Garfield Pitkin Counties Conservation Districts
Bookcliff, Mount Sopris & South Side Conservation Districts
258 Center Drive, Glenwood Springs, CO 81601
970-404-3439

October 30, 2021

Contact name: Emily Schwaller
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Glenwood Springs, CO 81650
Phone: 970-404-3439
Roundtable: Colorado River
Date of approval: June 14, 2018
Contract number: POGG1 2018-1014

Dear Mr. Wade and the Colorado Water Conservation Board,

Summary:

The Bookcliff, Mount Sopris and South Side Conservation Districts began the process of developing an unbiased approach to assess the needs of water right owners and land users along the main stream of the Colorado River and the tributaries from Glenwood Canyon to De Beque. The area included 57,000 acres of irrigated land producing primarily alfalfa, grass hay and mixed forage grazing. To assess the needs it was determined that ditch inventories should be conducted to aid in determining: current irrigated acreage, the number of diversion structures, length of ditches, water quality and needed treatments. With a primary outcome goal to use the inventory as a tool for the water owners and land users to prioritize projects on the ditches and aid in securing funding sources for the projects. The insight from these inventories could then be used in developing a plan to protect agricultural water, agricultural production and to protect and improve stream health. The decision was made to prioritize ditches that were pre-compact and over 10 cfs.

The Bookcliff, Mount Sopris and South Side Conservation Districts staff met with water users and walked each ditch. To complete the assessment Colorado River Engineering was hired to create the inventories that included: water rights, diversion records, acreage, GIS maps of the ditches, areas of concerns and potential treatments. District staff then met with ditch owners and presented the notebook that included: historic overview of agriculture in the area, engineering report, information for funding and assistance and additional resources for effective conservation practices.

In total:
59: Ditches were inventoried
1050 CFS: Ditches Deliver (Net Absolute)
205 Miles: Of Ditches were walked
1964: Waypoints collected to mark structures, diversions and areas of concern
312: Hours spent with ditch owners and users
915: Hours of involvement from community members
600: Hours of stakeholder involvement and input

Areas of Concern that Generated recommended treatments were:
Erosion Prevention
Seepage
Aging Infrastructure: Culverts, Headgates, Concrete Structures, Parshall flume, Splitter Boxes
Measuring Devices: Install and maintenance
Vegetation/Phreatophytes
Pump Capacity
Diversion Records - Maintained and Submitted to Division of Water
Bank Stabilization
Routine Maintenance: Clean out culverts/pipes, Turnouts, removal of large abstraction (trees, limbs etc.)
Carrying Capacity
Piping
Line Reservoir
Cover Pipe
Rodents
Sedimentation

Known Outcomes:
Ditches with completed inventories have applied for:
Colorado River District Funding
Colorado State Funding
USDA NRCS Funding - Environmental Quality Incentive Program
Private engineering firms hired to complete recommendations
Bookcliff, Mount Sopris and South Side's Conservation Districts Conservation Practise Cost Share
Used Inventories while requesting letters of support from County Commissioners

Obstacles:

Through the active period of this grant June 2018 thru October 2021 there have been several obstacles for this project. The pandemic limited the contact we could have with ditch owners/users; this made follow-up and reviewing the inventory notebooks challenging and limited the number of people we could follow-up with. Hosting outreach events was also very limited by mandates. Additionally, holding planning meetings with board members and stakeholders with rural internet and technological abilities to continue regular planning meetings was a challenge. There were also staffing changes with district staff and project managers. We adapted where possible and have made efforts to backtrack and catch up where follow-up was minimal.

Another noteworthy obstacle was obtaining permission from water and land owners to walk the ditch and develop the inventories. This ranged from not having up to date records of owners, neighbor conflict and a general distrust in allowing outside eyes on properties. We found value in the Bookcliff, Mount Sopris and South Side Districts' boards of supervisors being local landowners and having longstanding district staff members who have earned good reputations in these communities. Utilizing these connections we were able to figure out current owners and navigate where there were concerns in several situations.

Budget:

All cash and in-kind requirements were met or exceeded in total there is $90,318.66 cash match and $135,078.24 in-kind match. That makes the total match $225,396.66 which is over a 200% match of the $100,000.00 grant amount.

Comparing the current budget to the original budget there are some differences per task.
Task 1: Landowners Contact and Water Right Owner Involvement
Task 6: Develop an Inventory and Prioritize Projects

Task 1 and 5 were both under budget per the invoice tracking details provided with reimbursement requests. The inability and challenges around holding events and meetings also had an effect on completing these tasks. However, these tasks were largely achieved through in-kind hours from Bookcliff, Mount Sopris and South Side Conservation District's Board of Supervisors, Ditch Owners and Community members. In total board members contributed 646 hours in documented time, per the budget these hours were billed at, in my opinion, a very low rate considering the expertise of the board members. Ditch owners and community members spent 1,873 hours between outreach events, committee meetings and involvement before, during and after ditch inventories. Again, these hours were undervalued per the hourly rate set by the budget considering the knowledge that was gained and held by these water owners and community members.

Task 2: Public Relations, Outreach and Resource Identification was also higher than originally budgeted.
Task 3: Conduction and Preparing Inventories was much higher than originally budgeted.

For both of these tasks there was more time required than originally anticipated. The extended timeline and challenges in streamlining the process with staffing changes all contributed. Also the additional time it took to identify the water owners to who could give permission and earn their trust to obtain the permission was a larger factor than originally anticipated.

Task 4: Develop Treatment Alternatives for Land Owners
Task 5: Provide Planning and Treatment Alternatives
Task 7: Completion of Inventories, Reports and Next Steps

All three of these tasks are close to completed per the Invoice Tracking Detail. Also contributing to these tasks were the reported in-kind hours from district staff and Colorado River Engineering staff. There are 875.5 tracked hours of district staff time not included in the reimbursements; the bulk of this was spent with the ditch owners while gathering permission to walk a ditch, on site while walking ditches or in the follow-up meetings. In these follow-up meetings and presentations of the completed ditch inventory notebooks discussions of potential treatments, funding sources and general 'next step' planning help for the ditch owners was the focus. After these meetings there have been countless hours spent by the ditch owners in exploring treatment alternatives and taking the next steps to improve their ditches.

A spreadsheet is attached that details all cash and in-kind matches.

In Conclusion:

In spite of the obstacles, this has been a beneficial project not only for the water owners who received these ditch inventory notebooks but for the Bookcliff, Mount Sopris and South Side Conservation Districts to have the opportunity to meet with water owners and learn ways in which we can better serve them. We are aware of active contracts for the Environmental Quality Incentive Program through the Natural Resource Conservation Service and active grants through the Colorado River District's Community Partnership Program. We have reimbursed several of the recommended treatments suggested in inventories through our Conservation Practice Cost Shares. We are also aware of ditches that have hired private engineering firms and contractors to complete what was recommended through their ditch inventory. These have been received after and through

recommendations included in these ditch inventory notebooks. In completing this project there have also been invaluable benefits in the conversations and connections that have been made between water owners and the involved organizations. We have developed a better understanding of where and how we can better aid land and water users in the effective and efficient use of our natural resources.

The knowledge gained from meeting with the water owners and in observing the common areas of concern that generated recommended treatments directly benefited the writing of the Integrated Water Management Plan for the Middle Colorado River in partnership with the Middle Colorado Watershed Council. The writing of Appendix H: Middle Colorado River Agricultural Water Use Analysis and Infrastructure Assessment prepared for the Bookcliff, Mount Sopris and South Side Conservation Districts by Colorado River Engineering. This was written based on findings from the completed ditch inventories. This portion of the project is covered by POGGI-2020-2609 job number 1206 and the completed appendix will be included in the final report for that grant.

Please let me know if you have any follow-up questions,
Emily Schwaller, District Manager
258 Center Drive
Glenwood Springs, CO 81601
970-404-3439

Cash Match	From	Amount	Date	
	Bookcliff CD	$20,068.66	02/26/2018	
	Mount Sopris CD	$20,000.00	02/06/2018	
	South Side CD	$20,000.00	03/05/2018	
	GarCo Farm Bureau	$5,000.00	08/29/2018	
	Holy Cross Cattlemen	$1,000.00	06/2018	
	Local Irrigation Company/Ditches			
	Grand River Ditch	$2,000.00	01/18/2018	
	West Divide	$1,000.00	03/23/2018	
	Porter	$250.00	03/08/2018	
	Ware & Hinds	$1,000.00	06/06/2019	
	GarCo BOCC	$20,000.00	06/29/2018	
	Total Cash:	$90,318.66		

In-Kind Match

From	Amount Required	Amount Tracked	Notes	
Bookcliff CD	$10,000.00	$13,287.17	Supervisor: $7,040.00 Staff (1/3 of Total): $6,247.17	
Mount Sopris CD	$10,000.00	$10,935.92	Supervisor: $4,688.75 Staff (1/3 of Total): $6,247.17	
South Side CD	$10,000.00	$12,517.17	Supervisor: $6,270.00 Staff (1/3 of Total): $6,247.17	
Ditch Owners and Others	$55,000.00	$61,477.50		
NRCS	$30,000.00	$36,860.24	Includes office overhead, printing, mileage and NRCS Staff time at meetings	
	Total In Kind:	$135,078.00		
	Total Match	$225,396.66		

South Side	Supervisor	Date	Topic	Hour
	Board Meetings	2018	Average 3 Board Members - 4 Meeting Agendas w/ Water Plan business on Agendas	12
	Board Meetings	2019	4 Board Members - 8 Meeting Agendas w/ Water Plan business on Agendas	32
	Board Meeting	2020	3 Board Members- 9 Meeting Agenda w/ water plan meeting business on the agenda	27
	Board Meeting	2021	3 Board Members- 7 Meeting Agenda w/ water plan meeting business on the agenda	21
	Brett	6/20/2018	Liz meeting	4
	Peter	6/20/2018	Water Plan Meeting	3
	Terry	7/10/2018	Water Meeting	2
	Brett	8/7/2018	Water meeting	2
	Peter	9/14/2018	River District Meeting	8
	Brett	9/14/2018	River District meeting	8
	Peter	10/18/2018	Water Plan Meeting	2
	Dick	11/17/2018	Annual meeting	4
	Peter	11/17/2018	Annual Meeting	4
	Peter	6/1/2019	Watershed meeting planning	4
	Dick	8/6/2019	Water Plan	2
	Nick	8/6/2019	Water Plan	3
	Brett	8/6/2019	Water Plan Meeting	2
	Brett	10/1/2019	Compact Call Meeting	4
	Dick	10/1/2019	Compact Call Meeting	4
	Peter	10/1/2019	Compact Call Meeting	4
	Thad	10/1/2019	Compact Call Meeting	4
	Peter	10/18/2019	Watershed meeting	8
	Brett	10/19/2019	Ditch Inventory	4

	Dick	11/1/2019	Annual meeting	4	
	Peter	11/1/2019	Annual meeting	4	
	Thad	11/1/2019	Annual meeting	4	
	Brett	11/4/2019	Commissioners meeting	3	
	Dick	11/4/2019	Commissioners meeting	3	
	Peter	11/4/2019	Commissioners meeting	3	
	Thad	11/4/2019	Commissioners meeting	3	
	Peter	09/24/2020	Watershed meeting planning	8	
	Brett	1/27/2021	Update Meeting	4	
	Nick	1/27/2021	Update Meeting	4	
	Peter	1/27/2021	Update Meeting	4	
	Sara T	1/27/2021	Update Meeting	4	
	Thad	1/28/2021	Update Meeting	4	
	Peter	9/20/2021	Water Plan Meeting: Update Budgets	3	
	Angela	9/20/2021	Water Plan Meeting: Update Budgets	3	
	Brett	10/25/2021	Review and Edits to Final Report	1	
	Peter	10/27/2021	Review and Edits to Final Report	1	
			SS Total	**228**	
					$0.00
Bookcliff	**Board Meeting**	2018	4 Board Members - 4 Meeting Agendas w/ Water Plan business on Agendas	16	
	Board Meeting	2019	4 Board Members - 8 Meeting Agendas w/ Water Plan business on Agendas	32	
	Board Meeting	2020	4 Board Members- 9 Meeting Agenda w/ water plan meeting business on the agenda	36	

	Board Meeting	2021	4 Board Members- 7 Meeting Agenda w/ water plan meeting business on the agenda	28
	Charles	6/6/2018	Committee Meeting	3
	Charles	8/7/2018	Committee Meeting	3
	Sara	8/7/2018	Committee Meeting	3
	Raymond	9/18/2018	Water planning meeting	3
	Raymond	9/24/2018	River District Meeting	3
	Raymond	9/25/2018	IWMP	3
	Raymond	10/18/2018	Mayors Meeting	2
	Raymond	1/16/2019	Radio Interview	3
	Raymond	2/27/2019	Consumptive Use Focus Group	3
	Raymond	5/22/2019	IWMP Committee Meeting	3
	Charles	6/5/2019	State of the River	3
	Sara	6/5/2019	State of the River	8
	Sara	6/6/2019	Water Plan News Article	4
	Charles	6/26/2019	Water Plan	2
	Sara	8/1/2018	Grant writing for water plan	10
	Charles	8/6/2019	Water meeting	2
	Sara	9/6/2019	Water Plan / video	2
	Raymond	9/6/2019	Water Video	2
	Raymond	9/12/2019	IWMP Committee Meeting	2
	Sara	9/26/2019	Video Development	2
	Raymond	9/29/2019	Video development	2
	Charles	10/1/2019	Compact Call Meeting	4
	Sara	10/1/2019	Compact Call Meeting	4
	Mike Mello	10/1/2019	Compact Call Meeting	4
	Raymond	10/1/2019	Compact Call Meeting	4
	Sara	10/15/2019	Water plan grant	4
	Charles	10/18/2019	Watershed meeting	6

	Sara	11/1/2019	Annual Meeting	4	
	Raymond	11/1/2019	Annual meeting	4	
	Charles	11/1/2019	Annual meeting, Landowner update	4	
	Charles	11/4/2019	Commissioners meeting	2	
	Sara	11/4/2019	Commissioners meeting	4	
	Raymond	11/4/2019	Commissioners meeting	4	
	Charles	11/18/2019	Water meeting	2	
	Sara	12/4/2019	Joint Meeting	4	
	Charles	1/27/2021	Update Meeting - Zoom	4	
	Sara	1/27/2021	Update Meeting - Zoom	5	
	Raymond	1/27/2021	Update Meeting - Zoom	4	
	Raymond	9/20/2021	Water Plan Meeting: Update Budgets	3	
	Charles	9/21/2021	Water Plan Meeting: Update Budgets	3	
	Charles	10/26/2021	Review and Edits to Final Report	1	
	Raymond	10/27/2021	Review and Edits to Final Report	2	
			BC Total	**256**	
					$0.00
Mount Sopris	**Board Meetings**	2018	4 Board Members - 4 Meeting Agendas w/ Water Plan business on Agendas	16	
	Board Meetings	2019	4 Board Members - 8 Meeting Agendas w/ Water Plan business on Agendas	32	

	Board Meeting	2020	3 Board Members- 9 Meeting Agenda w/ water plan meeting business on the agenda	27
	Board Meeting	2021	3 Board Members- 7 Meeting Agenda w/ water plan meeting business on the agenda	21
	Jeff	6/6/2018	committee meeting	2
	Sandy	6/6/2018	committee meeting	2
	Mike	6/16/2018	committee meeting	2
	Jeff	6/20/2018	Water meeting	4
	Jeff	8/7/2018	Water meeting	2
	Sandy	8/7/2018	Water meeting	2
	Cassie	11/7/2018	Annual Meeting	4
	Jeff	11/7/2018	Annual Meeting	4
	Robert	11/7/2018	Annual Meeting	4
	Jeff	10/1/2019	Compact Call Meeting	4
	Sandy	10/15/2019	Water Rights reporting	2
	Jeff	10/17/2019	Annual meeting planning	1
	Jeff	11/1/2019	Annual Meeting	4
	Robert	11/1/2019	Annual meeting	4
	Sandy	11/1/2019	Annual meeting	4
	Cassie	11/4/2019	Commissioners Meeting	2
	Jeff	11/4/2019	Commissioners meeting	3
	Robert	11/4/2019	Commissioners meeting	2
	Cassie	1/27/2021	Update Meeting - Zoom	4
	Jeff	1/27/2021	Update Meeting - Zoom	4
	Sandy	1/27/2021	Update Meeting - Zoom	4
	Jeff	9/20/2021	Water Plan Meeting: Update Budgets	3
	Jeff	10/20/2021	Board meeting review Water Plan wrap-up plan	1

	Mike	10/21/2021	Board meeting review Water Plan wrap-up plan	1	
	Robert	10/22/2021	Board meeting review Water Plan wrap-up plan	1	
	Cassie	10/23/2021	Board meeting review Water Plan wrap-up plan	1	
	Jeff	10/26/2021	Review and Edits to Final Report	1	
	Robert	10/27/2021	Review and Edits to Final Report	1	
	Sandy	10/25/2021	Review and Edits to Final Report	1.5	
			Total MS	**170.5**	
					$0.00
			Total Supervisor Hours:		**$0.00**

Staff Hours	Pay Period	Staff Member	Hours	Cost				
	06/16/2018-07/15/2018	Dennis Davidson	16	$336.00				
	07/16/2018-08/15/2018		19	$399.00				
	08/16/2018-09/15/2018		38	$798.00				
	08/16/2018-10/15/2018		15	$315.00				
	10/16/2018-11/15/2018		27	$567.00				
	11/16/2018-12/15/2015		40	$840.00				
	12/16/2018-01/15/2019		52	$1,144.00				
	01/16/2019-02/15/2019		33	$726.00				
	02/16/2019-03/15/2019		60	$1,320.00				
	03/16/2019-04/15/2019		60	$1,320.00				
	04/16/2019-05/15/2019		33	$726.00				
	05/16/2019-06/15/2019		36	$792.00				
	06/16/2019-07/15/2019		8	$176.00				
	07/16/2019-08/15/2019		29	$638.00				
	08/16/2019-09/15/2019		34	$748.00				
	09/16/2019-10/15/2019		50	$1,100.00				
	10/16/2019-11/15/2019		33	$726.00				
	11/16/2019-12/15/2019		46	$1,012.00				
				$13,683.00				
	06/16/2018-07/15/2018	Sharie Prow	3	$78.00				
	07/16/2018-08/15/2018		6	$156.00				
	08/16/2018-09/15/2018		6	$156.00				
	08/16/2018-10/15/2018		10	$260.00				
	10/16/2018-11/15/2018		1.5	$39.00				
	12/16/2018-01/15/2019		1	$28.00				
	01/16/2019-02/15/2019		3	$84.00				
	02/16/2019-03/15/2019		3	$84.00				
	03/16/2019-04/15/2019		7	$196.00				
	04/16/2019-05/15/2019		5	$140.00				
	05/16/2019-06/15/2019		2	$56.00				
	07/16/2019-08/15/2019		2	$56.00				

	09/16/2019-10/15/2019		7	$196.00				
	10/16/2019-11/15/2019		4	$112.00				
				$1,641.00				
	06/16/2018-07/15/2018	Jonathan Rose	9	$162.00				
	07/16/2018-08/15/2018		19	$342.00				
	08/16/2018-09/15/2018		15	$270.00				
	08/16/2018-10/15/2018		30.5	$549.00				
	10/16/2018-11/15/2018		12	$216.00				
	11/16/2018-12/15/2015		18	$324.00				
	12/16/2018-01/15/2019		2	$36.00				
	02/16/2019-03/15/2019		22	$407.00				
	03/16/2019-04/15/2019		14	$266.00				
	04/16/2019-05/15/2019		14.5	$275.50				
	06/16/2019-07/15/2019		10	$190.00				
	07/16/2019-08/15/2019		20	$380.00				
				$3,417.50		Total CD Staff In-Kind	$18,741.50	06/16/18-12/30/19
			875.5					

$30,000			
Stephen:	$75		
Derrick:	$50		
		Type	**Hours**
Meetings:	Stephen		
	06/06/2018	Committee	3
	08/07/2018	Committee	3
	09/18/2018	Committee	3
	10/18/2018	Committee	3
	01/23/2019	Committee	3
	03/06/2019	Committee	4
	05/22/2019	Committee	3
	08/06/2019	Committee	3
	1/22/2021	Update Meeting via Zoom	3
			28
		$ Match	$2,100
Office Overhead	$800 per Month - All District Staff portion of time on Water Plan 40 Months of Active Grant	Includes office space, computers, phones etc.	$32,000
Printing	Plotter Maps	63 Maps @ $8.00 per Map Color	$504
	Reports	20 Cents per Page Reports Average 34 pages printed 63	$428.40

Use of NRCS Truck	Average 48 Miles Round Trip at 56 Cents per Mile 68 Trips (Some Ditches were two days some had follow-up visits to present the Inventories)		$1,827.84
		Total:	$36,860.24

