

ArkDSS Memorandum Final

To: Bill Tyner and Kelley Thompson, Colorado Division of Water Resources
From: Wilson Water Group
Subject: Task 2.1 – Water Commissioner Interviews
Notes from Water District 14 Meeting
Date: February 2019

Introduction

This memorandum provides notes from the September 7, 2017 meeting with the Water District 14 Water Commissioner. Water District 14 includes the mainstem Arkansas River from Portland to Fowler and smaller tributaries not included in other Water Districts. Meetings were held with Water Commissioners in each Water District in the ArkDSS study area. The objectives of these meetings were to 1) develop an initial basin understanding; 2) determine diversion and reservoir structures that should be included in future detailed modeling efforts, and 3) determine which reservoirs and diversions warrant more detailed investigation and technical documentation. These objectives support Task 3 Consumptive Use Analysis and Task 4 Surface Water Modeling. Information in this memorandum is believed to be accurate for water planning and modeling purposes; however this information should not be relied upon in any legal proceeding.

Approach

In preparation for the meeting, Water District 14 data were compiled and reviewed using the following procedure outlined in the ArkDSS Scope of Work:

1. Review availability of diversion, reservoir storage, and streamflow data.
2. Review historical call data and identify how it may vary from current call reporting standards.
3. Identify net absolute water rights for structures in each water district. Review the irrigated lands master parcel set to identify ditches with water rights and/or diversions records for which irrigated areas have not been identified.
4. Develop an initial list of key structures and structures with acreage and water rights, but no diversion records to understand areas without records and how to estimate their use.

Maps were also developed displaying reservoirs, diversion headgate locations, and irrigated acreage of the Water District to facilitate the discussions.

The interview with the Water Commissioner was intended to determine structures that should be considered key based on seniority, water administration, or basin operations. Because much of the irrigated acreage in the Water District 14 had inaccurate ditch assignments, the interview

also served to correct irrigated parcels and ditch assignments required for modeling purposes. Prior to the meeting, a brief description of the purpose and goals of the interview was provided to the Water Commissioner. The following is a summary of the meeting agenda:

1. Review straight-line diagrams for accuracy
2. Develop a list of major projects, reservoirs, and ditches in the water district, including names of knowledgeable contact people
3. Gather information on dry-up points in the river, calling rights, augmentation plans, and administration specific to the water district
4. Gather general information on the preliminary list of irrigation diversions selected to include in future detailed modeling efforts (key structures), and solicit input on their final inclusion
5. Develop information on reservoirs, such as owner entities, ditches that get reservoir deliveries, assigned delivery losses, etc.
6. Correct irrigated acreage information

Meeting Attendance

The meeting was held in Pueblo. The following people attended the meeting:

Bill Tyner, Assistant Division Engineer (Surface Water Operations)

John Van Oort, River Operations Coordinator

Kelley Thompson, DWR, Lead Modeler

Steve Stratman, District 14 and 15 Water Commissioner

Doug Hollister, Northern Region Lead Water Commissioner

Erin Wilson, Wilson Water Group

Katie Birch, Wilson Water Group

Transbasin Diversions

Transmountain water is delivered to Water District 14 from Clear Creek, Turquoise and Twin Lakes Reservoirs and stored in Pueblo Reservoir or delivered directly to Water District 14 or downstream users. Larkspur Ditch water has also been historically stored in Pueblo Reservoir prior to use downstream.

Compacts and Agreements Affecting District 14 Administration

Water District 14 is subject to conditions and stipulations set forth in the Arkansas River Compact between Colorado and Kansas; however this does not typically affect administration in the Water District 14 tributaries.

Stream Gages

There are eight active streamflow gages in Water District 14. In addition, there are ten historical gages that may be used during model development. The gages, station ID, and comments regarding the use or quality of the gage are summarized below.

