Division 2 Annual Report 2019

Arkansas River Basin

Department of Natural Resources

Division of Water Resources

April 17, 2020

COLORADO
Division of Water Resources
Department of Natural Resources

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This document is provided as an executive summary report of activities and accomplishments of Division 2 personnel during 2019 in partial fulfillment of the requirements of CRS 37-80-105.

Special thanks and recognition is due for the many Division 2 employees who helped compile the key information in this report and to all of the Division 2 employees who continued to perform their work in a manner that assisted in the effective and efficient use of water during 2019.

Appreciation is also expressed to key individuals in various sections of the report that discuss their meritorious work to accomplish significant outcomes during 2019.

I want to also thank you for your work in two significant areas in the Arkansas River Basin. Related to the Arkansas River Compact, special thanks goes out to you and those who served on the Special Engineering Committee to the Arkansas River Compact Administration. The most notable accomplishment in 2019 was the final approval of the Highland Canal water right for use as a source to supply water to the Permanent Fishery/Recreation Pool in John Martin Reservoir. This approval was completed at a special telephonic meeting of ARCA on February 14, 2019.

Perhaps most significant of all was the steadfast effort and support you provided in working through the issue of Reservoir Trades and Substitutions. This effort involved numerous meetings with major water users and other impacted interests and ultimately resulted in your final guidance and direction that was provided in early 2020.

Bill W. Tyner

Bill W. Tyner, P.E.
Division Engineer

April 20, 2020
Date

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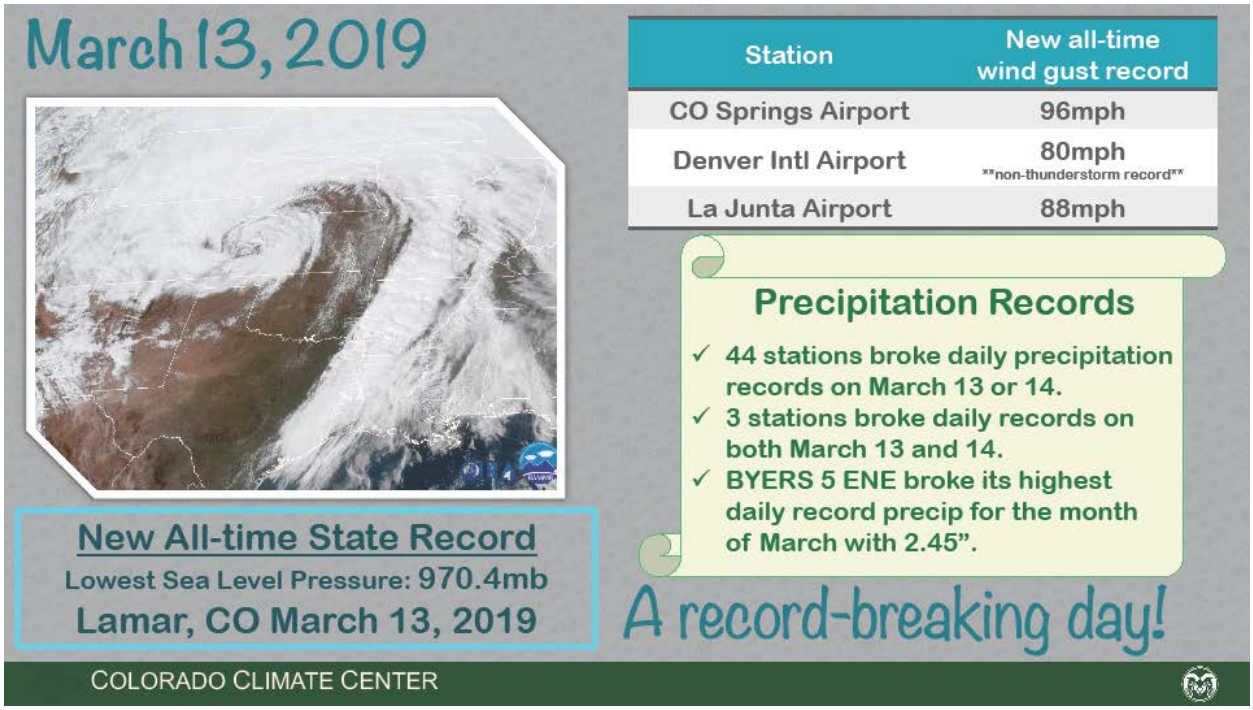
1 2019 Water Supply and Administration Operations

Water supply conditions in 2019 were above average within the Arkansas River basin, with a very good snowpack and reasonably good reservoir storage as a strong basis for a good water supply during the year. It should be noted though that the monsoon rain season was not

particularly strong during 2019 resulting in some areas of diminished supply emerging later in 2019. During March 2019 a unique snow event occurred termed the "Bomb Cyclone". This storm produced significant snowfall, primarily in the South Platte Basin, but also in the Arkansas Basin. This storm also created some record climatological conditions for areas of the Arkansas Basin as shown below.



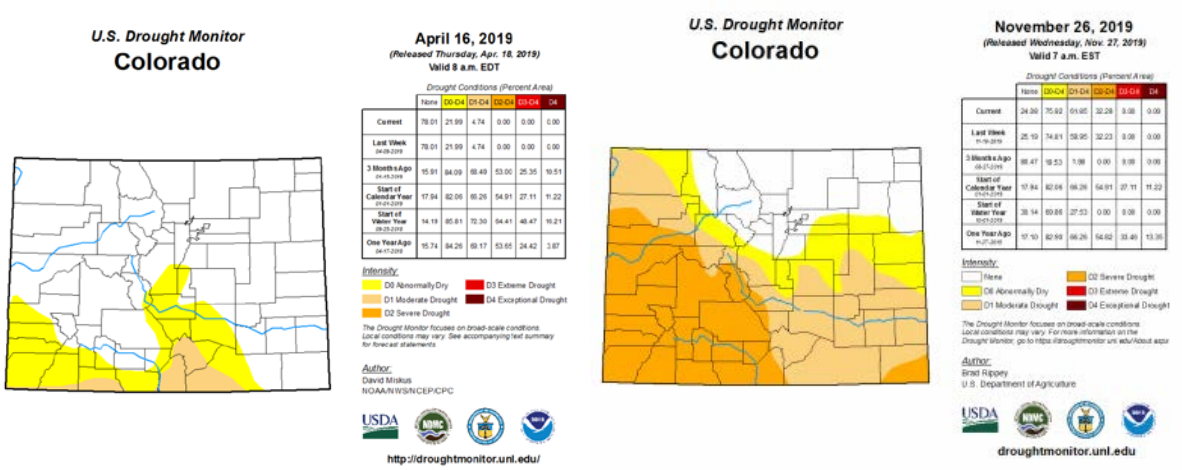
It is also notable that a temperature record was set at the John Martin Reservoir station on July 19, 2019 where a temperature of 115 degrees was recorded.

1.1 Water supply indicators

The benefits of the above average snowpack in the Arkansas Basin, enhanced by the March 2019 Bomb Cyclone storm, resulted in a significantly improved drought index map in April 2019. As the season unfolded there was typically an above average water supply during an extended snowmelt runoff. Note in the section below that 2019 was also characterized by a below average monsoon storm season that produced a drought index map that showed an increasing portion of the Arkansas Basin moving toward drought conditions.

1.1.1 U.S. Drought Monitor

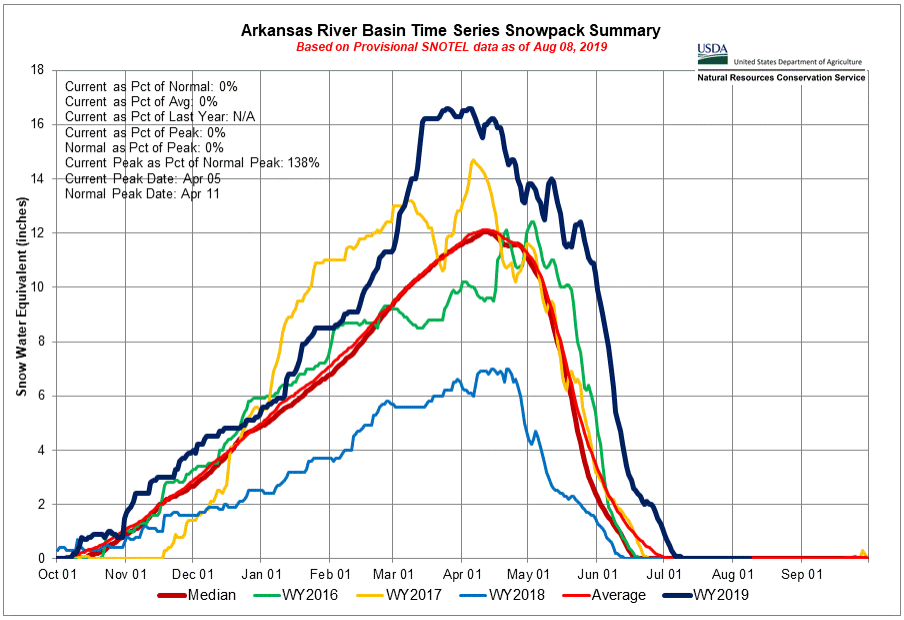
Figure 1: Comparison of April 2019 to November 2019 Drought Conditions



1.1.2 Snow Pack

The substantially above average snowpack in the Arkansas Basin resulted in a strong runoff that was a little later than normal due to a cooler spring. The snowpack in the Upper Colorado River Basin, namely the Frying-Pan River Basin, where imported transmountain water for the Fryingpan-Arkansas Project is derived, experienced a snowpack and runoff pattern above average as well and resulted in above average imports of Fryingpan-Arkansas water.

