

SPDSS Memorandum Final

To: Ray Alvarado and Ray Bennett
From: LRE, Erin Wilson
Subject: Task 3 – Identify Key Diversion Structures
Notes from Water District 8 Meeting
Date: August 7, 2006

Introduction

This memorandum provides notes from the December 10, 2003 and April 1, 2004 meetings on administration of the South Platte River in Water District 8. Meetings are being held with Water District Administrators (Water Commissioners or Division Engineers) in each Water District in the SPDSS study area. The objectives of these meetings are 1) to develop an initial basin understanding; 2) to determine what irrigation or municipal structures should be included as “Key Structures” in future detailed modeling efforts, and 3) to determine which reservoirs and diversions warrant more detailed investigation and technical documentation. These objectives support both Task 3 – Identify Key Diversion Structures and Task 5 – Identify Key Storage Reservoirs and Develop Operating Memorandum. Information in this memorandum is believed to be accurate. However, this information should not be relied upon in any legal proceeding. Water District 8 is different from other water districts in the South Platte Basin. There are two administrators for Water District 8. Water Commissioner Bob Stahl is in charge of the municipal accounting along the South Platte River within Water District 8 and the Chatfield Check-Sheet while Water Commissioner Mark Trivisonno is in charge of administration of all other tributary accounts as well as Denver Basin groundwater reports. Note that during the initial Water District 8 meeting, John Lochhead was responsible for municipal accounting along the South Platte River within the Water District. Claudia Engelmann has taken up the administration and accounting for Cherry Creek Reservoir.

Approach

Prior to the meeting, potential Key Structures for Division 8 were identified using the following procedure outlined in the SPDSS Scope of Work:

1. Identify net absolute water rights per structure. Select initial key structure cutoff value based on the 85 percent recommendation (SPDSS Feasibility Study, October 2001) for each water district.
2. Determine average annual diversion data for structures during three average hydrologic years, one year each during the 1950s, the 1970s, and the 1990s. Add

additional structures to the key list that diverted an average of 1,000 acre-feet per year on the main stem during any of the representative years. Note that this step will allow the inclusion of larger diversion structures having active water rights during the earlier years of the study that were subsequently transferred to other ditches or other uses.

3. Review readily available straight-line diagrams and include additional structures as appropriate, based on water rights and location.

Table 1, provided in the Results Section of this memorandum, lists the initial list of key diversion structures for the mainstem South Platte, the total of their decreed water rights, the period of record of available diversion records, and their average annual diversions for the period of record. In addition, as noted in the comment line, it includes new structures added during the interviews, or structures that were removed as key and will be modeled in an aggregated fashion. Table 1 generally lists structures in upstream to downstream order. Table 1a provides the same information for Plum and Cherry Creeks, and their tributaries, again generally in upstream to downstream order.

The interview was intended to determine additional structures that should be considered key based on seniority, water administration, or basin operations (including structures with supplemental reservoir water). Prior to the meeting, a brief description of the purpose and goals of the interview was provided to the Assistant Division Engineer, John Lochhead. 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 municipal and irrigation diversions selected to included 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.

David Ellington, Division 1, developed a preliminary straight-line diagram of the South Platte River in Water District 8 between Water Districts 23 and 2. In addition, LRE developed maps of the water district to facilitate the discussions. Maps displayed reservoirs, diversion headgate locations, and canal layouts on a quad-sheet background.

Meeting Attendance

The meeting was held at the Leonard Rice Engineering office in Denver. The following people attended part or all of the meeting:

Jim Hall – Division 1 Engineer

John Lochhead – Assistant Division 1 Engineer
Les Dalby – Assistant to John Lochhead
Mark Trivisonno – Water Commissioner District 8
David Ellington – Division 1
Ray Bennett – SEO Denver
Erin Wilson - Leonard Rice Engineers, Inc.
Mary Presecan - Leonard Rice Engineers, Inc.

Additional questions were addressed by Bob Stahl, who took over administration of the municipal diversions in Water District 8 when John Lochhead retired.

Meeting Notes

John Lochhead began the meeting discussing the major municipalities and users along the South Platte River in District 8:

- Denver Water (South side system)
- City of Englewood
- City of Aurora
- Centennial Water and Sanitation District (services Highlands Ranch)

Throughout the discussion of major municipalities, Mr. Lochhead discussed the major legal agreements and how they affected operations along the River, how coordination between the users is managed, and how such operation is administered and accounted for. The meeting was concluded with a discussion of streamgages, groundwater use, and future changes expected along the South Platte River in Water District 8.

Transbasin Diversions

While transbasin water is used in Water District 8, there are no transbasin diversions directly into District 8. Transbasin water used in Water District 8 includes water from the following transbasin diversions that are originally imported into other Water Districts as shown:

- Roberts Tunnel (Water district 80)
- Aurora Homestake Pipeline (Water District 23)
- Boreas Pass Ditch (Water District 23)

Where to find more information:

- Additional information on each of these transbasin diversions is presented in the structure specific memorandums prepared for SPDSS Task 4 – Identify Key Transmountain Diversion Structures.

Compacts and Agreements Affecting District 8 Administration

- **South Platte River Compact.** The April 27, 1923 compact between Colorado and Nebraska was enacted for the purpose of removing all causes of present and future controversy between the states and its citizens with respect to the South Platte River and promoting interstate comity. The South Platte River Compact affects District 8 indirectly, by nature of the South Platte running through District 8.
- **Blue River Decree** (Consolidated cases, 1955). Denver's decrees for its Blue River water rights stipulate that Denver must exercise due diligence in attempting to maximize its reuse of water from the Colorado River system otherwise Denver's Blue River diversions can be correspondingly decreased.
- **1940 Agreement** (Agreement between Denver Water and Consolidated Ditches in Water District 2). Prohibits the reuse of most water diverted through Denver Water's Moffat System into Water District 6 under water rights in the Fraser and Williams Fork Basins. In exchange, Denver Water is not required to make evaporation releases from its mainstem South Platte reservoirs (Antero, Elevenmile, Cheesman).
- Per the **1982 Agreement** established when Strontia Springs Reservoir was built, Denver Water has a release requirement from Strontia Springs Reservoir (0803983). Between Strontia Springs Reservoir and Denver Conduit No 20 (0801002), Denver Water must maintain a minimum flow of 30 cfs in the winter and 60 cfs in the summer, regardless of the amounts of native streamflow in the river during each season. Summer officially starts with the first direct flow call (typically around April 15) and continues throughout the irrigation season (typically October 31). Up until 2002, any of this water not exchanged would be considered "lost" when Chatfield Reservoir spilled because of Denver Water's physical inability to take and use water stored in Chatfield Reservoir. In 2002, Denver Water created the following two new connections by which they could take the "lost" water.
 - Water stored in **Platte Canyon Reservoir** (0803500) is pumped back to **Last Chance Pipeline**, part of Denver Water's system (0801002). This approach is used to regulate flow through **Denver Conduit No 20**, part of Denver Water's System (0801002).
 - Chatfield Pipeline, controlled by the Chatfield pumps (unknown WDID) pumps water directly from Chatfield Reservoir to Denver Conduit No 20. Typically 10 to 20 cfs is pumped through the 30 cfs maximum Chatfield Pipeline.
 - Denver Water anticipates bringing on-line a third system that will divert water directly from Chatfield Reservoir to Denver Conduit No 20.
- **Chatfield Check Sheet** – Result of a lawsuit involving Englewood and Denver Water involving the **1982 Agreement**. The purpose of the accounting form is to determine the required releases from Chatfield Reservoir for downstream delivery to water rights and to maintain natural streamflow in the River. The **South Platte River at Waterton Canyon** gage (06708000 / PLAWATCO) was used to measure the 30 / 60 cfs delivery requirement of the 1982 Agreement prior to development of Denver Water's Denver Conduit No 20 System (0801002). The Chatfield Check Sheet currently uses the **South Platte River below Strontia Springs** gage (06707501 / PLASTRICO) for streamflow values and checks these numbers against the flow values reported by Denver Water.

