capability to …".
Response 12: Suggested change were made.

Comment 13: Revise the first sentence of section 2.2.11 (p. 15), and add a new sentence, to read as follows: "Reclamation and Southeastern intend to design and construct the AVC trunk line and spur pipelines in no greater time than shown in the tentative schedule in Table 3. However, the recent passage of the Infrastructure Investment and Jobs Act may provide opportunities to shorten this schedule significantly."
Response 13: Suggested change was made.

Comment 14: The first paragraph in section 3.1 (p. 17) should acknowledge that the Proposed Action will have a beneficial effect because it will result in less of a decrease in stream flows downstream from Pueblo Dam than the No Action alternative due to the fact that the amount of water which will be delivered via the AVC Project has been decreased by about 2,600 afy.

Response 14: No changes were made to the Final EA. St. Charles Mesa utilizes ground water and surface water rights from the Arkansas River and St. Charles River. They also own shares in BIDC and use the BIDC Canal to deliver raw water to their existing water treatment facilities. St. Charles Mesa is no longer participating in the AVC Project but will continue to use its existing systems or seek other alternatives for delivery its raw water supplies. Since St. Charles Mesa is no longer participating in the AVC Project less of a decreased stream flows may or may not happen dependent on future changes to their delivery systems. Any future improvements by St. Charles Mesa are considered to be outside the scope of this EA.

Comment 15: We believe that Table 4 (p. 20) needs to be revised as follows:

a. Change "Master Contract" to "Southeastern Master Contract".

b. Revise the entry for the Triview Metro District contract to reflect the fact that the contract was executed in December. Also, the first full paragraph on p. 21 will need to be revised.

c. Delete the "Southern Delivery System" contract. The SDS contract is Contract No. 11XX6C0005 (dated May 4, 2011) with Colorado Springs for conveyance capacity in the N. Outlet Works and giving the city the right to connect the SDS pipeline to the outlet. It is not a contract for the use of excess storage capacity in Pueblo Reservoir.

d. Replace the entry for the SDS contract with the following 4 contracts for excess storage capacity.

Response 15: Table 4 was revised.

Comment 16: In the first paragraph below the bullets on p. 22, we suggest deleting the third sentence ("All Fry-Ark Project water …"). It is not germane to the point being made by this paragraph. If it is retained, we suggest making it the last sentence and rewording it to read as follows: "All Fry-Ark Project Water, including that for AVC Project Participants, would continue to be …".

Response 16: The paragraph was reworded and moved as suggested.

Comment 17: In the last sentence of the last paragraph in section 3.10 (p. 40), the FY 21 appropriation for the AVC was $11.05million, not $11.5 million.

Response 17: Suggested change was made.

Comment 18: In the last sentence of the second full paragraph on p. 47, we believe that the phrase "will not likely change" should be revised to "will not change". We believe that this is an accurate statement given that this paragraph acknowledges that the FEIS anticipated that Pueblo Water would continue to utilize excess storage capacity after 2025. Thus, the cumulative effects of continued use of excess storage capacity have already been addressed.

Response 18: Suggested change was made.

Comment 19: In Table 8 (p. 48), we think that the note for the "Surface Water Hydrology" entry is incomplete.

a. As written, the note only addresses the fact that the maximum use of excess capacity in Pueblo Reservoir will not change under the Proposed Action as compared to the analysis in the Temporary Program Programmatic EA. This, per se, says nothing about impacts on surface water hydrology. The note needs to be modified to state the conclusion reached in the last paragraph of section 3.1.2 (i.e., surface water elevations in Pueblo Reservoir under the Proposed Action are predicted to be similar to the No Action Alternative).

b. The note needs to be expanded to include the conclusions reached in section 3.1.1 regarding Arkansas River flows.

i. It should acknowledge the statement in section 3.1.1 that: "Minor increases in flows of up to 16 cfs (annual average) from Pueblo Dam to Pueblo Water's [river] intakes under the Proposed Action, are considered to be beneficial …"

ii. In addition, the note should acknowledge the beneficial effect addressed by comment 13 above.

c. Finally, while these effects are negligible, we think they should be identified as beneficial in the "Proposed Action Impacts" column of this table given the analyses in sections 3.1.1.