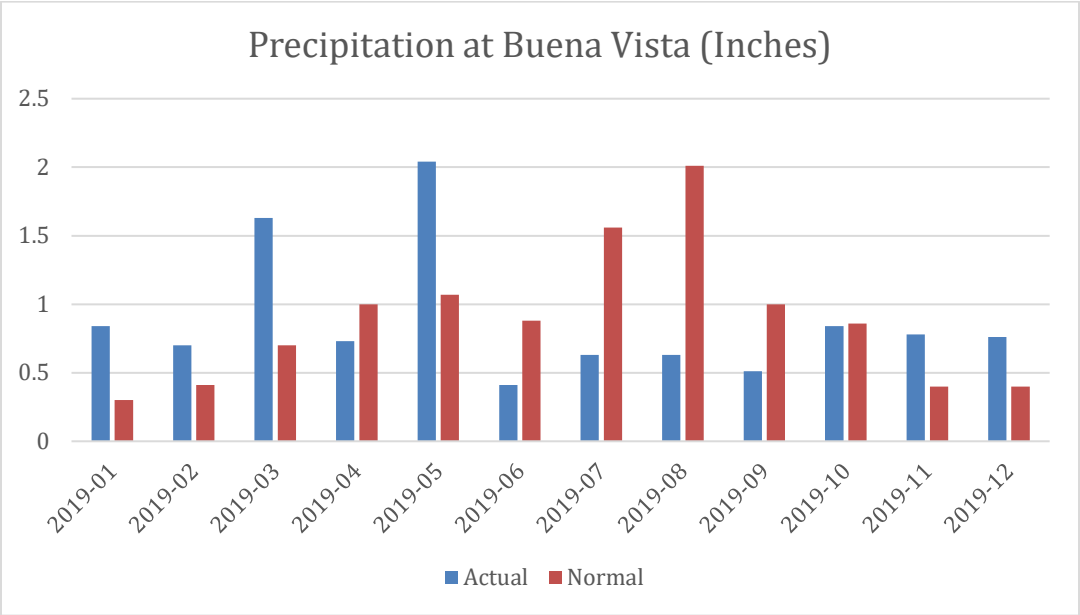
Figure 2: Snow Water Equivalent Time Series for the Arkansas Basin 2018-19

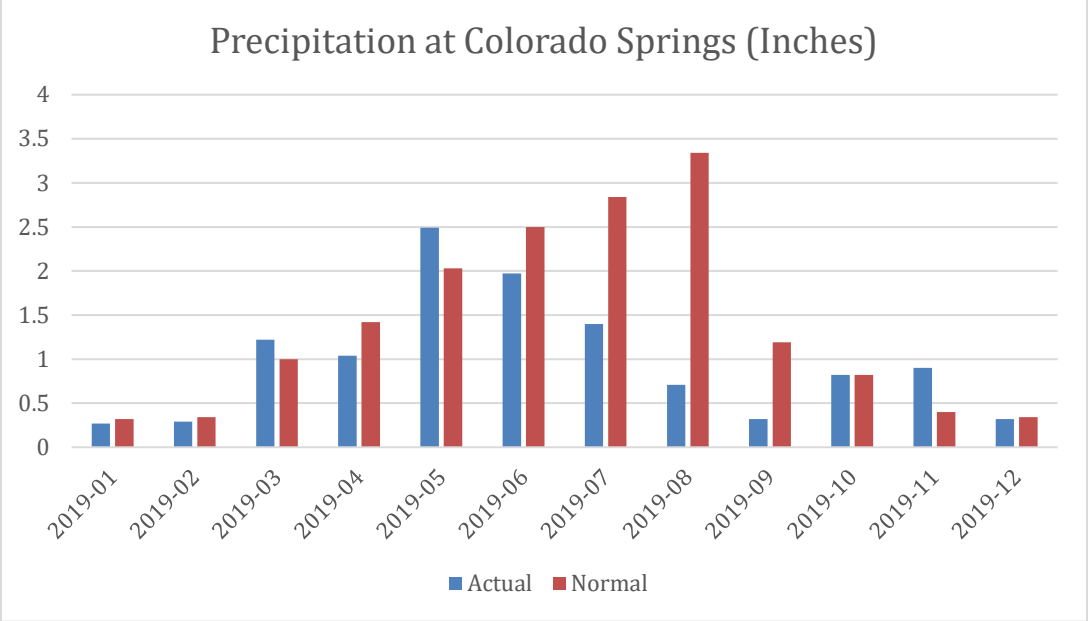


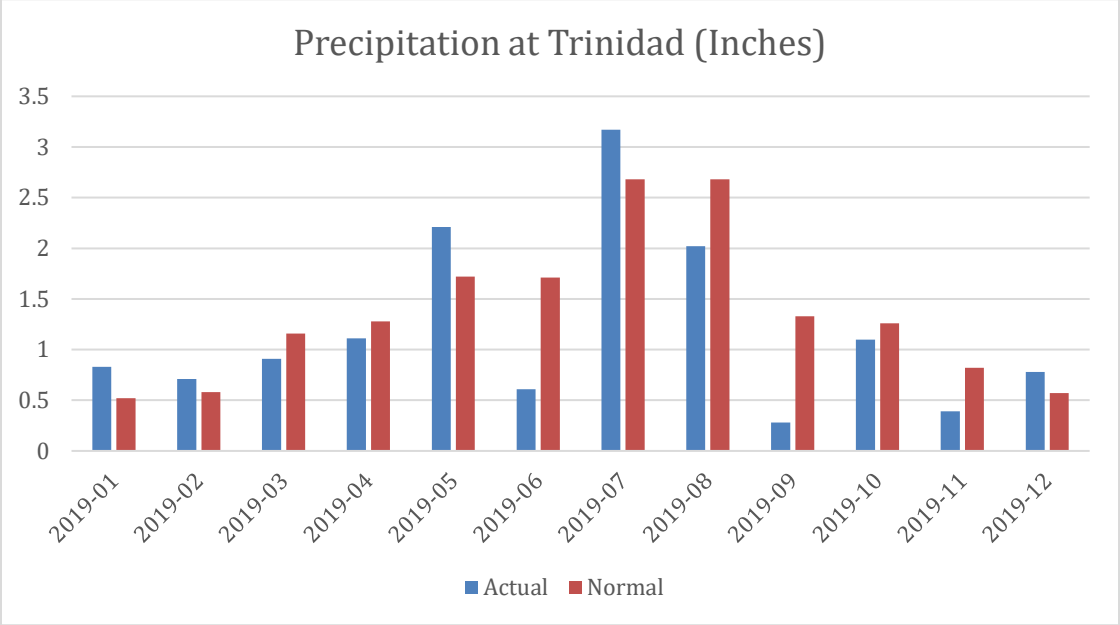
1.1.3 Precipitation and Streamflow

As described above, the precipitation in the Arkansas Basin in 2019 was much better than in 2018. The three location graphs below provide an illustration of the generous precipitation that occurred during the first half of the year followed by a weaker monsoon pattern with some recovery to start the winter storage season.

Figure 3: Average Precipitation at Key Locations compared to Measured Precipitation 2019

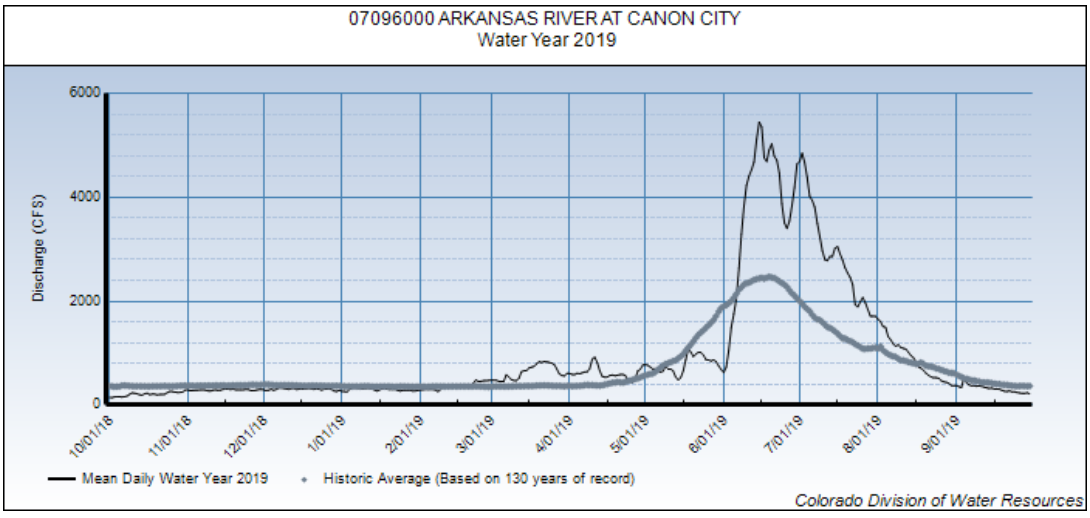


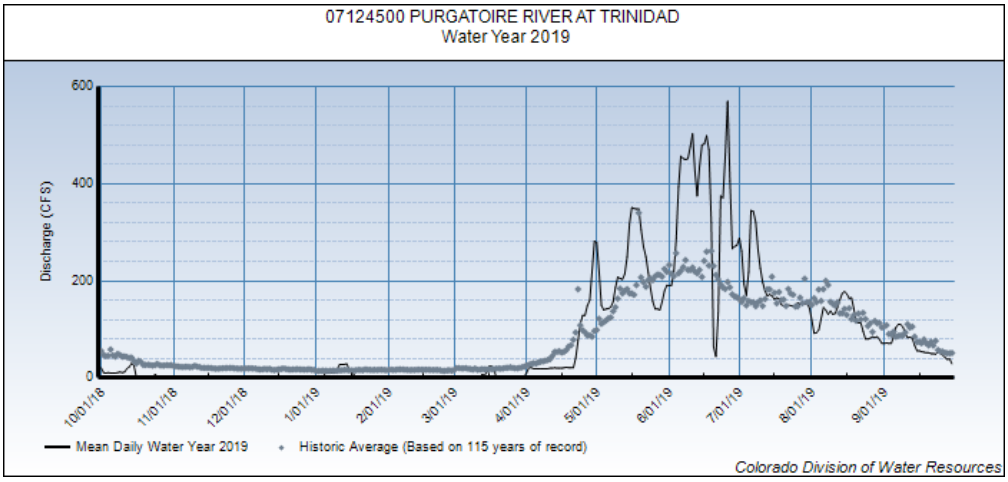


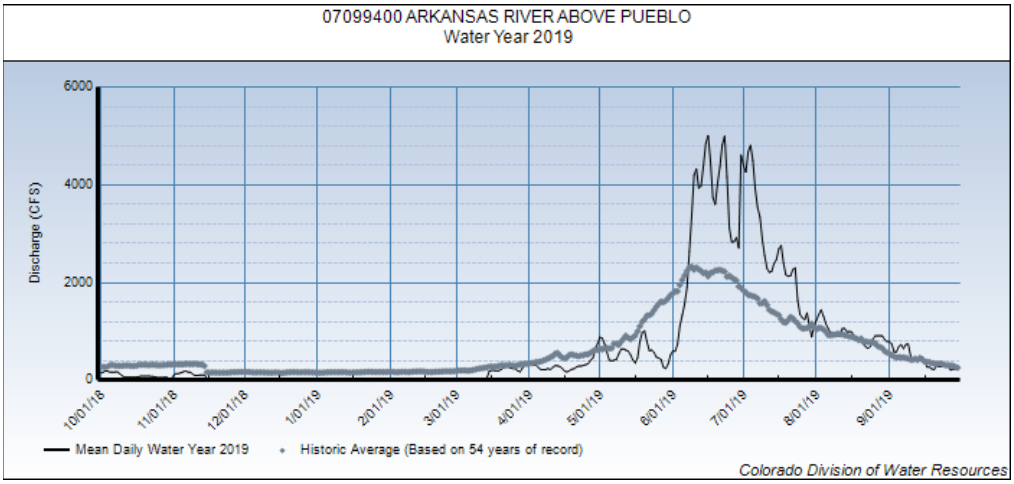


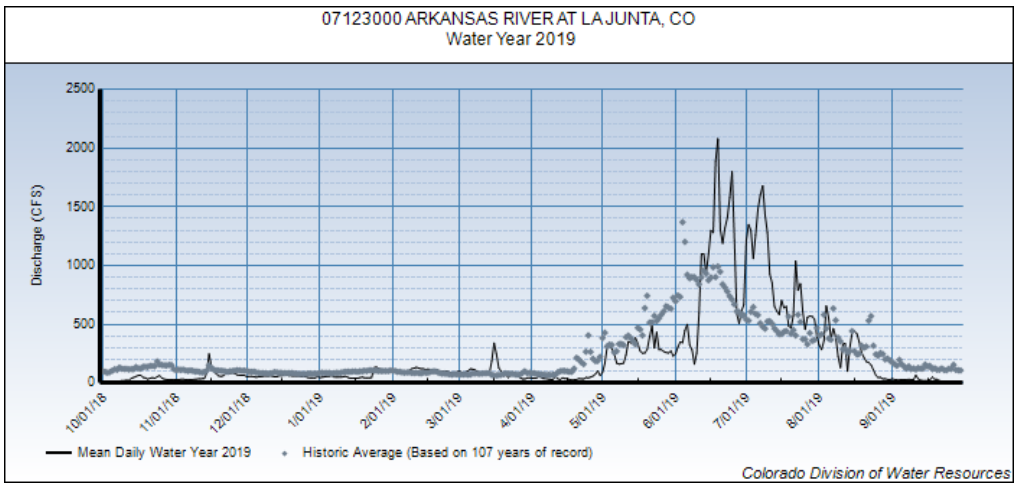
Streamflow was generally quite strong through the first half of 2019 with some diminution during the latter part of the summer at many locations.