Stream Gages and General Administration

- The DWR **South Platte River at South Platte** gage (06707500 / PLASPLCO) is considered good.
- The DWR **South Platte River below Strontia Springs** gage (06707501 / PLASTRCO) gage is considered good.
- The DWR **South Platte River at Waterton Canyon** gage (06708000 / PLAWATCO) is considered good. This gage was previously used to measure the 30/60 cfs delivery requirements of the 1982 Agreement.
- The USGS **South Platte River at Union Ave at Englewood** gage (06710245) replaced the **South Platte River at Littleton, CO** gage (06710000 / PLALITCO) in 1989. In 1996, the **South Platte River below Union Ave, at Englewood** gage (PLAUNICO) was installed, replacing the PLALITCO gage. The PLAUNICO gage is located below the Union Avenue intake to the water treatment plant.
- The USGS **South Platte River at Englewood** gage (06711565 / PLAENGCO) is considered good. This gage is located 1.4 miles downstream from Bear Creek. In 1980, the Englewood wastewater treatment plant was shut down. Streamflow records at the 06711565 gage did not include any contribution from the pre-existing wastewater treatment plant.
- The USGS **South Platte River at Denver** gage (06714000 / PLADENCO) is considered good. This gage is located 0.4 miles downstream from Cherry Creek. This is the most downstream gage station in Water District 8.
- Administration of Water District 8 is broken down into two areas; administration of municipalities along the South Platte River and administration of all other water rights in the District. John Lochhead was responsible for the administration of South Platte municipalities which includes the major task of daily accounting using the Chatfield check-sheet. Mark Trivisonno is responsible for all other District tributary administration matters.
- The task of administration of South Platte municipalities includes the following:
 - Chatfield Check-Sheet – A daily accounting form used to determine how much flow needs to be released from Chatfield Reservoir for delivery of downstream water rights and natural streamflow conditions.
 - Coordination between municipalities and Water Districts using South Platte River water in Water District 8 (Denver, Aurora, Englewood, Centennial).
- Ground water use in the District is mainly for augmentation, supplementation for releases, covering of depletions, and as supplemental municipal water supply. Most of the augmentation ground water wells in the District are Denver aquifer wells. Les Dalby indicated that there may be some WDID identification problems with ground water wells in District 8 in HydroBase. Ground water wells are operated along the South Platte in District 8 by the following entities:
 - Centennial Water and Sanitation District (servicing the area of Highlands Ranch) known as the Centennial South Platte Well Field. The Centennial South Platte well field consists of about one dozen deep wells. Water is treated at the wells and delivered to the system of commingled with water at the water treatment plant.

- Mission Viejo (An annexed area within East Cherry Creek Valley Water and Sanitation District).
 - Denver Water has deep wells that can take off City Ditch.
- Additional well fields in Water District 8, not directly along the South Platte River include the following:
 - Cherry Creek well field
 - Kennedy Golf Course
 - Denver Country Club
 - Glendale
- There are many municipal and domestic water providers located on the tributaries upstream from the South Platte, relying on ground water and some surface water supplies. They include water districts that serve Parker, Castle Rock, Meridian, Castle Pines, Greenwood Plaza Metro, Pinery, Arapahoe County, East Cherry Creek Valley, Cherry Creek Valley, Sedalia, Perry Park, Cottonwood, Stroh Ranch, Cherry Creek Project Water Authority, Woodland Park, Inverness, Roxborough Park, Roxborough Village, Stonegate, Silver Heights, Thunderbird, Glendale, and United.
- The following groups provide augmentation water to replace out of priority surface and ground water diversions for municipal users. The number in parenthesis indicates users at the date of this memorandum.
 - Cherry Creek Water Users Association (22)
 - Cherry Creek Project Water Authority (3)
 - Upper Cherry Creek Water Users Authority (5)
 - Great Divide Water Company (15)
 - Mountain Mutual Reservoir Company (15)
- The following table provides a normal year river call sequence:

Normal Year River Call Sequence

Winter	<p>Cheesman Reservoir (8003550) in Water District 80 controls downstream storage of water during the winter. Other reservoirs storing in the winter include:</p> <ul style="list-style-type: none"> ■ Strontia Springs Reservoir (0803983) ■ Chatfield Reservoir(0803514) ■ McLellan Reservoir (0803832) ■ Marston Reservoir (0803501, since Denver's construction of Denver Conduit No 20)
Beginning of April (Start of irrigation season) until beginning of June	<p>Demand for water typically greater than supply. Senior direct flow rights are calling for water and junior storage is limited.</p> <p>First direct call on the South Platte River is typically Burlington Ditch (0200840) 1885 water right. This call disables Denver from exchanging water from Metro WWTP.</p>

Beginning of June through beginning of July	Supply is typically greater than demand due to spring runoff. Free-river will typically occur during this time. Direct right diversions and diversions for storage. Try to allow storage as long and possible, by satisfying water rights below Chatfield Reservoir with releases from Chatfield Reservoir.
Beginning of July until End of Irrigation Season	Direct right diversions

- Most years, reservoirs in the South Platte Basin fill. **Cheesman Reservoir** (8003550) in Water District 80, controls downstream storage in the winter. In a good year, Cheesman Reservoir fills in the early spring. In early May, Cheesman Reservoir will typically spill, allowing **Spinney Reservoir** (2304013) and **Tarryall Reservoir** (2303700) to fill.

Where to find more information:

- Additional information on ditch and reservoir operations within Water District 80 and Water District 23 are presented in the Meeting Notes for the respective Districts prepared for SPDSS Task 3 – Identify Key Diversion Structures.