Response 19: Suggested changes were made with exception to suggested change previously addressed in comment 13.

5.3.2 Pueblo Water Comments dated January 31, 2022

Comment 1: Should Pueblo Water be included in the last sentence in 1.1 discussing collaboration in 2018 and 2019?
Response 1: Suggested change was made.

Comment 2: Section 2.1, 1st Paragraph, Would Reclamation purchase excess capacity available in the JUP upstream of the JUP wye from Pueblo Water or Colorado Springs Utilities?
Response 2: The FEIS on page 2-16 for the Comanche North Alternative states that "Reclamation would purchase excess capacity available in the JUP upstream from the wye (a three-way pipeline connection) from Board of Water Works of Pueblo and would construct a new pipeline downstream from the wye to the existing Whitlock Water Treatment Plant.

Comment 3: Section 2.1, Last Paragraph, Why would any of the AVC Participants exchange water upstream from Pueblo Reservoir?
Response 3: This sentence came directly from the FEIS. However, in the Final EA, "upstream" has been deleted from the sentence. We believe the sentence was intended to address exchanges by downstream AVC Project Participants to the upstream Pueblo Reservoir.

Comment 4: In Table 4, should the +0.1 miles, be changed to -0.1 miles for difference in delivery pipeline lengths?
Response 4: Suggested change was made.

Comment 5: Section 2.23, 1st Paragraph, "the existing JUP to the Whitlock WTP". This only describes to the "wye". Need to add Pueblo Water's Raw Water Pipeline.
Response 5: The Final EA was updated in multiple places to reflect that the JUP connects to the Pueblo Raw Water Pipeline which delivers water to the Whitlock WTP.

Comment 6: Section 1.1, #6 and Section 2.2.3, 2nd Paragraph, "existing pipelines that may be up-sized" should refer to expansion mains or new mains.
Comment 6: "up-sized" was changed to "pipelines improved to provide the increased capacity". This would be accomplished by replacing and/or adding new main pipelines by Pueblo Water.

Comment 7: In Section 2.2.4, Pueblo Connection Point, change "east of 36th Lane" to "about 750' west of 36th Lane".
Response 7: Suggested change was made.

Comment 8: Section 2.2.10, Second Paragraph, The JUP is 84" and 78" and the 66" is Pueblo Water's Raw Water Pipeline. For a portion of the JUP, Pueblo Water has 180 mgd capacity, 40 mgd is for the future peaking plant at the 50 acre reserved site. 140 mgd is the capacity we can deliver to the plant. 84 mgd is what our plant can produce right now.
Response 8: The description of the JUP and Pueblo Raw Water Pipeline was revised to: "The first segment of the JUP is 84" in diameter and then reduces to 78". The 66" diameter Pueblo Water Raw Water Pipeline connects to the JUP. It currently has the capacity to deliver up to 140 mgd (216.6 cfs) to the Whitlock WTP. Whitlock WTP can currently treat about 84 mgd (130 cfs)."

Comment 9: Section 2.2.10, Third Paragraph, 4th Sentence, upgrades listed are only to support AVC.
Response 9: "both future Pueblo Water" was deleted for the sentence to reflect this.

Comment 10: Section 3.1.1, 1st Paragraph, Replace "57 mgd or approximately 88 cubic feet per second (cfs)" with "57 mgd (88.2 cfs) and between 30 and 40 mgd (46.4 to 61.9 cfs), respectively".
Response 10: Suggested changes were made.

Comment 11: Section 3.1.1, 2nd Paragraph, What is the basis for the number in "Minor increases in flows of up to 16 cfs (annual average)"?
Response 11: The "16 cfs" comes directly from Table 4-8 for the average annual Streamflow effects of the Comanche North Alternative compared to No Action Alternative.

Comment 12: Figure 7, The red pipeline includes both the JUP and Pueblo Water's Raw Water Pipeline.
Response 12: Figure 7 was revised to reflect this.

