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Introduction

This appendix contains a list of common and scientific names used in the Vegetation and Wetlands section of the EIS, and a list of perennial rivers and streams pipeline crossings.

Table 1. Plant Species Common and Scientific Names

Common Name	Scientific Name
Blue grama	<i>Chondrosum gracile</i>
Cattail	<i>Typha latifolia</i> and <i>T. angustifolium</i>
Canada thistle	<i>Breea arvense</i>
Cholla	<i>Cylindropuntia imbricata</i>
Common reed	<i>Phragmites australis</i>
Dwarf milkweed	<i>Asclepias uncialis</i>
Four-winged saltbush	<i>Atriplex canescens</i>
Golden blazingstar	<i>Nuttallia chrysantha</i>
Greasewood	<i>Sarcobatus vermiculatus</i>
Juniper	<i>Sabina monosperma</i>
Kochia	<i>Bassia sieversiana</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Plains cottonwood	<i>Populus deltoides monilifera</i>
Pueblo goldenweed	<i>Oenopsis puebloensis</i>
Roundleaf four-o'clock	<i>Oxybaphus rotundifolia</i>
Rubber rabbitbrush	<i>Ericameria nauseosa</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Sagebrush	<i>Seriphidium tridentatum</i>
Sand sage	<i>Oligosporus filifolia</i>
Saltcedar	<i>Tamarix ramosissima</i>
Saltgrass	<i>Distichlis spicata</i>
Sandbar willow	<i>Salix exigua</i>
Sand dropseed	<i>Sporobolus cryptandrus</i>
Sandhill goosefoot	<i>Chenopodium cycloides</i>
Sand sage	<i>Artemisia filifolia</i>
Siberian elm	<i>Ulmus pumila</i>
Snakeweed	<i>Gutierrezia sarothrae</i>
Threesquare	<i>Schoenoplectus pungens</i>
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>
Western wheatgrass	<i>Pascopyrum smithii</i>

Source: Weber, W.A. and R.C. Wittmann. 2001. Colorado Flora – Eastern Slope. University Press of Colorado.

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Table 2. Perennial Rivers/Streams Pipeline Crossings

Perennial Rivers/Streams	No Action	Comanche North	Pueblo Dam South	JUP North	Pueblo Dam North	River South	Master Contract Only
Apishapa River	1	1	1			1	1
Arkansas River	2	7	6	11	11	7	2
Chicosa Creek		1	1			1	
Crooked Arroyo		1	1	1	1	1	
Fountain Creek				1	1		
Graveyard Creek		1	1	1	1	1	
Haynes Creek				1	1		
Horse Creek				1	1	1	
Huerfano River		1	1			1	
King Arroyo		1	1	1	1	1	
Limestone Creek		1	1	1	1	1	
Prowers Arroyo		1	1	1	1	1	
Saint Charles River		1	1			1	
Salt Creek		1	1			1	
Timpas Creek		1	1	1	1	1	
Tributary to Graveyard Creek		1	1		1	1	
Wild Horse Creek				1	1		
Total	3	19	18	21	22	20	3

Appendix J.1 – Wildlife Common and Scientific Names

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This appendix includes tables with federal endangered, threatened, candidate, and proposed species; state threatened and endangered species and Colorado Natural Heritage species; common and scientific names of terrestrial wildlife species; and birds of conservation concern discussed in the Wildlife section of the EIS.

Table 1. Federal Endangered, Threatened, Candidate, and Proposed Species

Common Name	Scientific Name	Status ⁽¹⁾	General Colorado Range/Habitat Affinity	Habitat in Project Area
Birds				
Interior least tern	<i>Sternula antillarum</i>	FE, SE	Southeastern Colorado; sandy/pebble beaches on lakes, reservoirs, and rivers	Potential
Lesser prairie chicken	<i>Tympanuchus pallidicinctus</i>	FC, ST	Southeastern Colorado; sandhills and shrublands	Potential
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT, ST	Front Range mountains, southwestern Colorado; closed canopy forests in steep canyons	No
Piping plover	<i>Charadrius melodus</i>	FT, ST	Southeastern Colorado; sandy lakeshore beaches and river sandbars	Potential
Fish				
Arkansas darter	<i>Etheostoma cragini</i>	FC, ST	Arkansas River Basin; clear waters, low current with sandy bottoms, and abundant aquatic vegetation	Potential
Greenback cutthroat trout	<i>Oncorhynchus clarkii stomias</i>	FT, ST	Historic range includes streams and rivers in the upper Arkansas River Basin and Fountain Creek tributaries	No
Mammals				
Black-footed ferret	<i>Mustela nigripes</i>	FE, SE	Historic range includes eastern and western Colorado; active prairie dog towns or complex > 80 acres	No
Canada lynx	<i>Lynx canadensis</i>	FT, ST	Colorado mountains; climax boreal forest with a dense understory of thickets and windfalls	No
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	FC	Central Colorado; shortgrass or midgrass prairies, grass-shrub habitats in low valleys or mountain meadows	No
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	FT, ST	North-central/northeastern Colorado; wetland and riparian areas with shrubs (mesic grass/shrub/ woodlands)	No
Vegetation				
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	FT	Subirrigated alluvial soils along the South Platte River and other river systems in Colorado; one historical record (1886) along Fountain Creek in El Paso County	No

Notes:

⁽¹⁾ FE = Federally Endangered, FT = Federally Threatened, FC = Federal Candidate, SE = State Endangered, ST = State Threatened.

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Appendix J – Wildlife Common and Scientific Names

Table 2. State Endangered, Threatened, and Species of Concern that are not also Federally Listed and Colorado Natural Heritage Program Species of Concern

Common Name	Scientific Name	Status ⁽¹⁾	General Colorado Range/Habitat Affinity	Habitat in Project Area
Amphibians				
Couch's spadefoot	<i>Scaphiopus couchii</i>	SC	Southeastern Colorado; shortgrass prairie	Potential
Northern leopard frog	<i>Rana pipiens</i>	SC	Throughout Colorado; rivers, wet meadows, and stock ponds	Potential
Plains leopard frog	<i>Rana blairi</i>	SC	East-central Colorado including Arkansas/Republican River basins; rivers, wet meadows, and stock ponds	Potential
Birds				
American peregrine falcon	<i>Falco peregrinus anatum</i>	SC	West/Central Colorado; cliffs, bluffs, and canyons	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	SC	Throughout Colorado; nests and roosts along lakes, reservoirs, and streams; forages over open water and prairie dog towns	Potential
Ferruginous hawk	<i>Buteo regalis</i>	SC	Northwestern and eastern Colorado; short- mid-grass prairie and shrublands	Potential
Long-billed curlew	<i>Numenius americanus</i>	SC	Nests in eastern Colorado; shortgrass prairie, often near water	Potential
Mountain plover	<i>Charadrius montanus</i>	SC	Eastern Colorado and South Park; shortgrass prairie and plowed agricultural fields	Potential
Western burrowing owl	<i>Athene cunicularia</i>	ST	Throughout Colorado; grassland, shrubland, and desert with ground squirrels	Potential
Western snowy plover	<i>Charadrius alexandrinus</i>	SC	Southeastern Colorado; shortgrass prairie near lakes, ponds, and playas	Potential
Fish				
Plains minnow	<i>Hybognathus placitus</i>	SE	Introduced into Arkansas River below Canon City	Potential
Suckermouth minnow	<i>Phenacobius mirabilis</i>	SE	Arkansas River Basin	Potential
Southern red-belly dace	<i>Phoxinus erythrogaster</i>	SE	Arkansas River Basin in Fremont and Pueblo counties	Potential
Flathead chub	<i>Platygobio gracilus</i>	SC	Arkansas River Basin	Potential
Mammals				
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	SC	Eastern Colorado; shortgrass prairie	Potential
Swift fox	<i>Vulpes velox</i>	SC	Eastern Colorado; prairie	Potential
Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	SC	Throughout Colorado; woodlands with rocky outcrops; roosts in caves, mines, and rock crevices	Potential
Reptiles				
Common kingsnake	<i>Lampropeltis getula</i>	SC	Southeastern Colorado; grasslands, agricultural areas, and canyons	Potential
Massasauga	<i>Sistrurus catenatus</i>	SC	Southeastern Colorado; grasslands and sandhills	Potential
Roundtail horned lizard	<i>Phrynosoma modestum</i>	SC	Otero County; grasslands and upland shrublands	Potential

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Table 2. State Endangered, Threatened, and Species of Concern that are not also Federally Listed and Colorado Natural Heritage Program Species of Concern (continued)

Common Name	Scientific Name	Status ⁽¹⁾	General Colorado Range/Habitat Affinity	Habitat in Project Area
Texas horned lizard	<i>Phrynosoma cornutum</i>	SC	Southeastern Colorado; grasslands and upland shrublands	Potential
Triploid checkered whiptail	<i>Cnemidophorus neotesselatus</i>	SC	Southeastern Colorado; canyons, arroyos, and riparian uplands associated with streams and grasslands	Potential
Invertebrates				
Colorado buckwheat blue butterfly	<i>Euphilotes rita coloradensis</i>	S1	Southeast Colorado; grasslands containing blue grama and buckwheat	Potential
Vegetation				
Dwarf milkweed	<i>Asclepias uncialis</i>	S2, USFS/BLM	Eastern Colorado; sandstone soils and gravelly/rocky slopes' associated with juniper woodlands; flowering/fruiting period is April/May	Potential
Golden blazingstar	<i>Nuttallia chrysantha</i>	S2, BLM	Lower Arkansas River Valley; barren slopes of limestone, shale, or alkaline clay; associated with juniper woodlands; flowering/fruiting period is July through September	Potential
Pueblo goldenweed	<i>Oonopsis puebloensis</i>	S2	Freemont and Pueblo counties, Colorado; compacted silty clays to looser rocky and sandy soils in open grasslands; flowering/fruiting period is July	Potential
Roundleaf four o'clock	<i>Oxybaphus rotundifolius</i>	S2	Lower Arkansas River Valley; barren shale outcrops of the Smokey Hill member of the Niobrara Formation in sparse shrublands or piñon/juniper woodlands; flowering/fruiting period is June	Potential
Sandhills goosefoot	<i>Chenopodium cycloides</i>	S1, USFS	Southeast Colorado; sandy soils, frequently found on vegetated edge of sand blowouts; fruiting period is early summer to fall	Potential

Notes:

- ⁽¹⁾ ST = State Threatened, SC = State Special Concern (not a statutory category), USFS = Listed by the U.S. Forest Service, BLM = Listed by the Bureau of Land Management, S1 = CNHP Critically imperiled in Colorado, S2 = CNHP Imperiled in Colorado.

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Appendix J – Wildlife Common and Scientific Names

Table 3. Common and Scientific Names of Terrestrial Wildlife Species

Common Name	Scientific Name
Amphibians	
Bullfrog	<i>Rana catesbeiana</i>
Great Plains toad	<i>Bufo cognatus</i>
New Mexico spadefoot	<i>Spea multiplicata</i>
Tiger salamander	<i>Ambystoma tigrinum</i>
Woodhouse's toad	<i>Bufo woodhousii</i>
Birds	
American avocet	<i>Recurvirostra americana</i>
American coot	<i>Fulica americana</i>
American robin	<i>Turdus migratorius</i>
American kestrel	<i>Falco sparverius</i>
American widgeon	<i>Anas americana</i>
Barn swallow	<i>Hirundo rustica</i>
Black-billed magpie	<i>Pica pica</i>
Blue-winged teal	<i>Anas discors</i>
Bullock's oriole	<i>Icterus bullockii</i>
Cassin's sparrow	<i>Aimophila cassinii</i>
Chickadee	<i>Poecile</i> spp.
Chipping sparrow	<i>Spizella passerina</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Dusky flycatcher	<i>Empidonax oberholseri</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>
Great blue heron	<i>Ardea herodias</i>
Great horned owl	<i>Bubo virginianus</i>
Greater sage grouse	<i>Centrocercus urophasianus</i>
Horned lark	<i>Eremophila alpestris</i>
House sparrow	<i>Passer domesticus</i>
House wren	<i>Troglodytes aedon</i>
Killdeer	<i>Charadrius vociferus</i>
Lark bunting	<i>Calamospiza melanocorys</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lewis's woodpecker	<i>Melanerpes lewis</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning dove	<i>Zenaida macroura</i>
Northern bobwhite	<i>Colinus virginianus</i>
Northern harrier	<i>Circus cyaneus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Rio Grande turkey	<i>Meleagris gallopavo intermedia</i>
Rough-legged hawk	<i>Buteo lagopus</i>

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Table 3. Common and Scientific Names of Terrestrial Wildlife Species (continued)

Common Name	Scientific Name
Scrub jay	<i>Aphelocoma californica</i>
Song sparrow	<i>Melospiza melodia</i>
Spotted sandpiper	<i>Pipilo maculatus</i>
Spotted towhee	<i>Pipilo maculatus</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Tree swallow	<i>Tachycineta bicolor</i>
Western meadowlark	<i>Sturnella neglecta</i>
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
Mammals	
American badger	<i>Taxidea taxus</i>
American beaver	<i>Castor canadensis</i>
American elk	<i>Cervus elaphus</i>
American pronghorn	<i>Antilocapra americana</i>
Black-tailed jackrabbit	<i>Lepus californicus</i>
Coyote	<i>Canis latrans</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Desert cottontail	<i>Sylvilagus audubonii</i>
Hispid pocket mouse	<i>Chaetodipus hispidus</i>
Hoary bat	<i>Lasiurus cinereus</i>
House mouse	<i>Mus musculus</i>
Little brown myotis	<i>Myotis lucifugus</i>
Meadow vole	<i>Microtus pennsylvanicus</i>
Mexican woodrat	<i>Neotoma mexicana</i>
Mule deer	<i>Odocoileus hemionus</i>
Muskrat	<i>Ondatra zibethicus</i>
Northern rock mouse	<i>Peromyscus nasutus</i>
Ord's kangaroo rat	<i>Dipodomys ordii</i>
Plains pocket gopher	<i>Geomys bursarius</i>
Plains pocket mouse	<i>Perognathus flavescens</i>
Prairie vole	<i>Microtus ochrogaster</i>
Pronghorn	<i>Antilocapra americana</i>
Raccoon	<i>Procyon lotor</i>
Red fox	<i>Vulpes vulpes</i>
Silky pocket mouse	<i>Perognathus flavus</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Spotted ground squirrel	<i>Spermophilus spilosoma</i>
Swift fox	<i>Vulpes velox</i>
Thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus</i>
Western harvest mouse	<i>Reithrodontomys megalotis</i>
White-footed mouse	<i>Peromyscus leucopus</i>
White-tailed deer	<i>Odocoileus virginianus</i>

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Table 3. Common and Scientific Names of Terrestrial Wildlife Species (continued)

Common Name	Scientific Name
White-tailed jackrabbit	<i>Lepus townsendii</i>
Reptiles	
Bullsnake	<i>Pituophis catenifer</i>
Eastern fence lizard	<i>Sceloporus undulatus</i>
Northern water snake	<i>Nerodia sipedon</i>
Painted turtle	<i>Chrysemys picta</i>
Plains gartersnake	<i>Thamnophis radix</i>
Short-horned lizard	<i>Phrynosoma hernandesi</i>
Snapping turtle	<i>Chelydra serpentina</i>
Soft-shelled turtle	<i>Apalone spinifera</i>
Western rattlesnake	<i>Crotalus viridis</i>
Western terrestrial gartersnake	<i>Thamnophis elegans</i>
Invertebrates	
Colorado blue butterfly	<i>Euphilotes rita coloradensis</i>

Table 4. Birds of Conservation Concern

Common Name	Scientific Name	Habitat in Project Area
Bald eagle	<i>Haliaeetus leucocephalus</i>	Winters along Arkansas River
Bell's vireo	<i>Vireo bellii</i>	No
Burrowing owl	<i>Athene cunicularia</i>	Potential
Chestnut-collared longspur	<i>Calcarius ornatus</i>	No – Northeast Colorado
Golden eagle	<i>Aquila chrysaetos</i>	Foraging/winter habitat
Lark bunting	<i>Calamospiza melanocorys</i>	Potential
Lesser prairie-chicken	<i>Tympanuchus pallidicinctus</i>	Far eastern edge
Lewis's woodpecker	<i>Melanerpes lewis</i>	No
Long-billed curlew	<i>Numenius americanus</i>	Potential
McCown's longspur	<i>Calcarius mccownii</i>	No – Northeast Colorado
Mountain plover	<i>Charadrius montanus</i>	Potential
Peregrine falcon	<i>Falco peregrinus</i>	West of Lake Pueblo
Prairie falcon	<i>Falco mexicanus</i>	Potential
Snowy plover	<i>Charadrius alexandrinus</i>	Potential
Sprague's pipit	<i>Anthus spragueii</i>	No – Possible migrant
Upland sandpiper	<i>Bartramia longicauda</i>	No – Possible migrant
Willow flycatcher	<i>Empidonax traillii</i>	No

Appendix K.1 – Human Environment

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Appendix K.1 - Human Environment**

Introduction

This appendix presents utilities within the buffer area alternative alignments in Pueblo County and areas east of Pueblo County. Sanitary sewer and water lines used in this analysis were filtered to 10 inches in diameter or larger. Gas lines were filtered to 4 inches in diameter and larger. Storm water utility lines along Highway 50 were filtered to 10 inches in diameter or larger. Storm water utility diameters were not available in other locations. Utility lines less than 10 inches in diameter may also be present and would need to be confirmed prior to construction activities. Table 1 shows the miles of existing utilities within the buffer areas of Pueblo County. Table 2 shows the miles of existing utilities within the buffer areas east of Pueblo County.

Table 1. Pueblo County Utility Lines Within Buffer

Type of Utility	No Action	Comanche North	Pueblo Dam South	JUP North	Pueblo Dam North	River South	Master Contract Only
	Utility Lines (miles)						
Communication	0	5.03	0.70	5.02	5.02	0.87	0
Electric	0	0.80	0.21	0.36	0.36	0.18	0
Fiber Optic	0	2.06	22.54	40.31	40.31	20.97	0
Natural Gas	0	2.02	1.63	15.31	15.34	1.38	0
Irrigated Water	0	n/a	n/a	n/a	n/a	n/a	0
Overhead Utility	0	8.09	23.55	19.84	20.49	19.69	0
Sanitary Sewer	0	1.14	0.52	5.38	5.48	1.02	0
Storm Sewer	0	1.18	1.70	1.90	1.90	0.38	0
Telephone	0	0.15	18.44	4.96	4.96	18.44	0
Water	0	5.10	1.95	15.90	14.54	0.44	0
TOTAL	0	25.57	71.24	108.98	108.40	63.37	0

n/a = not available or not applicable

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Table 2. East of Pueblo County Utility Lines Within Buffer

Type of Utility	No Action	Comanche North	Pueblo Dam South	JUP North	Pueblo Dam North	River South	Master Contract Only
	Utility Lines (miles)						
Communication	n/a	1.01	1.01	1.01	1.01	1.01	n/a
Electric	0.06	0.58	0.74	0.74	0.74	0.16	0.06
Fiber Optic	9.45	69.73	99.88	70.07	70.07	59.91	9.45
Natural Gas	1.93	10.75	15.76	10.63	10.63	11.19	1.93
Irrigated Water	0.10	0.87	0.93	0.87	0.87	0.46	0.10
Overhead Utility	1.61	29.73	37.54	38.64	38.64	21.18	1.61
Sanitary Sewer	0.44	2.98	2.78	2.98	2.98	0.91	0.44
Storm Sewer	0.06	0.10	0.16	0.16	0.16	0.16	0.06
Telephone	2.25	39.46	70.41	39.45	39.45	29.32	2.25
Water	0.06	21.75	12.58	13.06	13.06	10.68	0.06
TOTAL	15.95	176.95	241.78	177.62	177.62	134.99	15.95

n/a = not available or not applicable

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Appendix L.1 supplements the Socioeconomics and Environmental Justice sections of Chapter 3 and Chapter 4 in the EIS.

Personal Income, Employment and Unemployment

Table 1 and Table 2 display the total personal income, earnings by sector, total employment and employment by sector for counties within the analysis area.

Table 1. Personal Income and Earnings

County	Chaffee		Custer		Fremont		El Paso		Pueblo	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Income ⁽¹⁾										
Total Personal Income	\$365,379	\$578,238	\$78,774	\$148,919	\$886,517	1,299,183	\$15,687,908	\$25,420,872	\$3,326,552	\$5,098,818
Earnings By Industry ⁽¹⁾										
Farm	\$1,061	\$1,561	\$618	\$3,413	\$1,109	-\$1,122	\$4,087	-\$4,521	-\$40	\$10,755
Agriculture Serv., Forestry, Fishing, and other support services	\$561	(2)	(2)	(2)	(2)	(2)	\$44,886	\$4,666	\$7,941	(2)
Mining	(2)	\$1,351	\$325	\$241	\$9,636	\$4,749	\$19,281	\$39,340	\$2,569	(2)
Construction	\$27,909	\$31,051	\$10,390	\$14,796	\$65,597	\$42,027	\$980,664	\$830,983	\$187,974	\$264,268
Manufacturing	\$6,819	\$6,314	\$580	\$1,699	\$39,269	\$31,312	\$1,580,509	\$958,325	\$227,094	\$342,374
Wholesale Trade	\$5,208	\$10,121	(2)	\$349	\$5,049	\$7,142	\$356,816	\$378,130	\$56,696	\$72,422
Retail Trade	\$35,306	\$36,055	\$3,956	\$4,554	\$49,349	\$54,461	\$1,155,715	\$1,129,477	\$287,738	\$252,329
Transportation, Utilities, and Communications	\$8,471	\$8,744	\$1,528	(2)	\$22,201	\$28,100	\$1,207,424	\$1,045,088	\$132,427	\$170,739
Finance, Insurance, and Real Estate	\$16,004	\$25,357	\$3,597	\$3,930	\$27,575	\$21,780	\$951,109	\$1,236,944	\$169,695	\$117,448
Services	\$45,394	\$75,332	\$4,051	\$4,271	\$94,389	\$155,471	\$3,762,081	\$4,047,371	\$580,904	\$1,071,496
Earnings by Government ⁽¹⁾										
Federal	\$6,244	\$7,407	\$771	\$1,114	\$79,827	\$116,586	\$582,414	\$1,305,022	\$49,266	\$97,931
State and Local	\$53,892	\$82,054	\$5,528	\$9,301	\$164,295	\$234,155	\$1,075,193	\$1,893,601	\$394,867	\$604,646

Table 1. Personal Income and Earnings (continued)

County	Crowley		Otero		Bent		Prowers		Kiowa	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Income ⁽¹⁾										
Total Personal Income	\$87,818	\$96,092	\$457,769	\$591,802	\$113,485	\$148,919	\$324,276	\$426,481	\$51,475	\$62,260
Earnings By Industry ⁽¹⁾										
Farm	\$23,625	\$3,852	\$18,948	\$27,118	\$8,850	\$21,121	\$37,951	\$43,478	\$23,409	\$16,923
Agriculture Serv., Forestry, Fishing, and other Support Services	(2)	(2)	\$4,792	(2)	(2)	(2)	\$4,208	\$7,357	(2)	(2)
Mining	\$490	(2)	\$490	(2)	\$490	(2)	\$4,100	\$5,620	(2)	(2)
Construction	\$1,063	\$3,347	\$10,037	\$7,607	\$3,373	(2)	\$7,813	\$18,112	(2)	\$2,996
Manufacturing	(2)	(2)	\$20,876	\$21,615	(2)	(2)	\$31,869	\$14,709	(2)	(2)
Wholesale Trade	\$0	(2)	\$12,351	\$12,419	(2)	(2)	\$7,352	\$5,711	\$688	\$779
Retail Trade	\$3,039	\$2,879	\$29,949	\$25,452	\$3,340	\$3,436	\$24,966	\$24,943	\$864	\$825
Transportation, Utilities, and Communications	(2)	(2)	\$31,169	\$29,727	\$1,896	(2)	\$10,491	\$12,591	\$3,251	(2)
Finance, Insurance, and Real Estate	\$1,051	(2)	\$18,749	\$15,365	\$2,530	\$2,628	\$10,924	\$13,694	(2)	(2)
Services	\$12,801	(2)	\$57,340	(2)	\$9,941	(2)	\$40,656	\$44,922	\$932	(2)
Earnings by Government ⁽¹⁾										
Federal	\$690	\$706	\$6,779	\$9,954	\$30,473	\$3,580	\$2,849	\$3,019	\$766	\$1,560
State and Local	\$20,170	\$26,778	\$52,770	\$69,093	\$12,218	\$26,958	\$46,132	\$65,161	\$6,044	\$9,933

Source: U.S. Department of Commerce, Bureau of Economic Analysis 2013

Notes:

- (1) Estimates are in 2011 thousand dollars. Group code designations for industries changed in 2001. Therefore, some data categories are slightly different from 2000 to 2011.
- (2) Not shown to avoid disclosure or confidential information.

Table 2. Total Employment by Sector

County	Chaffee		Custer		Fremont		El Paso		Pueblo	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Farm	309	256	175	218	726	946	1,348	1,568	738	75,876
Agriculture Serv., Forestry, Fishing, and other Support Services	(1)	(1)	(1)	(1)	1,972	(1)	2,941	377	564	(1)
Mining	(1)	132	(1)	41	1,151	126	528	1,622	76	(1)
Construction	1,048	937	329	302	231	1,133	21,317	17,442	5,310	4,882
Manufacturing	313	184	39	74	3,123	636	29,715	13,761	5,117	4,402
Wholesale Trade	228	248	(1)	24	501	188	8,194	5,865	1,669	1,446
Retail Trade	2,135	1,335	297	236	1,303	2,144	55,346	36,791	15,308	8,873
Transportation, Utilities, and Communications	200	211	50	(1)	4,669	713	15,848	14,402	2,780	3,224
Finance, Insurance, and Real Estate	956	1,200	286	354	1,972	1,479	31,340	38,783	5,323	5,561
Services	2,534	3,821	380	(1)	1,151	5,798	102,269	145,769	22,009	32,839
Federal Government	110	87	18	15	1,165	1,128	10,505	13,368	767	1,008
State and Local Government	1,509	1,647	203	229	3,981	4,233	27,727	35,068	10,625	11,850
Total ⁽³⁾	9,519	10,582	1,882	2,386	22,076	19,542	335,778	365,839	70,688	75,876

Table 2. Total Employment by Sector (continued)

County	Crowley		Otero		Bent		Prowers		Kiowa	
	2000	2009	2000	2009	2000	2009	2000	2009	2000	2009
Farm	295	295	690	699	507	455	849	752	506	478
Agriculture Serv., Forestry, Fishing, and other Support Services	(1)	(1)	199	(1)	(1)	(1)	206	217	(1)	(1)
Mining	(2)	(1)	(1)	(1)	(2)	179	111	212	(1)	(1)
Construction	60	59	391	303	94	(1)	258	324	(1)	66
Manufacturing	(1)	28	701	487	(1)	(1)	1,188	363	24	(1)
Wholesale Trade	(2)	(1)	497	310	(1)	(1)	282	130	33	36
Retail Trade	202	122	1,741	971	244	141	1,485	910	84	111
Transportation, Utilities, and Communications	(1)	(1)	671	584	61	(1)	286	331	54	(1)
Finance, Insurance, and Real Estate	75	(1)	641	712	108	184	523	611	(1)	(1)
Services	520	(1)	2,636	1,697	451	(1)	1,406	1,676	76	(1)
Federal Government	17	12	132	123	459	47	59	42	20	24
State and Local Government	515	506	1,857	1,690	505	629	1,499	1,431	243	262
Total ⁽³⁾	1,784	2,021	10,219	9,426	3,410	2,501	8,193	7,220	1,152	1,615

Source: Department of Commerce, Bureau of Economic Analysis 2013

Notes:

- (1) Not shown to avoid disclosure or confidential information, but estimates for these items are included in totals.
(2) Less than 10 jobs, but the estimates for this item are included in the totals.
(3) Summation of Earnings by Industry may not match the total due to confidentiality issues.

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Agriculture

Agricultural and irrigation data from the 2007 and 2002 Census of Agriculture (U.S Department of Agriculture 2002, 2007) are in Table 3 for the counties located within the analysis area.

Table 3. County Agricultural Data

County	Chaffee		Custer		Fremont		El Paso		Pueblo	
	2002	2007	2002	2007	2002	2007	2002	2007	2002	2007
Number of Farms	212	223	158	226	700	924	1,175	1,529	801	881
Average Farm size (acres)	336	356	771	610	378	320	691	403	967	1,034
Total Farm Acreage	71,188	79,405	121,882	137,799	264,650	295,893	811,931	616,418	774,352	910,566
Total Irrigated Land (acres)	8,818	15,139	3,487	18,217	11,882	11,845	10,025	15,915	24,734	24,606
Market Value of Products Sold (in thousands)	\$8,536	\$8,091	\$2,741	\$8,424	\$14,638	\$19,306	\$31,964	\$39,423	\$41,652	\$49,251
Crop Sales (% of total sales)	--	38%	--	27%	--	25%	--	50%	--	32%
Livestock (% of total sales)	--	62%	--	73%	--	75%	--	50%	--	68%
Primary Irrigated Crops (Harvested Acres)										
Corn (grain)	3,733	5,340	--	--	4,093	4,949	4,828	2,087	2,181	3,680
Hay, Alfalfa	2,158	5,121	564	1,300	1,834	3,368	2,169	4,357	8,734	10,243
Hay, other	--	--	3,702	16,500	--	--	--	--	2,194	1,406
Sorghum (grain)	--	--	--	--	--	--	--	--	(1)	114
Wheat (all)	--	--	--	--	--	--	--	--	265	680
County	Crowley		Otero		Bent		Prowers		Kiowa	
	2002	2007	2002	2007	2002	2007	2002	2007	2002	2007
Number of Farms	217	268	488	569	265	311	357	425	531	638
Average Farm size (acres)	1,730	1,684	1,120	1,097	2,777	2,820	2,512	2,254	1,623	1,631
Total Farm Acreage	375,413	451,225	546,396	624,123	735,826	877,142	896,772	957,937	861,778	1,037,336
Total Irrigated Land (acres)	6156	9,849	39,230	55,217	30,219	50,450	3,606	3,266	94,175	103,205
Market Value of Products Sold (in thousands)	\$53,384	\$110,922	\$105,991	\$11,187	\$82,152	\$82,220	\$18,984	\$68,390	\$182,575	\$263,321
Crop Sales (% of total sales)	--	1%	--	24%	--	23%	--	76%	--	31%
Livestock (% of total sales)	--	99%	--	76%	--	77%	--	24%	--	69%
Primary Irrigated Crops (Harvested Acres)										
Corn (grain)	121	553	4,088	9,145	1,340	8,410	83,790	71,990	8,014	19,705
Hay, Alfalfa	3,848	5,821	18,161	29,257	22,080	28,748	(1)	(1)	62,641	53,739
Hay, other	368	818	2,648	2,662	566	2,502	1,040	576	1,577	1,501
Sorghum (grain)	--	(1)	(1)	(1)	692	1,587	(1)	(1)	988	3,596
Wheat (all)	(1)	(1)	2,493	3,398	1,227	3,604	18,889	18,841	11,669	15,652

Source: U.S Department of Agriculture 2002, 2007

Note:

(1) Data not published separately to avoid disclosure of individual operations.

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Minority and Low Income Populations

Table 4 through Table 11 display the minority population that could be affected by each alternative.

Table 4. Analysis Area Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
2	2,470	1,038	Prowers	58.0
3	4,975	3,190	Prowers	35.9
6	1,424	978	Prowers	31.3
7	2,220	1,422	Prowers	35.9
1	2,692	1,600	Pueblo	40.6
10	4,758	1,260	Pueblo	73.5
11	2,834	721	Pueblo	74.6
12	2,126	446	Pueblo	79.0
14	1,375	574	Pueblo	58.3
15	2,025	1,224	Pueblo	39.6
16	1,710	1,198	Pueblo	29.9
17	4,196	2,680	Pueblo	36.1
18	2,176	1,252	Pueblo	42.5
19	1,445	679	Pueblo	53.0
2	1,857	704	Pueblo	62.1
20	2,940	851	Pueblo	71.1
21	1,526	323	Pueblo	78.8
22	1,650	593	Pueblo	64.1
23	3,476	1,433	Pueblo	58.8
24	1,928	706	Pueblo	63.4
25	2,782	1,162	Pueblo	58.2
26	3,880	1,484	Pueblo	61.8
27	5,434	2,357	Pueblo	56.6
28.01	5,268	2,179	Pueblo	58.6
28.02	3,586	1,933	Pueblo	46.1
28.04	4,661	4,006	Pueblo	14.1
28.06	3,519	2,538	Pueblo	27.9
28.07	4,430	2,343	Pueblo	47.1
28.08	2,989	1,910	Pueblo	36.1
29.01	2,914	979	Pueblo	66.4
29.03	5,901	3,240	Pueblo	45.1
29.06	3,905	3,101	Pueblo	20.6
29.11	2,611	1,974	Pueblo	24.4
29.12	1,689	1,085	Pueblo	35.8
29.13	3,318	2,574	Pueblo	22.4
29.14	3,210	2,062	Pueblo	35.8

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Table 5. Analysis Area Minority Population Data (continued)

Census Tract No.	Total Population	Minority Population	County	Percent minority
29.15	2,525	1,752	Pueblo	30.6
29.16	3,004	2,131	Pueblo	29.1
29.17	2,935	2,133	Pueblo	27.3
29.18	6,646	4,883	Pueblo	26.5
3	1,332	711	Pueblo	46.6
30.01	1,244	710	Pueblo	42.9
30.04	2,721	1,903	Pueblo	30.1
31.03	1,885	809	Pueblo	57.1
31.04	2,210	1,523	Pueblo	31.1
31.05	3,204	2,291	Pueblo	28.5
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
35	2,374	1,060	Pueblo	55.3
36	2,196	1,002	Pueblo	54.4
4	2,602	1,345	Pueblo	48.3
5	2,204	1,270	Pueblo	42.4
6	2,153	831	Pueblo	61.4
8	3,031	866	Pueblo	71.4
9.02	5,802	2,477	Pueblo	57.3
9.03	777	436	Pueblo	43.9
9.04	4,350	2,487	Pueblo	42.8
9.05	2,202	1,086	Pueblo	50.7
9801	---	---	Pueblo	-
Total	204,165	113,071	---	44.6

Data Source: U.S. Census Bureau 2010

Table 6. No Action Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9696	5,823	3,369	Crowley	42.1
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9684	1,119	698	Otero	37.6
9683	3,819	2,469	Otero	35.3
9686	5,018	2,285	Otero	54.5
9680	1,617	1,314	Otero	18.7
9685	1,832	1,427	Otero	22.1
9667	6,499	3,832	Bent	41.0
7	2,220	1,422	Prowers	35.9
2	2,470	1,038	Prowers	58.0
1	1,462	1,245	Prowers	14.8
3	4,975	3,190	Prowers	35.9
6	1,424	978	Prowers	31.3
36	2,196	1,002	Pueblo	54.4
Total	45,900	26,715	---	41.8

Data Source: U.S. Census Bureau 2010

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Table 7. Comanche North Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
7	2,220	1,422	Prowers	35.9
16	1,710	1,198	Pueblo	29.9
17	4,196	2,680	Pueblo	36.1
2	1,857	704	Pueblo	62.1
28.02	3,586	1,933	Pueblo	46.1
28.06	3,519	2,538	Pueblo	27.9
28.07	4,430	2,343	Pueblo	47.1
28.08	2,989	1,910	Pueblo	36.1
29.01	2,914	979	Pueblo	66.4
31.04	2,210	1,523	Pueblo	31.1
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
36	2,196	1,002	Pueblo	54.4
Total	70,695	41,798	---	40.9

Data Source: U.S. Census Bureau 2010

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Table 8. Pueblo Dam South Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
7	2,220	1,422	Prowers	35.9
16	1,710	1,198	Pueblo	29.9
18	2,176	1,252	Pueblo	42.5
19	1,445	679	Pueblo	53.0
20	2,940	851	Pueblo	71.1
21	1,526	323	Pueblo	78.8
28.02	3,586	1,933	Pueblo	46.1
28.06	3,519	2,538	Pueblo	27.9
31.03	1,885	809	Pueblo	57.1
31.04	2,210	1,523	Pueblo	31.1
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
36	2,196	1,002	Pueblo	54.4
Total	64,281	37,096	---	42.3

Data Source: U.S. Census Bureau 2010

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Table 9. JUP North Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
7	2,220	1,422	Prowers	35.9
10	4,758	1,260	Pueblo	73.5
2	1,857	704	Pueblo	62.1
28.06	3,519	2,538	Pueblo	27.9
29.01	2,914	979	Pueblo	66.4
29.17	2,935	2,133	Pueblo	27.3
3	1,332	711	Pueblo	46.6
30.01	1,244	710	Pueblo	42.9
31.05	3,204	2,291	Pueblo	28.5
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
35	2,374	1,060	Pueblo	55.3
36	2,196	1,002	Pueblo	54.4
6	2,153	831	Pueblo	61.4
8	3,031	866	Pueblo	71.4
9.02	5,802	2,477	Pueblo	57.3
Total	78,407	42,550	---	45.7

Data Source: U.S. Census Bureau 2010

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Table 10. Pueblo Dam North Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
7	2,220	1,422	Prowers	35.9
10	4,758	1,260	Pueblo	73.5
2	1,857	704	Pueblo	62.1
28.06	3,519	2,538	Pueblo	27.9
29.01	2,914	979	Pueblo	66.4
29.17	2,935	2,133	Pueblo	27.3
3	1,332	711	Pueblo	46.6
30.01	1,244	710	Pueblo	42.9
31.05	3,204	2,291	Pueblo	28.5
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
35	2,374	1,060	Pueblo	55.3
36	2,196	1,002	Pueblo	54.4
6	2,153	831	Pueblo	61.4
8	3,031	866	Pueblo	71.4
9.02	5,802	2,477	Pueblo	57.3
Total	78,407	42,550	---	45.7

Data Source: U.S. Census Bureau 2010

Table 11. River South Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	6,499	3,832	Bent	41.0
9696	5,823	3,369	Crowley	42.1
9601	1,398	1,304	Kiowa	6.7
9680	1,617	1,314	Otero	18.7
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9683	3,819	2,469	Otero	35.3
9684	1,119	698	Otero	37.6
9685	1,832	1,427	Otero	22.1
9686	5,018	2,285	Otero	54.5
1	1,462	1,245	Prowers	14.8
7	2,220	1,422	Prowers	35.9
14	1,375	574	Pueblo	58.3
20	2,940	851	Pueblo	71.1
31.03	1,885	809	Pueblo	57.1
31.04	2,210	1,523	Pueblo	31.1
31.06	1,283	728	Pueblo	43.3
32	3,572	2,449	Pueblo	31.4
36	2,196	1,002	Pueblo	54.4
Total	51,694	29,747	---	42.5

Data Source: U.S. Census Bureau 2010

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Table 12. Master Contract Only Alternative Minority Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9696	5,823	3,369	Crowley	42.1
9681	2,718	803	Otero	70.5
9682	2,708	1,643	Otero	39.3
9684	1,119	698	Otero	37.6
9683	3,819	2,469	Otero	35.3
9686	5,018	2,285	Otero	54.5
9680	1,617	1,314	Otero	18.7
9685	1,832	1,427	Otero	22.1
9667	6,499	3,832	Bent	41.0
7	2,220	1,422	Prowers	35.9
2	2,470	1,038	Prowers	58.0
1	1,462	1,245	Prowers	14.8
3	4,975	3,190	Prowers	35.9
6	1,424	978	Prowers	31.3
36	2,196	1,002	Pueblo	54.4
Total	45,900	26,715	---	41.8

Data Source: U.S. Census Bureau 2010

Table 12 through Table 19 display the low-income population that could be affected by each alternative.

Table 13. Analysis Area Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
2	2,273	795	Prowers	35.0
3	4,803	936	Prowers	19.5
6	1,264	331	Prowers	26.2
7	2,396	386	Prowers	16.1
1	2,757	531	Pueblo	19.3
10	4,727	2,081	Pueblo	44.0
11	2,246	741	Pueblo	33.0
12	2,022	724	Pueblo	35.8
14	1,296	344	Pueblo	26.5
15	2,192	530	Pueblo	24.2
16	1,609	197	Pueblo	12.2
17	4,309	472	Pueblo	11.0
18	2,387	447	Pueblo	18.7
19	1,629	257	Pueblo	15.8
2	1,902	610	Pueblo	32.1
20	3,041	1,064	Pueblo	35.0
21	1,638	500	Pueblo	30.5

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Table 14. Analysis Area Low-Income Population Data (continued)

Census Tract No.	Total Population	Minority Population	County	Percent minority
22	1,509	358	Pueblo	23.7
23	3,499	1,136	Pueblo	32.5
24	1,900	236	Pueblo	12.4
25	2,561	853	Pueblo	33.3
26	3,271	1,230	Pueblo	37.6
27	5,380	1,069	Pueblo	19.9
28.01	5,359	349	Pueblo	6.5
28.02	3,919	411	Pueblo	10.5
28.04	3,564	712	Pueblo	20.0
28.06	3,494	131	Pueblo	3.7
28.07	4,352	211	Pueblo	4.8
28.08	2,993	26	Pueblo	0.9
29.01	2,962	1,220	Pueblo	41.2
29.03	6,375	508	Pueblo	8.0
29.06	4,004	196	Pueblo	4.9
29.11	2,597	170	Pueblo	6.5
29.12	2,025	553	Pueblo	27.3
29.13	3,439	92	Pueblo	2.7
29.14	3,423	207	Pueblo	6.0
29.15	2,446	474	Pueblo	19.4
29.16	3,066	360	Pueblo	11.7
29.17	2,725	140	Pueblo	5.1
29.18	5,521	292	Pueblo	5.3
3	20	15	Pueblo	75.0
30.01	1,413	243	Pueblo	17.2
30.04	2,295	228	Pueblo	9.9
31.03	2,098	246	Pueblo	11.7
31.04	2,375	163	Pueblo	6.9
31.05	3,004	351	Pueblo	11.7
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
35	1,822	655	Pueblo	35.9
36	1,688	391	Pueblo	23.2
4	2,470	343	Pueblo	13.9
5	2,289	410	Pueblo	17.9
6	1,803	556	Pueblo	30.8
8	3,130	1,035	Pueblo	33.1
9.02	5,520	1,380	Pueblo	25.0
9.03	89	23	Pueblo	25.8
9.04	4,425	857	Pueblo	19.4
9.05	2,225	672	Pueblo	30.2
9801	---	---	Pueblo	---
Total	193,466	36,213	---	18.7

Data Source: U.S. Census Bureau 2010

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Table 15. No Action Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9696	3,602	664	Crowley	18.4
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9684	1,143	293	Otero	25.6
9683	3,503	475	Otero	13.6
9686	4,908	1,724	Otero	35.1
9680	1,464	197	Otero	13.5
9685	1,586	189	Otero	11.9
9667	4,542	944	Bent	20.8
7	2,396	386	Prowers	16.1
2	2,273	795	Prowers	35.0
1	1,465	55	Prowers	3.8
3	4,803	936	Prowers	19.5
6	1,264	331	Prowers	26.2
36	1,688	391	Pueblo	23.2
Total	40,139	9,152	---	22.8

Data Source: U.S. Census Bureau 2010

Table 16. Comanche North Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent Minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
7	2,396	386	Prowers	16.1
16	1,609	197	Pueblo	12.2
17	4,309	472	Pueblo	11.0
2	1,902	610	Pueblo	32.1
28.02	3,919	411	Pueblo	10.5
28.06	3,494	131	Pueblo	3.7
28.07	4,352	211	Pueblo	4.8
28.08	2,993	26	Pueblo	0.9
29.01	2,962	1,220	Pueblo	41.2
31.04	2,375	163	Pueblo	6.9
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
36	1,688	391	Pueblo	23.2
Total	65,924	10,983	---	16.7

Data Source: U.S. Census Bureau 2010

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Table 17. Pueblo Dam South Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
7	2,396	386	Prowers	16.1
16	1,609	197	Pueblo	12.2
18	2,387	447	Pueblo	18.7
19	1,629	257	Pueblo	15.8
20	3,041	1,064	Pueblo	35.0
21	1,638	500	Pueblo	30.5
28.02	3,919	411	Pueblo	10.5
28.06	3,494	131	Pueblo	3.7
31.03	2,098	246	Pueblo	11.7
31.04	2,375	163	Pueblo	6.9
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
36	1,688	391	Pueblo	23.2
Total	60,199	10,958	---	18.2

Data Source: U.S. Census Bureau 2010

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Table 18. JUP North Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
7	2,396	386	Prowers	16.1
10	4,727	2,081	Pueblo	44.0
2	1,902	610	Pueblo	32.1
28.06	3,494	131	Pueblo	3.7
29.01	2,962	1,220	Pueblo	41.2
29.17	2,725	140	Pueblo	5.1
3	20	15	Pueblo	75.0
30.01	1,413	243	Pueblo	17.2
31.05	3,004	351	Pueblo	11.7
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
35	1,822	655	Pueblo	35.9
36	1,688	391	Pueblo	23.2
6	1,803	556	Pueblo	30.8
8	3,130	1,035	Pueblo	33.1
9.02	5,520	1,380	Pueblo	25.0
Total	70,531	15,959	---	22.6

Data Source: U.S. Census Bureau 2010

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Table 19. Pueblo Dam North Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
7	2,396	386	Prowers	16.1
10	4,727	2,081	Pueblo	44.0
2	1,902	610	Pueblo	32.1
28.06	3,494	131	Pueblo	3.7
29.01	2,962	1,220	Pueblo	41.2
29.17	2,725	140	Pueblo	5.1
3	20	15	Pueblo	75.0
30.01	1,413	243	Pueblo	17.2
31.05	3,004	351	Pueblo	11.7
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
35	1,822	655	Pueblo	35.9
36	1,688	391	Pueblo	23.2
6	1,803	556	Pueblo	30.8
8	3,130	1,035	Pueblo	33.1
9.02	5,520	1,380	Pueblo	25.0
Total	70,531	15,959	---	22.6

Data Source: U.S. Census Bureau 2010

Table 20. River South Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9667	4,542	944	Bent	20.8
9696	3,602	664	Crowley	18.4
9601	1,708	223	Kiowa	13.1
9680	1,464	197	Otero	13.5
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9683	3,503	475	Otero	13.6
9684	1,143	293	Otero	25.6
9685	1,586	189	Otero	11.9
9686	4,908	1,724	Otero	35.1
1	1,465	55	Prowers	3.8
7	2,396	386	Prowers	16.1
14	1,296	344	Pueblo	26.5
20	3,041	1,064	Pueblo	35.0
31.03	2,098	246	Pueblo	11.7
31.04	2,375	163	Pueblo	6.9
31.06	1,334	44	Pueblo	3.3
32	3,168	185	Pueblo	5.8
36	1,688	391	Pueblo	23.2
Total	46,819	9,359	---	20.0

Data Source: U.S. Census Bureau 2010

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Table 21. Master Contract Only Alternative Low-Income Population Data

Census Tract No.	Total Population	Minority Population	County	Percent minority
9696	3,602	664	Crowley	18.4
9681	2,697	1,163	Otero	43.1
9682	2,805	609	Otero	21.7
9684	1,143	293	Otero	25.6
9683	3,503	475	Otero	13.6
9686	4,908	1,724	Otero	35.1
9680	1,464	197	Otero	13.5
9685	1,586	189	Otero	11.9
9667	4,542	944	Bent	20.8
7	2,396	386	Prowers	16.1
2	2,273	795	Prowers	35.0
1	1,465	55	Prowers	3.8
3	4,803	936	Prowers	19.5
6	1,264	331	Prowers	26.2
36	1,688	391	Pueblo	23.2
Total	40,139	9,152	---	22.8

Data Source: U.S. Census Bureau 2010

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This appendix presents a list of tribes and associated correspondence regarding the EIS, and the distribution list for the Final EIS.

Native American Consultation

The following tribes and contacts were requested to provide assistance in identifying Indian Trust Assets within the area of potential effects (letter dated June 20, 2011):

Mr. Alonzo Chalepah, Chairman
Apache Tribe of Oklahoma
PO Box 1220
Anadarko, OK 73005

Mr. Johnny Wakua, Chairman
Comanche Nation of Oklahoma
PO Box 908
Lawton, OK 73502

Levi Pesata
Jicarilla Apache Nation
PO Box 507
Dulce, NM 87528

Mr. Donnie Tofpi, Chairman
Kiowa Tribe of Oklahoma
PO Box 369
Carnegie, OK 73015.