- There are no dry-up points in the South Platte River with Water District 8.
- In general, diversions from the South Platte River in Water District 8 are by municipalities for municipal, commercial, industrial, recreation, irrigation or augmentation. A limited number of individuals still irrigate along City Ditch, Nevada Ditch and Last Chance Ditch. High Line Canal also diverts water, when in priority, for minor irrigation uses. Generally only one canal can physically serve each parcel of land.
- There is about a two day delay from when water passes through the intake to Roberts Tunnel to when water reaches the Waterton Canyon streamgage and the Denver Water owned Foothills Treatment Plant.
- The State assesses a 5 percent transit loss on deliveries from Dillon Reservoir to Strontia Springs Intake.
- The State assesses a 1 percent transit loss on deliveries from Spinney Mountain Reservoir to Eleven Mile Reservoir.

History of South Platte River in Water District 8 and Ditch and Reservoir Specific Information

Numerous changes have occurred in the South Platte Basin to alter the flow of water through the River and through Water District 8. The following is a timeline of major structures that have been completed near or along the South Platte River in Water District 8 that potentially altered the pattern of delivery of water in the District.

1890	Kassler Treatment Plant was brought on-line
1904	Platte Canyon Reservoir completed
1905	Cheesman Reservoir completed
1909	Antero Reservoir completed
1928	Marston Reservoir and Foothills Treatment Plant completed and brought on-line
1932	Eleven Mile Canyon Reservoir completed
1936	Moffat Tunnel Collection System completed
1937	Moffat Treatment Plant brought on-line
1938	Williams Fork Reservoir completed
1955	Gross Reservoir completed
1962	Roberts Tunnel completed
1963	Dillon Reservoir completed
1964	Marston Intake Dam (Denver Conduit No 20 Intake Dam) completed
1967	Kassler Treatment Plant shut down
1973	Chatfield Reservoir (0803514) completed
1982	Strontia Springs Reservoir and Foothills Treatment Plant completed and brought on-line
2000	Last Chance Pipeline built to pump water from Platte Canyon Reservoir up to Denver Conduit No 20
2002	Chatfield pumps installed by Denver Water to pump water from Chatfield to Denver Conduit No 20

- When **Strontia Springs Reservoir** (0803983) was built at the location of the original **Aurora Pipeline** (0801001), the Pipeline was redesigned to be able to divert water stored in the Reservoir. At the same time, Denver Water built a new diversion, **Denver Foothills Pipeline 26** (aka Conduit 26) (0801017) to divert water to their Foothills Water Treatment Plant. Strontia Springs Reservoir is now used as a regulating reservoir for Aurora's and Denver Water's systems.
- **Highline Canal** (0801004) continues to divert. The Highline Canal is currently used as part of the stormwater system for neighboring lands and can also be used to deliver water to McLellan and Platte Canyon Reservoirs. The delivery of water to McLellan Reservoir has an associated delivery loss that is considerably large. Use of Highline Canal diversions down the Canal are in the process of changing. In the near future, water will probably be diverted down Highline Canal only as far as Cherry Creek. Between 1961 and 1991 diversion records in HydroBase from Highline Canal to Platte Canyon Reservoir were recorded under an accounting structure **Highline to PC** (0801453). After 1991 these diversions are reported as part of the Highline Canal diversions. It appears that diversion records for Highline to P C Res should be considered as diversions in addition to the Highline Canal diversions prior to 1991.
- In approximately 1967, Kassler Treatment Plant was closed down because of the concern that pollution from the Martin Marietta missile testing site was getting into the drinking water treatment and distribution system. To avoid contamination of the city water supply by running the water through the contaminated area of the South Platte River, the Kassler Filters (0801454) water rights and water was transferred to

Denver Conduit No 20 (0801001) and Denver Foothills Pipeline 26 (Conduit 26) (0801017), both located upstream of the polluted section of River. The Martin Marietta site has since been remediated.

- **Denver Conduit No. 20** (0801001) transports water to **Marston Reservoir** (0803501). Currently, there are four ways in which water can be transported to Denver Conduit No 20.
 - The original headgate for Denver Conduit No 20 on the South Platte River located below Strontia Springs Reservoir (gravity flow).
 - Platte Canyon Reservoir directly to Denver Conduit 20 (pumped).
 - Last Chance Ditch headgate to Conduit 20. (pumped via Kassler pumps)
 - As of 2002, water can be pumped via the Chatfield Pumps directly from Chatfield Reservoir to Denver Conduit No 20. The intent is to use the Chatfield Pumps only when Chatfield Reservoir is going to spill.

In addition, Denver has plans to install a pump station from the outlet of Chatfield to Conduit 20 for use during droughts.

- **Platte Canon Ditch** (0801005) has not diverted since 1985. Water rights are diverted through Conduit 26 or Conduit 20.
- **Last Chance Ditch** (0801007) located about one mile above Chatfield Reservoir is generally used to pump required bypassed winter water to Conduit 20. Minimum flow requirements are 60 cfs during the winter, 30 of which, by agreement, can be taken at the Last Chance Ditch. The Last Chance Diversion Pipeline is located at the previously abandoned diversion location for Last Chance Ditch. With the construction of Chatfield Reservoir, Last Chance Ditch and associated water rights were transferred to the outlet works of Chatfield Reservoir.
- In 1973, **Chatfield Reservoir** (0803514) was completed. Prior to being built, numerous ditches diverted water from the South Platte River in the vicinity of where Chatfield Reservoir currently exists. The headgate of **Nevada Ditch** (0801009) was originally located above Plum Creek prior to the building of Chatfield Reservoir. The original **City Ditch** (0801008) headgate was located below Plum Creek. A new manifold is currently being built at the Chatfield Dam to supply Nevada Ditch and City Ditch. Water rights in these two ditches, plus the Last Chance Ditch, whose rights were also transferred to the outlet of Chatfield, are owned by individuals and municipalities (Denver, Littleton, Aurora), some of which continue to irrigate. Denver Water runs all three of these ditches.
- Under current operations **Chatfield Reservoir** is controlled in the following manner.
 - The State of Colorado contracts with the United States Army Corps of Engineers (COE) to maintain a storage pool for recreation, fish, and wildlife purposes.
 - Anything below a gage height of 23 feet is considered drought condition. At a gage height of 17 ft, Last Chance Ditch and Nevada Ditch are unable to divert.
 - Between gage heights of 23 to 32, Denver Water has full control of operations of the Reservoir. Denver Water makes its utmost effort to maintain at least 20,000 acre-feet of water (water surface elevation of 5,426.94 feet MSL) within the conservation pool from May 1 through August 31 for recreation.
 - At a gage height greater than 32 the COE controls operations for flood control purposes.