Comment 13: Section 3.1.2, add "4) to Pueblo Water for municipal use;" to the list of Fry-Ark Project Water that is released from Pueblo Reservoir.
Response 13: Suggested change was made.

Comment 14: Make the following edits to Table 6.

Case No.	Water Right Name	Description	Priority Date(s)	Basin Source
W-3965	Twin Lakes Reservoir (Priority 3 and 4)	Pueblo Water's rights to Arkansas River. Basin native water (all Div. 2)	1896, 1897	Arkansas River
90CW53	Clear Creek Reservoir (Reservoir & ***1st*** Enlargement)		1902, 1910	
90CW55	~~Pueblo Water Northside Intake, Pueblo Dam Outlet Works, Pueblo Water~~ Southside Intake West Pueblo Ditch		1872 1874 1878 1883 1887 ~~1990~~	
04CW130	Clear Creek Reservoir ***2nd Enlargement***		2000	
12CW102	Hamp-Bell Ditch		1870, 1878 1888	
W-1901, 80CW505, 90CW340 (all Div. 5)	Independence Pass Transmountain Diversion System, Wurtz Ditch Extension, ***Busk-Ivanhoe System,*** Columbine Ditch, ***Ewing Placer Ditch, Warren E. Wurts Ditch***	Pueblo Water's rights ~~for~~ in the Eagle, Roaring Fork, & Fryingpan Rivers	1930, 1953, ***1921, 1924, 1927, 1930, 1906, 1929***	Eagle, Roaring Fork, & Fryingpan Rivers
Case No.	**Water Right Name**	**Description**	**Priority Date(s)**	**Basin Source**
84CW177A&B and 06CW120 (Div. 2 reuse exchanges)	Transmountain Sources, Return Flows, Exchanges, and Ark River FMP Arkansas Gravel Pit Reservoir Exchanges	***Reuse of*** Eagle, Roaring Fork, & Fryingpan River exports to the East Slope	1976, 2004	Eagle, Roaring Fork, & Fryingpan Rivers
~~90CW340 (all Div. 5); 84CW177A&B and 06CW120 (Div. 2 reuse exchanges)~~	~~Busk-Ivanhoe System~~	~~PBWW's interest in the Busk-Ivanhoe system for diversion of waters to the East Slope~~	~~1930, 1976~~	~~Fryingpan River~~
~~W-3965 (Div. 2) and W-1901 (Div. 5); and 84CW177A&B and 06CW120 (Div. 2 reuse exchanges)~~	~~Twin Lakes~~	~~Pueblo Water's interest in the Twin Lakes Reservoir & Canal Company~~		~~Roaring Fork River~~
Reservoir Trades		~~Exchanges~~***Trades*** of water in Turquoise & Twin Lakes Reservoirs with C. Springs, Aurora, and others		
1967 Agreement between PBWW and City of Aurora		2,500 AF of water from the Eagle R. drainage obtained annually from the City of Aurora	***1952***	Eagle River
Fry-Ark Project Return Flows		Pueblo Water Contract Administration Letter dated May 14, 2015	***1939***	Fry-Ark Project Return Flows
16CW3103 and 17CW3050	Bessemer Huerfano Exchange, Bessemer Ditch	Pueblo Water's BIDC Shares ***including reuse and other exchanges***	2016, 1861, ***1864, 1866, 1867, 1870, 1873, 1876, 1878, 1881, 1882, 1887***	Arkansas River Basin

Response 14: Suggested changes were made.

Comment 15: Section 3.5, 2nd to last Paragraph, Is this intended to be additive to the 16 cfs for AVC? In other words, would there be up to 33 cfs delivered downstream to prevent the river flow form dropping below 50 cfs?

Response 15: The 16 cfs is not meant to be additive to the requirement of up to 17 cfs that Pueblo Water is required to release to its intakes as included in the 2000 contract. However, AVC releases that would have been delivered through the JUP can also be made to Pueblo Water's river intakes to assist when flows drop below 50 cfs. This is included in the environmental commitments.