Figure 4: Average Stream flow compared to 2019 Stream flow at Various Locations




07124500 PURGATOIRE RIVER AT TRINIDAD
Water Year 2019
Discharge (CFS)
600
400
200
0
10/01/18
11/01/18
12/01/18
1/01/19
2/01/19
3/01/19
4/01/19
5/01/19
6/01/19
7/01/19
8/01/19
9/01/19
Mean Daily Water Year 2019
Historic Average (Based on 115 years of record)
Colorado Division of Water Resources


07099400 ARKANSAS RIVER ABOVE PUEBLO
Water Year 2019
Discharge (CFS)
6000
4000
2000
0
10/01/18
11/01/18
12/01/18
1/01/19
2/01/19
3/01/19
4/01/19
5/01/19
6/01/19
7/01/19
8/01/19
9/01/19
Mean Daily Water Year 2019
Historic Average (Based on 54 years of record)
Colorado Division of Water Resources


07123000 ARKANSAS RIVER AT LA JUNTA, CO
Water Year 2019
Discharge (CFS)
2500
2000
1500
1000
500
0
10/01/18
11/01/18
12/01/18
1/01/19
2/01/19
3/01/19
4/01/19
5/01/19
6/01/19
7/01/19
8/01/19
9/01/19
Mean Daily Water Year 2019
Historic Average (Based on 107 years of record)
Colorado Division of Water Resources

1.2 Administration Activities

1.2.1 Pueblo Winter Water Storage Program

The final report for the period November 15, 2018 through March 14, 2019 showed a system grand total of 100,072 acre-feet which was 30,889 acre-feet or 23.6% less than was stored in the previous year and 33,104 acre-feet or 24.9% less than the previous 20-year average.

One of the terms and conditions of the decree entered in 84CW179, which approved of the Winter Water Storage Program, is that the conservation storage in John Martin Reservoir is to be monitored to ensure that over time, the program does not have an adverse effect on Compact storage in John Martin Reservoir. During the winter of 2018-19, a total of 28,933 acre-feet was accumulated in John Martin Reservoir as conservation storage prior to March 15, 2019. This was 11,123 acre-feet or 38.44% more than the amount stored during the period 1950 – 1975, and 23,144 acre-feet less than last year.

Colorado and Kansas continue to discuss the possibility of documenting the procedures that have been used to allocate the inflow to John Martin as measured at Las Animas, Colorado between conservation storage and water to be stored pursuant to Section III of the 1980 Operating Resolution.

1.2.2 Transmountain Diversions

Table 1: WY 2019 Transmountain Water Imported to Division 2

RECIPIENT				
DIV/WD	DIVERSION STRUCTURE	STREAM	ACRE-FT	STREAM
2/11	COLUMBINE DITCH	ARKANSAS RIVER	1,320	EAGLE RIVER
2/11	EWING DITCH	TENNESSEE CREEK	524	EAGLE RIVER
2/11	WURTZ DITCH	TENNESSEE CREEK	1,380	EAGLE RIVER
2/11	HOMESTAKE TUNNEL	LAKE FORK CREEK	19,430	EAGLE RIVER
2/11	BOUSTEAD TUNNEL	LAKE FORK CREEK	40,930	FRYINGPAN RIVER
2/11	BUSK-IVANHOE TUNNEL	LAKE FORK CREEK	1,550	FRYINGPAN RIVER
2/11	TWIN LAKES TUNNEL	LAKE CREEK	31,070	ROARING FORK RIVER
2/11	LARKSPUR DITCH	PONCHA CREEK	100	TOMICHI CREEK
2/79	HUDSON DITCH	HUERFANO RIVER	56	MEDANO CREEK
2/79	MEDANO DITCH	HUERFANO RIVER	159	MEDANO CREEK
2/10	BLUE RIVER PIPELINE	FOUNTAIN CREEK	9,265	BLUE RIVER
	TOTAL:		105,784	

The Fryingpan-Arkansas Project reported that their imports of transmountain water in 2019 were 138% of average. This import amount was a substantial increase over 2018 Project imports.

1.2.3 Surface Water Administration

Above average snowpack, followed by below average rainfall, particularly during the monsoon season, combined for an above average water supply in the Arkansas Basin in 2019. Reservoir storage from previous wet years remained strong and mitigated some of the impacts of a slow snowmelt runoff. John Martin Reservoir, for example, saw an average amount of storage during the 2018-2019 winter months with a peak daily storage amount of 177,380 acre-feet on April 10, 2019. Storage content at the end of the irrigation season in John Martin Reservoir was 73,021 acre-feet. A partial reason for the large decrease was due to Kansas choice to empty almost all of their Section II water from their account for delivery to Kansas' ditches.

Figure 5: Storage Content John Martin Reservoir IY 2019

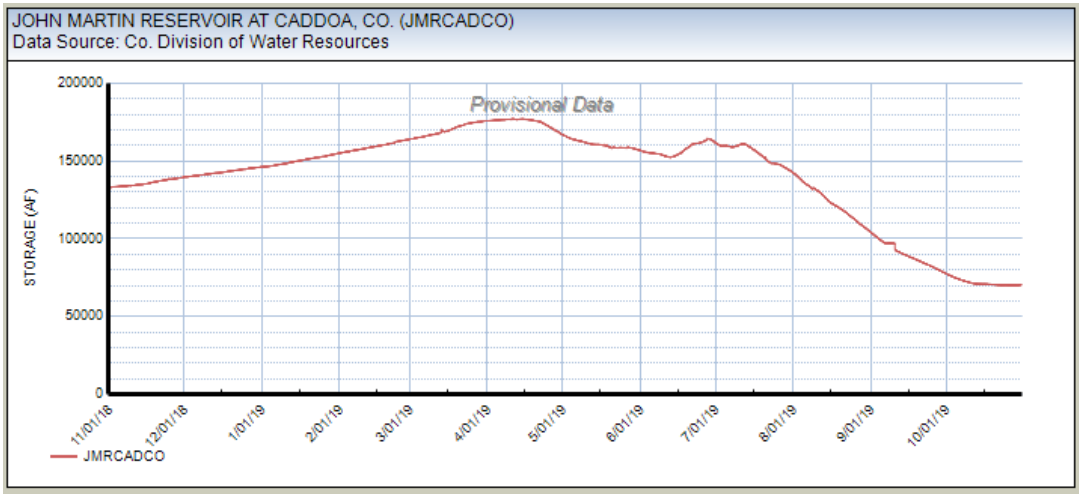
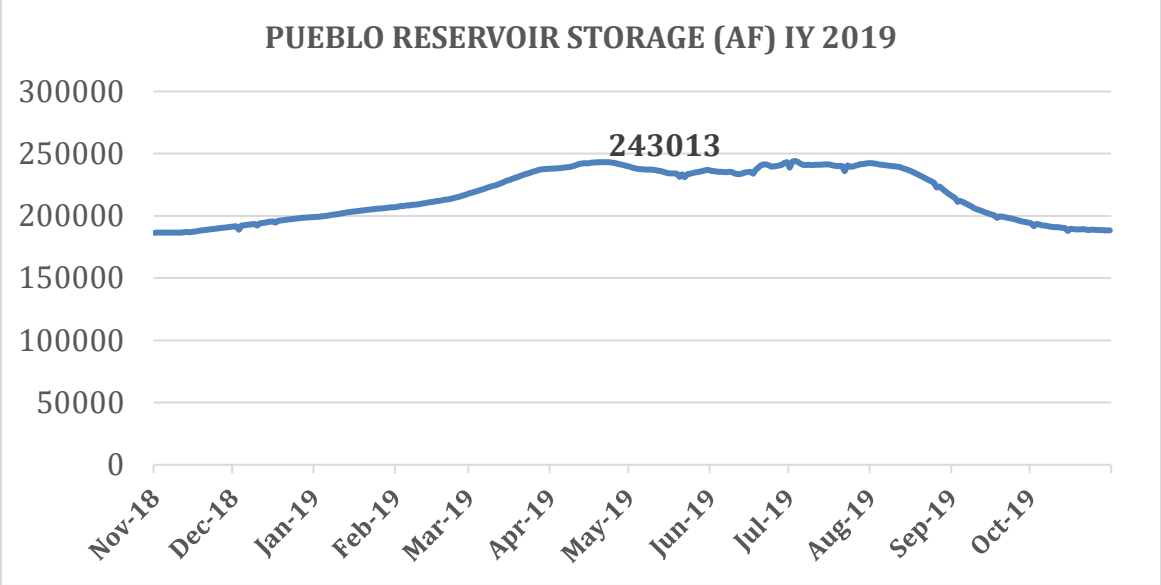


Figure 6: Storage Content Pueblo Reservoir IY 2019

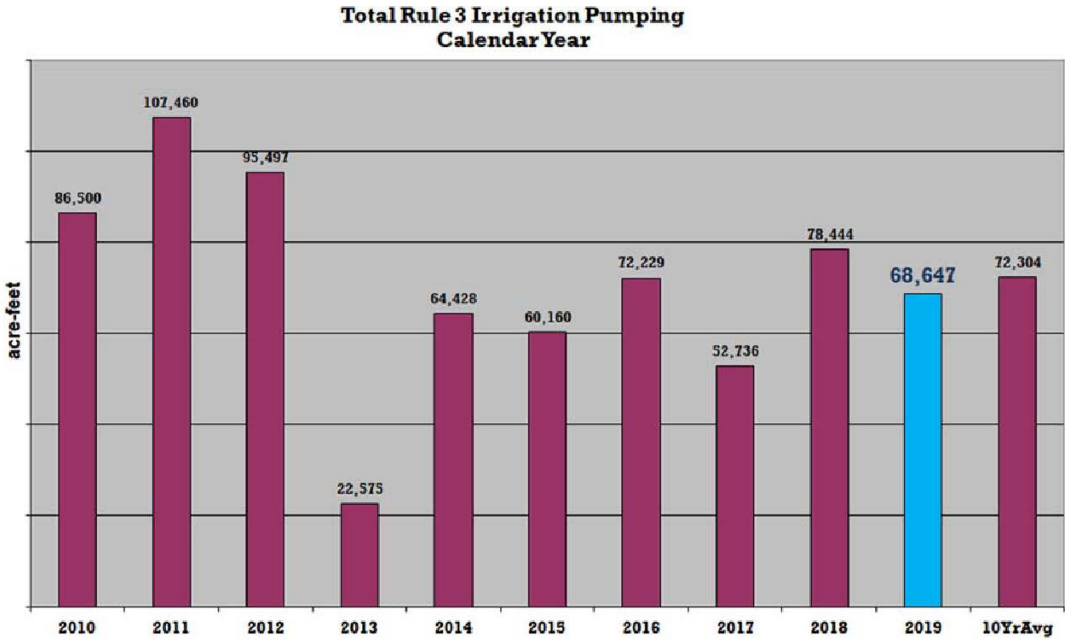


1.2.4 Ground Water Administration

During 2019 the irrigation well pumping represented in the H-I Model totaled 68,647 acre-feet. For User Groups 1-14 (above John Martin Reservoir Area) the total pumping was 34,180 acre-feet and for User Groups 15-24 (below John Martin Reservoir) the total pumping was 34,467 acre-feet.