- At a gage height of 35 feet the State Parks will get involved with reservoir operation for recreational reason (picnic tables around the reservoir are located at an elevation consistent with a gage height of 35 feet.
- Operation releases to the South Platte River below Chatfield Reservoir are limited to 3,000 cfs.
- For flood control purposes, efforts are made to keep Water in Chatfield when the downstream **South Platte River at Henderson** gage flows (06720500) reach 10,000 cfs.
- **South Platte Lake** (0804097) is an alternate point for the Centennial's conditional storage right in Chatfield Reservoir.
- The **Chatfield Fish Unit** (0801018) has a relatively junior water right; however the right is senior to any exchanges that may take place with water in City Ditch and Last Chance Ditch. The Fish Unit water right is not a consumptive right, however they do have an augmentation plan for evaporation from the Fish Unit ponds. All returns from the Fish Unit are returned to the South Platte River above Marcy Gulch. The relative seniority of the Fish Unit water right to City Ditch and Last Chance Ditch exchanges comes into play whenever Englewood or Centennial WSD want to take advantage of their exchangeable water in these ditches. The United States Fish and Wildlife Service (USFWS) are the operators of the Fish Unit. The USFWS, Englewood, and Centennial WSD work together to achieve a balanced operation for all parties involved.
- **Petersburg Ditch** (unknown WDID) and **Brown Ditch** (0801011) were transferred to **Englewood Intake** (0801013). A portion of the Brown Ditch is owned by Columbine Country Club.
- **Rough Ready Ditch** (0801012) was abandoned 30+ years ago. The water rights were not transferred. This was originally a mill water right and therefore there was no consumptive use component to the water.
- Diversion records for **Farmers and Gardeners Ditch** (0800800) are found in Water District 2 under WDID 0200800 because the irrigated area associated with this ditch is located in Water District 2.
- **Platte Valley Ditch** (0801445) was transferred to Water District 2 around 1961.

Municipal Use – South Platte Main Stem

- There are four main municipal users along the South Platte River in District 8. The following sections summarize the specifics for each of these municipal users.
 - Denver Water
 - City of Englewood
 - City of Aurora
 - Centennial Water and Sanitation District (services Highlands Ranch)

User Specific Information – Denver

The City of Denver and surrounding areas are serviced by the Denver Water Board (Denver Water). The main sources of raw water supply available to Denver Water consist of changed irrigation rights and municipal water rights along the South Platte River and its tributaries, transmountain diversions from the Roberts Tunnel Collection

System, Moffat Tunnel Collection System, and Williams Fork Diversion Project, and reused water through effluent exchanges from the Metro and Bi-Cities wastewater plants to their upstream diversion and storage points. Denver Water can legally reuse Blue River transbasin diversions (Roberts Tunnel Collection System water) and consumable water from irrigation rights changed to municipal use. To date, Denver Water is not getting credit for lawn return flows. This will be changing in the near future.

Where to find more information:

- Additional information on Denver Waters System is presented in the Denver Water System-wide Memorandum prepared for SPDSS Task 5 – Identify Key Storage Elements and Fill Missing Data.

Denver Water has a very long and involved portfolio of water rights. This memo will not attempt to reproduce that portfolio nor will it offer a complete explanation of the system. Instead, the information provided herein is a brief summary of key structures involved in Denver Water's system within Water District 8 between Strontia Springs Reservoir and the boundary with Water District 2. It should be noted that the State of Colorado water rights listings for Denver's water rights show the maximum amount for the water rights. Many of Denver's water rights are limited by monthly limitations.

- **Strontia Springs Reservoir** is used as a regulating reservoir for Denver Water and Aurora. Denver owns all of Strontia Springs Reservoir with the exception of a 700 acre-foot storage pool owned by Aurora.
- Prior to 2002, **Conduit 20** was Denver Water's main diversion from the South Platte River to **Marston Reservoir**. In 2002, Denver Water began operation of **Last Chance Pipeline** in order to capture lost water released in accordance with the 30/60 cfs release requirements in the 1982 Agreement. Denver Water anticipates bringing on-line a third system that will divert water directly from Chatfield Reservoir outlet to Denver Conduit No 20.
- Denver Water owns and operates the **High Line Canal**. Historically, Denver Water has taken direct flow water through High Line Canal for irrigation of parks, golf courses, cemeteries, etc. Exchanges through the **High Line Canal** are sometimes accomplished with Englewood and Aurora.
- Water stored in Platte Canyon Reservoir can be carried down the High Line Canal or pumped into Last Chance Pipeline to help regulate flow in Conduit 20.
- Denver Water has full control of water stored in Chatfield Reservoir between a gage height of 23 and 32 feet.
- Denver Water operates City Ditch, Last Chance Ditch, and Nevada Ditch. Currently, they are in the process of building a manifold for these three ditches at the outlet works of Chatfield Dam.
- Two exchanges commonly performed within Water District 8 are:
 - Metro Wastewater Treatment Plant to Strontia Springs Reservoir
 - Bi-City Wastewater Treatment Plant to Strontia Springs Reservoir
 - Denver Water typically operates most of the exchange potential for reuse from the Metro Wastewater Reclamation District Plant.
- When the Denver Water Recycled Water System reaches full capacity, the water plant will treat and deliver 45 MGD (17,660 acre-feet per year of water) for industrial

and outdoor irrigation uses. The Water Recycling Plant is currently delivering 30 MGD. These are the numbers provided by Denver Water. It is not clear how they calculate 17,660 AcFt/yr from 45 MGD. A portion of the water currently produced at the Recycling Plant is being used at the Cherokee Power Plant and for irrigation at Park Hills Golf Course. The next phase of the Denver Water Recycle Water System will supply water to replace direct flow water taken through City Ditch for irrigation of City Park for Washington Park and other places within the Denver Water system.

- Reusable water returning from to the South Platte as effluent from the Metro Wastewater Reclamation District Plant and the Littleton-Englewood (aka Bi-City) Wastewater Treatment Plant are an important source of replacement water for Denver's exchanges.

User Specific Information – City of Englewood

The main sources of raw water supply available to the City of Englewood consist of changed irrigation water rights previously used to irrigate lands below Chatfield Reservoir and from storage rights associated with McLellan Reservoir. Englewood receives transbasin water from 1) Ranch Creek Collection System, which is transported to the Eastern Slope by contract with Denver Water through Moffat Tunnel and 2) Boreas Pass Ditch. Englewood can legally reuse transbasin water diverted by Denver under their Cabin/Meadow Creek rights (aka, Ranch Creek Collection System) and through Boreas Pass Ditch and consumable water from irrigation rights changed to municipal use.