$55,000.00						
Partners:	$20.00			Total:	$61,477.50	
Tom VonDette	Holycross Cattlemen					
Ginny Harrington	Holycross Cattlemen					
Sam Potter	West Divide Conservancy District					
Angela Ryden	Farm Bureau					
Paul Keimeyer	Colorado State Conservation Board					
Nate Bell						
		Type	**Hours**			
Meetings:	Tom					
	09/18/2018	Committee	3			
	Ginny					
	01/14/2020	Committee	3			
Meetings:	Sam					
	09/18/2018	Committee	3			
	10/18/2018	Committee	3			
	01/09/2019	Consumptive Use Focus Group	3			
	01/23/2019	Committee	3			
	03/06/2019	Committee	4			
	02/27/2019	Consumptive Use Focus Group	3			
	05/22/2019	Committee	3			
	08/06/2019	Committee	3			
	11/18/2019	Committee	3			
	01/14/2020	Committee	3			
Meetings:	Angela					
	06/06/2018	Committee	3			
	08/07/2018	Committee	3			
	09/18/2018	Committee	3			
	10/18/2018	Committee	3			
	01/23/2019	Committee	3			
	03/06/2019	Committee	4			

	05/22/2019	Committee	3			
	08/06/2019	Committee	3			
	11/18/2019	Committee	3			
	1/22/2021	Update Meeting via Zoom	3			
Meetings:	Paul					
	03/06/2019	Committee	4			
		Total Hours	72	$1,440.00		
	IWMP Planning Meetings	https://www.midcowatershed.org/iwmp-adcomm				
	09/06/2018	In attendance: 21 - 3 hours	63			
	11/15/2018	In attendance: 20 - 3 hours	60			
	01/19/2019	In attendance: 20 - 3 hours	60			
	03/20/2019	In attendance: 15 - 3 hours	45			
	05/30/2019	In attendance: 18 - 3 hours	54			
	08/07/2019	In attendance: 13 - 3 hours	39			
	10/02/2019	In attendance: 16 - 3 hours	48			
	12/04/2019	In attendance: 18 - 3 hours	54			
	02/25/2021					
			423	$8,460.00		
	Consumptive Use Focus Group Meetings	https://www.midcowatershed.org/iwmp-adcomm				
	01/09/2019	In attendance: 12 - 3 hours	36			
	02/27/2019	In attendance: 12 - 3 hours	36			
	09/12/2019	In attendance: 11 - 3 hours	33			
	01/13/2020	In attendance: 11 - 3 hours	33			
	02/18/2020	In attendance: 13 - 3 hours	39			
			177	$3,540.00		
	Colorado River Engineers					
Invoice Date:	04/02/2019	Hydrologist	3	$285.00		
	04/03/2019	GIS Tech	11.25	$675.00		
	05/07/2019	GIS Tech	23.25	$1,395.00		
	06/04/2019	Hydrologist	5	$475.00		

	07/03/2019	Project Manager	1.95	$312.50		
	07/03/2019	GIS Tech	3.75	$225.00		
	08/01/2019	Hydrologist		$285.00		
	08/02/2019	GIS Tech		$690.00		
	10/02/2019	Hydrologist		$95.00		
	10/03/2019	GIS Tech		$2,685.00		
	12/3/2019	GIS Tech		$2,880.00		
	01/07/2020	GIS Tech		$1,800.00		
	02/05/2020	GIS Tech		$780.00		
	06/05/2020	GIS Tech		$3,585.00		
	07/06/2020	GIS Tech		$2,235.00		
	09/03/2020	GIS Tech		$1,185.00		
	10/05/2020	GIS Tech		$1,290.00		
	12/02/2020	GIS Tech		$300.00		
	05/12/2021	GIS Tech		$540.00		
	07/12/2021	GIS Tech		$1,785.00		
	10/05/2021	GIS Tech		$585.00		
				$23,502.50		
Community Members:						
Public Events	09/25/2018	Community Outreach/CU 65 Participants 3 hr	195			
	11/07/2018	Ag Water Workshop hosted with CCA Ag Water Network: 93 Participants 2.75 hours	255.75	Sign in Dec 2019 File		
	06/06/2019	State of the River: 42 Participants 2 Hours	86			
	10/01/2019	Compact Call/Demand Management: 90 Participants 3 Hours	270			
	06/11/2020	Water Resource Monitoring: 32 Participants 2.5 Hours	80	https://www.youtube.com/watch?v=Fo5Kirl0uqs		
	08/27/2021	Stream Management Plan 101: 28 Participants 1 Hour	28	https://www.coloradosmp.org/2021/08/27/smp-101/		
			914.75	$18,295.00		
Meetings w/ Ditch Owners	**Date**	**Who**	**Hours**			

	8/3/2018	Savage - Clauson Ditch	3			
	10/16/2018	Buddy & David - Starbucks and Paston Ditch	4			
	10/16/2018	McNeel & Graff Murray & Yule Ditch	3			
	10/16/2018	Porter - Williams Joint Ditch Garf. Cr	4			
	10/16/2018	Kelly Couey - Mamm Creek Ditch	6			
	10/16/2018	Dodd - West Divide Creek Ditch	6			
	10/18/2018	Porter - Sykes and Alvord Ditch	3			
	11/15/2018	Marla / Thad Porter - Porter South Canyon Ditch	6			
	11/29/2018	Silt Water - Spaulding - Davie Ditch	4			
	3/27/2019	Peter - East Divide Creek Ditch	3			
	4/10/2019	McNeel / Graff - Yule and Cooley Ditch	4			
	4/10/2019	Buddy / Graff - Joe Taylor Ditch	3			
	4/10/2019	Buddy McNeel / David Graff - Hudson & Sullivan Ditch	6			
	5/1/2019	McLin - Ward and Reynolds Ditch	2			
	5/2/2019	Buddy McNeel / David Graff -DOW Ditch	2			
	5/6/2019	Williams / Jolley - Coryell Ditch	4			
	5/6/2019	O'Connell - Divide Creek Highline Ditch	4			
	5/6/2019	Daley / Miller - Tallmadge and Gibson Ditch	6			
	5/17/2019	Silt Water/Spaulding - GVC	3			
	6/1/2019	McLin - Louis Reynolds	3			
	6/24/2019	Jim Lemon - Holmes	8			
	7/2/2019	Encana - W A Skelton Ditch	4			
	7/10/2019	Tom VonDette - Taughinbaugh	4			
	07/11/2019	Arnold Mackly	5			
	07/12/2019	Arnold Mackly	10			
	9/18/2019	Zuricher- Clinetop	4			
	10/29/2019	Brad Knox	4			
	10/30/2019	Bear Wallow	4			
	11/14/2019	Marla Porter: Inventory Review	2			
	11/29/2019	John Savage: Inventory Review	2			
	1/16/2020	Marla / Thad - Roderick	6			
	2/2/2020	Chenowith - Ware and Hinds	8			
	6/6/2020	Pollard - Minnesota Ditch	6			
	6/9/2020	Savage - Rustler	3			

	6/9/2020	Savage - Clausen Ditch beaver Creek	3			
	6/9/2020	Savage - Young and Mackey O'connor	4			
	6/9/2020	Savage - H and S Ditch	6			
	6/10/2020	Savage - O'connor	2			
	6/10/2020	Mackley -R and A G Anderson	4			
	9/6/2020	Schindler - Nicholls Ditch	4			
	9/20/2020	Savage - Clausen and Byrne Ditch	3			
	10/10/2020	Schindler - Rising Sun Ditch	3			
	11/15/2020	Dodd - Porter Ditch	4			
	11/18/2020	Antes / Snyder - Last Chance Ditch	4			
	3/22/2021	Fulton	6			
	03/23/2021	Morrisania:Intro/walk 7 Ditch users present: 5 Hour Total	35			
	5/5/2021	Mike Goscha / Nieslanik - Ella	8			
	05/17/2021	Morrisania: Sappington (x2) Whelen and Bessley Review Inventory	12			
	6/6/2021	Bear Wallow Mike Goscha	3			
	6/10/2021	Erpasted - Schatz Ditch	4			
	07/01/2021	Review Inventory Eric Fass	2			
	8/2/2021	Erpasted - Schatz Ditch Review	6			
	09/21/2021	Thompson Glen Walk	10			
	10/04/2021	Home Supply	6			
	10/06/2021	Home Supply	4			
	10/18/2021	Complete Walking Home Supply 2 ditch owners present	8			
	10/22/2021	Follow-up Glenwood	4			
	10/22/2021	Slough Ditch Planning	2			
	10/28/2021	Walk Slough Ditch 2 Ditch Owners present	16			
		Community/Ditch Owner Total	312	$6,240.00		

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Inventory prepared by

Bookcliff Conservation District

Colorado River Engineering Company

Funding provided by

South Side Conservation District

Bookcliff Conservation District

Mount Sopris Conservation District

Colorado Water Conservation Board - Colorado River Roundtable

Garfield County Commissioners

Garfield County Farm Bureau

Grand River Ditch Company

West Divide Water Conservancy District

Porter Ditch Company

Matching time provided by

Clark Ditch Company Owners

Colorado Parks and Wildlife

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Ditch Handbook Chapters

Inventory Preparation and Funding

Introduction

- Individual Ditch Inventory Report and Conservation District's Goal
- Garfield and Pitkin Counties Agriculture History

Engineering Report

- Colorado River Engineering Report

Cost Share Funding and Assistance

- Introduction to Funding Sources
- Funding for Conservation Table
- CWCB Loans and Grants
- District Cost Share Application
- Contact Information for Assistance

Other Information and Forms

- Conservation Practices and Physical Effects (CPPE) on
  - Environmental Resources Introduction
- Conservation Practice Name
- CPPE for Colorado
- CPPE for Colorado Fiscal Year 2018
- Blank Preliminary Engineering Report
- Your "Ditch Company Handbook" Template
- District Handouts – Seeding, No-Till, Weed App, Upcoming Workshops, etc.

Garfield and Pitkin County Agriculture History

The first people in what is now Garfield County were the Ute Indians. They used the area for hunting. The Hot Springs, at the present Glenwood Springs, were used for medicinal purposes and relaxation by the Native Americans. Early visits by trappers and explorers were limited because of the difficult access over the mountains east of the Colorado River, Roaring Fork River and Crystal River.

The first written record of the area was in 1776 -1777 by Father Silvestre Velez de Escalante and Father Francisco Dominguez. They were searching for a route to the west coast from the Santa Fe area, but got lost in the area of present-day Dolores, CO. The Ute Indians guided them from the Dolores River area back to the northeast to the area of Delta, CO. From this area their expedition headed north a few miles, then began turning back east to the headwaters of the North Fork of the Gunnison River. From this area they went north over the eastern end of Grand Mesa and entered the middle Colorado River Valley into what is currently Garfield County. Their route came down what today is Mamm Creek drainage. They were led by the Ute Indians, crossing the "Grand River" near the current day Una Bridge, and then up Roan Creek to the Douglas Pass area, and north into White River valley.

American trappers and explorers avoided the area to trap for hides and to scout for railroad and military purposes, not only because of the difficult access, but also because the area was a Spanish Territory, patrolled by the Spanish and Mexican forces. After the area was obtained by the United States in 1848 through the Mexican Cession, the first explorers in the area were John C. Fremont and Capt. John W. Gunnison. Although John C. Fremont had made an earlier trip into the area in 1845, he returned in the fall of 1848, looking for routes to establish a route for the railroads. This later expedition did not end well for Fremont, with some of his party dying during the harsh winter. Cannibalism was reported under Fremont's leadership and his exploration activities became questionable. In 1853, John Gunnison, while working for a railroad company, was searching for a railroad route through the Garfield County area and was killed by Indians in Utah.

In the 1860's, explorers and miners begin searching for gold and other precious metals. Sopris Mountain was named after Richard Sopris. He came into the area looking for gold, and is given credit for discovering Glenwood Springs in 1860. In late 1868, John Powell, on an expedition funded by the Federal Government, floated the Grand (Colorado) River from Middle Park to the confluence with the Green River, exploring what is now the Garfield County area. In 1873,

Dr. Ferdinand V. Hayden, leader of the Hayden party, led another federally funded exposition and began mapping the flora, fauna, geology, and topography near Mount Sopris.

Livestock grazing was the first agricultural production within the valley, beginning in the early 1880's when cattle were herded into the valley. These first cattle came into the mountains from Texas, and grazed areas from Aspen to Carbondale, the Divide Creek area, and on to Battlement Mesa. Other ranchers began grazing north of the river, near Rifle up the JQS trail and the area now called Harvey Gap. In order to get the livestock to markets back east, all of the cattle had to be herded in and out of the area, the same way they came in.

In the 1890's, the cattlemen and sheep ranchers were at odds over grazing rights. In August 1893, when a local sheep rancher left his De Beque ranch to attend the Peach Day celebration in the Grand Junction area, 40 masked gunmen wounded one of his sheepherders and tried to drive the herd of sheep off the Roan Cliffs. When the sheep refused to jump, the gunmen clubbed the herd to death. The conflicts continued for nearly another quarter of a century. It wasn't until the 1920's that livestock men begin to understand benefits of running sheep and cattle on the same lands, finally ending the squabbles between the two segments of agriculture.

The other early history agriculture production was the harvesting of timber from the mountain areas within the drainage of the Colorado River. Lumber was needed for building of homes, as railroad ties, mining timbers, and bridges. Many sawmills, and resulting communities, were established on each of the drainages coming down into the Colorado River so that the growing needs of the area could be met. Of course, the easiest trees to harvest were the trees closest to the point of use. The Ponderosa pine growing in the lower areas along the streams and larger rivers were the first to harvested for ties, mining timbers and lumber. Because of the nearly complete removal of this species, very few are found in the lower valley.

In 1939, an historic wind blew through many acres of spruce trees on the Flattops. This blowdown led to the harvesting of over 40 million board feet of lumber. But this downed timber created a prime environment for growth of the Engelmann spruce beetle. During the 1940's, the beetle went unchecked and continued to destroy the forest. But the winter of 1951 was much colder than normal, and the natural insect control of the frigid temperatures for an extended period terminated the bulk of the beetles.

The topography of the area around the middle portions of the Colorado River also contributed to the historically late development of the area. The valley is surrounded by rugged mountains on the east, north and south and steep deep canyons to the west. There was very little need for travel into or out of the area until gold and silver were discovered in the upper areas of the valley in the Aspen area. Coal was discovered as a resource as well. Agriculture products were

used locally primarily by the miners up valley in the Aspen area and for coal mining communities. The lack of any reliable transportation access kept agriculture commodities from being sent to markets further away.

The Ute trail along the northern boundary of today's Garfield County was without a doubt the first transportation route into the area and was used mainly by the native Indians. Later, livestock were herded on this route and more people started coming into the valley. The Denver & Rio Grande was the first railroad in the valley, reaching Glenwood Springs in 1887 from the east, in a competition with its competitor, the Midland Railroad. The D&RG completed a track on to Aspen from Glenwood in only 45 additional days. This gave the Denver & Rio Grande the lucrative business of shipping produce into the area and hauling mined commodities and livestock back out. Over the next two years, the railroad moved on west to Rifle and beyond.

With transportation and irrigation systems becoming established, agriculture crops were produced in Rifle, Rulison, Silt, New Castle, Parachute, Carbondale, and Glenwood Springs. Apples, cherries, apricots, peaches, strawberries, lettuce, potatoes, wheat and sugar beets were grown, with crops supplying food for the miners and families in the Aspen Mining District to the livestock ranches opening up to west.

Stage routes to the north were established, either on the Government Creek Trail or the route up West Rifle Creek and down Flag Creek into Meeker. With these stage routes, moving supplies and commerce in and out of the area from Aspen to Grand Valley and to communities to the north became possible.

Agriculture production developed concurrently with the construction of railroads and roads, and the growing populations. Because of the natural climate of the area, any agricultural commodity produced in the area required supplemental water. With the construction of irrigation diversions, ditches and structures, the agriculture production improved. Major ditches included the Cactus Valley Ditch, Rifle Canyon Ditch, and Glenwood Ditch, Farmers Irrigation Ditch, Last Chance Ditch, Reed – Harris Ditch, Salvation Ditch, Highline Ditch, Porter Ditch, with many, many more through the valley. With the ability to irrigate in place, agriculture production increased and produced food for the valley and beyond.

The railroad hauled potatoes, apples, cherries, and other products to markets outside of the valley. Thousands of head of sheep and cattle were also shipped from the rail yards in the valley to markets in Denver and farther east.

The first stored irrigation water in the valley was behind the Harvey Gap Dam. It was first constructed in 1894, but in April of 1895, the reservoir washed out. Farmer Irrigation Company was formed in 1903 and rebuilt the dam. In 1967, the Rifle Gap Dam was constructed by the

Bureau of Reclamation to store irrigation water, as part of the Colorado River Storage Project. Water from this structure was made available to farmed land in the Rifle and Silt area, finally providing a dependable supply of water that would last through the growing season.

Much of the produce such as potatoes, strawberries, sugar beets, apples, and other fruits has become an economic thing-of-the-past because of market timing and international trade. But today agriculture production is still a major source of economic income in Garfield and Pitkin Counties. The main commodities within the area are cattle, hay, sheep, and horses. Increased interest in organic and sustainable farming has seen a renewed growth of production of fruit, vegetables, meat, eggs and dairy products that have been historically grown in Garfield and Pitkin Counties.

A history of the water and agriculture in the area would not be complete without mentioning two men in particular.

Edward T. Taylor was a Glenwood Springs lawyer, a Senator to the Colorado State Senate, and a Senator to the United States Senate. He wrote much of the adopted water laws that Colorado still uses today to administer water rights and was active in brokering water amounts for eastern slope and western slope interests. At the Federal level, he wrote and persuaded the passage of the Taylor Grazing Act of 1934. This Act sets the rules and guide for grazing livestock on public Federal Lands, and again, is still in use today.

Frank Delaney, another Glenwood Springs attorney, was very active in forming Conservancy Districts and the Colorado River Water Conservation District. He served as counsel for many years to the District and worked to ensure that western slope water was protected for the use on the western slope.

It is conceivable and even probable that in 50 or 100 years, what we do today with our water and ditches will be “historical”. Ideally, the goals we set and the work we accomplish with our efforts and programs will have benefitted future generations, much as the early explorations of Dominguez and Escalante have benefitted all of us.

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Inventory Report

Conservation District's Goal

It is the Bookcliff Conservation District's goal that this inventory will result in the installation of conservation practices and assist the ditch company in improving the operation of the ditch resulting in more efficient use of our water resources in the production of food and fiber for our local population, as well as the world.

The District recognizes that this report may have information that will differ from what you as the ditch and water owner has in your deed, what you have been told, or have assumed over the years. We have attempted to gather information that is on record with the various Government agencies that control and administrate water rules and laws. **It is your responsibility to check the accuracy** of the information and to correct that data and information with the appropriate agency and courts.

An example of an item to check is the original filing of the water right with the water courts compared to the Colorado Division of Water Resources current records. Original filings often use the measurement of water in terms of cubic feet per **minute** compared to the common measurement today in cubic feet per **second**. Make sure the correct conversion factors were used and the math is accurate.

Another item that you want to insure is accurate would be the acres irrigated and the crop that is being produced. You will also, want to check the acres to ensure that you are irrigating the correct acres in term of amounts and location as stated in the original or modified water rights documents.

The Districts encourage ditch owners to use this inventory to determine needed repairs and improvements. Use the inventory maps to record location of work complete. Use the information to find and apply for funding in the form of cost share, grants or loans and engineering assistance. Finally, use the maps and photos to plan work for future years.

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Over the last few years, different Colorado entities have worked to develop a water plan as directed by Governor Hickenlooper A statewide plan was initially drafted. The major watersheds have since developed their own more specific plan identifying local concerns and projects. Agriculture interests own the major portion of the water rights in the state and will be the source of water for future water users to meet increasing demand of domestic, municipal, recreational and other water needs.

The local Conservation Districts have requested and received funding to develop and prepare the specific water plan for consumptive use of water within the area from Glenwood Springs to DeBeque. The Districts are uniquely qualified to represent agriculture because the boards, composed of local agriculture producers, have provided the services that assisted in the planning and application of conservation practices. The Districts have assisted land users conserving and properly managing the water, soil, plants, animals and air resources for over 60 years. The resulting water plan will address the needed improvement projects, funding, and management of agriculture water to ensure water needs are met in the future for the continued full production of food and fiber produced in this area.

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INTRODUCTION TO

FUNDING SOURCES FOR ASSISTANCE TO INSTALL WATER CONSERVATION PRACTICES FOR AGRICULTURE IRRIGATION

Research the funding source on line and on their web site to see what kind of projects they have funded. Compare to see if your project meets the goals of the grantee.

Funding sources listed in this chapter are for grants, and / or loans. They may require a percent of matching funds from land owners or from other partners, actual dollars or in-kind services.

Check with funding source to assure that funds are available this year. Checking with the funding source will also alert the grantor that you are interested in applying.

Each funding sources will have its own guidelines and requirements that will need to be followed and adhered to. Some sources will require that the practice installation not be started until the application has had final approval. Others may allow a practice to be started or completed before the application is approved.