Norman Willow, Councilman
Northern Arapaho Tribe
PO Box 396
Ft. Washakie, WY 82514

Bureau of Indian Affairs
Southern Plains Regional Office
WCD Office Complex
P.O. Box 368
Anadarko, OK 73005

Janice Boswell, Governor
Cheyenne-Arapaho Tribe of
Oklahoma
PO Box 38
Concho, OK 73022

Bureau of Indian Affairs
Rocky Mountain Regional Office
316 N 26th Street
Billings, MT 59101

Leroy Spang, President
Northern Cheyenne Tribe
PO Box 128
Lame Deer, MT 59043

Bureau of Indian Affairs
Southwest Regional Office
1001 Indian School Road, NW
Albuquerque, NM 87104

In consultation with the Colorado State Historic Preservation Office (SHPO), Reclamation transmitted a letter and the Class I cultural resource report to define the Area of Potential Effect [36 CFR 800.4(a) (1)] and identify any entities [36 CFR 800.3(f)] entitled to be consulting parties and invite them to participate (letter dated January 17, 2012):

Mr. Darrin Cisco
Apache Tribe of Oklahoma
PO Box 1330
Anadarko, OK 73005

Ms. April Darrow
Fort Sill Apache
Rt 2, Box 121
Apache, OK 73006

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Dr. Jeffrey Blythe
THPO
Jicarilla Apache
PO Box 507
Dulce, NM 87528

Ms. Holly Boughton
THPO
Mescalero Apache
PO Box 227
Mescalero, NM 88340

Ms. Darlene Conrad
THPO
Northern Arapaho Tribe
PO Box 396
Ft Washakie, WY 82514

Mr. Conrad Fisher
THPO
Northern Cheyenne Tribe
PO Box 128
Lame Deer, MT 59043

Ms. Lynette Gray
THPO
Cheyenne-Arapaho Tribe of
Oklahoma
PO Box 38
Concho, OK 73022

Mr. Jimmy Arterberry
THPO
Comanche Nation of Oklahoma
PO Box 908
Lawton, OK 73502

Mr. Dale Old Horn
THPO
Crow Nation
PO Box 159
Crow Agency, MT 59022

Ms. JameLynn Eskew
Kiowa Tribe of Oklahoma
PO Box 369
Carnegie, OK 73015

Cultural Resource Coordinator
Ohkay Owingeh
PO Box 1099
San Juan Pueblo, NM 87566

Mr. Gordon Adams
THPO
Pawnee Nation of Oklahoma
PO Box 470
Pawnee, OK 74058

Mr. Walter Cristobal
THPO
Pueblo of Santa Ana
02 Dove Rd, Cultural Resources
Dept
Santa Ana Pueblo, NM 87004

Mr. Ben Chavarria
Cultural Resource Coordinator
Pueblo of Santa Clara
PO Box 580
Española, NM 87532

Mr. Vernon Garcia
Pueblo de Cochiti
PO Box 70
Cochiti, NM 87072

Cultural Resource Coordinator
Pueblo of San Ildefonso
Route 5, Box 315-A
Santa Fe, NM 87501

Mr. Kurt Dongoske
THPO
Zuni Pueblo
PO Box 1149
Zuni Pueblo, NM 87327

Mr. Wilford Ferris
THPO
Eastern Shoshone
PO Box 538
Ft. Washakie, WY 82514

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Mr. Wilmer Mesteth
THPO
Oglala Sioux
PO Box 419
Pine Ridge, SD 57770

Ms. Was'teWin Young
THPO
Standing Rock Sioux
PO Box D
Fort Yates, ND 58538

Ms. Wanda Wells
THPO
Crow Creek Sioux
PO Box 50
Fort Thompson, SD 57339

Ms. Stacey Oberley
Southern Ute
PO Box 737
Ignacio, CO 81137

Mr. Russell Eagle Bear
THPO
Rosebud Sioux
PO Box 809
Rosebud, SD 57570

Mr. Terry Knight
THPO
Ute Mountain Ute
PO Box 468
Towaoc, CO 81334

The following Tribes were invited to participate in Section 106 Consultation. Tribes with an asterisk (*) were invited to be a concurring party in the programmatic agreement. The tribes were identified using the Department of Housing and Urban Development Tribal Directory Assessment Tool endorsed by the Advisory Council on Historic Preservation.

Mr. Alonzo Chalepah*
Acting Chairman
Apache Tribe of Oklahoma
P.O. Box 1220
Anadarko, OK 73005

Ms. Holly Boughton
THPO Mescalero Apache
P.O. Box 227
Mescalero, NM 88340

Mr. Darrin Cisco
Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

Mr. Jim Shakespeare*
Chairman Arapaho Tribe of the
Wind River Reservation
P.O. Box 396
Ft. Washakie, WY 82514

Ms. April Darrow
Fort Sill Apache
Rt. 2, Box 121
Apache, OK 73006

Ms. Darlene Conrad
THPO Northern Arapaho Tribe
P.O. Box 396
Ft. Washakie, WY 82514

Dr. Jeffrey Blythe
THPO Jicarilla Apache
P.O. Box 507
Dulce, NM 87528

Mr. Floyd Azure*
Chairman Assiniboine and Sioux
Tribes of the Fort Peck Indian
Reservation
P.O. Box 1027
Poplar, MT 59255

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Mr. Leroy Spang*
President Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Mr. Conrad Fisher
THPO Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Ms. Lynette Gray
THPO Cheyenne-Arapaho Tribe of
Oklahoma
P.O. Box 38
Concho, OK 73022

Ms. Janice Boswell*
Governor
Cheyenne and Arapaho Tribes
Oklahoma
P.O. Box 38
Concho, OK 73022

Mr. Johnny Wauqua*
Chairman Comanche Nation
P.O. Box 908
Lawton, OK 73502

Mr. Jimmy Arterberry
THPO Comanche Nation of
Oklahoma
P.O. Box 908
Lawton, OK 73502

Mr. Dale Old Horn
THPO Crow Nation
P.O. Box 159
Crow Agency, MT 59022

Mr. Ronald D Twohatchet*
Kiowa Tribe of Oklahoma
Chairperson
P.O. Box 369
Carnegie, OK 73015

Ms. Jame Lynn Eskew
Kiowa Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Cultural Resource Coordinator
Ohkay Owingeh
P.O. Box 1099
San Juan Pueblo, NM 87566

Mr. Gordon Adams
THPO Pawnee Nation of Oklahoma
P.O. Box 470
Pawnee, OK 74058

Mr. Walter Cristobal
THPO Pueblo of Santa Ana
02 Dove Rd, Cultural Resources
Dept.
Santa Ana Pueblo, NM 87004

Mr. Ben Chavarria
Cultural Resource Coordinator
Pueblo of Santa Clara
P.O. Box 580
Española, NM 87532

Mr. Vernon Garcia
Pueblo de Cochiti
P.O. Box 70
Cochiti, NM 87072

Cultural Resource Coordinator
Pueblo of San Ildefonso
Route 5, Box 315-A
Santa Fe, NM 87501

Mr. Kurt Dongoske
THPO Zuni Pueblo
P.O. Box 1149
Zuni Pueblo, NM

Mr. Wilford Ferris
THPO Eastern Shoshone
P.O. Box 538
Ft. Washakie, WY 82514

**Arkansas Valley Conduit Environmental Impact Statement
Appendix M.1 – Consultation and Distribution Lists**

Mr. Wilmer Mesteth
THPO Oglala Sioux
P.O. Box 419
Pine Ridge, SD 57770

Ms. Was'teWin Young
THPO Standing Rock Sioux
P.O. Box D
Fort Yates, ND 58538

Ms. Wanda Wells
THPO Crow Creek Sioux
P.O. Box 50
Fort Thompson, SD 57339

Ms. Stacey Oberley
Southern Ute
P.O. Box 737
Ignacio, CO 81137

Mr. Russell Eagle Bear
THPO Rosebud Sioux
P.O. Box 809
Rosebud, SD 57570

Mr. Terry Knight
THPO Ute Mountain Ute
P.O. Box 468
Towaoc, CO 81334

**Arkansas Valley Conduit Environmental Impact Statement
Appendix M.1 – Consultation and Distribution Lists**

Distribution List

The entities listed below were notified via mail or e-mail regarding the availability of the Draft and/or Final EIS.

U.S. Federal Agencies and Officials

Air Force

Phyllis Duff

Army

Cathy Akins

Army Corps of Engineers

Joshua Carpenter

Jeremy Decker

Karen Downey

Gregory Everhart

Dana Price

Van Truan

Jonathan Van Hoose

Lt. Col. Jason Williams

Bureau of Reclamation

Howard Bailey

Gary Campbell

Mike Collins

Tony Curtis

Gary Davis

Doug Epperly

Andrew Gilmore

Jaci Gould

Tyler Johnson

Kara Lamb

Elizabeth McPhillips

Tim Meyer

Carlie Ronca

Chuck Pedersen

Roxanne Peterson

Sara Salber

Signe Snortland

Peter Soeth

Valda Terauds

Karl Thiel

James Van Schaar

Roy Vaughan

Colorado Congressional Delegation

Honorable Michael Bennet – Senator

Honorable Cory Gardner –
Representative

Honorable Doug Lamborn –
Representative

Honorable Scott Tipton –
Representative

Honorable Mark Udall – Senator

Environmental Protection Agency

Suzanne Bohan

Julie Kinsey

Deborah Lebow

Maggie Pierce

Brent Truskowski

Melanie Wasco

Michael Wenstrom

Department of Agriculture

Joe Kost

Delores Sanchez Maes

Federal Highway Administration

Douglas Bennett

National Park Service

Cheryl Eckhardt

Michael Elliott

Jeff Hughes

Alexa Roberts

**Natural Resources Conservation
Service**

John Knapp

Patty Knupp

Rich Rhoades

Lorenz Sutherland

**Arkansas Valley Conduit Environmental Impact Statement
Appendix M.1 – Consultation and Distribution Lists**

U.S. Fish and Wildlife Service

Susan Linner
Adam Misztal

U.S. Forest Service

Misty DeSalvo
Michelle Stevens

U.S. Geological Survey

David Mau
Rodger Ortiz

Rural Development

Gigi Dennis

State Agencies and Officials

Colorado

Joseph Barth – Colorado Parks and
Wildlife
Craig Clark – Colorado Department of
Transportation
Donna Davis – Department of Public
Health and Environment
Mardell DeDomenico – District Water
Court, Division 2
Todd Doherty – Colorado Water
Conservation Board
Mike Dowd – Colorado Parks and
Wildlife
James Ecklund – Colorado Water
Conservation Board
Paul Foutz – Colorado Parks and
Wildlife
Deb Frazier – Department of Natural
Resources
Don Garcia – Colorado Department of
Transportation
Timothy Gates – Colorado State
University
John Geerdes – Colorado Parks and
Wildlife
John Gillogley – Department of
Corrections
Mary Halstead – Colorado Division of
Water Resources

Brad Henley – Colorado Parks and
Wildlife
Greg Hobbs – Colorado Supreme Court
Diane Hoppe – Colorado Water
Conservation Board
Mike King – Department of Natural
Resources
Ard Kirt – Colorado Parks and Wildlife
Ken Knope – Department of Public
Health and Environment
Doug Kreiger – Colorado Parks and
Wildlife
Ann Lopkoff – Colorado Water and
Power Development Authority
David Lovell – Colorado Parks and
Wildlife
Vicki Milano – Colorado Parks and
Wildlife
Rebecca Mitchell – Colorado
Department of Natural Resources
Monique Mullis – Colorado Parks and
Wildlife
Edward C. Nichols – State Historic
Preservation Officer
Del Nimmo – Colorado State University,
Pueblo
Dan Prenzlów – Colorado Parks and
Wildlife
Michael Rendon – Fort Lewis College
Ji Rogers – Arkansas River Compact
Administration (Colorado)
Kirk Russell – Colorado Water
Conservation Board
Honorable Larry Schwartz – 10th
Judicial District
Jack Seilheimer – Colorado State
University, Pueblo
Lisa Streisfield – Colorado Department
of Transportation
John Stulp – Governor’s Office
Don Sullivan – Colorado State
University, Pueblo
Kelley Thompson – Colorado Division
of Water Resources
John Tonko – Colorado Parks and
Wildlife

Arkansas Valley Conduit Environmental Impact Statement

Appendix M.1 – Consultation and Distribution Lists

Bill Tyner – Colorado Division of Water Resources
Joe Trevizo – Colorado Department of Transportation
Jim Valliant – Colorado State University Cooperative Extension
John Weiner – University of Colorado
Madeleine West – Department of Natural Resources
Steve Witte – Division of Water Resources
Dick Wolfe – Division of Water Resources

Kansas

Lawrence Gennette
David Barfield – Kansas Division of Water Resources
Chris Beightel – Kansas Division of Water Resources
Rachel Duran – Kansas Division of Water Resources
Kevin Salter – Kansas Division of Water Resources

Participants

Shirley Adams – Town of Manzanola
Tobe Allumbaugh – Crowley County
Carla Quezada – Lower Arkansas Valley Water Conservancy District
Jennifer Baker – Town of Sugar City
Ken Baker – Upper Arkansas Water Conservancy District
Bob Barnhart – West Holbrook Pipeline
Jerry Bay – East End Water Company
Barbara Berry – Town of Boone
Steve Berry – Colorado Springs Utilities
Terry Book – Board of Water Works of Pueblo
Van Brown – Town of Eads Water and Sanitation
Cynthia Crouch – Town of Ordway
Herman Darrell – Newdale Grand Valley/Hilltop Water Company
Rick Dell – Town of Swink
Deb Devore – Town of Olney Springs

John Dorsh – Saint Charles Mesa Water District
Brett Dougherty – Bents Fort Water Association
Scott Eilert – Pueblo West Metropolitan District
Leslie Feik – Patterson Valley Water Company
Mike Fink – City of Fountain
Clay Fitzsimmons – AVC Advisory Committee St. Charles Mesa Water District
Kristen Flannery – Colorado Springs Utilities
Sam Fosdick – Valley Water Company
Mike French – Pueblo West Metropolitan District
Corrin Garcia – City of Florence
Ron Gasser – Penrose Water District
Lynden Gill – Lower Arkansas Valley Water Conservancy District
Brett Gracely – Colorado Springs Utilities
Nicholas Gradisar – Board of Water Works of Pueblo
Jack Hall – Beehive Water Association
Bob Hancock – Formerly Hancock Water Inc.
Keith Hannan – 96 Pipeline Company
Hans Hansen – South Side Water Association
Bob Hartzman – City of Canon City
Roy Heald – Security Water District
Darrell Herman – West Grand Valley Water Inc.
Shirley Herman – Hilltop Water Company
Matthew Heimerch – AVC Advisory Committee Crowley County
Daniel Higgins – Pueblo West Metro District
Chuck Hitchcock – City of Fowler
Calvin Hostetler – Patterson Valley Water Company
John Hostetler – South Swink Water
Dave Howard – Town of Cheraw

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Appendix M.1 – Consultation and Distribution Lists**

Scott Howell – Colorado Springs Utilities	Bill and Jo Rich – Hasty Water Company
Lee Huffstetter – Board of Water Works of Pueblo	Keith Riley – Colorado Springs Utilities
Daniel Hyatt – Town of Fowler	Jim Robinson – City of Florence
Jack Johnston – Pueblo West Metro District	Gerald Ross – Town of Sugar City
Joe Kelley – City of La Junta	Janet Rummel – Colorado Springs Utilities
Rick Klein – City of La Junta	Julie Roesch – McClave Water Association
Jerry LaStrange – Town of Poncha Springs	Chris Sandoval – City of Lamar
Greg Lamont – Pueblo West Metro District	Terry Scanga – Upper Arkansas Water Conservancy District
Kevin Lindahl – Eureka Water	Claude Schultz – May Valley Water Association
John Lyons – Town of Rocky Ford	John Schweizer – Fayette Water Association
Dara MacDonald – City of Salida	Scott Shewey – Colorado Springs Utilities
Leroy Mauch – AVC Advisory Committee Prowers County	Greg Smith – City of Poncha Springs
Bruce McCormick – Colorado Springs Utilities	John Sutherland – City of Lamar
Bill McCurdy – AVC Advisory Committee Crowley County	Len Talkington – Crowley County Water Association
Curtis Mitchell – City of Fountain	Ken Wagner – City of Las Animas
Doug Montgomery – City of Lamar	Alan Ward – Pueblo Board of Water Works
Pete Moore – Lower Arkansas Valley Water Conservancy District	Steve Watkins – South Side Water Association
Denise Mosher – North Holbrook Water Company	Kelcie Weiss – Patterson Valley Water Company
Mark Murphy – Colorado Springs Utilities	Wayne Whittaker – City of Rocky Ford/Catlin Canal Company
Albert Muth – West Grand Valley Water Inc.	Dori Williams – City of Florence
Norman Noe – Homestead Improvement Association, South Swink Water	Darla Wyeno – Town of Crowley
Abby Ortega – Colorado Springs Utilities	Carol Wilson – Valley Water Company
Lonnie Oversole – City of Salida	Debbie Watson – Town of Wiley
Mike Patterson – City of Florence	Steve Wilson – Widefield Water/Sanitation District
Mark Pifher – Colorado Springs Utilities	Jay Winner – Lower Arkansas Valley Water Conservancy District
Bert Potestio – Avondale Water	Gail Zimmerman – Newdale Grand Valley
Vernon Proctor – Patterson Valley Water Company	
Ralph Ravenscroft – Stratmoor Hills Water District	
Terry Ray – Town of Boone	

Arkansas Valley Conduit Environmental Impact Statement

Appendix M.1 – Consultation and Distribution Lists

Southeastern

Christine Arbogast
Edward Bailey (Past Director)
Gary Bostrom (Director)
Jim Broderick (Executive Director)
Reed Dils (Director)
Carl Genova (Past Director)
Tom Goodwin (Director)
Alan Hamel (Advisory Board, Past Director)
Bob Hamilton - Southeastern
Gibson Hazard (Director)
Greg Johnson (Director)
Kevin Karney (Director)
Ray Kogovsek
Bill Long (Director, President)
Leroy Mauch (AVC Advisory Committee Prowers County, Past Director)
Carl McClure (Director)
Kevin Meador
Margie Medina
Bill Milenski (Past Director)
Howard Miller (Director)
Lee Miller
Harold Miskel (Director, Vice President)
Ann Nichols (Director, Treasurer)
Vera Ortegon (Director, Secretary)
Lissa Pinello (Past Director)
Leonard Pruett (Director)
Scott Reed (Past Director)
David Simpson (Director)
Lee Simpson (Past Director)
David Shohet (Past Director)
W.R. Stealey (Past Director)
Orville Tomky (Past Director)
Jean Van Pelt
Shawn Yoxey (Director)

Other Local Agencies and Officials

Tobe Allumbaugh – Crowley County
Joan Armstrong – Pueblo County
Sam Azad – City of Pueblo
Steve Bach – Colorado Springs
Jim Baldwin – Otero County
Elizabeth Baston – Colorado Springs

Jack Benson – City of Manitou Springs
Michael Bordogna – Lake County
Wade Broadhead – City of Pueblo
Ronda Bucholz – Las Animas Historic Preservation Advisory Board
Bryan Bryant – Otero County
Frank Bryant – Bent County
Karen Crumbaker – Custer County Extension
Rochelle Cruz – Pueblo County
Jo Dorenkamp – Prowers County
Scott Duff – Otero County
Karl Gabrielson – City of Trinidad
Roy Gertson – Town of Buena Vista
Gary Gibson – Crowley County
Keith Goodwin – Otero County
Frank Grant – Crowley County
Terry Hart – Pueblo County
Jean Hinkle – La Junta Historic Preservation Advisory Board
Jim Hinkle – Otero County
Scott Hobson – City of Pueblo
Frank Holman – Chaffee County
Rick Kienitz – City of Aurora
Rick Klein – City of La Junta
Gerald Knapp – City of Aurora Water Department
Dara MacDonald – Salida Historic Preservation Commission
Robert MacDonald – Pikes Peak Area Council of Governments
M. McHugh – City of Aurora
Buffie McFaydden – Pueblo County
Jim Munch – City of Pueblo
Sal Pace – Pueblo County
Alexa Roberts – Eads Historic Preservation Commission
Henry Schnabel – Prowers County
Richard Scott – Kiowa County
Tom Simpson – City of Aurora
Larry Small - Fountain Creek Watershed, Flood Control and Greenway District
Frank Wallace – Bent County
Julie Ann Woods – Pueblo County

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Tribal Officials

Earnest House Sr. – Chairman, Ute
Mountain Ute Tribe
See previous section.

Organizations and Firms

Ron Aschermann – Aurora Range
Project
SeEtta Moss – Audubon Society
Gary Barber – WestWater Research
Janet Barnhart – Fremont Conservation
District
Michael Bartolo – Arkansas Valley
Research Center
Jeff Baylor – Las Animas Consolidated
Canal Company
Richard Belt – Las Animas Consolidated
Canal Company
Ron Bergmann – West Maysville Ditch
Douglas Brown – Water Technology
Leader
Rhonda Bucholz – Historic Preservation
Advisory Board
Scott Campbell – Twin Lakes Reservoir
and Colorado Canal Company
Mark Carmel – Save the Water Now
Chaffee County Times
Bruce Cogan – Cogan Day Ditch/Frantz
Ditch
Joe Cogan – Helena Ditch
Coral Cosway – Atkins Global
Cynthia Covell – Alperstein & Covell,
P.C.
Josh Cowden – MWH
Jill Crockett – JACOBS Engineering
Jeris Danielson – Purgatoire River Water
Conservancy District
Paul Davis – Platte River Power
Authority
Mark DeHaven – ERO Resources
Roger Dekloe – Fountain Valley Sod
Farm
Dan DiRezza – Herman Klinkerman
Ditch
Ron Dorn – DeWeese Ditch and
Reservoir Company

Mike Drabing – Sundance Investments
Chad Ellington – CH2MHill
Earthjustice
Marie Evans – Michigan Ditch
Jim Felt – Felt, Houghton, Monson
Greg Felt – ArkAnglers
Nathan Fey – American Whitewater
Fishing and Hunting News
Paul Flack – Resource Based
International
Peter Fleming – Colorado River Water
Conservation District
Delbert Fountain – Fountain Livestock
Randy Freed – Arkansas River
Conservancy District
Jay Frost – Frost Livestock
Cathy Garcia – Action 22
Mike Gaylord – Canon Heights
Irrigation
Gail Gonzales – Fruitland Ditch
Jon Grannis – Antero Resources
Bill Grassmick – Lower Arkansas Water
Management Association
Bob Hamel – Arkansas River Outfitters
Association
Richard Hayes – Colorado Rural Water
Association
Mary Mead Hammond – Carlson,
Hammond and Paddock, LLC
Hanna Ranches
Donny Hansen – Holbrook Mutual
Irrigating Company
Daniel Henrichs – High Line Canal
Company/Arkansas Valley Ditch
Association
Howard Herrington – Riverside Dairy
Ditch
Don Higbee – Lower Arkansas Water
Management Association
Mike Hill – Bessemer Ditch
Ernie Hofmeister – Lamar Canal
Bob Houston – Parkdale Water
Association
Steve Howell – Ninyo and Moore
Terry Howland – Amity Mutual
Irrigation Company

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Appendix M.1 – Consultation and Distribution Lists

Loren Johnson – Rural Water Group
Dave Kaess – Otero Ditch Company
Tony Keenan – Arkansas River
Outfitters Association
Doug Kemper – Colorado Water
Congress
John Kisiel – Housing and Building
Association of Colorado Springs
KKTV Television
KMGH Television
Ken Knox – URS Engineering
Stacy Kolegas – Tamarisk Coalition
Bruce Kroeker – TZA Engineers
KOAA Television
Bob Krassa – Krassa and Miller, LLC
Eric Kuhn – Colorado River Water
Conservation District
KVAZ Radio
KXRM Radio
La Junta Tribune Democrat
Lamar Ledger
Leadville Herald Democrat
Stephen Leonhardt - Burns, Figa & Will,
P.C.
Fayne Long – East Florence Water
Association
Becky Long – Colorado Environmental
Coalition
Scott Lorenz – Arkansas Groundwater
Users Association
Kent Lusk – Riverside Water Company
Malcome MacDougall - MacDougall,
Woldridge & Worley, P.C.
Mary Madrid – Lydia Stiles
Deborah Marsicano – Park Center Water
District
The Masciantonios – Wood Valley Ditch
Larry Mason – Oxford Ditch Company
Larry McElroy – Laguna Ditch
Brian McPeek – The Nature
Conservancy
Bart Miller –Western Resources
Advocates
Sally Miller - Cherry Creek Farms Lot
Owners Assn.

Matthew Moorhead – The Nature
Conservancy
Glen Mullins – Gummar Ditch
Harry Nelson – Rocky Ford Ditch
Company
Tasha Newland – Holland and Hart
David Nickum – Trout Unlimited
William Paddock – Carlson, Hammond
& Paddock
Drew Peternell – Trout Unlimited
Ray Petros – Petros and White
Thomas Pope – Riverside Dairy Ditch
Bickel Randine – Sunset View Water
Company
Scott Rappold – Colorado Springs
Gazette
Robert Rawlings – *Pueblo Chieftain*
Jane Rawlings – *Pueblo Chieftain*
Jeffrey Reber – O’Neal Water Works
Herb Reyher – Fort Lyon Canal
Company
David Robbins – Hill and Robbins
Thomas Rusler – Bessemer Ditch
Tom Sanders – Beaver Park Water, Inc.
Nicole Seltzer – Colorado Foundation
for Water Education
Lisa Sigler – Sigler Communications
John Sliman – Southwest Farms Inc.
Lowell Soester – Ewing-Koppe Ditch
Jason Sorter –Trout Unlimited
Robert Barr - Steele Ditches
T Cross Ranch
Colin Thompson – Amity Canal
Curtis Thompson – Merrick Company
Gary Thompson – WW Wheeler and
Associates
Lavette Thorson-Whitney – Collier
Ditch
Mary Lou Totten – Totten Ranch
Sam Turner – Canaday Canal/Turner
Ranch
George Turner – Canon City and Oil
Creek Ditch Company
Amy Van Horn – Fort Lyon Canal
Company
Ross Vincent – Sierra Club

**Arkansas Valley Conduit Environmental Impact Statement
Appendix M.1 – Consultation and Distribution Lists**

Volunteers Outdoor Colorado
Tony Walisky – Riverside Water
Association
Bill Warmack – Applegate Group Inc.
Dick Westmore – GEI Consultants
Rob White – Arkansas Headwaters
Recreation Area
Mely Whiting – Trout Unlimited
Wilderness Society

Thomas Williamsen – Helton and
Williamsen, P.C.
Chris Woodka – *Pueblo Chieftain*
Lane Wyatt – Colorado Northwest
Council of Governments
Eustice Zacher – Classon Ditch
Jane Zinno – Joseph Corporation
Pam Zubeck – *Colorado Springs*
Independent

Interested Parties

Ron Ackerman
Alicia Archibald
Jeff Berman
David Brenn
Greg Brophy
Dennis Claveau
Darrow Dennis
Kelly DiNatale
Deb Dunfee
Bob Foltz
Howard Geller
German Gonzales
Rebecca Goodwin
George Gotto
Aaron Greco
Gene Grillot
Jason Hagerman
Don Halfield
Vern Harris
Jason Hayson
Richard Hayson
Randy Hayzlett
Hal Holder
Robin Jennison
Aaron Johnson
Elise Jones
Anthony Lane
Steve Lopez
Dan Luecke
Jim McCormick
Wendy McDermott
L. Medina
Bart Mendenhall
Curtis Miller
Jay Moore

J.L. Morris
Rosa Nicole
Tim Oliver
John Orr
Warren Paul
Paula Plamer
Yeshabet Quezada
Jace Ratzlaff
D. Ready
Sherry Richardson
Jim Robinson
Chandra Rosenthal
Shane Schultz
Ron Sering
Sloan Shoemaker
John Singletary
Larry Sly
Greg Smith
Jacob Smith
Matt Snider
Wayne Snider
Perla Sosa
John Stansfield
Mike Stiehl
Bill Thiebaut
Tom Tomky
Jerry Unruh
Ken Weber
Michael Wetterau
Shane Williams
Kenneth Yoder
Mildred Yoder
Naomi Yoder
Josh Zaffos
Rob Zuber

**Arkansas Valley Conduit Environmental Impact Statement
Appendix M.1 – Consultation and Distribution Lists**

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Appendix N.1 – Programmatic Agreement

**Arkansas Valley Conduit Environmental Impact Statement
Appendix N.1 – Programmatic Agreement**

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**PROGRAMMATIC AGREEMENT
BETWEEN BUREAU OF RECLAMATION, EASTERN COLORADO AREA OFFICE,
AND THE COLORADO STATE HISTORIC PRESERVATION OFFICER
REGARDING THE ARKANSAS VALLEY CONDUIT PROJECT,
COLORADO**

WHEREAS, the Omnibus Public Land Management Act of 2009 (Public Law 111-11) amended the original Fryingpan-Arkansas authorization (Public Law 87-590), and the proposed Arkansas Valley Conduit is an authorized feature of the Fryingpan-Arkansas Project that would transport water east from Pueblo Dam along the Arkansas River to Lamar, Colorado, serving communities that cannot meet primary and secondary water quality standards; and

WHEREAS, the Bureau of Reclamation, Eastern Colorado Area Office (ECAO) has determined that construction of the Arkansas Valley Conduit Project (AVC) and Long-Term Excess Capacity Master Contract, Colorado is an Undertaking and therefore triggers the requirements of Section 106 of the National Historic Preservation Act (NHPA) [16 U.S.C. Section 470f] for the Undertaking as defined at 36 CFR 800.16(y); and

WHEREAS, ECAO has determined that the Undertaking may have direct, indirect, and cumulative effects on cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), hereafter called historic properties [36 CFR 800.16(l)(1)]; and

WHEREAS, ECAO, in consultation with the Colorado State Historic Preservation Officer (SHPO), defined the area of potential effects (APE) as the AVC Project corridor consisting of the approximately 235-mile long pipeline from Pueblo, CO east to Lamar, CO with additional spurs to serve participants across multiple federal, state, and local jurisdictions; and private lands; as well as staging areas, detours, and other earth-disturbing activities within the construction corridor (see the *Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Final Environmental Impact Statement* map of identified alternative in Appendix A); and

WHEREAS, public involvement was implemented by Reclamation in accordance with a public involvement plan prepared and implemented through the *Draft and Final Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Environmental Impact Statements* (AVC EIS) process that included scoping meetings, newsletters, project website (www.usbr.gov/avceis), public hearings, cooperating agency team meetings, news releases, and publication of Federal Register notices. Historic property impacts were evaluated in the Draft and Final Environmental Impact Statements. This programmatic agreement was included as appendix to the Final AVC EIS.

WHEREAS, ECAO has consulted with the Advisory Council on Historic Preservation (ACHP) inviting them to participate; and the ACHP declined to participate in a letter dated April 17, 2012; and

WHEREAS, ECAO has consulted with the U.S. Army Corps of Engineers Albuquerque District (Corps) inviting them to participate; and the Corps declined to participate in a conference call on April 13, 2012; and

WHEREAS, ECAO has consulted with the National Park Service (NPS), inviting them to participate as a signatory and consulting party; and the NPS agreed to participate in an e-mail on December 6, 2012; and

WHEREAS, ECAO has consulted with twenty-four Native American tribes (Tribes) inviting them to participate in identifying Indian Trust Assets and Section 106 consultation (see Appendix B for listing); seven were invited to participate as consulting parties in the PA; and (as of the signing of this PA) none of the Tribes have responded to our letters of June 20, 2011, January 17, 2012, and January 5, 2013, or to follow-up telephone calls; and

WHEREAS, ECAO invited eight certified local governments to be consulting parties (see Appendix C for listing); and Bent County accepted in a telephone call on November 1, 2012; Kiowa County Historic Preservation Commission accepted in an e-mail on December 4, 2012; and Otero County accepted in a letter of January 22, 2013; and

WHEREAS, ECAO in consultation with the SHPO and other concurring parties, pursuant to 36 CFR Part 800, has determined to use a phased process to identify historic properties [36 CFR 800.4(b)(2)] and assess the effects on those properties [36 CFR 800.5(a)(3)]; such that completion of the identification and evaluation of historic properties, determinations of effect on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects will be carried out in phases as part of planning for and prior to the implementation of the Undertaking; and

WHEREAS, ECAO, with the concurrence of the SHPO, intends to facilitate its compliance with Section 106 of the NHPA for this Undertaking through the execution and implementation of this Programmatic Agreement (PA) because ECAO cannot fully determine the effects of the undertaking on historic properties [36 CFR 800.14(b)(1)(ii)] at this time; and

WHEREAS, ECAO will ensure all work is carried out by cultural resource personnel meeting the *Secretary of Interior's Professional Qualification Standards* (48 FR 44716); and

WHEREAS, ECAO consulted separately under Section 106 for phased geo-technical work for the Undertaking;

NOW, THEREFORE, ECAO and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations, as previously agreed upon, in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

ECAO shall ensure that the following measures are carried out:

I. Area of Potential Effects

A. Defining the APE

ECAO, in consultation with the SHPO, has defined and documented the APE based on direct, indirect, and cumulative effects. The APE will apply to federal, state, tribal, and private lands that may be affected by construction of the AVC, staging areas, access roads, borrow areas, and other related transmission infrastructure for this Undertaking. ECAO may modify the APE in accordance with Stipulation I.B. of this PA. The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking [36 CFR 800.16(d)].

1. Direct Effects

The APE for direct effects is the area within which historic properties may sustain physical alteration or destruction as a result of the Undertaking. The APE for direct effects is limited to the area of potential ground disturbance by activities related to the Undertaking.

- a. For the water pipeline, the APE will be the construction easement.
- b. The APE for access roads, except for existing crowned and ditched or paved roads, will be the construction easement. Existing crowned and ditched or paved roads are not part of the APE unless project-related changes to the current footprints of these roads are planned. If adjacent areas are needed, ECAO will re-define the APE as appropriate per terms of this PA.
- c. The APE for staging areas, borrow areas, and other infrastructure will include the footprint of the facility and the construction easement.
- d. Intensive survey of geo-technical drill sites will take place prior to the intensive survey of the rest of the APE. The area that will be surveyed is the drill rig footprint plus a 250 foot buffer. All cultural resources within the buffer will be avoided, but structures and buildings will not be formally recorded until later intensive survey (see II.D.2). For those drill holes in urban areas where buildings and structures are avoided, photographs and coordinates of those buildings and structures will be documented in an appendix to the report. A separate final report for all geo-technical work will be submitted to the SHPO.

2. Indirect Effects

The AVC EIS evaluated the APE for indirect effects and considered visual, atmospheric, and audible elements as well as vibration during construction in urban areas that could

diminish the integrity of the human and built environment. The indirect effects of all action alternatives would be temporary and for most action alternatives negligible to minor. However if an action alternative is selected in the Record of Decision that would have moderate, temporary noise effects on National Register eligible properties, ECAO will notify consulting parties and land-managing agencies and will consult on appropriate mitigation.

- a. The indirect APE for the Undertaking will be limited to a ½-mile radius surrounding large, permanent above-ground structures, such as treatment plants, storage tanks, pumping plants, and new or modified power lines. Smaller above-ground appurtenances including, but not limited to, valves, pressure-sensing devices, and chlorination/cleaning ports are not considered likely to affect the view shed and will not be considered further for indirect effects.

3. Cumulative Effects

Cumulative effects include reasonably foreseeable effects caused by the Undertaking that may occur later in time, be farther removed in distance or be cumulative [36 CFR 800.5(a)(1)]. For the purposes of this PA, the APE for cumulative effects is the same as that for direct and indirect effects.

B. Modifying the APE

The APE, as currently defined, encompasses an area sufficient to accommodate all of the Undertaking components under consideration as of the date of the execution of this PA. The APE may be modified by ECAO in consultation with the SHPO when tribal consultation, additional field research or literature review, consultation with consulting parties, or other factors indicate that the qualities and values of historic properties that lie outside the boundaries of the currently defined APE may be affected directly, indirectly, or cumulatively. Agreement to modify the APE will not require an amendment to the PA but consulting parties and affected land-managing agencies will be notified.

II. Identification, Evaluation, and Determination of Effects

A. ECAO will ensure that all work undertaken to satisfy the terms of this PA meets the Secretary of the Interior's Standards for Archeology and Historic Preservation (48 FR 44716) (Federal Register, September 29, 1983) and is consistent with the ACHP guidance on archaeology found at <http://www.achp.gov/archguide/> and the Guidelines for Evaluating and Documenting Traditional Cultural Properties, National Register Bulletin 38, 1998. ECAO has defined conventions or standards for inventory corridors and survey intensity to adequately identify historic properties that may be affected by this Undertaking consistent with SHPO survey guidelines.

B. ECAO will ensure that all identification and inventory is carried out by or under the direct supervision of a person or persons meeting, at a minimum, the applicable professional qualifications standards set forth in the Secretary's Standards and the permitting requirements of appropriate states and federal agencies.

C. Identification and evaluation activities will be conducted only after qualified cultural resource professionals have obtained the appropriate federal and state permits for such fieldwork. ECAO or other appropriate federal or state land managing agencies shall authorize fieldwork to conduct inventories on land they manage, respectively, following review of a complete application from the qualified cultural resource consultant.

D. Inventory - ECAO will ensure that a cultural resource inventory will be completed in the following phases:

1. Phase 1 – Literature Review

a. A literature review has been completed for a two- mile-wide corridor along all alternatives of the proposed Undertaking. The literature review resulted in a report that has been reviewed and commented on by the SHPO. The literature review will inform all subsequent phases, and it will be used as a reference document to support all of the intensive-level surveys conducted for this Undertaking. ECAO will ensure that additional file searches are conducted as needed to address changes in the APE and to be current in advance of any intensive-level inventories. ECAO will contact local and county historic preservation advisory boards seeking additional information to supplement the literature review and to use in planning the reconnaissance survey.

2. Phase 2 – Preferred Alternative Inventory – Direct Effects

a. After ECAO identifies a preferred alternative, a reconnaissance survey will be conducted within the direct effects APE, as described in Section I.A.1., for all areas not covered by previous acceptable intensive survey(s). The purpose of the reconnaissance survey is to identify areas with good or excellent potential to contain historic properties that require intensive survey. ECAO will consult with the SHPO and other consulting parties regarding the results of the reconnaissance survey to identify areas for which intensive-level survey will be completed. Federal lands and any portions of the preferred alternative adjacent to or crossing the Santa Fe National Historic Trail will be included in the intensive-level survey. The resulting intensive survey report will also recommend areas to be monitored during construction, including high and medium probability areas for buried archaeological deposits.

b. ECAO will review previous inventory files to ascertain the age of previous inventories, methods used, and results to determine whether previous surveys meet Colorado Survey Manual Guidelines. Those previous surveys that meet or exceed the guidelines will not be resurveyed. However, all cultural resources located within the APE and documented during previous survey will be revisited and re-evaluated for changes that may have occurred since the original documentation. Depending on the age of the original documentation and any changes, either complete documentation or a reevaluation form will be completed.

c. ECAO will assume that all previously documented or potential historic districts are significant and will not undertake new documentation or evaluation of either the district itself or contributing resources unless the resource is located within the APE

and will be affected by the Undertaking. Historic buildings and structures not located within an established or provisional historic district will be documented and evaluated for significance according to standard survey documentation.

d. ECAO intends to exclude the following cultural manifestations from formal documentation and evaluation: two-track roads that do not appear on historic maps or other available resources (as described below), stock ponds, soil berms, fence lines, pastures, and agricultural fields. The Colorado Survey Manual Guidelines will be consulted. ECAO will use available historical records prior to survey in order to evaluate the context and potential age of all observed cultural manifestations. Those manifestations that do not appear to meet the National Park Service established 50-year guideline for potential historic properties will be exempted from formal documentation. ECAO acknowledges that a cultural resource may be a potential historic property even though it does not meet the 50-year guideline; these resources would be evaluated for significance on a case-by-case basis (see Guidelines for Evaluating Properties that have Achieved Significance in the Past Fifty Years). Such historical records examined prior to survey include general land office survey plats, 15 minute U. S. Geological Survey quadrangles, historic maps (as available), and available histories of the project corridor. Due to the sheer number of private lands within the APE, it is not feasible to consult County Assessor records prior to survey, but ECAO intends to coordinate with local and county historic preservation advisory boards as an additional means to identify potential historic properties. Small unnamed irrigation laterals and field ditches and similar features will be listed in an appendix.

e. ECAO may choose to document the entire extent of a linear resource if said resource will be crossed on numerous occasions to streamline review of determinations of eligibility and effect. ECAO will use a combination of ground inspection (alignment crossings), aerial and satellite imagery, and historic records to document whole linear resources. Integrity evaluations will rely on reasonable assumptions determined using crossing locations and reconnaissance level evaluation.

f. Documentation may entail recording cultural resources over multiple land jurisdictions. If the boundary of a potentially eligible cultural resource extends beyond the APE, ECAO will attempt to obtain landowner permission to record and evaluate the resource. If landowner consent cannot be obtained, ECAO will evaluate the resource within the APE using best available information including evaluative testing and historical records. Cultural resources not fully evaluated because of access restriction will remain evaluated as “needs data” and that portion within the APE will be evaluated as contributing or noncontributing.

3. Phase 2 – Preferred Alternative Inventory – Indirect Effects

a. Visual. A Geographic Information System view shed analysis will be used to evaluate the visual effects of this Undertaking on historic properties within ½ mile radius of large, permanent above-ground structures. If any historic properties are located within that radius, ECAO will consult with SHPO and consulting parties

regarding landscaping, color, or architectural design of permanent above-ground structures to minimize adverse visual effects to nearby historic properties. Constructed structures, facilities, and features would be designed to blend with the architectural characteristics of surrounding structures. Local agencies would be invited to participate in the Environmental Review Team to coordinate design of above ground structures, facilities, and features.

4. Phase 3 – Inventory during Construction

a. This phase will include inventory as needed, of any variances to the Undertaking that are outside the currently defined APE (including changes in construction right-of-way and ancillary areas). Where ECAO determines that additional inventory is needed, no ground disturbance will be authorized in the variance area until the inventory, the effects determinations, and any required on-site mitigation measures are completed, and a Notice to Proceed is issued. ECAO will determine where construction may continue while the additional work is being completed.

E. ECAO will invite the SHPO and the NPS to be members of the Environmental Review Team. As explained on page 4-1 of the *Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Draft Environmental Impact Statement*, members of that team will advise ECAO regarding implementation of environmental commitments and will review changes in engineering design, such as pipeline routing. Any changes in the construction program warranting additional National Environmental Policy Act review, adaptive management or other environmental compliance will be addressed by the Environmental Review Team.

F. Determinations of Eligibility and Assessment of Effect

For each cultural resource that is located within the APE, ECAO in consultation with the SHPO and land-managing federal agency and any Indian tribe that attaches religious or cultural significance to any identified resource, will apply the NRHP criteria (36 CFR part 63) pursuant to 36 CFR 800.4(c)(1), to determine whether a property is eligible. Where there is insufficient information for making site eligibility determinations, ECAO in consultation with the SHPO, the land-managing agency, and tribes may determine that archaeological testing or other investigations are necessary to complete NRHP evaluations for cultural resources that may be affected by the Undertaking.

ECAO, in consultation with the SHPO and the land managing agencies, will assess effects in order to identify all reasonably foreseeable and potentially adverse effects that could occur as a result of the Undertaking. The land-managing agencies will be consulted about potential adverse effects to historic properties on their lands.

1. Consultation with Tribes

ECAO will provide inventory and evaluation report(s) to Tribes identified pursuant to 36 CFR 800.3(f). Tribes will have 30 days to review the report(s) and provide comments to ECAO.

2. Consultation with Other Consulting Parties

ECAO will prepare a summary document containing brief descriptions, recommendations for eligibility, and assessment of effect for each site. ECAO will distribute the summary document to consulting parties (other than tribes and the SHPO) for review and consultation of eligibility and effect, following 36 CFR 800.4(c) and 36 CFR 800.5(a)(1) and (a)(2)(i)-(vii). The document will be consistent with confidentiality provisions of 36 CFR 800.11(c).

Consulting Parties will have 30 days to review the summary document and provide comments to ECAO. ECAO will take the comments into account prior to transmitting the inventory report(s) and supporting documentation, including the recommendations for eligibility and assessments of effect to the appropriate SHPO for consultation.

3. Consultation with SHPO

ECAO will provide the inventory report(s) and supporting documentation to the SHPO and will seek a consensus determination of eligibility and effect with the SHPO for all cultural resources whether on federal, state, or private lands. These determinations of effect will serve as the basis for the development of a Treatment Plan.

a. If ECAO and the SHPO agree that the cultural resource is not eligible for listing in the NRHP, no further review or consideration under this PA will be required for such cultural resources.

b. If the ECAO and SHPO agree that the cultural resource is eligible, then effect determinations will be in accordance with Stipulation II. F.

c. If ECAO and the SHPO do not agree on eligibility, and agreement cannot be reached within 30 days, then ECAO will request a determination of eligibility from the Keeper of the National Register (Keeper), pursuant to 36 CFR 800.4(c)(2) and 36 CFR Part 63. The Keeper's determination will be final.

4. Determinations of effect may be subject to change due to alterations in the Undertaking and APE. ECAO will consult with the SHPO and all appropriate consulting parties to this PA and the land-managing agency, if affected, and tribes if any changes in the Undertaking or APE require changes in the agency's determinations of effect.

III. Reporting and Review of Documentation

At the conclusion of the fieldwork described in Stipulation II, the ECAO will submit copies of the draft reports and site forms to the SHPO for review. Each report will be consistent with Colorado state guidelines and formats including determinations of eligibility and effect. The SHPO will have 30 days from receipt of each report to review and provide comments on the report. These comments will address adequacy of inventory and reports, the eligibility of properties identified [36 CFR 800.4(c)], and the effects of the Undertaking on any cultural resources considered to be historic properties [36 CFR 800.4(d) and 36 CFR 800.5]. Based on

the comments received, the ECAO may revise the reports. Any revised reports will be submitted to the SHPO for a 15-day review.

All other outstanding reports, such as addendum reports for variances, mitigation or monitoring reports, or other reporting actions required under the Treatment Plan, will be produced no later than three years after the completion of the relevant work element (as described in the Treatment Plan) of the Undertaking.

IV. Treatment Plan to Resolve Adverse Effects

A. Before construction begins, ECAO, in consultation with the SHPO and any Indian tribe that attaches religious and cultural significance to identified historic properties, will prepare a Treatment Plan designed to resolve adverse effects on eligible Historic Properties within the APE. ECAO will consider any views concerning such effects which have been provided by consulting parties, tribes, land-managing agencies, and the public. The Treatment Plan will be appended to this PA and will list all historic properties located within the APE that have been identified and are subject to adverse effects. The Treatment Plan will address all characteristics contributing to the Properties' eligibility to the NRHP and will identify the specific mitigation strategies proposed to address the direct, indirect, and cumulative effects of the Undertaking. The Treatment Plan will be consistent with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (36 CFR 68), the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-42), and will take into account the ACHP publication *Treatment of Archaeological Properties: A Handbook* (ACHP 1980).

B. Each plan will provide a table listing each historic property including:

1. Smithsonian Trinomial Number, and
2. Sequential location in terms of GIS coordinates or UTM's or similar established markers, and
3. The nature of the required mitigation pertaining to each historic property (e.g., avoidance, minimization, landscape photography, archaeological data recovery, etc.), and
4. Identification of those corresponding mitigation measures, if any, which must be completed prior to authorization of ground-disturbing activities and those which may be completed after such authorization of ground-disturbance in the area requested by the ECAO for initiation of construction.

C. Review and Approval of Treatment Plans

1. Once the Treatment Plan is completed, a 30-day review by all consulting parties, tribes, and land-managing agencies will occur. Consulting Parties will submit all comments to ECAO.
2. ECAO will take the comments into account and ECAO will consult with the SHPO regarding the final Treatment Plan. The SHPO will have 30 days to review the final Treatment Plan before ECAO implements the plan to mitigate any adverse effects caused by the Undertaking.

D. An ANNUAL REPORT of findings regarding all Historic Properties treated under the Treatment Plan from January 1-December 31 for the given year will be filed with the SHPO and federal land-managing agency on or before January 31 of the following year. This report shall use and amend the treatment table as described above.

V. Unanticipated Discoveries

A. If previously unrecorded cultural resources are discovered during construction, the following actions will be implemented:

1. Construction will be immediately halted in the area of the discovery, and measures taken to protect the resources.
2. A Secretary of the Interior qualified archaeologist will evaluate the discovery and make a recommendation as to the NRHP eligibility of the resource.
3. ECAO will submit site-specific treatment, consistent with the Treatment Plan, and in accordance with Stipulation III listed above.
4. ECAO will conclude consultation with SHPO within five working days of delivery of the proposed treatment of the discovery.

B. If the discovered Historic Property is near an area identified by a Tribe as a Traditional Cultural Property, as described in *National Register Bulletin 38*, ECAO will consult with the identified Tribe regarding the proposed treatment.

VI. Inadvertent Discovery of Human Remains

A. In the event human remains or funerary objects, as defined by the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001) are discovered on Federal land, work will immediately cease and steps will be taken to secure the remains. ECAO will follow NAGPRA regulations set forth in 43 CFR 10.

B. In the event human remains are discovered on state, county, municipal, or private lands, work will immediately cease in the area, and steps will be taken to secure the remains. ECAO will ensure that the provisions of Colorado Statute CRS 24-80-1301 to 1305 (Unmarked Human Graves) and subsequent regulations by the Colorado State Archaeologist (8 CCR 1504-7) are followed.

VII. Curation

A. The ECAO shall ensure that curation of the material remains and all associated records resulting from identification and data recovery efforts is completed in accordance with 36 CFR Part 79. The ECAO shall provide documentation of the curation of these materials to the SHPO within 60 days of acceptance of the applicable report. Materials found on federal lands will remain federal property when curated (unless otherwise appropriately repatriated in accordance with federal law).

B. Archaeological materials collected from private lands pursuant to the implementation of this PA shall be maintained in accordance with 36 CFR Part 79 until all analysis is complete. If private landowners wish to donate collections from their lands to a museum, university, historical society, or other repository, the ECAO will offer to assist in the transfer by completing the repository's donation forms and other paperwork. Otherwise, collections from private lands will be returned to the landowners within 30 days of acceptance by the SHPO of the final mitigation report. Human remains associated with these collections will be treated according to applicable state law. Documentation of the disposition of private collections shall be provided to SHPO.

VIII. Duration

This agreement will be null and void if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time, ECAO may consult with the other signatories to reconsider the terms of the agreement and amend in accordance with Stipulation X below.

IX. Dispute Resolution

Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this PA are implemented, ECAO shall consult with the objecting party(ies) to resolve the objection. If ECAO determines, within 30 days, that such objection(s) cannot be resolved, ECAO will:

A. Forward all documentation relevant to the dispute to the ACHP in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the ACHP shall review and advise ECAO on the resolution of the objection within 30 days. Any comment provided by the ACHP, and all comments from the parties to the PA, will be taken into account by ECAO in reaching a final decision regarding the dispute.

B. If the ACHP does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, ECAO may render a decision regarding the dispute. In reaching its decision, ECAO will take into account all comments regarding the dispute from the parties to the PA.

C. ECAO's responsibility to carry out all other actions subject to the terms of this PA that are not the subject of the dispute remain unchanged. ECAO will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. ECAO's decision will be final.

