



CITY OF FLORENCE

FLORENCE MUNICIPAL CENTER
600 West 3rd Street
Florence, Colorado 81226
(719) 784-4848 Fax (719) 784-0228
E-mail: dwilli@florencecolorado.org
www.florenceco.govoffice2.com

February 7, 2008

U.S. Bureau of Reclamation
Eastern Colo Area Office
Attn: Kara Lamb
11056 W. County Road 18E
Loveland, CO 80537-9711

Re: Draft SDS EIS Hydrologic Model Documentation Report Comments

Dear Ms. Lamb:

By way of introduction, my name is Tom Piltingsrud, and I am the City Manager for the City of Florence. The purpose of this letter is to provide some comments regarding the Hydrologic Model Documentation Report as it concerns the City of Florence. I am forwarding these comments separately as I have not yet had the opportunity to review the other sections of the Draft EIS report. Should my review of those other sections require that I comment I will forward those comments separately.

In reviewing Table 21, "Major Direct Flow and Storage Water Rights on Arkansas River Basin in Study Area", I discovered a couple of potential issues.

The priority date for the Minnequa Ditch reads "12/31/1863". Later in the study there are references to "Minnequa/Union". In fact, these are two separate ditches. The Minnequa Ditch conveys the Union Ditch to its head gate west of Florence, where 14 cfs of the Union Ditch meanders through an agricultural area west of Florence, then the City of Florence, then through an agricultural area called "East Florence", and eventually reenters the Arkansas River west of Highway 115. The remainder of the Union Ditch continues down the Minnequa Canal. The Union Ditch has a priority date of November 30, 1861 (48cfs). If the Minnequa Ditch referred to in table 24, line 5, is in fact the Union Ditch, then the priority date should be changed to reflect 11/30/1861.

While not an expert on the Minnequa Canal, I believe they have five or six separate ditch rights, three of them very senior. The table on the second page illustrates what I understand are the Minnequa Ditch rights:

OFFICIAL FILE COPY RECLAMATION		
FEB 11 2008		
Date _____		
Code	Surname	Date
(Gould) 1300		
Copy to	1002	

Official File Copy	
File Code	ENV-6.00
Project	382
Folder I.D.	
Control No.	

SDS

Priority Date	Ditch Name	cfs
07/22/1861	Arkansas Valley Ditch	2 cfs
07/02/1863	Arkansas Valley Ditch	48 cfs
07/02/1864	Arkansas Valley Ditch	20 cfs
12/19/1881	Oak Creek Mining & Irrig.	4.7 cfs
12/13/1890	Bragg	1.64 cfs
92/24/1933	Minnequa Canal	150 cfs

The second page of Table 21 references the "Minnequa Canal" with a priority date of 02/24/1933 and attributes 150 cfs. Obviously with such a junior right this 1933 right is almost never in priority.

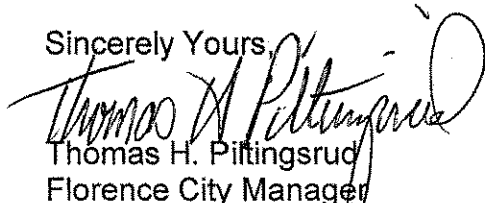
Table 21 correctly noted that the five senior rights listed in Table 21, including the "Minnequa Ditch (48 cfs) are in priority 100% of the time. Clearly the Union Ditch, with a priority date of November 30, 1861 (if that is the "Minnequa Ditch" reflected in Table 21), would be in priority 100% of the time.

However the Arkansas Valley Ditch rights owned by Rocky Mountain Steel (formally CF&I), could also be in the 100% priority column. Perhaps the "Minnequa Ditch" reflected in Table 21 is the 07/02/1863 right of 48 cfs owned by Rocky Mountain Steel. I would suggest you contact Pete Tandberg, Maintenance and Engineering Manager, 719-561-6334, for details regarding the Minnequa and Union Ditch rights. (Tandberg is also the President of the Union Ditch Company.)

What I am attempting to point out--given the above--is the amount of water diverted by the Minnequa Canal, which diverts west of Florence and returns the water at the steel mill in Pueblo, may not be reflected in Table 21. Table 21's caveat references only amounts of 50 cfs or greater are included in the study, or those "important to analysis" (presumably very senior rights).

If this is the case, then the model developed from this data may be flawed because the Union Ditch, and the Arkansas Valley Ditch rights owned by Rocky Mountain Steel and conveyed in the Minnequa Canal, might reflect more senior priority water being diverted than Table 21 reflects. This "shortfall", if it exists in your model, could have an affect on minimum flows, and exchanges postulated by the study.

Sincerely Yours



Thomas H. Piltingsrud
 Florence City Manager
 719-784-4848 ext. 222 pilt@florencolorado.org

Encl: Page 52, 4.3.2 Diversion Data (including Table 21), Hydrologic Model Documentation Report

cc: Council
 Fremont County Board of Commissioners

Creek are well defined throughout the study period. For purposes of the SDS EIS analysis, streamflows in Jimmy Camp Creek and Williams Creek require simulation. Streamflow data are available for Jimmy Camp Creek at its mouth in Fountain. However, streamflow data are not available for Williams Creek or other locations in Jimmy Camp Creek. Disaggregation and estimation of data needed for the model in these creeks is discussed later in this section.