Gage ID	Gage Name	Period of Record	Comment
07116000	Huerfano River bl Huerfano Valley Dam near Undercliffe	1939-1967 2000-2017	
ARKNEPC2	Arkansas River near Nepesta	2000-2000	
SALTMOCO	Salt Creek near Mouth below Pueblo	2008-2017	
07099200	Arkansas River near Portland	1964-1974	
07099500	Arkansas River near Pueblo	1894-1975	
07099970	Arkansas River at Moffat Street at Pueblo	1988-2017	
STCHARCO	St. Charles River at Vineland	1979-2017	Used to administer lower St. Charles diversions; these are juniors rights that are only in priority when flows are above average at this gage
07109000	St. Charles River at Mouth near Pueblo'	1922-1925	
07109500	Arkansas River near Avondale	1939-2017	
07110000	Sixmile Creek near Avondale	1941-1946	Note that a Bessemer Ditch augmentation station impacts flows on Sixmile Creek for the past 15-20 years.
07110500	Chico Creek near North Avondale	1941-1946	
07116500	Huerfano River near Boone	1980-2017	
07117000	Arkansas River near Nepesta	1935-2017	Note the inter-relationship with Oxford Farmers Ditch in reviewing historical records due to change in gage location during historical period. See ARKNECCO.
07117500	Arkansas River at Nepesta	1914-1936	
07117600	Chicosa Creek near Fowler	1968-1974	
07110400	Chico Creek near Pueblo Chemical Depot	1997-1999	
ARKNECCO	Arkansas River at Nepesta Road Bridge near Nepesta	2000-2015	
07099973	Arkansas River Tributary above Highway 227 at Pueblo	2004-2017	

Instream Flow Reaches

There are no instream flow rights in District 14.

General Administration

- The current Water Commissioner, Steve Stratman, has managed Water Districts 14 and 15 since 2016.
- Many IDs in Water District 14 have records kept in District 17 but have District 14 IDs so they can place calls. Historical diversion records and acreage are typically kept in District

17, but some records may exist in District 14. These ditches include the Colorado Canal, Oxford Farmers Canal, and Rocky Ford Highline.

- The Water Commissioner takes the lead in managing water shortages; he will notify ditches when they are in and out of priority to divert based on gage data, however the mainstem call is set by the Water District 17 Water Commissioner.
- Ditch users typically open and close their own headgates. On some occasions, the Water Commissioner will adjust headgates and shut off junior users, but typically out-of-priority calls are taken care of by phone. The Water Commissioner is in contact with users in this District every couple of weeks. They may contact the Water Commissioner if they think they are in-priority, and he will make a determination.
- Diversion data are generally recorded. Some ditches have continuous recorders and diversions are continuously reported through telemetry; some diversions have continuous recorders that are routinely downloaded, and some diversions are entered from flume staff readings. User-supplied data are provided annually and in some cases monthly.
- The primary crops are alfalfa/hay grazer/grass with some corn, pumpkins, chili peppers and other vegetables. Growing season generally begins in late April or early May, however irrigation begins in mid-March and runs through mid-November.
- The mainstem ditches are included in the H-I Model; it is appropriate to use the ditch efficiencies included in the model.
- Augmentation plans in Water District 14 are often tied to a River Reach ID. Return flow and depletion replacement obligations are tied to particular reaches.
- Calls from Water District 14 upstream on the Huerfano River do not affect Reed decrees on the Huerfano and Cucharas Rivers in Water Districts 16 and 69; however, they can call out supplemental adjudications under the Killian and Atwood decrees in those Water Districts.

The following provides a normal year river call sequence:

Normal Year River Call Sequence

Year-round	The mainstem call is controlled by the call in Water District 17 (see Water District 17 Memo for more information).
Winter November – Mid April	Welton Ditch (1400661) is typically the calling right on the lower Huerfano River.
Runoff April – May	The mainstem calls typically control diversions on the tributaries.
Irrigation season July – November	The mainstem call typically controls but that can vary depending on the flows. See Water District 17 Memo. In dry years, Rocky Ford Highline Canal calls.

Where to find more information:

- Additional information on historical calls is presented in the ArkDSS Task 2.9Historical Calls memorandum.