- Englewood owns McLellan Reservoir which they operate at a 50/50 split with Centennial.
- Englewood has water rights on City Ditch.
- Englewood has some deep, non-tributary groundwater wells.
- Englewood had an agreement with Thornton for water from Spinney Mountain Reservoir. Aurora has since purchased all of Spinney Mountain Reservoir and the associated water rights from Thornton. As such, Aurora will be required to meet the obligations of the Thornton / Englewood agreement.
- Due to historic ownership of water rights in Nevada Ditch and Last Chance Ditch prior to the building of Chatfield Reservoir, Englewood effectively has return flow obligations owed them from these Ditches.
- In the current operating system, return flows from Boreas Pass Ditch transbasin diversion are not reused. These return flows are junior regarding exchange along the South Platte River. If Englewood has the opportunity, they may be able to use the return flows themselves.
- To date, Englewood has not taken advantage of any return flows from their wastewater treatment plant.
- Englewood, along with Centennial, is required to provide Division 1 and Denver Water with their daily diversion records so the amount of natural flow that can be exchanged can be determined in the Chatfield Check Sheet.
- Englewood typically tries to take their South Platte River water rights at the Union Street Englewood Water Treatment Plant intake.
- Englewood has water rights on Bear Creek (Water District 9). There are three ways the Bear Creek water rights may be used in Englewood's system: 1) Water may be

diverted directly from Bear Creek to the South Platte River and pumped up to the Water Treatment Plant, 2) Water may be exchanged and taken on the South Platte as outflow from Chatfield Reservoir, or 3) the Bear Creek rights can be exchanged for augmentation water for very junior rights on Bear Creek. The most typical use of Bear Creek water rights is the exchange to outflow from Chatfield Reservoir.

User Specific Information – City of Aurora

The main sources of raw water supply available to the City of Aurora consist of changed irrigation water rights and municipal rights, transbasin diversions, alluvial and non-tributary groundwater wells, water reuse, and water conservation. Aurora can legally reuse all water supplies imported from the Colorado River, all Arkansas River Basin water rights, and those South Platte Basin irrigation rights that have been changed to municipal use.

Aurora has a long and involved portfolio of water rights. This memo will not attempt to reproduce that portfolio nor will it offer a complete explanation of the system. Instead, the information provided herein is a brief summary of key structures involved in Aurora's system.

Where to find more information:

- Additional information on the City of Aurora is presented in the City of Aurora System-wide Memorandum prepared for SPDSS Task 5 – Identify Key Storage Elements and Fill Missing Data.

- With the exception of a water right in Last Chance Ditch, all of Aurora's direct flow and storage water rights on the South Platte River are located at or above Strontia Springs Reservoir.
- Aurora has a storage pool in **Strontia Springs Reservoir** of approximately 700 acre-feet. The rest of Strontia Springs Reservoir is owned by Denver.
- Upstream of Strontia Springs Reservoir, Aurora owns all of Spinney Mountain Reservoir. Previously, the City of Thornton used some of Spinney Mountain Reservoir for storage of return flows. This storage space and water was sold back to the City of Aurora. Thornton is now totally out of the Aurora system.
- Aurora does get reuse credit for the portion of their water treated at the Metro Wastewater Treatment Plant. However, because Denver Water typically operates most of the exchange potential for reuse from the Metro Wastewater Reclamation District Plant (because of their senior rights), Aurora can not reuse much of their reusable water. Therefore, Aurora will typically use their reuse water for park irrigation or sell the water to users such as Calpine, Thornton, or well user groups for augmentation.

User Specific Information – Centennial Water and Sanitation District

The main sources of raw water supply available to Centennial Water and Sanitation District consist of changed irrigation rights and municipal rights and contract deliveries from Englewood and Denver Water.

- Centennial has one water right on the mainstem of the South Platte River in South Park- Kline Ranch. Centennial has no storage in South Park.
- Centennial owns a portion of Farview Ditch and Reservoir on Deer Creek.
- Centennial has the Lower Plum Creek Ditch right, however due to the tendency of Plum Creek to go dry intermittently occurring between the month of June to October these rights are often non-deliverable.
- Centennial can exchange on the effluent from their Highlands Ranch Wastewater Treatment Plant along Marcy Gulch.
- Highlands Ranch does receive credit for lawn irrigation return flows.
- South Platte Lake is used as an alternate point for conditional water rights in Chatfield Reservoir.
- The South Platte Well Field (aka, Ensor Well Field), owned by Centennial consists of 4 to 5 tributary groundwater wells. The Ensor Well Field is treated like a headgate. Water is pumped from the Well Field and placed in storage at McLellan Reservoir. Although Englewood owns McLellan Reservoir they operate a 50/50 storage agreement with Centennial.
- Centennial operated about 12 deep non-tributary groundwater wells. Water from these wells is co-mingled with other water sources for treatment at the Centennial Water Treatment Plant.
- All of Centennial's water rights are junior to Denver Water's rights.
- Centennial, along with Englewood, is required to provide their daily diversion records so that Division 1 can determine the amount of natural flow they can exchange on.

Cherry Creek

- Administration of Cherry Creek is focused on Cherry Creek Reservoir, upstream irrigation, and augmentation of well users within the sub-basin. There is generally no free river condition on Cherry Creek due to local, senior calls and South Platte River calls. Some free river exists depending on the rainfall/snowpack for any given year. During a drought year the free river does not occur but a futile call can exist upstream of the Parker KOA well. The main reason for this dry up is due to poor precipitation in both winter and spring months. The alluvium is also stressed by the large capacity municipal wells from the Pinery, Parker, Cottonwood, Arapahoe County, and Aurora. Cherry Creek has been observed dry from Franktown down to Arapahoe Rd during extreme drought. Prior to 1999 there was some administration, however users in Cherry Creek generally did their own accounting and submitted records to the Water Commissioner either on a monthly or annual basis.
- Large floods during the 1930s and the 1965 flood changed the configuration of the tributary creeks in Water District 8 (Cherry Creek, Plum Creek, Cottonwood Creek, etc) and washed out most of the existing headgates. Since that time, many river diversions on these tributaries are through sumps, alternate point wells or pumps placed in the river. Some of the decrees have not been changed to reflect alternate points as opposed to headgate diversions.
- John Jones Ditch (0801362) is a senior ditch with active irrigation. Ditch is approximately 1.5 miles long and tails into Russellville Gulch. There are essentially no more surface diversions downstream of John Jones Ditch, all use is from ground water. Some of the groundwater use is attached to surface water rights.