X. Amendments and Noncompliance

If any signatory to this PA determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this PA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all of the original signatories is filed

with the ACHP. If the signatories cannot agree to appropriate terms to amend the PA, any signatory may terminate the agreement in accordance with Stipulation XI below.

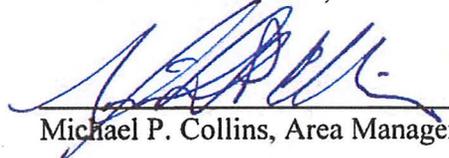
XI. Termination

If the PA is not amended following the consultation set out in Stipulation X, it may be terminated by any signatory. Within 30 days following termination, ECAO shall notify the signatories if it will initiate consultation to execute a new PA with the signatories under 36 CFR 800.6(c)(1) or request the comments of the ACHP under 36 CFR 800.7(a) and proceed accordingly.

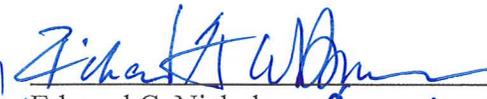
Execution of this PA by ECAO and SHPO, the submission of documentation, and filing of this PA with the ACHP pursuant to 36 CFR Section 800.6(b)(1)(iv) prior to ECAO's approval of this Undertaking, and implementation of its terms evidence that ECAO has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

Signatories:

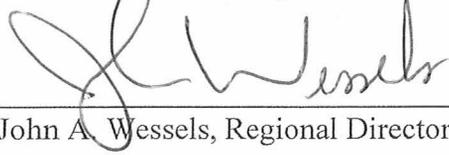
Bureau of Reclamation, Eastern Colorado Area Office

 Name 7/31/2013 Date
Michael P. Collins, Area Manager

Colorado State Historic Preservation Officer

 Name 7/8/2013 Date
for Edward C. Nichols (Deputy SHPO)

National Park Service, Intermountain Region



Name JUL 16 2013 Date

John A. Wessels, Regional Director

Consulting Parties:

Bent County Historic Preservation Advisory Board

By: Bill Kay Date: 7-10-13

Title: Commissioner

Kiowa County Historic Preservation Commission

By: Alysa Roberts Date: 7-25-13

Title: Chairperson

Agreement R13MU60034

Otero County Historic Preservation Advisory Board

By: Keith Goodwin Date: 7/29/13

Title: Otero County Board of Commissioners
Chairman

APPENDIX B

Tribes Invited to Participate in Section 106 Consultation

Mr. Alonzo Chalepah*
Acting Chairman
Apache Tribe of Oklahoma
P.O. Box 1220
Anadarko, OK 73005

Mr. Darrin Cisco
Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

Mr. Johnny Wauqua*
Chairman Comanche Nation
P.O. Box 908
Lawton, OK 73502

Mr. Jimmy Arterberry
THPO Comanche Nation of Oklahoma
P.O. Box 908
Lawton, OK 73502

Mr. Dale Old Horn
THPO Crow Nation
P.O. Box 159
Crow Agency, MT 59022

Ms. April Darrow
Fort Sill Apache
Rt. 2, Box 121
Apache, OK 73006

Mr. Ronald D Twohatchet*
Kiowa Tribe of Oklahoma
Chairperson
P.O. Box 369
Carnegie, OK 73015

Ms. Jame Lynn Eskew
Kiowa Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Mr. Leroy Spang*
President Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Mr. Conrad Fisher
THPO Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Mr. Wilmer Mesteth
THPO Oglala Sioux
P.O. Box 419
Pine Ridge, SD 57770

Ms. Lynette Gray
THPO Cheyenne-Arapaho Tribe of Oklahoma
P.O. Box 38
Concho, OK 73022

Ms. Janice Boswell*
Governor
Cheyenne and Arapaho Tribes Oklahoma
P.O. Box 38
Concho, OK 73022

Ms. Wanda Wells
THPO Crow Creek Sioux
P.O. Box 50
Fort Thompson, SD 57339

Mr. Wilford Ferris
THPO Eastern Shoshone
P.O. Box 538
Ft. Washakie, WY 82514

Dr. Jeffrey Blythe
THPO Jicarilla Apache
P.O. Box 507
Dulce, NM 87528

Ms. Holly Boughton
THPO Mescalero Apache
P.O. Box 227
Mescalero, NM 88340

Mr. Jim Shakespeare*
Chairman Arapaho Tribe of the Wind River
Reservation
P.O. Box 396
Ft. Washakie, WY 82514

Ms. Darlene Conrad
THPO Northern Arapaho Tribe
P.O. Box 396
Ft. Washakie, WY 82514

Cultural Resource Coordinator
Ohkay Owingeh
P.O. Box 1099
San Juan Pueblo, NM 87566

Mr. Gordon Adams
THPO Pawnee Nation of Oklahoma
P.O. Box 470
Pawnee, OK 74058

Mr. Walter Cristobal
THPO Pueblo of Santa Ana
02 Dove Rd, Cultural Resources Dept.
Santa Ana Pueblo, NM 87004

Mr. Ben Chavarria
Cultural Resource Coordinator
Pueblo of Santa Clara
P.O. Box 580
Espanola, NM 87532

Ms. Stacey Oberley
Southern Ute
P.O. Box 737
Ignacio, CO 81137

Mr. Terry Knight
THPO Ute Mountain Ute
P.O. Box 468
Towaoc, CO 81334

Mr. Vernon Garcia
Pueblo de Cochiti
P.O. Box 70
Cochiti, NM 87072

Cultural Resource Coordinator
Pueblo of San Ildefonso
Route 5, Box 315-A
Santa Fe, NM 87501

Mr. Russell Eagle Bear
THPO Rosebud Sioux
P.O. Box 809
Rosebud, SD 57570

Ms. Was'teWin Young
THPO Standing Rock Sioux
P.O. Box D
Fort Yates, ND 58538

Mr. Kurt Dongoske
THPO Zuni Pueblo
P.O. Box 1149
Zuni Pueblo, NM

Mr. Floyd Azure*
Chairman Assiniboine and Sioux Tribes of
the Fort Peck Indian Reservation
P.O. Box 1027
Poplar, MT 59255

*These tribes were invited to be a concurring party in the programmatic agreement. The tribes were identified using the Department of Housing and Urban Development Tribal Directory Assessment Tool endorsed by the Advisory Council on Historic Preservation.

APPENDIX C

Certified Local Governments Invited to Participate in the Programmatic Agreement

Historic Preservation Advisory Board
c/o City Administrator
102 East Parmenter
Lamar, CO 81052-3299

Historic Preservation Advisory Board
c/o Rick Klein, City Manager
601 Colorado Avenue
P.O. Box 489
La Junta, CO 81050

Historic Preservation Commission
c/o Dara MacDonald
448 East First Street, Suite 112
Salida, CO 81201

Historic Preservation Advisory Board
c/o Ronda Bucholz
County Administrator
725 Bent Avenue, Box 350
Las Animas, CO 81054

Historic Preservation Advisory Board
c/o T.E. Allumbaugh, Chairman
Crowley County Board of Commissioners
603 Main Street, Suite 2
Ordway, CO 81063

Ms. Alexa Roberts
Historic Preservation Commission
P.O. Box 100
Eads, CO 81036-0100

Historic Preservation Advisory Board
c/o Jean Hinkle, County Administrator
P.O. Box 511
La Junta, CO 81050

Historic Preservation Advisory Board
c/o Jo Dorenkamp, Administrator
301 South Main Street, Suite 215
Lamar, CO 81052

**Arkansas Valley Conduit Environmental Impact Statement
Appendix N.1 – Programmatic Agreement**

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Appendix O.1 – Biological Assessment Memorandum

Note: The Bureau of Reclamation prepared this Biological Assessment Memorandum and transmitted it to the U.S. Fish and Wildlife Service. As of August 2, 2013, the U.S. Fish and Wildlife Service has not responded.

**Arkansas Valley Conduit Environmental Impact Statement
Appendix O.1 – Biological Assessment Memorandum**

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United States Department of the Interior

BUREAU OF RECLAMATION
Great Plains Region
Eastern Colorado Area Office
11056 West County Road 18E
Loveland, Colorado 80537-9711

IN REPLY REFER TO:

GP-4200
ENV-7.00

JUN 28 2013

MEMORANDUM

To: Susan C. Linner
U.S. Fish and Wildlife Service
Colorado Field Supervisor

From: Michael P. Collins
Area Manager

Subject: Endangered Species Act (ESA) Section 7 Consultation for the Arkansas Valley Conduit (AVC), Fryingpan-Arkansas Project, Colorado

This memorandum, along with the draft AVC Final Environmental Impact Statement (FEIS) (sent under separate cover), constitutes the Bureau of Reclamation's biological assessment for the AVC and associated actions in southeastern Colorado as required at 50 CFR 402.12(b)(1). These documents are intended to satisfy Reclamation's compliance obligations under section 7(a)(2) of the ESA, as amended.

Reclamation is proposing three federal actions associated with the AVC: construction, operation, and repayment of the AVC; entering into a conveyance contract for use of the Interconnect to be constructed as part of AVC; and entering into a Master Contract with Southeastern Colorado Water Conservancy District to store water in Pueblo Reservoir. The Interconnect is an engineering feature of AVC and would be constructed and operated only if AVC was constructed. You can find detailed information on these proposed actions beginning on page 1-6 of Chapter 1 of the draft AVC FEIS.

Action Area

The draft AVC FEIS does not describe the action area associated with these proposed actions. The action area is defined as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). For purposes of this consultation, Reclamation has defined the action area to include:

The Arkansas River and its watershed downstream to, and including, John Martin Reservoir;
The Fryingpan River from its headwaters downstream to the Roaring Fork River;
The Roaring Fork River from the Fryingpan River downstream to the Colorado River; and
The Colorado River from the Roaring Fork River downstream to the Gunnison River.

A characterization of the action area can be found on pages 3-3 through 3-6 in Chapter 3 of the draft AVC FEIS.

Federally-listed Threatened or Endangered, Proposed, and Candidate Species That May Be Present in the Action Area

Reclamation submitted a list of federally-listed, proposed, and candidate species to the U.S Fish and Wildlife Service (Service) for confirmation by memorandum dated February 9, 2011. The Service confirmed that list by memorandum dated March 8, 2011. Reclamation communicated with the Service to re-confirm the list of species by electronic mail on June 11, 2013. As directed by electronic mail from the Service on June 14, 2013, the Service's Information, Planning, and Conservation webpage was accessed to confirm the list of species.

The current list of species includes:

Interior least tern – Endangered
Black-footed ferret – Endangered *
Greenback cutthroat trout – Threatened *
Piping plover – Threatened
Canada lynx – Threatened*
Mexican spotted owl – Threatened*
Preble's meadow jumping mouse – Threatened*
Ute ladies'-tresses orchid – Threatened*
Lesser prairie chicken – Proposed
Arkansas darter - Candidate
Gunnison's prairie dog – Candidate*

In your memorandum dated March 8, 2011, the Service confirmed that either habitat was not present or that the proposed actions were outside the range of the greenback cutthroat trout, Canada lynx, Mexican spotted owl, Preble's meadow jumping mouse, and Gunnison's prairie dog. The Service considers the Fountain Creek drainage to possibly contain Ute ladies'-tresses orchid habitat; however, no orchid populations are currently known from this drainage (Service 2010; 1992). Additionally, the lower Arkansas River area is within a black-footed ferret block clearance for black-tailed prairie dog towns (Service 2009). A block clearance is an area of land in which the Service has determined a federally-listed species no longer exists. An area that has been block cleared for a particular species does not require surveys for that species. Therefore, Reclamation is not considering these species (*) in this consultation.

The operation of the Fryingpan-Arkansas Project, associated depletions, and their effects on federally-listed fish in the upper Colorado River has been considered, quantified, and permitted through the *Final Programmatic Biological Opinion for Bureau of Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of Recovery Program Actions in the Upper Colorado River Above the Confluence with the Gunnison River* (Service 1999). The Colorado pikeminnow, razorback sucker, bonytail chub, and humpback chub are not considered in this consultation.

Description of Listed Species That May Be Affected by the Proposed Actions

Descriptions of the federally-listed, proposed, and candidate species can be found on the following pages in Chapter 3 of the draft AVC FEIS. This information constitutes the best scientific and commercial data available for these species in the action area and represents the environmental baseline against which potential effects are assessed.

Interior least tern – page 3-80
Piping plover – page 3-80
Lesser prairie chicken – page 3-81
Arkansas darter – page 3-49

Effects of the Proposed Action on Listed Species

Reclamation assessed the potential effects on listed, proposed, and candidate species by comparing effects projected for the preferred alternative to existing conditions (environmental baseline). A discussion of the potential effects for the species considered can be found on the following pages of the draft AVC FEIS.

Interior least tern – pages 4-134/137
Piping plover – pages 4-134/137
Lesser prairie chicken – page 4-137
Arkansas darter – page 4-81

Potential effects on terns and plovers would largely be confined to John Martin Reservoir. This reservoir was constructed, and is operated, by the Corps of Engineers (Corps). In 2002, the Service determined that John Martin Reservoir should not be designated as critical habitat for the piping plover because breeding populations are small and fluctuate in size, Colorado approved a recovery plan for interior least terns and piping plovers in 1994, the habitat is not considered essential, and it does not meet the definition of critical habitat (Service 2002).

Pursuant to Biological Opinion ES/GJ-6-CO-01-F-041 dated September 25, 2001, issued to the Corps for transferring recreation and surface water management to Colorado State Parks (now Colorado Parks and Wildlife) [CPW], the Corps developed an “Endangered Species Management Plan for Piping Plovers (*Charadrius melodis*) and Interior Least Terns (*Sterna antillarum athalassos*), John Martin Reservoir Project and John Martin State Park, Bent County, Colorado” (Plan) dated May 22, 2002. This Plan provides for monitoring, education, law enforcement, and habitat and population enhancement. It states on page 9 “to mitigate for this possibility [of nest inundation], the Corps, in conjunction with CPW will closely monitor pool elevations from the onset of nesting activity until brooding behavior occurs. Corps personnel will also receive training on techniques of nest relocation and necessary materials and tools will be identified and stockpiled for emergency relocations.” Implementation of these commitments by the Corps should minimize the occurrence of incidental take at John Martin Reservoir associated with projected higher surface elevations at John Martin Reservoir. Based on Corps’ commitments laid out in the Plan to monitor and relocate nests anticipated to be inundated, Reclamation has concluded that the proposed actions may affect, but are not likely to adversely affect interior least terns or piping plovers at John Martin Reservoir.

Potential effects on the lesser prairie chicken would be negligible as no construction would occur within one mile of any known lek. Reservoir surface fluctuations under all the alternatives would also have no effect on this upland species. All AVC alternatives would temporarily disturb about 97 acres of potential habitat within lesser prairie chicken range south of Lamar. Disturbance of potential habitat would be short-term. Best management practices, such as restoration of disturbed habitat with native vegetation, restricting construction during nesting season, pre-construction surveys, and halting ground-disturbing activities if leks or active nests are encountered, would be employed. Reclamation would stop construction and consult with the Service should potential effects on the proposed lesser prairie chicken be identified during construction. Based on this assessment and these best management practices, Reclamation has concluded that the proposed actions are not likely to jeopardize the continued existence of the lesser prairie chicken.

The Arkansas darter is a federal candidate species. Potential effects of the alternatives would change flow in the Arkansas River and Fountain Creek; however, flows and connectivity to tributary streams would be maintained near current levels. There would be negligible effects on darters as tributary populations would not be affected by the alternatives, and migration routes between tributaries would be maintained.

Cumulative Effects

Reclamation has not identified any non-federal actions in the action area that would adversely affect terns and plovers.

Reclamation has not identified specific non-federal actions in the action area that would adversely affect lesser prairie chickens or their habitat, but acknowledges that effects associated with agricultural activities, livestock grazing, alternative energy development, and oil and gas development on non-federal lands will continue.

Effects Determinations

Interior least tern – Reclamation has determined that the proposed actions may affect, but are not likely to adversely affect interior least terns.

Piping plover - Reclamation has determined that the proposed actions may affect, but are not likely to adversely affect piping plovers.

Lesser prairie chicken – Reclamation has determined that the proposed actions are not likely to jeopardize the continued existence of the lesser prairie chicken.

Reclamation requests the Service provide written concurrence with our effects determinations for the interior least tern, piping plover and lesser prairie chicken at your earliest convenience.

Should you have questions or require additional information, you can contact Gary Davis at (406) 247-7717 or at jgdavis@usbr.gov.

References Cited

- U.S. Fish and Wildlife Service. 1992. Endangered and Threatened Wildlife and Plants; Final Rule to List the Plant *Spiranthes diluvialis* (Ute Ladies'-Tresses) as a Threatened Species. *Federal Register* Vol. 57. No. 12.
- , 1999. Final Programmatic Biological Opinion for Bureau of Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of Recovery Program Actions in the Upper Colorado River Above the Confluence with the Gunnison River.
- _____, 2002. Designation of critical habitat for northern Great Plains breeding population of piping plover. Final rule. *Federal Register* Vol. 67. No. 176.
- _____. 2009. USFWS Block-Cleared Areas for Black-footed Ferret Surveys in Colorado. Available at http://www.fws.gov/mountainprairie/species/mammals/blackfootedferret/statewide_block_clearance_map_090809_final.pdf.
- _____. 2010. Threatened, Endangered, Candidate, and Proposed Species by County. Available at <http://www.fws.gov/mountain-prairie/endspp/countylists/colorado.pdf>.

**Arkansas Valley Conduit Environmental Impact Statement
Appendix O.1 – Biological Assessment Memorandum**

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Appendix P.1 – Response to Comments on the Draft Environmental Impact Statement

**Arkansas Valley Conduit Final Environmental Impact Statement
Appendix P.1 – Responses to Comments**

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Responses to Comments

Five public hearings were held on the Draft EIS during September 2012. The intent of the public hearings was to inform people about the proposed actions and solicit verbal or written public comments on the Draft EIS. The locations and dates for these meetings were as follows:

- | | |
|----------------------|--------------------------------|
| • Salida, Colorado | September 24, 2012 (evening) |
| • Pueblo, Colorado | September 25, 2012 (afternoon) |
| • Pueblo, Colorado | September 25, 2012 (evening) |
| • La Junta, Colorado | September 26, 2012 (evening) |
| • Lamar, Colorado | September 27, 2012 (evening) |

The public comment period ended October 30, 2012. During the public comment period, a total of 27 letters and e-mails were received, including oral comments at the five public hearings. A total of 200 comments were recorded and grouped into 18 issue categories. All comments were given due consideration and compiled in this Appendix.

This appendix presents copies of comment letters received on the Draft EIS. Alongside each reproduced letter is Reclamation's response to those comments. Letters included in this appendix are listed in Table 1.

All comment documents received are available for public inspection on Reclamation's Web site (<http://www.usbr.gov/avceis>).

How Comments Were Addressed

Some comment letters made a single suggestion, while others expressed multiple suggestions. Members of the EIS team that prepared the Final EIS carefully reviewed each comment. Comments were considered both individually and collectively. Some issues were raised by more than one commenter or several times by the same commenter. All specific substantive comments were addressed.

The NEPA requires that preparers of a Final EIS shall assess and consider all substantive comments on the Draft EIS and state their response in the final statement. Substantive comments must be specifically identified and attached to the Final EIS. Comments that simply express support or non-support of a project need not be displayed. Comments may be summarized and consolidated to condense the volume.

In general, comment responses in this appendix conform to the following conventions:

- References are made to the chapter or section of the Draft EIS within which relevant information was provided.

**Arkansas Valley Conduit Final Environmental Impact Statement
Appendix P.1 – Responses to Comments**

- References are made to the chapter or section of the Final EIS within which revisions were made in response to a comment.
- Documents that were referenced in the Draft EIS are identified by a citation in the text (e.g., “Smith 1993”) of a comment response. These citations refer to documents listed in Chapter 6 of the Draft EIS.
- Complete bibliographic information is provided for documents that were used in a comment response but were not listed in Chapter 6 of the Draft EIS.

Table 1. Government Agency and Elected Official Commentors

Letter Number	Commentator(s)	Organization
1	Leslie F. Feik	--
2	Calvin Hostetler	Patterson Valley Water Company
3	Shirley Herman	Hilltop Water Company
4	Jill Smith	--
5	Ken Wagner	City of Las Animas, Colorado
6	John Ploiter, President	Patterson Valley Water Company
7	Terry R. Book, Executive Director	Board of Water Works of Pueblo, Colorado
8	John Hostetler, President, and Normal Noe, Secretary-Treasurer/Manager	South Swink Water Company
9	Richard Jensen	--
10	Transcript of September 26, 2012 Public Hearing in La Junta, Colorado	
11	Transcript of September 27, 2012 Public Hearing in Lamar, Colorado	
10/11 Supplement	Various commentators- verbal questions and comments received by Signe Snortland following Public Hearings	--
12	Cheryl Eckhardt, Environmental Compliance Specialist	U.S. Department of the Interior, National Park Service, Intermountain Region
13	P. Kenneth and Mildred F. Yoder	--
14	Michael Wetterau	--
15	Dara MacDonald, City Administrator	City of Salida, Colorado
16	Kelley Thompson, P.E.	Colorado Department of Natural Resources, Division of Water Resources
17	Jim Munch, City Manager	City of Pueblo, Colorado
18	Abigail Ortega, P.E., Water Rights Administration Supervisor	Colorado Springs Utilities
19	David Barfield, P.E., Chief Engineer	Kansas Department of Agriculture, Division of Water Resources
20	Kevin Salter, P.E.	Kansas Department of Agriculture, Division of Water Resources
21	Raymond L. Petros, Jr., and Thomas W. Korver	Petros & White LLC, special counsel to Pueblo County, Colorado
22	Dan Prenzlow, Regional Manager	Southeast Region of Colorado Parks & Wildlife
23	Scott Eilert	Pueblo West Metropolitan District, Department of Utilities
24	Dana Price	U.S. Army Corps of Engineers, Albuquerque District
25	Suzanne J. Bohan, Director, NEPA Compliance and Review Program	U.S. Environmental Protection Agency Region 8, Office of Ecosystems Protection and Remediation
26	SeEtta Moss, Conservation Chairperson	Arkansas Valley Audubon Society
27	Raymond L. Petros, Jr. and Thomas W. Korver	Petros & White LLC, special counsel to Pueblo County, Colorado

Comment Letter

1

Response

1

From: Les Feik <l_feik1@hotmail.com>
Date: September 26, 2012 10:00:37 PM MDT
To: "Snortland, Jan S (Signe)" <JSnortland@usbr.gov>
Subject: Arkvalley Conduit Route

Signe,

After attending the meeting tonight I realized I needed to look at the map a little closer. Upon examining it I found that there can be a revision that would help Patterson Valley Water and will straighten a lot of turns in the pipeline. The change would start at cr14 and cr GG this is where a spur line could be sent to the Fayette water plant. The main line would then continue south to cr EE which is just north of the Patterson Valley Water plant. From there the pipe line could continue straight east to juncture at the southwest corner of Rocky Ford. This would eliminate several hills and turns and possibly crossing a few canals as well.

Thanks,

Leslie F. Feik

Thank you for identifying this engineering design modification. At this point engineering designs are at an appraisal-level. Alternatives are study corridors rather than exact alignments. After a preferred alternative is identified in the Record of Decision, Reclamation will collect design data and prepare a final design and cost estimate, if an action alternative is selected. Your comment will be carefully considered during the next phase of engineering design.

Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Draft Environmental Impact Statement

We Invite Your Comments

As part of the public review process of the Draft Environment Impact Statement, written comments are welcome and are due to the Bureau of Reclamation by 5 p.m. October 30, 2012. All comments become part of the public record.

(Please print clearly—thanks!)

Name Calvin Hostetler
Mailing Address P.O. Box 6, Rocky Ford, CO 81067
Organization (if applicable) Patterson Valley Water Company
Phone () 719-469-0393 E-mail address

If you'd like, you may use this form to provide your comments:

Patterson Valley Water Company connection is in the wrong location on the maps. Our location is actually at Road 14 & Road EE, in Otero County, west of Rocky Ford. To simplify this part of the conduit, I recommend the conduit continue south on Rd 14 then East on Road EE toward Eureka water plant, Fayette would need a spur. This would eliminate all the jogging around.

The Conduit is essential for us to meet water safe Drinking Water Standards.

Thank you for identifying this engineering design modification. At this point engineering designs are at an appraisal-level. Alternatives are study corridors rather than exact alignments. After a preferred alternative is identified in the Record of Decision, Reclamation will collect design data and prepare a final design and cost estimate, if an action alternative is selected. Your comment will be carefully considered during the next phase of engineering design.

Thank you for your comment.

Please mail your comments to the address on the back or e-mail your comments to J. Signe Snortland, jsnortland@usbr.gov. Thank you.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.

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(Please print clearly—thanks!)

Name Shirley Herman
Mailing Address 1821 Hopkins
Organization (if applicable) Hilltop Water Co
Phone () 719-254-6242 E-mail address

If you'd like, you may use this form to provide your comments:

Maps do not show the correct location for connections for Hilltop WC & West Grand Valley WC in Rocky Ford

Thank you for identifying this engineering design modification. At this point engineering designs are at an appraisal-level. Alternatives are study corridors rather than exact alignments. After a preferred alternative is identified in the Record of Decision, Reclamation will collect design data and prepare a final design and cost estimate, if an action alternative is selected. Your comment will be carefully considered during the next phase of engineering design.

Attach additional sheets if necessary

Please mail your comments to the address on the back or e-mail your comments to J. Signe Snortland, jsnortland@usbr.gov. Thank you.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.

Comment Letter 4

Jill Smith Lamar *By*

1. Study to prove that selenium and nuclear chemicals have impacted the service area?
2. How this whole thing change the water flow in the Ark River from JMR to the state line?
3. Why not allow JMR storage in excess years for the area below the dam? (instead of Pueblo Res)-Effects McClave,Hasty,Eads,lamar,Wiley- no mention of Granada or Holly
4. How this effect the tamarisks -Warblers love it,also cedar waxwing
5. Pg 29- Prairie chicken- short term-how short??
6. Will the costs be proportional to Useage? Or will lower ark users be paying for more and cleaner water for the 150,000 people growth up by Pueblo?? OUR population is getting SMALLER!
7. Pg 29- Vegetation-cottonwood and Tamarisk issues -what "mitigation" are they referring to?
8. Why are Granada and Holly not included in this project?
9. Why is LaJunta so high on the graph - Pg 6?
10. Pg 9-For future population growth needs?? We will help pay construction even though our population is DECREASING and we are not listed as a contaminated water supply (except for salts and selenium) -1.5 million increase is NOT us. There has been NO environmental testing to determine that Lamar has a higher cancer rate compared to comparable areas. and selenium has been around forever! lamar 2000 census- 8869 people 2010 census- 7804 Lost 2.57% of population since 1990.
11. Aquatic impact- summary just says impact is negligible. DEFINE. We lose 10% and have a summer like this one, and the river will not even run!!- it will be dry.
- Q) What about Kansas -if we loose river water, Kansas looses river water and the acquirer looses. Will there be another law suit? If there is, it will be SE Colorado that looses.
13. Pg 31-Historic properties Major- are you ready to demolish those?
14. Pg 27- Adverse effects @ Avondale-higher selenium -people play in the river!
15. 10,300 acre ft/year- Jill look up JMR capacity. "don't get it (pg 25) "all alternatives
16. Pg 31(10-20%) increase in water costs!!
17. Pg 31 -Ag water negligible effect-explain! Ditches depend on river water.
18. Pg 24
19. Says upper river is reduced by 10%- what about lower Arkansas?? Says greater than 10% - HOW MUCH??

Dispose of Radio active chld waste!

Medical Study - or eliminat chemical

1. Construct bond

2. 50 year - Repayment 35% of cost over 50 years

How will cost be

Charge cost on construction

No benefit

c<.9S be des 7 per use.

Response

Response to Comment 1: Reclamation does not concur. A study is not needed because the U.S. Environmental Protection Agency and the Health Department have already established primary drinking water standards and streamflow water quality standards to protect human water supplies. Concentrations that exceed these standards would be detrimental to human health as documented in Chapter 1 (see page 1–11 in the Draft EIS).

Response to Comment 2: In general, effects would be negligible with occasional minor effects during low flow periods. A section dedicated to surface water effects in the Arkansas River from John Martin Reservoir to the Kansas State Line is in Appendix B.5 of the Draft and Final EIS.

Response to Comment 3: Excess capacity storage in John Martin Reservoir was evaluated and removed from further consideration in the Draft EIS. See Appendix B.1, page B.1–27.

Response to Comment 4: Tamarisks are invasive species listed by Colorado as noxious weeds not native to the Arkansas River riparian community. While warblers and cedar waxwings may use tamarisk, native riparian vegetation, such as willows and cottonwoods, are their natural habitat. The minimal projected changes in streamflow in the lower Arkansas River would not appreciably affect riparian vegetation and bird and wildlife communities. This is noted in the Wildlife section of the final EIS on page 4–133.

Response to Comment 5: Short-term effects on wildlife were defined in the Draft EIS as those that would be less than one year, as noted on page 4–122.

Response to Comment 6: Southeastern plans to use revenue from water storage contracts to repay the 35% local cost share.

Response to Comment 7: The mitigation measures and best management practices to reduce effects on vegetation are described in greater detail in Appendix B.5. This includes avoiding effects on wetlands and other sensitive communities, where possible, and restoring these plant communities following temporary construction effects.

Response to Comment 8: Southeastern is responsible for repaying Reclamation for constructing the Fry-Ark Project. The AVC is an authorized feature of the original Fry-Ark Project, although it was not constructed at that time. Entities within the

Comment Letter 4 (continued)

*Jill Smith
Lamar* *By*

1. Study to prove that selenium and nuclear chemicals have impacted the service area?
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*Dispose of Radio active waste
Nuclear waste!*

Medical Study - or eliminat chemical

Construct bond

*2). 50 year - Repayment 35% of cost over 50 years
How will cost be Huge cost on construction
No benefit*

C<.95 be dis 7 per use.

Response

Response to Comment 8 (continued): Southeastern district boundaries pay an ad valorem tax that is designated for repayment of the Fry-Ark Project. Granada and Holly are not within the Southeastern district boundaries and are not taxed for the Fry-Ark Project repayment and thus do not benefit from the Fry-Ark Project.

Response to Comment 9: Las Animas, La Junta, and several other communities use alluvial groundwater as their primary supply. Alluvial groundwater in this region is saltier than deep bedrock groundwater that other communities use. This is one reason why Las Animas and La Junta use reverse osmosis to treat their water, which can remove salts. This is discussed in Chapter 3, page 3–35 in the Draft EIS.

Response to Comment 10: The Colorado State Demography Office projects small growth in Prowers County. See page 1–15 in the Final EIS. AVC would deliver water meeting secondary drinking water standards, which would be beneficial to Lamar.

Response to Comment 11: Aquatic resource effects were assessed using hydrologic and water quality modeling results from normal, dry, and wet years. Negligible aquatic life effects were defined as follows: "Changes in fish habitat availability and hydrologic parameters from the alternative would be mostly less than 10 percent. The alternative would cause a slight change to a fish and benthic macroinvertebrate community, but the change would be unmeasurable or of imperceptible consequence, and would be well within natural variability." This definition of negligible effect is in Chapter 4, Table 4–26 of the Draft EIS.

Response to Q: The Arkansas River Compact currently requires that: "the waters of the Arkansas River, as defined in Article III, shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this Compact by such future developments or construction" (Article IV.D), and the Colorado State Engineer's Office administers water rights as such. Assuming the Colorado State Engineer's Office would administer water rights in violation of the Arkansas River Compact is not reasonably foreseeable (as defined in the Draft AVC EIS, Appendix B.4). The Daily Model, therefore, assumed that streamflows would be managed to avoid violating the Compact.

Streamflow effects at the Arkansas River at Las Animas gage and Arkansas River Near Granada gage would be negligible (see Appendix D.4 and D.5 in the Final EIS).

Response to Comment 13: In compliance with the National Historic Preservation Act, Reclamation will identify historic properties in consultation with the State Historic Preservation Office, historic

Comment Letter 4 (continued)

Jill Smith
Lamar By

1. Study to prove that selenium and nuclear chemicals have impacted the service area?
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Dispose of Radio active waste
 Medical Study - or eliminate chemical cause!

1) Construct bond
 2). 50 year - Repayment 35% of cost over 50 years
 How will cost be huge cost on construction
 No benefit

C<.9S be des 7 per use.

Response

Response to Comment 13 (continued): preservation commissions, and tribes. Where feasible, historic properties will be avoided by ground disturbing actions using existing right-of-ways where ground disturbance has already taken place. Historic properties that cannot be avoided will be mitigated before construction in accordance with a programmatic agreement (See Appendix N).

Response to Comment 14: Selenium effects at the Arkansas River near Avondale gage would be predominately negligible for most alternatives. Effects of selenium changes on recreation would be negligible. This was clarified in the Final EIS, Chapter 4, page 4-60.

Response to Comment 16: Southeastern Colorado Water Conservancy District (Southeastern) would use revenue from water storage contracts to pay off components of the Fryingpan-Arkansas Project. This revenue source would be used to repay the 35 percent local cost share in accordance with the authorizing legislation if an action alternative is selected in the Record of Decision. The actual changes to individual water bills would be calculated by individual water suppliers.

Response to Comment 17: Effects on agricultural diversions are in Appendix D.4. Agricultural direct flow and storage water rights are typically senior to water rights in the proposed actions and would not be adversely affected by proposed project operations.

Response to Comment 18/19: Please see the Draft EIS, Appendix D-4 for details regarding surface water effects on the Arkansas River.

Response to handwritten comment "dispose of radioactive nuclide": Treatment and disposal of water from deep bedrock wells are described in the Draft EIS, Appendix B.3, page B.3-43.

Response to handwritten comment "medical study or eliminate chemical cause": Reclamation does not concur. See response to Comment 1 on page P.1-6.

Response to handwritten Comment 2: Southeastern would use revenue from water storage contracts to pay off components of the Fryingpan-Arkansas Project. This revenue source would be used to repay the 35 percent local cost share. Individual participants would negotiate storage contracts with Southeastern. The terms of those contracts could affect the cost of water within each service area.

Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Draft Environmental Impact Statement

We Invite Your Comments

As part of the public review process of the Draft Environment Impact Statement, written comments are welcome and are due to the Bureau of Reclamation by 5 p.m. October 30, 2012.
All comments become part of the public record.

(Please print clearly—thanks!)

Name Ken Wagner
Mailing Address P.O. Box 468, Las Animas, CO 81054
Organization (if applicable) City of Las Animas
Phone () (719)456-2571 E-mail address lapw1@bentcounty.net

If you'd like, you may use this form to provide your comments:

The City of Las Animas in Bent County, Colorado is a small economically challenged rural community consisting of approximately 2,500 citizens with a private prison. The City water so consists of 9 shallow alluvial wells that are approximately 30 feet deep. Source water has very high concentration of minerals that make our water very hard and would not meet state drinking water standards. To solve this problem a Reverse Osmosis Plant was constructed, b and put in service in the last part of 1996 at a cost of approximately 2 million dollars. This Reverse Osmosis Plant has a very high demand of source water as currently can only re-capture 65% of water going through the plant. Reject water from the Reverse Osmosis Plant h the potential in the near future of creating regulatory issues with the receiving stream of the Arkansas Valley River. Electric costs of operating the Reverse Osmosis Plant are now approx. \$150,000 per year with operating cost increasing yearly. The Arkansas Valley Conduit would save the City thousands of dollars per year in operational cost as well as keeping us from regulatory issues that will be ongoing. Water demand would also be less for the City a we would not have reject water with the Conduit.

Please mail your comments to the address on the back or e-mail your comments to J. Signe Snortland, jsnortland@usbr.gov. Thank you.

Thank you for your comment.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.

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Master Contract Draft Environmental Impact Statement

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All comments become part of the public record.

(Please print clearly—thanks!)

Name Patterson Valley Water Company
Mailing Address P.O. Box 6 Rocky Ford, CO 81067
Organization (if applicable) _____
Phone (nr) 469-0393 E-mail address _____

If you'd like, you may use this form to provide your comments:

The Patterson Valley Water Company Board of Directors recommend the following.
1. AVC Long-Term Excess Capacity Master Contract Storage Request Reduce from 40 A-ft to 25 A-ft.
2. Request change of Delivery Point to our existing Water Treatment Plant approximately 1/2 mile south of intersection of Rd. 14 and Rd. EE. Why is our current point of delivery more than 2 miles from our WTP when others are delivered to their WTP?
3. Regardless of which AVC Route Alternative is chosen, We recommend a direct connection with Pueblo Reservoir, and not a connection downstream from the river, because of water quality concerns.

Continued on next page

Attach additional sheets if necessary Page 1 of 2

Please mail your comments to the address on the back or e-mail your comments to
J. Signe Snortland, jsnortland@usbr.gov. Thank you.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.

Response to Comment 1: Patterson Valley Water Company has a Memorandum of Agreement with Southeastern for 40 ac-ft in the Southeastern Long-Term Excess Capacity Master Contract. This quantity is being analyzed for the purpose of the EIS. The MOA is valid during the EIS processes. When the EIS is completed Patterson Valley Water Company may request that Southeastern amend their Master Contract storage request.

Response to Comment 2: Thank you for identifying this engineering design modification. At this point engineering designs are at an appraisal-level. Alternatives are study corridors rather than exact alignments. After a preferred alternative is identified in the Record of Decision, Reclamation will collect design data and prepare a final design and cost estimate, if an action alternative is selected. Your comment will be carefully considered during the next phase of engineering design.

Response to Comment 3 and 4: Thank you for your comment.

Arkansas Valley Conduit and Long-Term Excess Capacity
Master Contract Draft Environmental Impact Statement

We Invite Your Comments

As part of the public review process of the Draft Environment Impact Statement, written comments are welcome and are due to the Bureau of Reclamation by 5 p.m. October 30, 2012.
All comments become part of the public record.

(Please print clearly—thanks!)

Name Patterson Valley Water Company
Mailing Address P.O. Box 6 Rocky Ford, CO 81067
Organization (if applicable) _____
Phone (719) 469-2373 E-mail address _____

If you'd like, you may use this form to provide your comments:

Continued from previous page
4. AVC project needs to be completed to provide safe drinking water and sustain the future of the Lower Arkansas Valley.

Denise J. Flath
President of the
Patterson Valley Water Company

Attach additional sheets if necessary

Page 2 of 2

Please mail your comments to the address on the back or e-mail your comments to
J. Signe Snortland, jsnortland@usbr.gov. Thank you.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.



October 12, 2012

Ms. J. Signe Snortland
Bureau of Reclamation
PO Box 1017
Bismarck, North Dakota 58502

*Re: Arkansas Valley Conduit and Long Term Excess Capacity Master Contract –
Draft Environmental Impact Statement*

Dear Ms. Snortland:

The Board of Water Work of Pueblo, Colorado (Board) appreciates the opportunity to participate as a Cooperating Agency in the NEPA review of the proposed Arkansas Valley Conduit (AVC) and Long Term Excess Capacity Master Contract. As we discussed at the open house in Pueblo, I believe the DEIS provides an incomplete comparison of the alternatives because not all the components have been included in the three action alternatives. I believe this could lead to exclusion of a viable alternative because it may appear to have more environmental impacts or may be more costly when, in fact, it may be the best alternative if all components are included. The Board urges Reclamation to compare all three action alternatives on an equal basis.

In addition, the Board has consistently advocated a regional approach to water treatment and we question whether it is in the AVC participants' best interests to pay for and staff a stand-alone treatment plant. I believe the Board's Whitlock Water Treatment Plant can provide filtered water or filtered and disinfected water at a competitive cost without duplicating staffing. The participants would still pay the incremental costs that the Board would require to replace the treatment capacity utilized by the AVC participants but the Board should be able to provide the water treatment for the AVC up to 20 mgd utilizing current employees. This would have to be verified once the design of the new facilities is finalized. I understand that Reclamation prefers to own all facilities but it seems like it would be worth the effort to determine whether a water treatment contract with the Board would make more sense for the AVC participants. The market for qualified operators in the state of Colorado and more specifically in southern Colorado could present challenges to Reclamation to recruit and retain qualified operators. The Board urges Reclamation to seriously consider the JUP North Alternative or some variation of that alternative that would avoid duplication of facilities and staffing thus potentially reducing the costs for the AVC participants.

Page 1 of 2

We concur with your recommendation and re-examined alternatives to see if reformulating alternatives by mixing components evaluated in the Draft EIS would decrease costs and minimize environmental effects. As a result the Joint Use Pipeline, Interconnect, and Master Contract were incorporated into a hybrid alternative called Comanche North. This alternative replaced Comanche South and is evaluated in the Final EIS.

Expansion and use of the existing Whitlock Water Treatment Plant to treat AVC water is included in the Final EIS on page 2–17 in response to your comment.

Thank you for the opportunity to provide comments on the DEIS. If have questions or would like to discuss the issues, please contact me at (719) 584-0233.

Sincerely,



Terry R. Book
Executive Director

*copy: Matt Trujillo
Lee Huffstutter
Don Colalancia
Jim Broderick*

8

South Swink Water Company

P.O. Box 442
Swink, CO 81077

Phone 719-384-5458
Fax 719-384-5458
Cell 719-469-5031

October 10, 2012

J. Signe Snortland
Bureau of Reclamation
Dakotas Area Office
P.O. Box 1017
Bismarck, ND 58502

Re: Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract written comments.

Attention: J. Signe Snortland

John Hostetler (President) and Norman Noe (sec.-treas./manager) of South Swink Water Company (SSWC) are participants and promoters of the AV Conduit.

We believe the "no action alternative" is not a reasonable alternative for water providers in the AV Valley, especially those of us under an enforcement order from Colorado Department of Public Health & Environment for not meeting drinking water standards with the radionuclide rule. SSWC had a preliminary engineering report completed in 2011, and the AV Conduit was the most cost effective and logical answer in meeting drinking water standards. Many other water providers had engineering reports completed also, with similar results. There are water treatment methods to remove radium and alpha from water, but they are cost prohibitive to smaller systems. The waste disposal of radionuclide's is simply too expensive. Our engineering report estimated our annual disposal cost at \$75,000, with capital construction of the water treatment plant at 1.3 million dollars. We will point out that treatment to remove radium and alpha was our second least expensive option following the AV Conduit. Also studied was regionalization with the City of La Junta, but it was estimated more expensive than treatment. We also have sincere concerns that radionuclide disposal costs will be much more expensive in the future, due to stricter regulations, and that makes treatment even less affordable.

We currently serve approximately 250 taps. As indicated from the above dollar figures, a no action alternative leaves SSWC and many others without drinking water that meets standards. All other alternatives are simply out of our reach financially.

National Environmental Policy Act (NEPA) regulations require analysis of a No Action Alternative to serve as a basis of comparison to other alternatives. For this EIS, No Action means that AVC and the Interconnect would not be built and the associated contracts would not be issued. AVC participants would either partner to form regional water systems or continue current operations. Water treatment would meet primary drinking water standards but not necessarily secondary drinking water standards. We agree that No Action would have the highest operation, maintenance, and replacement costs of all alternatives.

In the No Action Alternative, which does not include AVC, South Swink Water Company would upgrade their water treatment process to comply with the Health Department enforcement action. Estimated treatment costs and associated disposal costs are included in the Final EIS in Appendix B.3.

Thank you for your comment.

Comment Letter 8 (continued)

Response

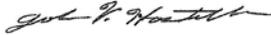
Another reason the Arkansas Valley requires the completion of the AV Conduit is we need another source of water for the future. Most small towns and rural water companies utilize the Dakota and Cheyenne aquifers for their water source. Over the years these aquifers have realized significant depletions. For example, static water levels and pumping levels on our wells have decreased approximately 250 feet in the last 50 years. Where will water levels in the Dakota be in year 2062? This could be a problem for future generations if the AV Conduit is not constructed.

SSWC and many other water providers desperately need the AV Conduit constructed.

Our comment on alignments is utilize ones with least impact on getting through Pueblo. As for alignments in the Rocky Ford/La Junta area, we prefer the Comanche South alignment running along Highway 10 or Roads Y & Z from Rocky Ford to La Junta. This route seems less obtrusive and simpler than other alignments following the congestive Highway 50 corridor from Rocky Ford to La Junta.

Thank You for your time on this matter.

John Hostetler, President of South Swink Water Company



Norman Noe, Secretary-Treasurer/ Manager of South Swink Water Company



We concur. This information was added to the purpose and need discussion in the Final EIS in Chapter 1, page 1–20.

In response to your comment and others, Reclamation carefully considered effects on infrastructure by the various alternatives in consultation with the cities that would be affected by the proposed alignments. The results of that analysis are summarized in the Final EIS in Chapter 2 and in Chapter 4, Human Environment.

Comment Letter 9

9

October 18, 2012

Telephone Comment on Draft AVC EIS from Richard Jensen

In case Mr. Jensen does not send a written comment, this is a record of his verbal comment.

On October 18, 2012, Mr. Richard Jensen, Fowler, Colorado, called me regarding the Draft AVC EIS. Mr. Jensen was concerned about alignment of the alternatives and effects on irrigated agriculture. I directed him to the www.usbr.gov/avceis website for more detailed information on the alternatives and explained that at this level of 10% engineering design, alignments were corridors rather than exact locations.

He said that he would look at the engineering report on the website and asked about the process of picking an alternative. I explained the Principles and Guidelines benefit/cost analysis, the steps in identifying a preferred alternative, and the selection of an alternative in the Record of Decision. He wanted to know who the selecting official is, and I responded that Mike Ryan, Regional Director of the Great Plains Region was the decision maker for this proposed project.

Mr. Jensen asked if we had taken into account the effects of the proposed project on irrigated agriculture. He explained that he and other farmers level their fields and use furrow irrigation. Any disruption to the soils takes years to settle and can adversely affect an irrigated field. Considering construction of a pipeline through an irrigated field may not cause a temporary, short-term impact and should be regarded as long-term.

He asked if we had seen a study that he had done for the Colorado Department of Transportation (CDOT) regarding expansion of Highway 50 that evaluated the impacts one of their alternatives on irrigated agriculture. I told him that we had been working closely with CDOT and were using data from their programmatic EIS, but I was not familiar with the study he had done. I asked him to send us a written comment and send us a copy of that report.

He said that he would do so and wondered why he should send comments to someone in North Dakota. I explained my role as team leader and said that most of our team members are located in Colorado.

Signe Snortland
Team Leader
AVC EIS

Response

We concur that constructing the pipeline could affect agricultural operations. Where possible construction would be scheduled to avoid the irrigation season, but that may not be feasible in all locations. Best management practices would be used to salvage and restore soils on agricultural lands, as described in Appendix B.5, and to restore productivity to agricultural lands following construction disturbance. It is anticipated that temporary disruptions in agricultural or other land uses would be less than 1 year, although productivity of hay meadows or other perennial vegetation could take more than 1 year to return to pre-disturbance production levels.

1 ARKANSAS VALLEY CONDUIT
2 DRAFT ENVIRONMENTAL IMPACT STATEMENT
3 PUBLIC HEARING HELD WEDNESDAY, SEPTEMBER 26, 2012
4 LA JUNTA, COLORADO
5 *****
6 (Whereupon, the formal testimony of the public
7 hearing was opened at 7:22 p.m.)
8 MS. LAMB: I will formally open the public
9 testimony section of this hearing. During this portion of
10 the hearing, Erin will be recording all that is said. So
11 quick review, October 30th is the deadline. We are
12 accepting written and verbal comments. Tonight is your
13 opportunity to submit the verbal comments. Written
14 comments, again, can be provided this evening on a comment
15 card or on a future date via e-mail or regular mail to
16 Signe's attention, and her information is on the card.
17 This hearing will proceed in the following manner.
18 We ask that speakers please keep your comments to five
19 minutes. I will call speakers to the microphone. If I
20 call your name and you are not present, you will be moved
21 to the end of the list. Again, five minutes to speak, and
22 during testimony we ask that folks please remain quiet and
23 not comment in any way during the speaker's testimony. If
24 you have extensive comments, we ask that you please
25 summarize your comments during your five minutes and then

Comment Letter 10 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 submit the full version in writing, which you can do, of
2 course, attached to the comment card.
3 To help you accurately gauge the time, we're using
4 these three lights over here on the right. The green
5 light indicates that the five minutes has started. The
6 yellow light will indicate that there are 30 seconds left,
7 and the red light will indicate that your time has
8 elapsed. At that point we will call for the next speaker.
9 When it is your turn to speak, please clearly state your
10 name, and if you're representing a group, your
11 affiliation.
12 Please remember that this is a formal hearing and
13 Erin our court reporter is recording your comments. It is
14 important that you speak clearly and not really go too
15 fast so she can keep up with the typing. If you do not
16 feel comfortable standing in front of the group but would
17 like to make verbal comments, you may come up after the
18 hearing is concluded and give your comments to Erin and
19 she can record them at that time also.
20 We are here to listen and not to respond. So
21 during the verbal comments, we will not respond to what
22 you're saying or answer questions. We are here to receive
23 those comments and to hear what you have to say.
24 All right, any questions about that? Yes, sir?
25 UNIDENTIFIED COMMENTER: Will all the comments be

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 on the website some place so we can read them?

2 MS. LAMB: They will be in the final environmental
3 impact statement, and they will be responded to in there.

4 MS. SNORTLAND: And we have posted -- on other
5 environmental impact statements I have worked on, we have
6 posted each comment as we get it, but we wait until the
7 public comment period has closed and then we post them.

8 MS. LAMB: Okay.

9 MS. SNORTLAND: And I'm assuming that's what we'll
10 do this time.

11 MS. LAMB: We definitely can do that. All right.
12 So when you come up to speak, please be sure, don't be
13 shy, to adjust the microphone so you're comfortable with
14 it so we can hear. Because it helps Erin hear what she
15 needs to be typing.