The pumping by supplemental Rule 3 irrigation wells is shown in Table 1 by User Group by month. The total supplemental Rule 3 irrigation pumping for 2019 was 25,477 acre-feet. The pumping by sole source Rule 3 irrigation wells is shown in Table 2 by User Group by month. The total sole source Rule 3 irrigation pumping for 2019 was 27,258 acre-feet.

Figure 7: Irrigation Well Pumping - Ten Year Comparison



For 2019 supplemental flood Rule 3 irrigation wells were assigned 36% presumptive depletion factors pursuant to Appendix A.4 of the Decree in Kansas v. Colorado.

Rule 3 irrigation pumping delivered to fields via flood and furrow irrigation was assessed the 50% presumptive depletion factor unless flood irrigation of dry-up lands occurred under a Rule 6 temporary change of water rights. In this circumstance the presumptive depletion factor was increased to 65% for flood and furrow irrigation. Rule 3 irrigation wells supplying sprinkler systems were assigned a 75% presumptive depletion factor except for those wells irrigating dry-up lands per a Rule 6 temporary change of water rights. Under this circumstance the depletion factor was set at 85%. Rule 3 irrigation wells supplying drip irrigation systems were assigned a 100% depletion factor.

Overall irrigation well pumping in 2019 was below average since Colorado's Amended Use Rules for well pumping went into effect in 1996. The 2019-2020 Rule 14 Plan approvals for AGUA, CWPDA and LAWMA provided for an estimated amount of pumping and stream depletions as follows:

Plan	Estimated Total Pumping (Original Plan without Amended Pumping) (AF)	Estimated Rule 3 Irrigation Pumping (Original Plan without Amended Pumping) (AF)	Estimated Stream Depletions (Original Plan without Amended Pumping) (AF)
AGUA	8,825	6,660	4,165
CWPDA	58,749	49,086	25,376
LAWMA	67,235	51,021	21,598
TOTALS	134,809	106,767	51,139

The 2019 calendar year actual pumping and stream depletions for AGUA, CWPDA and LAWMA were as follows:

Plan	Actual 2019 Calendar Year Pumping (AF)	Actual 2019 Calendar Year Rule 3 Irrigation Pumping Included in H-I Model (AF)	Actual 2019 Calendar Year Stream Depletions (AF)
AGUA	5,758	4,442	3245.36
CWPDA	31,191	24402.17	11864.47
LAWMA	33,977	30950.36	14046.96
TOTALS	70,926	59794.53	29156.79

1.2.5 Water Court Activity

2019 caseload summary:

- 98 new cases were filed.
- 5 Statement of Oppositions were filed 2 of which were LAWMA cases

  - 18CW3076 Upper Arkansas Water Conservancy District - Plan for Augmentation, Change of Water Rights, and Appropriative Rights of Exchange
  - 18CW3077 Colorado Division of Parks and Wildlife, Mueller State Park, Groundwater Rights, Storage, Exchange and Augmentation
  - 19CW3061 Smith – Change of Water Right
  - 19CW3036 Lower Arkansas Water Management Associations LAWMA
  - 18CW3072 LAWMA
- 1 Motion to Intervene
  - 19CW3069 LAWMA
- 2 cases we were parties to were decreed.
- 11 cases we are parties to remain un-decreed
- In 2019 a total of 46 cases remain un-decreed.

1.2.5 Administration of Decreed Plans for Augmentation

Eighteen new augmentation plans were decreed in 2019, with the current total number of decreed plans shown here:

Table 2:

WD	2016	2017	2018	2019
10	285	340	379	387
11	116	127	129	130
12	38	48	51	53
13	30	30	31	31
14	15	34	34	38
15	13	13	13	13
16	20	28	28	29
17	9	15	19	20
19	10	14	14	14
67	18	19	19	19
79	2	2	2	3
Total	556	670	719	737

The majority of the Augmentation Plans are in Water District 10, most of them are subdivision augmentation plans utilizing individual on lot wells in the Denver Basin Aquifers with replacements made with septic returns. However, the successful utilization of this non-renewable resource depends on the active administration of these plans to prevent over pumping as these plans only allow for a finite pumping life (typically between 100 and 300 years at their maximum pumping rates) before pumping must cease and post pumping replacements begin, absent a return to water court to identify a new source of water. **These subdivisions are cooperative in providing annual, biannual or monthly diversion records to the Water Commissioner with a reporting rate in 2019 of 100%**. The District 10 Water Commissioner and Deputy are also responsible for working with these plans to bring them into compliance for failure to report or for over pumping. The remaining plans for augmentation in District 10 are heavily municipal or small individual well augmentation plans that are outside the Denver Basin and are also administered by the District 10 Water Commissioner. **These plans for**

augmentation also report 100% and the records are primarily maintained through automated methods. They operate primarily by utilizing replacement sources generated from historical consumptive use generated from changed surface ditch shares.

In Districts 11, 12 and 13, effort continues to increase obtaining use reports from individual on-lot wells. There is a high turnover in property and a large population of part-time occupancy. Many owners believe their private well is not subject to any type of regulation. There are still some that have not installed flow meters. The attempt to educate these individuals of state statutes pertaining to water administration, as well as the terms and conditions of the court decrees and permit conditions is ongoing.

In the Fall of 2019, 777 emails and letters were sent to property owners requesting meter readings and use reports, 347 responded for a 45% response rate. Emphasis continues this year on obtaining email addresses from all well owners contacted in order to reduce the expense of mailing reporting forms. While only a handful reported that they have no computer or email, many more reported by mail without comment, however, owners provided their email addresses for future contact via email. This effort is believed to be more efficient and will be continued in 2020

In order to determine annual uses for published diversion records we estimate a diversion amount for the entire subdivision by using the available actual uses, as reported, and adding the maximum decreed amounts for those lots or wells where actual uses are not known. So, the actual user supplied data is integrated in the annual diversion record and seems to reduce the replacement obligation in some cases.

1.3 Compact Operations

During the period of Winter Compact storage from November 1, 2018 through March 31, 2019, 40,814.21 acre-feet (net) was stored as Compact Water. An additional 93.07 acre-feet (93.07 acre-feet - Offset Accounts transfer) was added to Conservation Storage prior to the end of winter storage. Distribution into accounts began on April 7, 2019, in accordance with Subsection II A of the revised 1980 Operating Plan and continued at the prescribed rates until exhausted on April 25, 2019. The transfer of 39,719.50 acre-feet as prescribed by Section II D of the 1980 Operating Plan (including 3,944.58 acre-feet of summer stored water from April 1, 2019 through April 25, 2019 and 93.07 acre-feet of Offset Account transfers). See Section 2 – Table I and Accounting Supplement - Distribution of Compact Stored Water April 2019.

In contrast, the previous year's storage totaled 65,681.55 acre-feet (net). The 1950 to 1975 historical average amount of Winter Compact Water storage was 22,209 acre-feet in the period prior to the beginning of the Pueblo Winter Water Program operations.

During the 2019 Summer Compact Storage season, there were no events that resulted in additions to Conservation Storage beyond April 25, 2019.

During the year, the maximum end of day content of 176,834.00 acre-feet occurred on April 13 and April 15, 2019.

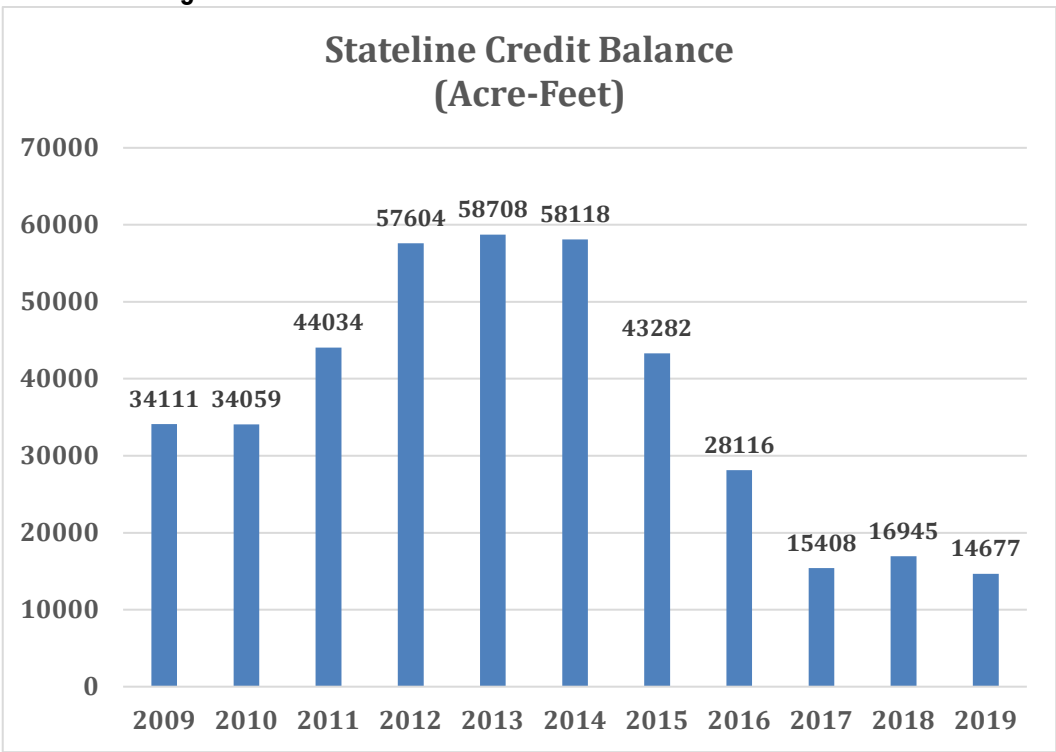
For additional details concerning the operation of John Martin Reservoir, the reader is referred to the Operations Secretary's Report for CY 2019 and the Report of the Colorado State Engineer to the Arkansas River Compact Administration concerning the Offset Account.

1.4 Compact Compliance

1.4.5 Post Compact Wells

The H-I Model is used for the purpose of determining depletions to usable stateline flow caused by well pumping of a ten-year period, which is updated annually. The update made in 2019 was for the period 2009-2018. This update showed a credit of 14,677 acre-feet, the following figure illustrates the status of Compact compliance over the past decade.

