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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 and Comanche South most appropriately minimize the impacts of concern 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.

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."

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

Month	Pueblo	DEIS	Difference
	Permit	"Existing	
	(cfs)	Conditions"	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

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	Discharge Flow (cfs)	Percent	AVC-	Discharge Flow (cfs)	Percent
	Chronic Low Flow (cfs)			Impacted Chronic Low Flow (cfs)		
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.

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.

TABLE I PHYSICAL AND BIOLOGICAL PARAMETERS								
Parameter	Recreational			Aquatic Life			Agriculture	Domestic Water Supply
	CLASS E (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⁾⁽²⁾	3.0(A)	3.0(A)	3.0(A)	6.0 ⁽¹⁾ (G) 7.0(spawning)	5.0 ⁽²⁾ (G)	5.0(A)	3.0(A)	3.0(A)
pH (Std Units) ⁽²⁾	6.5-9.0 (Bm)	6.5-9.0 (Bm)	6.5-9.0 (Bm)	6.5-9.0(A)	6.5-9.0(A)	6.5-9.0(A)		5.0-9.0(A)
Suspended Solids ⁽¹⁾								
Temperature (°C) ⁽²⁾				Rivers & Streams: Tier I ¹ : June-Sept = 17.0 (ch), 21.7 (ac) Oct-May = 5.0 (ch), 13.0 (ac) Tier II ¹ : Apr-Oct = 16.3 (ch), 23.9 (ac) Nov-Mar = 9.0 (ch), 13.0 (ac) Lakes & Res: Apr-Dec = 17.0 (ch), 21.2 (ac) Jan-Mar = 9.0 (ch), 13.0 (ac) Large Lakes & Res: ¹ Apr-Dec = 16.3 (ch), 23.8 (ac) Jan-Mar = 9.0 (ch), 13.0 (ac)	Rivers & Streams: Tier I ¹ : Mar-Nov = 24.2 (ch), 29.0 (ac) Dec-Feb = 12.1 (ch), 14.5 (ac) Tier II ¹ : Mar-Nov = 27.5 (ch), 28.6 (ac) Dec-Feb = 13.8 (ch), 14.3 (ac) Tier III ¹ : Mar-Nov = 28.7 (ch), 31.8 (ac) Dec-Feb = 14.3 (ch), 15.9 (ac) Lakes & Res: Apr-Dec = 26.3 (ch), 29.5 (ac) Jan-Mar = 13.2 (ch), 14.6 (ac)	Same as Class 1		

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

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

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.

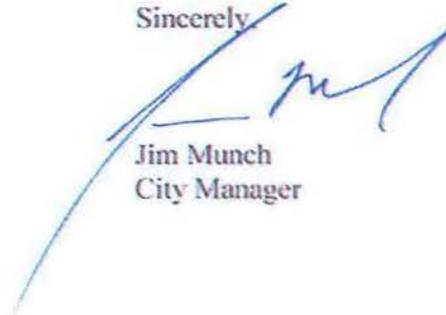
All alternatives but the River South and Master Contract Only alternatives withdraw about 30 cfs from river before the river channel passes through the City. DEIS, Table 4-8, page 4-20. With any of these alternatives, methods must be implemented to offset or eliminate the adverse effect of decreased 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, additional 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 alternatives most appropriately minimize 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 for the AVC. Please feel free to contact me with any questions you may have.

Sincerely,



Jim Munch
City Manager

cc: Pueblo City Council
Department of Law