Forms and applications will vary greatly from each funding source. Be sure that you fill out the correct forms from the granting entity. Be sure to check deadline dates and meet those dates.

The preparation of a Preliminary Engineering Report will help you in preparing any application. It will help you gather your thoughts, list people involved, funding sources, time line, legal requirements, rights of way, required permits, obtain needed maps, aerial photos of the area, location maps, pictures of the problem area and of what will be fixed, repaired or improved and other engineering needs. A sample report outline is attached in the last section of this document.

A completed set of engineering drawings, standards and specifications will assist in the preparation of the grant application and most likely will be required prior to the approval of the project. A bid package for the project may assist in preparation of the application and if used may save the individual or ditch company money.

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Conservation Practices and Effects on Environmental Resources

For the

Consumptive Use Water Plan in the Middle Colorado River Area

In this section of the Water Plan we have selected the 25 most applicable Conservation Practices from The NRCS Technical Guide. The Technical Guide includes all the practices listed that are used to treat natural resources that are in some form of degradation misuse reducing the sustainability, value and productivity of our resources causes maybe natural disaster or poor management and decisions by land owners and other land managers.

The practices selected have been used within the area over the last 40 to 50 years. Additional practices can certainly be used and added to this list from the over 150 conservation land treatment practices that are found in the NRCS Technical Guide.

Although this plan is primarily directed to water related issues and problems, we must consider the five natural resources of Soil, Water, Animal, Plants, and Air as they are affected by human, economic, cultural, historical, legal and social activities.

As an example, we cannot address an issue of water without having some cause, effect, cost, etc. on other resources or issues. These planning tools help us rate and determine what decisions will have desired results on our resources.

This chapter is designed to be used by planners, landowners, ditch owners and those helping to guide landowners, ditch users etc., in selecting practices that will adequately treat, and protect resources by selecting the correct treatment practices.

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To use this section, you must first identify the resource problem such as a leaking ditch or landslide causing a ditch to break, or hydrophytic vegetation using up water. Once the problem is identified a short research in the standard and specification of the practice that you may think will solve or partly solve the issue can be determined. Read the Statement of Work portion of the Standard and Specification to determine if it addresses the situation. You will need to consider if additional practices are needed to facilitate or add additional treatment to address the resource problem. Repeat the process of reading the Statement of work on additional practices you think are needed to adequately treat the problem.

With the practices selected you can determine the Conservation Practice Physical Effects by selecting the main practice from the list of practices and saving that page on your desktop or in another folder. Once the CPPE page is loaded you can add the other practice you determined were needed and go to number two on the page and down arrow to the selected practice and entering it. Additional columns will add and populate to show the total effects either negative or positive on all the resources.

If your effects are generally positive, the treatment you selected when implemented should have the desired effects and solve the issues.

Section A. Standards and Specifications.

Each Standard and Specification has several Sections

1. Practice Standard--- states what it will do, where it should be applied and various other considerations
2. The Specification--- states what needs to be done to have this practice properly applied and installed
3. Statement of Work--- Defines the deliverables, needed worksheets and Operation and Maintenance plans, installation and need check out
4. Job Sheets and other documentation that one may need to properly install the practice to have it meet the intended long-term goal.
5. Additional drawings, calculations, workbooks, notes and guidance can be provided.

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Section B. Conservation Practice Physical Effects

1. This section helps determine the benefit of each practice when installed (this is a wide spread sheet 7 pages)
2. The 25 selected practices are listed in the left column.
3. The various Resource concerns or problems are listed across the top of the chart.
4. Ratings are given in the columns of the chart.
5. These rating are generated in the process described above when selecting practices for treatment of a problem.
6. For the convenience of seeing the benefit of each practice individual practice ratings are provided on single pages at the end of Section B.

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Contact Information for Assistance

The following pages have a list of local, state and federal agencies that may have various types of assistance to help you with the planning, designing and funding of your project.

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Contact Information for Assistance

(Bookcliff, Southside, and Mount Sopris) Conservation Districts
258 Center Drive
Glenwood Springs, CO 81601
970-404-3439
www.southsidecd.org

Colorado Division of Water Resources
50633 U S Highway 6 & 24
P. O. Box 396
Glenwood Springs, CO 81601
970-945-5665

Natural Resources Conservation Service
258 Center Drive
Glenwood Springs, CO 81601
970-404-3443

Farm Service Agency
258 Center Drive
Glenwood Springs, CO 81601
970-404-3435

US Army Corps of Engineers, Sacramento District
Western Colorado Regulatory Office
Wayne N. Aspinall Federal Building
400 Rood Avenue, Room 142
Grand Junction, CO 81501-2563
970-243-1199

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Colorado River Water Conservation District
201 Centennial Street, Suite 200
P. O. Box 1120
Glenwood Springs, Colorado 81602
970-945-8522
www.crwcd.org

Colorado Water Conservation Board
1580 Logan Street Suite 750
Denver CO 80203
303-866-3449

Silt Water Conservancy District
P.O. Box 8
Silt, CO 81652
970-876-2393

West Divide Water Conservancy District
818 Taughenbaugh Blvd.
Suite 101
P.O. BOX 1478
Rifle, CO 81650
970-625-5461
Email water@wdwcd.org web: www.wdwcd.org

CSU Cooperative Extension
1001 Railroad Ave
Rifle, CO 81650
970-625-3969

Bureau of Reclamation
2764 Compass Dr
Grand Junction, CO 81506
970-248-0690

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YOUR Ditch Company List

1. List any Agency, Unit of Government
2. List Contractor: Name, Company, Phone number (Who has the authority to hire to do work)
3. List Engineer: Name, Company, Phone number (Who has the authority to hire to do work)
4. List Attorney: Name, Company, Phone number (Who has the authority to hire to do work)

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Your Ditch Company Name

Purpose of this Document:

Purpose of this book is to provide continuity of operation and management of the (___Ditch Name___) throughout the year, and for uture years, as well as during changes of ownership and management of the irrigation water and the ditch.

Mission of Ditch:

The mission of the (____Ditch Name___) is to ensure that decreed water is delivered to the owners of the Water Rights in an efficient timely manner.

Goals of Ditch:

Deliver water with as little seepage and ditch loss as possible.
Maintain and keep the ditch in proper operating condition.
Operate as economically as possible.

Irrigation Ditch History

A. Brief History of Ditch

1. Date constructed, major enlargements, major repairs, extensions and other projects

2. Location: Diversion location, acres served, location of irrigated acres.

3. Water right decrees and priorities

4. Organization (over the years)

- date incorporated,
- describe operational organization as loosely organized group, formal group, etc.

B. Maps

C. Photos

D. Other

Irrigation Ditch
Current Organization, Management and Planning

Current Organization, Management and Planning

A. Describe current organization (corporation, partnership, loosely organized group, formal group) including voting shares, (shares owned, one person one vote?).

B. Dues and assessments

C. Articles of Incorporation

D. Bylaws

E. Plans to incorporate or modify incorporation papers

F. Photos

G. Arial Maps

H. Map showing location of problem areas

I. Description of problem and list of possible alternative solutions

J. Document any recurring problems with the ditch (sliding areas, leaky sections, rocky, gravelly sections)

K. List attempts to mitigate these problems

L. Draft bylaws or update existing bylaws

M. Proposed construction projects

N. Other

Ditch Company Policy

Ditch Company Policy

A. Rules of the Ditch Company
B. Selling and trading shares or water policy
C. Policy of terms of office if not in the bylaws
D. Trespass rules
E. Infringement of right of way
F. New structures on ditch
G. Ditch crossings

Legal Documents

Legal actions of ditch and water rights

A. Copy of court decree of all water rights (or by reference)
B. Priorities of water rights
C. Use records
    1. local record of water diverted
    2. Colorado Engineers Diversion Summary
    3. Colorado Engineers Diversion Records (detailed)
D. Court actions
E. Ditch Right of Way (prescriptive or legal description)

F. Diversion summary
G. Diversion records detailed
H. Exchange Division records

Information on Water Rights

Refer to your ditch report from the engineering company on water rights and locations.

The following site is the home page for the Colorado Division of Water Resources. This site can provide much information about any irrigation water right, diversion location, diverted amounts, and more.

http://water.state.co.us/

The following site provides information regarding location of the diversion structures. This site will provide historical records of amounts diverted once you select a structure and request the data on the page.

http://cdss.state.co.us/DNN/StructuresDiversions/tabid/75/Default.aspx

The following site provides information regarding legal actions according to the Colorado Division of Water Resources

http://cdss.state.co.us/DNN/WaterRights/tabid/76/Default.aspx

Contact information Outline

Contact Information:

Emergency Contact: Name, title, phone number, and address

Ditch Rider: Name, title, phone number, and address

Emergency situations: call 911

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Garfield County Sheriff 970-945-0453

Pitkin County Sheriff 970-920-5310

Ditch Officers List

Name	Office	Phone	Address	City	State	Zipcode	
Sam Jones	President	970-896-2622	6111 County Road 316	Silt	CO	81652	
	Vice President						
	Secretary						
	Treasurer						

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Shareholders List

Name	No. of Shares	Phone	Address	City	State	Zipcode	

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Operation and Maintenance Outline

Ditch Operation, Monitoring and Maintenance

A. Describe actions the ditch company does to get ready for water in the spring.
B. What actions are done when water is first turned into the ditch
C. What actions and how often are they completed the first 10 days of operation in the spring
D. What actions need completed regularly while water is flowing in the ditch
E. What actions are completed after water is turned off in the fall
F. Diversion structure
G. Head gate
H. Measuring device
I. Main ditch
J. Diversions out of ditch

Check concrete for cracks, slaking, exposed rebar, structural integrity (tipping, holes under concrete, separation of joints.

Check steel for cracked welds, excessive warping, and excessive rust, failure of foundation material under and to the sides of structure.
Make sure that joints fit correctly and align properly.
Check rods and shafts for ice damage (bending and twisting).

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Monitoring and Maintaining Problem Sites

Beginning each spring about a month before water is diverted into the ditch, the ditch must have the deposited silt and debris removed by backhoe or excavator. Beginning on the first day of water diversion and continuing every day until the water is running
debris-free, the ditch must be checked and any debris removed. Once the water is running clean, the ditch must be checked regularly for damage by beaver and muskrat and any damage removed. The ditch must also be checked after each rain storm or high water in the creek.

Problem area inspection: (flood area, slide areas, slow sections of the ditch, debris collection area, other)

Where location
Who
Frequency of inspection

Things to Check:

1. Remove debris and trash from the inlet screen.
2. Remove rock and other loose trash items from the area of the inlet screen to keep someone from throwing them into the siphon.
3. Remove sediment from the outlet of the siphon to insure that the water flows away from the structure.

4. Each fall after irrigation water is no longer diverted the siphon must be drained and the inlet and outlet blocked to keep animals and damage from occurring.

Access

Provide accurate and detailed description of access to any diversion through property and any required notification before operators can access the diversion for repairs. Notice may not be required for normal changes of diversion headgates.

The access agreements provide legal access for ditch personnel for the purposes of inspections and repairs.

Contingency Plan

If the monitoring indicates any problems with the ditch, a contingency plan should be in place. The plan should allow the ditch to be shut off immediately, with specific people authorized to do so. Officers should be notified, and repairs implemented as soon as possible. Placing machinery in the ditch may be required. A spill kit will be on site to deal with spills of petroleum products.

This outline for a preliminary engineering report will assist in preparation of applications for cost share, loans and grants to install needed improvements such as structures, pipelines, and application systems on the land.

(Name of Project)

Preliminary Engineering Report

Date:
Written by:
Job
Name of Project:
Class:
Field Office:
Conservation District:
County:

1. Job type, size, purpose and program

a. Conservation Practices (Name and Number)

b. Brief description of size and extent of the project (diameter, length, cubic yards, acres), need for project:

c. Estimated cost:

d. Project to be completed contingent upon receiving funding (list source or sources)

e. Estimated date to begin project and length of time to completion

2. # Location

a. Proposed project site is located: Section ___, T ___S, R ___ W. Physical Address:

b. (Project) site is approximately __ miles (direction) of (Nearest Town), CO.

c. Elevation of site is _____ feet above mean sea level.

d. Site is / is not accessible by road.

e. Planning Area

(This section needs to be edited and written to describe the area of your project)

SAMPLE: The planning area is in _____ County, near the town of _____. _____ is located ___ miles south of (larger town). This area has grown at a rapid rate due to proximity to Aspen and Glenwood Springs. Agriculture in the area is still extremely important for the production of livestock, hay and pastureland.

The agriculture land is dependent on irrigation water for high production. The average annual precipitation is 16" to 18", with approximately half of the moisture coming in the form of snow. Agriculture commodity's is including, hay, livestock, pasture, and sod production.

Most of the agricultural land is used for irrigated pasture and hay production. Pinyon juniper land is adjacent to the farmland and has very little agricultural use. The plant community consists of pinyon, juniper, Indian rice grass, western wheatgrass and other upland forbs.

3. Evaluation of Resources

Soils: (describe soils from soils report)

SAMPLE: The irrigated land is alluvial and ranges from 20 to 60 inches in depth. Gravel and cobble underlie the area. The surface textures vary from loam to light clay loam, with loam and clay loam in the subsoil. Most of the soils take water at a moderate to moderately slow rate and have a water holding capacity of 2 inches per foot. The PH is 7.4 to 8.4.

Wildlife: (Edit)

SAMPLE: several species of game animals, rodents and birds are common in the area. (Critical Habitat, Threatened and Endangered species, Winter habitat)

Water:

Plants:

4. Cooperators

a. There are (number) shareholders of the water rights. The water users have a group cooperative agreement for the ditch company with the conservation district.

b. Contingent on approval of (funding source0 cost-share assistance, the group intends to complete the project to the satisfaction of NRCS's standards and specifications.

c. Proposed construction date: Spring 20__ or Fall 20__

d. Shareholders recognize and will do the maintenance responsibilities.

5. History

a. The (Ditch Company) has a water right out of (water source) which has a decree for __ CFS plus a flood right of ___ cfs.

b. (Describe work and repairs the ditch company has made to the irrigation system and structure in recent years.)

6. Cost of Economic Feasibility

a. Acres directly benefited: _____

b. Installation of _____ will solve the (List) problem, resulting in users receiving their water right.

c. Cost per acre: $_____.

7. Method of Financing

List all sources of funds:

Ditch Company, Grants, Loans,

Federal assistance for carrying of the planned works of improvement described is NRCS's (List program)

Technical assistance will be sought from the (List any engineering firms) and Natural Resources Conservation Service (if you are using them.)
The _____ Ditch Company, through shareholders, agriculture and non-agriculture, will provide local financing. The land rights for the work will be the responsibility of the ditch company.

8. Estimated Hours Required

a. ___ hours of engineering and design

b. ___ hours of administrative time

c. ___ hours of construction

d. ___ hours of inspection and supervision

9. Investigation and Special Problems

a. Geology: Describe and list problems that maybe encountered.

b. Soils: See description of construction site.

c. Complete utilities locate

d. Determine needed permits, easements, permissions, public reviews at county, state and national levels that may be needed and obtained. List and give date approved.

e. Other considerations, permissions and reports could include: Cultural and Historic investigations, Threatened and Endangered Species Act, EPA permits, Army Corps of Engineers permits, Economic and Social Considerations, Clean Air Act, Environmental Justice, Essential Fish Habitat, Flood Plain Management, Invasive Species, Migratory Birds Natural Areas, Prime and Unique Farmland, Riparian Area, Scenic Beauty, Wetlands, and Wild and Scenic Rivers.

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P.O. Box 1301
Rifle, CO 81650
(970) 625-4933

Ditch Inventory: [redacted] Ditch

Water Rights

The water rights decreed to the [redacted] Ditch are shown in Table 1 below. This structure has 2 priorities which are decreed for irrigation uses. Both priorities are decreed absolute for 2.5 cfs. Case No. 97CW140 decreed the Ed Conner Ditch as an alternate point of diversion to the [redacted] ditch for the full 5.0 cfs. The original adjudication did not define a duty of water in CA4954 as it recognized the "peculiar" nature of the soils present in Water District 45. Water rights were decreed based on demonstrated, established facts, and actual proof of the necessities of water.

Table 1: [redacted] Ditch Water Right Information

Water Source	Div	WDID	WD	UTM X	UTM Y	Adjudication Date	Approp. Date	Priority Admin No ↑	Priority No.	Associated Case Numbers	Decreed Use(s)	Net Absolute	Net Conditional	Net APEX Absolute	Net APEX Conditional	Comments
DRY HOLLOW CREEK	5	4500755	45	271250.7	4378515.8	2/9/1965	5/15/1953	37755.00000	247	CA4954	1	2.5000	0.0000	0.0000	0.0000	INCORRECT LEGAL DESCRIPTION
DRY HOLLOW CREEK	5	4500755	45	271250.7	4378515.8	2/9/1965	10/31/1960	40481.00000	270	CA4954, W0584, W0110	1	2.5000	0.0000	0.0000	0.0000	SEE W584, SEE W110

Diversions

Figure 1 below show the annual diversions in acre-feet for direct flow irrigation uses on the [redacted] Ditch. No diversions are recorded after 2001. Water commissioner notes indicate that all available [redacted] water is diverted at the Ed Conner Ditch and carried to the west side of Dry Hollow Road. The diversions in Figure 1 include diversions made under the Green Mountain Reservoir Historic Users Pool during times of a Cameo call. Figure 2 shows the [redacted] Ditch diversions taken at the [redacted]

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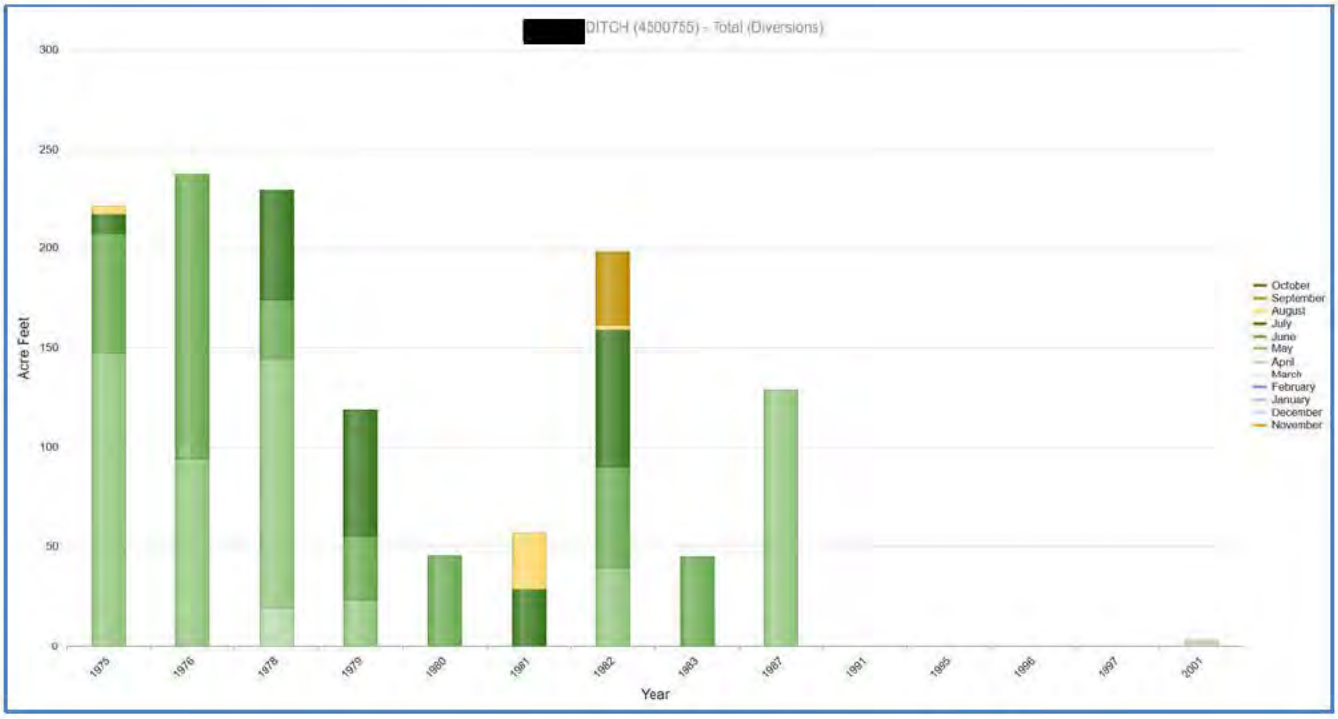

Figure 1: (1975-2011) Diversions for irrigation use at the [redacted] Ditch.