16 Our first speaker is Mr. Norman Noe.

17 MR. NOE: Hi. My name is Norman Noe. I'm
18 currently the operator of South Swink Water Company, one
19 of the companies who is under enforcement action from the
20 Colorado Department of Public Health and Environment to
21 meet standards. We are happy to see the progress on this
22 EIS, and the conduit would help us to meet water quality
23 standards. And we actually could have used it built
24 yesterday. Thank you.

25 MS. LAMB: That microphone is not -- oh, neither

Thank you for your comment.

Comment Letter 10 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 was this one. This microphone is having a little
2 difficulty picking up, so it's hard to hear in the back.
3 So if the speakers don't mind to bring it right up here to
4 where you are. You don't have to touch it.

5 MR. NOE: I didn't want to go in the first place.

6 MS. LAMB: You did very well. Our next speaker is
7 Mr. Keith Goodwin.

8 MR. GOODWIN: And I am shorter than Norm, so I
9 have to adjust this. My name is Keith Goodwin,
10 commissioner of Otero County, and I'm a positive supporter
11 of this activity in that in Otero County particularly we
12 have 28 independent water companies that most are having
13 troubles with radionuclides, variety of things, and the --
14 they're using the conduit as a method of solving or
15 hopefully solve the problems with the water quality with
16 the Department of Health waiting for the conduit to come
17 along. I'm sure that the Department of Health would not
18 wait forever.

19 So the expediency of getting this is important,
20 and also the importance of government funding so that it
21 can go on. You've seen the numbers up there, and we don't
22 have that kind of money laying around. So it's built on
23 being funded and then paid back over a 50-year period.
24 And we're okay with paying back, we just need the funding
25 up front to get the project done. Thank you.

Thank you for your comment.

Comment Letter 10 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 MS. LAMB: Our next speaker is Joe Kelley.

2 MR. KELLEY: I noticed these other guys didn't use
3 all their time, so I request that we not start at the
4 light. I'm here -- my name is Joe Kelley, and I'm the
5 director of City of La Junta Water Utilities. A few
6 comments. Hopefully I can make it quick, not just a few
7 comments, but several.

8 The Arkansas Valley Conduit, I believe, is
9 essential to the future of all the communities east of
10 Pueblo, and it has been for decades. And it's an
11 essential part of the original project, Fry-Ark project
12 authorization. And in the words of Bill Long, current
13 president of the Southeast District, is that if we don't
14 complete this conduit, then the project has been a
15 failure. We haven't done 100 percent. So I just want to
16 point that out. I don't think Bill is here. If he was,
17 he wouldn't mind me repeating that.

18 Sometimes we think of what's going to happen to us
19 today and tomorrow only. To me, a lot of perspective that
20 folks have is in terms of the time period that they think
21 about where they think about, okay, what's this going to
22 do for me? Or what's this going to do for my children or
23 my grandchildren? And what's going to happen in the
24 future? And the only lessons that we can get about the
25 future are the ones that we get from the past.

Thank you for your comment.

Thank you for your comment.

Comment Letter 10 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 And having been in water treatment for over 30
 2 years now, I can guarantee you that it's not going to get
 3 any easier or any cheaper to treat our water. We talk
 4 about radioactive waste and the problems of radioactive
 5 water contamination and the problems that we have today.
 6 We need to consider that the EPA sets maximum contaminant
 7 levels which don't always correspond with their maximum
 8 contaminant level goals. And their goals are set based on
 9 the technology available to measure how much contaminants
 10 are in the water.

11 And I can promise you that as technology gets more
 12 precise in measuring those, the limits that we have to
 13 face in our drinking water, among other things in our
 14 lives, will become more and more stringent. So future
 15 costs that we see seem maybe to be not quite -- not quite
 16 so expensive could in the future be considerably more
 17 expensive.

18 We also need to consider how we're going to treat
 19 this. The -- what I've read so far and no action
 20 alternatives suggest that we'll use reverse osmosis and
 21 connect to the folks that are already doing it, that we've
 22 already got this great water, which we do by the way.
 23 Everybody's welcome to try some. But the problem is, is
 24 that what do we do with the waste and what is the cost of
 25 the waste or the byproduct that comes from treating with

It is possible that future regulatory changes could increase water treatment costs. However, cost estimates and effects analyses in the Final EIS use existing regulatory information and could not quantitatively assess future regulatory changes that are not reasonably foreseeable.

Estimated treatment costs and associated disposal costs of the No Action Alternative are included in the Final EIS in Appendix B.3.

Comment Letter 10 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 reverse osmosis or actually anything else? There's always
2 going to be a byproduct. Okay, so in that case, I just
3 want to make sure that what we look at when we look at no
4 action alternative, it's more than just pipelines, that
5 perhaps we need to make sure that we evaluate what
6 disposal and operating and costs are involved there.

7 One point, just a kind of side point as I ramble
8 on here, is that this -- it needs to be pointed out that
9 by doing pipeline to these communities, a lot of the
10 communities are already utilizing the water, the project
11 water that's available, or other water in the Pueblo
12 Reservoir. Pipeline will cut down on the -- it's kind of
13 a passive conservation method that will cut down on the
14 amount of water that's lost in transport from Pueblo
15 Reservoir to here, to Lamar, which Lamar has huge, huge
16 losses.

17 Okay. I want to speak one -- a little bit to the
18 Master Contract. Master Contract, over the years that
19 I've worked on this, and I can guarantee you it's a lot of
20 years. I go to meetings now, and I look around and
21 there's only young people there. I was one of them at one
22 time. And we need to use the Pueblo Reservoir
23 consistently and use the entire space, and that's
24 important. Master Contract is a must for Arkansas Valley
25 Conduit to work efficiently. We need to consider that

We concur with this statement.

Thank you for your comment.

Comment Letter 10 (continued)

Response

1 there's -- if there's no Arkansas Valley Conduit, then
2 it's going to change the Master Contract.

3 MS. LAMB: Mr. Kelley?

4 MR. KELLEY: I understand there was a light. I
5 was hoping I would get somebody else's time.

6 MS. LAMB: Wait, hold on, hold on. Is anyone else
7 interested in commenting tonight? Otherwise we'll have
8 Mr. Kelley continue. Please proceed.

9 MR. KELLEY: I'll try fast, 15 seconds here. Most
10 of these people know me. They'll tell you he can talk
11 forever if you let him.

12 One thing that I want to point out, it's pretty
13 significant, if you look at the -- all of the alternatives
14 compared to the no action alternative, even though no
15 action alternative capital cost seems lower if we've
16 considered all of these other points, is that the annual
17 operating cost saves us somewhere around 33 percent, from
18 the 5 million down to 4 million or less, which would be 20
19 percent down to 30 percent, something like that.

20 And then just one last negative comment on one
21 portion of it is that I do not believe, considering
22 everything else that I've said, that the River South is
23 a -- let me put it a different way. Considering
24 everything else that I've said, I consider that the River
25 South is an unacceptable alternative because it may work

Thank you for your comment.

Thank you for your comment.

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 today, it may work ten years, but I have my doubts on
2 whether it's going to work 20 or 30 years, and we'll end
3 up building a pipeline from that point to Pueblo
4 Reservoir. Thank you.

5 MS. LAMB: Thank you very much. I do not have any
6 other speaker cards. Is there anyone else who wishes to
7 speak that might have changed your mind perhaps? All
8 right. If we do not have any other speakers this evening,
9 then that concludes our formal public hearing, and I thank
10 you all for coming out tonight to join us, giving us your
11 time and your comments. We really appreciate it. We will
12 be staying here in this room if you would like to have
13 some additional discussion with members of the team. And
14 Erin will be here, too, if you do decide you wish to make
15 a private comment. Yes, sir?

16 UNIDENTIFIED COMMENTER: Will there be any more
17 hearings after you release the chosen alternative?

18 MS. LAMB: I don't know that. Signe?

19 MS. SNORTLAND: No. We have one more hearing
20 tomorrow. After the final environmental impact statement
21 is released, if you want a copy, just let us know and when
22 you signed it, if you indicated you wanted a final
23 environmental impact statement, we will be sure you get a
24 copy. And take a draft with you when you leave if you
25 didn't get one delivered to your mailbox. But there is no

There will be no more hearings, but Reclamation sought input from affected and interested individuals and groups in responding to public comments and in the decision process as the Final EIS was prepared. Reclamation continued meeting with cooperating agencies, distributed a newsletter identifying the preferred alternative, and updated the project website to inform the public of important developments. The preferred alternative is identified in the Final EIS but will not be selected until the Record of Decision is signed. Reclamation's decisions regarding the proposed federal actions will be documented in the Record of Decision.

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 public hearing after the final is released, but it will be
2 posted. You'll get the information, you can read it, and
3 then we'll make sure you get the record of decision when
4 that's done. Yes, sir?

5 UNIDENTIFIED COMMENTER: I don't want to push
6 this, but the -- when the final alternative is suggested,
7 chosen by the Bureau, that's it?

8 MS. SNORTLAND: Okay, when we identify it?

9 UNIDENTIFIED COMMENTER: Well, I know you'll
10 identify it, but there's no comment on it after?

11 MS. SNORTLAND: That's correct. What people do is
12 when we identify the alternative, we'll post it on the
13 website. We also send out newsletters. I don't know if
14 you've gotten any. If your name is down there, you've
15 given your address, we will have a newsletter going out
16 that will have an alternative, and you'll have my e-mail
17 address if you could send me a comment if you'd like, but
18 there will be no formal comment response period.

19 But scoping really never ends in an environmental
20 impact statement process. We're always looking for input.
21 So we won't ignore you. We want to hear from you, and you
22 do influence what we do. You really do. And I'm so glad
23 we finally have a written comment, and I'm so glad we had
24 people speak up in the public hearing.

25 MS. LAMB: I do want to add something to what you

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD WEDNESDAY
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1 were saying. Also on the website, if you have not
2 received newsletters so far, we do have the newsletters
3 posted on the website so you can download them from there.
4 And if you prefer to get your information electronically,
5 we can send you everything via e-mail as well. When you
6 submit your e-mail address tonight, it goes on our e-mail
7 list. And you can always go to the website, as Signe
8 mentioned earlier, see where we are, what we're doing.
9 And at the top of next week, we'll have tonight's
10 presentation also posted on the website so you can view it
11 if you would like.

12 MS. SNORTLAND: And for your friends who may have
13 missed it, they can go on the website and take a look at
14 the slide show. And you can walk them through it.

15 MS. LAMB: And the entire draft EIS is on there as
16 well.

17 MS. SNORTLAND: Oh, yay, yes.

18 MS. LAMB: If you can't get enough of the
19 engineering reports here, you can get them there. So with
20 that, we will conclude this evening's hearing and feel
21 free to stick around and have more discussions with us if
22 you like. And eat cookies; otherwise we will.

23 MS. SNORTLAND: Thank you.

24 (The formal testimony portion of the public
25 hearing was closed at 7:38 p.m.)

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REPORTER'S CERTIFICATE

I, ERIN R. DONATO, Registered Professional Reporter, Certified Realtime Reporter and Notary Public within Colorado, appointed to stenographically record the public hearing of the Arkansas Valley Conduit, do certify that hearing was taken by me at the Otero Junior College, 2001 San Juan Avenue, #116, La Junta, Colorado, on September 26, 2012, then reduced to typewritten form consisting of 12 pages herein; that the foregoing is a true transcript of the proceedings had.

In witness hereof I have hereunto set my hand this 2nd day of October, 2012.

Erin R. Donato, RPR, CRR
1204 South Seventh Street
Lamar, Colorado 81052

1 ARKANSAS VALLEY CONDUIT
2 DRAFT ENVIRONMENTAL IMPACT STATEMENT
3 PUBLIC HEARING HELD THURSDAY, SEPTEMBER 27, 2012
4 LAMAR, COLORADO
5 *****
6 (Whereupon, the formal testimony of the public
7 hearing was opened at 7:28 p.m.)
8 MS. LAMB: I'm going to go ahead and start the
9 formal hearing now. I want to give everyone a chance to
10 have the very good comments we're receiving be officially
11 recorded into our process, which of course Erin will do
12 for us here as our court reporter.
13 Before we officially open it, I have comment
14 cards. If anyone else wants to speak, we ask that you
15 please go ahead and fill out the comment card. Would
16 anyone like to do this so we have a record? I have Mr.
17 Scranton's. All right, very good, thank you.
18 And before I do start with the formal hearing, I
19 would like to introduce our senior representative from the
20 Bureau of Reclamation, Ms. Jaci Gould is our deputy area
21 manager with the Eastern Colorado Area Office. It's the
22 Eastern Colorado Area Office that oversees the
23 Frying-Arkansas project which the AVC would be a part of
24 should it be constructed. So Jaci is here to listen to
25 your comments as are Signe and I.

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1 During this formal -- this more formal part of the
2 hearing, the testimony you submit will be recorded here by
3 Erin. We will not respond. It is our job to listen, and
4 it is my job as your hearing officer this evening to make
5 sure that your comments are incorporated and that we do
6 hear them and to enable you to get whatever comments,
7 concerns, questions you might have into our public record
8 here that we're keeping for our NEPA process. So this is
9 your opportunity to say what you might have already said,
10 if you care to resubmit the same comments you've already
11 done so Erin can type them in, or to submit new ones.

12 So I have two speakers already. Is there anyone
13 else who would care to hand me a speaker card at this
14 time? Okay. If you do change your mind, just wave at me
15 and I'll make sure you get the microphone. So our first
16 speaker this evening is Jill Smith.

17 MS. SMITH: Oh, that's me. Well, I thought I was
18 asking questions more than making a statement. I came
19 prepared with 19 questions, but I wanted to ask them in a
20 way that everyone -- there could be a discussion. So I
21 guess I'll propose them and then if anybody wants to make
22 a statement, they can. My first concern -- not concern,
23 just curiosity. I did read the executive summary. And I
24 mean it's well documented that selenium and certainly
25 radioactive materials are detrimental to health. But I'm

Comment Letter 11 (continued)

Response

1 curious, I mean, is that -- the health of the water is one
2 of the three factors. So to me there needs to be some
3 kind of study that proves there has been some kind of a
4 negative impact by those chemicals in the water in the
5 past to justify this kind of expense, because it's
6 astronomically expensive. And as far as I know, perhaps
7 in the big document it says, but I mean, we don't know if
8 our cancer rates from those two particular chemicals are
9 higher in this watershed region than the general
10 population at all.

11 So to me, that needs to be done, and I realize
12 that's adding an enormous expense to the project doing
13 that kind of study, but it's one of the justifications for
14 doing it. And if we can't prove that it's detrimental to
15 health, we've lost a third of the reason to do this to
16 begin with. So that was probably No. 1.

17 Trying not to do 19, I'll just pick one other one.
18 My other concern is distribution of the expense for this
19 project. I see huge, humongous benefits to the front
20 range, to the high population areas up there, and I'm
21 curious about how the distribution of cost is going to be
22 distributed among all the participants. If it's a per
23 capita event of users, perhaps that's worthwhile. But
24 on -- and I don't remember which project it was when
25 you're building the conduit under the river, whichever one

Reclamation does not concur. A study is not needed because the U.S. Environmental Protection Agency and the Health Department have already established primary drinking water standards and streamflow water quality standards to protect human water supplies. Concentrations that exceed these standards would be detrimental to human health as documented in Chapter 1 (see page 1–11 in the Draft EIS).

Southeastern would use revenue from water storage contracts to pay off components of the Fryingpan-Arkansas Project. This revenue source would be used to repay the 35 percent local cost share. Individual participants would negotiate storage contracts with Southeastern. The terms of those contracts could affect the cost of water within each service area.

1 that one is, that one is going to be enormously expensive
2 to do. And us down here will not get any benefit from
3 that. The beneficiaries of that particular one on your
4 slide were all west of here by a long shot.

5 So to me, those of us down in this lower region
6 perhaps shouldn't even pay for that whole conduit to go
7 under the river and take care of those communities up
8 there. So if you just divide it up per capita, we're
9 still paying for those communities to have a service that
10 we have no part of whatsoever. So that's a huge concern
11 to me.

12 Would somebody else like to talk?

13 MS. LAMB: You're free to continue if you like.
14 It's good to get your comments.

15 MS. SMITH: Well, let's see, has anybody broken it
16 down, assuming that it would be broken down financially to
17 a per capita use, which I don't want to see happen, but if
18 it goes to that, what does that do to Joe Blow and I in
19 terms of our water bill? I mean, I'm anticipating minimum
20 \$20 a month more for 35 years. And that's a lot of money
21 when we're already paying a great deal. Okay? So the --
22 nowhere did I read a cost impact. And with inflation, is
23 this cost fixed or could it go up over the 1200 -- you
24 know up to 2070 that we're talking about? So will we
25 adjust on those costs over those many years and our costs

Southeastern would use revenue from water storage contracts to pay off components of the Fryingpan-Arkansas Project. This revenue source would be used to repay the 35 percent local cost share. Individual participants would negotiate storage contracts with Southeastern. The terms of those contracts could affect the cost of water within each service area.

Comment Letter 11 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD THURSDAY
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1 will continue to rise? So that's a huge concern as well.

2 I'm also horrendously -- I'm the -- for those of
3 you that don't know me, I'm a teacher and a wildlife
4 photographer by fun. So I'm really concerned for -- I
5 want good water. I want good and healthy water for all of
6 us, but I want balance in all things. And Lamar
7 particularly is on a major north/south flyway for
8 wildlife. And the idea of losing a single gallon of water
9 out of that river and our waterways for the wildlife is
10 pretty alarming to me right now after our drought year. I
11 mean, with our drought year, and we tend to have -- those
12 of you from Lamar know, what? five to seven years of
13 drought and one year of plenty. And then it starts all
14 over again.

15 If you lose more water on a year like this, the
16 impact is huge. Economically in our community we have
17 enormous sacrifices by our farmers and ranchers for water
18 just as a result of the whole Kansas debacle. And so
19 we're suffering from that. We've lost the Amity Canal.
20 That water has been diverted up to Colorado Springs. And
21 I might mention, it was diverted up to Colorado Springs
22 under less than honorable purchase. And so that makes us
23 all just a little nervous about what's going to happen to
24 our agriculture water as well.

25 You reduce the flow of the Arkansas, and there are

Average annual streamflow on the lower Arkansas River at Las Animas would increase less than 1 percent compared to No Action for the action alternatives except JUP North, which would decrease less than 1.5 percent (Table 4–8 in Draft EIS). These small changes in streamflow would not measurably affect riparian vegetation and stream habitat used by waterfowl.

Appendix D.4 in the Draft EIS contains details regarding surface water effects on the Arkansas River. Effects criteria are on page 4–19 of the Final EIS. The averages are for the 28-year study period evaluated by the hydrologic modeling.

1 how many -- there are people who could speak to this
2 better than I can. How many head gates are coming
3 directly off of the river that provide agriculture water
4 for our communities? And although those little symbols
5 say negligible, negligible by what standard? What was
6 your formula for averaging? I mean, is it an average over
7 a 20-year period of water flow? Is it an average over the
8 last 10? You know, I'd kind of really like to know where
9 those numbers came from, and I'm really intimidated by the
10 monstrosity size of those binders. So maybe someone could
11 address that.

12 Anybody else, would you like to talk, guys? I can
13 come back and talk again.

14 MS. LAMB: And you're most definitely welcome to
15 do that.

16 MS. SMITH: I just want someone else to have an
17 opportunity to speak.

18 MS. LAMB: Well, thank you very much. Good
19 comments.

20 MS. SMITH: I still have a whole bunch more, but
21 I'm sure you guys too.

22 MS. LAMB: If no one else has a comment, Mr.
23 Scranton, you are next on my list if you care to make more
24 comments or reiterate the ones you've already made for the
25 official record.

Comment Letter 11 (continued)

Response

1 MR. SCRANTON: Yes. It seems to me, and I know
2 this is true, that Colorado Springs, we are the flush
3 route down Fountain Creek and into the Arkansas. They
4 say, oh, okay, sorry, we know we had a spill. We'll pay
5 the fine. Well, they never quit having spills. So it
6 pollutes the water, the very water that you're trying to
7 clean up. Now, I see you shaking your head. You've heard
8 this before, haven't you?

9 Somewhere along the line we've got to have some
10 ground -- ground rules. Now me and the John Martin dam
11 are the same age, and this water line has been part of
12 every appropriation that they've asked for, and they have
13 never laid one foot of pipeline. Thank you.

14 MS. LAMB: And does anyone else care to submit an
15 oral comment at this time? Otherwise, Ms. Smith, would
16 you like the microphone back?

17 MS. SMITH: Well, give them a chance to think, to
18 answer. Do you guys have more?

19 MR. SCRANTON: Sure, I like to hear you talk.

20 MS. SMITH: You like to hear me talk? Oh, no, I
21 just have more questions than I have statements.

22 MS. LAMB: Questions are good. Oh, yes, sir.

23 MR. RICH: I'll chime in again.

24 MS. LAMB: And go ahead and submit your name and
25 any affiliation you care to share with us for the record.

Regulating water quality in Fountain Creek is outside of the scope of this EIS. Although AVC was authorized by Congress in 1962, it was not constructed primarily because of the beneficiaries' inability to pay 100% of the construction costs. In 2009 Congress amended the legislation to authorize annual federal funding with a 35% local cost share. Construction funding would be requested only if an AVC action alternative is selected in the Record of Decision.

Comment Letter 11 (continued)

Response

1 ARKANSAS VALLEY CONDUIT DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC HEARING HELD THURSDAY
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1 MR. RICH: I'm Bill Rich. I'm with Hasty Water
2 Company, and I've been sitting on the Conduit Advisory
3 Board for -- how long has it been?
4 MR. SCRANTON: Eighty years.
5 MR. RICH: No, it hasn't been quite that long, but
6 close, you're real close.
7 One of the things that I don't think you did
8 address in your costs was the savings that's going to be
9 realized by folks right here. Ask Pat Palmer what it
10 costs him to soften enough water to wash cars or run his
11 sub shop or anybody else in town that serves food.
12 They've got to have softened water. That hasn't taken the
13 salt out yet. It hasn't taken the radiation,
14 radioactivity, selenium, all that other stuff out. But
15 they've got to have soft water just to operate.
16 I mean, I was just telling somebody, I spend --
17 heck, I spend \$30 a month just filtering my water in my
18 house. I live in Hasty. We've got dirtier water than you
19 guys do. We've got a lot of iron in our water. That's
20 not a pollutant, but you ought to see my tan T-shirts.
21 We've also got a lot of salt. I've told folks I can't
22 wash my car in my driveway. I'd like to. I am lazy, but
23 I'd like to wash the car. But if a drop of water dries on
24 it, it looks like you poured flour on the thing. So I
25 come down to the car wash down here that they have soft

We concur that AVC would have water quality benefits for individual businesses and households. These benefits are described in the Final EIS on page 4-159.

1 water, makes it real nice.

2 There would be a lot of money saved in households
3 and commercial businesses by having this conduit and not
4 having to do all that just to have decent water. Has that
5 even been thought about? I don't know. I'm done.

6 MS. LAMB: Thank you very much. Anyone else?

7 Jill, you get it back.

8 MS. SMITH: I get it back.

9 MS. SNORTLAND: Jill, would you -- do you -- I
10 mean, I think you want to chat. I think you want to get
11 answers.

12 MS. SMITH: I do, I need answers.

13 MS. SNORTLAND: And we're trying to do this as a
14 hearing to get this recorded, but it's kind of
15 counterproductive for you.

16 MS. SMITH: Yes, it is.

17 MS. SNORTLAND: So I sense your frustration.

18 MS. SMITH: But it is questions that others will
19 probably want to bring up and know answers as well. So I
20 don't know how you want -- however you want to handle it
21 is fine.

22 MS. LAMB: There are also questions that I think
23 are good to have Erin record, so why don't we just
24 continue to record the questions, but should we answer --

25 MS. GOULD: And then we can stick around

Comment Letter 11 (continued)

Response

1 afterwards and answer.

2 MS. SNORTLAND: Let's get them recorded and then
3 let's talk.

4 MS. LAMB: That's a great idea.

5 MS. SMITH: That's a good idea. Okay. Another
6 one of my concerns is, I'm interested in the three
7 purposes for doing this. One of the purposes is to
8 anticipate population growth through 2070, I think it was,
9 wasn't it? 2070 or 2060. But I went back and looked in
10 the census for our area down here certainly, and I'm down
11 in the Lamar region. I think if you get up to La Junta
12 and west, you're going to see increased population growth
13 all the way up that direction. But from La Junta east,
14 you're going to find that our population has decreased
15 rather significantly over the last 20 years even, the last
16 two census dates. So for us our needs are -- are less.

17 I do assume that there will be some kind of
18 priority rights to water when this project is made based
19 on per capita use. But what worries me is -- and we're
20 all worried about water going away from our area that
21 normally we would have access to. I'm concerned about
22 these high population areas that are growing and growing
23 and growing saying, oh, we've got so much allocation to
24 our area. Gosh, we've got a little extra water. Let's
25 build some golf courses. So I'm really concerned about

Reclamation does not concur. The Colorado State Demography Office projects small growth in Prowers County. See page 1–15 in the Final EIS. AVC would deliver water meeting secondary drinking water standards, which would be beneficial to Lamar.

Southeastern developed the Final Report Regional Water Conservation Plan in Support of Arkansas Valley Conduit and Related Projects that includes a tool box of resources for the AVC participants. This water conservation plan is Appendix B.7 in the Final EIS. If an action alternative is selected in the Record of Decision for the AVC, Southeastern would serve as a technical resource for the participants when they implement the Water Conservation Plan.

1 conservation in those high population areas that are
2 literally taking water away from down here. That concerns
3 me a lot. It's quality of life.

4 And I know from chatting with some people, you
5 can't get into forced conservation. There's no way for
6 that to happen. But I would like to see some connection
7 to conservation to this, if not as a requirement, but as a
8 strong suggestion to communities that they develop
9 alongside of this, if it actually goes through, that every
10 community work on creating a conservation attitude for new
11 growth. The old growth we can't change and probably
12 shouldn't; they're grandfathered in. But for new growth,
13 there needs to be a conservation event in -- on the side
14 of this to protect that sort of thing from happening.

15 I think I'm going to stop there. The rest of them
16 are the kinds of questions that I can do one-on-one with
17 you. Okay?

18 MS. LAMB: Okay, very good. Thank you very much.
19 Are there any other -- I'm going to turn this off because
20 I'm just standing in front of it. Are there any other
21 comments to be submitted this evening? All right. I
22 would like to thank you all for coming. We greatly
23 appreciate your participation in the process and taking
24 your time out to come and speak with us tonight. We are
25 going to stay afterwards so we can have more one-on-one

1 conversations, address more of your concerns, answer the
2 questions you might have. And I do think it's really
3 raining outside, so you might want to stay and talk to us.

4 MS. SMITH: It's raining. We need to go out and
5 look at it and see what it looks like.

6 MS. LAMB: I am going to conclude the formal
7 hearing at this point, and thank you all again.

8 (The formal testimony portion of the public
9 hearing was closed at 7:45 p.m.)

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REPORTER'S CERTIFICATE

I, ERIN R. DONATO, Registered Professional Reporter, Certified Realtime Reporter and Notary Public within Colorado, appointed to stenographically record the public hearing of the Arkansas Valley Conduit, do certify that hearing was taken by me at the Lamar Community Building, 610 South Sixth Street, Lamar, Colorado, on September 27, 2012, then reduced to typewritten form consisting of 13 pages herein; that the foregoing is a true transcript of the proceedings had.

In witness hereof I have hereunto set my hand this 2nd day of October, 2012.

Erin R. Donato, RPR, CRR
1204 South Seventh Street
Lamar, Colorado 81052

Comment Letter Supplement to 10 and 11

Arkansas Valley Conduit and Excess Capacity Master Contract
Draft Environmental Impact Statement Public Hearings
September 24 - 27, 2012

Comments and Questions Submitted by Participants Following Signe's Power Point Presentation

Pueblo Public Hearing, 1 p.m.

- Can you modify alternatives to add in components?
- Crowley and Kiowa Counties are not listed as participants. Why? Is Pueblo County involved?

Pueblo Public Hearing, 6:30 p.m.

- Are the different bases of the cost estimates available?
- Is the \$8 million for the Interconnect included in the alternative cost estimates?
- What is the plan to supply cities north of the river?
- What are EPA's flood protection plans? How will the pipe hold up in instances of flooding?
- Has work been done with local communities to see how they could transfer water to retain recreation flows?
- What's the likelihood of funding for this? Three times it's been in bills and three times it's failed. Does Reclamation do an analysis about the chances of funding? Does the benefits/costs analysis include looking at health issues?

La Junta Public Hearing

- Why is the Interconnect considered with the Pueblo Dam South alternative?

Lamar Public Hearing

- The water line at John Martin Dam was established when it was first authorized. People keep coming through here telling us they'll bring us water and it hasn't happened yet. We need the pipeline and not 80 years from now—we need it now.
- For the Pueblo Dam South alternative, did you consider the cost of disruption to people living there?
- How does this project tie in with Colorado Springs' pipeline from the Pueblo Dam to Colorado Springs?
- Water flows downhill. Why do you need pump stations?
- Where is the pipeline Colorado Springs is proposing? Where's the outlet for that water?
- What are you going to do with salt and brine treatment plants?
- Las Animas and La Junta have good drinking water. They take three gallons out of the river and put two gallons back in that pollute the river. They're putting brine-y water in the river.

Response

Response to comment line 11: Yes we can and did so in the Final EIS. We reexamined alternatives to see if mixing components would decrease costs and minimize environmental effects. As a result the Joint Use Pipeline, Interconnect, and Master Contract were incorporated into a hybrid alternative called Comanche North. This alternative replaces Comanche South and is evaluated in the Final EIS.

Response to comment line 12–13: Several water providers in Crowley, Kiowa, and Pueblo counties are AVC or Master Contract participants. Pueblo County was invited to participate in the Environmental Review Team during final design. The Environmental Review Team could also include representatives from other interested counties.

Response to comment line 17: Cost estimates for the alternatives, as well as the detailed cost sheets used to prepare those estimates, are posted on www.usbr.gov/avceis. The documents are titled Technical Memorandum No. PUB-8140-APP-2012-01 Volume 1–Appraisal Design Report and Appendices A–O, and Technical Memorandum No. PUB-8140-APP-2013-01 – Appraisal Design Report Supplemental Data–Comanche North.

Response to comment line 18: Yes. Those alternatives with the Interconnect include an additional \$7 million to construct that component. The cost of constructing and operating, maintaining, and replacing the Interconnect is in Chapter 2, page 2–8 in the Final EIS.

Response to comment line 19: Several spurs and stream crossings would be used to supply participants. See the Appraisal Design Report for additional details. It is posted on www.usbr.gov/avceis. The documents are titled Technical Memorandum No. PUB-8140-APP-2012-01 Volume 1 – Appraisal Design Report and Appendices A–O, and Technical Memorandum No. PUB-8140-APP-2013-01 – Appraisal Design Report Supplemental Data – Comanche North. General spur and stream crossings descriptions were included in Chapter 2 alternative descriptions.

Response to comment line 20–21: Agencies with flood-related responsibilities in the study area include the U.S. Army Corps of Engineers, Federal Emergency Management Agency, Pueblo Conservancy District, and county and city governments. The pipeline would be bored under all stream and river crossings and would not impede flood operations. Hydrologic data and flood related regulations and codes, as applicable, will be used in final engineering design to maintain the integrity of the pipeline during flood conditions.

Comment Letter Supplement to 10 and 11 (continued)

1 Arkansas Valley Conduit and Excess Capacity Master Contract
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5 6 Comments and Questions Submitted by Participants 7 Following Signe's Power Point Presentation 8

9 10 Pueblo Public Hearing, 1 p.m.

- 11 – Can you modify alternatives to add in components?
- 12 – Crowley and Kiowa Counties are not listed as participants. Why? Is Pueblo County
13 involved?
- 14
- 15

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- 17 – Are the different bases of the cost estimates available?
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- 19 – What is the plan to supply cities north of the river?
- 20 – What are EPA's flood protection plans? How will the pipe hold up in instances of
21 flooding?
- 22 – Has work been done with local communities to see how they could transfer water to
23 retain recreation flows?
- 24 – What's the likelihood of funding for this? Three times it's been in bills and three times it's
25 failed. Does Reclamation do an analysis about the chances of funding? Does the
26 benefits/costs analysis include looking at health issues?
27

28 29 La Junta Public Hearing

- 30 – Why is the Interconnect considered with the Pueblo Dam South alternative?
31

32 33 Lamar Public Hearing

- 34 – The water line at John Martin Dam was established when it was first authorized. People
35 keep coming through here telling us they'll bring us water and it hasn't happened yet.
36 We need the pipeline and not 80 years from now—we need it now.
- 37 – For the Pueblo Dam South alternative, did you consider the cost of disruption to people
38 living there?
- 39 – How does this project tie in with Colorado Springs' pipeline from the Pueblo Dam to
40 Colorado Springs?
- 41 – Water flows downhill. Why do you need pump stations?
- 42 – Where is the pipeline Colorado Springs is proposing? Where's the outlet for that water?
- 43 – What are you going to do with salt and brine treatment plants?
- 44 – Las Animas and La Junta have good drinking water. They take three gallons out of the
45 river and put two gallons back in that pollute the river. They're putting brine-y water in
46 the river.
47

Response

Response to comment line 22–23: The best management practices outlined in Appendix B.5 require participation in the Flow Management Programs to maintain recreation flows. Best management practices would require participants to continue voluntary commitment to operations of the Fry-Ark Project and other non-Fry-Ark water supplies in accordance with the Upper Arkansas Voluntary Flow Management Program. Reclamation notes that, due to the absence of any contracts between Reclamation and participants, Reclamation would not have a mechanism for imposing best management practices for the No Action Alternative, if that alternative would be selected in the Record of Decision.

Response to comment line 24–26: Predicting whether or not Congress would fund a project is difficult, and is not assessed in the EIS. AVC water quality and health benefits are described in the Final EIS on page 4–159.

Response to comment line 30: The alternatives represent a range of reasonable and practicable alternatives for meeting the purpose and need. NEPA regulations (Section 1505.1(e)) require consideration of all reasonable alternatives. The alternatives are responsive to scoping issues, satisfy the requirements for rigorous evaluation of alternatives under NEPA and the U.S. Department of the Interior regulations, and are consistent with Clean Water Act Section 404(b)(1) Guidelines. The three proposed actions (AVC route, Interconnect, and Master Contract) could be interchanged to form a hybrid alternative and be selected in the Record of Decision for implementation as long as effects of the modified alternative are similar to effects of evaluated alternatives.

Response to comment line 34–36: Thank you for your comment.

Response to comment line 37–38: The Pueblo Dam South, JUP North, and Pueblo Dam North alternatives would have the greatest effects on Pueblo residents because pipeline alignments would be located along roads in urban and residential areas. The actual cost of construction would be higher in urban areas because of the numerous underground utilities, roads, and properties present. Reclamation considered the cost of construction in the urban environment as part of the Appraisal Engineering Report posted on www.usbr.gov/avceis. The documents are titled Technical Memorandum No. PUB-8140-APP-2012-01 Volume 1 – Appraisal Design Report and Appendices A–O and Technical Memorandum No. PUB-8140-APP-2013-01 Appraisal Design Report Supplemental Data – Comanche North. Effects on residents and businesses from construction activities in an urban environment were evaluated qualitatively in the Human Resources Section of the Draft EIS (pages 4–133 through 4–142). Construction-related effects associated with noise, vibration, visual effects,

Comment Letter Supplement to 10 and 11 (continued)

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- Las Animas and La Junta have good drinking water. They take three gallons out of the river and put two gallons back in that pollute the river. They're putting brine-y water in the river.

Response

Response to comment line 37–38 (continued): traffic delays, disruption in utility service, and land use effects are discussed in the EIS, but there is not a monetary cost associated with effects. While these effects are mostly temporary, construction activities would inconvenience residents and businesses and adversely affect the quality of life nearby during construction. Best management practices in Appendix B.5, pages B.5–6 and B.5–7 would minimize these temporary effects.

Response to comment line 39–40: The Southern Delivery System pipeline is not part of any AVC alternative. The proposed Interconnect would connect Pueblo Dam's north and south outlet works, providing backup diversion points to a number of participants (see Chapter 1, page 1–22), including Colorado Springs Utilities.

Response to comment line 41: Most alternatives need pumping plants to lift the water over high ground or out of a low-lying water treatment plant (e.g. JUP North Alternative water treatment plant would be lower in elevation than some participants). A pumping plant is also required to get water to Eads from the main pipeline. This is clarified in the Final EIS in Chapter 2 on page 2–30.

Response to comment line 42: In 2012 Colorado Springs Utilities constructed a North Outlet Works at Pueblo Dam to serve the Southern Delivery System, as described in Chapters 1 and 2 of the Final EIS.

Response to comment line 43: We assume that existing treatment plants would not be decommissioned as several participants plan to blend AVC supplies with existing supplies. Existing plants also could be used for redundancy or in an emergency. This is clarified in the Final EIS in Chapter 2 on page 2–26. Estimated treatment costs and associated disposal costs of the No Action Alternative are included in the Draft EIS in Appendix B.3.

Response to Comment line 44–47: The No Action Alternative, which continues Las Animas' and La Junta's use of reverse osmosis, assumed that brine discharge to the river would no longer be allowed, and that a zero liquid discharge method would be used to dispose of brine (see page 2–11 in the Final EIS).



United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
12795 West Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287



In Reply Refer to:
IMR-EQ, DES-12/0039

October 29, 2012

To: Signe Snortland, Bureau of Reclamation
From: Cheryl Eckhardt, Environmental Compliance Specialist, National Park Service
Subject: National Park Service Comments on the Draft Environmental Impact Statement for the Arkansas Valley Conduit and Long-term Excess Capacity Master Contract

The National Park Service (NPS) has reviewed the Draft Environmental Impact Statement (DEIS) entitled "Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract (DES 12-39)" This DEIS evaluates the potential impacts of several alternatives related to the Arkansas Valley Conduit (AVC), which was originally proposed as part of the Fryngpan-Arkansas Project. The purpose of the Arkansas Valley Conduit project is to deliver reliable and high quality water to various water providers in the service area. The NPS recognizes the benefits to be provided to the communities in the Arkansas Valley and supports the completion of this project. However, the NPS does have some concerns about the potential long-term impacts from changes in water quantity and quality in the Arkansas River to the flow-dependent resources of Bent's Old Fort National Historic Site (Bent's Old Fort NHS), a unit of the National Park Service (NPS), as well as the Santa Fe National Historic Trail.

The NPS recognizes the need for an improvement in water quality and reliability of water supply in the Arkansas River Valley and therefore does not oppose the completion of the AVC. However, as the caretaker for the nationally important Bent's Old Fort NHS, an analysis of the long term impacts by the various alternatives proposed in the DEIS on the flow-dependent resources within the park unit should be completed.

Bent's Old Fort NHS is located on the Arkansas River approximately 7 miles downstream of La Junta, CO. The fort was built on a segment of the Old Santa Fe Trail in 1833 for trade with trappers and native tribes. On June 3, 1960, a Congressional Act (74 Stat. 155) incorporated the fort into the NPS system "...to commemorate the historic role played by such fort in the opening of the West. This Act provides further direction on the management of the unit to "administer, protect and develop such monument, subject to the provisions of the Act entitled 'An Act to establish a National Park Service, and for other purposes', approved August 25, 1916". The Act of August 25, 1916, commonly referred to as the NPS Organic Act, directs the NPS to "...conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (16. U.S.C. 1)

The Arkansas River is an important feature in the management and interpretation of Bent's Old Fort NHS. The river and riparian area of the park are part of the historic setting and as such are one of the three identified fundamental resources of the park. The river and riparian area, the short-grass prairie, and the watershed maintain a sense of place important to interpreting the history of the site. Flow dependent riparian species within Bent's Old Fort NHS include Salix exigua (Sandbar willow), Salix amygdaloides (Peach-leaved willow) and Populus deltoides subspecies monilifera (Plains cottonwood). Some of the other water dependent species in the park are

We concur that additional clarification on effects on these riparian species is needed. Sandbar willow, peachleaf willow, and plains cottonwood are deep-rooted species and the minor changes in streamflow predicted under all the alternatives are unlikely to adversely affect those species. Overall average monthly changes in Arkansas River streamflow at the Rocky Ford gage upstream from Bent's Fort would range from slightly increased flow of less than 3.5 percent to decreases of less than 1 percent compared to existing conditions during the growing season (Table 100, Appendix D4 in the Draft EIS). Because the magnitude of flow changes would be relatively small, measurable effects on riparian and wetland species in the Arkansas River floodplain would be negligible. Although increases in total dissolved solids could give a competitive advantage to tamarisk, the minor predicted increase in total dissolved solids would be unlikely to affect species composition. This discussion was added to the Final EIS in the Vegetation and Wetland section (page 4-120).

Comment Letter 12 (continued)

Phragmites australis, Eleocharis palustris, Schoenoplectus pungens, Spartina pectinata and Veronica anagallis-aquatica.

Impacts to the flow-dependent resources of Bent's Old Fort NHS from the various proposed alternatives were not specifically evaluated in the DEIS. Impacts were evaluated to vegetation and other resources within the reach of stream identified as the "Lower Arkansas River" between La Junta and Las Animas, CO where Bent's Old Fort NHS is located. The NPS believes that an evaluation of impacts to the flow-dependent resources of Bent's Old Fort NHS should be included in the Final Environmental Impact Statement.

The flow regime in the Arkansas River has been altered considerably since the arrival of settlers when the fort was operating as a trading post. The construction of reservoirs, surface and groundwater diversions, which are now controlled by the implementation of the Arkansas River Water Rights Compact between Colorado and Kansas, has contributed to significant changes in flow and water quality. As a result, the river-related processes that established and allowed the riparian vegetation to exist have been altered.

The NPS is concerned that further modification of the flow system in the Arkansas River will be detrimental to the riparian vegetation dependent on the flow characteristics and water quality in the Arkansas River. While analyses in the DEIS describe impacts from the various alternatives in the Lower Arkansas River section to be negligible or minor, it is unknown whether these small impacts, when considered with the existing flow alterations and water quality issues, could adversely affect the flow-dependent resources of the park unit over the long term.

Specifically, the NPS is concerned if there will be any further reduction in high flow events at the park. High flows create new habitat for cottonwood regeneration and also can remove a build-up of salts on floodplains that can inhibit cottonwood growth and reproduction. A further reduction in high flows could increase salt concentrations and other constituents that can accumulate and increase over time in soils. Periodic high flow events flush out and reduce these levels.

While development of the alternatives outlined in the DEIS may not have detrimental effects on the flow-dependent resources of Bent's Old Fort NHS, the NPS is concerned about the potential effects from the proposals outlined in the DEIS in combination with the already modified hydrology of the Arkansas River.

Impacts to the cultural and natural resources and interpretation of Bent's Old Fort NHS from the various proposed alternatives were not specifically evaluated in the DEIS. The NPS would like to see more discussion of the impacts to Bent's Old Fort National Historic Site since several alternatives parallel Highway 50 and appear to have potential to impact two archeological sites, the Sandhill Site (State number 5OT141) and BEOL 3 - South (State Number 5OT536), as well as an additional 40 acres of National Park Service land. The NPS would also like to see consideration given to the impacts to the visitors of the park. These likely would be relatively short-term impacts, but should be discussed. The NPS is concerned that no consideration has been given to the impact to these sites or to the land on the southern section of the national historic site.

Santa Fe National Historic Trail

NPS administers the Santa Fe National Historic Trail (NHT) in accordance with a Comprehensive Management Plan (CMP) prepared in 1990. We work with land managers, property owners, trail advocates, and others to accomplish the administrative goals for the trail as mandated in the National Trails System Act. These include the identification, protection, and interpretation of the trail and its associated resources for the enjoyment and education of the American people. The CMP and its associated maps are available online at <http://www.nps.gov/safe/parkmgmt/comprehensive-management-plan.htm>. We request that you review this document as part of your analysis, and refer to it in the text and references section of the document.

While we appreciate the explicit recognition of the trail in the document, we wish to point out that it is not the same entity as the Santa Fe Trail Scenic and Historic Byway as is implied on page 3-86 of the document. We

Response

Response to Comment, 4th paragraph: See previous response.

Cumulative changes in overall average monthly Arkansas River streamflow at Rocky Ford, with assumed reasonably foreseeable future actions, would cause minor decreases in flow April to July (< 2%) and slightly higher flows (<2%) in other months compared to the No Action Alternative (Table 104, Appendix D4 in Draft EIS). Lower Arkansas River flows during dry years would be slightly less (<3%) than the No Action Alternative, but higher than existing conditions during the growing season, which could slightly benefit riparian species (Table 107 Appendix D4 in Draft EIS). It is unlikely that these minor predicted changes in flow under cumulative effect conditions and the negligible water quality changes discussed in the Water Quality section, would adversely affect riparian vegetation. This discussion was added to the Vegetation and Wetland Section of the Final EIS on page 4–120.

Response to comment, 5th paragraph: We concur that additional clarification is needed regarding the unlikelihood of slightly reduced high flows affecting riparian vegetation. An analysis of flood hydrology and floodplains indicates a negligible change in flood events on the Arkansas River and Fountain Creek. The frequency of flushing flow events would not be expected to substantially change from current conditions and thus effects on riparian vegetation and cottonwood regeneration would be negligible. Negligible changes in flood flows would not lead to accelerated streambank erosion or vegetation encroachment into the stream channel. Riparian vegetation would continue to have a beneficial effect in moderating the effect of periodic flood events. This discussion was added to the Vegetation and Wetland Section of the Final EIS on page 4–121.

Response to comment, 7th paragraph: We concur that additional detail is needed. The Pueblo Dam South Alternative would parallel Highway 50 and could potentially be located on National Park Service property if located north of Highway 50. However, if this alternative is selected in the Record of Decision, it is likely that the pipeline alignment in this area would be located south of Highway 50 because of the railroad line and National Park Service property north of the highway. Because there is no access to Bent's Fort off of Highway 50, potential effects on park visitors would primarily be limited to possible noise during construction. This potential effect was added to the recreation discussion in the final EIS, Chapter 4, page 4–108.

In addition, archeological sites 5OT141 and 5OT536 located on National Park Service property could potentially be impacted by a pipeline alignment north of Highway 50. Reference to potential impacts to archeological sites at Bent's Old Fort National Historic Site was added to the final EIS,

request that the Santa Fe NHT be recognized as a different entity than the Scenic Byway, and that impacts to trail resources and settings be evaluated on their own and not as part of the analysis of impacts to the Scenic Byway.

The eastern portion of the current project includes about 45 miles of the Mountain Route of the Santa Fe NHT between La Junta and Lamar. The project involves activities that could affect trail resources, the viewshed and setting of the trail, and opportunities to develop and interpret certain high potential sites along the trail that are identified in our CMP. These include, from west to east, the Arkansas River Crossing, Bent's Old Fort, Boggsville, New Fort Lyon, Bent's New Fort, and Old Fort Lyon. We request that any activities associated with or authorized by this project take into account the direct, indirect, and cumulative impacts of any project activity on these important trail resources and their settings.

Thank you for this opportunity to provide comments on this important project. If you have any questions concerning these comments, please contact Jeff Hughes of the NPS, Water Resources Division at (970) 225-3527, jeff_hughes@nps.gov. For questions specific to the Santa Fe National Historic Trail, please contact Michael Elliott at 505-988-6092, michael_elliott@nps.gov.

- ec:
- DOI (Robert Stewart)
- DOI (Peter Fahmy)
- NPS-WASO EQD
- NPS-IMSF (Michael Elliott)
- NPS-IMRO (John Reber)
- NPS-WRD (Hughes, Mangan)
- NPS-BEOL (Alexa Roberts)
- NPS-BEOL (Fran Pannebaker)

Response

Response to comment, 7th paragraph (continued): Chapter 4 on page 4–167. If the Pueblo Dam South Alternative is selected and these sites cannot be avoided during final design, Reclamation and the National Park Service would develop a treatment plan in accordance with the programmatic agreement. The National Park Service, as a concurring party to the programmatic agreement would participate in developing any measures to avoid or mitigate adverse impacts on cultural resources within NPS jurisdiction (see Appendix N).

Response to comment, 8th paragraph (previous page): See previous responses. A description of the Santa Fe Trail as a recreational resource was added to the Recreation section, as well as to the Historic Properties section of the Final EIS. None of the alternatives are anticipated to affect the trail as a recreation amenity. If there would be adverse effects, Reclamation and the National Park Service would develop a treatment plan in accordance with the programmatic agreement (Appendix N) to minimize impacts to the Santa Fe National Historic Trail in accordance with Section 106 compliance and consideration of the goals and objectives of the Santa Fe National Historic Trail Comprehensive Management and Use Plan developed by the National Park Service.

Response to comment, 9th paragraph (previous page): We concur that additional and separate discussion on the Santa Fe National Historical Trail is needed. The text in the Human Resource Section on page 4–147 of the Final EIS was revised to better distinguish the Santa Fe National Historic Trail and the Santa Fe Scenic and Historic Byway.

Additional discussion on the Santa Fe National Historic Trail was also added to the Final EIS in the Recreation and Cultural Resource sections. All of the AVC pipeline alternatives have the potential for pipeline crossings of segments of the Santa Fe Trail (5BN391) along Highway 50. If a crossing of the Santa Fe Trail cannot be avoided during final design, Reclamation would develop a treatment plan in accordance with the programmatic agreement measures developed as part Section 106 compliance. The National Park Service, as a concurring party to that agreement will be consulted during development of the treatment plan to minimize impacts to the Santa Fe National Historic Trail (see Appendix N).

Response to comment, 2nd paragraph: We concur that additional information is warranted. Description of the Santa Fe National Historic Trail as a recreational resource and Bent’s Old Fort National Historic Site was added to the Recreation section. A more substantive discussion of cultural and historic attributes of the trail corridor and potential impact was added to the Historic Properties section. See also response to previous comments.

Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract Draft Environmental Impact Statement

We Invite Your Comments

As part of the public review process of the Draft Environment Impact Statement, written comments are welcome and are due to the Bureau of Reclamation by 5 p.m. October 30, 2012. All comments become part of the public record.