Municipal Use

Pueblo

The Pueblo Board of Water Works (Pueblo Water) diverts its municipal supply through the following ditches and reservoir intakes:

- Pueblo Water Dam Outlet (1400639)
- Pueblo Water Northside Intake (1400589)
- Pueblo Water Southside Intake (1400590)
- West Pueblo Ditch (1400535)

Water supply sources include direct diversion rights, Twin Lakes Reservoir and Canal Company shares, Bessemer Ditch shares, Colorado Canal Company/Lake Meredith/Lake Henry shares, Fry-Ark Project allocations, and Clear Creek Reservoir storage.

Pueblo West

Pueblo West receives its water from the Pueblo West Metro System (1400663) and non-tributary wells. They use stored water from Pueblo Reservoir directly through a contract exchange for Twin Lakes Reservoir water with Aurora Water and Colorado Spring Utilities. They also have reusable Twin Lakes Reservoir and Canal Company shares. In addition, Pueblo West receives water from the Fry-Ark Project. Pueblo West also could receive a portion of their water supply from the Hill Ranch water rights in Water District 11, however this has not yet occurred due to Chaffee County 1041 regulations that require the historical ditch lands to be successfully revegetated prior to conversion to municipal use.

Avondale

The City of Avondale's municipal supply comes from augmented alluvial wells, non-tributary wells, Bessemer Ditch shares, and Fry-Ark Project water.

St Charles Mesa Water District

St Charles Mesa Water District (SCMWD) serves water users located within the area of the confluence of the St. Charles and Arkansas Rivers. The District's water sources are Bessemer Ditch Shares and Water District 11 Cottonwood Irrigation Shares (1100936 and 1100648) via Bessemer Ditch and Water District 15 Zoeller Ditch (1500527) shares via transfer to Keller Pump (1500710).The District also derives a portion of their water supply from Fry-Ark Project water allocations. Water is delivered through the Bessemer Irrigation Ditch Company canal from March 15 to November 15. Water is stored in Raw Water Reservoirs #1 and #2, with capacities of 90 acre-feet and 1,800 acre-feet, to supply water during winter months and during drought conditions. They also use wells and can augment out-of-priority depletions with Bessemer consumptive use credits. Diversion supplies include:

- SCMWD Pump Station (1400666)
- SCMWD PUMP STATION NO 3 (1400714)

- SCMWD PUMP STATION NO 4(1400712)

Where to find more information:

- Additional information on Pueblo Water operations is included in the ArkDSS Pueblo Water Operations memorandum.
- Additional information on Pueblo West water use is included in the ArkDSS Pueblo West Metropolitan District Operations memorandum.

Reservoir Specific Information

Lake Henry(1403524 and 1703524) and Lake Meredith (1403525 and 1703525)

The Colorado Canal Company operated these two reservoirs in conjunction. Both reservoirs are off-channel and filled by Colorado Canal; diversion records are kept in Water District 17. Lake Henry has 12,465 acre-feet of total capacity with a 1,550 acre-feet dead pool. Lake Meredith has 56,413 acre-feet of total capacity with a 15,000 acre-feet dead pool. These reservoirs can be used to store Winter Water Storage Program (WWSP) water. Lake Henry releases directly to irrigation or for storage in Lake Meredith. Lake Meredith releases for Colorado Canal irrigation via exchange; directly to Holbrook Canal for irrigation or storage in Dye or Holbrook Reservoirs; to the river for re-diversion at the Fort Lyon Storage Canal for irrigation or storage in Horse Creek or Adobe Creek Reservoirs; or to the river for exchange with several ditches and for maintenance of return flow obligations pursuant to the Colorado Canal change decrees.

Pueblo Reservoir

Pueblo Reservoir is an on-channel reservoir on the Arkansas River whose primary purpose is storage of Fryingpan-Arkansas Project water and flood control. The reservoir is operated and maintained by the U.S. Bureau of Reclamation; DWR works closely with Reclamation and directs Reclamation to release water from specific accounts. Reclamation takes primary responsibility for tracking reservoir account information and DWR reviews this accounting. Requests for releases are sent through DWR accounting and DWR tracks the inflow and releases. Reclamation will provide users with their accounting and will accounts for reservoir spills.