Comment 16: Section 3.8.4, FWCA Reclamation Response 3 and Section 4.2, Reclamation Environmental Commitment 6., What does this mean? Pueblo Water thought that past practice was to prohibit storage in Pueblo Reservoir under storage contracts if that operation would have the effect of reducing the river flow below 100 cfs.
Response 16: The 100 cfs practice is associated with the Pueblo Flow Management Program and the 2004 Pueblo Intergovernmental Agreement in which Reclamation was not a signatory to. In the 2006 Temporary Program EA, Reclamation responded: "Reclamation is not a party to the Pueblo IGA, and does not believe it is necessary to bind those contractors who aren't signatories to the Pueblo IGA to its terms and conditions when those terms are not consistent with the findings of the EA.". However, in the 2013 FEIS and ROD for the AVC Project made the following commitment: "Reclamation will limit excess capacity contract operations that will affect the Arkansas River below Pueblo Reservoir when flows are ≤ 50 cfs, as measured by adding the flow at the Above Pueblo Gauge to fish hatchery return flows." This environmental commitment has been included in all long-term and temporary excess capacity contract issued since the AVC ROD to mitigate moderate effects of occasional low streamflow immediately below Pueblo Reservoir, and the effects of this low streamflow on water quality and aquatic life. This applies only to water exchanged from below Pueblo Reservoir into Participant accounts that could reduce streamflow immediately below the reservoir.

5.3.3 CPW Comment Letter dated January 31, 2022

Comment 1: Regarding the current review and the limited scope of proposed project changes, CPW has reviewed the Draft EA and has no additional comments on Reclamation's assessment of impacts. CPW appreciates the inclusion of impact assessments for both aquatic habitat and recreation in the project area. CPW supports the application of Best Management Practices as detailed in the 2013 FEIS to the changes outlined in the proposed action and supports the continuation of mitigation commitments outlined in the 2013 FEIS and the Draft EA.
Response 1: No response needed.

Comment 2: CPW also appreciates the additional information regarding potential impacts to the Eastern black rail population in the project area. And while the FEIS and Draft EA anticipate negligible impacts to lesser prairie chicken habitat in the project area, CPW recommends those potential impacts be evaluated as individual projects in Kiowa and Prowers County are developed in light of the proposed federal listing of the Colorado population as threatened. The State of Colorado lists the lesser prairie chicken as a State Threatened Species under state law.
Response 2: Reclamation will continue to coordinate activities associated with listed federal, state, and sensitive as the AVC project is being designed, constructed, and operated. Reclamation will implement the ROD BMPs and mitigation measures and also utilize the Environmental Review Team to assist in evaluating and addressing any future proposed AVC Project changes or other new information.

5.3.4 Colorado Springs Utilities Comment Letter dated January 28, 2022

Comment 1: The Draft EA discusses a proposed long term excess capacity storage contract between Pueblo Water, Reclamation, and Southeastern and summarizes the anticipated environmental impacts of the Contract. However, the proposed Contract is not included in the appendices. It is difficult for Colorado Springs Utilities to analyze the impacts of the activities described in the draft EA and provide thorough comments without the opportunity to review a draft of the proposed Contract. Among other issues, Springs Utilities does not currently have the information necessary to fully evaluate Pueblo Water's purpose and need for additional capacity storage or the potential impacts of Pueblo Water's request to store its Bessemer

Ditch water rights in excess capacity storage in Pueblo Reservoir. Utilities requests that Reclamation provide a copy as soon as possible.
Response 1: The purpose and need of the Contract as described in the 2000 EA for Pueblo Water's existing excess capacity contract was Section 1 of this EA. In addition, the draft Contract has been provided to Colorado Springs Utilities as requested. However, it should be noted that Reclamation held two negotiations sessions between the Pueblo Board of Water Works, Southeastern, and the United States (Reclamation) prior to distribution of the draft EA. On 11/3/2021, an in-person session was held in Pueblo, CO, and on 11/17/2021, a session was held online. The public was invited to both sessions by notice in the following newspapers on the indicated publication dates:

11/3/2021 session:
Pueblo Chieftain on 10/28/2021
Colorado Springs Gazette on 10/27/2021
Denver Post on 10/27/2021
La Junta Tribune on 10/29/2021
Mountain Mail on 10/29/2021

11/17/2021 session:
Pueblo Chieftain on 11/13/2021
Colorado Springs Gazette on 11/11/2021
La Junta Tribune on 11/12/2021
Mountain Mail on 11/12/2021

The public notice included information on how to attend the negotiation sessions, provide written comments, request additional information, or view a copy of the proposed Contract. No members of the public were present at the in-person session on November 3, 2021. One member of the public was present during a portion of the online session on November 17, 2021.