(Please print clearly—thanks!)

Name P. Kenneth and Mildred F Yoder
Mailing Address PO Box 508 Rocky Ford, CO 81067
Organization (if applicable)
Phone () 719 254 6784 E-mail address knmyoder@centurytel.net

If you'd like, you may use this form to provide your comments:

We received the map from the Dept. of Reclamation showing our property parcel I.D.: OT-56-23-18-03336 to be in line with the proposed Conduit Construction. Actually, the proposed path of the conduit with it's easement will go through our house.

We have great concerns about our future. We hope the conduit will be rerouted to avoid our property.

P. Kenneth Yoder
Mildred F. Yoder

Attach additional sheets if necessary

Please mail your comments to the address on the back or e-mail your comments to J. Signe Snortland, jsnortland@usbr.gov. Thank you.



For additional information about the Arkansas Valley Conduit project, please visit www.usbr.gov/avceis.

Thank you for identifying this engineering design modification. At this point engineering designs are at an appraisal-level. Alternatives are study corridors rather than exact alignments. After a preferred alternative is identified in the Record of Decision and if an action alternative is selected, Reclamation will collect design data and prepare a final design and cost estimate. Your comment will be carefully considered during the next phase of engineering design. We plan to avoid standing structures wherever practicable.

J. Signe Snortland, Reclamation Environmental Specialist
Bureau of Reclamation
Dakotas Area Office,
PO Box 1017, Bismarck ND 5850

Dear J. Signe Snortland,

I am writing as a student attending the University of Colorado Boulder, I submit the following comments regarding the proposed action for the Arkansas Valley Conduit Long-Term Excess Capacity Master Contract. Thank you for taking the time to review my comments of the proposed project and alternative actions.

After reading the drafted EIS I have drawn a few conclusions. I support the overall goal of the project to provide people with a long-term plan of quality drinking water supply. It is just unsafe to have people consume natural contaminants from their current drinking water supply. The idea of proposed project split into three components AVC, interconnect and master contract is a great approach to meet the future demand. I find that six of the seven alternative actions share common elements of the proposed project but different options. The data and calculations for the proposed project and alternative actions were clearly defined in the appendices. I still have concerns about the EIS and felt that some things were overlooked. I am unable to know alternatives that existed before the screening process I feel that one key alternative was left out. The alternative action was to install treatment facility to treat the groundwater but was thrown out because of how much it would cost to deal with the naturally occurring contaminates. If that alternative action were included in the EIS it would give the audience an understanding maybe why exactly it was not included and maybe some perspective. These contaminates are naturally occurring and travel through groundwater. Groundwater travels from high head to low head. Since water is traveling through the mountains is it likely that the contaminated groundwater will travel to lower elevations and make its way into rivers which people downstream will have to deal with. Could the action of pumping and treating existing water supply be a better option to treat contaminates now where the locations of contamination are known. Opposed to deal with the naturally occurring contaminates in the future when it begins impact another regions drinking water supply. If you continue to carry through with the proposed action

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Response to comment, 2nd paragraph: Reclamation does not concur. Treating each participant's groundwater supply to meet demand was considered but eliminated from further consideration in the EIS in accordance with NEPA. Reasons for elimination include inability to supply bulk water meeting primary water quality standards to all participants. The No Action Alternative is a combination of groundwater treatment and regionalization of groundwater supplies, and was considered in the Draft EIS. See Appendix B.1 of the Draft EIS for details.

Reclamation does not concur that treating each participant's groundwater supply is feasible. See response above.

Comment Letter 14 (continued)

Response

I suggest to implement a program that will use monitoring wells to monitor the level of naturally occurring contaminants in the aquifer. The data could eventually help with future planning to pump and treat groundwater when it may become a problem again. I still stand by the goal of providing clean drinking water to this region but still feel that the naturally occurring contamination of the aquifer is being neglected when it should be treated now before it can spread over a larger area and dealt with later. Thank you again for taking the time to read my comments.

Sincerely,



Michael Wetterau
460 South 41st Street
Boulder, CO 80305

Reclamation does not concur. The proposed actions would not affect the naturally occurring contaminants in groundwater.



U.S. Bureau of Reclamation
Dakotas Area Office
PO Box 1017
Bismarck ND 58502
Attn: J. Signe Snortland
jsnortland@usbr.gov

15

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REPLY	YES NO
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RE: Arkansas Valley Conduit Long-Term Excess Capacity Master Contract Draft Environmental Statement

Dear Mr. Snortland:

These comments to the Draft Environmental Impact Statement ("DEIS") for the Arkansas Valley Conduit Long-Term Excess Capacity Master Contract are submitted on behalf of the City of Salida ("Salida"). Salida is located in the Upper Arkansas River basin and has a substantial interest in the flows of the Arkansas River, both upstream and downstream of Salida. To serve its citizens, Salida owns a variety of water rights in the Arkansas River basin and also operates exchanges along the Arkansas River. Salida also has interest in protecting water quality in the Arkansas River and maintaining flows to protect recreation opportunities along the river.

Salida supports those options in the DEIS that include the Master Contract. Salida relies on an excess capacity contract to meet its needs. It currently has a temporary excess capacity contract ("If and When" contract) for 625 acre-feet. In the future, Salida will need the Master Contract to fulfill demand, particularly in winter months when its direct flow rights are limited. Salida has committed to participating in the Master Contract in the amount of 2,000 acre-feet. In order to ensure a firm future water supply, Salida has a preference for those options in the DEIS that include the Master Contract and encourages the Bureau to select a preferred option including the Master Contract.

Finally, Salida supports compliance with the Upper Arkansas Voluntary Flow Management Program ("UAVFMP"). This is a year-round program designed to provide an annual flow regime that helps maintain the brown trout fishery, meet the demand for boating recreation and support the region's tourism industry. It has been an important flow protection tool. Salida is a participant in the UAVFMP and appreciates the fact that the DEIS studied the effects of each option on the UAVFMP. Salida was pleased to see that the DEIS concluded that all options would have a negligible effect on the frequency with which the UAVFMP target flows are satisfied. Salida was also pleased to see the DEIS identified, as a best management practice, that all participants will continue voluntary commitment to operation of Fryingpan-Arkansas Project and non-Project water in accordance with the UAVFMP. Accordingly, Salida supports compliance with the UAVFMP as a best management practice in any preferred option.

448 E. FIRST STREET • SUITE 112 • SALIDA, COLORADO 81201
PH: 719.539.4555 • FX: 719.539.5271

Thank you for your comments. Best management practices would require participants to continue voluntary commitment to operations of the Fry-Ark Project and other non-Fry-Ark water supplies in accordance with the Upper Arkansas Voluntary Flow Management Program. Reclamation notes that, due to the absence of any contracts between Reclamation and participants, Reclamation would not have a mechanism for imposing best management practices for the No Action Alternative, if that alternative would be selected in the Record of Decision.

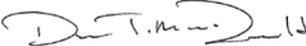
Response

Comment Letter 15 (continued)

P.1-52

Thank you for this opportunity to provide comments to the Arkansas Valley Conduit Long-Term Excess Capacity Master Contract DEIS. Please contact me with any questions or concerns or if Salida can, in any way, be of help.

Sincerely,



Dara MacDonald
City Administrator



DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RESOURCES

TO: Ms. J. Signe Snortland, Bureau of Reclamation
FROM: Kelley Thompson, Colorado Division of Water Resources
RE: Comments on Draft Environmental Impact Statement,
 Arkansas Valley Conduit and Long-Term Excess Capacity
 Master Contract
DATE: October 29, 2012

John W. Hickenlooper
 Governor
 Mike King
 Executive Director
 Dick Wolfe, P.E.
 Director/State Engineer

This letter provides brief comments from the Colorado Division of Water Resources (CDWR) regarding the Draft Environmental Impact Statement (EIS) for the proposed Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract project. The draft EIS documents are well written, detailed, and informative. A comprehensive and complete review of the Arkansas River Daily Simulation Model was not conducted by DWR at this time. However, it is clear that a significant amount of work was invested in the surface water model and the EIS.

The draft EIS Appendix (page D4-49) states "Operations of AVC would not directly affect senior water rights, including both direct flow and storage rights, owned by other entities within the basin". DWR suggests that this statement also be made in the main EIS document along with justification of why this is true despite modeling showing reduced deliveries to agricultural entities.

The draft EIS (page 4-35) states "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 assist the participants annually in reserving water in Pueblo Reservoir or upstream storage facilities that can be released to maintain flows in the Arkansas River downstream from Pueblo Reservoir. The amount of water/storage to be reserved would be evaluated during development of a Fish and Wildlife Mitigation Plan." DWR would appreciate any additional details on this plan in the final EIS if available.

For simulated demands in table 55 in the draft EIS Appendix (page D3-92), Average Annual Historic Diversion and Simulated Diversions for many agricultural water rights (for example "Catlin Canal demand") are listed as zero. DWR would appreciate additional explanation that would clarify why these values are listed as zero.

In the draft EIS Appendix (page D3-29), DWR suggests that titles for tables 13 and 14 should be "Diversion" number rather than "Division" number.

Thank you for the opportunity to comment on the draft EIS and be involved in the EIS process.

Respectfully,

Kelley Thompson, PE

Response to comment, 2nd paragraph: In response to your comment a statement similar to the Appendix D.4 statement has been added to the Final EIS on page 4–17. Differences in agricultural deliveries in Appendix D.4 are less than 2 percent and are within the error of the hydrologic model. An explanation of differences in agricultural deliveries was added to Appendix D.4.

Response to comment, 3rd paragraph: We agree that mitigation would offset the effects of an action alternative on streamflow. To mitigate moderate streamflow effects during low-flow periods in the Arkansas River associated with the Master Contract, 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 gage to fish hatchery return flows from the current hatchery discharge point.

Reclamation will provide \$50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of an action alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed, including site-specific NEPA compliance.

Response to comment, 4th paragraph: Many of the zero values in Table 55 of Appendix D.3 are incorrect. The correct values were added to the table. Other ditches did not have historical data available for the calibration period and were removed from the table.

Response to comment, 5th paragraph: We concur. Change has been made on page D.3–29 in the Final EIS.

See responses below.

17

October 29, 2012

J. Signe Snortland, Environmental Specialist
Bureau of Reclamation
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

Also sent via e-mail to: JSnortland@usbr.gov

Re: City of Pueblo's Comments on the Draft Environmental Impact Statement for the
Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract

Dear Ms. Snortland:

The City of Pueblo appreciates the opportunity to comment on the Draft Environmental Impact Statement ("DEIS") for the Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract ("AVC"). In addition, the City has appreciated the opportunity to participate as a Cooperative Agency in the NEPA review process.

As the Bureau of Reclamation is aware, the full range of direct, indirect, and cumulative effects of the alternatives identified in the DEIS must be analyzed. As a necessary precursor to analyzing these effects, the agency must present sufficient information and detail appropriate data. In this regard, more information and data could be detailed within the DEIS that would allow for a comprehensive evaluation of the impacts in several categories of concern to the City. Specifically, the City identifies concerns related to three categories, which include:

1. Impact on existing infrastructure;
2. Impact on water quality; and
3. Impact on Arkansas River stream flow through the City of Pueblo.

As detailed within the DEIS (page 2-4), the above concerns are consistent with the "alternative themes" identified in the review process as recurring issues. These themes center on minimizing cost, maintaining highest minimum flow in the Arkansas River through Pueblo, and minimizing construction disturbance. As such, of the action alternatives proposed, the River South most appropriately addresses the concerns of the City. Nonetheless, the City believes that a variation of the alternatives may be available that would fully address the concerns of the City while meeting the overall purpose and need of the project. The following is the City's explanation of its identified concerns.

Existing Infrastructure

As indicated in the DEIS, the City of Pueblo is an identified cooperating agency with jurisdiction and expertise related to “land development permitting, special use permitting, rights-of-way, building permitting, and the Pueblo Flow Management Program.” DEIS, page 1-28. This recognition is partially the result of the concentration of AVC construction and operating activities within the City’s jurisdiction. Except for the Comanche South and the Master Contract Only action alternatives, the AVC pipeline routes will conflict significantly with existing infrastructure, including sanitary sewer, storm water, and streets. The City’s concerns with several action alternatives are set forth below.

Pueblo Dam South Alternative:

This route begins at the Pueblo Reservoir and follows the Bessemer Ditch through the City of Pueblo. The City has multiple utilities crossing the Bessemer Ditch, including eleven (11) sanitary sewer crossings. Crossings would require evaluation, and due to their location and condition, most would need to be replaced or eliminated by the project. Any replacement of a crossing would necessitate additional main replacement.

Pueblo Dam North and JUP North Alternative:

This alignment will conflict with existing infrastructure along 11th, 13th, and 14th Streets through the City of Pueblo. The city requirement of 10 feet of separation from the outside of water main to the outside of sanitary sewer main may require realignment of the sewer mains and sewer service to homes and other utilities.

River South Alternative:

Pueblo has a 36-inch sanitary sewer main on the south side of the Arkansas River. The alignment of the water main and pumping plan will conflict with this utility. The crossing at Highway 50 (Santa Fe Avenue) will conflict with a 72-inch sanitary sewer main and several smaller mains on the east side of Santa Fe Avenue.

Water Quality – More Stringent Effluent Limits

As noted on page 4-44 of the DEIS, the effects of all action alternatives (except for the Master Contract Only Alternative) on La Junta’s wastewater discharge permit would be adverse. Similarly, the City of Pueblo’s wastewater discharge permit would be adversely impacted; however, the DEIS does not identify this impact. All action alternatives but the Master Contract Only Alternative would result in poorer water quality, particularly upstream of the City of Pueblo’s Water Reclamation Facility effluent outfall, and would reduce the water available for dilution of the effluent outfall by about thirty cubic feet per second (“cfs”). These two impacts ultimately result in a more stringent effluent limit calculation for the City’s Water Reclamation Facility. The City’s specific concerns as to water quality are set forth below.

Response to comment, 1st through 4th paragraph: We concur. Effects on utilities and infrastructure were reevaluated in the Final EIS, and Reclamation worked with the City of Pueblo to find a route through Pueblo that would minimize effects to existing infrastructure. The Comanche North Alternative was designed to avoid these effects (see Chapter 2, page 2–16 and Chapter 4, page 4–148). The text in the Human Environment section on page 4–149 of the Final EIS was revised to compare the effects of the alternatives on utilities in Pueblo. This evaluation was based on the miles of major utility line in the pipeline buffer area.

Response to comment, 5th paragraph: Reclamation does not concur. Direct streamflow effects at La Junta’s outfall and Pueblo’s outfall would not be equivalent. Direct effects (see page F.2–200 in Appendix F.2 of the Final EIS) on Pueblo’s simulated annual chronic low flow (alternatives compared to No Action) would range between 0 percent and 3.4 percent increase, which would be negligible as defined by the significance criteria. These results were clarified on page 4–66 in the Final EIS and were discussed with the City of Pueblo.

Direct and cumulative increases to instream waste concentration would be less than 1 percent and would be negligible. Pueblo’s instream waste concentration effects were added to Appendix F.2 on page F.2–201.

Comment Letter 17 (continued)

Response

Improper definition of river segments

The body of the DEIS does not describe the segmentation of the Arkansas River accurately from a water quality regulation perspective, which may lead to ambiguity in the interpretation of impacts on the Arkansas.¹ The DEIS describes the Upper Arkansas River as that portion of the river from the headwaters through the Pueblo Reservoir, and describes the Lower Arkansas River as that portion from the Pueblo Reservoir to the Colorado-Kansas border.

In terms of water quality, the Colorado Department of Public Health and Environment (“CDPHE”) defines the stream segments and their corresponding classifications and water quality standards. The CDPHE defines the segment from the Pueblo Reservoir to Fountain Creek as the Middle Arkansas River, and defines the river from Fountain Creek to the Colorado-Kansas border as the Lower Arkansas River. The significance of this distinction is that the CDPHE assigns different water quality criteria to the Middle Arkansas River and to the Lower Arkansas River based on the appropriate uses for each segment. The DEIS definitions thus create ambiguity. Because the DEIS defines the river segments differently, the analysis of water quality impacts may be incorrect because the DEIS may be comparing post-project water quality to the wrong water quality standard.

Water quality standards for dissolved oxygen, nitrite, temperature, sulfate, iron, selenium, several heavy metals (cadmium, chromium, copper, lead, manganese, nickel, silver, and zinc) will differ from segment to segment. Water quality criteria for the heavy metals differ because these standards are defined by equations in which water hardness is the major variable, and the hardness of the Middle Arkansas River and the Lower Arkansas River differs significantly.

Chronic low flow calculations inconsistent with State data

The DEIS states that the chronic low flow analysis applied the methodology of the CDPHE for determining low flows for discharge permits (Appendix F.2, page 166). The CDPHE uses the DFLOW computer model to estimate future low flows based on a statistical treatment of historic flow data. The DEIS states that the same DFLOW model was used to predict future low flows under each alternative, and that these estimates were compared with present-day low flow estimates. However, the low flow values presented as “existing conditions” in Table 120 (Appendix F.2., page 179) differ dramatically from the calculated low flows generated by the DFLOW model and incorporated into the City of Pueblo’s discharge permit. The existing condition chronic low flows presented by the DEIS are approximately twice the chronic low flows in the City’s permit for all months except June, as set forth in the below table:

¹ Although the DEIS, in Appendix F.1, references the State’s stream segments and classifications, this should be applied to body of the DEIS (i.e., Chapters 3 and 4) to avoid ambiguity. In addition, the two references to “Appendix E.1” on page 3-29, in regard to water quality standards and data, should be “F.1.”

Response to comment, 1st and 2nd paragraph: Reclamation does not concur. The Health Department’s Water Body Identification numbers for specific stream segments, designated in the 2012 Regulation 32 in effect at the time the Draft EIS was prepared, were included in Appendix F.1 of the Draft EIS. Appendix F.1 also included water quality standards for each stream segment in the study area. The water quality effect analysis used segment-specific water quality standards. Water Body Identification numbers were added for clarification in the water quality effects discussion in Chapter 4 of the Final EIS.

Response to comment, 4th paragraph: Reclamation does not concur. The existing conditions simulation level of development (i.e., 2010 demand and operations) does not change over time during the 28 year simulation. This establishes a baseline to compare a future level of development (e.g. 2070 demands and operations in the No Action Alternative) and to calculate effects between action and no action. Simulated existing conditions chronic low flow does not equal historical chronic low flow, even if a model is calibrated perfectly, because historical chronic low flow in the existing permit was calculated using historical streamflow that was subject to conditions changing over time (such as demand and operations). The change in simulated chronic low flows between the baseline and alternative (such as between existing conditions and No Action, or No Action and action alternatives) is the effect of the alternative. The absolute simulated numbers compared to historical observation are not used in effects analyses. The chronic low flow analysis methodology was clarified in Appendix F.2 on page F.2–165 and was discussed with the City of Pueblo.

Chronic Low Flow Amounts Incorporated into City of Pueblo Discharge Permit vs. DEIS "Existing Conditions".

Month	Pueblo Permit (cfs)	DEIS "Existing Conditions" (cfs)	Difference Factor
January	95	182	1.9
February	105	181	1.7
March	143	181	1.3
April	127	200	1.6
May	127	200	1.6
June	262	271	1.0
July	95	186	2.0
August	95	181	1.9
September	95	181	1.9
October	95	183	1.9
November	95	182	1.9
December	95	182	1.9

The difference factor presented in the above table is very significant to the City of Pueblo because chronic low flow estimates are a principle variable in the calculation of effluent limits for specific chemical species, including metals and nutrients.

Criteria for low flow and water quality assessments incorrect

Figure 4-38 indicates that all action alternatives other than the Master Contract Only Alternative will decrease the annual chronic low flow between 47 percent and 73 percent at La Junta. DEIS, page 4-62. Because all of these alternatives would divert water from the Arkansas River upstream of Fountain Creek, and the City of Pueblo's wastewater effluent outfall is downstream of Fountain Creek, it seems reasonable to assume that the reduction in annual chronic low flow for Pueblo's Water Reclamation Facility would be similar to the reduction observed at La Junta. Such a reduction in annual chronic low flow will have a significant adverse impact on Pueblo's effluent limits. Effluent limits calculated after an AVC alternative is in place can be expected to be lower than the present effluent limit. This could result in a requirement for the City to construct additional treatment facilities, at a significant cost, in order to comply with the new limit.

The DEIS failed to evaluate this impact on the City of Pueblo. This may have resulted from the sequential process used to determine whether a chronic low flow impact evaluation is needed. The process is set forth in Appendix F.2, page 167. The DEIS arbitrarily assumed that any change in flow less than 10 percent (*i.e.*, the presumptive resolution of the model) is insignificant to wastewater treatment facilities. The second tier of the evaluation criteria referenced guidance by the CDPHE on mixing zones and Whole Effluent Toxicity monitoring, and made the assumption that the effect of these policies is that a majority of dischargers would not have flow-based effluent limits in their discharge permits. That is decidedly not the case for the City of

Response to comment, 2nd and 3rd paragraphs: Reclamation does not concur. See response to previous City of Pueblo comment on chronic low flow.

Pueblo. The DEIS apparently erred in not completing a chronic low flow analysis for the City of Pueblo.

The potential effect of chronic low flow on the City of Pueblo’s permit can be analyzed by evaluating the In-stream Waste Concentration (“IWC”). The IWC is the worst-case scenario – the percentage of stream flow that would be comprised of wastewater effluent if the treatment plant were discharging at its maximum permitted hydraulic capacity at the same time that the river was at the critical chronic low flow condition. Under existing conditions, the City’s effluent at full hydraulic capacity (19 million gallons per day or 29 cfs) would comprise between 18 and 23 percent of the flow in the Arkansas River at the present calculated chronic low flow condition, depending on the time of year. If an action alternative withdraws 30 cfs from the river, the City’s IWC would increase to between 23 and 31 percent of total river flow. Because a higher proportion of river flow would be comprised of wastewater effluent, the effluent limits would become correspondingly lower in order to maintain ambient water quality. The following table presents this calculation.

Existing In-stream Waste Concentration vs. AVC-Impacted In-stream Waste Concentration.

Annual Quarter	Existing Chronic			AVC- Impacted Chronic		
	Low Flow (cfs)	Discharge Flow (cfs)	Percent	Low Flow (cfs)	Discharge Flow (cfs)	Percent
1 Q	95	29	23.4%	65	29	30.9%
2 Q	127	29	18.6%	97	29	23.0%
3 Q	95	29	23.4%	65	29	30.9%
4 Q	95	29	23.4%	65	29	30.9%

Evaluation of selenium incorrect

The DEIS states that in-stream selenium concentrations appear to be decreasing at Moffat Street. DEIS, page 4-54. That statement is incorrect. Contrary to the assertion that selenium data indicated a decreasing trend, data from 2008 through 2011 show that the 85th percentile of in-stream selenium concentrations increased to 18.7 µg/L (i.e., over five percent higher than the 17.4 µg/L value that the DEIS uses to characterize ambient water quality). This increase has already occurred without the more than 1 µg/L projected increase in concentrations caused by alternatives.

The DEIS suggests that current ambient selenium concentration may actually be lower than CDPHE criteria reflect because the current ambient value was “calculated using old data from 2001 to 2006.” DEIS, page 4-54. As discussed above, the speculation that there is a decreasing trend in selenium concentrations is incorrect. Current data on selenium concentrations are readily available from the City of Pueblo, U.S. Geological Survey and Colorado State University-Pueblo. All three organizations maintain water quality monitoring programs that include selenium.

Response to comment, 3rd and 4th paragraphs: We concur. New selenium data were discussed in the Final EIS on page 4–59.

Evaluation of temperature incorrect

The use of interim values for evaluation of temperature impacts is inappropriate because existing regulations state that they apply for a limited time and the replacement standards have been approved since 2007. The Colorado Water Quality Control Commission adopted interim temperature standards in the Arkansas River Basin in 2007 that were effective until December 31, 2012. This standard has been adopted in each basin statewide as the triennial hearings have occurred. They will be adopted at the June, 2013 Arkansas Basin Triennial Hearing to replace the interim values. The cold water temperature standard of 17°C and warm water standard of 30°C will be replaced with the following table values that were adopted in Regulation 31, Basic Standards and Methodologies for Surface Water (5 CCR 1002-31) with an effective date of July 1, 2007.

Parameter	TABLE 1 PHYSICAL AND BIOLOGICAL PARAMETERS						
	Recreational			Aquatic Life		Agriculture	Domestic Water Supply
	CLASS C (Existing Primary Contact) and CLASS U (Undetermined Use)	CLASS P (Potential Primary Contact Use)	CLASS N (Not Primary Contact Use)	CLASS 1 COLD WATER BIOTA	CLASS 1 WARM WATER BIOTA	CLASS 2	
PHYSICAL							
D.O. (mg/l) ¹	3.0(A)	3.0(A)	3.0(A)	5.0 ² (C) 7.0(escavelling)	0.0 ² (C)	0.0(A)	3.0(A)
pH (Std Units) ¹	6.5-9.0 (lim)	6.5-9.0 (lim)	6.5-9.0 (lim)	6.5-9.0(A)	6.5-9.0(A)	6.5-9.0(A)	6.5-9.0(A)
Suspended Solids ¹							
Temperature (°C)				Always & Minimum: May 17: June-July = 17.0 (ph) 21.7(ph) Oct-May = 9.0 (ph) 13.0 (ph) Nov-Dec = 16.3 (ph), 23.0 (ph) New Mex = 9.0 (ph), 13.0 (ph) Lakes & Res: Apr-Dec = 17.0 (ph), 21.2 (ph) Jan-Mar = 9.0 (ph), 13.0 (ph) Large Lakes & Res: Apr-Dec = 18.3 (ph), 23.0 (ph) Jan-Mar = 9.0 (ph), 13.0 (ph)	Always & Minimum: May 17: June-July = 24.7(ph) 29.0 (ph) Oct-Feb = 12.1(ph) 14.5(ph) Mar-Apr = 27.5(ph) 29.0 (ph) Dec-Feb = 13.8 (ph) 14.3 (ph) Same as Class 1 Mar-Apr = 26.7 (ph), 31.8 (ph) Dec-Feb = 14.3 (ph), 15.9 (ph) Lakes & Res: Apr-Dec = 26.3 (ph), 31.5 (ph) Jan-Mar = 13.2 (ph), 14.8 (ph)		

Significant water quality issues not addressed

The DEIS does not address several other issues of regulatory concern to the City of Pueblo. The effects of the AVC alternatives on water quality impacts regarding nutrients are not discussed. The CDPHE adopted nutrient standards for streams and lakes/reservoirs in 2012 that will have economic impacts on a number of communities. Moreover, the nutrient standards presently in effect will decrease by a factor of 10 in 2022. The DEIS should evaluate the impacts of the proposed AVC alternatives on attainment of the 2022 nutrient standards.

The effects of the AVC alternatives on water quality impacts regarding arsenic are not discussed. The CDPHE is considering the adoption of a state-wide water quality standard of 2 µg/L for arsenic, a factor of five lower than the permissible drinking water limit. Because selenium and

Response to comment, 1st paragraph: We concur. The new temperature standards were included in the discussion on page 3–34 of Chapter 3 and page F.1–17 in Appendix F.1.

Response to comment, 2nd paragraph: We concur. At the time of Draft EIS analyses, standards were not finalized or in effect for total phosphorus and total nitrogen. Data used by the Colorado Health Department in the 2012 303(d) impairment determination did not include total phosphorus or total nitrogen measurements. Colorado’s Regulation No. 31 (The Basic Standards and Methodologies for Surface Water) has subsequently been revised (June 2012, September 2012) to include interim numeric values for total phosphorus and total nitrogen for water bodies meeting specific criteria. Numeric standards for specific stream segments will not be established until after May 31, 2022. The Colorado Health Department was contacted to evaluate whether these interim values applied to the study area, and whether data existed to adequately assess effects. As a result, nutrient information, which is limited, was added to the existing conditions descriptions in Chapter 3 (page 3–34) along with discussion of the new standards. The best available information was also used to qualitatively assess effects on nutrients in the analysis area (Chapter 4, page 4–49).

Response to comment, 3rd paragraph: Reclamation does not concur. The Health Department proposal to lower the arsenic water quality standard to 2 µg/L has been dropped and likely will not be proposed again for several years (Health Department, Personal Communication November 2012). A change in the arsenic water quality standard will not be evaluated in this EIS because of the uncertainty of when an arsenic standard change will be proposed again, what the proposed change in standard would be, and whether a proposed change in the future would be adopted.

arsenic are chemically similar, come from the same geological source, and the DEIS analysis indicates that in-stream selenium concentrations will increase as a result of any of the AVC alternatives, it is reasonable to assume that in-stream arsenic concentrations will increase. Several segments will be listed as impaired on the 303(d) list when this standard is adopted according to the data collected by the City of Pueblo; the table below highlights those segments.

Regional Arsenic Data, 2008-2011.

Location	85th percentile (µg/L)	Minimum (µg/L)	Maximum (µg/L)	Number of data points
Arkansas at Moffat	1.19	0.65	2.44	24
Fountain at Pinõn	3.9	2.33	12	23
Fountain at Hwy 50	3.87	1.3	11.1	24
Arkansas at Avondale	3.07	1.08	8.93	27

When the arsenic water quality standard is adopted and if an implemented AVC alternative increases arsenic impairment, it will impose additional costs on waste water treatment plants that discharge to affected segments of the river, such as the City of Pueblo. This potential impact should be evaluated.

The DEIS does not discuss total dissolved solids concentrations in light of a possible impaired waters status for the Lower Arkansas River. Table 4-16, page 4-45, seems to imply that the effects of the action alternatives will be minor adverse on total dissolved solids. However, Figure 1 from Appendix F.1 shows that total dissolved solids concentrations in the river already exceed the secondary drinking water standard of 500 mg/L at all locations downstream from Colorado Highway 227. Total dissolved solids are important for aquatic life, agricultural, and industrial designated uses, as well as for drinking water. The Environmental Protection Agency (“EPA”) is discussing national water quality criteria for total dissolved solids, possibly expressed as chloride and sulfate standards. Because all AVC action alternatives increase in-stream concentrations of inorganic salts in the Arkansas River and if national criteria for total dissolved solids are adopted, the Lower Arkansas River may become an impaired stream. The EPA’s draft criteria document is expected to be issued in 2012.

Arkansas River stream flow through the City of Pueblo

As identified in the cooperating agency meetings, the City of Pueblo is very concerned with the hydrological effect of the alternatives through the City. As you are aware, the approximately 10-mile segment of the Arkansas River between the outlet of Pueblo Reservoir and the confluence with Fountain Creek has been the subject of extensive restoration and rehabilitation actions in conjunction with Pueblo’s Arkansas River Legacy Project (“Legacy Project”) which is intended to restore fish and wildlife habitat and the natural environment of the River. The Legacy Project, with 23 local project partners, is an important regional resource within the City. In 2006, the City obtained a recreational in-channel diversion (“RICD”) water right for water control

Response to comment, 3rd paragraph: Reclamation does not concur. Effects on total dissolved solids concentrations are described on page 4–59 in the Final EIS. These effects could not be discussed in terms of impairment status in the Final EIS because draft total dissolved solids criteria were not yet released by the EPA, and because the extent these criteria would be adopted by the state was unknown.

structures which were planned, and which have been constructed, as part of the Legacy Project. The RICD water right is decreed for “[b]oating, including but not limited to kayaking, rafting, and canoeing.” The decree also recognizes that the RICD water right will be used for “incidental fishing, wildlife habitat, and piscatorial uses,” although a water right for such purposes was not confirmed by the decree. In addition, major regional municipal water providers entered into intergovernmental agreements to effectuate the Flow Management Program, the purpose of which is to provide a reasonable level of protection for stream flows (*i.e.*, target flows) through the Legacy Project.

All alternatives but the River South and Master Contract Only alternatives withdraw about 30 cfs from river before the river channel passes through the City. DEIS, Table 4-8, page 4-20. With any of these alternatives, methods must be implemented to offset or eliminate the adverse effect of decreased stream flow. As indicated in Appendix B.5 of the DEIS, some of these measures could be implemented directly by Reclamation, such as ensuring participants commitment to the Flow Management Program and assisting participants in reserving water in Pueblo Reservoir or upstream storage facilities which could be released to maintain flows in the Arkansas River downstream from Pueblo Reservoir. Given the projected loss of stream flow, the implementation of these measures are critical to any action alternative.

Conclusion

As highlighted above, more information and data could be detailed within the DEIS that would allow for a more comprehensive evaluation of the alternatives in light of the City’s water quality concerns. Nonetheless, of the action alternatives proposed and the data provided, the River South and Comanche South most appropriately address impacts as they relate to existing infrastructure, water quality, and the Arkansas River stream flow through the City. With further analysis on the part of Reclamation, it may be possible that a variation of the alternatives would fully address the concerns of the City while meeting the overall purpose and need of the project.

Thank you for the opportunity to provide comments on the DEIS. Please feel free to contact me with any questions you may have.

Sincerely,

Jim Munch
City Manager

cc: Pueblo City Council
Department of Law

Response

Response to comment, 2nd paragraph: All action alternatives except River South and Master Contract Only would decrease average annual streamflow at the Arkansas River Above Pueblo gage between 13 and 16 cfs compared to No Action.

We agree that mitigation would offset the effects of an action alternative on streamflow. To mitigate moderate streamflow effects during low-flow periods in the Arkansas River associated with the Master Contract, 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 gage to fish hatchery return flows from the current hatchery discharge point.

Reclamation will provide \$50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of an action alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed, including site-specific NEPA compliance.

Memoranda of Agreement between Southeastern and AVC/Master Contract participants would require participation and compliance with Southeastern’s commitments in the Pueblo Flow Management Program, as outlined in the Six Party Intergovernmental Agreement (IGA 2004). This would be a commitment in proposed future contract(s).

Response to comment, 3rd paragraph: Thank you for your comment. See previous responses to comments in this letter for issues related to water quality.

Regarding alternatives, we reexamined alternatives to see if mixing components would decrease costs and minimize environmental effects. As a result the Joint Use Pipeline, Interconnect, and Master Contract were incorporated into a hybrid alternative called Comanche North. This alternative replaces Comanche South and is evaluated in the Final EIS.



October 30, 2012

Signe Snortland, Reclamation Environmental Specialist
 Bureau of Reclamation
 Dakotas Area Office,
 PO Box 1017, Bismarck ND 58502
isnortland@usbr.gov

RE: Arkansas Valley Conduit Long-Term Excess Capacity Master Contract Environmental Impact Statement

Dear Ms. Snortland,

Colorado Springs Utilities is submitting the attached comments on the Arkansas Valley Conduit (AVC) / Master Contract Environmental Impact Statement (EIS). We are supportive of the AVC and appreciate the opportunity to provide comments on the modeling and work done to date to facilitate completion of the EIS, to meet National Environmental Policy Act (NEPA) requirements for the project. Colorado Springs Utilities desires to work closely with the Bureau of Reclamation, the Southeastern Colorado Water Conservancy District, and other stakeholders on the proposal moving forward and reserve the right to provide additional comments in the future as new information comes to light or as further analysis is conducted.

In reviewing the modeling documentation, we noticed a fairly significant error in the assumed "mean annual exchanges" for Colorado Springs Utilities. The modeling has the exchanges valued at 6,150 Acre-feet to 6,750 acre-feet. The current Fountain Creek exchanges levels are closer to 24,000 acre-feet. We would like to see this issue resolved and the impacts re-calculated. We would be happy to work with you and your NEPA contractor to resolve this issue.

The remainder of our comments are attached. Please do not hesitate to contact me with any questions (719) 668-8748.

Thank you,

Abigail Ortega, P.E.
 Water Rights Administration Supervisor

cc: Jim Broderick, SECWCD

121 South Tejon Street, Third Floor
 P.O. Box 1103, Mail Code 830
 Colorado Springs, CO 80947-0930

Phone 719 688-8674
 Fax 719 688-8735
<http://www.csu.org>

We concur. This model error has been identified and fixed. New exchange results are in the Final EIS in Appendix D.6. New exchange results were discussed with Ms. Ortega before release of the Final EIS. Changes in quantity and timing of exchanges varied from the Draft AVC EIS, and affected all scenarios, including existing conditions and the No Action Alternative. Streamflow decreased slightly, but did not substantially change the level of effects or mitigation required. Changes in hydrologic effects did not change the level of effects for other resource categories. The Draft AVC EIS conclusions were not affected.

Page 2-14 – The text in the box states that the 2006-2010 Environmental Assessment showed no significant impacts for excess capacity contracts up to 80,000 acre-feet. Reclamation has current long term contracts with entities for contracts of 67,000 acre-feet of the excess capacity – the proposed Master Contract storage of 29,938 puts this amount at 96,938 acre-feet. There is no analysis of impacts to levels in Pueblo Reservoir nor is there any reference to spill frequency and impacts of this to streamflow.

Page 2-25 – If no new supplies are to be conveyed through the Interconnect, and any user would have an existing conveyance contract for the appropriate outlet works, why is there an assumption that any user of the Interconnect would be required to negotiate new contracts for the interconnect? Colorado Springs Utilities believes this could be accomplished through an addendum to the existing conveyance contracts which allows for use of the interconnect if Reclamation has either the North or South Outlet works not operational for any reason (e.g., planned or unplanned outage, etc.).

Page 2-38 – Table 2-14, were the impacts from the increased exchanges evaluated?

Page 3-18 – Please reword “Turquoise Reservoir is generally drawn down... to meet streamflow requirements...” should say “to meet voluntary streamflow targets...”

Page 3-31 – Colorado Springs Utilities would appreciate a more thorough discussion of any ongoing or planned water quality monitoring that may be necessary to fulfill the requirements of this EIS.

Appendix A – Many of the supplies contemplated to be conveyed through the Arkansas Valley Conduit are speculative, will a supplemental EIS be required as new sources are identified and “firmed up”? If the participants do not know how much supply they currently have how can they quantify or demonstrate a need for the project?

Page A.1-17 – Para. 2 states that Southeastern approved the conservation plan, do you mean CWCB?

Page A.1-41 – Colorado Springs Utilities believes that the correct the decree number for the SECWCD is 06CW08.

Page A.1-47 – Para. 3, - Colorado Springs Utilities understands that Fountain will be exchanging water from the confluence of Fountain Creek and the Arkansas River to Pueblo Reservoir? Please list the decrees under which these exchanges will occur.

Page A.1-48 – Colorado Springs Utilities would appreciate clarification on whether the Lower Arkansas Valley Water Conservancy District (LAVWCD) will be limited to leasing supplies only to the entities listed in the EIS? Will LAVWCD be approved to convey leased water to others outside the SE District boundaries (Cherokee and others?) through USBR facilities?

Page A.1-74 – Please reference where data on Colorado Springs Utilities and Fountain Valley Authority was obtained.

Response

Response to comment ‘Page 2–14’: Although effects on Pueblo Reservoir and annual spill volumes are in Appendix D.4 of the Draft EIS, additional information on the frequency of spills with the addition of Master Contract storage in Pueblo Reservoir has been added to the Appendix D.4 on page D.4–41 in response to your comment. Effects on streamflow downstream from Pueblo Reservoir are in Appendix D.4. These streamflow effects result from changes in operations, exchanges, spills, etc.

Response to comment ‘Page 2–25’: Reclamation would negotiate a contractual agreement whether it is a “new” contract or an amendment or supplement to an existing contract. The use of the Interconnect must be authorized in some sort of a negotiated contractual agreement between Reclamation and the parties to allow conveyance of water via a federal facility.

Response to comment ‘Page 2–38 – Table 2–14’: Effects due to increased exchanges are evaluated in the surface water effects. Appendix D.4 outlines these effects by gage and reservoir.

Response to comment ‘Page 3–18’: We concur. The wording on page 3–19 in the Final EIS was revised as follows.

Turquoise Lake is drawn down to meet streamflow requirements along Lake Fork Creek, to supplement voluntary streamflow targets associated with the Upper Arkansas Voluntary Flow Management Program, and to make room for summer transmountain imports through the Boustead Tunnel.

Response to comment on ‘Page 3–31’: Water quality monitoring is not proposed as mitigation in the Final EIS. Regarding changes to operations or assumption during construction of AVC, the Environmental Review Team would review any future proposed project changes (e.g., new participants, new water supplies, or changes in water rights administration) and make recommendations to Reclamation regarding whether additional NEPA or Compact compliance analyses would be needed. The Environmental Review Team would function during final design through one year after AVC and Master Contract operations would begin.

Response to comment ‘Appendix A’: We disagree with the characterization of Appendix A water supplies as speculative. Only reasonably foreseeable supplies were included. Additional NEPA analyses would be required for any new supplies or supplies in excess of those identified and analyzed in this EIS.

Comment Letter 18 (continued)

Colorado Springs Utilities Comments
October 30, 2012
Page 2

Page A.2-8 – Table is missing decrees for many of the exchanges

Page A.3-5 – (row 11) What action is needed for Fountain's FMIC shares?

Page A.3-6 – (rows 16-18, rows 21-26) No decrees listed and no explanation given?

Page A.3-16, 17 – formatting issues in rows 65-67?

Appendix D.1 – Table formatting issues

Page D.1-8 – Upper Arkansas Voluntary Flow Program; these are the recommendations as of 2012 but are subject to change – should they really be laid out in the EIS or should there just be a general reference to the flow targets?

Page D.1-9 – Para. 2, The target flows only curtail exchanges by entities that are party to the agreement and are senior in priority to the Pueblo RICD.

Page D.1-10 – Para. 3, Equitable Hours – exchanges are actually curtailed from 7 a.m on Friday through 7 p.m. on Monday

Page D.1-13 – Why is the Homestake Project collection system is even evaluated in the EIS as it has no impact to the AVC or the Master Contract and the Homestake space in Turquoise is separate from the Project space? Colorado Springs Utilities would prefer if this section was removed.

Page D.1-29 – Same comment as above

Page D.1-31 – Left out the fact the Colorado Springs owns 17,416 AF of Colorado Fuel and Iron Co. space in Turquoise.

Page D.1-45 – Homestake Reservoir, same comment as above – why is it included?

Appendix D.4, Table 17 – Direct effects mean annual spills are surprising, would like to see actual modeled results

Appendix D.4, Table 18 – The mean annual river exchanges into Pueblo is confusing; Colorado Springs current exchanges are closer to 24,000 acre-feet – currently shown as 6,140 AF

Appendix D.5-58 – Again, not sure how any of the alternatives would affect Homestake Reservoir or Homestake Creek when neither Aurora nor Colorado Springs Utilities are participants in the projects

Response

Response to comment 'Appendix A.1–17, A.1–41, A.1–47, A.1–48, and A.1–74': We concur that the conservation plan was approved by the Colorado Water Conservation Board. This was changed in the Final EIS in Appendix A.1. Changes and additions to decree numbers are in the Final EIS. Lower Ark District supplies would only be leased to entities assessed in the EIS. Additional leases/supplies would require additional NEPA documentation. Data sources are referenced as suggested in your comment.

Response to comment 'Page A.2–8, A.3–5, A.3–6, A.3–16 – A.3–17': We concur. Additional details on decrees were added to Appendixes A.2 and A.3 of the Final EIS

Response to comment 'Page D.1–8': Regarding page D.1–8, Reclamation added a note to page D.1–8 in the Final EIS that the flow program targets are recommendations as of 2012 and are subject to change. These targets were used in the effects analysis and were not removed.

Response to comment 'Page D.1–9': We concur. Text has been modified on page D.1–9 according to comment.

Response to comment 'Page D.1–10': We concur. Text has been modified on page D.1–10 in response to your comment.

Response to comment 'Page D1–13': We concur. Text regarding the Homestake project has been removed.

Response to comment 'Page D1–29': We concur. Text regarding the Homestake project has been removed.

Response to comment 'Page D1–31': We concur. Text has been modified on page D.1–31 to include Colorado Fuel and Iron Co. space in Turquoise.

Response to comment 'Page D.1–45': We concur. Text regarding the Homestake project has been removed.

Response to comment 'Appendix D.4, Tables 17 and 18': We concur. A minor input error in the Daily Model has been identified and fixed. Revised spill results are in Appendix D.6. These spill results were discussed with Ms. Ortega before release of the Final EIS. Also see first response in this letter.

Response to comment 'Appendix D.5–58': We concur. References to Homestake Reservoir and Homestake Creek effects have been removed.



109 SW 9th Street, 2nd Floor
Topeka, Kansas 66612-1283

Dale A. Rodman, Secretary
David W. Barfield, Chief Engineer

phone: (785) 296-3717
fax: (785) 296-1176
www.ksda.gov/dwr

Sam Brownback, Governor

October 30, 2012
VIA EMAIL

Signe Snortland, Reclamation Environmental Specialist
Bureau of Reclamation
Dakotas Area Office
PO Box 1017
Bismarck ND 58502

RE: Comments on the Draft EIS for the
Arkansas Valley Conduit and Long-Term
Excess Capacity Master Contract

Dear Ms. Snortland:

I am writing to provide the state of Kansas' comments in response to the Bureau's draft Environmental Impact Statement (EIS) for the Arkansas Valley Conduit (AVC) and related projects, issued in August 2012. This comment letter will focus on our primary concerns: the daily model assumptions and the EIS's related assumption of future Compact compliance by Colorado, water quality concerns, and the need for the Bureau to commit to on-going operational review of the projects it enables. Kevin Salter is providing a separate letter with additional comments from our review.

Arkansas River Compact Compliance and the EIS' Daily Model Assumptions

The USBR's approach in this EIS, as written, continues to rely on Colorado's assurances that Arkansas River Compact (Compact) compliance will be maintained without independent review or confirmation. The Compact is a federal statute having been enacted by Congress, as well as the State of Colorado and the State of Kansas (Federal Statute, 63 Stat. 145; State of Colorado, C.R.S. 37-69-101; and State of Kansas, K.S.A. 82a-520). As a federal statute, the Compact obligates the Bureau to independently review projects for Compact compliance. The Bureau should be aware of the Special Master's admonishment to the United States in *Kansas v. Colorado* (No. 105, Original) on this same concern. In his First Report (1994) to the U.S. Supreme Court (Vol. II, p. 322), the Special Master expressed the following regarding USBR's review of the impacts of the Pueblo Winter Water Storage Program:

The Arkansas River Compact currently requires that: "the waters of the Arkansas River, as defined in Article III, shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this Compact by such future developments or construction" (Article IV.D), and the Colorado State Engineer's Office administers water rights as such.

Assuming the Colorado State Engineer's Office would administer water rights in violation of the Arkansas River Compact is not reasonably foreseeable (as defined in the Draft AVC EIS, Appendix B.4). The Daily Model, therefore, assumed that streamflows would be managed to avoid violating the Compact. Streamflow effects at the Arkansas River at Las Animas gage and Arkansas River Near Granada gage would be negligible (see Appendix D.4 and Appendix D.5 in the Final EIS).

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"Pueblo Reservoir is a major storage facility, and to alter the regime of the Arkansas River by storing winter flows is not a trivial change. The compact is a law of the United States, binding on the Bureau of Reclamation as well as on the States of Kansas and Colorado. *Texas v. New Mexico*, 462 U.S. 554, 564, 77 L.Ed.2d 1, 103 S.Ct. 2558 (1983). In a development of this kind, the United States should not operate the project or participate in its operation, without a good faith belief, based on whatever data or studies may be needed, that the United States is acting in full compliance with the law. This is not to suggest that United States' officials have not been acting in good faith. But their beliefs appear to rest primarily on assurances from Colorado, without independent review or confirmation."

Modeling and Assumptions: As Kansas has repeatedly expressed, we remain concerned with a primary assumption of the daily model that the flows of the Arkansas River at Las Animas will remain at historical levels. This result is accomplished via an artificial constraint (call) that is not done in the real-world of Colorado water administration. The assumption in essence determines that there will be no impacts of the proposed alternatives below this gage. While the study with this assumption may demonstrate that the AVC and long-term excess capacity contracts can potentially be done within Compact requirements, the study does not provide assurance that the projects and contracts enabled by the Bureau's action will be done in compliance with the Compact.

Fry-Ark Return Flows: The EIS' treatment of Fry-Ark return flows is described in Appendix D.3 (page D.3-52). As is acknowledged, Kansas is concerned with the treatment of return flows derived from native Arkansas River flows. The EIS' daily model assumes these flows are usable to extinction. The Bureau states that this assumption is in accordance with the Special Master's ruling. However, the Special Master's ruling made it clear that Kansas' concern was not resolved with respect to future uses of such waters. Despite this, the Bureau made the assumption to treat these native waters as consumable to extinction.

The excerpt of the Special Master's order on page D.3-52 is misleading. His full statement from the order:

"In short, this issue comes too late to be decided in the drafting of the Decree. It is more properly left to the Dispute Resolution provisions of the Decree if, and when, John Martin Reservoir is again full and spilling, and agreement cannot be reached between the States. For the purposes of drafting the Decree, no change should be made in Data Set 14, Appendix B, Section III.B.6, and it should continue to read 'Monthly transmountain deliveries (Data Set 14).'"

The Special Master was referring to Colorado's request that the Decree include references to both transmountain and native components in the description of Data Set 14. He was not referring to how these native east slope return flows would be handled into the future.

Response to comment, 2nd paragraph: See previous response.

Response to comment, 3rd paragraph: Resolution of East Slope Fry-Ark return flows in the Arkansas River Compact administration process is not reasonably foreseeable. Text in Appendix D.3, page D.3-51, was clarified to state:

The Daily Model does not distinguish between Fry-Ark return flows from transmountain sources and Fry-Ark return flows from East Slope water rights. Kansas has raised the issue of whether return flows that accrue to the Arkansas River from use of native (East Slope) Arkansas River water rights should be treated the same as return flows from transmountain sources (i.e. fully reusable). By order of the Special Master, "this issue [came] too late to be decided in the drafting of the Decree, [and] it is more properly left to the Dispute Resolution provisions of the Decree if, and when, John Martin Reservoir is again full and spilling, and agreement cannot be reached between the States." As of release of this Final EIS, this issue is unresolved. Therefore, AVC EIS hydrologic modeling assumes return flows accruing from the use of native Fry-Ark water rights as reusable to extinction.