Figure 9: H-I Model Results - Stateline Accretion Credit



1.4.6 Surface Water Irrigation Improvements

Administration of the Irrigation Improvement Rules began the eighth year of operations since the Rules were promulgated in 2011. For 2019 there were four approved plans. Aurora completed revegetation operations for the Rocky Ford Ditch and therefore did not submit a Rule 8 Plan to reuse the Rocky Ford Ditch water right previously changed in court cases 83CW018 and 99CW169 to continue to rehabilitate revegetated lands under the canal following drought damage.

Four Rule 10 Plans were approved for operation during 2019-20 including a plan by the Lower Arkansas Water Management Association (LAWMA) for sprinkler improvements under the Lamar Canal, Fort Lyon Canal and Amity Canal involving approximately 4,840 acres of improvements and a plan by the Purgatoire River Water Conservancy District (PRWCD) for sprinkler improvements under the Enlarged Southside Ditch and Model Canals east of Trinidad involving 1,598 acres of improvements. The Lower Arkansas Valley Water Conservancy District (LAVWCD) applied for two Rule 10 Plans in 2019. The Fort Lyon LAVWCD Plan involved approximately 18,695 acres of sprinkler improvements and 1,173 acres of lateral improvements under the Fort Lyon Canal while the Non-Fort Lyon LAVWCD Plan involved approximately 9,438 acres of sprinkler improvements, 626 acres of drip improvements and 1,804 acres of lateral improvements.

1.5 Special Engineering Committee

In 2019 the Special Engineering Committee met on five occasions, predominantly by conference call. The primary focus for the SEC during 2019 was related to the Highland Canal as a source to the Permanent Pool until approval on February 14, 2019. Discussions after February 2019 centered on the proposed Colorado Multi-Purpose Account in John Martin Reservoir and those discussions will continue in Compact Year 2020.

1.6 Infrastructure Improvement/ Futile call model (Update)

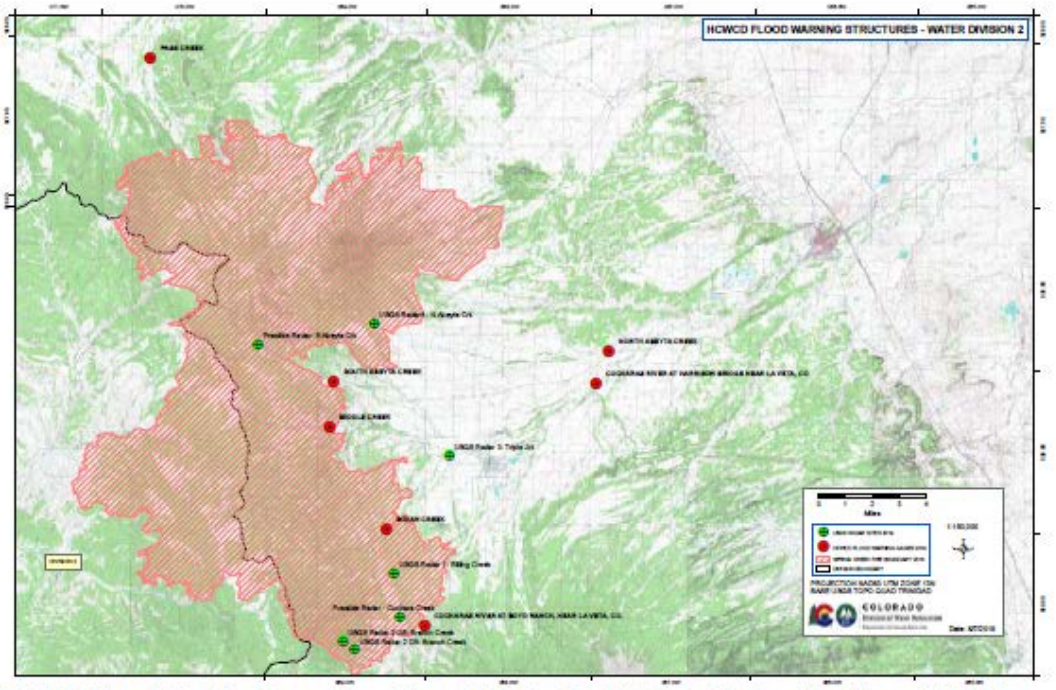
The Purgatoire River Water Conservancy District worked cooperatively with the Division 2 on a project to improve the stream management infrastructure on the Purgatoire River by installing a new stream gage below the Hoehne Dam. This gage is critical to ensuring that historical return flows from several major Water Court change cases are properly delivered below the diversion dam for the Hoehne Ditch. These changes of water right were done by City of Trinidad and Colorado Parks and Wildlife.

The figure below shows the new gage installation (Purgatoire River Near Hoehne):

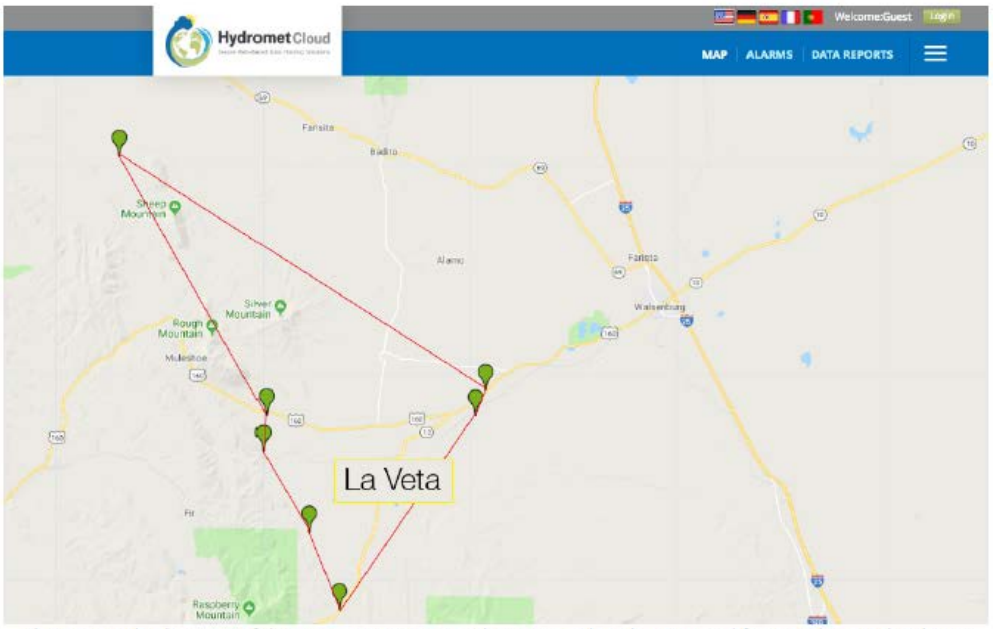
2 Community Involvement

2.1 Spring Fire Community Support - Huerfano County

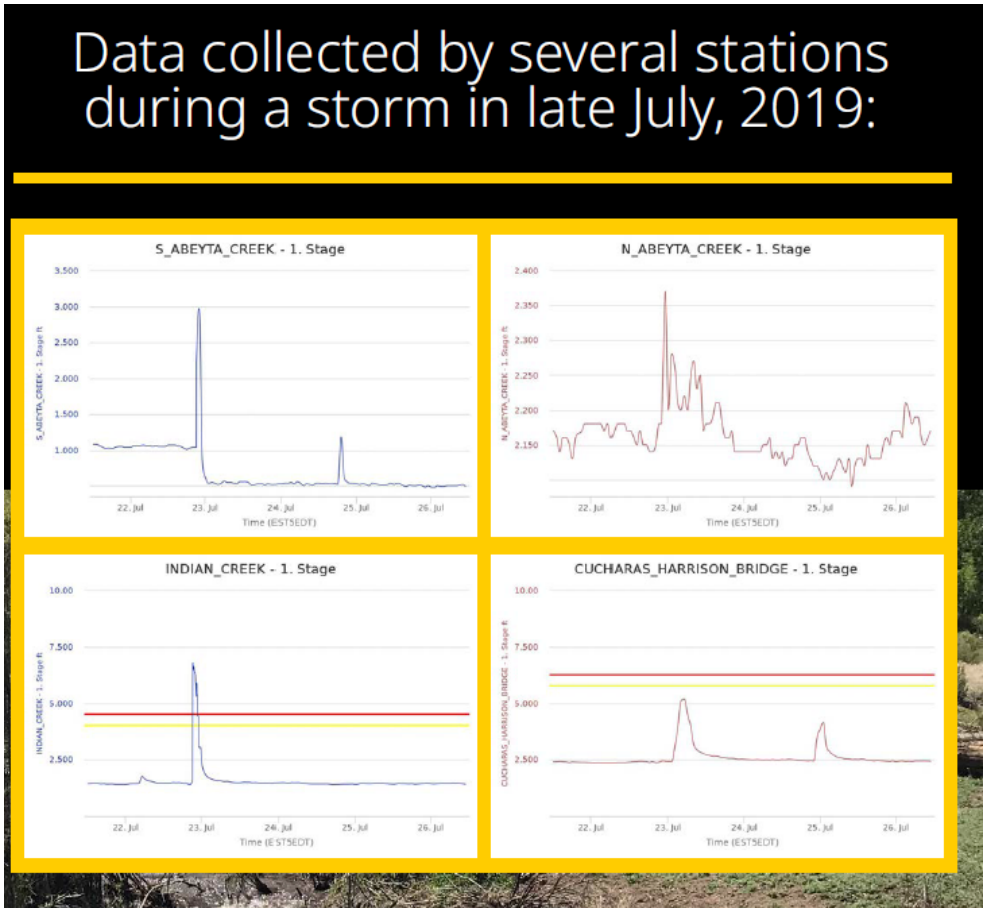
During 2019 the Division 2 Hydrography Team along with Matt Hardesty and David Hutchens maintained an emergency warning gage network on the upper Cucharas and Huerfano Rivers to provide community emergency managers with warning data about damaging flood flows.



HCWCD Flood Warning Structures - Water Division 2. (2019, June 7). Retrieved from HCWCD.net.



The geographic location of the seven stations around La Veta, Colorado. Retrieved from HydrometCloud.com.



Here are some excerpts from a publication done by Sutron Corporation on the project:

"Only in a small town can a remarkable team immediately come together to make these gages possible and get this done before the summer monsoon season."

– Michael White, Huerfano County Water Conservancy District

"The goal of this system is to provide timely information to emergency managers without placing them in harm's way to make visual observations. It's like having eyes in the field."

– Matt Hardesty, Colorado Division of Water Resources

The OTT RLS and OTT SVR 100 fixed to a bridge over flowing water.

Luckily, the summer of 2019 was a mild monsoon season. Since the system's installation, a full evacuation has not been needed.

As Mayor Brgoch's team learns more about their stations, they aim to continue improving a system that is still in its early stages. With more data coming in, they are getting a better understanding of how much rain the town can handle before it becomes an emergency state. They are constantly adjusting alarm threshold levels as rain events occur, to ensure each of their stations are finely tuned given their unique placements.