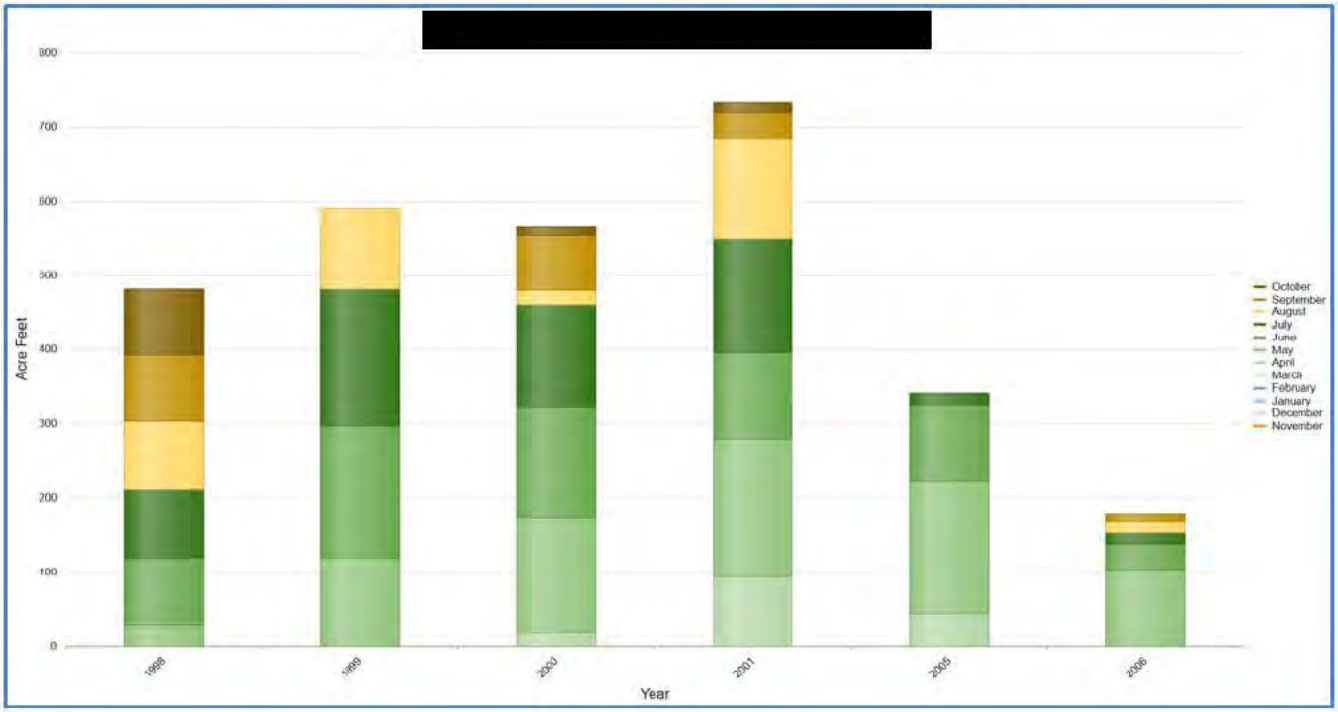

Figure 2: [redacted] Ditch diversions taken at the [redacted]

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Acreage

The Colorado Decision Support System (CDSS) provides information of Colorado water rights and their associated irrigated acreage. Using the 2005 assessment (the only one available for this structure), the State has assigned a total of 68.6 acres to this structure. The assessment notes the crop type as grass pasture under unknown irrigation type.

Table 2: Irrigated acreage assessment for the [redacted] Ditch.

Crop Type	Irrigation	Acres
GRASS_PASTURE	UNKNOWN	68.6

Field Inspection

A field inspection was conducted on December 8, 2020. The following sections will highlight issues observed on the ditch as documented with photos. CRE is providing this document to summarize the field inspection conducted as well as include supporting water rights information available through the State of Colorado's Decision Support System (CDSS). The opinions in this document have relied on photos and field notes from the inspection; CRE did not visit this structure.

Main Concerns

A few minor concerns were noted during the ditch inventory with the most notable being the lack of diversion records if water is carried in the [redacted] Ditch, overgrowth of vegetation, and unstable soils near the end of the ditch.

Figure 3 shows the main diversion structure for the [redacted] Ditch, which uses the [redacted] as an alternate point of diversion. The structure is concrete and in good working order. Boards are used to check water into the headgate during low flow periods.

[redacted] DITCH

Date of inventory: 12/8/2020

Water right 5 CFS lower right

Permission to survey ditch, [redacted]

Waypoint Start at 285-296

Point of diversion: [redacted]

Heargate is concrete in good shape check board are used to check water up in low water times. When board are in place fish passage is difficult.

Ditch splits into 2 at division.

Soils on the end of the ditch are bad for piping and is evident in the lower stretch of this ditch.

OID *	Name	PopupInfo
1	286	
2	287	
3	288	Rd xing
4	289	Division schanzt connor
5	290	
6	291	Parshall
7	292	Rd xing dry hollow
8	293	Fencelie
9	294	Sediment in ditch
10	295	
11	296	
12	297	
13	298	Takeout
14	299	
15	300	
16	301	
17	302	
18	303	
19	304	End

FID	Name	DateTime	Direction
0	P1000716.JPG	2020:12:08 12:17:35	202.5
1	P1000717.JPG	2020:12:08 12:31:07	315
2	P1000718.JPG	2020:12:08 12:40:13	337.5
3	P1000719.JPG	2020:12:08 12:40:23	180
4	P1000720.JPG	2020:12:08 12:42:58	0
5	P1000721.JPG	2020:12:08 12:44:09	67.5
6	P1000722.JPG	2020:12:08 13:22:13	90
7	P1000723.JPG	2020:12:08 13:22:16	270
8	P1000724.JPG	2020:12:10 11:49:59	180
9	P1000725.JPG	2020:12:10 11:50:05	90
10	P1000726.JPG	2020:12:10 11:57:01	112.5

COLORADO
Division of Water Resources
Department of Natural Resources

Structure Summary Report

Structure Name: [redacted] DITCH (4500755)

Structure Type: DITCH

CIU Code: Active Structure with contemporary diversion records (A)

Associated Permits:

Water Source Type: Tributary

Water Source: DRY HOLLOW CREEK [00174769] @ Stream Mile: 2.42

Physical Location

Feature Type	Dist N/S	Dist E/W	Q10	Q40	Q160	Sec	Township	Range	PM	UTMx	UTMy	Latitude	Longitude	Location Accuracy
Point of Diversion			NW	NW	SW	15	6.0 S	92.0 W	S	271250.7	4378515.8	39 525858	-107.661334	Digitized

Division: 5 District: 45

County: GARFIELD

Designated Basin:

Management District:

Associated Structures

Structure Association	Structure Type	Start Date	End Date	Associated Structure Type	CIU Code
4500755 is alt. point to 4500585 - ED CONNER DITCH	Ditch	1/1/1901		Ditch	A

Associated Permits

No available data

Water Rights - Net Amounts

Adj Date	Appro Date	Priority Admin No	Order No	Priority No	Associated Case Numbers	Net Absolute	Net Conditional	Net APEX Absolute	Net APEX Conditional	Decreed Units	Seasonal Limits	Comments
7/9/1965	5/15/1953	37755.00000	0	247	CA4954	2.5000	0.0000	0.0000	0.0000	C	No	NCORRECT LEGAL DESCRIPTION
7/9/1965	10/31/1960	40481.00000	0	270	CA4954, W0584, W0110	2.5000	0.0000	0.0000	0.0000	C	No	SEE W584, SEE W110

Water Rights - Transactions

Case Number	Adj Date	Appro Date	Priority Admin No	Order No	Priority No	Adjudication Type	Decreed Uses	Max Decreed Rate (CFS)	Total Vol Limit (AF)	Seasonal Limits	Comments
CA4954	7/9/1965	5/15/1953	37755 00000	0	247	S	1	2 5000		No	INCORRECT LEGAL DESCRIPTION
CA4954	7/9/1965	10/31/1960	40481 00000	0	270	S,C	1	2 5000		No	
W0110	7/9/1965	10/31/1960	40481 00000	0		S,CA	1	1 5000		No	SEE W584
W0584	7/9/1965	10/31/1960	40481 00000	0		S,CA	1	1 0000		No	SEE W110

[redacted]

Adjudication Type(s): C - Conditional, CA - Conditional Made Absolute, S - Supplemental

Decreed Use(s): 1 - IRRIGATION

Diversion Record - Totals

Water Class	Irr Year	FDU	LDU	MaxQ	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
Total (Diversions)	2001	4/25/01	4/26/01	0.80						3.17							3.17	AF	Approved
Total (Diversions)	1997			0.00									0 00				0 00	AF	Approved
Total (Diversions)	1996			0.00							0.00						0 00	AF	Approved
Total (Diversions)	1995			0.00							0.00						0 00	AF	Approved
Total (Diversions)	1991			0.00	0.00					0.00							0 00	AF	Approved
Total (Diversions)	1987	5/16/87	5/28/87	5.00							128.93						128 93	AF	Approved
Total (Diversions)	1983	6/9/83	6/16/83	2.85								45 22					45 22	AF	Approved
Total (Diversions)	1982	5/25/82	9/16/82	2.87							39.85	51 23	68 31	2.28	36.50		198.17	AF	Approved
Total (Diversions)	1981	7/27/81	8/5/81	2.87									28.46	28.46			56 93	AF	Approved
Total (Diversions)	1980	6/4/80	6/8/80	4.59								45 52					45 52	AF	Approved
Total (Diversions)	1979	5/22/79	7/19/79	4.00							23.80	31.74	63.47				119 01	AF	Approved
Total (Diversions)	1978	4/28/78	7/14/78	4.00						19.58	125.54	29 32	55 54				229 97	AF	Approved
Total (Diversions)	1976	5/20/76	6/18/76	4.00							95.21	142 81					238 02	AF	Approved
Total (Diversions)	1975	5/9/75	8/11/75	3.29							147.41	61.45	9 02	4.17			222 05	AF	Approved

Note:
FDU - First day used
LDU - Last day used
MaxQ - Maximum flow rate

Diversion Record - Water Classes

Water Class	Irr Year	FDU	LDU	Max Q	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
4500755 S:1 F:4504900 U:1 T:1 G: To:	2001	4/25/01	4/26/01	0 80						3.17							3.17	AF	Approved
4500755 S:1 F: U:1 T G: To:	1997			0 00									0 00				0.00	AF	Approved
4500755 S:1 F: U:1 T G: To:	1996			0 00							0.00						0.00	AF	Approved
4500755 S:1 F: U:1 T G: To:	1995			0 00							0.00						0.00	AF	Approved
4500755 S:1 F: U:1 T G: To:	1991			0 00	0 00					0 00							0.00	AF	Approved
4500755 S:1 F: U:1 T G: To:	1987	5/16/87	5/28/87	5 00							128.93						128.93	AF	Approved
4500755 S:1 F: U:1 T G: To:	1983	6/9/83	6/16/83	2 85								45.22					45.22	AF	Approved
4500755 S:1 F: U:1 T G: To:	1982	5/25/82	9/16/82	2 87							39.85	51.23	68 31	2 28	36 50		198.17	AF	Approved
4500755 S:1 F: U:1 T G: To:	1981	7/27/81	8/5/81	2 87									28.46	28.46			56.93	AF	Approved
4500755 S:1 F: U:1 T G: To:	1980	6/4/80	6/8/80	4 59								45.52					45.52	AF	Approved

Water Class	Irr Year	FDU	LDU	Max Q	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Annual Amount	Units	Data Status
4500755 S:1 F: U:1 T G: To:	1979	5/22/79	7/19/79	4 00							23.80	31.74	63.47				119.01	AF	Approved
4500755 S:1 F: U:1 T G: To:	1978	4/28/78	7/14/78	4 00						19 58	125.54	29.32	55 54				229.97	AF	Approved
4500755 S:1 F: U:1 T G: To:	1976	5/20/76	6/18/76	4 00							95.21	142.81					238.02	AF	Approved
4500755 S:1 F: U:1 T G: To:	1975	5/9/75	8/11/75	3 29							147.41	61.45	9 02	4.17			222.05	AF	Approved

Note:
FDU - First day used
LDU - Last day used
MaxQ - Maximum flow rate

Diversion Comments

Type	Irrigation Year	Description	Comment	Source
DIVERSION	1977	No water available		Approved
DIVERSION	1983	Structure not usable		Approved
DIVERSION	1984	Water taken, but no data available		Approved
DIVERSION	1985	Water taken, but no data available	MEASURING DEVICE IS ON THE DITCH BANK	Approved
DIVERSION	1986	Water taken, but no data available		Approved
DIVERSION	1988	No information available	NO CONCLUSIVE EVIDENCE SHOWING THAT THIS WAS USED	Approved
DIVERSION	1989	Water taken, but no data available	WATER TAKEN BETWEEN 05/20/89 AND 07/19/89 NO MEASURING DEVICE	Approved
DIVERSION	1990	No water available		Approved
DIVERSION	1991	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/20/91 AND 06/25/91 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1992	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/10/92 AND 06/30/92 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1993	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/15/93 AND 07/04/93 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1994	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/15/94 AND 06/20/94 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1995	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/15/95 AND 07/15/95 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1996	Water taken, but no data available	NO MEASURING DEVICE WATER DIVERTED BETWEEN 05/10/96 AND 06/20/96 ACRES ACCOUNTED FOR UNDER ID 693 MINEOTA DITCH	Approved
DIVERSION	1997	Water taken in another structure	WATER DIVERTED BETWEEN 05/10/97 AND 07/20/97. IN ED CONNOR DITCH. ALT PT FOR 5.0 CFS OF [redacted] DITCH WATER 97CW140	Approved
DIVERSION	1998	Water taken in another structure	ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER. SEE 97CW140. AMOUNTS ARE ESTIMATED. NO MEASURING DEVICE	Approved
DIVERSION	1999	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140. IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2000	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140 IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2001	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140 IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2002	No water available	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140 IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2003	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140 IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2004	No water available	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140 IRRIGATED ACREAGE UNDER [redacted] DITCH IS 100 AC	Approved
DIVERSION	2005	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140.	Approved
DIVERSION	2006	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT FOR 5.0 CFS OF [redacted] WATER SEE 97CW140.	Approved
DIVERSION	2007	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT	Approved
DIVERSION	2008	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT	Approved
DIVERSION	2009	Water taken in another structure	ID 585 ED CONNOR DITCH IS ALT PT	Approved

Type	Irrigation Year	Description	Comment	Source
DIVERSION	2010	Water taken, but no data available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2011	Water taken, but no data available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD. NEW PARSHALL FLUME INSTALLED THIS SPRING.	Approved
DIVERSION	2012	No water available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2013	Water taken, but no data available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD. NEW PARSHALL FLUME INSTALLED THIS SPRING.	Approved
DIVERSION	2014	No water available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2015	Water taken, but no data available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2016	Water taken, but no data available	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2017	Water taken in another structure	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2018	Water taken in another structure	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved
DIVERSION	2019	Water taken in another structure	ANY AVAILABLE [redacted] WATER IS PUT INTO THE EDCONNER AND CARRIED TO THE WEST SIDE OF DRY HOLLOW ROAD.	Approved

Irrigated Lands

Year	Parcel Count	Land Use	Irrigation Method	Parcel Size (Acres)	Prorated Structure Acres	Linked Surface Water WDIDs	Linked Groundwater WDIDs
2005	54503746	GRASS_PASTURE	UNKNOWN	68 6086	68 6086	1	0

IN THE DISTRICT COURT IN AND FOR THE

COUNTY OF GARFIELD AND STATE OF COLORADO

CIVIL ACTION NO. 4954

IN THE MATTER OF THE ADJUDICATION OF THE PRIORITY OF RIGHTS TO THE USE OF WATER IN WATER DISTRICT NO. 45,	)	
THE TOWN OF RIFLE, COLORADO, PETITIONER.	)	D E C R E E

Findings having been made by the Court herein, and such Findings having been filed with the Clerk of this Court, in the manner provided by law, and an Order having been made and entered herein, fixing the 18th day of June, 1965, as the day for the hearing and consideration of such objections and exceptions to said Findings as may be filed herein, and due and proper notice thereof having been given to all persons entitled to notice thereof, and certain exceptions or objections having been filed thereto, and the hearing thereof having been duly continued to the 7th day of July, 1965, and upon said date such objections and exceptions were heard, considered and sustained by the Court, and it having also appeared to the Court that a clerical error existed in the tabulation of structures and appurtenant data in said Findings which has been corrected; and the Court having ordered that a decree be entered herein in accordance with the aforesaid Findings as corrected, modified or amended; and the Court now being fully advised in the premises,

IT IS ORDERED, ADJUDGED AND DECREED:

1. That this is a supplemental general adjudication proceeding with reference to water rights in Water District No. 45 of the State of Colorado; that prior hereto certain general adjudication proceedings in said District have been conducted and concluded by a Decree, the last immediately preceding decree having been duly entered by the Court on the 2nd day of March, 1953.

2. That all conditions precedent to the entry of the Decree herein have been fully performed and complied with and the Court has jurisdiction over all parties in interest herein and of the subject matter of the proceeding and of each ditch or other structure hereinafter named.

3. That this Decree determines and establishes the several priorities of right, by appropriation of water, of the several ditches, reservoirs and other structures in said water district, concerning which testimony has been offered, each according to the time of its construction, or the time of any extension or enlargement thereof, as the case may be, with the amount of water which has been appropriated by such construction and by such extension and enlargement, if any. The right to divert water is hereby decreed in cubic feet per second of time, and the right to store water is hereby decreed in acre feet.

4. That the amount of water awarded to the several ditches, reservoirs, and other structures hereinafter mentioned, and to the several priorities connected thereto or therewith, has been beneficially applied and used in the irrigation of the lands under said ditches, reservoirs or other structures, or for such other purposes as are set forth herein, except as to conditional appropriations, and that the amount of water so awarded to each of the several ditches, reservoirs or other structures is necessary and essential to the proper irrigation of the land covered thereby, and to the profitable production of crops thereon, or for the particular beneficial purposes herein set forth, and that under the evidence submitted herein, said amount of water has been appropriated, used and applied to a beneficial use in each and every case, except as to said conditional appropriations.

5. That by reason of the application of said quantities of water so awarded to the several ditches, reservoirs or other structures to a beneficial use therethrough or thereby, the appropriators, claimants and parties lawfully entitled thereto have acquired a vested property right to the use of such water under the Constitution and laws of the State of Colorado, and of the Constitution of the United States of America.

6. That nothing herein contained shall be held, deemed or construed to change the date of appropriation, or the volume or quantity of water

appropriated, or the time of appropriation, or the manner of use, or to in any other way change, modify or adversely affect any decree of this Court heretofore entered. That the several decrees for water rights adjudicated to each and every ditch, reservoir or other structure herein specifically mentioned by, through or under former adjudications by this Court, are hereby recognized and acknowledged as prior valid decrees, and the same should be, and hereby are ratified and confirmed.

7. That all of the ditches, reservoirs or other structures herein mentioned are entitled to priority rights for the appropriation of water in an amount equal to the amount herein awarded, relating back to a date as early in every instance as the priority date fixed in this Decree.

8. That the actual priority rating of said several ditches, reservoirs and other structures, and the priority rights for the appropriation of water are calculated upon their dates of appropriation, respectively, as controlled by the laws of the State of Colorado, the order of priority, or priority of rights, for each particular use being in accordance with the priority numbers herein assigned to each thereof, the lower priority numbers being awarded the right of precedence over the higher priority numbers.

9. That each of the claimants of the water rights hereinafter set forth has prosecuted his, her, their or its appropriation, or appropriations, with due diligence within the meaning of, and in accordance with, the Constitution and laws of the State of Colorado.

10. That by reason of the peculiar nature of the soil irrigated by many of the ditches in Water District No. 45, the presence of coarse gravel and glacial deposits under a comparatively thin top soil, the ease with which water escapes through the bottom and sides of the ditches, many of which are constructed along steep side hills or steep terrain, the readiness with which water escapes into and under the soil during the process of irrigation, and the fact that many of said appropriations are for water which is available for only a relatively short period in the spring of each year, no definite ratio for the use of water in general can be established because the duty of water varies greatly in different localities and with different formations and ditches and other structures, and therefore the amounts awarded in this decree are based on demonstrated, established facts and actual proof of the necessities for water under the several claims; that the ditches, reservoirs and other structures involved herein are hereby decreed a priority right for the quantity of water necessary to profitably produce crops, or for other purposes as hereinafter set forth, without unnecessary waste.

11. That where the letters "cfs", "c.f." or"cu. ft. per sec." are used in this decree, said letters and contractions are used and should be construed as abbreviations for "cubic feet of water per second of time", and that the letters "A.F.", "Ac. Ft.", "Acre Ft.", and "A. Ft." as used herein shall be construed as abbreviations for "acre feet".