Each user relying on Pueblo storage will have one or more of the following reservoir accounts:

1. Winter Water account: allocated based on direct diversion decrees
2. Winter Water Carryover account: winter water not released can be carried over if capacity is available
3. Fryingpan-Arkansas Project Water account: allocated annually in May depending on entity's contracted amount and water availability; Project Water is "first-priority" storage water
4. Project Water Carryover account :water not used during the allocation year can be carried over if capacity is available
5. "If and When" or "Excess Capacity" account: accounts that are used for contract storage and exchanges if capacity is available, could be long term or "not" long term

Any of these accounts can be classified as agricultural or municipal use, depending on the user.

Pueblo Reservoir can store native Arkansas River water or transbasin water from several sources, including Project transbasin water. Transbasin water is accounted for separately in each user accounts. Reclamation reconciles the accounts and will notify DWR if accounts reach their full share. A majority of Project Water is typically is allocated at the May Board Meeting of the Southeastern Colorado Water Conservancy District (SECWCD), the entity responsible for management of the Fryingpan-Arkansas Project. The allocations of Project water are controlled by the 80/20 Rule which requires that 80 percent of the allocation be used by November while the remaining 20 percent may be used beyond November until the next allocation. SECWCD may allocate additional Project water in July if more water becomes available and may provide exemption from the 80/20 Rule as conditions warrant.

DWR assesses transit loss for water delivered from Pueblo Reservoir. DWR also tracks native water inflows and determines when water needs to be bypassed to senior water users or can be stored in Pueblo Reservoir. If accounting indicates a gain or loss of native water not in priority to store, the operations team will adjust to zero-out “administration” water each day.

Release requests are made through the Division 2 dashboard www.cdwrdiv2.us, which automatically sends the requests to Phil Reynolds. He then calculates transit loss and provides release request information to Reclamation.

Chicosa Reservoir No. 5 (aka Nepesta Reservoir No. 5 - 1403809) and Dotson Reservoir (1403849)

Chicosa Reservoir No. 5 is decreed for a total of 2,493 acre-feet under two storage rights. It is filled via Farmers Nepesta Ditch (1400653) and used for irrigation. Reservoir contents are not measured. Dotson Reservoir is decreed for 9,031 acre-feet under three storage rights. Because of storage restrictions dating from 1995, it was breached in 2015.

Huerfano Valley Reservoir (1403821)

Huerfano Valley Reservoir is decreed for a total of 2,016 acre-feet under a Killian Decree water right for irrigation purposes. It is filled via Huerfano Valley Ditch (1400657). Minimal storage and release records exist.

Where to find more information:

- Additional information on Fry-Ark Project and operations and transmountain deliveries in the upper Arkansas River basin is included in the ArkDSS Fryingpan-Arkansas Facilities and Related Operations memorandum.
- Additional information on Lake Henry and Lake Meredith operations is included in the AkrDSS Colorado Canal Operations memorandum.

Tributary Specific Information

The District can generally be divided into four main sections for discussion purposes:

- Upper District 14 - Above St Charles Creek
- Lower District 14 - Below St Charles Creek
- Northern Tributaries
 - Turkey Creek
 - Chico Creek
 - Boone Creek
- Southern Tributaries
 - Sixmile Creek
 - Huerfano River
 - St. Charles River
 - Chicosa Creek