Given La Veta's smaller size, it's all the more important for their core team not to have to manually check field sites on a regular basis. Remote data transmission helps them make the most of every minute and get staff into the field when it is most crucial, to fulfill their goal of keeping Colorado residents safe.

During 2020 Division 2 Hydrographers will continue to operate this important system.

3 Highlights of 2019

3.1 Augmentation and Reporting Team Efforts

Throughout 2019 the Division 2 Augmentation and Reporting Team developed critical components for gaining control of augmentation and replacement plan administration. This team met numerous times during 2019 with the following important outcomes.

- Described for each type of plan the steps necessary during plan review and approval to set in motion the ability to track actions related to administering the plan.
- Identified key elements that were important to track for each type of plan. Examples include:

(1) Elements in final decrees that require tracking
 (a) Dry-up
 (b) Aug Plan Projections
 (c) Return flow reporting requirements
 (d) Accounting/Diversion reporting
 (e) Retained jurisdiction
 (f) Aug plan auditing/correction of failures
 (g) Consent decrees/contempt citations in enforcement cases
(2) Dam Safety Related
 (a) LSWT/ECD Applications
 (b) NOI Applications
(3) Irrigation Improvement Rules
 (a) Annual Rule 10 application/approval postings to DWR website
 (b) Communication to Notification List and tracking of comment deadlines
(4) Lease Fallow Projects
 (a) Monthly/Annual reporting to DWR website
 (b) Deadlines inherent to CWCB/State Engineer approvals
(5) SWSP Processing/Administration
 (a) Applications/renewals
 (b) Terms/Conditions deadlines/compliance
 (c) Five year limits/court extensions
(6) Augmentation Coordinator & Engineer
 (a) Rule 14 and related SWSP/Augmentation Plan reporting/accounting
 (b) Tracking time-forward accretions (Fry-Ark)
 (c) Scheduling/tracking Augmentation Coordination Meetings
 (d) Tracking augmentation releases/operations
 (e) Administratively approved plans/tracking
(7) GIS/Compact Compliance
 (a) Monitor submittal of annual dry-up information
 (b) Provide dryup mapping to Kansas by April 15th
 (c) Provide timely data to Water Commissioners for:
 (d) Dryup inspections
 (e) Farm Unit Verifications

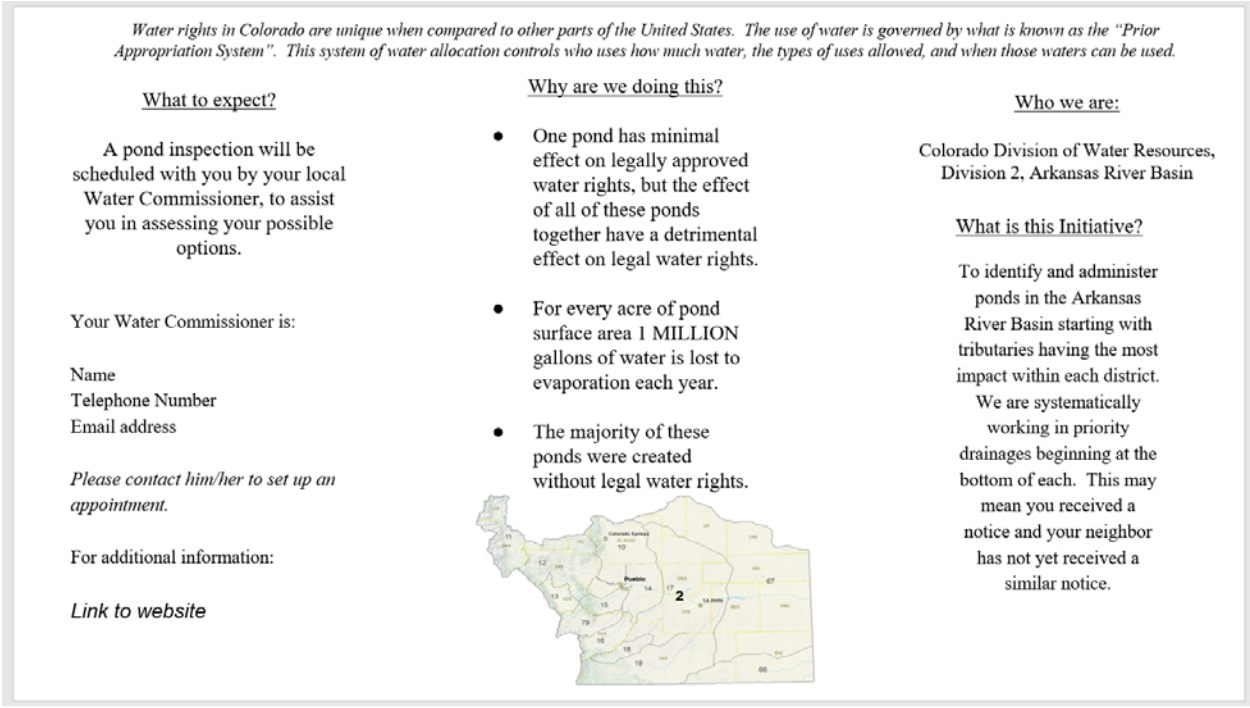
(f) Irrigation Improvement Rules inspections
(g) Five year random parcel inspection
(h) Track submission of dry-up affidavits
(i) Track enforcement on ponds

- A very important development involved working with the DWR Water Information Team to set in motion the development of an Reporting/Accounting Uploader Tool to provide a portal for receiving, storing and tracking key information submittals provided to DWR by consultants, attorneys and water right owners and users. This tool will be available for use sometime during 2020.

3.2 Pond Team Efforts

Work also continued to advance by the Pond Enforcement Team. This objective by Division 2 is targeted towards achieving compliance for hundreds of ponds in Division 2 that have no apparent legal basis for existing.

Critical to this enforcement effort is the establishment of very clear communication material. A significant amount of effort was undertaken by a subcommittee of the Pond Team to work on communication brochures to explain the problem and potential solutions to pond owners.



Water rights in Colorado are unique when compared to other parts of the United States. The use of water is governed by what is known as the "Prior Appropriation System". This system of water allocation controls who uses how much water, the types of uses allowed, and when those waters can be used.

What to expect?

A pond inspection will be scheduled with you by your local Water Commissioner, to assist you in assessing your possible options.

Your Water Commissioner is:

Name
Telephone Number
Email address

Please contact him/her to set up an appointment.

For additional information:

Link to website

Why are we doing this?

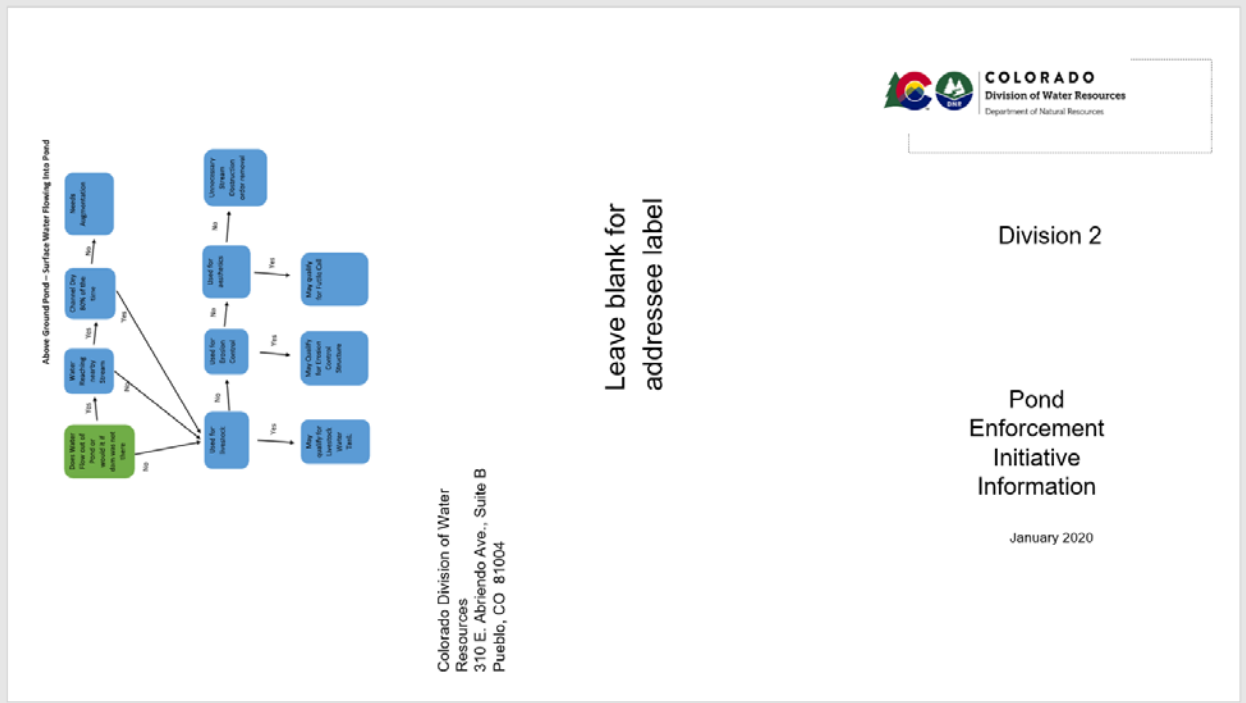
- One pond has minimal effect on legally approved water rights, but the effect of all of these ponds together have a detrimental effect on legal water rights.
- For every acre of pond surface area 1 MILLION gallons of water is lost to evaporation each year.
- The majority of these ponds were created without legal water rights.

Who we are:

Colorado Division of Water Resources, Division 2, Arkansas River Basin

What is this Initiative?

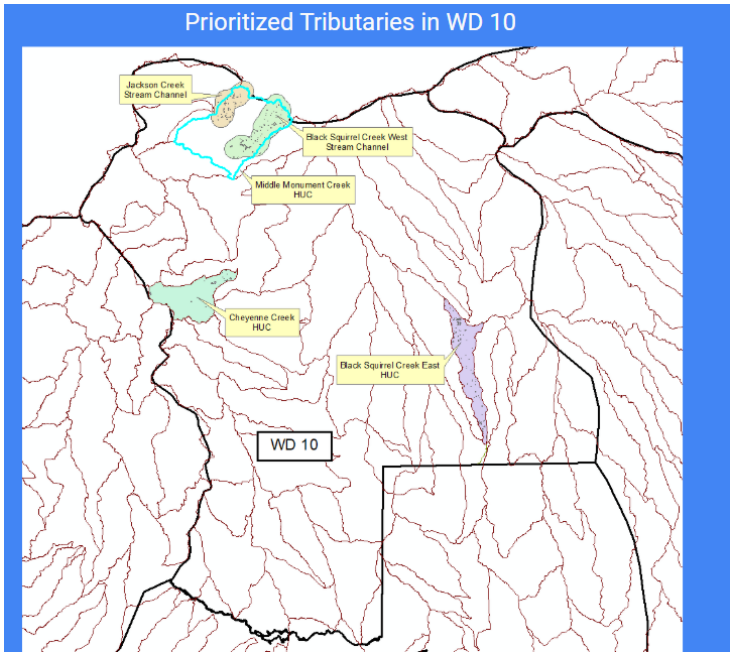
To identify and administer ponds in the Arkansas River Basin starting with tributaries having the most impact within each district. We are systematically working in priority drainages beginning at the bottom of each. This may mean you received a notice and your neighbor has not yet received a similar notice.