Response to comment, 4th through 6th paragraphs: See previous response.

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Thus, the Special Master's order explicitly left the resolution of treatment of native Fry-Ark return flows until a future time when native water is again stored under the Fry-Ark Projects east slope water rights. At that time, unless an agreement is reached, the States will use the dispute resolution procedure under the *Kansas v Colorado* decree. The daily model is contemplating those future conditions and in Kansas' view inappropriately assumes that these native return flows are usable to extinction. A more appropriate assumption would be that those return flows are not usable to extinction.

In summary, the projects and contracts the Bureau is enabling at this juncture, taken together with the Southern Delivery System (SDS) and other actions, will increase Colorado's ability to more fully utilize the waters of the Basin. Given that actual operations may differ from the operations assumed by this model, we continue to stress the importance of independent review to assure Compact compliance. We recommend that a Compact compliance section be added to the EIS as a commitment of the Bureau along with on-going monitoring of both water quality and quantity.

Water Quality

Because of the relationship of water quantity and water quality, the assumptions that cause concern in water quantity would also cause concern with the water quality evaluation. Therefore, water quality degradation is more apparent in the cumulative effect section.

Kansas is concerned with the potential for further water quality degradation at the Colorado-Kansas state line due to cumulative, long-term impacts of this and other projects the Bureau is enabling in the Basin. Water quality impacts associated with the AVC could become more pronounced as other water-related projects are implemented in the Arkansas River Basin. The concern here is if the enabled project expands use of higher quality upper basin water from the historic conditions, there is a real potential for further water quality degradation. A mitigation measure in the final EIS should include long-term water quality monitoring due to the uncertainties related to cumulative and long-term impacts.

Conclusion

As expressed above, Kansas is concerned with assumptions of the daily model that the flows for Arkansas River at Las Animas be maintained at historic levels. With this assumption, the daily model demonstrates that it can show no impacts below this gage, but there is no assurance that there will be no impacts under actual operating conditions.

Including these projects being reviewed, there are several projects that are or will be enabled by their use of federal facilities. We believe, as a minimum, it is the Bureau's responsibility to conduct regular operational reviews and monitoring of these project's impacts

Response

Response to comment, 2nd paragraph: The Arkansas River Compact currently requires that: "the waters of the Arkansas River, as defined in Article III, shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this Compact by such future developments or construction" (Article IV.D), and the Colorado State Engineer's Office administers water rights as such.

Assuming the Colorado State Engineer's Office would administer water rights in violation of the Arkansas River Compact is not reasonably foreseeable (as defined in the Draft AVC EIS, Appendix B.4). The Daily Model, therefore, assumed that streamflows would be managed to avoid violating the Compact. Streamflow effects at the Arkansas River at Las Animas gage and Arkansas River Near Granada gage would be negligible (see Appendix D.4 and Appendix D.5 in the Final EIS).

For water quality, Reclamation does not concur with this comment. Effects on water quality at the Arkansas River at Las Animas gage and locations downstream would be negligible. Streamflow effects would be negligible and effects on water quality constituents wouldn't increase impairment. Water quality effects in the lower basin were clarified throughout the water quality effects section. The Compact does not address water quality. Article IV-D allows for future beneficial development in either state with a proviso that limits the water quantity impact of those developments but that does not address water quality effects.

Response to comment, 4th paragraph: Regarding water quality, see previous response.

Response to comment, 5th paragraph and last paragraph: Regarding Compact compliance monitoring, see previous response.

Regarding changes to operations or assumptions during construction of AVC, the Environmental Review Team would review any future proposed project changes (e.g., new participants, new water supplies, or changes in water rights administration) and recommend whether additional NEPA or Compact compliance analyses would be needed. The Environmental Review Team would function during final design through one year after AVC and Master Contract operations begin.

Comment Letter 19 (continued)

Response

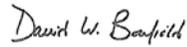
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on the Arkansas River Basin. Although useful, the EIS modeling cannot capture all of the situations that may arise and assumptions used in the modeling process may not be valid.

The operational reviews and monitoring should determine if the modeled conditions and assumptions were appropriate and whether the expectation of Compact compliance and no water quality degradation were valid. If not, then the projects should be reviewed to determine actual impacts to the river system. Such operational reviews and monitoring would represent a commitment by the Bureau to independently review impacts to the Arkansas River and compliance with the Arkansas River Compact.

Please feel free to contact Kevin Salter (620-272-2901) if you have any questions or need clarification. I appreciate the opportunity to comment.

Sincerely,



David Barfield, P.E.
Chief Engineer

pc: Randy Hayzlett, Kansas ARCA Representative
David Brenn, Kansas ARCA Representative
Tom Stiles, Kansas Department of Health and Environment
Don Whittemore, Kansas Geological Survey
Kevin Salter, Garden City Field Office

Response to comment, 2nd paragraph: See previous responses to this letter.

Garden City Field Office
2508 Johns Street
Garden City, Kansas 67846-2804



phone: (620) 276-2901
fax: (620) 276-9315
www.ksda.gov/dwr

Dale A. Rodman, Secretary
David W. Barfield, Chief Engineer
Michael A. Meyer, Water Commissioner

Sam Brownback, Governor

October 30, 2012
VIA EMAIL

Signe Snortland, Reclamation Environmental Specialist
Bureau of Reclamation
Dakotas Area Office
PO Box 1017
Bismarck ND 58502

RE: Arkansas Valley Conduit and Long-Term
Excess Capacity Master Contract
– Draft EIS

Dear Ms. Snortland:

I am providing comments on the draft Environmental Impact Statement (EIS) for the Arkansas Valley Conduit (AVC) and related projects, issued in August 2012. David Barfield is providing a separate letter with additional comments from our review.

This letter will offer section rewrites on the following: the Arkansas River Compact (Compact), Pueblo Winter Water Storage Program, Kansas water supply, and John Martin Reservoir. These rewrites are needed due to mischaracterizations in the draft EIS.

Chapter 3 – Surface Water Hydrology

Native Water rights: The third paragraph doesn't properly describe the Arkansas River Compact's role in Colorado's administration (page 3-11). Although the Compact does apportion Arkansas River flows and the conservation benefits of John Martin Reservoir, the Arkansas River in Colorado is administrated generally under the Colorado priority system. I would suggest this paragraph be rewritten as follows:

Colorado also is required to maintain compliance with the Arkansas River Compact (Compact), which was negotiated between Colorado and Kansas. This

Response to comment, 3rd paragraph: The paragraph on page 3–11 in the Final EIS has been modified as follows.

"Colorado also is required to maintain compliance with the Arkansas River Compact, which was negotiated between Colorado and Kansas. This compact apportioned the Arkansas River flows and the conservation benefits of John Martin Reservoir which was constructed by the Corps between 1939 and 1948. The compact was signed by the states' and the federal representative in December 1948. The compact was subsequently enacted as state law by Colorado and Kansas as well as being adopted as a federal statute (State of Colorado, C.R.S. 37-69-101; State of Kansas, K.S.A. 82a-520; and Federal Statute, 63 Stat. 145). Compact Article IV-D provides:"

"This compact is not intended to impede or prevent future beneficial development of the Arkansas river basin in Colorado and Kansas by federal or state agencies, by private enterprise, or by combinations thereof, which may involve construction of dams, reservoirs and other works for the purposes of water utilization and control, as well as the improved or prolonged functioning of existing works: Provided, that the waters of the Arkansas river, as defined in Article III, shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this compact by such future development or construction."

"The Arkansas River Compact and related documents can be found on the Colorado Division of Water Resources (2011) Web site."

Comment Letter 20 (continued)

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Compact apportioned the Arkansas River flows and the conservation benefits of John Martin Reservoir which was constructed by the Corps between 1939 and 1948. The Compact was signed by the States' and the federal representative in December 1948. The Compact was subsequently enacted as state law by Colorado and Kansas as well as being adopted as a federal statute (State of Colorado, C.R.S. 37-69-101; State of Kansas, K.S.A. 82a-520; and Federal Statute, 63 Stat. 145). The Compact divides and apportions Arkansas River water between those two States. The Compact also requires that useable streamflows not be depleted at the Colorado-Kansas state line by subsequent post-Compact development. Therefore, increased consumptive use caused by groundwater irrigation pumping and irrigation system improvements that have occurred since the Compact's adoption must be offset to prevent depletion of streamflows at the state line. Those offsets are administered under augmentation plans (Rule 14 and Rule 10 plans, respectively). The Compact and related documents can be found on the Colorado Division of Water Resources (2011) Web site:

<http://water.state.co.us/SurfaceWater/Compacts/ArkansasRiverCompact/Pages/ArkansasRiverCompact.aspx>)

Pueblo Winter Water Storage Program: This program is not accurately characterized and is much larger than is represented in the draft EIS (page 3-11 to 3-12). Regarding the size, the twenty year average (1991-2011) is 142,860 AF from the final winter water report for the November 2011 to March 2012 program. Also, there is a significant portion of PWWSP storage that occurs in John Martin Reservoir, with the 1982 to 2009 average storage in John Martin Reservoir being 24,500 AF. I would suggest rewriting this section as follows:

Pueblo Winter Water Storage Program The Pueblo Winter Water Storage Program allows agricultural water users to store native Arkansas River flows during the winter in Pueblo Reservoir, John Martin Reservoir, and other off-channel reservoirs below Pueblo Reservoir. Before Pueblo Reservoir was completed, agricultural entities would divert water during the winter using their normal conveyance systems to maintain soil moisture levels. However, problems associated with winter operations frequently occurred. Beginning in 1975, a program was developed to allow entities the option to divert water into storage for use during the following irrigation season. The Pueblo Winter Water Storage Program is in effect from November 15 through March 15 annually. Total program diversions are divided among participants using set percentages. Nonparticipants retain the right to divert water according to their priority date. The program is administered with a priority date of March 1, 1910, and typically stores between 30,000 and 50,000 ac-ft in Pueblo Reservoir each year, with additional storage in off-channel structures (Hopkins 2010). Winter Water

Response to comment, 2nd paragraph: The paragraph on page 3–12 in the Final EIS has been modified as follows.

“The Pueblo Winter Water Storage Program allows agricultural water users to store native Arkansas River flows during the winter in Pueblo Reservoir, John Martin Reservoir, and other off channel reservoirs below Pueblo Reservoir. Before Pueblo Reservoir was completed, agricultural entities would divert water during the winter using their normal conveyance systems to maintain soil moisture levels and for storage in pre-Arkansas River Compact off-stream facilities. Beginning in 1975, a program was developed to allow entities the option to divert water into storage for use during the following irrigation season. The Pueblo Winter Water Storage Program is in effect from November 15 through March 15 annually. Total program diversions are divided among participants using set percentages. Nonparticipants retain the right to divert water according to their priority date. The program is administered with a priority date of March 1, 1910, and typically stores between 30,000 and 50,000 ac-ft in Pueblo Reservoir each year, with additional storage in off-channel structures (Hopkins 2010). Winter Water Storage in John Martin Reservoir averaged 24,500 ac-ft during the study period (1982 to 2009).”

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Storage in John Martin Reservoir averaged 24,500 ac-ft during the study period (1982 to 2009).

Streamflow: It is not appropriate to compare the volume of inflows to John Martin Reservoir to the volume of water that crosses the state line (page 3-13). This comparison leaves the incorrect impression that the two volumes are well-correlated. This is shown by the flows at the state line ranging from an annual volume of water as low as 13% of John Martin inflows for that year, to an annual volume as high as 488% of John Martin inflows during the 1950 to 2011 period.

The 70% average cited on page 3-13 is neither a target nor a good representation of the appropriate volume of water that Kansas is entitled to under the Compact. State line flow is quite variable, depending on the hydrologic conditions within the basin, and shows the impact of inflows below John Martin Reservoir. Any depletive impacts to John Martin Reservoir inflows would be a concern to Kansas because of the right to maintain flow conditions as of the time of the Compact under most conditions. I would suggest redrafting this section as follows:

USGS and the Colorado Department of Natural Resources maintain streamflow gages throughout the Arkansas River Basin. Figure 3-4 and Figure 3-5 show mainstem and tributary gage locations with average annual streamflow. The flows referenced in this section are related to the 1982 to 2009 study period.

Figure 3-4 shows that a large portion of Upper Arkansas River streamflow originates from tributary inflow, with 60 percent of total annual flow at the Portland gage comprising measured tributary inflows. Figure 3-5 shows the impact of agricultural diversions, with streamflow between Avondale and Las Animas decreasing nearly 70 percent. The Arkansas River contributes about 83 percent of measured inflows into John Martin Reservoir, while the Purgatoire River contributes about 17 percent.

The Kansas water supply as measured at the Colorado-Kansas state line is composed of several sources, including Kansas account releases from John Martin Reservoir, irrigation return flows, and tributary inflows below John Martin Reservoir. For the 1982 to 2009 period, the Kansas account releases are approximately 28 percent of the water passing through the Arkansas River below John Martin Reservoir USGS gage.

John Martin Reservoir: The statement that John Martin Reservoir has not been in priority since the Spring of 2000 is misleading (page 3-22). In part, this is due to the fact that the Compact doesn't involve a water right that is in the Colorado priority system. John Martin Reservoir has stored water each and every year since before the Compact was adopted. During

Response

Response to comment, 2nd paragraph: We concur that the John Martin Reservoir sentence on the referenced page was inadequate. That sentence on page 3–14 in the Final EIS was revised as suggested. The study period was also added to the streamflow maps in Chapter 3.

Response to comment, 7th paragraph: The paragraph on page 3–22 in the Final EIS has been modified as follows.

“John Martin Reservoir is an on-channel reservoir primarily used for flood control, irrigation, and recreation purposes. The reservoir is located on the Arkansas River downstream from the town of Las Animas. John Martin Reservoir is owned and operated by the Corps. The Arkansas River Compact Administration oversees the operation of the conservation pool. Although the total capacity at the top of the dam is 793,400 ac-ft, the maximum capacity is limited to 603,465 ac-ft. The conservation pool has a capacity of 333,912 ac-ft based on the 1999 resurvey and there is no dead storage. Starting on November 1st of each year, Compact inflows are stored in Compact conservation storage. Water in Compact conservation storage is transferred to accounts for Colorado and Kansas water users starting on the first demands of water on or after April 1st, but no later than April 7th of each year. While water is being transferred from Compact conservation storage, Compact inflows continue to accumulate in Compact conservation storage even as the water is transferred. When Compact conservation storage is emptied by these transfers, then Colorado reverts to the priority system, and the water rights downstream from the reservoir may again place calls against their upstream juniors. After Compact conservation storage is first emptied after April 1st, then water can be stored in Compact conservation storage if inflows exceed the downstream Colorado surface water irrigation demands by more than 1 ,000 ac-ft. Any post-Compact development is subject to Article IV-D, which precludes any material depletion in usable quantity or availability for use to the water users in Colorado and Kansas under this compact by such future development or construction. Water derived from pre-Compact water rights can be stored in separate accounts in John Martin Reservoir: (1) the Pueblo Winter Water Storage Program, (2) the Amity Canal Great Plains water rights, or (3) in the Offset Account.”

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the study period, at least 4,334,000 acre feet were stored in the Compact conservation storage. I would suggest that this section be rewritten as follows:

John Martin Reservoir John Martin Reservoir is an on-channel reservoir primarily used for flood control, irrigation, and recreation purposes. The reservoir is located on the Arkansas River downstream from the town of Las Animas. John Martin Reservoir is owned and operated by the Corps. The Arkansas River Compact Administration (ARCA) oversees the operation of the conservation pool. Although the total capacity at the top of the dam is 793,400 ac-ft, the maximum capacity is limited to 603,465 ac-ft. The conservation pool has a capacity of 333,912 ac-ft based on the 1999 resurvey and there is no dead storage.

Starting on November 1st of each year, Compact inflows are stored in Compact conservation storage. Water in Compact conservation storage is transferred to accounts for Colorado and Kansas water users starting on the first demands of water on or after April 1st, but no later than April 7th of each year. While water is being transferred from Compact conservation storage, Compact inflows continue to accumulate in Compact conservation storage even as the water is transferred. When Compact conservation storage is emptied by these transfers, then Colorado reverts to priority system for the water rights located downstream of the reservoir. After Compact conservation storage is first emptied after April 1st, then water can be stored in Compact conservation storage if inflows exceed the downstream Colorado surface water irrigation demands by more than 1,000 ac-ft. The Compact precludes any upstream depletions of John Martin Reservoir supply due to post-Compact development. Water derived from pre-Compact water rights can be stored in separate accounts in John Martin Reservoir: (1) under the Pueblo Winter Water Storage Program, (2) the Amity Canal Great Plains water rights, and/or (3) in the Offset Account.

Appendix D.1 (page D.1-44) would need to be similarly rewritten. The inflows into John Martin Reservoir need to be protected from depletions by these proposed projects.

Chapter 5 Consultation and Coordination

Arkansas River Compact: The Arkansas River Compact is a federal statute, and therefore the discussion of it should be moved up into the section on "Federal Laws, Regulations, and Policies." This section perpetuates several misconceptions related to the Compact (page 5-13). This section should be rewritten as follows:

Arkansas River Compact Interstate compacts apportion water that can be used by each State from a particular river system. The Arkansas River Compact between Kansas and Colorado apportioned the available water supply and John Martin Reservoir conservation benefits by its provisions. Related to the

Response

Response to comment, 5th paragraph: We concur. The text was revised as follows and was moved to the Federal section in Chapter 5 on page 5–12:

"Interstate compacts apportion water that can be used by each State from a particular river system. The Arkansas River Compact between Kansas and Colorado apportioned the available water supply and John Martin Reservoir conservation benefits by its provisions. Related to the conservation benefits of John Martin Reservoir, either State could call against the conservation pool up to a certain maximum release rate. These calls were independent of each other, and theoretically one State could release the entire conservation pool without the other State placing a call. This method of "sharing" the conservation pool created inefficiencies that were recognized by both States. In 1980, the Arkansas River Compact Administration adopted a Resolution Concerning an Operating Plan for John Martin Reservoir (a.k.a. the 1980 Operating Plan) which created a system of accounts in John Martin Reservoir, including accounts for water derived from pre-Compact Colorado water rights.

Under the 1980 Operating Plan, inflows into John Martin Reservoir that are stored in Compact conservation storage are ultimately divided 60 percent to Colorado and 40 percent to Kansas. These inflows include streamflow of the Arkansas and Purgatoire rivers, ungaged inflows, and precipitation directly on the reservoir during periods of Compact conservation storage. When the reservoir is not in Compact conservation storage, inflows, to the extent practical, are measured and released from the reservoir without temporary storage or averaging flows. Water delivered to the permanent pool and offset account does not accrue to Compact conservation storage. Water may also be delivered to John Martin Reservoir under the Pueblo Winter Water Storage Program and the Amity Canal Great Plains water rights.

During times when John Martin Reservoir is not in conservation storage, Colorado is to operate under its prior appropriation system. Kansas is entitled to those flows present at the Colorado-Kansas state line under these conditions. This includes water passed through John Martin Reservoir in excess of District 67 irrigation demands and irrigation return flows. Colorado's Compact compliance with respect to groundwater pumping is evaluated using the annual updates of the H-I Model as required by the United States Supreme Court's approval of the stipulated final decree in *Kansas v. Colorado* (No. 105 Original), 556 U.S. 98 (2009).

Comment Letter 20 (continued)

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conservation benefits of John Martin Reservoir, either State could call against the conservation pool up to a certain maximum release rate. These calls were independent of each other, and theoretically one State could release the entire conservation pool without the other State placing a call. This method of "sharing" the conservation pool created inefficiencies that were recognized by both States. In 1980, the Arkansas River Compact Administration adopted a *Resolution Concerning an Operating Plan for John Martin Reservoir* (a.k.a. the 1980 Operating Plan) which created a system of accounts in John Martin Reservoir, including accounts for water derived from pre-Compact Colorado water rights.

Under the 1980 Operating Plan, inflows into John Martin Reservoir that are stored in the Compact conservation storage account are ultimately divided 60 percent to Colorado and 40 percent to Kansas. These inflows include flows of the Arkansas and Purgatoire rivers, ungaged inflows, and precipitation directly on the reservoir during periods of Compact conservation storage. When the reservoir is not in Compact conservation storage, inflows related to the Compact are to be passed downstream. Additionally, water derived from pre-Compact Colorado water rights can be stored in separate accounts in John Martin Reservoir: (1) under the Pueblo Winter Water Storage Program, (2) the Amity Canal Great Plains water rights, and/or (3) in the Offset Account.

During times when John Martin Reservoir is not in conservation storage, Colorado is to operate under its prior appropriation system. Kansas is entitled to those flows present at the Colorado-Kansas state line under these conditions. This includes water passed through John Martin Reservoir in excess of District 67 irrigation demands and irrigation return flows. An additional test of Colorado's Compact compliance is accomplished through annual updates of the H-I Model under the *Kansas v Colorado* decree to determine the impacts of certain post-Compact developments.

Colorado and Kansas have been in litigation before the U.S. Supreme Court regarding the Arkansas River. The first case was brought in 1902. The U.S. Supreme Court encouraged the States to form an interstate compact in a separate litigation.

In 1985 Kansas filed an action with the U.S. Supreme Court claiming that Colorado had violated the Compact. A Special Master was appointed to hear the issues and make recommendations to the court. The Special Master issued five reports to the U.S. Supreme Court based on his findings. The States negotiated a final judgment and decree which was recommended by the Special Master for adoption by the court. In 2009, the U.S. Supreme Court entered this final judgment and decree in this case. The final judgment included monetary compensation owed to Kansas by Colorado for damages. The decree also provided a method to determine whether or not Colorado is in compliance with

Response

Response to comment, 5th paragraph (continued): Colorado and Kansas have been in litigation before the U.S. Supreme Court regarding the Arkansas River. The first case was brought in 1902. In a subsequent litigation, the U.S. Supreme Court encouraged the States to form an interstate compact (Colorado v. Kansas (No. 5 Orig), 320 U.S. 383, 392 (1943))."

Response

Comment Letter 20 (continued)

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the Compact. Through the course of this litigation and afterwards, Colorado has developed rules and regulations for irrigation groundwater well pumping and irrigation system improvements in the lower Arkansas River Basin.

Conclusion

A number of mischaracterizations have been identified and suggested language has been offered. We would request that the final EIS use the language provided. I would be willing to answer any questions or provide additional explanation if needed. With the above identified mischaracterizations, it does call into question the understanding of the role of the Compact and its representation in the development of this draft EIS. Thank you for this opportunity to comment and provide this clarification.

Sincerely,



Kevin L. Salter, P.E.

pc: David Barfield, Chief Engineer
Randy Hayzlett, Kansas ARCA Representative
David Brenn, Kansas ARCA Representative

PETROS & WHITE LLC
ATTORNEYS AT LAW

1999 BROADWAY, SUITE 3200
DENVER, COLORADO 80202

TELEPHONE (303) 825-1980

FACSIMILE (303) 825-1983

October 30, 2012

Via U.S. Mail and Email

J. Signe Snortland (jsnortland@usbr.gov)
Reclamation Environmental Specialist
Bureau of Reclamation, Dakotas Area Office
P.O. Box 1017
Bismarck, ND 58502

Re: Draft Environmental Impact Statement for the proposed Arkansas Valley Conduit (AVC), Long-Term Excess Capacity Master Contract (Master Contract), and Outlet Works Interconnect (Interconnect)

Dear Ms. Snortland:

Our law firm serves as special counsel to Pueblo County on water rights and related land use and environmental matters. We are submitting this letter at the request of the Pueblo County planning staff and the Pueblo County Attorney (Pueblo County) to furnish comments on the Draft Environmental Impact Statement (DEIS), dated August, 2012, for the three proposed federal actions referenced above. Pueblo County previously submitted comments dated June 1, 2012 on the Cooperating Agency Review Draft, which comments are attached hereto and the County incorporates by reference herein.

Pueblo County supports the Bureau of Reclamation's (BOR) efforts to enhance the quality of drinking water supplied to residents in the Lower Arkansas River basin. The County also supports the efficient utilization of surplus storage capacity in Pueblo Reservoir and the redundant delivery options provided by the proposed Interconnect. Those efforts must, however, be undertaken with a thorough assessment and mitigation of the impacts and costs to local governments and the environment within Pueblo County. Pueblo County wishes to ensure that the costs and impacts of the three projects are not imposed unfairly and involuntarily upon Pueblo County residents and its governmental entities.

The Final Environmental Impact Statement (FEIS) will be used by Pueblo County and other local governments to help them reach decisions on conditions of local approvals. Accordingly, it is important that the DEIS fully examine and clearly report the costs and impacts of the alternatives.

Comment Letter 21 (continued)

Ms. J. Signe Snortland
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COMMENT 1. The DEIS does not contain a preferred alternative; when a preferred alternative is selected, the BOR should provide the opportunity for additional comments before issuance of the FEIS.

The 402-page DEIS explains the proposed action and the “economic, environmental, technical, and other factors” that may result from the seven alternatives presented therein. The 2,080 pages of appendices to the DEIS (and 1,318 pages of engineering supplements) expand on the seven alternatives and attempt to further explain the consequences of each alternative.

The BOR should be commended for not selecting a preferred alternative without a clear consensus. The lack of a preferred alternative, however, makes it difficult to provide focused comments on the DEIS. In this case, parties are forced to comment on the myriad consequences of all alternatives included in the DEIS, with no indication of which alternative is most likely to be approved. When a preferred alternative is selected, the public should be given another opportunity to comment on the preferred alternative before the FEIS.

COMMENT 2. The preferred alternative needs to maximize the benefits to Pueblo County while minimizing the detriments to Pueblo County.

The majority of the benefits of the alternatives presented in the DEIS will occur outside Pueblo County. For example, only 28% of the annual deliveries are proposed to be for the benefit of AVC participants within Pueblo County, and 27% of the storage requested under the Master Contract is for participants in Pueblo County. Conversely, the majority of the impacts of the alternatives presented in the DEIS will occur within Pueblo County. The alternative ultimately chosen by the BOR will impact roads, bridges and other infrastructure owned and maintained by Pueblo County. It will likely reduce flows in the Arkansas River below Pueblo Reservoir, might adversely reduce lake levels in Pueblo Reservoir and impact recreation in Pueblo State Park, and might cause the additional impacts discussed in the DEIS and in these comments below.

The differences in the AVC configurations are also mainly within Pueblo County. Accordingly, Pueblo County urges the BOR to accommodate the needs of the residents of Pueblo County and to obtain consensus among Pueblo County residents and entities in selecting the appropriate alternative. The alternative chosen should enhance the benefits in Pueblo County to the extent possible, minimize the detriments in the County, and not preclude participation by Pueblo County entities as a result of the chosen AVC configuration.

Comment 2.1. The River South alternative avoids much pipeline construction through Pueblo and preserves river flows through Pueblo.

The River South alternative appears to be the least expensive of the AVC alternatives. It also maintains flows in the Arkansas River below Pueblo Reservoir while also reducing the cost of piping and the impacts of road and other damage near Pueblo. The River South alternative has the added benefit of providing St. Charles Mesa Water District with the non-filtered water it prefers, and does not impose duplicate filtering costs on St. Charles Mesa. The DEIS claims water diverted from the Arkansas River at the River South location would not meet secondary

Response

Response to Comment 1: There will be no more hearings, but Reclamation sought input from affected and interested individuals and groups in responding to public comments and in the decision process as the Final EIS was prepared. Reclamation continued meeting with cooperating agencies, distributed a newsletter identifying the preferred alternative, and updated the project website to inform the public of important developments. The preferred alternative is identified in the Final EIS but will not be selected until the Record of Decision is signed. Reclamation’s decisions regarding the proposed federal actions will be documented in the Record of Decision.

Response to Comment 2, 2nd paragraph: Reclamation worked with cooperating agencies in preparing the Final EIS. This included discussions on identifying a preferred alternative in the Final EIS. Ideally a preferred alternative has the consensus of the affected communities. Pueblo County is a cooperating agency and was included in those discussions.

Response to Comment 2.1: Reclamation has given due consideration to all of the alternatives, including River South. Secondary drinking water standards are not mandatory, as explained in Chapter 1, page 1–13 of the Final EIS. A qualitative discussion on meeting secondary drinking water standards under the River South Alternative was added to Chapter 2 on page 2–26 in the Final EIS. .

Reclamation does not concur that the Comanche South (or the Comanche North) Alternative would preclude participation of St. Charles Mesa Water District. Delivery of AVC water by pipeline would reduce transit loss that would occur during delivery via the Bessemer Ditch or the Arkansas River. St. Charles Mesa Water District would be willing to accept filtered AVC water because it would reduce treatment costs for Saint Charles Mesa Water District and prolong use of their water treatment facility. This issue is clarified in the Final EIS on page 2–6.

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water quality standards. Pueblo County urges the BOR not to summarily dismiss this alternative and BOR should, at a minimum, carefully analyze and compare the treatment cost to meet secondary standards under the River South alternative and compare them to the costs of piping water from Pueblo Reservoir to that location. The River South alternative might also provide an opportunity for a regional water treatment facility in conjunction with the existing facilities at St. Charles Mesa Water District.

Comment 2.2. The JUP Alternative may offer a meaningful opportunity for regional water treatment facilities and associated cost savings; and alternate southern pipeline routes for the JUP alternative should be studied as possible variations.

Pueblo County agrees with the October 12, 2012 comments of the Board of Water Works of Pueblo County (Pueblo Water Board) that the BOR should conduct a fair examination of the opportunities for regionalization and consolidated treatment as part of its examination of alternatives. There may be opportunities for water treatment at the Water Board's Whitlock Plant that provide cost savings and enhanced treatment that are not available to separate smaller facilities. As variations within the JUP alternative, the BOR should assess configurations of the AVC pipeline south of the Arkansas River or along the Bessemer Ditch from the Whitlock Plant, instead of just a northern route. These other routes should be explored further to determine if there are ways to use existing water conveyance and treatment mechanisms to decrease pumping or infrastructure costs.

Comment 2.3. Comanche South avoids urban areas but appears to be the most expensive; it may preclude participation by St. Charles Mesa and other Pueblo entities.

Another possible consensus opportunity is the Comanche South alternative, which has the advantage of avoiding many urban areas in Pueblo County but also will have more of an impact on County roads than other alternatives. The Comanche South alternative, however, might not offer advantages to the St. Charles Mesa Water District by providing filtered water which St. Charles Mesa does not require because of its existing treatment facility. To the extent that any alternative would preclude the participation of St. Charles Mesa it should be avoided as it would result in only 3% of the annual AVC deliveries occurring within Pueblo County, reducing the benefit to Pueblo County even further. St. Charles Mesa should not be required to subsidize the costs of filtered water in order to participate in this AVC alternative.

COMMENT 3. AVC construction and operation must comply with county and local permitting and land use requirements.

The DEIS is unclear as to what local permits will be required during the construction and operation of the AVC, Master Contract and Interconnect, or whether the BOR intends to seek local approvals and will require its project participants or contractors to do so. The DEIS merely states that permit applications will be submitted to federal, state, or local agencies with jurisdiction over reasonably foreseeable actions "if required." DEIS p. 4-1. Similarly, Appendix B.5 to the DEIS lists the best management practices (BMPs) that are to be required for the AVC construction and includes Compliance with "Federal, State and local laws and regulations," but

Response to Comment 2.2: Expansion and use of the existing Whitlock Water Treatment Plant to treat AVC water is discussed in the Final EIS on page 2–17 in response to your comment.

We reexamined alternatives to see if mixing components would decrease costs and minimize environmental effects. As a result the Joint Use Pipeline, Interconnect, and Master Contract were incorporated into a hybrid alternative called Comanche North. This alternative replaces Comanche South and is evaluated in the Final EIS.

Response to Comment 2.3: Reclamation does not concur that the Comanche South (or Comanche North) Alternative would preclude participation of St. Charles Mesa Water District. Delivery of AVC water by pipeline would reduce transit loss that would occur during delivery via the Bessemer Ditch or Arkansas River. St. Charles Mesa Water District would be willing to accept filtered AVC water because it would reduce treatment costs for Saint Charles Mesa Water District and prolong use of their water treatment facility. This issue is clarified in the Final EIS on page 2–6.

Response to Comment 3 Introduction, 3A, 3B: Reclamation does not concur. The entities performing work on this project pursuant to contracts with the United States will comply with all applicable law. Our view is that the Colorado state laws referenced in the comment are not applicable to this factual scenario.

Therefore it is recommended that this mitigation measure not be adopted. However, Reclamation will follow best management practices concerning rehabilitation and revegetation of disturbed areas in coordination with the Environmental Review Team. The Environmental Review Team would function during final design through one year after AVC and Master Contract operations begin. Reclamation has invited a Pueblo County representative to participate in the Environmental Review Team (see Chapter 4, page 4–1 of the Final EIS). When final engineering is.

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qualifies the commitment by stating that compliance is only necessary for “all appropriate” such laws and regulations.

Construction of the AVC will cause significant impacts to infrastructure and resources maintained by Pueblo County. Depending on the alternative chosen, the installation of pipelines and the construction of treatment and pumping plants will impact roads, bridges and drainage crossings, not to mention the impacts on residential, commercial and agricultural property, and on natural resources. As an example, the costs to rehabilitate Pueblo County roads after construction in connection with the Southern Delivery System (SDS) pipeline project has recently been estimated in the approximate amount of \$15,000,000, which costs Colorado Springs Utilities, as project manager for the SDS, has agreed to pay to Pueblo County. Pueblo County should not have to bear similar costs in connection with the AVC.

The BOR’s intent in the FEIS and Record of Decision (ROD) regarding compliance with local regulations and permits needs to be clear so that Pueblo County and other local agencies can assess whether additional action on their part will be required in order to protect infrastructure and resources within their jurisdictions. Incorporating specific requirements that would otherwise be imposed on the project by such local agencies will result in less conflict when permitting decisions are made. If all necessary standards and requirements of local regulations are already included in the FEIS and incorporated by reference in the ROD, permitting by local agencies will be expedited. At a minimum, the major regulations and requirements that should be incorporated in the FEIS and ROD include the following.

A. Pueblo County Zoning and 1041 Regulations. A commitment should be made in the FEIS and incorporated in the ROD that the BOR and all participants in the AVC, Master Contract and Interconnect must comply with County zoning regulations and obtain “1041 permits” from Pueblo County for construction and operation in an area of State and local interest within Pueblo County, or when they propose to conduct a designated activity of State and local interest as set forth in Title 17, Land Use, Division II of the Pueblo County Code. Applicable 1041 activities would include Site Selection and Construction of Major New Domestic Water and Sewage Treatment Systems (Ch. 17.164) and Major Facilities of Public Utilities (Ch. 17.168); and Efficient Utilization of Municipal and Industrial Water Projects (Ch. 17.172)

B. County Road Improvements and Restoration. A 1041 permit was issued by Pueblo County to Colorado Springs Utilities as project manager for the SDS (available at http://www.co.pueblo.co.us/cgi-bin/webformbroker.wsc/cases3.p?CaseNum=1041_2008-002 at Doc. No. 192624). Paragraph 13 of that permit required Colorado Springs Utilities to comply with certain Pueblo County requirements due to the damage that would be caused to roads and the nuisance of construction activities. The requirements in Paragraph 13 of the SDS 1041 permit similarly should be imposed on the BOR, the BOR’s contractors and incorporated in the FEIS and ROD. In particular, the requirements should include:

- Obtaining and complying with excavation permits from the Pueblo County Public Works Department (“Department”);
- Submitting a detailed traffic plan for each stage of construction to the Department for its approval;

Response

Response to Comment 3 Introduction, 3A, 3B (continued): complete, 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 EIS and ROD.

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- Submitting a staging area plan to the Department that defines construction work times, material delivery hours, noise suppression, dust abatement, construction methods and other mechanisms to mitigate construction nuisances;
- Submitting a detailed haul route plan for each stage of construction to the Department for its approval;
- Repairing all local roads during construction, and after construction rehabilitating all haul roads and all other roads impacted by the AVC to current Pueblo County Roadway Design and Construction Standards;
- Providing a cash payment, escrow, or other financial instrument acceptable to the County in an amount estimated by the Department to cover total costs for rehabilitation of roads to current Pueblo County Roadway Design and Construction Standards; and
- Coordinating, designing and constructing facilities and pipelines to anticipate and accommodate future roadways and utilities.

The DEIS and FEIS should analyze and incorporate the cost for repair and rehabilitation of all roads impacted by project construction to current Pueblo County Roadway Design and Construction Standards. In addition, the AVC pipeline should be designed and constructed so as to accommodate any future roads, water and sewer lines and other infrastructure adjacent to or near the AVC pipeline to ensure that construction costs for such future infrastructure is not more expensive.

C. Reclamation of Disturbed Lands. The only discussion in the DEIS concerning revegetation indicates "disturbed areas would be restored to original grade and reseeded with native vegetation." DEIS, p. 2-28. No discussion of bonding requirements was discovered in the DEIS. The reclamation and bonding requirements included in paragraph 22 of the SDS 1041 permit should be imposed on the BOR, the BOR's contractors and incorporated in the FEIS and ROD. At a minimum, the requirements should include:

- A preconstruction evaluation of existing vegetation to be disturbed during construction;
- Reclaiming the vegetation cover to the same seasonal variety native to the area disturbed or to a reasonable substitute vegetation agreed to by the landowner;
- Revegetating and irrigating disturbed areas so that the revegetated cover is not less than 90% of preconstruction vegetation cover with similar species diversity;
- Returning disturbed lands to the original contours; and
- Providing a security bond equal to \$2,000 per acre of land in permanent or temporary construction easement, which bond shall be released once 90% of preconstruction vegetation cover has been achieved on the impacted land segment after an adequate "grow-in" period (3 years minimum).

As with road rehabilitation, the DEIS and FEIS should analyze the cost for reclamation of disturbed areas to meet the above conditions. Properly reclaiming disturbed areas and providing bonding is especially important given the significant testimony that was received during the SDS 1041 permit hearings concerning the unsuccessful reclamation of the Fountain Valley Authority pipeline right-of-way.

Response to Comment C: Reclamation has committed to implementing revegetation plans as part of best management practices. The Environmental Review Team would review development, implementation, and success of revegetation plans. Specific criteria for revegetation of disturbed lands would be developed as part of a revegetation plan for the preferred alternative. The Environmental Review Team would function during final design through one year after AVC and Master Contract operations begin.

See previous response regarding compliance with state and local laws.

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COMMENT 4. The DEIS alternatives should include an analysis with all components included for each alternative in order to provide an adequate comparison.

Pueblo County agrees with the Pueblo Water Board's assessment that the DEIS provides an incomplete comparison due to the BOR's exclusion of components from certain alternatives. The DEIS "mixes and matches" several components in each alternative without separating out the costs of each component. Some alternatives exclude treatment plants, pumping stations and the Interconnect while others do not. This makes a cost comparison of alternatives difficult, and does not lend itself to examining other variations under the alternatives. Separating out the costs of each component would allow a comparison of alternatives not considered by the BOR, such as using a southern pipeline route from the Pueblo Water Board's Whitlock plant, rather than just a northern route.

COMMENT 5. The EIS, ROD and implementing documents should include an explicit term and condition mandating compliance with the flow targets of Pueblo Flow Management Program (PFMP) for all diversions and exchanges by AVC and Master Contract participants.

Pueblo County is encouraged that the BOR has incorporated the PFMP as a BMP for the action alternatives. However, the DEIS does not specify whether compliance with the PFMP will be enforced and required of all project participants. The DEIS includes a BMP that "participants would commit to the Pueblo Flow Management Program under action alternatives, and continue according to current agreements under the No Action Alternative." DEIS Table 2-8. However, the impacts to various resources "assumed that the best management practices in Table 2-8 would be implemented under each action alternative." DEIS p. 2-30.

The PFMP was created under intergovernmental agreements whereby water users temporarily reduce their water exchanges to allow more water to flow in the Arkansas River below Pueblo Reservoir through Pueblo while allowing the water to be recaptured downstream for later exchanges. A purpose of the PFMP is to maintain target flows downstream of Pueblo Reservoir. These target flows protect fisheries, riparian habitat, and water quality. It thereby advances the Legacy Project, a federal and local effort that has created improvements in the river channel and helped turn an abused river into a recreational and aesthetic amenity.

If the PMP is to function, it is important that there be universal compliance. Under the terms of the intergovernmental agreements creating the PFMP, if other third-party water users divert or exchange against the increased flows created by the PMFP, the PMFP participants need not forgo their exchanges to preserve target flows. See March 1, 2004 IGA, § I.D; May 1, 2004 IGA Exhibit 1, p. 2. Diversion by AVC, Interconnect, or Master Contract participants of increased flows created by the PFMP could suspend the PFMP. Given the environmental, economic and social importance of the PFMP, the BOR should require that all project participants comply with the PFMP by reducing diversions into storage or curtailing exchanges to the extent necessary to meet PFMP flow targets.

Response

Response to Comment 4: Cost estimates for the components used in the alternatives, as well as the detailed cost sheets used to prepare those estimates, are posted on www.usbr.gov/avceis. The documents are titled Technical Memorandum No. PUB-8140-APP-2012-01 Volume 1 – Appraisal Design Report and Appendices A–O, and Technical Memorandum No. PUB-8140-APP-2013-01 – Appraisal Design Report Supplemental Data – Comanche North. Expansion and use of the existing Whitlock Water Treatment Plant to treat AVC water is discussed in the Final EIS on page 2–17.

Response to Comment 5: Reclamation concurs with this recommendation. Memorandum of Agreement between Southeastern and AVC/Master Contract participants require participation and compliance with the Pueblo Flow Management Program, which curtails exchanges between Fountain Creek and Pueblo Reservoir during low flow periods. This was assumed in the AVC EIS best management practices (see Draft EIS Appendix B.5 and Chapter 4 of the Final EIS). This would be included as a best management practice in proposed future contract(s).

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Comment 5.1. The DEIS does not adequately examine impacts on the environment because it does not study impacts with and without mandatory compliance with the PFMP.

There is minimal discussion in the DEIS concerning the percentage of time the PFMP may be met under the various alternatives. *See e.g.* DEIS Table 4-11. There is no discussion or comparison of the impacts of the various alternatives with and without mandatory compliance with the PFMP. Such an analysis should be included in the DEIS. Moreover, if the PFMP is not enforced against all proposed project participants, the analysis of impacts provided in the DEIS will be faulty, and the DEIS, EIS and ROD must be reopened to re-examine those impacts and provide an accurate analysis of them.

Comment 5.2. The proposed Fish and Wildlife Mitigation Plan should be enforced and used in conjunction with the PFMP.

The DEIS states that a “Fish and Wildlife Mitigation Plan” will be developed to mitigate the effects of low streamflow on water quality and aquatic life immediately below Pueblo Reservoir, and that the BOR will assist in reserving storage water annually for possible releases to maintain minimum flows. DEIS p. 4-35. The DEIS currently provides very little detail on the Fish and Wildlife Mitigation Plan, and so the FEIS and ROD should include a detailed plan that is enforceable. At a minimum, the BOR should commit to promulgating the Fish and Wildlife Mitigation Plan to meet the targets and goals of the PFMP. The FEIS and ROD should also include a requirement that the Project participants contribute to and maintain an appropriate storage pool in Pueblo Reservoir that will release water during times of low flow in the Arkansas River. As a useful comparison, Paragraph 10 of the SDS 1041 permit included a provision whereby Colorado Springs Utilities and the Water Board agreed to release water (up to 3,000 acre-feet) into the Arkansas River below Pueblo Reservoir during times when the flow would otherwise fall below 50 cfs.

Comment 5.3. The DEIS does not report clearly the cumulative impacts of activities on meeting the PFMP.

Various actions in the past and proposed actions in the future will impact the PFMP. The DEIS examined some of those past activities and reasonably foreseeable actions for certain areas impacted by the AVC and Master Contract. *See e.g.* DEIS Table 4-1 and related discussion. The only discussion of cumulative impacts on the PFMP in the DEIS states “climate change could reduce days that Pueblo Flow Management Program flows would be met.” DEIS p. 4-103. Given the significant amount of additional future activity that will impact the PFMP reach, an analysis of cumulative effects on the PFMP is essential to determine appropriate mitigation measures or modifications to the PFMP.

COMMENT 6. The DEIS simulation of existing and future conditions does not provide an informative assessment of projected changes to historical conditions on rivers and reservoirs.

The DEIS compares the direct and cumulative effects of the alternatives to “existing” conditions or to a “no action” alternative. However, these “existing” conditions are simulated

Response to Comment 5.1: More detail on PFMP modeling for direct and cumulative effects can be found in Appendix D.4. The EIS modeling assumes all participants would be subject to compliance with the PFMP. No analyses were conducted without compliance as it was assumed that all participants would be required to comply.

Response to Comment 5.2: Reclamation does not concur. Reclamation will complete a Fish and Wildlife Coordination Act Report, in coordination with U.S. Fish and Wildlife Service, documenting that fish and wildlife received equal consideration with other project purposes.

The entities performing work on this project pursuant to contracts with the United States will comply with all applicable law. Our view is that the Colorado state laws referenced in the comment are not applicable to this factual scenario.

Mitigation involving the Arkansas River Low Flow Program, which stores water in Pueblo Reservoir for releases during low flow periods, would duplicate mitigation described in the EIS regarding streamflow and aquatic life effects below Pueblo Dam. Therefore, it is recommended that mitigation involving the Arkansas River Low Flow Program not be adopted.

Memoranda of Agreement between Southeastern and AVC/Master Contract participants require participation and compliance with Southeastern’s commitments in the Pueblo Flow Management Program, as outlined in the Six Party Intergovernmental Agreement (IGA 2004). This would be a commitment in proposed future contract(s).

Response to Comment 5.3: See response to Comment 5.1 in this letter.

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and are substantially different from historical baseline conditions. Using a simulated existing condition as a baseline can significantly understate the effects of the alternatives and cumulative future conditions. The DEIS compounds the confusion by assuming that “historical hydrology (basin runoff) is indicative of future hydrology,” and that “current minimum flow requirements and flow programs continue to be operated.” DEIS p. 4-17.

There also is a lack of clarity concerning whether and to what extent climate change and other factors are examined in the past, existing and future simulations. *See e.g.* DEIS pp. 4-5, 4-11, D.2-1. Moreover, on page D.2-3 the DEIS indicates that several studies have confirmed the original estimated yield of the Fry-Ark Project, while a July 9, 2012 memorandum included in Appendix C.2 suggests that there could be dramatic changes to the Fry-Ark yield due to climate change. In short, the extent to which the DEIS simulates conditions together with the confusion concerning whether certain factors were analyzed creates a lack of confidence in the modeling conducted for the DEIS.

Comment 6.1. The failure to use actual historical data as a comparative baseline of existing conditions results in understating future impacts.

Similar to the SDS DEIS, the AVC/Master Contract DEIS uses a comparison to “existing” conditions to quantify the changes in rivers and reservoirs caused by the various alternatives. Also similar to the analysis performed in the SDS DEIS, it is apparent that the synthetic existing condition may not represent the actual existing condition or accurately reflect historical conditions. The problems associated with this mixing of data becomes apparent when the AVC/Master Contract DEIS is compared to the SDS DEIS and associated reports such as the MWH Americas Inc. Water Resources Technical Report for the SDS and the Environmental Assessment for the Aurora Excess Capacity Contracts, as represented in the following table.

	Aurora EA	MWH	SDS DEIS	SDS FEIS	AVC/Master Contract DEIS
Wellsville Gage historical mean monthly flow		726 cfs (1982-2004)			717 cfs (1982-2009)
Wellsville Gage existing conditions	724 cfs (2004)		673 cfs (2006)	677 cfs (2006)	712 cfs (2010)
Above Pueblo historical mean monthly flow		725 cfs (1982-2004)			694 cfs (1982-2009)
Above Pueblo existing conditions	622 cfs (2004)		614 cfs (2006)	631 cfs (2006)	646 cfs (2010)
Pueblo Reservoir historical annual average		181,434 (1982-2004)			174,410 (1995-2009) ¹
Pueblo Reservoir existing conditions	181,857 af (2004)		173,700 af (2006)	170,700 af (2006)	203,300 af (2010)

¹ Calibration Run Average Monthly Summary.

Response

Response to Comment 6: Reclamation does not concur with comparing future and existing conditions to historical data. The existing conditions simulation level of development (i.e., 2010 demand and operations) does not change over time during the 28 year simulation. This establishes a baseline to compare a future level of development (e.g. 2070 demands and operations in the No Action Alternative) and calculate effects. Simulated existing conditions streamflow would not equal historical streamflow, even if a model is calibrated perfectly, because historical streamflow was subject to conditions changing over time (such as demand and operations). The change in simulated streamflow between the baseline and alternative (such as between existing conditions and No Action, or No Action and action alternatives) is the effect of the alternative. The absolute simulated numbers compared to historical observation are not used in effects analyses conducted for NEPA compliance seeking to analyze the effects of specific proposed actions.

NEPA regulations require analysis of a No Action Alternative to serve as a basis of comparison to other alternatives. This isolates potential effects specific to the proposed actions. The narrative was based on a No Action Alternative baseline. Data tables in the appendixes comparing future alternatives to existing conditions were included only for informational purposes. The differences between future alternatives and existing conditions would be attributable to not only the proposed actions, but also changes in demand, population growth, water right transfers, operations, etc., which would occur even if the proposed actions were not implemented.

Previous Fry-Ark yield studies referenced in Appendix D.2 confirmed the historical yield of the Fry-Ark Project and did not consider climate change effects on future yield. Appendix C.2 describes the sensitivity of future Fry-Ark yield under various climate change scenarios. This difference in methodology between past and future yield was clarified in Appendix C.2 and D.2 methodology in the Final EIS. Climate sensitivity was not quantified in the effects analysis, rather a qualitative analysis evaluated resource effects. Actions or factors included in the quantitative effects analyses are described in the Draft EIS in Appendixes B.4, D.3, and D.4. Discussion of these factors and how they were used in the analyses was footnoted in Table 4–1 in Chapter 4, page 4–5 in the Final EIS.