- Significant amounts of senior water rights started to be purchased in the 1970s for transfer to municipal uses to cover well depletions. The largest alluvial demand on the Cherry Creek System comes from the Piney (Southeast Suburban Water and Sanitation District) and Parker Water & Sanitation District.
- In 1989, administration of Cherry Creek Reservoir and upstream irrigation began.
- Upper Cherry Creek Water Users (provides ~10,000 acre-feet of augmentation for municipal users, including Arapahoe Water and Sanitation District, East Cherry Creek Valley, Cottonwood Water and Sanitation, Aurora Well Field, and State Parks. Ditches generally began to be purchased and changed to municipal and industrial uses in the 1970s.
- Around 1989, the Cherry Creek Water Users Association (CCWUA) began augmenting well and junior surface water uses. The Cherry Creek Water Users, consisting of irrigators, commercial users, and small groups of other well users, filed for an augmentation plan to cover well depletions. Their main source of replacement water comes from direct flows from non-tributary well pumping.
- The Upper Cherry Creek Water Users filed for an augmentation plan to cover well depletions. Currently using storage water (about 800 af) leased from State Parks for augmentation purposes. Includes the following entities:
 - Arapahoe Water and Sanitation District
 - East Cherry Creek Valley
 - Cottonwood Water and Sanitation District
 - Aurora well field
 - State Parks
- Conahey Ditch 1 (0801360) was transferred to Lininger Wells as an alternate point. OOP use is augmented by CCWUA .

Information specific to other diversions along Cherry Creek include the following:

East Cherry Creek

- Heiser Ditch (0801403) – Minor amount of surface irrigation diversions.
- McCracken Ditch (0801404) - Minor amount of surface irrigation diversions.
- Smith Ditch (0801405) - Minor amount of surface irrigation diversions. Gilliland Sump is the decreed APOD

West Cherry Creek

- Sixty-Seven Ditch (0801412) – Senior irrigation ditch on West Cherry Creek. This ditch is generally the calling right during the futile call on Cherry Creek.
- Crawford Ditch (0801413) - Minor amount of river headgate irrigation diversions.
- Birmingham Ditch (0801414) - Irrigates pasture. River headgate diversions replaced by river pumps after 2000. A portion of water right transferred to O'Brian wells for domestic uses as an alternate point in late-1990s.
- Goodrich Ditch (0801416) - Minor amount of river headgate irrigation diversions.
- Rocky Ridge Ditch (0801417) - Minor amount of surface irrigation diversions. Headgate currently inoperable but not abandoned. Owner also diverts via a sump as an alternate point of diversion.
- Necessity Ditch (0801418) – Transferred to Necessity Pump (0801423) in 2002. OOP diversions augmented by CCWUA.

- Izzard Ditch (0801492) – Irrigates pasture. River headgate diversions replaced by river pumps after 1998.

Plum Creek

Plum Creek has been actively administered for many years. The river at Titian Road in Louviers is where a futile call situation intermittently begins in late June/early-July because the river dries up at this point. The futile call generally extends through September or October when the creek starts to flow again as phreatophytes become inactive.

A number of irrigation water rights along Plum Creek have been transferred to local municipalities to augmentation of municipal well depletions, including the following structures. These diversion structures should be modeled as multistrucre components of the respective municipal demands.

City of Castle Rock (transferred to well augmentation)

- Hillside Ditch (0801192)
- Cook Creek Ditch (0801193)
- John Kinner Ditch (0801207)
- John Kinner Ditch 2 (0801208)

Perry Park Water and Sanitation District (transferred to well augmentation)

- Pleasant Park Ditch (0801230) Partial ownership shared with two others (Paulk & Weins)
- Glen Grove Feeder Ditch (0801203)
- Plum Creek Ditch (0801209)

Castle Pines

- Ball Ditch (0801213). Transferred to Owens Concrete and Vogel augmentation plans.

Centennial

- Lower Plum Creek Ditch (0801161). Water is diverted to McClellen Reservoir through City Ditch.

Information specific to other diversions along Plum Creek include the following:

- Ratcliff Plum Creek Ditch (0802010) is a larger diversion from West Plum Creek that irrigates around 200 acres.
- Curtis Ditch (0801215) is a larger irrigation diversion on West Plum Creek.
- Craig Ditch (0801218) is the senior irrigation ditch on West Plum Creek. This ditch is generally the calling right during the futile call on Plum Creek.

There are a number of “missing ditches” on the tributaries in Water District 8. Some of the information regarding active water rights and users has not been passed down from

previous water commissioners. Therefore, some of the old ditches that appear to be inactive in our data base may actually be diverting without the knowledge of the water commissioner. Some of these water rights should have been abandoned over the years but are still considered viable water rights and may become active in the future. The water commissioner is continuing to update the status of ditches.

Recommended Detailed Documentation

Additional detailed information should be developed and included in the Basin Information Report for the following canals, reservoirs, or entities. Note that off-channel reservoirs are generally recommended to be included with the ditch entity operating memoranda, and not as stand-alone memoranda.

- City of Denver (Denver Water Board)
- City of Aurora

Table 1
Water District 8 Mainstem South Platte River Diversions

WDID	Structure Name	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions 1995-2005	Comment	Key
0801000	AURORA PL	12.161			Water Rights Taken through Aurora Intake	MS with 1001
0801001	AURORA INTAKE	4.983	1966-2005	31630	Primary MS with 1000	Yes
0801017	DENVER FOOTHILLS PL 26	413	1982-2005	139919	Carrier to Foothill WTP	Yes
0801002	DENVER CONDUIT NO 20	439.8	1918-2005	78681	Carrier to Marston WTP and Marston Reservoir	Yes
0801004	HIGHLINE CNL	628.3	1949-2005	22561	Carrier to Platte Canyon Reservoir and minor irrigation demand in Denver	Yes
0801453	HIGHLINE TO P C RES		1961-1991	11312	Since 1991 included in diversion records for Highline Canal (0801004)	No
0801005	PLATTE CANON DITCH	5.813	1959-1974	1434	Rights take through Conduit 26 or 20	No
0801454	KASSLER FILTERS		1958-1967	63071	No Water rights, historical accounting	No
0801007	LAST CHANCE DITCH 2	7.854	1949-2005	3683	Diversions carried to Conduit 20 and/or municipal irrigation demands	Yes
0801465	LAST CHANCE/AURORA		1964-1966	1720	No Water rights, historical accounting	No
0801018	CHATFIELD FISH UNIT		1982-2005	3625	No Water rights, historical accounting	No
0801008	CITY DITCH PL	97.86	1949-2005	8660	Operated by DWB, Carrier to Englewood municipal demands	Yes
0801009	NEVADA DITCH	11.061	1949-2005	3317	Operated by DWB, Carrier to municipal irrigation demands	Yes
0801462	LITTLETON PL	2.04	1962-1968	416	Diverted through Nevada Ditch and Wells, model rights at Nevada Ditch	MS with 1009
0801011	BROWN DITCH	6.82	1949-1974	1119	Diverted through Nevada Ditch, model with Nevada Ditch	MS with 1009
0801460	BROWN/LITTLETON		1962-1969	593	No Water rights, historical accounting	No
0801459	BROWN/PETERSBURG		1962-1965	674	No Water rights, historical accounting	No
0801012	ROUGH READY DITCH	68.27			Recommended for Abandonment 1974	No