Table 20. Gaging Stations in Daily Model – Fountain Creek and Monument Creek

Station ID	Station Name	Period-of-Record
07103700	Fountain Creek Near Colorado Springs, Co.	4/58-Present
07103747	Monument Creek At Palmer Lake, Co.	2/77-1/90
07103780	Monument C Ab N.Gate Blvd At USAF Academy, Co.	4/85-Present
07103790	Monument Cr Bel Sewage Tr Plant At USAF Academy,	4/00-11/00, 4/01-11/01, 4/02-Present
07103800	West Monument Creek At Air Force Academy, Co.	5/70-Present
07103900	West Monument Creek Near Pikeview, Co.	10/57-4/70
07103940	Monument Cr At South Boundary USAF Academy, Co	3/00-Present
07103970	Monument Cr Abv Woodmen Rd At Colorado Springs	10/96-Present
07103990	Cottonwood Creek At Mouth, At Pikeview, Co.	12/85-Present
07104000	Monument Creek At Pikeview	1/76-Present
07105500	Fountain Creek At Colorado Springs	1/76-Present
07105530	Fountain Cr Bl Janiteil Rd Bl Colo. Springs, Co.	10/89-Present
07105800	Fountain Creek At Security	10/64-Present
07105900	Jimmy Camp Creek At Fountain, Co	1/76-Present
07106000	Fountain Creek Near Fountain	10/49-9/54, 7/85-Present
07106300	Fountain Creek Near Piñon	4/73-Present
07106500	Fountain Creek At Pueblo	10/49-9/65, 2/71-Present

Notes:

- (1) Source of data is CDWR.

4.3.2. Diversion Data

Demands within MODSIM are populated with either historical diversion data or estimated future diversion data. For calibration, the Daily Model uses historical diversion data for all diversions. For existing and future scenario simulations, the model uses historical diversion data for most agricultural diversions and smaller municipal diversions, and existing and estimated future diversions for the larger municipal diversions (existing and future diversion data are discussed in Sections 8 and 9). In addition, calculation of historical ungaged gains and losses use historical demands. All diversion data are available on a daily time-step. Monthly diversion data within the study period for the major diversions are contained in Appendix B, while daily diversion data are available electronically.

The primary source of diversion data was the Colorado Division of Water Resources' Hydrobase Database (CDWR 2005). The database contains all recorded diversions within the Arkansas River Basin. The database sorts diversions based upon state structure number and water source (direct flow right, storage and transmountain), and is available as average daily diversion.

A limited amount of historical diversion data were also obtained from Reclamation, either directly from the Great Plains Region's Hydromet data system (Reclamation 2003b) and/or the Pueblo Field Office. These data were primarily limited to those facilities in which Reclamation has direct influence on operation of the structure, such as the Twin Lakes pipeline and the Fountain Valley Conduit.

Historical diversion data for the Arkansas River is shown in Table 21. Although each of the diversions listed in the table is shown as a node in the Daily Model, only a portion of these diversions are explicitly modeled (that is, the return flows from these diversions are dynamically calculated by the model).

Table 21. Simulated Diversion Structures – Arkansas River

Structure ID	Structure Name	Period-of-Record
11-529	Otero Pump Station Intake	5/70-10/71, 1/77-12/77, 1/79-12/80
12-504	South Cañon Ditch	4/11-10/11, 1/12-Present
12-505	Cañon City Hydraulic Ditch	4/11-Present
12-503	Cañon City Water Works	6/1896-10/1896, 4/11-10/13, 11/24-10/88, 11/89-Present
12-3397	Oil Creek Ditch	(2)
12-510	Fremont County Ditch	4/11-Present
12-511	Minnequa/Union Ditch	9/23-10/23, 10/39, 11/43-Present
14-533	Bessemer Ditch	10/65-Present
14-663	Pueblo West Diversions	2/80-10/85, 11/98-Present
10-859	Fountain Valley Authority Diversions	11/94-Present (3)
(5)	Pueblo Fish Hatchery Releases	1/90-Present
14-535	West Pueblo Ditch	1/11-10/19, 11/23-10/95
14-534	Hamp Bell Ditch	5/13-9/13, 4/66-10/86
14-618	Comanche Power Plant Diversion	11/75-Present
14-589	PBWW Northside Diversion	5/15-10/19, 11/23-10/73, 11/75-5/81, 11/86-9/90, 11/97-10/2002
14-590	PBWW Southside Diversion	5/15-10/16, 11/17-10/19, 11/23-10/86
14-536	Riverside Dairy Ditch	11/65-10/99, 11/01-Present
14-537	Booth Orchard	5/15-10/15, 4/18-10/19, 11/23-10/69, 3/71-10/71
14-539	Excelsior Ditch	5/11-10/16, 6/18-10/19, 4/24-8/88, 11/98- Present
14-538	Collier Ditch	5/11-7/12, 6/32-8/33, 5/37-6/39, 4/41-7/44, 5/47-6/91, 4/00-Present
14-540 (4)	Colorado Canal	1/11-9/19, 11/23-Present
14-542 (4)	Rocky Ford Highline Canal	1/11-10/19, 11/23- Present
14-541 (4)	Oxford Ditch	1/11-10/19, 11/23- Present
14-639	PBWW Pueblo Dam Outlet	7/02-Present
14-645	St. Charles Water District Pump Station	1/80-10-97
14-713	Southern Colorado Power (Aquila)	4/97-10-97, 11/03-Present
17-557	Otero Ditch	5/11-9/18, 5/20-Present
17-552	Catlin Canal	11/10- Present
17-554	Holbrook Canal	12/10-10/18, 5/20- Present
17-558	Rocky Ford Canal	11/10-10/18, 5/20-Present
17-648	Fort Lyon Storage Canal	1/13-8/16, 6/20-3/39, 5/41-8/65, 11/69- Present
17-553	Fort Lyon Canal	11/10-Present
17-556	Consolidated Ditch	11/10-10/18, 5/20-Present
17-652	Las Animas Town Ditch	11/10-11/71