These brochures are designed to be sent out when a Water Commissioner begins enforcement activities on a particular drainage area.

It was also recognized by this subcommittee that key communication with local Legislators, Water Conservancy Districts and augmentation plan providers will also be important as the pond enforcement effort gets underway.

An important element accomplished by the Pond Team in 2019 included mapping and data coordination on the critical enforcement areas identified by each Water Commissioner in their Water Districts. A map for Water District 10 critical drainages is shown below as an example.



3.3 Reservoir Trades and Substitutions

Critical work occurred in Division 2 related to review of the historical practice regarding Reservoir Trades and Substitutions. This practice has had a long standing in the Arkansas River Basin and involves the voluntary "trade" of water from one reservoir to another reservoir. Below are some excerpts from two of the communication memos that help frame this topic:

From the April 2019 memo from Kevin Rein:

"The State and Division Engineers are currently reviewing historical water administration practices in Water Division 2 (Arkansas River Basin) and potential changes that may affect the operations of major water users in the Arkansas River Basin, including Colorado Springs Utilities, Pueblo Board of Waterworks, the City of Aurora, the Southeastern Colorado Water Conservancy District, the U.S. Bureau of Reclamation, the Upper Arkansas Water Conservation District, the Lower Arkansas Water Management Association, the Colorado Water Protective and Development Association, and others. Historically, some of these entities have entered into contracts to exchange or trade water with each other to facilitate more effective and efficient delivery of their water supplies to their decreed places of use. While the Engineers are required to administer the water court's decrees and distribute water in accordance with the priorities and other provisions of those decrees, the Engineers do have statutory authority to administratively approve 1-for-1 exchanges of water or taking a senior water right's supply and providing that water user with a substitute supply in the stream on a

1-for-1 basis, after assessing any appropriate transit losses on the delivery of the substitute supply. However, the Engineers' authority is not unlimited and such exchanges may only occur without causing material injury and in priority as against other exchange rights, on-channel hydropower rights, and instream flow rights that may continue to operate even when there is an unsatisfied downstream senior water right calling for water. These exchange operations are critical to Colorado optimizing the beneficial use of the state's water supply. Exchanges and substitutions that the Engineers may administratively approve may also be adjudicated as appropriative rights of exchange by the water courts and given priorities for administrative purposes. The priorities are important because a live stream is required for such exchanges and there may be limited exchange potential available in the stream. Unsatisfied instream flow water rights and senior exchanges frequently preclude the operation of exchanges with more junior priorities.

Recently, the Colorado Water Conservation Board staff questioned some of the Engineers' administrative practices in Water Division 2 above Pueblo Reservoir where the CWCB holds instream flow rights. In addition, the extent of exchange practices that may be approved by the Engineers outside of any water court decrees have increasingly become the focus of water court applications pending in other water divisions, especially Water Division 1. For instance, the Division 1 water court recently held that replacing lagged well depletions with downstream replacement sources does not constitute an appropriative right of exchange for which the water court can confirm a priority, which is a drastic change from historical water court practice. An appeal is also pending before the Colorado Supreme Court in *Consolidated Ditches v. Denver*, Case No. 16SA291, which may confirm whether Colorado has a mandatory "character of exchange rule" that would require that the water diverted upstream by exchange take on all of the decreed characteristics of the water right used as the downstream replacement supply. The Engineers have advocated for a more flexible approach, arguing that the intent and needs of the exchange appropriator should determine the purposes to which the water diverted upstream may be placed."

And from the November 2019 memo prepared by John Van Oort and Bill Tyner:

"This report makes clear that reservoir trades and substitutions are widely applied along the mainstem of the Arkansas River and up some key tributaries to facilitate movement of water in a manner that attempts to avoid disruption of flows in the river in a manner contrary to flow agreements established on the river. Nearly 50,000 acre-feet (49,462 acre-feet) were moved via a reservoir trade and substitution during the 2016 through 2019 period (note that 2019 reservoir trades and substitutions were only compiled through June).

Additionally, reservoir trades and substitutions serve as an efficient means to get water delivered to key operational locations that position water supplies to better meet the intended uses by the owners of the transmountain, fully consumable or native water involved.

Although the practice has most extensively occurred upstream from Pueblo Reservoir, future operation of Alternative Transfer Method plans and change of water right decrees below Pueblo Reservoir may cause an increased reliance on reservoir trades and substitutions to move water back upstream to Pueblo Reservoir or other reservoirs for end use."

Division 2 greatly appreciates the effort invested in this topic by Kevin Rein, Tracy Kosloff and Paul Benington. The meetings (held in April, July and November 2019) to delve into this issue involved 50-60 people representing numerous organizations with interest in this practice and potential legal implications associated with the practice. Efforts in 2019 resulted in a key guidance document issued by Kevin Rein and Bill Tyner in early 2020 regarding this issue.

3.4 Fryingpan Arkansas Tour

An important event that took place in September 2019 was the tour of the Fryingpan Arkansas Project. This tour was organized as a joint effort between Division 2 and the Southeastern Colorado Water Conservancy District (SECWCD; managing district for the Fry-Ark Project). Special thanks go out to Lori Lest and Wendy Hunker from Division 2 and to Chris Woodka, Toni Gonzales, Margie Medina and Jim Broderick with SECWCD.

The tour was held on September 9th and 10th and included the following individuals:

From Division 2:

Bill Tyner, Division Engineer
John Van Oort, Division 2 - River Operation Coordinator
Rachel Zancanella, Assistant Division Engineer
Lori Lest, Assistant Division Engineer, Litigation
Joey Talbott, Lead Hydrographer
Brian Sutton, District 11 Water Commissioner
Lonnie Spady, District 17 Water Commissioner

From Division 5:

Alan Martellaro, Division Engineer
James Heath, Lead Assistant Division Engineer
Caleb Foy, Assistant Division Engineer
Jana Miller, Water Resources Engineer

From the State Engineer's Office:

Melissa Van der Poel, Team Leader, Team 237
Kate Fuller, Water Resource Engineer
Kevin Rein, State Engineer, DWR Director
Tracy Kosloff, Deputy State Engineer

From the Colorado Water Conservation Board:

Kaylea White, Sr. Water Res Specialist
Colin Watson, Water Resources Engineer
Rachel Pittinger, Project Manager

Cole Bedford, Water Resources Engineer

From the Division 2 Water Court:

Michele Santisteven, Water Clerk
Kate Brewer, Water Referee

From the U.S. Bureau of Reclamation:

Roy Vaughn
Terri Dawson
Michael Holmberg

From the Attorney General's Office:

Paul Bennington, First Assistant Attorney General
Chris Stork, Assistant Attorney General

From the Governor's Office:

Amy Moyer, Assistant Deputy Director Water
Nate Pearson, Senior Policy and Budget Analyst

From SECWCD:

James & Cindy Broderick
Chris Woodka
Garrett Markus
Margie Medina
Toni Gonzales

Lee Miller, Legal Council

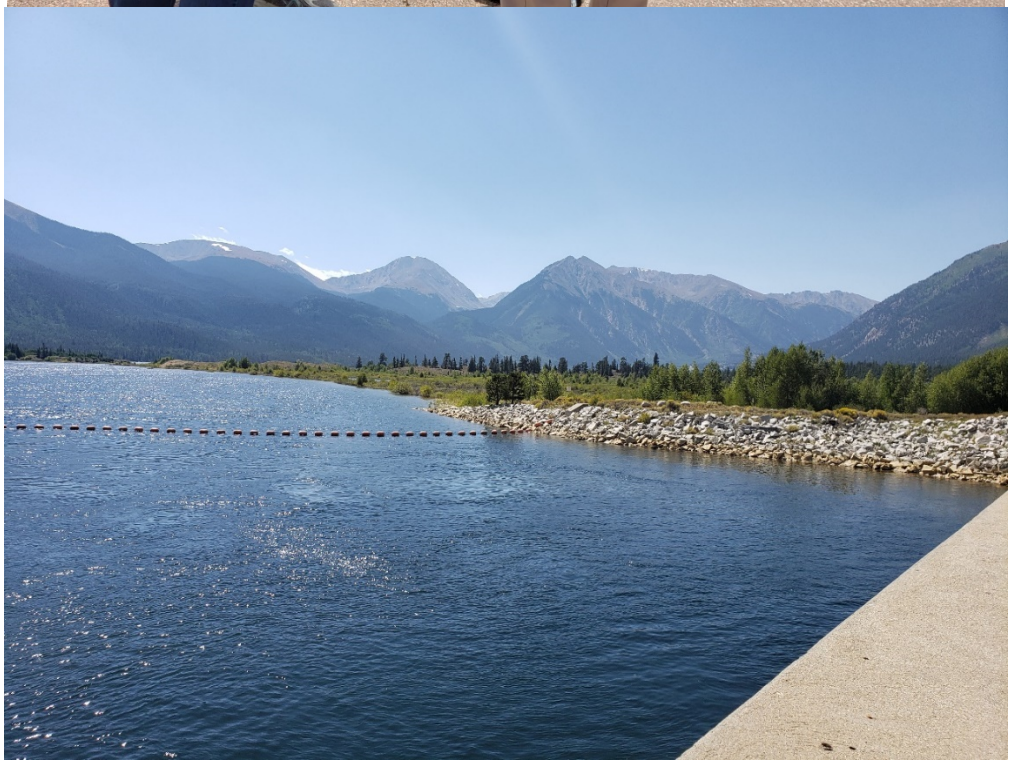
Peter Van Dusen, Wilson Water Group

This tour provided a great opportunity for individuals to view some of the important physical parts of the Fryingpan Arkansas System both in Division 5 where the imports originate and in Division 2 where the water is received. This event also was instrumental in being able to help gain understanding of the importance of the work that Division of Water Resources does and how that work intertwines with critical efforts by other agencies.

Below are some photos from the tour.


The Smarter Way to Go


US DOT 533527 CO PUC 47366



4 Organizational Changes

Personnel changes occurred throughout the year with those employees that left State service and those that began State service.

In the Hydrography group, John Canaday transferred to the PE position vacated by Lori Lest when she became the Litigation Assistant Division Engineer in the previous year. That occurred in February. Canaday's position was filled by Brian Lenherr. Division 2 experienced the loss of Anthony Gutierrez who passed away while on the job in May. His vacancy was filled by Gary Peltack. Both new hire hydrographers started in May.

Charlie DiDomenico retired from the Augmentation Coordinator position in March. That position was filled by Eunhye Kim in June. She resigned in August leaving this position vacant at the end of the year.

Water commissioner positions impacted this year were the hiring of Brandy Cole in WD66/67 to replace Becky Nichols after her retirement. Vanessa Indarte was hired in WD18, replacing Justin Lucero after his resignation. Both employees began in April. The groundwater commissioner team had a resignation by Taylor Weirich (May) and his workload was taken on by temp employee Kain DiRezza. The permanent position was vacant at year end.

Audrey Sartin retired from the Decreed Augmentation Coordinator position at the end of December.