Comment 2: Reclamation and Colorado Springs Utilities entered into Contract No. l 1XX6C0002 in 2011 that provided for both conveyance and storage of water related to our SDS Project. Colorado Springs Utilities knows that Reclamation strives for consistency regarding the terms of these contracts and Colorado Springs Utilities requests that future contracts for long term storage, such as Pueblo Water's Contract, include the same environmental commitments that Springs Utilities agreed to in Contract No. l IXX6C0002 in order to avoid undue impacts.
Response 2: Reclamation entered into two contracts with Colorado Springs Utilities regarding the SDS Project. Contract No. l IXX6C0002 addresses use of excess capacity by Colorado Spring Utilities in the facilities of the Fry-Ark Project and No. 11XX6C0005 addresses the conveyance SDS Project water and operations, maintenance and replacement costs associated with the North Outlet Works. Three other SDS Project excess capacity contracts were also executed at that time as discussed in Chapter 3. Since the execution of the SDS contracts in 2011, Reclamation has executed three additional long-term excess capacity contracts with Southeastern (Souteastern's Master Contract), Donala Water and Sanitation District, and Triview Metropolitan District. Donala and Triview utilize the SDS system to treat and deliver a portion of their water supplies. All excess capacity contracts issued since the 2014 AVC ROD have incorporated the same environmental commitments. This EA also discusses the 2018 Temporary Program EA and incorporates commitments included in the 2018 FONSI.

Comment 3: Specific examples of those commitments include, but are not limited to, ensuring that the Contract with Pueblo Water will require commitments that the parties to the contract will: (1) make the same environmental compliance commitments to each other as Reclamation and Colorado Springs Utilities have committed to in Article 8, and Exhibit C of Contract No. 11 XX6C0002 incorporating FEIS Numbered 08-63 and ROD Numbered GP-2009-01; (2) comply with the Pueblo Flow Management Program pursuant to existing intergovernmental agreements; (3) require robust water quality monitoring; (4) develop and implement a head pressure monitoring program on the Joint Use Manifold to isolate *effects* attributable to the AC project and to mitigate those effects if they were to occur; and (5) comply with the Upper Arkansas Voluntary Flow Management Program except during emergency conditions as defined in Section 2.b of the Memorandum of Understanding for Settlement of Case No. 04CW 129, Water Division 2 (Chaffee County Recreational In-Channel Diversion).
Response 3: Reclamation has already incorporated all appropriate environmental commitments associated with excess capacity contracts issued after SDS. Reclamation's responses to the specific examples list above are as follows:

1) Article 8, and Exhibit C of Contract No. 11 XX6C0002: Article 8-Measurement and Accounting for the Use of Excess Capacity is addressed as Article 26 in the Contract.

   With exception to Article 8(2): "The amount of the Contractor's water exchanged for Project Water stored upstream in either Twin Lakes or Turquoise Reservoirs"; the language in Article 26 is consistent with Article 8. Pueblo Water's excess capacity does not include exchanges for Fry-Ark Project water stored in either Twin Lakes or Turquoise Reservoirs.

   Exhibit C is the SDS ROD. The SDS ROD environmental commitments addressed both the construction and operations of the SDS Project and the four SDS long-term excess capacity contracts. Where appropriate, SDS ROD environmental commitments associated with the SDS long-term contracts have been incorporated in all excess capacity contracts issued since the SDS ROD as discussed in the Environmental Commitment section of this EA. The excess capacity portion of the Contract with Pueblo Water (Part B of the Contract) does not require a new contract to store or deliver Pueblo Water's excess capacity water stored in Pueblo Reservoir.