Table 1 (continued) Water District 8 Mainstem South Platte River Diversions						
WDID	Structure Name	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions 1995-2000	Comment	Key
0801013	ENGLEWOOD INTAKE	26.312	1949-2005	7637	Intake for WTP	Yes
0801014	ARAPAHOE POWER PLANT		1955-2005	1546	Augmented by Denver, Infrequent data since 1998	Yes
0801015	EPPERSON DITCH/PUMP	2.59	1968-1993	373	Alternate Point to Denver (Harriman Ditch). Used to irrigated Overland Golf course	Yes
0801445	PLATTE VALLEY DITCH		1949-1961	1427	No Water rights, historical accounting	No
0801016	LACOMBE POWER PLANT	300	1971-2005	26017	Zuni Power Station, Augmented by Denver, Infrequent data since 1993	Yes

Table 1a
Water District 8 Plum Creek Diversions, Deer Creek, and Cherry Creek Diversions

WDID	Structure Name	Source	Total Decree (cfs)	Diversion Record Period¹⁾	Ave Annual Diversions	Comment	Key 2)
0801180	EAST PLUM CR DITCH	EAST PLUM CREEK	10.55	1973 - 2005	582	Active	No
0801193	COOK CREEK DITCH	COOK CREEK	2.6	1969 - 1988	349	Transferred to Castle Rock Augmentation Plan ID 2534	No
0801181	KOUNTZ DITCH	EAST PLUM CREEK	0.75			Structure not usable in 1989 - no other information	No
0801192	HILLSIDE DITCH	COOK CREEK	1.65	1969 - 1988	253	Transferred to Castle Rock Augmentation Plan ID 2534	No
0801170	EVERGREEN DITCH 2	E BR E PLUM CR	0.75	1970 - 1993	68	No information since 1998	No
0801172	EASTSIDE DITCH	E BR E PLUM CR	2	1970 - 1987	293	No information since 1999, Water Commissioner has not located headgate	No
0801171	WEST DITCH	E BR E PLUM CR		1970 - 1998	203	No information since 1998	No
0801175	EVERGREEN DITCH 1	CARPENTER CREEK	0.75	1969 - 1998	99	No information since 1998	No
0801176	ARNALD DITCH	CARPENTER CREEK	1	1970 - 1998	143	Water Commissioner has not located headgate	No
0801182	HIGHLINE DITCH	EAST PLUM CREEK	13.524			Partial transfer to wells, no information since 1982	No
0801186	EUREKA DITCH	EAST PLUM CREEK	7	1973 - 2005		Active	No
0801185	CASTLE ROCK W W PL	EAST PLUM CREEK	15.73			No information since 1982	No
0801652	CASTLE ROCK RES DITCH	EAST PLUM CREEK	2			No information	No
0801189	LAST CHANCE D (E PLUM)	EAST PLUM CREEK	1			No information	No

Table 1a (continued)
Water District 8 Plum Creek Diversions, Deer Creek, and Cherry Creek Diversions

WDID	Structure Name	Source	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions	Comment	Key
0801226	KOONTZ DITCH	W BR WEST PLUM CR	2.52	1970 - 2005	292.1	Active	No
0801203	GLEN GROVE FEEDER DITCH	WEST PLUM CREEK	1	1973 - 1976	66.9	Used as Aug for Perry Park WSD	No
0801204	GRANT DITCH	WEST PLUM CREEK	2.52	1971 - 1980	86.8	Used as Aug for Perry Park WSD	No
0801205	HUNTSVILLE DITCH	WEST PLUM CREEK	4	1969 - 1981		Used in Castle Rock Aug Plan 2534	No
0801206	BENJAMIN QUICK DITCH	WEST PLUM CREEK	3.8	1955 - 1976	64.6	Used in Castle Rock Aug Plan 2534	No
0801207	JOHN KINNER DITCH	WEST PLUM CREEK	3.52	1955 - 1977	47.3	Used in Castle Rock Aug Plan	No
0801208	JOHN KINNER DITCH 2	WEST PLUM CREEK	3.52	1969 - 1976	66.9	Used in Castle Rock Aug Plan	No
0801209	PLUM CREEK DITCH	WEST PLUM CREEK	3	1969 - 1991	249.4	Used as Aug for Perry Park WSD	No
0801230	PLEASANT PARK DITCH	BEAR SPRINGS CREEK	5.61	1970-2005	557	GIS = 127 acres	No
0801210	RATCLIFF PLUM CR DITCH	WEST PLUM CREEK	7.5	1969 - 1995	281.4	Active, Ditch not used	No
0801241	DAKAN DITCH	DRY CREEK	1.95	1970 - 2003	213	GIS = 70 acres	Yes
0801240	RATCLIFF DILLON DITCH	DRY CREEK	4	1973 - 1998	140	GIS = 70 acres	Yes
0801235	RED ROCK DITCH	SPRING CREEK	3	1970 - 1998	269	GIS = 16 acres	Yes
0801237	SPRING CREEK DITCH	SPRING CREEK	4.42	1970 - 1998	360	GIS = 70 acres	Yes
0801213	BALL DITCH	WEST PLUM CREEK	0.872	1970 - 1973	223.1	Alternate point wells	No
0801250	GARBER CREEK DITCH 1	GARBER CREEK	4.19	1970 - 2005	373	GIS = 79 acres	Yes
0801215	CURTIS DITCH	WEST PLUM CREEK	1.5	1969 - 2005	117.6	Active	No
0801216	JAMES DITCH	WEST PLUM CREEK	0.5	1970 - 1994	16.4	Pumps from River	No
0801218	CRAIG DITCH	WEST PLUM CREEK	2.92	1952 - 1998	425.4	Active, Headgate needs repair since 2002	No
0801264	C ALPHONSE JARRE D	JARRE CREEK	1.5	1981 - 1998	157	No information since 1998	Yes

Table 1a (continued)
Water District 8 Plum Creek Diversions, Deer Creek, and Cherry Creek Diversions