Upper District

- Hobson Ditch (1400573): Only historical diversion above Pueblo Reservoir. The water rights were transferred to Pueblo Water and irrigation ceased in 1991. The water rights are diverted through 1400590, 1400589 and 1400639; Pueblo Water Pueblo Reservoir intake structures.
- Bessemer Ditch (1400533): Diverts directly from Pueblo Reservoir for irrigation and municipal use by St. Charles Mesa Water District; diversions are gaged. There have been several transfers to and transfers from the ditch.
 - The Elmwood golf course is primarily irrigated by the Bessemer Ditch; although they do have an irrigation meter with Pueblo Water and can receive potable city water as a backup source. City Park is primarily irrigated with potable water from Pueblo Water, although it may be possible to direct ditch water to the park.
- Hamp Bell Ditch (1400534): Used as a source of replacement for “Chain of lakes” augmentation plan for augmentation of evaporation and storage. Available to Pueblo Water to be used for municipal or augmentation use under temporary leases (e.g. Transit Mix East Gravel Pit SWSP).
- Several golf courses in Pueblo may be irrigated from Bessemer shares.
- West Pueblo Ditch (1400535): Pueblo Water via municipal outlet or storage in Pueblo Reservoir, also used for augmentation.
- Pueblo Water Pueblo-Dam Outlet (1400639): primary municipal intake and alternate point of diversion for Booth Orchard Ditch, Warrant Barnes & Baxter Ditch, West Pueblo Ditch and Hobson Ditch.
- Pueblo West Metro System (1400663): non-tributary wells plus Twin Lakes water (reuse plan associated with ID) and water from an “If & When” account used to store water from the Hill Ranch water rights from Water District 11.
- Comanche Pump Station (1400618): Cooling water for Coal and Natural Gas power plant. Xcel Energy owns Comanche Power Plant, which is physically located in the St Charles River basin. Return flow of cooling water effluent (with an equalization pond) to the St. Charles River is gaged and records are maintained by Pueblo Water. Transbasin water can be provided from Pueblo Water, measured at the Comanche return station, and exchanged back up to Pueblo. Native water provided to Comanche by Pueblo Water

is for one-time use. Pueblo Water runs some of their “if and when” water to Comanche controlled by capacity limitations.

- Pueblo Water Northside Intake (1400589): Municipal intake and alternate point of diversion for Booth Orchard Ditch, Warrant Barnes & Baxter Ditch, West Pueblo Ditch, Hobson Ditch, and Rocky Ford Ditch as well as for exchanges from the Pueblo Water wastewater treatment plant outfall and Comanche return station. There are records available when releases/diversions are made; however, this intake is rarely used since the primary outlet directly from Pueblo Reservoir was installed (has been used recently for marijuana operations in circumstances where use of a federal reservoir for cannabis operations was prohibited and usually at flow rates of approximately 3 cfs).
- Pueblo Water Southside Intake (1400590): Municipal intake and alternate point of diversion for Booth Orchard Ditch, Warrant Barnes & Baxter Ditch, West Pueblo Ditch and Rocky Ford Ditch as well as for exchanges from the Pueblo Water wastewater treatment plant outfall and Comanche return station.
- Southern Colorado Power Co (1400713): Non-consumptive except evaporation; used by Pueblo Water as a point of diversion for the Historic Arkansas River Walk (HARP) flow through.
- Booth Ditch (1400591) Water rights were transferred to Pueblo Water at multiple alternate points of diversion including Pueblo Reservoir. Lands are no longer irrigated by the surface water right, however wells serve to irrigate some lands to the extent irrigation still occurs.
- Pueblo Waste Water Treatment Plant: Pueblo tracks reusable water through the plant
- Lake Minnequa (1403693): Off-channel reservoir filled from the St Charles River in District 15 via the St. Charles Reservoirs.
- Clason Ditch (1400668): The point of diversion was found to be in error and needed to be corrected in GIS. This water right is very junior and is seldom in priority.
- Excelsior Ditch (1400539): This water right was changed to include well augmentation and in recent years has not been used for irrigation of the historical lands. Some of the lands are irrigated by wells. Primary diversions are for augmentation and water is diverted through the headgate and either returned through the augmentation station for augmentation of wells and maintenance of surface return flows, or delivered to a series of four recharge ponds near Chico Creek at the end of the Excelsior Ditch to re-time accretions for augmentation of wells and to maintain historical delayed return flows.