12. That the ditches, reservoirs or other structures heretofore awarded numbers by prior decrees in this Court, and which the Court has found are entitled to additional decrees and priority rights under the findings of fact filed herein, are as follows, to-wit:

NO. OF DITCH	NAME OF DITCH	STREAM FROM WHICH SUPPLY OF WATER IS DERIVED
13	The Rising Sun Ditch	Colorado River
77A	The Ed Connors Ditch	Dry Hollow Creek
15	Starke Ditch	Beaver Creek
90BBBAA	Valentine Ditch	Cache Creek
89A	Fairview Mesa Ditch	West Garfield Creek
71	The Mineota Ditch	Divide Creek

13. That the ditches, reservoirs and other structures which heretofore have not been awarded a ditch number by prior decrees in this Court and have not had their priority rights adjudicated heretofore, but which now are entitled to be awarded priority rights, are as follows, to-wit:

NO. OF DITCH	NAME OF DITCH	STREAM FROM WHICH SUPPLY OF WATER IS DERIVED
145	W. A. Skelton Ditch	Colorado River
146	Wayne Ditch	Battlement Creek
147	J. T. Pearch Ditch	Colorado River
148	The Margaret Pipeline and Tank	Beaver Creek
149	The Mead Pipeline and Tank	Beaver Creek
150	The Farris Pipeline	Beaver Creek
151	The Dorrell Pipeline and Tank	Beaver Creek
152	The Ruth Pipeline and Tank	Beaver Creek
153	Slide Creek Ditch, Headgate No. 1	Unnamed tributary of Colorado River
154	Slide Creek Ditch, Headgate No. 2	Slide Creek Gulch
155	Rivers Ditch	Morris Gulch
156	Spring Gulch Ditch, Headgate No. 1	Spring Gulch
157	Spring Gulch Ditch, Headgate No. 2	Unnamed tributary of Colorado River
158	Spring Gulch Ditch, Headgate No. 3	Unnamed tributary of Colorado River
159	Fogarity Ditch	Spring, seepage, and floodwater
160	Grand Valley Water Supply Pipeline	The ABC Springs, The O'Toole Springs and Revel Spring
161	The Eaton Springs Ditch	Unnamed springs
162	The Studt Spring Ditch	Studt Gulch and spring area
163	The Sawyer Ditch	Big Alkali Creek

164	McPherson Spring No. 1	Divide Creek
165	McPherson Spring No. 2	Divide Creek
166	The Swartz Ditch	Unnamed tributary to West Divide Creek
167	The Bud No. 2 Ditch	Alkali Creek
168	The Bud No. 3 Ditch	Alkali Creek
169	Luxon Spring and Ditch	Springs
170	The Gilstrap Pump and Pipeline No. 1	Colorado River
171	Pine Spring and Ditch	Pine Spring a tributary to West Mamm Creek
172	Aspen Spring and Ditch	Aspen Spring, a tributary of West Mamm Creek
173	Knight Spring and Pipeline	Spring, a tributary to Colorado River
174	The Schatz Ditch	Dry Hollow Gulch
175	Rinehart No. 8 Spring and Pipeline	Spring, a tributary to Beaver Creek
176	Knight Pump and Pipeline	Colorado River
177	Rinehart Ditch No. 1	Gulch, a tributary to Beaver Creek
178	Rinehart Spring No. 6 and Pipeline	Spring
179	Rinehart No. 2 Ditch	Unnamed gulch, a tributary to Porcupine Creek
180	Rinehart Floodwater Ditch No. 3	Drainage area tributary to Beaver Creek
181	Eaton Pipeline No. 1	Colorado River
182	Eaton Pipeline No. 2	Colorado River
183	West Divide Project	Various sources in Pitkin, Garfield and Mesa Counties in Water District Nos. 38 and 45

14. That notwithstanding the respective appropriation dates of water as decreed herein, the priority dates to which the respective appropriations are entitled to relate, under and by virtue of the laws of the State of Colorado, are as hereinafter shown; that the priority number of the respective appropriations of water for ditches, reservoirs or other structures hereinbefore mentioned, the numbers assigned thereto, the names thereof, the amount and volume of water to which they are entitled in this proceeding, measured in cubic feet of water per second of time, or in acre feet, as the case may be, the streams from which the respective ditches, reservoirs or other structures derive their supply of water, the priority date to which the same are respectively entitled to relate under the laws of the State of Colorado, and whether by original construction or enlargement and extension, and if by enlargement, the particular enlargement according to its number or name, are as follows, to-wit:

DITCH NO.	NAME OF DITCH	ORIGINAL OR ENL.	SOURCE OF SUPPLY	APPROPRIATION DATE	PRIORITY DATE	PRIORITY NUMBER	WATER ALLOWED C. f. s.
169	LUXON SPRING AND DITCH	Original	Spring	June 15, 1929	Apr. 28, 1953	239	1.5
170	THE GILSTRAP PUMP AND PIPELINE NO. 1	Original	Colorado River	June 11, 1932	Apr. 29, 1953	240	2.5
15	STARKE DITCH	1st Enl.	Beaver Creek	June 1, 1936	Apr. 30, 1953	241	1.0
90BBBAA	VALENTINE DITCH	Lemon Enl.	Cache Creek	May 1, 1937	May 1, 1953	242	2.7
71	THE MINEOTA DITCH	Valley Farms Enl.	Divide Creek	May 1, 1944	May 2, 1953	243	5.0
171	PINE SPRING and DITCH	Original	Pine Spring a tributary to West Mamm Creek	Aug. 1, 1945	May 3, 1953	244	1.0
172	ASPEN SPRING and DITCH	Original	Aspen Spring, a tributary of West Mamm Creek	Aug. 1, 1945	May 4, 1953	245	1.0
173	KNIGHT SPRING and PIPELINE	Original	Spring, a tributary to Colorado River	July 24, 1950	May 5, 1953	246	.013
174	THE SCHATZ DITCH	Original	Dry Hollow Gulch	May 15, 1953	May 15, 1953	247	2.5
175	RINEHART NO. 8 SPRING and PIPELINE	Original	Spring, a tributary to Beaver Creek	Oct. 11, 1953	Oct. 11, 1953	248	0.03
176	KNIGHT PUMP and PIPELINE	Original	Colorado River	May 1, 1955	May 1, 1955	249	1.5
89A	FAIRVIEW MESA DITCH	Original	West Garfield Creek	Aug. 1, 1955	Aug. 1, 1955	250	10.0
177	RINEHART DITCH NO. 1	Original	Gulch, a tributary to Beaver Creek	Sept. 15, 1955	Sept. 15, 1955	251	1.9
178	RINEHART SPRING NO. 6 and PIPELINE	Original	Spring	Sept. 15, 1955	Sept. 16, 1955	252	.03
179	RINEHART NO. 2 DITCH	Original	Unnamed gulch, a tributary to Porcupine Creek	Sept. 15, 1955	Sept. 17, 1955	253	0.9

THE SCHAATZ DITCH 174.

The claimants of said Ditch are RUDOLPH SCHAATZ and JOHN SCHAATZ, SILT, COLORADO.

The source of supply of said ditch and of the appropriation of water thereto, and the name of the stream from which said ditch takes its water is Dry Hollow Gulch, a tributary of the Colorado River in Garfield County, Colorado.

The point of diversion is a point on the northerly bank of Dry Hollow Gulch, whence the NW Corner of Section 15, Township 6 South, Range 92 West of the 6th P.M. bears north 19°54' W. 3117.47 feet.

The purpose for which water is diverted through said ditch is for irrigation purposes.

The priority date to which the appropriation hereby awarded shall relate is May 15, 1953.

Said appropriation was made by original construction and subsequent use of the Schaatz Ditch.

WHEREFORE, IT IS ORDERED, ADJUDGED AND DECREED that there be allowed to flow into said Schaatz Ditch from Dry Hollow Gulch for the use and benefit of the parties lawfully entitled thereto, under and by virtue of the original construction thereof under Priority No. 247, 2.5 cubic feet of water per second of time.

IN THE DISTRICT COURT IN AND

FOR THE COUNTY OF GARFIELD AND STATE OF COLORADO

Civil Action No. 4954

IN THE MATTER OF THE ADJUDICATION OF THE PRIORITY OF RIGHTS TO THE USE OF WATER IN WATER DISTRICT NO. 45,	)	FINDINGS, ORDER AND DECREE
THE TOWN OF RIFLE, COLORADO,	)	
Petitioner.	)	

On the 25th day of March, 1966, appeared Kenneth Balcomb, of the firm of Delaney & Balcomb, attorneys at law, for and on behalf of certain claimants of water to whom certain conditional decrees were awarded in the above entitled proceedings, and proof thereon was offered this date, by such claimant in support of appropriations herein granted conditional decrees and showing a reasonable diligence in the prosecution of completion of appropriation of such conditional decrees heretofore awarded such claimant herein, and the Court, after consideration of the decree heretofore entered, the files herein, and the evidence of the claimant,

FINDS: With regard to the structure hereinafter named:

> VALLEY FARMS SECOND ENLARGEMENT OF THE MINEOTA DITCH, being Ditch No. 71, with Priority No. 275.

That claimant, Valley Farms, Inc., has shown reasonable diligence and progress in the prosecution of the completion of the above entitled ditch, that additional time should be allowed

to claimant within which to complete such second enlargement and apply to the beneficial use for which the decree was entered, the water awarded to this ditch.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED with relation to the following ditch as follows:

VALLEY FARMS SECOND ENLARGEMENT
OF THE MINEOTA DITCH, being Ditch
No. 71, with Priority No. 275.

Reasonable diligence and progress in the prosecution of the completion of the above named structure having been shown by claimant, Valley Farms, Inc., the conditional Decree awarded this structure is hereby continued for further hearing and proof of further reasonable diligence and progress until the first day of the March, 1968 term of this Court.

Done at Chambers in the City of Glenwood Springs, Colorado, this 25th day of March, 1966.

Clifford H. Dawson

JUDGE.

IN THE DISTRICT COURT IN AND FOR THE

COUNTY OF GARFIELD AND STATE OF COLORADO

Civil Action No. 4954

IN THE MATTER OF THE ADJUDICATION OF THE PRIORITY RIGHTS TO THE USE OF WATER IN WATER DISTRICT NO. 45. THE TOWN OF RIFLE, COLORADO, Petitioner.	FINDINGS OF DILIGENCE AND SUPPLEMENTAL DECREE BATTLEMENT MESA PUMPING PLANT, PIPELINE AND DITCHES Structure No. 195 Priority No. 272

On this the 24th day of May, A. D. 1968, this cause came on for hearing, pursuant to the order of Court heretofore entered continuing said cause to this date for further showings and evidence as to due diligence, under and pursuant to the provisions of C.R.S. 1963, 148-10-8. The present claimant of the above structure and priority right, the Battlement Land Company, a corporation, appeared by its attorney Frank Delaney, Esq. Thereupon evidence, oral and documentary, was introduced showing the amount of labor and equipment, such as pumps and pipelines, made and installed since the date of entry of the conditional decree herein, and the amount of the expenditures made by the claimant and its predecessor in interest. From said evidence, THE COURT FINDS AS FOLLOWS:

1. That the present claimant and its predecessor in interest, Rea L. Eaton, have partially completed said structure and have with due diligence beneficially used and applied 1.78 cubic feet of water per second of time (being 106.8 cubic feet of water per minute of time) in the irrigation of the lands of the claimant subject to irrigation under said Battlement Mesa Pumping Plant, Pipeline and Ditches.

2. That the claimant has shown due diligence in the completion of said structure and in applying the 20 cubic feet of water per second of time (the same being 1200 cubic feet of water per minute of time), heretofore conditionally awarded to said structure as Priority No. 272, to a beneficial purpose in the irrigation of the lands of the claimant.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that said Priority No. 272 be, and the same is hereby, made absolute and unconditional as to 1.78 cubic feet of water per second of time (or 106.8 cubic feet of water per minute of time).

IT IS FURTHER ORDERED that the conditional decree entered in this cause on the 9th day of July, 1965, is modified to the extent above provided only, and is not otherwise cancelled or modified in whole or in part; and that said cause is continued as regards the other conditional features of said decree to the first day of the First Term of this Court in the year 1970, the same being the day for hearing further testimony with respect to the exercise of due diligence in said cause.

BY THE COURT:

CLIFFORD H. DARROW
Judge

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

I, DESMOND D. BERTHOLF, Clerk of the District Court in and for said county and state, do hereby certify the above and foregoing to be a full, true and complete copy of the order of Court entered in said Cause No. 4954 on the 24th day of May, A. D. 1968, as will appear from the original of said instrument remaining on file in this Court.

IN WITNESS WHEREOF, I have set my hand and caused the seal of said Court to be affixed at Glenwood Springs, Colorado, this 28th day of May, A. D. 1968.

Desmond D. Berthold
Clerk of the District Court

By _____
Deputy

IN THE DISTRICT COURT IN AND FOR THE

COUNTY OF GARFIELD AND STATE OF COLORADO

Civil Action No. 4954

IN THE MATTER OF THE ADJUDICATION OF THE PRIORITY RIGHTS TO THE USE OF WATER IN WATER DISTRICT NO. 45. THE TOWN OF RIFLE, COLORADO, Petitioner.	FINDINGS OF DILIGENCE AND SUPPLEMENTAL DECREE EATON PIPELINE NO. 2 Structure No. 182 Priority No. 256

On this the 24th day of May, A. D. 1968, this cause came on for hearing, pursuant to the order of Court heretofore entered continuing said cause to this date for further showings and evidence as to due diligence, under and pursuant to the provisions of C.R.S. 1963, 148-10-8. The present claimant of the above structure and priority right, the Battlement Land Company, a corporation, appeared by its attorney Frank Delaney, Esq. Thereupon evidence, oral and documentary, was introduced showing the amount of labor and equipment, such as pumps and pipelines, made and installed since the date of entry of the conditional decree herein, and the amount of the expenditures made by the claimant and its predecessor in interest. From said evidence, THE COURT FINDS AS FOLLOWS:

1. That the present claimant and its predecessor in interest, Rea L. Eaton, have partially completed said structure and have with due diligence beneficially used and applied 4.25 cubic feet of water per second of time (being 255 cubic feet of water per minute of time) in the irrigation of the lands of the claimant subject to irrigation under said Eaton Pipeline No. 2.

2. That the claimant has shown due diligence in the completion of said structure and in applying the 10 cubic feet of water per second of time (the same being 600 cubic feet of water per minute of time), heretofore conditionally awarded to said structure as Priority No. 256, to a beneficial purpose in the irrigation of the lands of the claimant.

IT IS THEREFORE ORDERED, ADJUDGED AND DECREED that said Priority No. 256 be, and the same is hereby, made absolute and unconditional as to 4.25 cubic feet of water per second of time (or 255 cubic feet of water per minute of time).

IT IS FURTHER ORDERED that the conditional decree entered in this cause on the 9th day of July, 1965, is modified to the extent above provided only, and is not otherwise cancelled or modified in whole or in part; and that said cause is continued as regards the other conditional features of said decree to the first day of the First Term of this Court in the year 1970, the same being the day for hearing further testimony with respect to the exercise of due diligence in said cause.

BY THE COURT:

CLIFFORD H. DARROW

Judge

STATE OF COLORADO)
) ss.
COUNTY OF GARFIELD)

I, DESMOND D. BERTHOLF, Clerk of the District Court in and for said county and state, do hereby certify the above and foregoing to be a full, true and complete copy of the order of Court entered in said Cause No. 4954 on the 24th day of May, A. D. 1968, as will appear from the original of said instrument remaining on file in this Court.

IN WITNESS WHEREOF, I have set my hand and caused the seal of said Court to be affixed at Glenwood Springs, Colorado, this 28th day of May, A. D. 1968.

Desmond D. Berthelf
Clerk of the District Court

By _____
Deputy

14. That notwithstanding the respective appropriation dates of water as decreed herein, the priority dates to which the respective appropriations are entitled to relate, under and by virtue of the laws of the State of Colorado, are as hereinafter shown; that the priority numbers of the respective appropriations of water for ditches, reservoirs or other structures hereinbefore mentioned, the numbers assigned thereto, the names thereof, the amount and volume of water to which they are entitled in this proceeding, measured in cubic feet of water per second of time, or in acre feet, as the case may be, the streams from which the respective ditches, reservoirs or other structures derive their supply of water, the priority date to which the same are respectively entitled to relate under the laws of the State of Colorado, and whether by original construction or enlargement and extension, and if by enlargement, the particular enlargement according to its number or name, are as follows, to-wit:

IN THE DISTRICT COURT IN AND FOR THE

COUNTY OF GARFIELD AND STATE OF COLORADO

CIVIL ACTION NO. 4954

IN THE MATTER OF THE ADJUDICATION OF THE PRIORITY OF RIGHTS TO THE USE OF WATER IN WATER DISTRICT NO. 45.

THE TOWN OF RIFLE, COLORADO, PETITIONER.

O R D E R

This cause comes on for hearing before the Court on this 7th day of July, 1965, upon the objections and exceptions filed to the Findings heretofore entered herein which hearing was originally set for the 18th day of June, 1965, but was on such date for good cause continued to this date; and counsel having made a statement to the Court with reference to said objections and exceptions wherefrom and from the records and files herein, the Court is of the opinion that they are well taken and should be sustained; and it also appearing to the Court that a clerical error exists in the tabulation of structures and appurtenant data which should be corrected;

It is accordingly ORDERED by the Court that the objections and exceptions filed to the Findings herein are sustained and that the said Findings shall be and hereby are corrected, modified and amended in the following particulars, to-wit:

The priority dates heretofore established in said Findings for the following structures are deleted and priority dates for such structures are correctly re-established as follows:

DITCH NUMBER.	NAME OF STRUCTURE.	PRIORITY DATE.
174	THE SCHATZ DITCH	May 15, 1953
175	RINEHART NO. 8 SPRING and PIPELINE	Oct. 11, 1953

176	KNIGHT PUMP and PIPE-LINE	May 1, 1955
89A	FAIRVIEW MESA DITCH	Aug. 1, 1955
177	RINEHART DITCH NO. 1	Sept. 15, 1955
178	RINEHART SPRING NO. 6 and PIPELINE	Sept. 16, 1955
179	RINEHART NO. 2 DITCH	Sept. 17, 1955
180	RINEHART FLOODWATER DITCH NO. 3	Sept. 18, 1955
181	THE EATON PIPELINE NO. 1	Dec. 17, 1956
182	THE EATON PIPELINE NO. 2	Dec. 18, 1956
183	WEST DIVIDE PROJECT	Apr. 22, 1957
184	TALBOTT PUMP and PIPELINE	Apr. 30, 1957
185	THE GILSTRAP PUMP and PIPELINE NO. 2	May 1, 1957
186	LULA NO. 1 DITCH	Nov. 7, 1957
187	ELLIS SPRING and PIPELINE	July 1, 1958
188	CEDAR SPRING and DITCH	July 2, 1958
189	HELEN and LEE SPRING and PIPELINE	Aug. 11, 1958
190	GUS DITCH	Oct. 28, 1958
191	MORRIS SPRING and PIPELINE	Oct. 29, 1958
192	THE JOLLEY PUMP and PIPE-LINE NO. 1	Jan. 27, 1960
193	THE JOLLEY PUMP and PIPE-LINE NO. 2	Jan. 28, 1960
176	KNIGHT PUMP and PIPELINE (1st Enl.)	May 1, 1960
13	THE RISING SUN DITCH (McPherson Enl.)	June 1, 1960
174	THE SCHATZ DITCH (1st Enl.)	Oct. 31, 1960
194	ALSBURY RESERVOIR	June 15, 1961
195	THE BATTLEMENT MESA PUMP-ING PLANT, PIPELINE AND DITCHES	Sept. 16, 1961
196	McPHERSON WATER WELL	May 15, 1962
197	ROAN PLATEAU PUMPING PIPELINE	May 27, 1964
71	THE MINEOTA DITCH (Valley Farms 2nd Enl.)	June 10, 1964

It is further ORDERED by the Court that the tabulation of structures and appurtenant data in the Findings on file herein is hereby corrected as follows:

The quantity of water shown for structure No. 183 - WEST DIVIDE PROJECT - under Priority 257B, to-wit, 670 (c.f.s.) through West Divide Canal, is deleted and the quantity 300 (c.f.s.) inserted in lieu thereof.

It is further ORDERED by the Court that the Findings entered herein, as corrected, modified and amended, are confirmed by the Court and shall constitute the Findings of the Court in this cause.

It is further ORDERED by the Court that appropriate decree herein shall be entered in accordance with the Findings entered in this cause as corrected, modified and amended.

Done in Open Court,

By the Court:

Clifford H. Darrow
Judge.

FILED
IN OFFICE OF WATER REFEREE
Division No. 5
AUG 26 1970
STATE OF COLORADO
L. L. Tuley
WATER REFEREE

FILED
IN WATER COURT
Division No. 5
AUG 26 1970
STATE OF COLORADO
Michael J. McClure
WATER CLERK

IN THE DISTRICT COURT IN AND

FOR WATER DIVISION No. 5

SATE OF COLORADO

APPLICATION No. W-110

IN THE MATTER OF THE APPLICATION FOR)
WATER RIGHTS OF THOMAS J. SWEENY and)
MAURICE F. SWEENY and MARGARET S.)
SWEENY of Silt, Colorado, and ALFRED)
A. SWEENY OF Albuquerque, New Mexico.)
)
IN GARFIELD COUNTY)
)

RULING OF REFEREE

The above entitled matter having been referred to the undersigned as Water Referee for Water Division No. 5, State of Colorado, by the Water Judge of said Court on the 15th day of June, 1970, in accordance with Article 21 of Chapter 148, Colorado Revised Statutes 1963, as amended (Chapter 373 S. L. Colo. 1969), known as The Water Rights Determination and Administration Act of 1969.