WDID	Structure Name	Source	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions	Comment	Key
0801150	WILLIS BRYANT DITCH	PLUM CREEK	5			Filed for sumps as alternate point, no information since 1989	No
0801151	ALFRED G PERRY DITCH	PLUM CREEK	4.7			Alternate Point to pond	No
0801154	CHAS T NEWMARCH D	PLUM CREEK	3			Alternate Point Well	No
0801153	ENTERPRISE DITCH 1	PLUM CREEK	10.12			Recommended for Abandonment in 1982	No
0801158	FIFTY NINE DITCH 2	PLUM CREEK	4.5			Leased by Cottonwood WSD and Arapahoe WSD, Water Commissioner has not located headgate	No
0801279	WOODHOUSE DITCH	INDIAN CREEK	4.3	1970 - 2005	66	GIS = 39 acres	No
0801159	THIRTY THREE DITCH	PLUM CREEK	3.44			Recommended for Abandonment in 1982, Water Commissioner has not located headgate	No
0801161	LOWER PLUM CREEK DITCH	PLUM CREEK	19.5	1954 - 1991	224.3	Also used by Centennial Water and Sanitation District	No
0800909	WHEELER DITCH	TROUT CREEK	2.5	1975 - 2001	218	GIS = 19 acres	No
0800910	LOWER WHEELER DITCH	TROUT CREEK	1.5	1975 - 2001	149	GIS = 17 acres	No
0801124	HAYLAND DITCH	DEER CREEK	2.52	1950 - 2005	229	GIS = 15 acres	Yes
0801125	FAIRVIEW DITCH	DEER CREEK	16.5	1950 - 2002	322	GIS = 145 – Jeffco Open Space	Yes
0801127	OLD TIME DITCH	DEER CREEK	2.5	1950 - 2000	214	GIS = 15 acres	Yes
0801128	GARDEN DITCH	DEER CREEK	1	1972 - 2005	113	GIS = 15 acres	Yes

Table 1a (continued)
Water District 8 Plum Creek Diversions, Deer Creek, and Cherry Creek Diversions

WDID	Structure Name	Source	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions	Comment	Key
0801400	ALDERMAN DITCH	EAST CHERRY CREEK	5	1907 - 2005	181.8	Active - Filed on sumps for Alt Point	Yes
0801401	MILLER DITCH	EAST CHERRY CREEK		1978 - 1998	10.9	Alternate Point Sump ID 1686	No
0801403	HEISER DITCH	EAST CHERRY CREEK	0.7	1953 - 2004	86.5	Active, no water available last few years	Yes
0801404	MCCRACKEN DITCH	EAST CHERRY CREEK	3	1955 - 1998	139.2	Active, headgate needs repair	Yes
0801405	SMITH DITCH	EAST CHERRY CREEK	4.52	1971 - 2005	135.9	Active, GIS = 33 acres	Yes
0801406	SCHREIBER DITCH	EAST CHERRY CREEK	0.75	1972 - 1995	43.5	Active, no water available last few years	Yes
0801492	IZZARD DITCH	WEST CHERY CREEK	4	1980 - 1998	199	Pumps from River	Yes
0801412	SIXTY SEVEN DITCH	WEST CHERRY CREEK	6.82	1970 - 2005	716	Active, GIS = 94 acres	Yes
0801413	CRAWFORD DITCH	WEST CHERRY CREEK	2	1984 - 2005	499.4	Active	Yes
0801414	BIRMINGHAM DITCH	WEST CHERRY CREEK	2.5	1972 - 1998	65.9	Alternate point sumps	Yes
0801416	GOODRICH DITCH	WEST CHERRY CREEK	5	1969 - 2005	337.7	Active	Yes
0801418	NECESSITY DITCH	WEST CHERRY CREEK	3.67	1971 - 1994	150	Sporadic Data	No
0801417	ROCKY RIDGE DITCH	WEST CHERRY CREEK	3	1969 - 1998	169.5	Active, headgate washed out in 2000	Yes
0801421	DUVALL DITCH	ANTELOPE CREEK	1.5	1970 - 1988	178	Infrequent data since 2000	No
0801360	CONEHAY DITCH 1	CHERRY CREEK		1973 - 1973		No water rights but current acreage, diversions augmented by CCWUA	No
0801362	JOHN JONES DITCH	CHERRY CREEK	3.08	1970 - 1998	343	GIS = 101 acres	Yes
0801426	SCHUTZ DITCH	RUSSELL GULCH	2	1952 - 2005	385.3	Active and Alternate Point Well 7970	No
0801427	VON OSTEN DITCH	RUSSELL GULCH	1.65	1972 - 1985	171	Infrequent data since 1985	No
0801363	J F GARDNER DITCH	CHERRY CREEK	0.85	1969 - 1985	246.7	Alternate Point Wells	No
0801366	MONROE DITCH	CHERRY CREEK	2.25			No information since 1991	No
0801369	HALEY DITCH	CHERRY CREEK	0.16			Alternate Point Wells	No
0801370	LECUECE LEMEN DITCH	CHERRY CREEK	11.31			Alternate Point Well	No

Table 1a (continued)
Water District 8 Plum Creek Diversions, Deer Creek, and Cherry Creek Diversions

WDID	Structure Name	Source	Total Decree (cfs)	Diversion Record Period	Ave Annual Diversions	Comment	Key
0801372	MONTGOMERY DITCH	CHERRY CREEK	1.75			No information since 1982	No
0801373	ROWLEY DITCH	CHERRY CREEK	2			No information since 1982	No
0801374	HERTZOG DITCH	CHERRY CREEK		1953 - 1956	227.6	Transferred to Well Augmentation	No
0801376	DAVIDSON DITCH	CHERRY CREEK	1			Alternate Point Wells	No
0801377	SHORE DITCH	CHERRY CREEK	5			Water Commissioner has not located headgate, recommended for Abandonment in early 1980s	No
0801378	GREGG DITCH	CHERRY CREEK	14			Water Commissioner has not located headgate	No
0801705	BALDAUF UNDERFLOW DITCH	TALLMAN GULCH	2.36			No information	No
0801383	PIONEER DITCH	CHERRY CREEK	3.502			Cherry Creek Water Users Association Lease	No
0801384	CLEONA DITCH	CHERRY CREEK	3.5			Arapahoe Water and Sanitation District Lease?	No
0801385	HAWKEY DANE GIRD DITCH	CHERRY CREEK	2.587	1952 - 1956		Alternate Point Well	No
0801387	MURMUR DITCH	CHERRY CREEK	1.75			Water Commissioner has not located headgate	No
0801389	HAWKEY DITCH	CHERRY CREEK	3			Water Commissioner has not located headgate, maybe used by Arapahoe Water and Santation District	No
0800902	MANITOU PARK DITCH 6	TROUT CREEK	5.6	1988 - 1998	1180	No information since 1998	No

1) Several structures diverting from Cherry Creek and Plum Creek have diversion records in 1952 and 1953 and are then missing diversions until the early 1970s. For these structures, the Diversion Record Period is shown as beginning in the 1970s.

2) Note that due to generally incomplete diversion records, it is recommended that most irrigation diversions on Cherry and Plum Creeks be represented in an aggregated fashion. In general, structures recommended as “Key” have both irrigated acreage assigned in the GIS assessment and relatively complete diversion records from 1972 through 2005. It is further recommended to estimate supply-limited consumptive use for the aggregates based on shortages identified for the structures with more complete diversion records, designates as “Key” in Table 1a.