Additionally, Ryan Canterbury received an upgrade from EPSAII to EPSAIII in April and Bethany Arnold received her PE license allowing her position to be upgraded from EITIII to PEI in October.

Training/Staff Development

Employee training/educational opportunities include the following:

- Combined Division 2 and Team 237 training; January 2019
- Colorado Water Congress; Bill Tyner, Rachel Zancanella, Lori Lest, John Van Oort, Mark Perry; January 2019
- Tech Forum Meeting for Groundwater; Kaleb Dunn, Dale Baker, Dan DiRezza, Bethany Arnold, Monica Long, Kathy Trask, Martha Archuleta, Donna Smith, Jessica Wodiuk, Chad Brumit, Audrey Sartin, Janet Dash; February
- Past, Present, Future of Colorado Water Law; Rachel Zancanella; April

- Arkansas River Basin Forum; Lori Lest, Dan Henrichs, Phil Reynolds, Rachel Zancanella, Brian Sutton, Kathy Trask, Audrey Sartin, Ina Bernard, Janet Dash, Kaleb Dunn, Jessica Wodiuk, Monica Long, Donna Smith, Steve Stratman, Jeanette Myers, Dennis Jones, Bill Tyner; April
- Water Law In a Nutshell; Bethany Arnold, Monica Long, Jessica Wodiuk, Kaleb Dunn, Dan Henrichs, Jacob Olson, Steve Stratman, Jeff Montoya, Ryan Canterbury; May
- Association of Western State Engineers Spring Meeting; Rachel Zancanella; May
- Water & Flood Awareness; Ryan Canterbury, John Canaday; May
- Pueblo Board of Water Works Mountain Tour; Monica Long; July
- Colorado Springs Utilities Tour; Bill Tyner, John Hunyadi, Monica Long; September
- Fryingpan Arkansas Tour; Bill Tyner, Rachel Zancanella, Lori Lest, John Van Oort, Lonnie Spady, Joey Talbott, Brian Sutton; September
- Hydraulics Lab Tour; Monica Long, Jeanette Myers, Rachel Zancanella, Joey Talbott, John Canaday, Jessica Wodiuk, Kaleb Dunn, Phil Reynolds, Jacob Olson, Kathy Trask, Cheston Hart; September

CWOA

The CWOA annual meeting was hosted by Division 3 in Alamosa. Division 2 employees that attended the conference in October were: Bruce Smith, Jessica Wodiuk, Monica Long, Dennis Jones, Steve Stratman, Dan Henrichs, Phil Reynolds, Kaleb Dunn, Rachel Zancanella, Jerry Livengood, Bill Tyner, and Martha Archuleta.

Budget & Pay

Division 2's operational budget again remained the same at $195,054. Once again 50% of the budget was spent on leased vehicle charges. The reimbursement of private miles increased to 7% of the budget due to the inability to receive temporary vehicles for the busy water administration season.

Pay for Performance was once again unfunded. There was an award of $200 Bonus/One Time Award funded by DWR for employees who received Exceeds Expectation. Salary Survey granted a 3% increase to all employees; however, PERA contribution by employees increase another .75%.

Overtime funding was a seriously discussed expense. No overtime was allowed in Fall 2019. Division 2's operating budget was used to cover overtime needs in March, April and June. Denver paid for overtime and winter work in July, August, September, October, November and December.

Vehicles

One new vehicle was received this year. We were able to keep it for a few months as a temporary vehicle. Division 2 received one other temp vehicle from Fleet, eight were requested.

Awards

Lonnie Spady was named Water Commissioner of the Year.

Mark Perry and Doug Brgoch (along with Scott Cuthbertson and Bill McCormick) received the Client Partner Award given by the Attorney General's Office.

Above and Beyond Awards were given to Joey Talbott, Doug Brgoch and John Canaday for their work on the Huerfano-Cucharas emergency gage stations.

Excellence Award was given to Wendy Hunker for budget work.

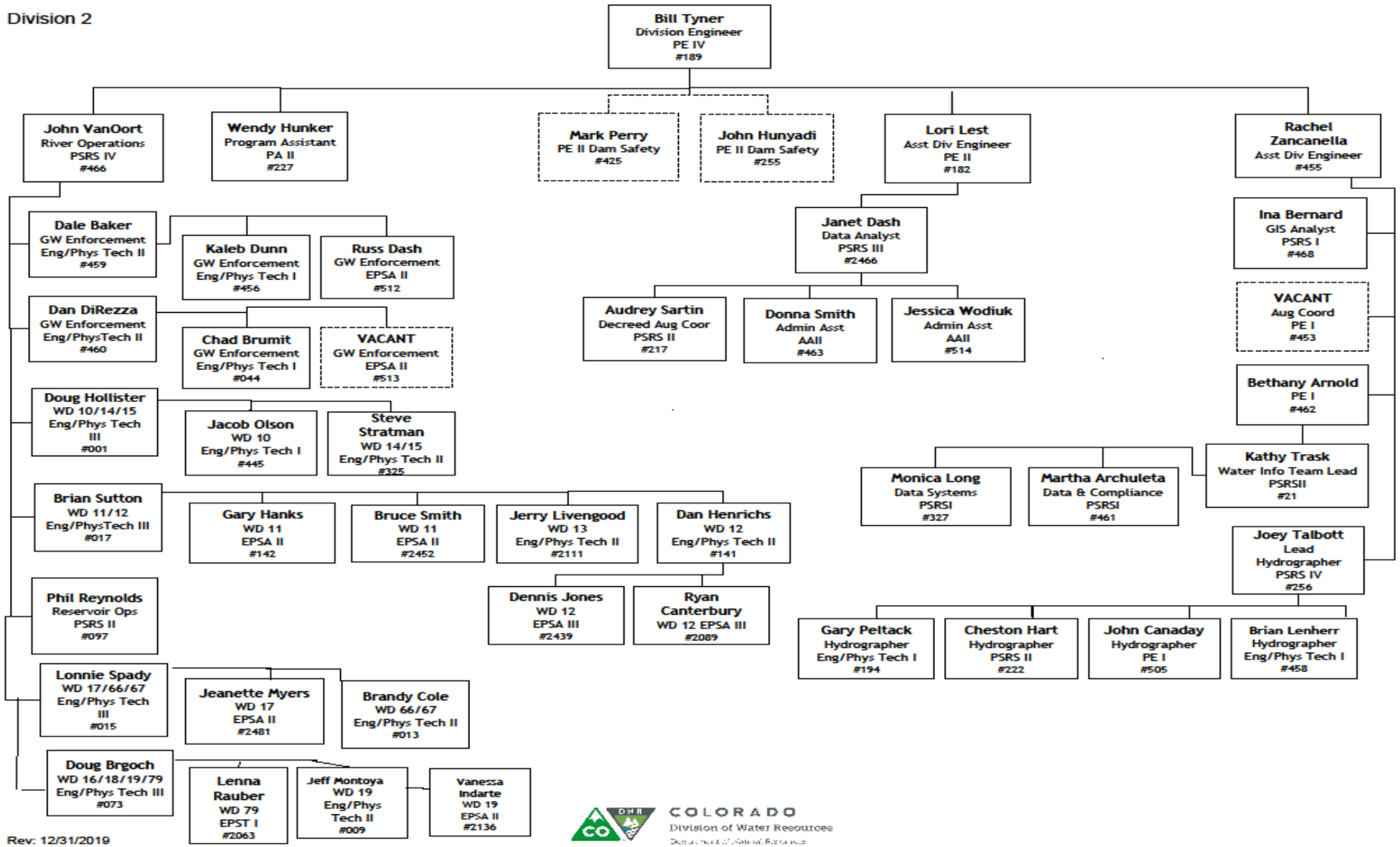
Cheers for Peers were given to Kathy Trask, Lonnie Spady, Donna Smith, Lenna Rauber, Steve Stratman, Jacob Olson, Jessica Wodiuk, Lonnie Spady and Joey Talbott

Other notes of interest

Governor Polis granted additional time off for employees. These were for the day after Thanksgiving, Christmas Eve (8 hours each) and 3 hours on New Year's Eve. The time was recorded as Admin Leave.

Executive Director Dan Gibbs created an Admin Leave Wellness Day for employees to be used for wellness related activities.

Several employees participated in Creek Week Clean Up in September


Division 2
Bill Tyner
Division Engineer
PE IV
#189
John VanOort
River Operations
PSRS IV
#466
Wendy Hunker
Program Assistant
PA II
#227
Mark Perry
PE II Dam Safety
#425
John Hunyadi
PE II Dam Safety
#255
Lori Lest
Asst Div Engineer
PE II
#182
Rachel Zancanella
Asst Div Engineer
#455
Dale Baker
GW Enforcement
Eng/Phys Tech II
#459
Kaleb Dunn
GW Enforcement
Eng/Phys Tech I
#456
Russ Dash
GW Enforcement
EPSA II
#512
Janet Dash
Data Analyst
PSRS III
#2466
Ina Bernard
GIS Analyst
PSRS I
#468
Dan DiRezza
GW Enforcement
Eng/PhysTech II
#460
Chad Brumit
GW Enforcement
Eng/Phys Tech I
#044
VACANT
GW Enforcement
EPSA II
#513
Audrey Sartin
Decreed Aug Coor
PSRS II
#217
Donna Smith
Admin Asst
AAII
#463
Jessica Wodiuk
Admin Asst
AAII
#514
VACANT
Aug Coord
PE I
#453
Doug Hollister
WD 10/14/15
Eng/Phys Tech III
#001
Jacob Olson
WD 10
Eng/Phys Tech I
#445
Steve Stratman
WD 14/15
Eng/Phys Tech II
#325
Bethany Arnold
PE I
#462
Monica Long
Data Systems
PSRSI
#327
Martha Archuleta
Data & Compliance
PSRSI
#461
Kathy Trask
Water Info Team Lead
PSRSII
#21
Brian Sutton
WD 11/12
Eng/PhysTech III
#017
Gary Hanks
WD 11
EPSA II
#142
Bruce Smith
WD 11
EPSA II
#2452
Jerry Livengood
WD 13
Eng/Phys Tech II
#2111
Dan Henrichs
WD 12
Eng/Phys Tech II
#141
Joey Talbott
Lead
Hydrographer
PSRS IV
#256
Phil Reynolds
Reservoir Ops
PSRS II
#097
Dennis Jones
WD 12
EPSA III
#2439
Ryan Canterbury
WD 12 EPSA III
#2089
Gary Peltack
Hydrographer
Eng/Phys Tech I
#194
Cheston Hart
Hydrographer
PSRS II
#222
John Canaday
Hydrographer
PE I
#505
Brian Lenherr
Hydrographer
Eng/Phys Tech I
#458
Lonnie Spady
WD 17/66/67
Eng/Phys Tech III
#015
Jeanette Myers
WD 17
EPSA II
#2481
Brandy Cole
WD 66/67
Eng/Phys Tech II
#013
Doug Brgoch
WD 16/18/19/79
Eng/Phys Tech III
#073
Lenna Rauber
WD 79
EPST I
#2063
Jeff Montoya
WD 19
Eng/Phys Tech II
#009
Vanessa Indarte
WD 19
EPSA II
#2136
Rev: 12/31/2019
COLORADO
Division of Water Resources