Response to Comment 6.1: See response to Comment 6 in this letter.

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The wide variety of results obtained by using simulated conditions in the DEIS leads to misleading assumptions when comparing the impacts of the various alternatives and, at the very least, leads to confusion regarding those impacts. Clarification should be provided in the FEIS.

Both the public and permitting authorities understand impacts in the context of their actual historical experience with the resource being examined. This makes comparisons to historic conditions essential when deciding whether those additional impacts should be allowed. This is especially true when the resource is already planned for impact that has not yet occurred, such as the Aurora contract and the SDS. The analysis of impacts, whether they be direct or cumulative, should be made against actual historic conditions rather than simulating historic or simulated existing conditions. For example, the historical mean monthly flow at the above Pueblo gage is 694 cfs. See p. D.1-21, Table 11. When the cumulative effects of the SDS and other activities are considered, the overall average monthly streamflow under three of the five action alternatives is reduced to 481 cfs (p. D.4-108, Table 79), a 31 percent decrease. The BOR needs to be alert to and appropriately mitigate the water quality and other impacts that cumulative reductions in streamflow levels and reservoir contents may cause.

Comment 6.2. The DEIS fails to adequately explain the differences in the hydrologic study periods used.

The DEIS uses a 1982–2009 study period for hydrologic data “because it characterizes typical hydrologic years, contains extreme low and high flow years, and includes operations of many important past actions that have affected hydrology analysis in the overall EIS study area.” DEIS p. 3-7. However, in discussing yield, the DEIS uses a 1950-2009 study period “because it contains several extended drought, average, and wet periods that affect Fry-Ark yield.” DEIS p. D.2-1. The DEIS does not explain why it chose to use two different periods of record in its analysis.

COMMENT 7. The narrative descriptions of impacts to streamflows in the Arkansas River and in affected reservoirs are generally uninformative and often misleading.

The tables in Section 2 of the DEIS often describe the impacts to streamflows as “negligible” or “minor.” The discussion of “minor effects” and “negligible effects” in the DEIS without context becomes tedious and uninformative. The confusion is compounded by the often nebulous manner in which the results are presented. As just one example, p. 4-22 of the DEIS states “in general, the AVC and Master Contract excess capacity accounts could both increase and decrease storage contents in Pueblo Reservoir, depending on configuration of the alternatives.” This provides no useful information.

The actual data used to create the tables also shows that the narrative descriptions do not adequately describe the impact of the alternatives. For example, the DEIS indicates “occasional moderate effects would occur downstream from Pueblo Reservoir during some winter and spring months in dry and normal years (Table 4-6).” DEIS p. 4-13; see also p. 4-162 predicting minor decreases in streamflow in Arkansas River flows through Pueblo under some alternatives. In Appendix D.4, however, Table 75 shows consistent decreases in normal year monthly

Response to Comment 6.2: We concur. Narrative has been added to appendix D.2 and D.3 to explain why the monthly Yield model uses a longer study period than the Daily Model.

Response to Comment 7: Reclamation does not concur. NEPA regulations require analysis of a No Action Alternative to serve as a basis of comparison to other alternatives. This isolates potential effects specific to the proposed actions. The narrative was based on a No Action Alternative baseline. Data tables in the appendixes comparing future alternatives to existing conditions were included only for informational purposes. The differences between future alternatives and existing conditions would be attributable to not only the proposed actions, but also changes in demand, population growth, water right transfers, operations, etc., which would occur even if the proposed actions were not implemented.

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streamflow at the above Pueblo gage for the direct effect of the alternatives when compared to existing conditions, and decreases in streamflow as high as 28.6 percent. When cumulative effects are considered, the normal year decreases can be as high as 65.2 percent. Appendix D.4, Table 80. For dry years, the direct effect of the alternatives on monthly streamflows when compared to existing conditions is as high as 35.7 percent (Table 77), and the cumulative effects are as high as 67.7 percent (Table 82). These drastic changes to streamflows noted in the DEIS appendices are not adequately represented in either the narrative of the DEIS or the tabular summaries.

As another example, the DEIS states that “direct and cumulative effects on all average monthly Pueblo Reservoir storage contents would be negligible to minor (greater than 2 percent change) for all alternatives.” DEIS p. 4-13. The tables in Appendix D.4, however, reveal that direct effect monthly storage contents in a normal year could decrease by as much as 26.7 percent when compared to existing conditions (Table 178), and as much as 45.7 percent when cumulative effects are considered (Table 182). In a dry year, the direct effect monthly storage contents could decrease by as much as 27.6 percent when compared to existing conditions (Table 180), and as much as 46.2 percent when cumulative effects are considered (Table 184). The same effects are shown for the tables examining surface elevations in Pueblo Reservoir.

COMMENT 8. The DEIS does not adequately address the impacts of increased return flows on Fountain Creek.

The DEIS suggests that there could be increases in return flows to Fountain Creek due to Master Contract exchanges (p. 4-22) and that the cumulative effect of Colorado Springs’ return flows would increase streamflow in Fountain Creek compared to direct effects (p. 4-35). The DEIS needs to quantify return flows in order to assess impacts on Fountain Creek. The SDS FEIS and ROD assumed the continuation of the Colorado Springs Stormwater Enterprise, as a reasonably foreseeable action, would control and prevent increased stormwater flows in Fountain Creek thus lessening the impact of increased flows from the SDS. Since the SDS 1041 permit was issued, however, the Colorado Springs Stormwater Enterprise has been abolished and the American Society of Civil Engineers has published a report giving Colorado Springs poor or failing grades for stormwater control.²

As noted in an August 17, 2012 letter to the BOR from the Special Counsel for the Lower Arkansas Valley Water Conservancy District, repeal of the Stormwater Enterprise has reduced Colorado Springs’ revenues for stormwater maintenance and enhancement by approximately \$15 million per year, and there is a \$498 million backlog in stormwater capital improvement projects. Given these developments and the further impact of the Master Contract use, the DEIS should undertake additional analysis of the impact of return flows on Fountain Creek, both direct and cumulative. Moreover, any additional conditions and costs resulting from the repeal of the Stormwater Enterprise should be borne by the SDS participants and not just by the participants to the instant Master Contract. The SDS FEIS should be reopened to quantify those costs and to

² See <http://www.asce-sbranch.org/pdfs/ASCE%20Report%20Card.pdf>.

Response to Comment 8: The proposed actions would cause negligible to minor average monthly streamflow increases in Fountain Creek under both direct and cumulative effects simulations (see pages 4–30 and 4–36 in Chapter 4 of the Final EIS).

A peak flow assessment (flood hydrology assessment) was completed for the Draft EIS and documented in the resource memorandum Arkansas Valley Conduit Flood Hydrology and Floodplains Assessment. The results showed that the negligible results are so small that they fall within the error of the model. In response to your comment, the resource memorandum was updated to include flood hydrology in Fountain Creek using Daily Model output. The effects of AVC and Master Contract on flood hydrology in Fountain Creek would be negligible. The resource memoranda are posted on the website at www.usbr.gov/avceis.

Because the Colorado Springs Stormwater Enterprise was repealed in 2009 by the Colorado Springs City Council, the Draft AVC EIS did not consider the Stormwater Enterprise to be reasonably foreseeable (see Draft AVC EIS, Appendix B.4, Table 3, page B.4–14). Therefore, the hydrologic cumulative effect studies in the Draft AVC EIS do not include Colorado Springs Stormwater Enterprise.

Comment Letter 21 (continued)

Response

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impose terms and conditions to address the repeal of the Stormwater Enterprise. In no event should BOR allow increased flows to damage Fountain Creek.

COMMENT 9. Terms and conditions should be added to alleviate impacts to visual resources.

The DEIS contains a “Visual Resources” BMP that indicates “permanent aboveground structures and facilities would be designed to blend with local surroundings.” This BMP should be made a specific term and condition imposed on any contractor or AVC participant, and should also apply to power substations and overhead power lines, especially within Pueblo State Park or its environs. In addition, representatives of Pueblo County and other local authorities should be invited to participate in the evaluation and selection of the architecture and landscaping for any proposed water treatment plant and other buildings within Pueblo County, as was done for the SDS Project.

COMMENT 10. The DEIS does not adequately address water quality impacts due to potentially reduced streamflows and should address the comments of the Pueblo County District Court in overturning the 401 certification for the SDS Project.

Reduced streamflows downstream of Pueblo Reservoir may lead to water quality impacts due to the inability of the limited flows to dilute stormwater and other sources entering the Arkansas River. This is particularly evident with respect to impacts on instream temperatures. However, the DEIS simply makes the statement that “streamflow temperature effects in the Upper Arkansas River were qualitatively assessed as streamflow effects would be negligible.” DEIS p. 4-48. Neither the main body of the DEIS nor the appendix on water quality (Appendix F.2) provide an adequate discussion of these kinds of impacts to water quality below Pueblo Reservoir.

A thorough analysis of water quality impacts is especially necessary in light of the findings made by Pueblo County District Court Judge Victor Reyes in Case No. 11CV174 concerning the inadequacy of the 401 certification for the SDS Project. In particular, Judge Reyes found an overreliance on future adaptive management in connection with the assessment of the water quality impacts and that the BOR did not adequately consider future growth in its analysis. See April 12, 2012 Order Reversing Decision of the Colorado Water Quality Control Commission.

COMMENT 11. The DEIS, EIS and ROD should include a term and condition that wastewater discharges from Pueblo West Metropolitan District originating from its storage in Pueblo Reservoir be returned to Wild Horse Dry Creek. Otherwise, the DEIS, EIS and ROD should provide that they be reopened for further examination of impacts if wastewater from Pueblo West is not discharged to Wild Horse Creek but returned to Pueblo Reservoir.

The DEIS assumes as a reasonably foreseeable action a wastewater discharge pipeline from Pueblo West Metropolitan District to Wild Horse Dry Creek and not to Pueblo Reservoir as was once proposed by Pueblo West. Consequently, maintaining the location of the Pueblo West

Response to Comment 9: We concur. Best management practices for visual resources were revised to include aboveground structures or features (see Appendix B.5). Best management practices would be included as terms/conditions of any potential construction contracts. Best management practices were revised to include coordination with local agencies on design of above ground features/structures by participation in the Environmental Review Team.

Response to Comment 10: Temperature effects in the Lower Arkansas River are described on page 4–60 of the Draft EIS. Additional qualitative assessment of streamflow effects on temperature was added to the Final EIS in Chapter 4, page 4–65.

Response to Comment 11: Reclamation does not concur. Hydrologic modeling simulated the Pueblo West wastewater discharge returning to Wild Horse Creek under existing conditions and direct effects. Cumulative effects analyses simulated the Pueblo West wastewater discharge returning to the Arkansas River downstream from Pueblo Reservoir in a proposed discharge pipeline. These actions were deemed reasonably foreseeable, as defined in the Draft EIS, Appendix B.4. Reclamation does not assume authority over wastewater discharge permits in Colorado, nor does the AVC EIS preclude future permitting processes and activities. Unknown future wastewater permitting processes and activities are outside the scope of this EIS.

Comment Letter 21 (continued)

Response

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 October 30, 2012
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wastewater discharge at Wild Horse Dry Creek should be included as a term and condition of any Master Contract for Pueblo West to ensure that its wastewater is not discharged to Pueblo Reservoir, particularly because its storage contents will be lower in the future. If such a term and condition is not included, the DEIS, EIS and ROD should contain a requirement that they be reopened and storage contracts be suspended in the event of discharges of wastewater to Pueblo Reservoir by Pueblo West.

COMMENT 12. The AVC and Master Contract beneficiaries should be limited to currently anticipated participants or the DEIS, FEIS and ROD should be reopened to examine future impacts of additional participants.

The DEIS only evaluates currently proposed AVC and Master Contract participants. DEIS pp. 1-4, 1-8. Subsequent unanticipated impacts could result from adding other participants to the AVC and/or Master Contract without having evaluated such additional participants in the DEIS. The BOR should either limit the AVC and Master Contract to only those examined in the DEIS or commit to reopening the DEIS, FEIS and ROD if participants are added in the future.

COMMENT 13. A representative of Pueblo County should be included on the Environmental Review Team.

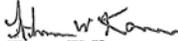
The DEIS commits to establishing an Environmental Review Team "to ensure that project activities are completed concurrently and in full compliance with all environmental commitments specified in this EIS" and to "advise Reclamation regarding implementation of environmental commitments and will review changes in engineering design, such as pipeline routing." DEIS p. 4-1. The environmental commitments made in the DEIS and the routing of the pipeline through areas within its jurisdiction are vitally important to Pueblo County. Accordingly, a representative of the County should be invited to participate on the Environmental Review Team.

Conclusion.

Pueblo County acknowledges the complexities of the issues confronting the BOR when studying the environmental and economic impacts of the proposed federal actions. We offer these comments in the sincere hope that they will assist BOR in further evaluating and reporting such impacts, and in crafting enforceable terms and conditions in the ROD and implementing contracts. Pueblo County especially encourages the BOR to incorporate county and local permitting and land use requirements in the FEIS and ROD to expedite future permitting by local agencies.

Sincerely,


 Raymond L. Petrus, Jr.


 Thomas W. Korver

Response to Comment 12: If any new participants are proposed after the Record of Decision is signed, Reclamation would evaluate the proposal and decide if additional NEPA compliance is required. The appropriate level of NEPA compliance document would be completed before approving changes in beneficiaries.

Response to Comment 13: While Reclamation disagrees with your position that these proposed actions are subject to county and local permitting (see previous responses to comments in this letter), Reclamation has invited a Pueblo County representative to participate in the Environmental Review Team.



COLORADO PARKS & WILDLIFE

4255 Sinton Road • Colorado Springs, Colorado 80907
Phone (719) 227-5200 • FAX (719) 227-5297
wildlife.state.co.us • parks.state.co.us

J. Signe Snortland, Reclamation Environmental Specialist
Bureau of Reclamation
Dakotas Area Office,
PO Box 1017, Bismarck ND 58502

Subj: CPW Comments on the Arkansas Valley Conduit Draft Environmental Impact Statement

Dear Signe:

Colorado Parks and Wildlife has completed its review of the Draft EIS (DEIS) for the proposed Arkansas Valley Conduit. We appreciate the involvement we have had as a cooperating agency in the development of this DEIS and our continued work together as we move forward with the development of a Fish and Wildlife Mitigation Plan. We respectfully submit the following comments on the Draft EIS to you and the Bureau of Reclamation for your consideration.

General Comments

After extensive review and involvement in the development of the Draft EIS Colorado Parks and Wildlife believes the least damaging alternative from an environmental standpoint is the River South Alternative. This alternative and the Master Contract Only Alternative are the only ones that leave water in the river through Pueblo which currently experiences severely low flows during the late summer and fall, and during the winter water storage period of November 15 – March 15. With proper mitigation to ensure base level flows in the Arkansas River below the Pueblo dam and through Pueblo several of the other alternatives will work as well including Comanche South and Pueblo Dam South.

Language that references the requirement for a Fish and Wildlife Mitigation Plan is present in the DEIS in both Chapter 4 within the Surface Water Hydrology section on page 4-35 and in Chapter 5 in the section dealing with State Laws, Regulations and Policies on page 5-14. We appreciate the discussion surrounding the requirement for a Fish and Wildlife Mitigation Plan. We believe the statute pre-dates the 2010 reference in the DEIS and suggest the correct statutory reference is Colorado Revised Statute 37-60-122.2. We would recommend also that more specific language be included as one of the required mitigation measures outlined in the Record of Decision with the following suggested wording:

Submit a proposed wildlife mitigation plan to the Colorado Parks & Wildlife Commission (Wildlife Commission) pursuant to C.R.S. § 37-60-122.2. This proposal will include actions the Participants propose to mitigate impacts that the AVC Project may have on fish and wildlife. As required by that statute, the Parks & Wildlife Commission will evaluate the probable impact of the project on fish and wildlife and, if the Participants and the Parks & Wildlife Commission cannot agree upon reasonable mitigation, the Parks & Wildlife Commission will make recommendations to the Colorado Water Conservation Board (CWCB) regarding what it believes to be reasonable mitigation actions. If the Participants and the Parks & Wildlife Commission agree on a mitigation plan, the Parks & Wildlife Commission will submit that agreement to the CWCB, which must adopt the agreement as the state's official position. If the Participants and the Parks & Wildlife Commission do not reach agreement on a mitigation plan, the CWCB will consider the plan submitted by the Participants and the recommendations of the Parks & Wildlife Commission and either affirm the recommendations of the Parks & Wildlife Commission, which then becomes the

STATE OF COLORADO
John W. Hickenlooper, Governor • Mike King, Executive Director, Department of Natural Resources
Rick D. Cables, Director, Colorado Parks and Wildlife
Parks and Wildlife Commission: Robert W. Bray • Chris Castellan • Jeanne Horne
Bill Kane, Vice-Chair • Gaspar Perricone • James Pribyl • John Singletary, Chair
Mark Smith, Secretary • James Vigil • Dean Wingfield • Michelle Zimmerman
Ex Officio Members: Mike King and John Salazar

Response

Response to comments, 2nd paragraph: Reclamation will identify the environmentally preferable alternative in the Record of Decision. We agree that mitigation would offset the effects of an action alternative on streamflow. To mitigate moderate streamflow effects during low-flow periods in the Arkansas River associated with the Master Contract, 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 gage to fish hatchery return flows from the current hatchery discharge point.

Reclamation will provide \$50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of an action alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed, including site-specific NEPA compliance.

To mitigate moderate reservoir effects in the Lower Arkansas River Basin on aquatic life, the United States would approve expansion of the Pueblo Fish Hatchery near the existing Pueblo Fish Hatchery, if requested and deemed feasible by CPW, in conjunction with mitigation requirements set forth in the Southern Delivery System EIS and Fish and Wildlife Mitigation Plan. Hatchery expansion would occur through a mutually acceptable agreement between Colorado Parks and Wildlife and Reclamation, and the location of the expansion and site-specific NEPA compliance would be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed. The state would be responsible for construction, operation and maintenance of fish production ponds and associated facilities. This includes providing all water necessary for these ponds, including, but not limited to, water for filling the ponds, and augmenting evaporation from the ponds, in accordance with Colorado state law.

Response to comments, 3rd paragraph: Reclamation does not concur. Reclamation will complete a Fish and Wildlife Coordination Act Report, in coordination with U.S. Fish and Wildlife Service, documenting that fish and wildlife received equal consideration with other project purposes.

The entities performing work on this project pursuant to contracts with the United States will comply with all applicable law. Our view is that the Colorado state laws referenced in the comment are not applicable to this factual scenario.

Comment Letter 22 (continued)

Response

State's official position, or submit its own recommendations to the Governor, who will ultimately determine the state's official position on the proposed wildlife mitigation plan."

This language is similar to language used in the ROD for the Southern Delivery System EIS that was also a Bureau action and fairly succinctly outlines the required process that meets the statutory requirements.

AQUATIC RESOURCE COMMENTS

In general, the following aquatic resources addressed in the Draft EIS will not be affected, or only negligibly affected, by AVC alternatives and will not be discussed further:

River segments:

- Lake Fork Creek (below Sugarloaf Dam)
- Lake Creek (below Twin Lakes)
- Grape Creek
- Upper Arkansas River
 - Arkansas River – Segment 1
 - Arkansas River – Segment 2
 - Arkansas River – Segment 3
 - Arkansas River – Segment 4
 - Arkansas River – Segment 5
 - Arkansas River – Segment 6
 - Arkansas River – Segment 7
- Lower Arkansas River
 - Arkansas River – Segment 3
 - Arkansas River – Segment 4
- Fountain Creek
 - Security to Arkansas River

Reservoirs:

- Twin Lakes Reservoir
- Turquoise Reservoir

Hydrological data presented in the DEIS suggests that the following aquatic life resources will be more than minimally affected by operations of AVC. Impacts in reference to those resources listed below will be discussed in more detail.

Lower Arkansas River – Segment 1 (Pueblo Reservoir to Wildhorse Creek)

This reach of the Arkansas River supports a high-quality coldwater fishery for rainbow and brown trout within the metropolitan area of the City of Pueblo. There is also some warm water fishing opportunities for walleye and bass. The quality and accessibility of the fishery has led to its popularity for local anglers and those from across the Front Range, particularly during the period from November through March. Quality fishing regulations on a portion of this reach were enacted in 2011 for purposes of further increasing the size of trout. This fishery was once recognized by *Fly Fisherman Magazine* as one of the "Top 10" trout fisheries in the U.S. Angling use in 2008 was estimated to be 17,500 recreation-days, but fishing continues to grow each year. Overall average monthly streamflow (Appendix D4, Table 74), indicates potential for minor flow reductions in March and September for most alternatives compared to No Action; but are greater for Comanche South, Pueblo Dam South, and Pueblo Dam North, and less for River South and JUP North. Reductions are more pronounced when alternatives are compared to Existing Conditions, and approach -14%.

Flow reductions are greater and evidenced for more months during normal years (D4-Table 75), and particularly during dry years (D4-Table 77). The hydrology for all alternatives (except River South) indicates streamflow reaching maximum decreases (and approaching 30%) for the periods of Feb-Apr and again Sept-Dec, when compared to No Action, and even greater flow reductions when compared to Existing Conditions.

Comment Letter 22 (continued)

Response

Although this level of flow reduction may not appear significant, the reduction comes in months when flow can occasionally (due to circumstances not related to AVC) get to minimum levels. In March, flows in the past have approached critical levels prior to the end of Winter Water Storage; and again in September if native water inflow to Pueblo Reservoir is unusually low. The potential for convergence of events leading to unacceptable fishery flows is uncommon, but possible, and is exacerbated by AVC.

Low winter flows are considered a controlling factor to fish populations, invertebrates, and also fishing recreation. Winter flows (Jan/Feb and March – at least until the end of WWSP on March 15) suffers from lower overall flows for all alternatives. Evidence of natural rainbow trout reproduction in 2012, suggests that this species has the potential to spawn within this river segment – and likely during the early spring period. The winter and early spring is also the most popular months for fishing, as it is one of the few fishable rivers at this time of the year.

Another factor, only tangent to hydrology, is higher water temperatures that can be detrimental to trout, particularly when coupled with low flows. Higher water temperatures are not typically of concern from Jan-Mar, but can become so in September during warmer years which also normally correspond to dry (hot) years when hydrology model indicates the greatest level of streamflow reduction (D4-Table 77).

Lower Arkansas River – Segment 2 (Wildhorse Creek to Fountain Creek)

The moderation of water temperatures resulting from releases out of Pueblo Dam that support the cold and cool-water fishery and invertebrate community in Segment 1, is lost in Segment 2. In addition, habitat for cold or cool-water sport fishes and invertebrates decreases in quality below the Wildhorse Creek confluence. As a result, the aquatic resource values in this segment shift to native species and some warmwater sport fish.

Hydrology for overall average monthly streamflow (Appendix D4- Table 84) indicates some level of flow reduction for all alternatives when compared against No Action, but is most evident for March. Streamflow reductions are more pronounced during normal years (D4-Table 85), and in dry years (D4-Table 87) for the months of Oct-Dec. These are normally low flow months, but AVC operations further reduce flows generally from 10-30%. Because of the wide and flat dimensions of the river channel in this segment, deeper water habitat sought by fish is restricted, and shallow habitats inhabited by invertebrates can be limited.

Pueblo Reservoir

All months of the year can be important periods for the fishery in Pueblo Reservoir, depending on the aquatic resource and life stage. A water elevation fluctuation plan that favors cool and warm water fisheries really functions in three separate time segments. The first segment would be the period from mid-March through mid-June, when spawning of sport fishes (walleye, yellow perch, bass, bluegill and crappie) takes place, and it is also a critical time for gizzard shad (the dominant forage fish) reproduction. It is important that water levels remain at the highest levels possible during this period and that any changes in elevation are implemented very gradually. Virtually all of these species spawn in shallow water, and the egg development and hatch require constant water elevations for some time post-spawn. Moderate or severe drawdown during this period can result in eggs being exposed to air, subsequent failure of the spawning effort, and a total or partial loss of a year class of fish for a given species. Because of the need for consistent water elevation at this time a reduction in surface water elevation, particularly one that occurs rapidly could be potentially harmful to the fishery.

The second time segment of a beneficial fluctuation plan is the period from mid to late June until late October. During this period negative changes in elevation or a drawdown would be beneficial to the fishery. As a result of the drawdown, shoreline areas and banks become exposed to air, resulting in rock and gravel areas being cleaned and organic material in rock and gravel areas being converted to a more usable status. This process also involves the growth of rooted vegetation on these shores. This process shifts nutrients from organic matter on the banks and in the soil into green vegetation, which becomes very important in the third segment of the fluctuation plan. For the purposes of the fishery only, rapid drawdowns that expose shorelines earlier in the growing season become much more acceptable and

Response to comment, 1st through 3rd paragraphs: To mitigate moderate streamflow effects during low-flow periods in the Arkansas River associated with the Master Contract, 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 gage to fish hatchery return flows from the current hatchery discharge point.

Also see previous response.

Response to comment, 4th and 5th paragraphs: See previous responses for proposed streamflow and aquatic life mitigation downstream from Pueblo Reservoir.

beneficial to the fishery. The second benefit to fisheries from drawdowns during this time involves predator-prey relationships. Late summer and fall drawdowns shrink the reservoir pool and forces predators and prey into the same habitats. This process allows predators to more effectively feed on forage populations and maximize growth during the season. In a proper fluctuation plan that favors fisheries, the summer drawdown would not exceed a level that would expose shorelines that could not be later inundated with water during the third time segment of the plan.

The third segment of the fluctuation plan is the period from late October through mid March, when the reservoir would be refilled. During this phase water storage levels need to increase until all of the exposed shorelines have been inundated. Refill rates are more beneficial when done in a slow controlled manner that is completed in the first half of March. This stage benefits fisheries in a couple of ways. First, it inundates the shorelines that were rejuvenated during the summer drawdown period which provides suitable spawning habitat. The second benefit occurs when vegetation (that grew on the exposed shorelines during the second phase) dies when covered with water and begins to decompose. The nutrients from this decomposition fuel both phytoplankton and zooplankton production in the reservoir. This plankton is the first line of productivity and is a critical food source for juvenile fish.

Water surface elevation hydrology (Appendix D4- Tables 185-188) is most important to the function of the aquatic resources in Pueblo Reservoir, and most easily evaluated. Overall monthly average data (Table 185) indicates minimal changes in WSE, except for the JUP North alternative, where up to 5% WSE reductions are noted. Greater decreases in WSE are seen for the JUP North alternative in both normal (Table 186) and dry years (Table 188), and for nearly all months of the year. Reductions in WSE reach 10-13%.

Only the JUP North alternative poses concerns for fishery impacts due to reductions in WSE. Those reductions are at acceptable levels during the summer months when drawdowns have some benefits; but are detrimental during spring (March to June) when spawning and egg/fry development is occurring. In contrast, the Master Contract Only alternative results in higher WSE for all months across all water years (average, normal, wet and dry).

John Martin Reservoir

The fishery at John Martin Reservoir (JMR) continues to be one of the most important along the lower Arkansas Valley, particularly with the loss of other large reservoirs due to continued drought conditions. Walleye, saugeye, white bass, wipers, crappie, and channel catfish dominate the sport fishery and are all species highly sought after by anglers.

Water management considerations for the fishery at John Martin Reservoir mirror those discussed above for Pueblo Reservoir. However, due to continued drought conditions JMR has experienced exceedingly low water levels in recent years. Total storage fell below 10,000 ac-ft in both 2006 and 2011, and was at or below 30,000 ac-ft every year since 2006.

It is encouraging to see net water benefits to JMR in all of the proposed alternatives. The tables in Appendix D4 used to present the data were a bit misleading however. 2005 was simulated as a "normal" year. In the past decade, 2005 was one of our wetter years. Also, 2004 was simulated to be a "dry" year, but again, it may not truly represent a "dry" year. On table 73 (dry year), water levels never drop below 20,000 acre ft. We know that a true dry year (2006, 2011) has water levels dipping well below 10,000 acre ft. Also, Table 71 shows a wet year (1997) in which water levels were well over 200,000 acre ft. for most of the year. That is not a typical "wet" year. It is an abnormally wet year. It serves to skew the data for the overall average table (Table 70).

Normal operations results in springtime (Mar-Apr) storage maxima, followed by drawdown during the irrigation, and refill during the period of the Winter Water Storage Program (mid-Nov to mid-Mar). This water management scenario benefits the fishery; however the decline in overall storage over the past six years has had significant impacts on the fishery. Reduced reproduction on white bass and crappie, lower success rates on fry stocking, and increased flushing of fish from the reservoir due to greater turnover rates with low storage, has been evidenced.

Response to comment, 4th paragraph: We agree that only the JUP North Alternative would have moderate effects on aquatic life in Pueblo Reservoir. The adverse effects are because the Master Contract is not included in that alternative. We also agree that the Master Contract Only Alternative avoids these impacts.

Response to comment 7th and 8th paragraphs: We concur that the selected "typical" normal, dry, and wet years may not be "typical" for all water bodies in this large watershed. Use of the selected "typical" years was used in the Final EIS to maintain consistency and allow broad comparisons. Additional qualitative discussion is in the John Martin Reservoir section in Appendix D.5 (page D.5-112) of the Final EIS to highlight other "typical" years.

Monthly storage content hydrological data (Appendix D5- Tables 70-73) project increased storage for all alternatives and for all months, across all water year analyses (overall average, normal, wet, and dry years). The increases in modeled storage content for all alternatives (compared to No Action) generally are limited to less than 10%, but even minor improvements in storage will provide benefits to the fishery. It is also notable that increases in storage during normal and dry years, when compared to Existing Conditions, are generally well above 10% and as much as 45% higher.

Henry and Meredith reservoirs

Although the narrative suggests (Appendix D4- p 248) that the alternative's negative effects would be negligible to minor, it is important to remember that these lakes are large, shallow reservoirs, that even when full, have average depths less than 10 ft. Even at full conditions, these lakes can be considered at the lower limit of the acceptable range for fisheries habitat. The sportfish components of these reservoirs are very popular to area residents and visitors from the Front Range. During normal or wet years, slight decreases to the water supply can have some negative effects to the fishery, especially if the timing of the releases interrupts spawning activity. During dry years, however, decreases to the water supply can be disastrous to the fishery. Table 204 shows dry year changes at Meredith. During the months Jun. - Dec., all of the alternatives show less water storage than current conditions. Many of the changes show more than a 15% reduction in storage content. Currently, we are concerned about fish kills in these lakes during dry years (a good example is the present condition of these lakes). Any alternative that would reduce storage even further could result in the complete loss of the fishery, especially during an abnormally hot summer or cold winter.

Holbrook Reservoir

The fishery at Holbrook Reservoir consists of wipers, walleye, saugeye, crappie, channel catfish, and seasonal stocking of catchable-sized rainbow trout. It is a shallow basin and lacks defined fish habitat structure. Nonetheless, it is a State Wildlife Area that receives fishing pressure from local anglers.

Surface water hydrology modeling for monthly storage contents is exhibited in Appendix D4 (Tables 249-252). The monthly storage contents for overall average (Table 249) and wet year (Table 251) indicates less than 11% change for all alternatives, compared to No Action or even Existing Conditions. However, the situation is much different for normal (Table 250) and dry year (Table 252). In those years there is significant decrease in storage for all alternatives (except JUP North), as compared to No Action; and dramatic loss of storage when compared to Existing Conditions. For a normal year, storage declines up to 67% (compared to No Action) during mid-summer to total storage levels of 100-500 ac-ft.

In those years that align with the "normal" (2005) and "dry" (2004) projections, it is almost certain that all fish will be lost from the reservoir due to low water, and the resulting and expected high water temperatures and low dissolved oxygen levels. Since it takes several years to develop an attractive fishery through stocking of fry and fingerling fish, a loss in any one year will be realized over a much longer time frame. Depending on the frequency of normal or dry type of water years that are encountered in the future, this fishery may not have adequate time to recover and may not be a reasonable option for continued fishery management and recreation.

TERRESTRIAL RESOURCE COMMENTS

CPW appreciates the inclusion of our concerns and recommendations as outlined in Scoping comments dated September 8, 2010 in formulating the Arkansas Valley Conduit Environmental Impact Statement. We feel that adequate attention was paid to delineating impacted habitat and careful consideration was made in regards to the impacts affecting Federal T&E species, State T&E species, and Species of Concern as a result of this project. We commend the commitment to avoiding sensitive wildlife habitats where feasible and would like to emphasize the necessity of preconstruction surveys for wildlife use. The timing of construction in sensitive wildlife habitats is important to avoid or minimize negative impacts to wildlife. Spring timing restrictions are recommended to avoid disruption of critical breeding behaviors or disturbance of important breeding habitats. As with any development project, sound Best Management Practices (as outlined in Appendix B.5) are vital in avoiding negative impacts to wildlife. CPW would

Response

Response to comment, 2nd paragraph: To mitigate moderate reservoir effects in the Lower Arkansas River Basin on aquatic life, the United States would approve expansion of the Pueblo Fish Hatchery near the existing Pueblo Fish Hatchery, if requested and deemed feasible by CPW, in conjunction with mitigation requirements set forth in the Southern Delivery System EIS and Fish and Wildlife Mitigation Plan. Hatchery expansion would occur through a mutually acceptable agreement between Colorado Parks and Wildlife and Reclamation, and the location of the expansion and site-specific NEPA compliance would be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed. The state would be responsible for construction, operation and maintenance of fish production ponds and associated facilities. This includes providing all water necessary for these ponds, including, but not limited to, water for filling the ponds, and augmenting evaporation from the ponds, in accordance with Colorado state law.

Response to comment, 3rd through 5th paragraphs: Holbrook Reservoir: Holbrook reservoir is an actively managed "workhorse" reservoir owned by the Holbrook Mutual Irrigating Company. Holbrook Reservoir experiences frequent and substantial reservoir level fluctuations, including being drained dry. The Holbrook Mutual Irrigating Company has also recently improved the outlet to completely drain the reservoir as needed (Barnhart 2012). Reclamation and Southeastern do not own or operate this reservoir nor have jurisdictional control, and a reservoir minimum pool agreement does not exist between the Holbrook Mutual Irrigating Company and CPW.

Also, the moderate effects on Holbrook Reservoir during certain months identified by the hydrologic model are not direct effects of AVC/Master Contract operations, rather the effects result from the following:

- Modeling assumptions on Colorado Springs operations at Holbrook Reservoir are sensitive to small changes in the quantity and timing of streamflow and reservoir storage in the Lower Arkansas River Basin (see Appendix D.4).
- Holbrook Reservoir storage contents are low particularly in simulated existing conditions and No Action Alternative. A small change in volume could result in a large percent change and trigger a moderate significance level in the modeling.

These explanations are in a footnote to the Holbrook Reservoir effects table (see page 2–39 in the Final EIS).

See previous comment responses in this letter regarding Pueblo Fish Hatchery-related mitigation for reservoir effects in the Lower Arkansas River Basin on aquatic life.

Comment Letter 22 (continued)

Response

appreciate the opportunity to comment on AVC's Migratory Bird Management Plan and Fish and Wildlife Management Plan to ensure that everything possible will be done to protect the wildlife of Colorado.

The following comments are supplemental to those submitted in 2010-2011.

Federal Threatened and Endangered Species

Two federally listed species, the Interior Least Tern (*Sternula antillarum*) and Piping Plover (*Charadrius melodus*), hereafter terns and plovers, annually return to breeding grounds in the Lower Arkansas River valley. Both occupy breeding, nesting, and foraging sites on the south and north shores of John Martin Reservoir and Tern and Long Islands at Adobe Creek Reservoir.

Regarding tern and plover conservation and management efforts in the Lower Arkansas River basin, the most significant concern is a decrease in water levels during the breeding season (April 1- September 1st) at John Martin Reservoir. Terns and plovers have historically exhibited relatively high fidelity to a core area. John Martin Reservoir – i.e. – sandy shorelines devoid of any vegetative cover along with scattered areas of small rock aggregate substrate at Point 5 on the south shore and Dinosaur Island on the north shore.

Due to the reduced risk of predation, island habitats offer the greatest potential for increased nest and fledgling success. Consequently, active management efforts are directed to Dinosaur Island as well as the south shore. Higher water levels maintained throughout the nesting cycle, which preserve the island habitat, coupled with continued vegetation removal, offer the most desirable management strategy for successful tern and plover reproduction at John Martin Reservoir. Conversely, extended periods of reduced water levels would allow expanded, undesirable vegetative growth. Reduced water levels also diminish or eliminate the island effect at Dinosaur Island.

Based on the provided information, there does not appear to be any significant threats or impacts, both direct and indirect, to currently occupied tern and plover habitat at John Martin Reservoir. Water levels under all alternatives are projected to be slightly higher which would enhance tern and plover habitat.

State Threatened, Endangered and Species of Concern

The Black-tailed Prairie Dog (*Cynomys ludovicianus*) plays a vital ecological role on the prairies of southeastern Colorado. The colonies of Black-tailed Prairie dogs offer suitable habitat during all or a portion of the life-history requirements for a number of grassland species of concern– Ferruginous Hawk (*Buteo regalis*), Burrowing Owl (*Athene cunicularia*), Mountain Plover (*Charadrius montanus*), and Swift Fox (*Vulpes velox*). Because Black-tailed Prairie dog colonies tend to support a broad suite of important grassland species, it is recommended that any colonies identified during pre-construction wildlife surveys be avoided, if possible.

Though all pipeline alternatives lie north of the Arkansas River beginning just west of Las Animas and along the Hwy. 50 corridor, there is potential for negative impacts to a small wintering population of Bald Eagles (*Haliaeetus leucocephalus*) at John Martin Reservoir. Seasonal avoidance is suggested during November – March to minimize disturbance due to construction activities.

Vegetation

Upland vegetation will be effected by construction of the pipeline; however, it will be minimal (relative to the amount of upland vegetation in eastern Colorado) and temporary. Best Management Practices (as outlined in Appendix B.5) for vegetation are suitable for the actions proposed for this project and should result in the avoidance/mitigation of negative impacts. Regardless of the footprint of ground disturbance, CPW would like to reiterate the importance of proper revegetation and weed control. Proper revegetation, from a wildlife perspective, involves not only stabilizing the soil and establishing ground cover, but fostering plant communities with a diversity of species and plant types (grasses, broadleaf forbs, and woody vegetation) which will fully serve the nutritional and cover needs of wildlife. All reclamation seed mixes should be suited to on-site soil types, and mirror native plant communities. All reseeding should be completed in a timely manner and should be monitored for success and noxious weed establishment.

Reclamation will complete its coordination with the U.S. Fish and Wildlife Service under the Fish and Wildlife Coordination Act before implementing the selected alternative. The U.S. Fish and Wildlife Service was a cooperating agency and was consulted throughout the AVC EIS process. A draft Fish and Wildlife Coordination Act Report is on file with Reclamation. Fish and wildlife conservation measures recommended in the final Report will be considered by Reclamation and those found to be appropriate will be implemented by Reclamation through construction requirements and contract provisions. The final Report and Reclamation's response will be made available to cooperating agencies and the public when complete.

Response to comment, 7th and 8th paragraphs: Prairie dog colonies are present along all of the alternative pipeline alignments, so complete avoidance could be difficult. Construction would be scheduled to avoid the breeding season for burrowing owls, mountain plovers and other migratory birds that may use prairie dog colonies where feasible. Pre-construction surveys would also identify and avoid active swift fox burrows, ferruginous hawk nests and other important grassland species.

Use of Colorado Parks and Wildlife recommended buffer zones around bald eagle nest or roost sites would be a component of the migratory bird management plan to minimize effects from construction activities (see Final EIS, page 4–135). Seasonal avoidance of construction activities would occur if nest and roost sites are within the ¼ to ½ mile buffer zones.

CPW would appreciate the opportunity to assist AVC in development of a Reclamation Plan that includes the formulation of suitable seed mixes for all areas of the project.

CPW recognizes that this project has the potential to spread noxious weeds/seeds through ground disturbance and material transport and appreciates the inclusion of noxious weed best management practices (as outlined in Appendix B.5). A comprehensive noxious weed management plan should be developed prior to construction and implemented in areas where there will be disturbance due to construction activities. Noxious weed management is important to the long-term success of the project and should continue throughout the useful life of the project. CPW would also like to have the opportunity to review the project's Noxious Weed Management Plan pending completion.

Riparian and wetland habitats on the plains are used disproportionately to their extent; they are relatively rare compared to other habitat types and approximately 90% of all wildlife utilize them at some point in their life cycle. These areas are critical to fish, waterfowl, neotropical migratory songbirds, amphibians and predators. CPW appreciates the project's commitment to avoid riparian and wetland habitats where feasible. Where avoidance is not possible, CPW would like to see compensatory wetland mitigation conducted properly, with special attention to replacement of wetland type and function as well as size. CPW is interested in working with AVC to ensure that wetland mitigation will benefit the wildlife of Colorado.

OUTDOOR RECREATION – LAKE PUEBLO STATE PARK

Lake Pueblo State Park with Pueblo Reservoir as its centerpiece hosts over 1.8 million visitors annually and is consistently one of the most heavily visited state parks in Colorado. A marketing report on Colorado state parks (Colorado State Parks 2009) estimated annual visitor spending of \$97,848,400 (for all visitors) and \$67,057,000 (for nonlocal visitors – visitors coming from further than 50 miles) on the local economies of Lake Pueblo State Park. The \$97,848,400 spending represents roughly 20 percent of the statewide total for all 42 state parks in Colorado. Visitors to Lake Pueblo State Park contribute significantly to the local community economies (Pueblo, Pueblo West, etc) surrounding Pueblo Reservoir.

The Park recreation facilities and supporting infrastructure at Pueblo Reservoir were designed and constructed in conjunction with the U.S. Bureau of Reclamation in the late 1970's & early 1980's to accommodate water surface elevation fluctuations up to the top of the active conservation pool (4880.5 feet) under reservoir operations of the time.

Park visitation has increased substantially from the early 1980's and fluctuating reservoir levels up into the top of the active conservation pool and into joint use pool elevations do have effects on Park operations and visitors. As an example, since the 2008 water storage year (recognized as above average water years), current reservoir operations has maintained/sustained higher water surface elevations at the beginning and further into the Park's high use season of May 1st to September 30th. The higher water surface elevations and the increased frequency of the higher water surface elevations attract more visitors to the Park while presenting new Park operation challenges.

At water surface elevations above ~4875 feet, parking for access to the reservoir at Sailboard, N-1, and South Fishing and vehicle/trailer parking capacity at the South Boat Ramp, the South Shore Marina, the North Boat Ramp, and the North Shore Marina becomes limited due to less available shoreline for vehicle parking. In addition, the natural land mass located west of the South Shore Marina/Boat Ramp protects these facilities from wind and wave at water surface elevations up to ~4875 feet. Once the water surface begins to exceed the 4875 feet elevation, the land mass goes underwater thus exposing users of the boat ramp and marina to wind and wave.

With the decrease in available parking at the reservoir access points, visitors are parking along the shoulders of Juniper Road and walking to the reservoir creating social trails. Parking along the shoulders of the road creates a safety hazard to visitors. Social trails are not designed or planned, resulting in degradation of the natural vegetation around the rim of the reservoir and, hence, the trails are highly

Response to comment, 1st and 2nd paragraphs: Best management practices include preparing revegetation plans with suitable seed mixes and noxious weed control plan for areas temporarily disturbed during construction. These plans would be developed in detail during final design for the preferred alternative. Colorado Parks and Wildlife was invited to participate in the Environmental Review team, which would review revegetation plans.

Response to comment, 3rd paragraph: Permanent effects on wetlands would be avoided where feasible; however, if effects are unavoidable, Reclamation would request a 404 permit from the U.S. Army Corps of Engineers and a compensatory wetland mitigation plan (per Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, Corps and EPA, 2008) would be prepared. The majority of wetland and riparian effects would be temporary. Revegetation of these areas would be conducted per the revegetation plan and would include restoring wetland functions and values. Colorado Parks and Wildlife was invited to be on the Environmental Review team, which would review revegetation plans.

Comment Letter 22 (continued)

Response

susceptible to erosion. Visitors using these social trails for access to the reservoir have no access to trash and restroom facilities, which leads to unsanitary conditions along the trails and the shoreline.

In addition to the more frequent/sustained higher water surface elevations, the discovery of zebra and quagga mussels (Aquatic Nuisance Species) in Pueblo Reservoir in 2008 along with the resulting regulatory, management, and operation requirements to prevent their spread to other water bodies has also contributed to the limited parking issue. The public boat ramps located on the Pueblo Reservoir State Wildlife Area were closed and all trailered and motorized vessels must launch from the Park's two boat ramps where vessels/trailers are inspected for Aquatic Nuisance Species has concentrated vehicle/boat trailer traffic to two locations versus three.

Since 2008, additional high water parking areas have been designated and constructed in cooperation with Reclamation to accommodate the need for additional vehicle/trailer parking at the North Shore Marina/North Boat Ramp and the South Shore Marina/South Boat Ramp. The high water parking area at the South Shore Marina/South Boat Ramp has been improved by the addition of gravel and parking delineation however additional parking space is still needed. The high water parking area at the North Shore Marina/North Boat Ramp remains an open field and needs to be improved. Additional designated high water parking areas are needed along and adjacent to Juniper Road along with the establishment of designated access trails. A permanent breakwater is needed to protect the South Shore Marina/Boat ramp.

The maximum historic reservoir water surface elevation of 4888.4 feet occurred in February, 1996. In addition to the effects described above, in 1996 access to the Kettle Creek Loop of the Northern Plains Campground, the North Picnic day use area, and the Sailboard day use area were closed due to water over access roads. Use of the South Boat Ramp was limited to launching/loading of small boats and the northwest corner of the S. Marina Parking Lot was underwater.

Any water surface elevation of Pueblo Reservoir exceeding 4888.4 feet (maximum historic elevation) will have substantive effects on Lake Pueblo State Park facilities/infrastructure and operations. These effects are listed in bullet form below:

- At ~4900 feet the 1200 gallon South Shore wastewater (sewage) lift station is under water and all shoreline parking access points, the South Boat Ramp, the South Marina, the North Boat Ramp, and the North Marina are closed to public access and use.
- At ~4902 feet Juniper Road at N-2 and the 12" potable water main line which parallels Juniper Road goes under water. Juniper Road connects the north side of the park to the south side of the park and is a popular commuter route between the community of Pueblo West and Pueblo. The 12" potable water main feeds the entire north side of the park (Northern Plains Campground, Juniper Breaks Campground, and the North Shore Marina).
- At ~4904 feet the 1200 gallon North Shore wastewater (sewage) lift station is under water.

There are several complexities in the Pueblo Reservoir modeling based on numerous assumptions. Although the direct effects of all alternatives presented in the AVC EIS appear to be minimal, any action or event not assumed in the modeling that would increase the surface elevation above 4888.4 feet, along with the cumulative effects as described above, are substantive to the operation of Lake Pueblo State Park and to the local economies. Since the Arkansas Valley Conduit is a municipal water supply project, it is very likely that water stored for this project would remain in Pueblo Reservoir for a longer duration (typically year-round) than when water is stored for agricultural purposes. While this may provide more stable reservoir water levels which is often desired by boaters, it could increase the frequency of lake level rising due to summer storms or during high runoff periods, which could increase the chances for Pueblo State Park experiencing the problems outlined above. It would be beneficial for Pueblo State Park and the local Pueblo economy if the project proponents would establish a contingency fund for mitigation of those issues raised if the water level elevation exceeds the limits identified above.

Response to comment, 7th paragraph: Reclamation does not concur that a contingency fund would be needed for Pueblo Reservoir recreation effects. With agreement from the State of Colorado Division of Parks and Outdoor Recreation, the Pueblo Area Management Plan (Parks and Outdoor Recreation and Reclamation 1981) and the Recreation and General Development Plan (National Park Service 1975) for Pueblo Reservoir State Recreation Area considered fluctuating water levels and the flood control pool in recreation development in the park. The land areas in the flood pool were designated as having major physical constraints. Lowlands subject to flash floods in the spring and summer were also designated as having recreational development constraints. These areas were identified as having the potential for inundation.

OUTDOOR RECREATION – ARKANSAS RIVER ABOVE PUEBLO RESERVOIR

Reference is made in the DEIS that “The Master Contract would include up to 29,938 ac-ft of excess capacity storage in Pueblo Reservoir. The DEIS further states that each identified water provider with requested storage space in Pueblo Reservoir would request that Reclamation release water from Pueblo Reservoir to either the Arkansas River to an existing or future water delivery system, or exchange water to an upstream location (Appendix A).” CPW is concerned that upstream exchanges (other actions associated with AVC) could potentially reduce the amount of water that would be available in the Arkansas River between Lake Pueblo and upstream storage vessels (Twin Lakes, etc) thereby potentially having a detrimental effect on whitewater boating and float fishing.

Additionally, the DEIS notes that all alternatives would cause some minor (less than 10 percent) decreases in streamflow in the Upper Arkansas River Basin during winter and spring months in normal and wet years due to changes in Fry-Ark reservoir storage volumes. A 10% decrease in stream flow during late winter at 300 cfs, the absolute bare minimum for floating lower Browns Canyon, lowers the river potentially to 270 cfs, which creates an un-boatable water level for lower Browns Canyon. This would not be a negligible detrimental effect as noted in the report. Again, upstream Exchanges (other actions associated with AVC) could potentially exacerbate this situation by further reducing the amount of water that would be available in the Arkansas River between Lake Pueblo and upstream storage vessels (Twin Lakes, etc) thereby potentially having a detrimental effect on whitewater boating and float fishing

In summary, CPW would ask that AVC operations, including the Master Exchange Contract, not, in any way, negatively affect the ability of Reclamation to store and/or move water as necessary to maintain the recommended Voluntary Flow Management Program (VFMP) year-round fishery flows of 250 cfs or the targeted 700 cfs augmentation flows (July 1 – August 15) as measured at the Wellsville Gage.