2) Comply with Pueblo Flow Management Agreement pursuant to existing IGA governmental agreements: Pueblo Water and Southeastern are signatory parties to the existing IGA agreements regarding the Pueblo Flow Management Program, which Reclamation is not a party to. See Response to Pueblo Water Comment 15, above. Pueblo Water's IGA commitments were added to its environmental commitments in the Final EA. In addition, Reclamation's environmental commitment No. 5 in this EA and all Pueblo Reservoir temporary excess capacity contracts issued since 2006, limits temporary excess capacity contract operations that affect the Arkansas River below Pueblo Reservoir when flows are ≤ 500 cfs and > 50 cfs to a decrease of no more than 50% of the average daily flow as measured by adding the flow at the Above Pueblo Gauge to fish hatchery return flows. The AVC ROD also incorporated the following BMP: "Participants will participate and comply with Southeastern's commitments in the Pueblo Flow Management Program, as outlined in the Six Party Intergovernmental Agreement.".

3) Require Robust Water Quality Monitoring: Water quality monitoring requirements included in the SDS ROD for SDS water quality effects on Fountain Creek and the Arkansas River downstream of its confluence with Fountain Creek focus on dissolved selenium, Escherichia coli, ammonia, and

salinity. The continuation of Pueblo Water's excess capacity contract does not affect flows or water quality on Fountain Creek. Increasing Pueblo Water's maximum allowable excess capacity storage by 10,000 acre-feet per year and the addition of Pueblo Water's BDIC water rights as a water source under the Proposed Action are expected to have negligible effects on stream flows and water quality downstream of Pueblo Water's North and South river intakes as previously discussed in the EA. Reclamation believes requiring a robust water quality monitoring program for this reach of the Arkansas River included as an environmental commitment is not appropriate.

4) Develop and implement a head pressure monitoring program on the Joint Use Manifold: Under the No Action and Proposed Action alternatives evaluated in this EA, neither alternative modifies the Joint Use Manifold. Both alternatives utilize existing excess pipe capacity in the JUP to make deliveries to the Whitlock Water Treatment Plant. However, under the No Action Alternative (FEIS and ROD's Comanche North Alternative), approximately 1.2 miles of new pipeline would have been added to deliver AVC Project raw water for treatment at a separate treatment facility constructed at Whitlock WTP. Under the Proposed Action, AVC Project raw water is mixed with Pueblo Water's other raw water sources, delivered through the JUP and Pueblo Water Raw Water Pipeline or via the Arkansas River to Pueblo Water's North and South Intakes, treated at existing Whitlock WTP facilities and then delivered to the AVC Project's Pueblo Connection Point.

5) Comply with the Upper Arkansas Voluntary Flow Management Program: Pueblo Water's existing 2006 MOU commitments were added to Pueblo Water's environmental commitments listed in this EA. Reclamation's commitments are included in the AVC ROD. Reclamation's Environmental Commitment No. 5 states that Reclamation will limit excess capacity contract operations from Pueblo Reservoir to upstream locations against releases made by Reclamation in support of the Upper Arkansas River Voluntary Flow Management Program or make exchanges from Pueblo Reservoir that would require Reclamation to release additional water to meet objectives and recommendations of the Upper Arkansas Voluntary Flow Management Program.

Comment 4: Springs Utilities also requests that the proponents of the AVC Project be required to commit that prior to constructing any portion of the AVC Project that will cross infrastructure owned by Colorado Springs or the Colorado Canal Company, they will provide the opportunity to review and comment on the construction plans to ensure that there will be no impact to any infrastructure and operations.
Response 4: Reclamation will review and coordinate with all affected parties, review the 90% design packages with appropriate federal, state and local authorities, affected landowners, utilities, and canal and ditch companies. The AVC Project is proposed to cross the Colorado Canal in two locations as shown in the SIR and Final EA. The first crossing is not included in the construction of the Boone Reach and will be addressed in future design review packages. Reclamation and Southeastern will work directly with each canal and ditch company during the design process. The canal or ditch company will be responsible for obtaining input from their members.

6.0 References

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