And the undersigned Referee having made such investigations as are necessary to determine whether or not the statements in the application are true and having become fully advised with respect to the subject matter of the application does hereby make the following determination and ruling as the Referee in this matter, to-wit:

1. The statements in the application are true;

2. The name of the structure is THE FIRST ENLARGEMENT AND EXTENSION OF THE SCHATZ DITCH;

3. The names of the claimants are Thomas J. Sweeny, Maurice F. Sweeny, Margaret S. Sweeny and Alfred A. Sweeny;

4. The source of supply of said ditch is Dry Hollow Gulch, a tributary of the Colorado River in Garfield County, Colorado;

5. The point of diversion is at a point on the northerly bank of Dry Hollow Gulch whence the Northwest corner of Section 15, Township 6 South, Range 92 West of the 6th P. M. bears North 19°54' West 3117.47 feet;

6. The water is used for irrigation and other beneficial purposes;

7. The date of initiation of appropriation is October 31, 1960;

8. The amount of water claimed is 2.5 cubic feet of water per second of time;

9. Since the original decree was entered the claimants have

expended $1,000.00 toward development and use of the said water.

Said ditch has heretofore been assigned No. 514 in the Decrees of the District Court in and for Garfield County, Colorado; and thereafter, under and by virtue of the First Enlargement and Extension was awarded Priority No. 270 for 2.5 cubic feet of water per second of time, with the proviso that said Priority No. 270 be conditioned upon application of such water to the beneficial use for which decreed within a reasonable time, with priority date of October 31, 1960; that since the entry of said Decree 1.5 cubic feet of water per second of time has been applied to the uses for which intended.

The referee does, therefore, conclude that the above entitled application should be granted and that 1.5 cubic feet of water per second of time, Priority No. 270, date of priority October 31, 1960 decreed conditionally to the claimants herein named, for irrigation and other beneficial purposes, be made absolute and unconditional; subject, however, to all earlier priority rights of others and to the integration and tabulation by the Division Engineer of such priorities and changes of rights in accordance with law as may be determined in pending supplemental general adjudication proceedings; that the remaining 1 (one) cubic foot of water per second of time shall remain subject to the condition as provided in the original decree and remain as a conditional right until applied to a beneficial use.

The Referee does find that the claimants have shown reasonable diligence in the development of the proposed appropriation of the one (1) cubic foot of water, and claimants should be entitled to an absolute decree therefor upon showing of due diligence.

Application for a biennial finding of reasonable diligence shall be filed in May of 1972 and in May of every second calendar year thereafter so long as the claimants desire to maintain this conditional water right or until a determination has been made that this conditional water right has become an absolute water right by reason of the completion of the appropriation.

It is accordingly ORDERED that this ruling shall be entered by the Referee in his records and shall become effective upon such entry, subject to judicial review as provided by law.

It is further ORDERED that a copy of this ruling shall be filed with the appropriate Division Engineer and the Water Clerk of said Court.

Done at the City of Glenwood Springs, Colorado this 26 day of August ~~September~~, 1970.

BY THE REFEREE:

Lester L. Smiley
Water Referee
Water Division No. 5
State of Colorado

No protest was filed in this matter.
The foregoing ruling is confirmed
and approved, and is made ~~the~~ a
Judgment and Decree of this court.

-3-

Dated: June 22, 1971.

Clifford H. Harrow
Water Judge

IN THE DISTRICT COURT IN AND

FOR WATER DIVISION NO. 5

STATE OF COLORADO

Application No. W-584

FILED
IN WATER COURT
Division No. 5
JUL 25 1973
STATE OF COLORADO
Elaine Dubowich
WATER CLERK
BY DEPUTY

IN THE MATTER OF THE APPLICATION)
FOR WATER RIGHTS OF CLARENCE)
EDWARD HANGS AS SUCCESSOR IN)
INTEREST TO THOMAS J. SWEENY,)
MAURICE F. SWEENY AND MARGARET)
S. SWEENY AND ALFRED A. SWEENY)
IN THE COLORADO RIVER OR ITS)
TRIBUTARIES)
TRIBUTARY INVOLVED: DRY HOLLOW)
GULCH IN GARFIELD COUNTY)

AMENDED RULING
OF REFEREE

The above entitled matter having been referred to the undersigned as Water Referee for Water Division No. 5, State of Colorado, by the Water Judge of said Court on the 5th day of May, 1972, in accordance with Article 21 of Chapter 148, Colorado Revised Statutes 1963, as amended (Chapter 373 S.L. Colo. 1969), known as The Water Rights Determination and Administration Act of 1969.

And the undersigned Referee having made such investigations as are necessary to determine whether or not the statements in the application are true and having become fully advised with respect to the subject matter of the application does hereby make the following determination and ruling as the Referee in this matter, to-wit:

1. The statements in the application are true.

2. The name of the structure is the First Enlargement and Extension of the Schatz Ditch.

CLARENCE EDWARD HANGS, SUCCESSOR TO

3. The names of claimants and addresses are: Thomas J. Sweeny, Maurice F. Sweeny and Margaret S. Sweeny of Silt, Colorado, and Alfred A. Sweeny of Albuquerque, New Mexico.

AMENDED 11/28/73 Jan Cole WATER REFEREE

4. The source of the water is Dry Hollow Gulch, a tributary of the Colorado River.

5. The point of diversion is at a point on the Northerly Bank of Dry Hollow Gulch whence the Northwest Corner of Section 15, T. 6S., R. 92W. of the 6th P.M. bears N. 19°54' W. 3117.47 feet.

6. The water is used for irrigation.

7. The date of initiation of appropriation is October 31, 1960.

8. In Civil Action No. 4954, in the Garfield County District Court, the First Enlargement and Extension of the Schatz Ditch was assigned No. 174, and was awarded Priority No. 270 for 2.5 cubic feet of water per second of time, conditionally upon the water being applied to a beneficial use within a reasonable time.

9. On the 4th day of March, 1968, in Civil Action No. 4954, Garfield County District Court, at the request of Valley Farms, Inc., found that the project had been completed and the 2.5 cubic feet of water per second of time had been applied to the beneficial use as specified in the conditional decree, and made the conditional decree

absolute in its entirety.

10. On the 26th day of August, 1970, acting upon the application of the owners of the First Enlargement and Extension of the Schatz Ditch, in Case No. W-110, the Water Referee for Water Division No. 5 found that the 1.5 cubic feet of water per second of time had been applied to the use intended, and ruled that said 1.5 cubic feet of water per second of time be made absolute and unconditional; and that reasonable diligence had been exercised in the development of the additional 1.0 cubic foot of water per second of time, and that said 1.0 cubic foot of water per second of time remain as a conditional right until applied to a beneficial use.

11. In the period of time since the 26th day of August, 1970, by enlargement of the ditch and other work on the land, the owners of the First Enlargement and Extension of the Schatz Ditch have applied the 1.0 cubic foot of water per second of time remaining as the conditional portion of the decree, to the beneficial use for which intended.

The Referee does, therefore, conclude that the above entitled application should be granted and that 1.0 cubic foot of water per second of time, Priority No. 270, date of priority October 31, 1960, decreed conditionally to the First Enlargement and Extension of the Schatz Ditch for irrigation purposes, be made absolutely and unconditionally; subject, however, to all earlier priority rights of others and to the integration and tabulation by the Division Engineer of such priorities and changes of rights in accordance with law.

The Referee does further find that the action of the Court on the 4th day of March, 1968, in Civil Action No. 4954, which made the 2.5 cubic feet of water per second of time absolute and unconditional was in error and should be so noted in the records of the Court.

It is accordingly ORDERED that this ruling shall be filed with the Water Clerk and shall become effective upon such filing subject to judicial review pursuant to Section 148-21-20 CRS 1963 as amended (1971).

It is further ORDERED that a copy of this ruling shall be filed with the appropriate Division Engineer and the State Engineer.

Done at the City of Glenwood Springs, Colorado, this 25th day of July, 1973.

BY THE REFEREE:

[signature]
Water Referee
Water Division No. 5
State of Colorado

No protest was filed in this **matter**. **The foregoing ruling** is **confirmed and approved, and** is made the **Judgment and Decree of this court.**

Dated: March 14, 1974

[signature]
Water Judge

FILED
IN OFFICE OF WATER REFEREE
Division No. 5
AUG 31 1972
STATE OF COLORADO
WATER REFEREE

IN THE DISTRICT COURT IN AND

FOR WATER DIVISION NO. 5

STATE OF COLORADO

Application No. W-584

FILED
IN WATER COURT
Division No. 5
AUG 31 1972
STATE OF COLORADO
Elaine Bukowski
WATER CLERK
BY DEPUT

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF THOMAS J. SWEENY, MAURICE F. SWEENY, MARGARET S. SWEENY AND ALFRED A. SWEENY IN THE COLORADO RIVER OR ITS TRIBUTARIES
TRIBUTARY INVOLVED: DRY HOLLOW GULCH IN GARFIELD COUNTY

RULING OF REFEREE

The above entitled matter having been referred to the undersigned as Water Referee for Water Division No. 5, State of Colorado, by the Water Judge of said Court on the 5th day of May, 1972, in accordance with Article 21 of Chapter 148, Colorado Revised Statutes 1963, as amended (Chapter 373 S.L. Colo. 1969), known as The Water Rights Determination and Administration Act of 1969.

And the undersigned Referee having made such investigations as are necessary to determine whether or not the statements in the application are true and having become fully advised with respect to the subject matter of the application does hereby make the following determination and ruling as the Referee in this matter, to-wit:

1. The statements in the application are true.

2. The name of the structure is The First Enlargement and Extension of the Schatz Ditch.

3. The names of claimants and addresses are: Thomas J. Sweeny, Maurice F. Sweeny and Margaret S. Sweeny of Silt, Colorado, and Alfred A. Sweeny of Albuquerque, New Mexico.

4. The source of the water is Dry Hollow Gulch, a tributary of the Colorado River.

5. The point of diversion is at a point on the Northerly Bank of Dry Hollow Gulch whence the Northwest Corner of Section 15, T. 6S., R. 92W. of the 6th P.M. bears N. 19°54' W. 3117.47 feet.

6. The water is used for irrigation.

7. The date of initiation of appropriation is October 31, 1960.

8. In Civil Action No. 4954, in the Garfield County District Court, the First Enlargement and Extension of the Schatz Ditch was assigned No. 174, and was awarded Priority No. 270 for 2.5 cubic feet of water per second of time, conditionally upon the water being applied to a beneficial use within a reasonable time.

9. On the 4th day of March, 1968, in Civil Action No. 4954, GARFIELD County District Court, at the request of Valley Farms, Inc., found that the project had been completed and the 2.5 cubic feet of water per second of time had been applied to the beneficial use as specified in the conditional decree, and made the conditional decree absolute in its entirety.

10. On the 26th day of August, 1970, acting upon the application of the owners of the First Enlargement and Extension of the Schatz Ditch, in Case No. W-110, the Water Referee for Water Division No. 5 found that 1.5 cubic feet of water per second of time had been applied to the use intended, and ruled that said 1.5 cubic feet of water per second of time be made

DISTRICT COURT, WATER DIVISION NO. 5, COLORADO

RECEIVED

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WATER RESOURCES
STATE ENGINEER
COLO.

CENTRAL FILES

Application No. 97CW140

RULING OF REFEREE

IN THE MATTER OF THE APPLICATION FOR WATER RIGHTS OF VALLEY FARMS, INC., IN GARFIELD COUNTY

The above entitled Application was filed on June 12, 1997, and was referred to the Water Referee for Water Division No. 5, State of Colorado, in accordance with article 92 of Chapter 37, Colorado Revised Statutes 1973, known as The Water Right Determination and Administration Act of 1969.

The undersigned Referee having made such investigations as are necessary to determine whether or not the statements in the Application are true and having become fully advised with respect to the subject matter of the Application does hereby make the following determination and Ruling in this matter, to wit:

1. The statements in the Application are true.

2. The name of the structure is the Schatz Ditch.

3. The name and address of the Claimant: Valley Farms, Inc.; c/o R. W. Dixon; 3141 Hood Street; Dallas, TX 75219 5503.

4. The source of the water is the Dry Hollow Creek.

5. The Applicant seeks an alternate point of diversion for a total of 5.0 cubic feet of water per second of time of the Schatz Ditch water right, Priority No. 247 with appropriation date of May 15, 1953 and Priority No. 270 with appropriation date of October 10, 1960 which are the subject of a previous decree:

Date entered: July 9, 1965
Case No.: C.A. 4954
Court: Garfield County District Court

to a point on the Ed Conner Ditch, up stream from the other Schatz Ditch diversion and located in the NW¼SW¼ Section 15, T. 6 S., R. 92 W. of the 6th P.M. at a point on the westerly bank of Dry Hollow Creek whence the NW Corner of said Section 15 bears N12°25'W, 3,360.80 feet.

6. The use of the water is irrigation.

The Referee does therefore conclude that the above entitled Application should be granted and that 5.0 cubic feet of water per second of time adjudicated to the Schatz Ditch may be utilized at the alternate point of diversion above described.

Dennis Hansen
970-363-5948
Roy McPherson

It is accordingly ORDERED that this Ruling shall be filed with the Water Clerk subject to Judicial review.

It is further ORDERED that a copy of this Ruling shall be filed with the appropriate Division Engineer and the State Engineer.

Dated 30th December 1997

BY THE REFEREE

Water Referee
Water Division No. 5
State of Colorado

Copy of the foregoing mailed sent
to all Counsel of record ✓
Water Referee Div Engineer
and State Engineer Date 12-30-97

Deputy Clerk, Water Div. No. 5 Lanterman
Valley Farms Payne Davidson
Trinm Oppelt

No protest was filed in this matter. The foregoing Ruling is confirmed and approved, and is made the Judgment and Decree of this court.

Dated January 23, 1998

Water Judge

Copy of the foregoing mailed
to all Counsel of record ✓
Water Referee Div Engineer
and State Engineer Date 1-23-98

Deputy Clerk, Water Div. No. 5
Valley Farms
Davison, et al

Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
September 6th, 2018
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. It was noted that federal land managers were absent (but invited), energy development representatives should be invited, and that we would like additional engagement from municipal drinking water and wastewater representatives.

II. **Why We're Here/Background.** Laurie Rink and Liz Chandler, project managers for the non-consumptive and consumptive use analyses, respectively, provided a historical and current perspective for the integrated planning effort. Topics covered included: 1) what is an IWMP and why are they important, 2) the roles of Middle Colorado Watershed Council/Conservation Districts and the integration of efforts, and 3) the role of the Advisory Committee.

Copies of the two power point presentations can be accessed here and here.

Jim Pokrandt introduced himself in the role of IWMP facilitator and emphasized the need for this type of planning as identified by the Colorado Basin Roundtable (CBRT), the specific desire and need for integration of consumptive and non-consumptive use need planning, and the fact that our local work is being watched by others throughout the state to see if it succeeds and can be used as a model for similar efforts in other basins.

III. **History of the middle Colorado River.** Director Russell George, Colorado River representative on the Colorado Water Conservation Board, provided an interesting perspective on the settlement of the middle Colorado River area and how water availability played a role. He noted that the water we enjoy in the middle Colorado River is highly controlled by factors outside of local control (i.e., upstream inputs and demands and downstream demands). There are, however, certain local controls that can be exercised and our job may be to identify and integrate the two forces.

IV. **Meet the Technical Consultant, Lotic Hydrological.** Seth Mason, Principal of Lotic, shared a powerpoint presentation explaining the overall approach to environmental/recreation use needs analysis and how that work will be used to inform the evaluation and prioritization of implementation projects as an outcome of the planning effort. A copy of his presentation can be viewed here.

V. **Perspectives from the Committee Members.** Jim asked the group for feedback and comments based on what was heard today and where we may be venturing. Following are a few points that were offered:

- Concern was voiced over the future ability of our region to produce food through agricultural practices. Future water use and availability presents a threat to agricultural. The middle Colorado region started out dry and is becoming increasingly drier.
- There is a need to tie land use planning to water availability. Municipal growth both locally and statewide is a concern to grapple with.
- Agricultural land conversion is undesirable, but it was noted that it is important for land and water owners to retain the right to sell these assets as they see fit.
- Where would our region be today if not for water storage projects (e.g., the Silt Water Project)? Is more storage needed and desired?
- Conservation of the river and the resources and ecological services it provides is of rising importance in our state and region. These uses need to be recognized.
- Valuing the river for the recreational opportunities it offers is a critical component of water planning efforts.
- Cross-pollination between the consumptive and non-consumptive use needs is something that should occur on a regular and consistent basis throughout our planning process if we are going to succeed in developing a plan that partners can embrace and implement in partnership.

VI. **Next Meeting.** The group agreed to meet, at least for now, every other month. There was interest in having an education topic presented at each meeting. Topic ideas for future meeting included: 1) recreational in-channel diversions (RICDs), 2) water rights 101, 3) water administration/big river threats in the big picture context, and 4) outdoor visits (agricultural water use demonstrations, river float, etc.).

Upcoming Meetings of Interest

- Colorado River District 2018 Annual Water Seminar. Risky Business on the Colorado River. Friday, September 14th, Grand Junction. Register here.
- Water Planning Town Hall Meeting. Local Input on Consumptive Use in the Middle Colorado River. Sponsored by the Mount Sopris, Bookcliff and South Side Conservation Districts. Tuesday, September 25th, Silt Library, 6:00 – 7:30 PM. RSVP at 970-404-3439.
- Hutchins Water Center at Colorado Mesa University, 2018 Upper Colorado River Basin Water Forum: Bridging Science, Policy & Practice. November 7 and 8, Grand Junction. Register here.

Links to Important IWMP Resources (these can also be accessed at https://www.midcowatershed.org/iwmp/

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants

Last updated 9-13-18

First	Last	Affiliation	E-mail	Attended 9/6/18 Mtg?
Janet	Aluise	Town of Silt Community Development	jaluise@townofsilt.org	X
Nathan	Bell	Bell Consulting, LLC	nbell@bellconsultingllc.com	X
Sheryl	Bower	Garfield County Community Development	sbower@garfield-county.com	X
Tim	Cain	Town of New Castle Planning Department	timc@newcastlecolorado.org	
Liz	Chandler	Conservation District IWMP Project Manager	lizelkvet@gmail.com	X
Don	Chapman	private land owner/water rights owner	247@skybeam.com	
John	Currier	Colorado River District	jcurrier@crwcd.org	
Dennis	Davidson	Mt. Sopris, Bookcliff, South Side Conservation Districts	garfieldag@hotmail.com	X
Scot	Dodero	Silt Water Conservancy District	windyknob55@gmail.com	
Angie	Fowler	MCWC Board/CBRT Representative	AngieF@sgm-inc.com	X
Tom	Fresques	BLM - Colorado River Valley Office	t1fresqu@blm.gov	
Russ	George	Director - CWCB	russellgeorge54@gmail.com	X
David	Graf	Colorado Parks and Wildlife	david.graf@state.co.us	
Annie	Henderson	Upper Colorado River Private Boaters Association	anniehenderson13@gmail.com	X
Morgan	Hill	Garfield County Environmental Health	mhill@garfield-county.com	X
Tommy	Hilleke	recreation enthusiast	tommyhilleke@comcast.net	
Hannah	Holm	Hutchins Water Center at Colorado Mesa University	hholm@coloradomesa.edu	X
Trent	Hyatt	City of Glenwood Springs Community Development	trent.hyatt@cogs.us	
Joe	Keys	Jet Boat Colorado - Owner	info@jetboatcolorado.com	X
Kathy	Kitzmann	Homestake Project - City of Aurora	kkitzman@aurora.gov	X
Seth	Mason	Lotic Hydrological - IWMP Technical Lead Consultant	seth@lotichydrological.com	X
Stuart	McArthur	Manager, Town of Parachute	stuartmc@parachutecolorado.com	X
Chad	Mickschl	BLM - Colorado River Valley Office	cmickschl@blm.gov	

Ken	Murphy	Glenwood Adventure Company - Owner	ken@adventureoutdoorsco.com	
Ken	Neubecker	American Rivers/CBRT Environmental Representative	kneubecker@americanrivers.org	X
Maria	Pastore	Homestake Project - Colorado Springs Utility	mpastore@csu.org	
Jim	Pokrandt	Colorado River District/IWMP Facilitator	jpokrandt@crwcd.org	X
Sam	Potter	West Divide Water Conservancy District	water@wdwcd.org	X
Sharie	Prow	District Manager, Mt. Sopris, Bookcliff, South Side Conservation Districts	Sharie.Prow@co.usda.gov	
Clay	Ramey	USFS - White River	rramey@fs.fed.us	
Dick	Rhoades	private land owner/water rights owner	rwro@yahoo.com	
Laurie	Rink	MCWC IWMP Project Manager	laurie@midcowatershed.org	X
Steve	Rippy	District Manager, Battlement Mesa Metropolitan District	srippy@acsol.net	
Brian	Rusche	City of Rifle Planning and Development Department	brusche@rifleco.org	X
Lance	Stewart	Manager, Town of De Beque	stuartmc@parachutecolorado.com	X
Chris	Sturm	CWCB - IWMP Project Manager	chris.sturm@state.co.us	
Richard	VanGytenbeek	Trout Unlimited	r.vangytenbeek@tu.org	X
Mark	Weinhold	USFS - White River	mweinhold@fs.fed.us	
Josh	Williams	Garfield County Environmental Health	jwilliams@garfield-county.com	
Dan	Woolley	recreation enthusiast	hydriad@yahoo.com	

Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
November 15th, 2018
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Suggested additions to the invitee list are encouraged.