PROPOSED CONCEPTUAL MITIGATION MEASURES

A Fish and Wildlife Mitigation Plan will be developed for this project under the authority of Colorado State Statute 37-60-122.2. More detailed mitigation measures can be developed as part of that process and should include many of the following as well, however, these below listed conceptual mitigation measures should also be included in the Environmental Commitments section of the Record of Decision.

1. Establish and utilize a reserve pool in Pueblo Reservoir to be used in the event of low or no flows in the Arkansas River from Pueblo Dam downstream to the Wildhorse confluence. Water would be released from Pueblo Dam in such situations to maintain a minimum acceptable flow for fish, macroinvertebrates, and fishing recreation. This release of water would not be done to the detriment of hatchery operations at the Pueblo Fish Hatchery.
2. Evaluate and consider the installation of additional instream habitat structures and develop channel modifications in the Arkansas River from Pueblo Dam to the Wildhorse confluence to minimize impact (reduced habitat due to low flow) on rainbow and brown trout, and macroinvertebrates.
3. The Pueblo Fish Hatchery was built as part of the original mitigation for the Fryingpan-Arkansas Project. Reclamation has provided the hatchery the required 25-37 cfs as part of that mitigation since that time, but BOR does not have a decree or adjudicated water right to guarantee these flows. Except for a commitment from BOR for “compensation for evaporation losses from the hatchery ponds” (based on a letter from BOR to CDOW in 1984), there is a lack of evidence that there is a legal decreed water right for that purpose (see status report for #02CW53). In addition, actual flows to the hatchery have only been considered as a “flow through right” (up to 16 cfs) by which downstream senior rights are satisfied. This project (as well as those that have proceeded it) results in less water being released (via hatchery or dam) to satisfy downstream rights. As this trend (agricultural to municipal) continues, at some point hatchery flows may be curtailed or otherwise negatively affected and the original value of the Pueblo Hatchery as mitigation for the Pueblo Reservoir and Fry-Ark project will be lost. We believe it would be prudent and appropriate to establish an adjudicated flow right for operation of the hatchery and secure augmentation for the associated ponds and wells.

Response

Response to comment, 1st through 3rd paragraph: Late winter streamflow effects (Feb-Mar) at the Arkansas River near Wellsville gage, upstream from the lower Browns Canyon, would be negligible (less than 2 percent decrease) in all year types (Appendix D.4, page D.4–86 in the Draft EIS). Effects on the Upper Arkansas Valley Voluntary Flow Management Program targets are discussed on page 4–23 of the Draft EIS. Targets would not be violated. Recreation effects in the Upper Arkansas River Basin are discussed on page 4–100 of the Draft EIS. Recreation effects in the Upper Arkansas River Basin, including lower Browns Canyon, would be negligible. This was clarified in Chapter 4, page 4–105 in the Final EIS.

Response to comment ‘Conceptual Mitigation Measures 1’:

Reclamation’s view is that a reserve pool in Pueblo Reservoir for low flow augmentation is not needed because it would duplicate mitigation already implemented for the Fryingpan-Arkansas Project, of which AVC is an authorized component. However, to mitigate occasional moderate low streamflow effects immediately downstream from Pueblo Reservoir, and the effects of this low streamflow on water quality and aquatic life, the following mitigation language was added to Chapter 4 and Appendix B.5 in the Final EIS:

“Reclamation would provide coordination assistance with participants in managing storage and water releases in a manner that could assist in augmenting low streamflows 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.”

Also, Memoranda of Agreement between Southeastern and AVC/Master Contract participants would require participation and compliance with Southeastern’s commitments in the Pueblo Flow Management Program, as outlined in the Six Party Intergovernmental Agreement (IGA 2004). This would be a commitment in proposed future contract(s).

Response to comment ‘Conceptual Mitigation Measures 2’:

Reclamation will provide \$50,000 for habitat improvements downstream from Pueblo Reservoir to mitigate moderate streamflow effects and minor aquatic life effects of an action alternative during low-flow periods in the Arkansas River. Design and location of improvements will be coordinated between Reclamation and Colorado Parks and Wildlife after a Record of Decision has been signed for the AVC EIS, and site-specific NEPA compliance is completed.

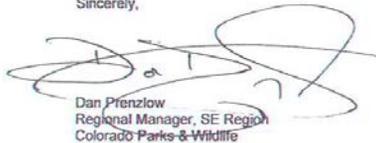
Response to comment ‘Conceptual Mitigation Measures 3’: In accordance with the Fry-Ark Project authorization, Reclamation built a number of recreation and wildlife enhancement facilities as part of the

Comment Letter 22 (continued)

4. Holbrook Reservoir is limited by bottom and shoreline (littoral area) habitat. Artificial habitat structures have been added to many of the warmwater reservoirs in the form of trees, tires, or a combination of concrete, PVC, or other materials. These structures provide benefits for spawning, fry/juvenile rearing, and escape cover, and as focus for recreational fishing. Other improvement techniques that would be applicable to Holbrook Reservoir include seeding of shoreline areas prior to inundation and control of excessive vegetation that is an impediment to fisheries and fishing.
5. Expansion of CPW warmwater fish production was a commitment in the Southern Delivery System Record of Decision and Fish and Wildlife Mitigation Plan. Construction of 7.5 acres of warmwater production ponds, are planned and although the Pueblo Fish Hatchery was discussed, no specific location was officially designated. The most appropriate and logical scenario is to construct these new ponds at the existing Pueblo Fish Hatchery to the north of the current ponds. This is land owned by BOR, and as part of AVC mitigation CPW requests that BOR consider the designation of a perpetual easement to allow for the construction and operation of these new production ponds. This designation should be done while also pursuing the establishment of an appropriate flow through water right at the Pueblo Fish Hatchery as outlined in #3 above.
6. With the potential for decreased or affordable "If and When Account" storage in Pueblo Reservoir due to increased storage as part of the AVC and Master Exchange Contract consider the establishment of a permanent guaranteed CPW "If and When Account" at a reasonable price in Pueblo Reservoir for purposes of augmenting flows for the Voluntary Flow Management Program and for release downstream.
7. Formally recognize the Upper Arkansas Voluntary Flow Management Program agreement and the Pueblo Low Flow Agreement as part of the Record of Decision and commit, to the maximum extent practical, to adherence to these agreements through operations of the Arkansas Valley Conduit and Master Exchange Contracts identified within this DEIS.

Colorado Parks and Wildlife appreciates being involved in the Arkansas Valley Conduit Environmental Impact Study process. Please feel free to contact Dave Lovell at 719-227-5209 or Doug Krieger at 719-227-5202 if you should have any questions or require additional information regarding this letter. We look forward to working with the Bureau of Reclamation in the development of the Fish and Wildlife Mitigation Plan and with its successful presentation to the Colorado Parks and Wildlife Commission.

Sincerely,



Dan Prenzlow
Regional Manager, SE Region
Colorado Parks & Wildlife

Response

Response to comment 'Conceptual Mitigation Measures 3'

(continued): Project, including the fish hatchery. In a September 1984 letter, Reclamation stated that one water supply for the Pueblo Fish Hatchery was to be 16 cfs of Arkansas River natural flow, with Fry-Ark water compensating for any consumptive use of this water (Reclamation 1984). The majority of the water consumed by these facilities is due to evaporation off of exposed water surfaces, for which an augmentation plan was decreed on January 4, 2013 (Case No. 02CW53), ensuring the continued reliable operation of the hatchery. No further action is recommended.

Response to comment 'Conceptual Mitigation Measures 4': See previous response to this letter on Holbrook Reservoir.

Response to comment 'Conceptual Mitigation Measure 5': See previous response to this letter on Henry and Meredith Reservoirs.

Response to comment 'Conceptual Mitigation Measure 6': It is recommended that this mitigation be adopted to reduce uncertainty in CPW's excess capacity contract costs. CPW would provide water to be stored in a CPW long-term excess capacity account in Pueblo Reservoir. The contract price would be negotiated based on current policy. Permitting, NEPA compliance, contracting, and operation of such an account would be coordinated between Reclamation and CPW after a Record of Decision has been signed for the AVC EIS.

Response to comment 'Conceptual Mitigation Measure 7': The streamflow effects in the Upper Arkansas River would be predominately negligible. Variation in the ability to meet voluntary flow targets, compared to the No Action Alternative, would be less than 0.5 percent. Therefore, it is recommended that mitigation involving the Upper Arkansas Voluntary Flow Management Program not be adopted.

Mitigation involving the Arkansas River Low Flow Program, which stores water in Pueblo Reservoir for releases during low flow periods, would duplicate mitigation described in other responses to this letter. Therefore, it is recommended that mitigation involving the Arkansas River Low Flow Program not be adopted.

Memoranda of Agreement between Southeastern and AVC/Master Contract participants require participation and compliance with Southeastern's commitments in the Pueblo Flow Management Program, as outlined in the Six Party Intergovernmental Agreement (IGA 2004). This would be a commitment in proposed future contract(s).

Pueblo West Metropolitan District
Department of Utilities
20 W. Palmer Lake Dr.
Pueblo West, CO 81007



Pueblo West hereby submits the following comments on the draft Environmental Impact Statement for the Arkansas Valley Conduit and Long Term Excess Capacity Master Contract (DES 12-39) dated August, 2012:

1. Page A.1-73: Please revise the text regarding Pueblo West as shown in the following redline of the subject text:

“Pueblo West

All of Pueblo West’s **non-emergency** water sources originate as surface water stored at Pueblo Reservoir. Pueblo West can draw up to 18.94 cfs of water from the south outlet works. Pueblo West is also a participant in the Southern Delivery System, and in the future will be able to draw 27.85 cfs of water from the north outlet works. Pueblo West has no other available **non-emergency** potable water supplies other than those drawn from Pueblo Reservoir. Pueblo West’s projected water demand is discussed above. Pueblo West uses Pueblo Reservoir as a terminal storage facility. It has no terminal storage other than Pueblo Reservoir. Without the Interconnect, in the event of a shutdown of either the north or south outlet works at Pueblo Reservoir, Pueblo West would use the other outlet for emergency supplies. If both outlets were shutdown, or the Interconnect were to fail, Pueblo West could serve demands for several hours using existing treated water storage. If an outage were to last for one day or less during summer months (three days in winter), Pueblo West would activate their emergency plan of notifying large users such as schools and parks. If an outage at Pueblo Reservoir lasted for one week or more, Pueblo West would not be able to meet **full** any water demands **but would activate their emergency plan to pump from river or reservoir as a temporary emergency water supply**. If the Interconnect were in place, Pueblo West would begin using it after about one day of interrupted water service from Pueblo Reservoir. This would allow them to maintain water service to customers in the event of an operations disruption at Pueblo Reservoir of one day or more.”

2. Page 4-19 Results: This section of the report, among other things, discusses the impacts of the various alternatives on the flow of the Arkansas River from downstream of Pueblo Reservoir to Fountain Creek which encompasses the reach in which the Pueblo Flow Management Program has been implemented. Also encompassed in this reach is the exchange reach for Pueblo West’s decreed exchanges in Case No. 85CW134(Part A and Part B). Decreases of flow in this reach from the AVC alternatives which pipe water past this reach have the potential to decrease the amount of water available to Pueblo West as compared to existing conditions. Mitigation for any decrease in water available to Pueblo West from existing conditions should be included in the cost of the AVC portion of those alternatives which pipe flow past the subject reach.

We concur. The text on Appendix A.1 was revised as suggested in the Final EIS

Effects on Pueblo West exchanges are in Appendix D.4, page D.4–42 of the Draft EIS. Pueblo West exchanges would not be adversely affected by AVC operations.

Comment Letter 23 (continued)

Response

3. Pueblo West could not find in the report where the amount of water estimated to be lost in transmission pipelines is addressed. Pueblo West suggests that this loss should be addressed in the report and in the project evaluations.

Transmission/water treatment loss in AVC was assumed to be 5 percent (see page D.4–10 in Appendix D.4 in the Final EIS for details.)

Thank you for the opportunity to provide comments on this report.

Weimerskirch, MickiJ

Subject: FW: AVC EIS comments (UNCLASSIFIED)
Attachments: Tern -Plover Annual Report -2012.pdf; ATT00001.htm

From: "Price, Dana M SPA" <dana.m.price@usace.army.mil>
Date: October 30, 2012, 7:19:16 PM CDT
To: "Snortland, Jan S (Signe)" <JSnortland@usbr.gov>
Cc: "Downey, Karen S SPA" <Karen.S.Downey@usace.army.mil>, "Everhart, Gregory D SPA" <Gregory.D.Everhart@usace.army.mil>, "Carpenter, Joshua G SPA" <Joshua.G.Carpenter@usace.army.mil>, "Alcon, Julie A SPA" <Julie.A.Alcon@usace.army.mil>
Subject: AVC EIS comments (UNCLASSIFIED)

Classification: UNCLASSIFIED
 Caveats: NONE

Hi Signe,

I have minimal comments on the AVC DEIS. I reviewed the "vegetation and Wetlands" and "Wildlife" including T&E species sections. I also looked at the Best Management Practices in Appendix B.5; a thorough list.

I was pleased to read that Reclamation intends to bore under the wetlands and perennial stream crossings instead of trenching, avoiding impacts to these resources.

Assuming the hydrologic analysis is correct and the effects on storage at John Martin would be minimal, I concur with Reclamation's conclusion that effects to nesting Least Terns and Piping Plovers would be negligible. I would caution that if storage rises significantly and stays elevated during the nesting season, there would be less habitat available for nesting. The analysis places a lot of emphasis on the Corps' ongoing habitat management as a major factor in nest success. Although this is essentially true, we have limited time and resources for vegetation management. The higher we need to go above areas that are frequently inundated, the longer the vegetation has had to grow, the harder it is to remove.

I do agree that a slight increase in storage would help our nesting island (Dinosaur Island) to remain an island longer into the summer. As long as the island is out of the water by nesting season, we may see a slight benefit. The island exists at water elevations between approx. 3809' and 3814' (the top of the island is slightly over 3814').

I've attached our 2012 monitoring report for use in updating the information on these species.

On another topic:
 With regards to the BMPs for rare plant species, if populations are encountered that can't be avoided, I would suggest that a restoration plan be developed in collaboration with the botanists at the Colorado Natural Heritage Program. I worked with rare/endorsed plants for several years and it is NOT a simple matter of transplanting them somewhere else when there are impacts to a site. A suitable reintroduction site needs to be identified and the reintroduction

Rare plants would be avoided to the extent possible using preconstruction surveys to identify these resources. If effects are unavoidable, Reclamation would carefully plan and monitor the site as described in Appendix B.5. The revegetation plan would include measures appropriate for specific rare plant species and site conditions based on methods developed by the Rare Plant Initiative, Colorado Natural Heritage Program, and other experts. This information was added to the Vegetation and Wetland section of the final EIS on page 4-125.

Comment Letter 24 (continued)

Response

needs to be carefully planned and monitored. Similar to Reclamation's development of a mitigation plan for wildlife that may be affected, plants deserve a plan.

Thank you,
Dana

Dana M. Price
Botanist, Environmental Resources Section
USACE, Albuquerque District
(505) 342-3378

Classification: UNCLASSIFIED
Caveats: NONE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

Ref: 8EPR-N

OCT 9 9 2012

J. Signe Snortland
Bureau of Reclamation
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

Re: EPA Comments on the Draft
Environmental Impact Statement
Arkansas Valley Conduit and Long-Term
Excess Capacity Master Contract,
Fryingpan-Arkansas Project
CEQ # 20120290

Dear Ms. Snortland:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the U.S. Bureau of Reclamation's (BOR) Draft Environmental Impact Statement (DEIS) for the Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract, Fryingpan-Arkansas (Fry-Ark) project. Our review was conducted in accordance with EPA's responsibilities under section 102 of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332(2)(c), and Section 309 of the Clean Air Act, 42 U.S.C. § 7609. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action.

The DEIS discusses potential environmental consequences associated with the construction and operation of a proposed Arkansas Valley Conduit (AVC), the conveyance contract for the Pueblo Dam north-south outlet works interconnect (Interconnect), and a long-term excess capacity master contract (Master Contract). Although these three proposals are independent actions, the BOR analyzed the environmental effects and provided a range of alternatives for these three federal actions within the same DEIS due to the overlap in area, timing and participants. A Preferred Alternative was not identified in the DEIS, therefore each alternative action was considered when evaluating and rating the environmental impact and the adequacy of the NEPA document.

Background

There are three proposed federal actions evaluated in the DEIS: 1) AVC construction, operation, and repayment; 2) a conveyance contract for use of the Interconnect, which would be constructed as part of AVC; and 3) entering into a Master Contract with the Southeastern Colorado Water Conservancy District (Southeastern) to store water in Pueblo Reservoir and other Fry-Ark reservoirs. Each proposed action has a specific purpose and need.

Comment Letter 25 (continued)

Response

The AVC is a congressionally authorized Fry-Ark feature that would provide a bulk water supply pipeline to meet existing and future municipal and industrial water demands in the Lower Arkansas River Basin. The water supply is also needed to supplement or replace existing poor quality drinking water. Forty water providers would participate in AVC, with all but one currently relying primarily on groundwater sources. The interconnect consists of a short section of pipeline necessary to convey water between the future north outlet works (associated with the Southern Delivery System) and existing south outlet works at Pueblo Reservoir during short-term maintenance and emergency outages. Finally, the proposed 40-year Master Contract between the BOR and Southeastern provides for excess capacity up to 29,938 acre-feet for storing non-Fry-Ark water in Pueblo Reservoir and other Fry-Ark reservoirs when excess space is not filled with Fry-Ark water to meet existing and future water demands and provide drought protection.

Future water demand through the year 2070 is estimated to be 12,569 acre-feet based on projected population growth rates applied to each AVC participant. AVC would deliver about 10,250 acre-feet per year of Fry-Ark allocations to AVC participants to meet 82 percent of 2070 water demands. The DEIS states that AVC would deliver AVC participant Fry-Ark allocations, including not previously allocated nonirrigation water and reusable return flows, plus a portion of existing and future non Fry-Ark water supplies that are required to meet future demand (p.1-19).

The DEIS evaluates a No Action Alternative and six action alternatives. The DEIS on page 2-7 provides the following summary in Table 2-2:

No Action Alternative – AVC participants would regionalize or continue current operations. Water treatment would meet primary drinking water standards (including radionuclides), but not necessarily secondary drinking water standards. There would be no Master Contract.

Comanche South Alternative – Water would be diverted from existing Pueblo Reservoir south outlet works. AVC would be constructed south of Pueblo and then south of the Arkansas River to Lamar. A new water treatment plant would be built at Pueblo Reservoir to filter water.

Pueblo Dam South Alternative Water would be diverted from the existing Pueblo Reservoir south outlet works. AVC would be constructed along the Bessemer Ditch through Pueblo, then south of the Arkansas River and east to Lamar. A new water treatment plant would be built near South Road and 21st Street in St. Charles Mesa to filter water.

Joint Use Pipeline (JUP) North Alternative – Water would be diverted from the existing Pueblo Reservoir JUP. AVC would be constructed north of the Arkansas River through Pueblo to Lamar. New water facilities would be built at the existing Whitlock Water Treatment Plant to filter water. There would be no Master Contract.

Pueblo Dam North Alternative - Water would be diverted from the existing Pueblo Reservoir south outlet works. AVC would be constructed north of the Arkansas River through Pueblo to Lamar. A new water treatment plant would be built at Pueblo Reservoir to filter water.

River South Alternative – Water would be diverted from the Arkansas River upstream from Fountain Creek. AVC would be constructed south of the Arkansas River to Rocky Ford and east to Lamar. A new water treatment plant would be built near the existing St. Charles Mesa Water District facilities to filter and disinfect water.

Master Contract Only Alternative -- AVC would not be built. AVC participants would operate as described in the No Action Alternative.

EPA Comments

The EPA appreciates having had the opportunity to work closely with the BOR as a Cooperating Agency during the development of the DEIS. This collaboration has improved the EPA's understanding of the analytical approach, and ultimately produced an enhanced characterization of impacts in the DEIS technical documents. The EPA remains committed to working with the BOR to resolve any remaining issues. After review of the DEIS, the EPA has the following principal concerns: 1) evaluation of potential impacts to impaired waterbodies and other aquatic resources; 2) general presentation of effects analyses; and 3) lack of detail regarding mitigation measures and monitoring. We have provided recommendations regarding our concerns for your consideration.

Water Resources

Water Quality Impairments and TMDLs

The DEIS did not fully analyze the project's effects on several constituents associated with CWA Section 303(d) listed waterbodies and total maximum daily loads (TMDLs) in the Upper Arkansas River Basin. Specifically impacts on concentrations of pH, dissolved oxygen (DO), copper, arsenic, cadmium, mercury and zinc were not analyzed for some of the Section 303(d)-listed water body segments. The water quality effects analysis, as illustrated in Table 4-16 of the DEIS, concludes that direct and indirect effects to "Upper Basin TMDL Allocations" will be negligible; however, the DEIS acknowledges that two of the three TMDLs were not examined because the flow gages used to calculate the TMDLs were outside of the modeled area. The river segments that were not assessed include the TMDLs for cadmium and zinc for the Arkansas River between Lake Fork Creek and Lake Creek, and the TMDL for copper for Lake Creek.

Additionally, although the DEIS acknowledges that nutrients are of concern, ammonia and nitrate/nitrite were the only "regulated nutrients" examined. Other principal nutrient forms were not included in the analysis, including total nitrogen (TN) and total phosphorous (TP). Phosphorous is the limiting nutrient in most Colorado waterbodies, which argues for including an examination of the project's effects on phosphorous concentrations. Furthermore, surrogate measures for nutrient impairment (i.e., pH and DO) were not examined, although there are waterbodies impaired for (and/or potentially affected by) these constituents within the study area.

Recommendations

The EPA recommends that the contaminants of concerns outlined above, including surrogate measures (i.e. pH and DO), be examined as part of the EIS impacts analysis to ensure that streamflow changes associated with the project will not exacerbate impaired conditions. For the TMDL analysis on streams without a gage within the modeled area, the EPA suggests that the BOR use analogous/surrogate flow information from a similar sub-basin or stream reach within the Upper Arkansas Basin modeled study area, if such information is available, to calculate concentrations for the various TMDL contaminants. The calculated concentrations could then be compared with the current TMDLs to determine if they exceed the various allocations. If more recent data are available for contaminants in data limited stream segments, we recommend that this information be included in the analysis.

Response

Response to comment, 3rd paragraph: We concur that additional clarification in the text is needed. The TMDL for Lake Creek (COARUA10) notes that all copper sources are natural and occur upstream from Twin Lakes. This segment is outside the study area and would not be affected. The copper loading into Twin Lakes would not be affected. Twin Lakes storage volume changes would be negligible (<2%). Dissolved oxygen and pH would not be affected. The alternatives would not affect the copper TMDL and reductions needed to attain the standard. This was clarified on page 4–55 in Chapter 4 and F.2–204 in Appendix F.2 in the Final EIS, but no additional analysis was needed. The TMDL effects analysis for the Arkansas River between Lake Fork Creek and Lake Creek (COARUA02c) was expanded (see page F.2–205 in Appendix F.2 in the Final EIS) using the Arkansas River at Granite gage as a surrogate. This discussion was also added to Chapter 4, page 4–55. No Upper Arkansas River segments are impaired for mercury or arsenic (2012 303(d) list) and no TMDLs exist for these constituents.

Response to comment, 4th paragraph: We concur. At the time of Draft EIS analyses, standards were not finalized or in effect for total phosphorus and total nitrogen. Data used by the Colorado Health Department in the 2012 303(d) impairment determination did not include total phosphorus or total nitrogen measurements. Colorado's Regulation No. 31 (The Basic Standards and Methodologies for Surface Water) has subsequently been revised (June 2012, September 2012) to include interim numeric values for total phosphorus and total nitrogen for water bodies meeting specific criteria. Numeric standards for specific stream segments will not be established until after May 31, 2022. The Colorado Health Department was contacted to evaluate whether these interim values applied to the study area, and whether data existed to adequately assess effects. As a result, existing nutrient information, which is limited, was added to the existing conditions discussion in Chapter 3 (page 3–34) along with discussion of the new standards. The best available information was also used to qualitatively assess effects on nutrients in the analysis area (Chapter 4, pages 4–49, 4–65).

Response comment, 5th paragraph: We concur that additional clarification in the text is needed. See previous two responses.

Comment Letter 25 (continued)

Response

Selenium Effects

The DEIS states that all alternatives compared to the No Action would have negligible to minor adverse effects on water quality, with occasional moderate increases in selenium in dry years near the Avondale gage. It is unclear what effects the project may have on the selenium-impaired section of the Arkansas River between Fountain Creek and the Kansas state line, because TMDLs have not yet been established and approved. Based on these modeling results presented in Appendix D.4 and projected decreased flow conditions compared to existing conditions, it raises concern that the modeled change in streamflow could increase constituent concentrations and exacerbate impairment on this section of the river.

Additionally, the DEIS presents apparently contradictory conclusions regarding selenium loading in Appendix F.1., page F.1-4, which states, "Surface and sub-surface water from lawn watering, irrigation, and precipitation contacts and dissolves selenium-containing rock and soils in the study area. Ortiz et al. (1998) found that over 90 percent of the selenium measured in Arkansas River downstream from Pueblo Reservoir was in the dissolved phase." Conversely, the section goes on to state that selenium loading "results from natural sources and is not exacerbated by land use or other reversible, anthropogenic factors (Health Department 2012a)."

Recommendations

The EPA recommends including an assessment of project effects for selenium in the Environmental Consequences EIS chapter so that alternatives are compared to existing conditions based on information presented in Appendix D.4. If any TMDLs for selenium are approved in the project analysis area prior to publishing the FEIS, please provide an assessment on the project's ability to meet the TMDL as you have done in the DEIS using the mass balance model and Daily Model streamflow results. The EPA also recommends clarification in the FEIS on whether land-use practices could be altered by AVC alternatives, and the extent to which such alterations could affect selenium concentrations or other water quality parameters in the study area.

Aquatic Resources

In order to calculate potential streamflow impacts in the headwater region of the Colorado River Basin on the West Slope from changes in transmountain imports, data from mainstem gages on rivers and creeks downstream from diversions were utilized in the DEIS analysis. Since many of the smaller streams on the Western Slope are not currently gaged, the streamflow changes (gain/loss) for the ungaged reaches located below the diversions but above the mainstem gages were pro-rated based upon distance from the gages. By pro-rating the flow reduction by distance from the gage, the DEIS attributes the diverted flows to all of the tributaries instead of attributing the reduced flow to the headwater stream from which it is diverted. The DEIS concludes that "Effects in tributary streams upstream from these gages would be approximately the same percentage as those calculated at the gages" (p. D.5-2). There is not a detailed enough resource description of these stream reaches within the DEIS. Depending on the size of the headwater streams, even minor flow reductions have the potential to impact wetland and riparian areas, water quality, and/or aquatic life. Therefore, because the information available in the DEIS is limited for the streamreaches between the diversions and mainstem gages, it is difficult to assess if effects will be negligible even if flow reductions are minimal.

Response to comment, 1st paragraph: Effects on selenium concentrations in the Lower Arkansas River, compared to both the No Action Alternative and existing conditions, are presented in Appendix F.2 of the Draft EIS. Effects on the selenium 85th percentile concentration would be predominately negligible. This was clarified in the Final EIS in Chapter 4, page 4–59.

Response to comment, 2nd paragraph: We concur that the Draft EIS text was not clear. The text was clarified to eliminate contradictory statements and to address any land-use effects on selenium.

Response to comment, 3rd paragraph: Effects on selenium concentrations, compared to both the No Action Alternative and existing conditions, are presented in Appendix F.2. The Final EIS included an assessment of all TMDLs approved before March 1, 2013 (see Appendix F.2 of the Final EIS). The text in Chapter 4, page 4–60 of the Final EIS was clarified to eliminate contradictory statements and to address any land-use effects on selenium.

Response to comment, 4th paragraph: We concur that additional clarification is needed in the text. None of the alternatives were developed specifically to divert more water from the West Slope. West Slope imports are governed and limited by Fry-Ark water rights (Div. 5 W-829-76; Div. 5 83CW352, District Court Chaffee County Civil Action No. 46130. Fry-Ark transbasin diversions are exercised only when in priority. The magnitude and timing of transbasin diversions from the headwater streams would not be significantly affected by implementation of AVC. Changes were found to be predominately negligible and are documented in Appendix D.5 in the Draft EIS. Simulated West Slope diversion data (i.e. operational data) and additional analyses on West Slope tributaries near diversion points was added to the text of Appendix D.5 in the Final EIS to support this evaluation.

Recommendations

The EPA recommends that the FEIS include additional information regarding aquatic life and wetland characterization (e.g., is the streambed in bedrock or alluvial deposit) for the stream reaches in question to better determine what level of impact may occur (e.g., minor, moderate or major) as a result of a particular diversion. By also including available operational data from the diversion points in the FEIS, this will assist in presenting a more precise description of the impact on the flow of the headwater streams, particularly during low flow periods when additional diversions may increase frequency or duration of critical low or no flow conditions. The EPA recommends the FEIS provide a range of potential flow reductions occurring at (immediately below) the diversions based on operational scenarios. In this way, the FEIS will better describe minimum and maximum impacts to these stream stretches that pro-rating will likely not capture. This information may help address potential concerns that diversions and likely operating scenarios could draw down headwater streams to an unhealthy level, even when flow reductions are minimal.

General Presentation of Effects Analyses

When evaluating effects of project alternatives, the DEIS did not present results against consistent baselines. In most cases, the No Action Alternative was evaluated against existing conditions, and the Action Alternatives were evaluated against the No Action Alternative. However, in some instances, action alternatives were compared to existing conditions. The rationale provided in the DEIS stated that this type of comparison was necessary “when relevant to quantifying or characterizing the magnitude of effects,” and gave the example of an agency’s request to evaluate effects of alternatives on aquatic life to existing conditions (DEIS p. 4-2).

Comparison of the action alternatives to existing conditions enables the public and decision-makers to clearly understand impacts (i.e. intensity of effects) of each of the alternatives as they relate to the current baseline. It can also be useful, although often less certain, to compare alternatives against a no action baseline that includes reasonably foreseeable future conditions. The EPA continues to recommend that the FEIS compare and present impacts to resources, such as water quality, against the existing conditions baseline using a consistent method to measure project impacts on these critical resources for all alternatives. It may be useful to include both baselines when illustrating the intensity of effects for the resource analyses.

Mitigation Measures for Aquatic Life and Other Resources

The EPA acknowledges that this is a complex project involving various water sources associated with meeting future water needs. There is some uncertainty related to water availability and associated reservoir operations, with climate change further complicating the issue. The DEIS identifies potential moderate adverse impacts to aquatic life in both Pueblo and Holbrook Reservoirs related to certain alternatives. The moderate effect intensity is described, in part, as effects on fish and benthic macroinvertebrates abundance, habitat, or the natural processes sustaining them would be detectable and readily apparent and sometimes out of the historical range of natural variability. For benthic macroinvertebrates, there would be changes in the number of species (DEIS p. 4-86). Although the DEIS states that the Environmental Review Team intends to monitor and coordinate with the Colorado Parks and Wildlife (CPW) to determine the level of mitigation that is warranted, these details are not included in the DEIS.

Response to comment, 1st paragraph: See previous response.

Response to comment, 2nd and 3rd paragraphs: In Chapter 4 the No Action Alternative is compared to existing conditions and the action alternatives are compared to the No Action Alternative. Because EPA and other cooperating agencies requested a direct comparison of no action to action alternatives, this information is in the appendixes. However, some comparisons of the action alternatives to existing conditions are included in the EIS rather than the appendixes when relevant to quantifying or characterizing the magnitude of effects. For example, the projected effects on aquatic life from action alternatives were compared to existing conditions at the request of Colorado Parks and Wildlife.

Response to comment, 4th paragraph: Final mitigation measures and best management practices to minimize effects are included in the Final EIS in Appendix B.5.

Comment Letter 25 (continued)

Additionally, moderate effects on surface water hydrology (defined as a measureable change to streamflow or reservoir contents greater than 10 percent) are projected in some capacity for all of the alternatives (see DEIS pp. 4-15, 4-16). The DEIS explains that the amount of water/storage to be reserved annually will be evaluated during development of a Fish and Wildlife Mitigation Plan for maintaining flows in the Arkansas River downstream from Pueblo Reservoir to meet water quality and aquatic life goals.

Mitigation Recommendations

We recommend mitigation commitments, including identification of environmental thresholds that would trigger management actions to prevent or reduce impacts to aquatic life, be discussed in the Final EIS. We suggest including more detail to further explain the current proposal that mitigation at Holbrook Reservoir will be limited to restocking aquatic species. Mitigation options such as habitat improvement in the form of increased cover and/or outlet design to minimize fish loss downstream may deserve further consideration based on the operations of the reservoir. It would be helpful if the Fish and Wildlife Mitigation Plans (to be developed between the Draft and Final EIS, see DEIS p. 5-14) are included in the Final EIS, and that plans and specifications for mitigation activities resulting from CPW coordination are also prepared and included within the Record of Decision (ROD).

Other Considerations

- There is currently a provisional Section 303(d) listing for aquatic life associated with the Fryngpan River. Affected segments may be subject to AVC diversions. The EPA recommends including any up-to-date information on this provisional listing in the Final EIS. If the impairment is formally listed, please include an impacts analysis and any associated mitigation/monitoring measures proposed to address potential project impacts in the Final EIS.
- The DEIS states in Chapter 3 Affected Environment that several natural and anthropogenic resources, including air quality and hazardous materials, were not addressed in detail in the DEIS because the effects of the project alternatives were considered minimal. The DEIS references consultant reports that were the basis of the decision not to analyze these resources; however, these reports are not readily available. The EPA recommends including these reports in the appendices to the FEIS, or providing a website link, so that agencies and the general public can easily access them.
- Finally, there were no aerial maps showing the exact location of the pipeline for the alternatives that included the Arkansas Valley Conduit. Aerial maps would be a helpful reference, particularly for those alternatives where the pipe alignment traversed the more populated areas in Pueblo.

Climate Change

In this DEIS, the BOR provided a robust project analysis of climate change effects. The DEIS describes climate change and general regional effects on climate and hydrology, and includes a quantitative analysis of how climate change could affect AVC water supply yields and future water demands. A qualitative description of climate change effects is also included for each resource. The EPA has recommended that decisionmakers involved in other water supply projects review this DEIS when considering approaches to incorporating climate change analyses in NEPA documents.

Response

Response to comment, 1st and 2nd paragraphs: See responses to Colorado Parks and Wildlife comments regarding mitigation to streamflow and aquatic life effects (Comment Letter 22).

Reclamation will complete a Fish and Wildlife Coordination Act Report, in coordination with U.S. Fish and Wildlife Service, documenting that fish and wildlife received equal consideration with other project purposes.

Final mitigation measures and best management practices are included in the Final EIS in Appendix B.5.

Responses to comments, 3rd paragraph: We concur. Up-to-date information available on Fryngpan River 303(d) impairment is on page 3-43 of the Final EIS.

Response to comment, 4th paragraph: The resource memoranda addressing these resources are posted on the project website at www.usbr.gov/avceis. In response to your suggestion, a link is in the Executive Summary and on page 3-1 in Chapter 3.

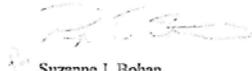
Response to comment, 5th paragraph: We concur. Aerial maps are included in the Appraisal Design Report and will be referenced in the Human Environment section. At this point the exact alignment of pipeline routes is unknown. The Appraisal Design Report and the EIS evaluated project corridors. More specific alignments within these corridors would be included in final engineering designs and would be reviewed by the Environmental Review Team. The City of Pueblo has been invited to join that team.

The EPA's Rating

Consistent with Section 309 of the CAA, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on the procedures the EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action, the EPA is rating this DEIS as Environmental Concerns – Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. The "2" rating indicates that the EPA has identified additional information, data, analyses, or discussion to fully assess and mitigate all potential impacts that we recommend for inclusion in the FEIS. Because a preferred alternative was not identified in the DEIS, we are rating the DEIS based on the six action alternatives (we do not rate the no action alternative). A full description of EPA's rating system is included as an enclosure.

We appreciate the opportunity to participate in the review of this project, and we're committed to working with you in the coming months. If we may provide further explanation of our comments during this stage of your planning process, please contact me at 303-312-6925, or your staff may contact Melanie Wasco, Lead NEPA Reviewer, at 303-312-6540.

Sincerely,



Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure: Ratings Criteria

Arkansas Valley Audubon Society

725 Frankie Lane
 Canon City, Colorado 81212
 October 30, 2012

Bureau of Reclamation
 Attn: J. Signe Snortland
 Bureau of Reclamation
 Dakotas Area Office,
 PO Box 1017, Bismarck ND 58502

REF: Draft Arkansas Valley Conduit Long-Term Excess Capacity Master Contract Environmental Impact Statement

Dear Ms. Snortland,

Please accept the following comments from the Arkansas Valley Audubon Society (AVAS), the local chapter of the National Audubon Society that covers most of the area of the Arkansas Basin in Colorado. The mission of the AVAS is to promote the conservation of nature through education, political action, and field activities with a focus on birds and other wildlife and their habitats in southern Colorado. AVAS represents approximately 450 members who enjoy and are concerned with the conservation of wildlife.

As noted in the Draft Arkansas Valley Conduit Long-Term Excess Capacity Master Contract Environmental Impact Statement (hereafter referred to as the DEIS), the impacts to species, their habitat and environmental attributes are primarily negligible in upper Arkansas River area so I will focus on our concerns in the area east of the Pueblo Reservoir.

Noted early in the DEIS is the statement that included in the importance of the Interconnect is the need for redundancy for the Pueblo Fish Hatchery in case the south outlet works at the Pueblo Reservoir shut down. (p1-23). We support providing redundancy for the Pueblo Fish Hatchery but add that there is a need for the Pueblo Fish Hatchery to be able to access its water rights from the reservoir even at times of low output. Currently they are unable to access their water rights during times of low releases due to some functional issue in opening and closing the outlet at the dam. Since the Pueblo Fish Hatchery is stated as one of the four stated needs in the DEIS for the Interconnect, it should be given some priority for assuring that it can access its water rights even during low output.

The River South Alternative is clearly the Alternative that we recommend. One of the major reasons for supporting this Alternative is that it minimizes the number of wetland acres disturbed by the proposed project. Wetlands are vital to any river system in providing their invaluable benefits of reducing flooding, retaining sediment that clogs reservoirs and can impair aquatic life and cleaning of pollutants from the water. Wetlands also provide habitat for fish, birds and other wildlife species. The State of Colorado has a goal of no net loss of wetland habitat.

The River South Alternative provides negligible to minor impacts to water quality which is important for fish, insect and bird life that use or inhabit the Arkansas River. It has a negligible impact to surface flow hydrology (except at Holbrook Reservoir, which this year went totally dry) during average years.

The new valves/gates installed on the North Outlet Works at Pueblo Reservoir (as part of the Southern Delivery System), allow for controlled low flow releases to the Arkansas River and eliminate the need to use the hatchery to manage low flows. Deliveries to the hatchery would not be affected by low releases from either outlet works because the hatchery has a separate Pueblo Reservoir outlet.

Again, important for the fish, insect and bird life that use or inhabit this river especially the fish species of special concern. Of the action Alternatives, the River South Alternative appears to have the least negative impact on the monthly Arkansas River above Pueblo streamflow. The Pueblo Reservoir and streambased aquatic life impacts are negligi with moderate impacts to aquatic life only in Holbrook Reservoir (again, this reservoir went totally dry this year so currently has no aquatic life).

Of the six action Alternatives, only the River South Alternative and the Master Contract Only Alternative have negligible on the Colorado Species of Potential Concern habitat. The River South Alternative is one of the action Alternatives that does not disrupt the use of the Pueblo Nature Center or trails. AVAS is a supporter of the Pueblo Nature Center which provides nature programs and educational activities. The trail system along the Arkansas River is used by thousands of nature enthusiasts.

We are in agreement that all Alternatives for this proposed project have negligible impacts on birds, other wildlife and especially State and Federal Threatened and Endangered species would be negligible with the exception of the roundtail horned lizard and the common kingsnake. It is our recommendation that this proposed project utilize trained observers to survey construction areas in potential habitat for these two state listed species prior to initiation of construction and that all reasonable efforts be made to avoid destroying habitat in proximity to any populations located.

Of concern to us is the loss of return flows from rotational fallowing of the 4,800 acres of irrigated land in Pueblo, Otero and Bent Counties. Wetlands and riparian vegetation, both vital to birds and other wildlife, are often supported by the water from return flows on adjacent cropland and ditches. It is vital that these loses be mitigated. Since these may be located in a several locations that may be difficult to mitigate we recommend that this project provide an adequate amount of water to supplement the water from return flows that supports the upland wetlands in the Ft Lyons State Wildlife Area adjacent to John Martin Reservoir. The Ft Lyons State Wildlife Area adjacent to John Martin Reservoir has been identified by the Arkansas Basin Roundtable as an non-consumptive priority area in the lower Arkansas River. These wetlands have been found in a study funded by the Colorado Water Conservation Board to be supported by return irrigation flows and leakage from irrigation ditches.

Thank you for the opportunity to provide comments on this proposed project.

Sincerely,

SeEtta Moss, M.S.
Conservation Chairperson
Arkansas Valley Audubon Society

We concur and suitable habitat for sensitive species would be identified by trained observers. Habitat for sensitive wildlife species would be avoided to the extent possible during final design. In addition, habitat disturbed by construction activities would be restored as soon as practicable to minimize effects.

Rotational fallowing was not assumed for fields with return flows to John Martin Reservoir or to locations downstream from that reservoir. For rotational fallowing upstream from John Martin Reservoir, the EIS assumed water deliveries would be made to the headgate and consumptive use exchanged back to Pueblo Reservoir, if possible. Meeting historical return flow obligations with direct flow rights or storage was assumed in hydrologic modeling. These hydrologic effects were clarified in the text in Chapter 4 on page 4–122 of the Final EIS.

Return flows along the Arkansas River would remain a major source of hydrologic support for wetland and riparian vegetation under the No Action Alternative and action alternatives.

Comment Letter 27

27

PETROS & WHITE LLC
ATTORNEYS AT LAW

1999 BROADWAY, SUITE 3200
DENVER, COLORADO 80202

TELEPHONE (303) 825-1980

FACSIMILE (303) 825-1983

November 30, 2012

Via U.S. Mail and Email

J. Signe Snortland (jsnortland@usbr.gov)

Reclamation Environmental Specialist

Bureau of Reclamation, Dakotas Area Office

P.O. Box 1017

Bismarck, ND 58502

Re: Draft Environmental Impact Statement for the proposed Arkansas Valley Conduit (AVC), Long-Term Excess Capacity Master Contract (Master Contract), and Outlet Works Interconnect (Interconnect)

Dear Ms. Snortland:

Our law firm serves as special counsel to Pueblo County on water rights and related land use and environmental matters. On September 30, 2012, we submitted comments at the request of the Pueblo County planning staff and the Pueblo County Attorney on the August, 2012 Draft Environmental Impact Statement (DEIS) for the three proposed federal actions referenced above. We are writing to request additional clarification on certain elements of the DEIS as they relate to the cumulative impact on Fountain Creek that will result from the Master Contract in the above-referenced federal action when combined with the repeal of the Colorado Springs Stormwater Enterprise (SWENT).

As background, Comment 8 of our September 30, 2012 letter raised issues relating to the impact of increased return flows on Fountain Creek. Specifically, the DEIS suggested that there would be a direct impact on return flows to Fountain Creek due to the Master Contract, and that there would also be a cumulative impact on Fountain Creek due to increases in return flows from Colorado Springs. We remain, however, uncertain as to the extent of the increased return flows expected to occur in Fountain Creek and the consequent impacts of those increases when combined with increased stormflows.

The Record of Decision for the Southern Delivery System (SDS), and the Final Environmental Impact Statement (FEIS) on which it was based, considered the continuation of SWENT to be a reasonably foreseeable action that would prevent increased stormwater flows to Fountain Creek. Because SWENT has been repealed, the DEIS for the Master Contract now states that SWENT is no longer a reasonably foreseeable action. The DEIS, however, does not discuss the effect that the repeal of SWENT has on Fountain Creek flows forecasted in the DEIS.

Response

The proposed actions would cause negligible to minor average monthly streamflow increases in Fountain Creek under both direct and cumulative effects simulations (see pages 4–30 and 4–36 in Chapter 4 of the Final EIS).

A peak flow assessment (flood hydrology assessment) was completed for the Draft EIS and documented in the resource memorandum Arkansas Valley Conduit Flood Hydrology and Floodplains Assessment. The results showed that the negligible results are so small that they fall within the error of the model. In response to your comment, the resource memorandum was updated to include flood hydrology in Fountain Creek using Daily Model output. The effects of AVC and Master Contract on flood hydrology in Fountain Creek would be negligible. The resource memoranda are posted on the website at www.usbr.gov/avceis.

Because the Colorado Springs Stormwater Enterprise was repealed in 2009 by the Colorado Springs City Council, the Draft AVC EIS did not consider the Stormwater Enterprise to be reasonably foreseeable (see Draft AVC EIS, Appendix B.4, Table 3, page B.4–14). Therefore, the hydrologic cumulative effect studies in the Draft AVC EIS do not include Colorado Springs Stormwater Enterprise.

Comment Letter 27 (continued)

Ms. J. Signe Snortland
November 30, 2012
Page 2 of 3

Given the foregoing, we have certain questions that we were hoping the Bureau of Reclamation would answer so that we can better understand both the physical impacts of those increased flows in Fountain Creek and the institutional mechanisms, if any, available to address them. Those questions are as follows:

1. Effect of Repeal of SWENT. What effect did the repeal of SWENT have on the calculation of flows in Fountain Creek for purposes of the Master Contract DEIS when compared to the previous flow calculations performed in connection with the SDS?
2. Peak Flow Analysis. Why does the Master Contract DEIS lack an analysis of the cumulative effects of peak flows, especially in Fountain Creek? It would seem appropriate to perform such an analysis given the cumulative increases in stormwater peak flows in Fountain Creek that will certainly occur given the Master Contract and the repeal of SWENT. By comparison, the FEIS and associated reports prepared for the SDS examined the cumulative effects of peak flows under various short-term and long-term scenarios. The SDS FEIS stated that SWENT “would require future peak flows (up to the 100-year recurrence interval) to remain at current peak flow levels following future development,” and that “because of the Stormwater Enterprise, cumulative effects future peak flows would be equal to Existing Conditions peak flows for areas within the City of Colorado Springs service area or directly downstream of the city’s service area.” SDS FEIS pp. 317, 329. As indicated above, SWENT was considered to be a reasonably foreseeable action under the SDS FEIS that would prevent increased stormwater impacts to Fountain Creek from Colorado Springs.
3. Enforcement Remedies. Please describe the enforcement mechanisms, if any, available to Reclamation under which the increased stormwater flows in Fountain Creek resulting from the repeal of SWENT will be reduced or eliminated under either the SDS ROD or the proposed action for the Master Contract. Are those enforcement actions reasonably foreseeable actions for purposes of the DEIS?
4. Discrepancies in Projected Flows. At the Fountain Creek at Pueblo gage, it appears that there is a 24 c.f.s. difference between the average existing conditions for the AVC/Master Contract DEIS (164 c.f.s.) and the SDS FEIS (188 c.f.s.). See AVC/Master Contract DEIS at Table 4-12, SDS FEIS Table 47. Please explain why there is a discrepancy in the existing conditions between the AVC/Master Contract DEIS and the SDS FEIS. Moreover, there is a 21 c.f.s. difference in the average annual streamflow cumulative effect of the SDS preferred alternative (250 c.f.s.) when compared to the annual cumulative effect of the Master Contract (271 c.f.s.). *Id.* If the existing conditions numbers are reconciled (i.e., the DEIS existing condition is brought up to 188 c.f.s.), the cumulative effects of the Master Contract rises to 295 c.f.s., and the difference between the cumulative effect of the SDS preferred alternative and the Master Contract is 45 c.f.s. As the Master Contract is the only action under the DEIS that will have an additional impact on Fountain Creek, please also explain the reason for the 45 c.f.s. difference in the cumulative effect of the SDS preferred alternative when compared to the Master Contract.

Response

Response to Comments 1, 2 and 3: See previous response.

Response to Comment 4: Existing conditions streamflow differ between the two studies because existing conditions refer to current river operations. Existing conditions for the SDS EIS was defined as 2006, whereas existing conditions for AVC EIS was 2010. The variables used to construct an existing conditions simulation primarily consist of variable municipal demands, the availability and size of existing and proposed infrastructure, use of Excess Capacity storage accounts in Pueblo Reservoir, the status and use of change cases, and the status and implementation of certain flow management programs. These variables differ between the two studies. Appendix D.4 in the Draft EIS describes the existing condition settings for the AVC EIS. The study period is also different between studies, which would cause differences in annual averages. The SDS study ended in 2004, but the AVC study period was extended to 2009. The future simulations between the two studies cannot be compared because of differences in future settings and assumptions (e.g. SDS demand was studied at 2046, AVC demand was studied at 2070).

Comment Letter 27 (continued)

Ms. J. Signe Snortland
November 30, 2012
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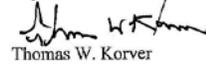
5. Additional Environmental Studies. Does the Bureau of Reclamation intend to reopen the SDS Record of Decision or FEIS to consider the environmental impact resulting from the repeal of SWENT? If the Bureau of Reclamation chooses not to do so, does the Bureau intend to prepare a Supplemental Information Report to consider the environmental impact resulting from the repeal of SWENT, much like the Bureau recently prepared in connection with the Windy Gap Firing FEIS?

Responses to the foregoing questions will be greatly appreciated as they will provide additional clarity on the cumulative environmental impacts to Fountain Creek in Pueblo County resulting from the Master Contract and SDS. We thank you for the opportunity to pose these questions and ask that you contact us if you need any clarifications in order to answer them.

Sincerely,



Raymond L. Petros, Jr.



Thomas W. Korver

Response

Response to Comment 5: This comment is outside the scope of the AVC Draft EIS.