Lower Turkey Creek

Although Turkey Creek is technically in District 10, the lower Turkey Creek is administered by District 14 because of difficulty of accessing this reach of the river through Fort Carson. Turkey Creek is typically administered as futile to Arkansas River mainstem calls.

- Teller Reservoir (1003608)– Owned by Fort Carson, structure outlet and spillway need improvement and limited storage has been allowed due to dam safety restrictions.

St. Charles River

- Crouch Spring and Seepage (1500610): supplemental source for Blunt Thompson
- Blunt Ditch : Alternate points of diversion for multiple owners are through river pumps(1500738)and lands are also irrigated by supplemental wells

Huerfano River

- Hermosilla Ditch (1400656): Water is diverted through Huerfano Valley Ditch; the point of diversion may require a change in court.
- Huerfano Valley Ditch (1400657): Delivers water to the Huerfano Valley Ditch lands and to the Huerfano Valley Reservoir. This ditch also received water stored in the Cucharas Reservoir #5 (dam removed in 2018/19). Telemetered data reporting occurs for this ditch.
- Kinsey Ditch(1400615): Water taken through Huerfano Valley Ditch
- Farmers Nepesta Ditch(1400653): No current reported acreage, no diversion records since 2009, junior 1 cfs max flow flood right; was nearly abandoned in2010 abandonment process, but was removed because they cleaned the headgate and ditch. If water were to be available, this ditch could deliver to the Chicosa Reservoir and Dotson Reservoir.
- Pryor Ditch (1400532): Historically took rights through Ellis ditch, but has changed point of diversion.
- Ellis Ditch (1400654) -Comingled land served by Ellis and Pryor water rights
- Welton Ditch (1400661): Huerfano River controlling and sweeping calling right for the more senior decrees. The Welton Ditch bought Pryor right, but a Supreme Court ruling did not allow this transfer, so the Pryor right is diverted at Ellis Ditch. The Welton Ditch has an 1861 priority Killian right (most senior); however, the Welton can be called out by mainstem Arkansas River calls. The ditch irrigates about 1,500 acres south and east of the Huerfano River and has telemetered data available.
- Welton Pipeline (1400736): Treated as a well and not used as a supply to the Welton Ditch since the Division 2 Well Use Rules were implemented.
- Huerfano Valley Reservoir(1403821): Served by Huerfano Valley Ditch aka (Huerfano Cucharas), treat it as flow through

Mainstem below St. Charles River and Chico Creek

- Collier Ditch 1400538 – Irrigation
- Haver Ditch Ext 1400577 – potential abandonment, operates in conjunction with Collier, but too junior
- Colorado Canal 1400540 – see District 17

Boone Creek

- Ila Ditch 1400664: Return flows from Chemical Depot

Mainstem Below Boone and the Huerfano River

- Rocky Ford Highline 1400542: 1869 right calls in very dry years only, records kept in District 17

Chicosa Creek

- Chicosa Res No. 5 1403809 (see above)
- Dotson Res 1403849(see above)

LowerMainstem

- Oxford Farmers Ditch 1400541: Diversion records in District 14 and District 17 but administered in District 17

Well Augmentation

Operations by the Arkansas Groundwater Users Association (AGUA) and Colorado Water Protective & Development Association (CWPDPA) provide for significant replacement of well depletions within Water Districts 14. AGUA relies on changed Excelsior Ditch shares for a substantial portion of their augmentation operations. CWPDPA relies on a small block of changed Bessemer Ditch shares delivered to the Arkansas River through the Sixmile Creek augmentation station for a portion of their augmentation supply.

Critical River Operations

It cannot be over-emphasized how complex and critical the river operations within Water District 14 are. This District includes exchanges from the Fountain Creek confluence back upstream to Pueblo Reservoir or reservoirs above Pueblo. The reach between Pueblo Reservoir and the Fountain Creek confluence includes a recreational in-channel diversion owned by City of Pueblo and is managed under an intergovernmental agreement honored by multiple major parties who exchange or release water through this reach.

Pueblo Reservoir acts as a primary hub for operations throughout many parts of Division 2 as more completely described in other water user memos.