II. **Brief Review.** Wendy Ryan, Colorado River Engineering, introduced herself as the both the co-project lead and technical consultant for the consumptive use assessment. Wendy talked briefly about what the consumptive use assessment includes. Laurie Rink, Middle Colorado Watershed Council, introduced herself as the project lead for the non-consumptive use assessment. Laurie mentioned that past meeting notes and materials were distributed to the group and will also be made available on the IWMP webpage.

III. **Water Law 101**. Aaron Clay, Esq., provided an expert presentation on the basics of Colorado water rights to help establish a common foundation of understanding of this topic to support future group discussions. Topics and salient points included:

- **The Prior Appropriations Doctrine and how adjudications operate**. All waters of the state belong to the public. The right to prior appropriations shall never be denied. "Prior" refers to first in time, first in right. Water in Colorado shall be put towards maximizing beneficial uses. A water right is appropriated once it is put to beneficial use (e.g., digging a ditch), but not recognized by the state until it is adjudicated through issuance of a decree. The adjudication process has evolved over time, recognizing "supplemental" adjudications, application of the "postponement doctrine" and, as of 1969, use of the water court system to issue decrees.
- **The concept of "reasonably efficient" use**. The concept is applied differently depending on the use, but implicit is that there must be a way to measure the actual water use and ensure water is being used without waste.
- **When and how non-consumptive uses were recognized.** Non-consumptive uses, also currently referred to as environmental and recreational uses, were officially recognized by the state in 1969 for the purpose of preserving the natural environment to a reasonable degree. Fish were the original focus but the scope has since been broadened.
- **Water rights are property rights.** You can use water, you can transfer water away from the land, you can change how it is used, and any change in a water right must be done as to not injure other water rights holders. Change of water rights must be done through a water court process and new uses are limited to the historic consumptive use of the water right; in addition, the change cannot alter the delayed return flows to the river which have been available to downstream users. Augmentation plans are commonly used to insure non-injury by providing replacement water to replicate the delayed return flow requirements of the original use by maintaining them in timing, location, quantity and quality once the water right is changed to a different use that it was originally decreed for. This is commonly achieved by providing upstream reservoir releases.

- **The "duty of water" and how that is quantified and assigned in our region**. Duty of water refers to the amount reasonably required for land application, used reasonably efficiently without waste, to maximize production. In our region the court uses a value of one cubic foot per second per fifty acres. This assumes that roughly half is consumed by the crop and half returns to the stream.
- **Particulars around "use it or lose it" and how efficiencies come into play.** Abandonment of a water right can occur after 10 years of non-use. Otherwise, the "use it or lose it" concern arises. The historic, consumptive portion of water use is the measure that is applied to determine the quantity (and ultimately, value) of water available for the change. The water court process dictates that a representative historic period of wet, dry and average years must be analyzed to quantify the historic consumptive use of the water right. If the water is not physically available at any point for use (e.g., during a drought), this portion of the record does not count against the water rights owner in terms of non-use of the water right; however, it does count against the historic consumptive use as water was not physically available for diversion or the water right was out-of-priority. If, however, that water is forgone for any reason (e.g., left in the stream to support fish in the absence of a pre-approved program), this will reflect as a zero use of water for that period. When upgrades in efficiencies are made that result in less water needed for irrigation purposes (e.g., conversion from flood to sprinkler irrigation), the record will reflect the lesser quantity of water used. The increment of unused water may be "lost" to the water rights owner for future use if it is determined that reinstatement of that water use would be wasteful. It was noted, however, that the underlying value of the water is still tied to the consumptive use portion which is not negatively affected by efficiencies.
- **The 2017 Guide to Understanding Waste.** The Colorado Division of Water Resources issued this internal guide to field staff to provide more specificity on what is considered waste.

Each of these topics touched on particulars that impact how we each view water management as it applies to our specific water use interests as well as providing a more global perspective of the challenges we may encounter in evaluating ways to optimize water management at the watershed scale.

The Citizen's Guide to Colorado Water Law, published by Water Education Colorado, is an excellent read on the subject and hard copies were provided to attendees. An online copy can be accessed here.

IV. **Understanding Ecosystem Condition, Goods and Services.** Seth Mason of Lotic Hydrological introduced a conceptual modeling exercise that he intends to perform with a number of subject-specific focus groups over the next couple of months. The purpose of the exercise will be to explore relationships between water uses, ecosystem health and the various good and services that humans derive from river-related goods and services, introducing our individual perceptions around the value of these goods and services. After running through a quick example of how this will work, Seth asked committee participants to sign up for a focus group session of interest. Six focus groups are being formed to include:

- Aquatic Ecosystems
- Riparian Ecosystems
- Water Quality
- Consumptive uses
- Recreation
- Agriculture

Laurie will keep the group informed on selected focus group session dates.

V. **Next Meeting.** In keeping with the format for offering educational presentations as part of each Advisory Committee meeting, two more ideas were advanced for consideration: 1) the Upper Colorado River Wild and Scenic Stakeholder process (for Deep Creek and Glenwood Canyon), and 2) the Colorado River Endangered Fish Recovery Program.

Click here for access to the 9-6-18 Advisory Committee meeting notes and list of attendees.

Links to Important IWMP Resources (these can also be accessed at https://www.midcowatershed.org/iwmp/

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants

First	Last	Affiliation	E-mail	Attended 11/15/18
Janet	Aluise	Town of Silt Community	jaluise@townofsilt.org	
Daniel	Becker	Town of New Castle, Utilities	dbecker@newcastlecolorado.org	X
Nathan	Bell	Bell Consulting, LLC	nbell@bellconsultingllc.com	X
Sheryl	Bower	Garfield County Community	sbower@garfield-county.com	X
Don	Chapman	private land owner/water rights	247@skybeam.com	
Brandy	Copeland	Town of New Castle	brandys.copeland@gmail.com	X
John	Currier	Chief Engineer, Colorado River	jcurrier@crwcd.org	
Dennis	Davidson	Mt. Sopris, Bookcliff, South Side	garfieldag@hotmail.com	X
Scot	Dodero	Silt Water Conservancy District	windyknob55@gmail.com	
Sara	Dunn	Conservation District IWMP	sarad@balcombgreen.com	
Angie	Fowler	MCWC Board/CBRT	AngieF@sgm-inc.com	
Tom	Fresques	BLM - Colorado River Valley	t1fresqu@blm.gov	
Alex	Funk	Ag Water Resources Specialist,	alexander.funk@state.co.us	
Russ	George	Director - CWCB	russellgeorge54@gmail.com	
David	Graf	Colorado Parks and Wildlife	david.graf@state.co.us	X
Bill	Hoblitzell	Lotic Hydrological	bill@lotichydrological.com	X
Annie	Henderson	Upper Colorado River Private	anniehenderson13@gmail.com	
Morgan	Hill	Garfield County Environmental	mhill@garfield-county.com	X
Tommy	Hilleke	recreation enthusiast	tommyhilleke@comcast.net	
Hannah	Holm	Hutchins Water Center at	hholm@coloradomesa.edu	
Kay	Hopkins	USFS - White River	kchopkins@fs.fed.us	
Trent	Hyatt	City of Glenwood Springs	trent.hyatt@cogs.us	
Joe	Keys	Jet Boat Colorado - Owner	info@jetboatcolorado.com	
Kathy	Kitzmann	Homestake Project - City of	KKitzman@auroragov.org	
Alan	Martellaro	Division Engineer, CDWR	alan.martellaro@state.co.us	
Seth	Mason	Lotic Hydrological - IWMP	seth@lotichydrological.com	X
Stuart	McArthur	Manager, Town of Parachute	stuartmc@parachutecolorado.com	X
Chad	Mickschl	BLM - Colorado River Valley	cmickschl@blm.gov	
Ken	Murphy	Glenwood Adventure Company -	ken@adventureoutdoorsco.com	
Ken	Neubecker	American Rivers/CBRT	kneubecker@americanrivers.org	
Tricia	Parish	Garfield County	tparish@garfield-county.com	X
Maria	Pastore	Homestake Project - Colorado	mpastore@csu.org	
Jim	Pokrandt	Colorado River District/IWMP	jpokrandt@crwcd.org	X
Sam	Potter	West Divide Water Conservancy	samisbmo7@gmail.com	X
Sharie	Prow	District Manager, Mt. Sopris,	Sharie.Prow@co.usda.gov	
Clay	Ramey	USFS - White River	rramey@fs.fed.us	
Dave	Reynolds	City Manager, Town New Castle	dreynolds@newcastlecolorado.org	X
Dick	Rhoades	private land owner/water rights	rwro@yahoo.com	
Laurie	Rink	MCWC IWMP Project Manager	laurie@midcowatershed.org	X
Steve	Rippy	District Manager, Battlement	srippy@acsol.net	
Brian	Rusche	City of Rifle Planning and	brusche@rifleco.org	X
Wendy	Ryan	Colorado River Engineering	wendy@coloradorivereng.com	X
Angela	Ryden	Colorado Farm Bureau	angelalryden@gmail.com	
Abi	Saeed	CSU Extension	abi.saeed@colostate.edu	X
Andrew	Steininger	Upper Colorado River Private	andrew.steininger@riverrestoration.org	
Lance	Stewart	Manager, Town of De Beque	stuartmc@parachutecolorado.com	
Chris	Sturm	CWCB - IWMP Project Manager	chris.sturm@state.co.us	
Richard	VanGytenbeek	Trout Unlimited	r.vangytenbeek@tu.org	X
Tom	Vondette	Holy Cross Cattleman's	tvondette@skybeam.com	
Mark	Weinhold	USFS - White River	mweinhold@fs.fed.us	
Lyle	Whitney	Aurora Water	gwhitney@auroragov.org	X
Josh	Williams	Garfield County Environmental	jwilliams@garfield-county.com	
Dan	Woolley	recreation enthusiast	hydriad@yahoo.com	

Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
January 18, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Suggested additions to the invitee list are always encouraged. Meetings are open to the public.

II. **Water Administration in the Middle Colorado River.** Alan Martellaro, Division Engineer - Water Division 5, Colorado Division of Water Resources, provided a deep dive into the specifics of water operations that impact the middle Colorado River from Dotsero to De Beque. A copy of his presentation can be accessed here. The level of detail presented does not lend itself well to summary, but the highlighted points are as follows.

- **The Shoshone Power Plant**, located in Glenwood Canyon and operated by Xcel Energy, owns water rights that have a significant and controlling influence on the middle Colorado River. The senior right of 1,250 cubic feet per second (cfs) with a priority date of 1905 and a junior right of 158 cfs with a 1940 priority date, are generally "called" each water year. When a call is on, which can occur as early as June after spring runoff, all water rights junior to the Shoshone rights must forego diverting until the full amount of the call is satisfied. Note that the 1905 and 1940 water right priorities call out the majority of other larger diverters (Homestake, Windy Gap, Blue Mesa, but not Colorado Big-Thompson). Flows that result from the Shoshone call are non-consumptive, meaning they are used to generate power then returned in full to the river (they do, however, dry up about 2.5 miles of the Colorado River). Without the power plant water rights call, flows in the river downstream of Shoshone could be considerably less because of upstream water users diverting for storage purposes.

- **The "Cameo Demand",** which occurs in the Grand Valley just upstream of Palisade, consists of a group of water rights that make up the demand for a number of Grand Valley water users. Total demand by these users is 2,260 cfs, including an 800 cfs water right for wintertime operation of the Orchard Mesa Power Plant. Administration of these rights is somewhat complicated given the various priority dates, use of shared structures, and interplay with the power plant. When the native river flows fall below 2,260 cfs at the Cameo diversion structure, then the most senior water right of 1,950 cfs is put into priority, followed by a junior right for power production of 310 cfs. When these calls are in priority, this allows for water to flow from Shoshone to Cameo, thereby creating the summertime (generally June through October) streamflows experienced in the middle Colorado River between these two structures.

- **The Orchard Mesa Check Case** was an important court case resulting in a 1996 decree stipulating particular operating criteria that affect river operations and water users from Green Mountain Reservoir (Summit County) downstream to the Grand Valley.

- **Green Mountain Reservoir** (GMR) is a large storage project built and operated by the Bureau of Reclamation (BOR) as part of the Colorado-Big Thompson project. It stores water for the benefit of multiple parties on both side of the continental divide and generates hydropower. Note that the water rights used to fill the bucket are junior (1935 priority date) to the senior Shoshone Power Plant right. GMR has a carve-out of 100,000 acre-feet (ac-ft) of water for the exclusive use of the west slope, for irrigation, domestic, and industrial uses. After the drought of 1977, a new operating policy was developed for GMR, apportioning the 100,000 ac-ft pool, as (and if) filled, to the following: 1) the first 5,000 ac-ft of fill is allocated to the Silt Project, 2) the next 66,000 ac-ft is distributed to the Historic Users Pool (HUP), 3) another 20,000 ac-ft is set aside as a contract pool for municipal and ski area use, and 4) the remaining 9,000 ac-ft, not considered firm yield, is reserved for discretionary release by the BOR. The 66,000 ac-ft of HUP water is released during the irrigation season, for the benefit of downstream users in the Colorado River system, to replenish pre-GMR water yields. In any given year, some portion of this water is likely to flow through the middle Colorado River between the months of June through October.

- **Flows to Protect Threatened and Endangered Fish.** Flows in the Colorado River below the Cameo diversion can get exceedingly low. The so called "15-mile reach", extending from the Cameo diversion to the confluence of the Colorado and Gunnison Rivers, is where 4 species of native fish exist, all on the federal list of threatened and endangered (T&E) species. Because of T&E designation, efforts must be undertaken to recover the species and, in the case of the 15-mile reach, this translates into enhanced streamflows. Environmental flows for the 15-mile reach come from GMR, Granby, and Ruedi Reservoirs. Total minimum volume of water is 21,825 ac-ft with 26,825 ac-ft 4 out of 5 years. Per stipulations in the Orchard Mesa Check Case, a surplus of HUP water that accumulates in GMR can be used to enhance streamflows in the 15-mile reach. Times of year when low flows could use a boost occur in later portions of the irrigation season (August – October), and occasionally in April (the "April hole") when irrigation withdrawals begin, spring runoff has not started, and the Shoshone Power Plant is under a call reduction. Successful T&E fish recovery is also tied to high, flushing spring runoff flows. In certain years, HUP surplus and other fish water is bypassed through the reservoirs during runoff to enhance peak streamflows at the Cameo diversion. Specifically, if peak flows are forecast to fall between 12,500 and 24,500 cfs at Cameo, then additional bypass flows are desirable. A number of parties meet weekly during the irrigation season to discuss, plan, and execute stream and reservoir operations to meet a whole host of objectives. In sum, HUP deliveries to the Silt Project and Grand Valley water users, plus T&E fish flows to augment both high and low flows, result in measurable streamflows in the middle Colorado River.

- **Shoshone Call Reduction.** This 2006 agreement, between Denver Water and Xcel Energy, reduces the amount of water used at the Shoshone power plant, but cannot affect the ability for Cameo to call 1,950 cfs. It can only be implemented when the snowmelt is forecasted to be less than 85% of average. The agreement is valid for a 25-year period.

- **Shoshone Outage Protocol (SHOP).** In recognition that the Shoshone Power Plant is aging and has outage days each year (or non-use of the power generating water rights), and that many water rights and augmentation plans in the Colorado River system have been developed assuming Shoshone as the controlling right on the river, an agreement was struck in 2016 to keep river administration consistent as if the senior Shoshone call was operating. This agreement was and continues to be critically important

to Colorado River water users who rely on the Shoshone call. Note that this agreement is only in effect for 40 years. This point was made to drive home the need for a solution to keep the Shoshone water rights operating in perpetuity.

- **Other Water that May be in the Middle River.** In addition to T&E fish flows at various times of the year, Grand County controls releases from Granby Reservoir to the benefit of Grand Valley irrigators during the irrigation season. Ute Water Conservancy District (Grand Valley) contracts water from Ruedi Reservoir that is delivered for Grand Valley irrigators and can also be released to enhance fish flows. These releases travel down the Frying Pan River, through the Roaring Fork River, and are enjoyed as live streamflows through the middle Colorado River (below the confluence with the Roaring Fork). There are several other small Ruedi water contracts that cumulatively can have a similar effect during the irrigation season.

III. **Update on Consumptive Use Analysis.** Wendy Ryan, as technical consultant to the Conservation Districts, reported that 24 out of 90 ditch inventories have been completed to date. The remainder of the inventories will be completed this year. The Conservation Districts have started meeting with the ditch companies to share results of the inventories and discuss funding opportunities for efficiency projects and infrastructure repair. The Districts will be hosting an IWMP booth at the upcoming Ag Expo (February 2nd). There have been recent articles published in the Post Independent, featuring topics like Demand Management and Snow Surveys, as part of outreach efforts to the ag community.

IV. **Synthesis of Mental Modeling Exercises.** Seth Mason, as lead technical consultant to the Middle Colorado Watershed Council, presented a draft aggregation of the results from five focus group modeling exercises that were conducted in December and January. Each focus group was asked to individually and collectively consider how water-related ecological and social systems operate. The aggregated results were initially mind-boggling, but served to reinforce the complexity and interdependence of our ecological and social systems.

As Seth explained, when the Advisory Committee and its focus groups begin to consider projects and processes for optimizing water use and management in the watershed, they can use this model to evaluate the ramifications of individual actions, both positive and negative. The model will also serve as a visual map for helping articulate the more complex relationships that affect decision making. As part of the planning process, it will important to clearly convey the reasoning that drives recommendations and prioritizations; this model may serve to facilitate such discussions with the public and key decision-makers. The technical team will also use the model results to select appropriate assessment methodologies robust enough to tease out key relationships at a coarse scale.

The Committee broke out into small groups to briefly review the draft model results and identify rooms for improvements, clarifications, or corrections. Seth intends to incorporate the suggestions, then reconvene the focus groups for another work session on sub-model refinement.

V. **Future Meetings.** It was agreed that the Advisory Committee will meet on the following pre-scheduled dates. Assume all meetings will occur in the afternoon in Rifle. Laurie will send out Outlook and Google calendar invites for all.

- March 20
- May 30
- August 7
- October 2
- December 4

Click here for access to the 11-15-18 Advisory Committee meeting notes and list of attendees.

Links to Important IWMP Resources (these can also be accessed at https://www.midcowatershed.org/iwmp/)

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
March 20, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Suggested additions to the invitee list are always encouraged. Meetings are open to the public.

II. **Colorado River Compact, Drought Contingency Planning, Demand Management.** Presentation by Jim Pokrandt, Community Relations Director, Colorado River District. Jim's presentation brought the committee up-to-date with ongoing planning and discussions concerning these topics. A copy of his presentation can be accessed HERE. Following is a brief synopsis of key points.

- **Function of Lake Powell through the Colorado River Compact.** Powell serves as the location for the upper basin states (Colorado, Wyoming, Utah, plus a small portion of New Mexico and corner of Arizona) to store water derived from annual snowmelt and precipitation. This stored water is subsequently used to fulfill water supply obligations to the lower States (Arizona, Nevada, and California) per the Colorado River Compact of 1922. Stored water is also used to generate hydropower at Glen Canyon dam, the outlet at Powell, to create electricity, revenues from which support programs important to Colorado. These programs fund projects to control salinity loading to the Colorado River (ex., Gunnison Basin salinity control improvements) and to support recovery of threatened and endangered fish species in the upper Colorado River. The Upper Colorado Fish Recovery Program is also important in that it has allowed for ongoing development of water in the basin, including another 120,000 acre-feet of water for the Moffat Collection System Project expansion, Eagle River MOU, and Windy Gap Firming.