Notes:

- (1) Unless otherwise noted, source of data is Division 2 Engineer database.
- (2) No data available.
- (3) Data from Reclamation.
- (4) Data since 1992 recorded in Division 17
- (5) No structure number.

Historical diversion data for Fountain Creek and Monument Creek are shown in Table 22. Diversions on Fountain Creek are typically much smaller than those on the Arkansas River. However, many of the smaller diversions on Fountain Creek were included so that the model could define in more detail the SDS EIS affected reaches within Fountain Creek. All of the diversions shown in the table were included as nodes in the model. However, none of the diversions in Fountain Creek are explicitly modeled.

Table 22. Simulated Diversion Structures – Fountain Creek

Structure ID	Structure Name	Period-of-Record
10-883	33 rd Street Pump Station	89-Present (Data prior to 1989 estimated in previous studies, MW 1998)
10-736	FMIC Diversion	11/50-Present
10-567	Stubbs and Miller Ditch	4/22-10/28, 4/30-8/41, 11/56-5/90, 9/03-Present
10-747	Chilcotte Ditch	2/50-Present
10-596	Crabb Ditch	4/22-9/28, 4/30-8/51, 1/53-10/58, 1/60-10/90
10-857	Lock Ditch	6/86-8/86, 4/91-9/91
10-857	Lock Ditch No 2	6/86-8/86, 4/91-9/91
10-583	Liston and Love Ditch	4/22-8/55, 1/58-9/89
10-577	Owen and Hall Ditch	5/22-10/54, 3/57-Present
10-704	Reed Ditch No 2	3/23-9/27, 4/29-8/31
10-568	Talcott & Cotton Ditch	4/22-9/55, 5/57-Present
10-600	Dr. Rogers Ditch	4/22-4/52, 2/54-7/54, 12/59-2/77, 5/87-Present
10-806	Jackson and Burke Ditch	7/20, 3/22-10/29
10-605	Burke Ditch	5/22-Present
10-761	Toof & Harmon Ditch	11/64-7/67, 4/69-6/71, 11/76-10/80, 3/83-12/87, 3/93-Present
10-764	Young and Callaway Ditch	11/72-10/73
10-763	Wood Valley Ditch	3/65-Present
10-751	Hobson Ditch No 2	4/66-7/67, 11/76-9/78

Notes:

- (1) Source of data is Division 2 Engineer database.

In addition to physical diversions on the river, historical exchange accounting is also required. Colorado Springs and the City of Aurora made a majority of historical exchanges, and historical exchange data were available from these entities. Additional exchange data, where required for any remaining historical exchanges on the river, were obtained from the Division Engineer's office.

Future municipal diversion data were obtained for the larger municipal diversions within the basin. This included data for Colorado Springs, the PBWW, the City of Fountain, and Pueblo West. For many of the smaller diversions, especially those that are at least partially dependent upon Fry-Ark deliveries, estimates of future Fry-Ark demands were made (see Section 4 of this document). Estimates of future diversion data are provided in later sections of the documentation.

4.3.3. Historical Storage Data

Historical storage data were primarily required for historical gain/loss calculations and model calibration. Seven existing reservoirs and their associated accounts are explicitly simulated, while one reservoir (Holbrook Reservoir) is partially explicit and partially implicitly simulated. These reservoirs are shown in Table 23. More detailed information on these reservoirs is contained in Section 5, while historical data are presented in Appendix B.

Turquoise Reservoir, Twin Lakes, and Pueblo Reservoir are owned and operated by Reclamation. Historical daily contents for these reservoirs was available through the Hydromet website (Reclamation 2003b). More detailed reservoir account information was supplied by Reclamation's Pueblo Field Office from historical data. Clear Creek Reservoir is owned and operated by the PBWW, which provided historical reservoir contents since 1997 (Ward, 2004). Historical storage data for Lake Meredith and Lake Henry were obtained from the Colorado Canal Company (Ringle 2004).