- **Current Condition and Outlook for Lake Powell.** Lake Powell currently sits at 38% full. Accumulating storage has been on the decline for several years; 2018's spring time net contribution was the smallest blip of a rise on the hydrograph, one of the four worst years in recent history. The current snow season is trending positive with the Colorado River basin in Colorado well above average for snow-water equivalent. This will be the 5th positive year within a series of 19 years considered to be part of the on-going drought. Bureau of Reclamation (BOR) is forecasting inflows to Powell of 9.9 million acre-feet (MAF), as of March 1. Note, however, that this prediction is still below the long-term inflow average of 10.8 MAF. This is due, in large part, to the current soil moisture deficit in the upper watershed. The soil moisture deficit needs to be satisfied as the snow melts and becomes runoff. There will be enough inflows this year to maintain hydropower generation.

i. Question: Is there some way to quantify the soil moisture needs and amount of water that will return to groundwater in order to better understand and predict annual inflows to Powell? Answer: The BOR estimates attempt to factor in these influences when they create predictions. In addition, researchers are studying the effects of mid-elevation snow and rain patterns and how those are influencing the runoff cycle and streamflows.
ii. Question: Powell reached a storage elevation low in 2005 that is lower than where it sits today. How were the upper and lower basins reacting to that low as versus today's low? Answer: The lower basins were historically using the "surplus" at will which became unacceptable and spurred development of the 2007 interim guidelines which dictated revised operations and allowed for more storage to accumulate.
iii. Question: Who is damaged if the Powell storage elevation falls below levels needed to maintain hydropower generation? Answer: The answer is not entirely clear since this has never happened. Monies that support ongoing infrastructure repairs and upgrades for the Silt Project, and irrigation infrastructure efficiency and upgrade projects for salinity control in the Gunnison basin are the types of projects that may suffer.

- **Colorado River Drought Contingency Plan.** Colorado has included four elements in its drought contingency plan (DCP): 1) expanded cloud seeding, 2) expanded removal of tamarisk and other phreatophytes, 3) moving water stored in Colorado River Storage Project (CRSP) reservoirs to Lake Powell, and 4) implementing demand management (which means cutting back on water use). The Colorado Water Conservation Board (CWCB) currently has a plan to create a demand management plan. At this point, the intent is for demand management to be implemented on a temporary, voluntary, and compensated basis with the pain of water use reductions being shared equitably across the state, with the intent to protect ALL current water uses (consumptive and nonconsumptive). Various entities on the west slope have been conducting a Lake Powell Risk Analysis to understand the future vulnerabilities and risks of not meeting Compact obligations at Lake Powell. In other words, what is the future risk of not being able to deliver the agreed upon amount of water to the lower basin states? The current phase of this risk analysis is modeling how much water could be yielded from the Colorado if a Compact Call was placed by the lower basin states (essentially calling all post-1922 water rights). A mandatory curtailment is thought to result in a disproportionate impact to west slope users. A presentation on study results will be made at the March 25th Colorado Basin Roundtable meeting.
    i. Question: What elements are in other states' DCPs? Answer: Arizona, Nevada and California all have quantitative use reduction goals in their plans, and the lower basin is fully using its allocations. These states are much closer to a water crisis than Colorado, so they have more reason to be quantitative. Arizona is clearly the hardest hit and the agricultural use sector will bear the brunt of initial cutbacks. Farmers are saying they will return to pumping groundwater but that historic practice was deemed unsustainable many years ago and was one of the reasons to build the Central Arizona Project that delivers Colorado River water to Phoenix and Tucson.
    ii. Question: What does demand management really look like in western Colorado? Think about, if money is involved through compensation measures, how can that be put to best use: ag infrastructure improvements, support for conversation to other crop types, programs to rebuild soil health as some examples. This is where our IWMP effort can fit in – by identifying projects, processes and programs that could benefit our watershed and its unique set of water uses.
    iii. Question: Is upper basin storage at Powell the answer? Answer: It appears to be better than the alternative of new large-scale storage in Colorado that would be subject to very junior water rights.

III. Consumptive Use Analysis. Wendy Ryan, as technical consultant to the Conservation Districts, made a presentation that summarized how they are conducting the agriculture consumptive use analysis. Access the

presentation HERE. The purpose of this work is to provide an updated and region-specific analysis of water that is consumed by agriculture at a ditch-wide scale. Factors that are considered as part of the analysis include:

- Water Court Decrees – which helps establish water right priorities, acreage of irrigation allowed by decree, and the duty of water (how much applied per acre).
- Water Right Proof of Ownership – research is required to establish ownership of the various priorities of the water rights decreed to the structure and for what uses within each ditch system, and to establish which rights have been changed for use over time. Ownership information is not maintained by the Division of Water Resources and must be obtained through local research.
- Diversion Records – indicate the quantity of water historically diverted at the river headgate.
- Irrigated Acreage Through Time - to determine the changes in historic irrigated acreage, crop type and irrigation methods over the representative study period. This is generally accomplished using aerial imagery and conducting interviews. The quantified acreage is then limited to the amount allowed by decree for determining historic consumptive use.
- Representative Climate Data – this involves some complex calculations that take into account climate data and crop type to determine the quantity of irrigation water required by various crop types over a representative period including wet, dry and average years.
- Soil Information – helps with the calculation of soil moisture available to the crop and how excess soil moisture or irrigation is returned to the system.
- Irrigation Method – which determines how efficiently the water is applied and ultimately used by the crop.

The final Historic Consumptive Use analysis (HCU) outputs include, on an annual basis for wet, average and dry years, the following: 1) consumptive use – amount of applied irrigation water consumed by the crops; 2) surface runoff, 3) deep percolation/delayed return flows (the amount that goes to deep percolation taking into account the lagged nature of these returns to the river), and 4) conveyance and application losses.

The Statewide Water Supply Initiative (SWSI) released in 2010 utilized similar methodology to those described above; however, expanding beyond the field scale to the basin scale requires more estimation and extrapolation methods. SWSI 2010 identified irrigated acreage, assessed crop types and application methods and created diversion datasets (from those available) in order to determine the Agricultural Consumptive Use Gap. The Gap was defined by determining the Irrigation Water Requirement if a full physical and legal supply was available. Once the total water requirements were known, diversion records were utilized to reduce those numbers based on what was physically available to each structure (known as Water Supply Limited Consumptive Use). The difference between these two values quantified the Agricultural Consumptive Use gap.

The 2019 SWSI will utilize slightly different methodology which takes into account climate, irrigated acreage, and crop type to determine the irrigation water requirement. Assumptions related to conveyance and application efficiencies are then utilized to determine the Agricultural diversion demand over various planning scenarios. These demands are then entered into a surface water allocation model which then determines what amount of the diversion demand can be met by physical supply. The amount that cannot be satisfied is defined as the Agricultural Demand Gap.

- Question: If land was irrigated in the past when there was more available water, but not irrigated in more recent years or to the historic extent to which it was once irrigated, does this mean they loose that water? Answer: If the water was not utilized to irrigate more acreage and was due to a physical supply or legal limitation, the quantified consumptive use would be reduced; however, it does not mean that the water right would be abandoned. There are many enlargement rights decreed that are only physically available in wet years during peak runoff.
- Question: Can a crop type be changed in the future, particularly one that might consume more water? Answer: Any crop can be grown, the HCU analysis would take into account these changes

and the quantified CU would reflect those changes. You can change your crop type, but you cannot expand beyond the acreage allowed by the decree.

Wendy briefly described the methodology for calculating municipal consumptive use which relies on population growth and associated projections. The state is updating these estimates for SWSI 2019.

More detail on SWSI 2019 update methodologies by water use can be accessed HERE – see Fact Sheets.

IV. **Non-Consumptive Use Analysis - Update on Water Rights Synthesis and Plan for Visualizations.** Scott Schreiber, Wright Water Engineers, as a subconsultant to Lotic Hydrological, briefed the group on ongoing efforts to characterize and describe the major internal and external factors that affect water availability in the study area. The team will be working to develop a written analysis of the effects of water administration, integrating administration on the tributaries with what occurs on the mainstem. Graphical tools will be produced in addition to written text with the goal to have working documents by early summer. An annotated bibliography of associated water documents will also be produced.

V. Wrap up and Future Meetings. Laurie provided a brief meeting wrap and directed the committee's attention to two on-line resources. One is the IWMP webpage that provides access to meeting notes and associated documents. The other is a new website, www.coloradosmp.org, that provides information related to ongoing stream management plans and IWMPs across the state.

Remaining Advisory Committee meetings for 2019 are scheduled as follows. Assume all meetings will occur in the afternoon in Rifle.

- May 30
- August 7
- October 2
- December 4

Links to Important IWMP Resources

Past Meeting Minutes and Notes

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
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Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
May 30, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Meetings are open to the public.

II. **Upper Colorado River Endangered Fish Recovery Program.** Joint presentation by Tom Chart, Program Director and Don Anderson, Hydrologist and Instream Flow Coordinator, for the Upper Colorado River Endangered Fish Recovery Program. Tom's presentation can be accessed HERE, and Don's HERE. Following is a brief synopsis of key points.

- **Why a Recovery Plan.** The Endangered Species Act (ESA) was promulgated to halt and reverse the trend toward species extinction. The mid 1970's ushered in the era of compliance required for federal water projects that impacted ESA listed endangered fish. In 1983, the US Fish and Wildlife Service (USFWS) proposed no further net depletions in the Upper Colorado River Basin to protect endangered fish. To address the ensuing issues, the Colorado River Recovery Program was established in 1988. The program's goal is to recover the endangered fish as water development proceeds in compliance with the Endangered Species Act, state water law, interstate compacts, and federal trust responsibilities to tribes.
- **Endangered Fishes of the Upper Colorado River.** The four endangered native fishes of the Upper Colorado River include the Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub. Critical habitat for the Pikeminnow and Razorback begins at Rifle and extends downstream while the Bonytail and Humpback habitat begins further downstream.
- **Consultation for Water Depletions.** The Recovery Program has benefited Colorado water users by providing ESA compliance for roughly 1.9 million ac-ft of historic depletions over 1,243 projects, as well as for roughly 200,000 ac-ft of new depletions, for the period 1988 through 2018.
- **Program Elements.**
    i. Managing Flows for Endangered Fish. The Instream flow Program works with partners to try to maintain enough water in key river reaches of the upper Colorado River basin at the right times to promote endangered fish recovery.
    ii. Fish Habitat Development. Fish ladders have ben installed at key locations to allow endangered fish to move between stretches of river that contained impassable diversion structures. Screens have been installed at a number of reservoirs to prevent stocked, nonnative fishes from moving into endangered fish habitat on the mainstem of the Colorado and Green Rivers. The Program is currently experimenting with floodplain management to provide backwater nursery areas for spawning fish and their offspring in the period prior to spring runoff.

iii. Research and Monitoring. Ongoing research involves monitoring adult population size, stability, and mobility. More recent monitoring has been conducted to evaluate the success of early life stage recruitment.
iv. Information and Education. The Program participates in local events that provide opportunities for public interaction like water festivals, water seminars and workshops, etc. They also work with state agencies to sponsor fishing tournaments that promote the capture and removal of competing, non-native fishes from area reservoirs.
v. Stocking Endangered Fish. The Program stocks about 12,000 Razorback Suckers and 35,000 Bonytails on an annual basis. Stocked Razorback are responding well to this method of introduction while the Bonytails are not.
vi. Non-Native Fish Control. This element poses a significant challenge for Program managers as well as their partner agency, CPW. Non-natives in the mainstem Colorado River compete with the endangered fish for habitat and food, and readily prey upon young of the year and smaller adult endangered fish. Northern pike, walleye, and smallmouth bass are the focus non-natives for control measures. Instream control measures include physical removal and techniques that disrupt non-native spawning while in-reservoir control methods involve containment and fisheries composition management.

- **Current Status of Endangered Fish Populations.** The Colorado Pikeminnow appears to be hanging on at status quo levels without clear recovery. There have been few documented uses of the fish ladder at the Cameo diversion by this species. Female adults naturally don't reach breeding status until 8 years of age which influences the rate of repopulation. Razorback sucker numbers have been increasing steadily over the years. This species is currently being reviewed for a potential downlisting to threatened status. Bonytails, like the Pikeminnow, are maintaining but not clearly recovering. There is a large, stable population of Humpback in the Grand Canyon and a few other distinct populations in the Upper Colorado that is cause for a potential downlisting of this species to threatened.
- **Post-2023 Future.** In 2023 the Recovery Program sunsets and its source of federal funding ceases. A report on Program effectiveness is due to Congress at the end of fiscal year 2021. Program managers and Program beneficiaries are interested in convincing Congress of the importance of continued recovery efforts and federal support for these activities. Staff at the Recovery program are actively considering and evaluating the best methods for moving forward with an adaptive management program and funding proposal. As pointed out, the Recovery Program may disappear but the ESA and its requirements remain. This may result in water users being directly responsible for ESA compliance (i.e., recovery of the fish) rather than having the Recovery Program acting as an intermediary manager.
- **More Detail on Instream Flows for the 15-Mile Reach.** The 15-Mile reach of the Colorado River extends from the Cameo Diversion structure to the confluence of the Gunnison River in the Grand Valley. This is considered habitat critical to the recovery of Colorado Pikeminnow and Razorback Sucker because the clean cobble bars in this reach provide some of the most suitable spawning sites for these two species. Flows in this section of river are severely depleted during the irrigation season. Sufficient base (or minimum low) flows as well as a peak, scouring flows are important and targets have been developed. A number of partners are working together, on a voluntary basis, to ensure that these target flows are met, when possible. Flow target are not met every year, particularly the base flow targets during drought years. The 15-mile reach may have completely dried up in fall 2018 if not for efforts of the Recovery Program partners. Besides benefiting recovery program fishes, the instream flows provide benefits as follows:
    i. Passage and flow augmentation for other native fish, including the three species of concern (Bluehead Sucker, Roundtail Chub, and Flannelmouth Sucker), and supplemental flows for trout in upstream habitats;
    ii. Augmented spring and summer flows that benefit non-consumptives uses in the Middle Colorado River (and upstream), like boating; and

iii. Augmented flow to Lake Powell to help upper basin states meet lower basin delivery obligations under the Colorado Compact.

- **Wrap-up Points on How the IWMP Can Help Support USFWS Recovery Activities**
  - Be a voice in supporting the various management activities that USFWS employs to help meet fish recovery seasonal flow targets as well as associated biological targets.
  - Streamside ponds or gravel pits (e.g., the Mamm Creek pits near Rifle) can provide habitat for nonnative predatory fish. There may be an opportunity to work together on controlling non-natives species if / when CPW discovers more problematic sites in the future.
  - Lend support for the Recovery Program's post-2023 plans (under development) for continued implementation of adaptive management as prescribed by the Programmatic Biological Opinion. This will be a congressional decision.
  - Demand management and drought contingency planning may provide an opportunity to help meet flow targets in the 15-mile reach, also benefiting the middle Colorado River. Keep this in mind when participating in future stakeholder conversations on these topics.

III. Update on Nonconsumptive Use Assessment Work. Seth Mason's, Lotic Hydrological, presentation can be accessed HERE.

- Seth provided a series of graphs to illustrate how the hydrograph, as measured at the Cameo Diversion, has changed with time: Pre-water development in the Colorado River basin, post-water development, and post-Recovery Program implementation and flow augmentation. Trends, evaluated from 1933 to 2019, suggest that: 1) hydrological variability is being reduced across annual cycles and in the summer irrigation period, and 2) historical data shows downward trend in peak flows and upward trend in low flows.
- Work is ongoing with CPW, USFS and BLM to identify the existing and historic/potential ranges of native and important sport fish in the watershed, and to identify known barriers and impediments to healthy populations.
- The technical team completed a field reconnaissance of the river from Rifle to De Beque via jet boat to assess riparian habitat quality, extent of invasive competition, floodplain connectivity, physical barriers and obstacles, channel health, and other aspects. This information will be used to evaluate changes from historic conditions and future trajectories influenced by expected changes in flow volume and timing.
- A water quality assessment has been completed, including an analysis of existing water quality compared to state standards as well as future predictions regarding changes in quality.
- The team is working to describe and document water administration in the middle river.

IV. **Update on Consumptive Use Analysis.** Sara Dunn, as co-project manager for the Conservation Districts, provided an update on the agriculture consumptive use analysis. The ditch inventories are ongoing – of about 100 identified, 50% are now complete. The inventories involve walking the ditch and documenting a variety of observations. These results are being shared with ditch companies and water rights holders as a tool and as outreach. District staff are using the opportunity to provide suggestions regarding best management practices to improve water efficiencies and crop productivity, and informing on opportunities for cost share programs for improvements and upgrades. The Districts have been performing outreach to the ag community through regular newspaper articles, radio interviews, and workshops.

V. Future Meetings

Next Meeting August 7th, 1:00 to 3:30 PM, Rifle Library
Remaining meeting schedule for 2019:
October 2
December 4

Links to Important IWMP Resources

Past Meeting Minutes and Notes

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants
Last updated 6-5-19

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
August 7, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Meetings are open to the public.

II. **Colorado River Risk Study Phase III** – why was this study initiated, what was evaluated, what are the results, and how do they affect the Middle Colorado River? Jim Pokrandt, Director of Community Affairs for the Colorado River District and Chair of the Colorado Basin Roundtable, delivered the presentation and led a follow up discussion around what our local planning process can do to help address and offset the potential vulnerabilities identified in the study. Jim's presentation can be accessed HERE. Following is a brief synopsis of key points.

- **Why was the Study Initiated.** The West Slope basin roundtables united around the need for a more quantitative understanding of the risk of a Compact deficit. Funding for the work was provided by the Colorado River District, Southwestern, and West Slope BRTs (through the Colorado Water Conservation Board (CWCB)). It was noted that the Front Range water users are conducting similar modeling and interested in comparing assumptions and results.
- **What was Evaluated.** Phase I determined that there is a risk of curtailment for post-1922 water rights, Phase II focused on marrying a couple of existing modelling efforts for purposes of further analysis, and Phase III took a critical look at the potential effects of a Compact call. These specific questions were addressed:
  - How much Colorado River water does the State of Colorado use?
  - How much of Colorado's depletions are pre-compact?
    - How is this volume split up across the west slope basins (including TMDs)?
    - How much post-compact use could be called out?
    - Where are those post-compact uses?
  - What are potential approaches to "Sharing the Pain"?
- **Results.** Water elevations at Lake Powell and the average volume of water "delivered" to Powell for the lower basin's use are the principle measures for risk evaluation. These measures are influenced by hydrology, consumptive use, and the currently low condition of water storage in Powell. The study found the following:
  - There's a 39% likelihood over the next 25 years of Powell dropping below a defined critical water storage elevation (3525').
  - There's a 46% likelihood that the upper basin will fall short of maintaining a 10-year running average volume of "delivered" water of 82.5 million acre-feet (Maf). This decreases to 0% chance if that volume is decreased to 75 Maf. There is some dispute over which volume of delivered water is the correct one for evaluating risk.

- These calculated risks double if annual consumptive use in the upper basin increases by 11.5%. Some have observed, however, that consumptive use has not been increasing despite recent growth, perhaps because of the conversion of ag water usage for municipal (net less water consumed).

By parsing out the numbers as it relates to a possible curtailment:

- Of Colorado's ~2.5 Maf of average annual consumptive use, approximately ~1.6 Maf is attributable to Pre-Compact rights, and ~900 Kaf is Post-Compact.
- Trans-mountain Diversions (TMDs) constitute over half of the Post-Compact depletions (~56%).
- Because of the large volume of TMD use in the headwaters of the upper Colorado River basin, the Colorado Mainstem users comprise 2/3 of all Post-Compact uses.
- The large TMDs often end up being the swing call, even across different volumetric reductions.
- Allocating deficit volumes pro-rata by sub-basin depletions results in substantially different administration dates for certain sub-basins when compared to a state-wide curtailment of all Colorado River water users.

There is a stated intent to pursue a Phase IV evaluation that will look more critically at the partitioning of post-compact water rights by user type and at a sub-basin scale.

- **How do these results affect the Middle Colorado River.**
  - Question - are ag water rights protected or more vulnerable?
    1. As an observation, while most of the ag water rights in the middle Colorado River are pre-Compact, the water was also over-appropriated pre-1922.
    2. The answer to this question could vary depending upon how the state would administer a compact call. How this would be administered would be up to the state and is currently anyone's guess. Risk Study Phase III and subsequent studies were/are being designed to illuminate the effects of various administration scenarios. As a note, Drought Contingency Planning currently underway in the upper basin is being used as a pro-active management tool as versus the federalization of water administration which has taken effect in the lower basin. Best to keep it controlled by the states while the opportunity exists in the upper basin.
    3. Ag rights may be vulnerable to market forces as front range water users seek to buy and dry senior west slope water rights in order to reduce municipal risk in the event of curtailment.
  - It was noted that many of the middle Colorado River municipalities rely on stored water. How might storage by affected by a curtailment? The Colorado Constitution enables the exercise of eminent domain in times of drought.
  - Question – what percent of the TMDs in the Colorado basin headwaters goes to the front range for ag versus municipal use? These numbers may be evaluated in a Phase IV study.
  - Is anyone considering the political/social science of how a curtailment would work in Colorado? For example, is east slope ag more important that west slope ag? The CWCB has convened a number of work groups to evaluate various questions around the implementation of a demand management program in Colorado. We'll see the outcomes of this process after about a year.
  - Question - what is local ag willing to consider by way of participation in a demand management program? Based on a Water Banking Study completed a few years ago, Colorado has about 80,000 acres of row crops in irrigation. Row crops, as annual crops, are probably the most feasible target for demand management. Middle Colorado River ag is comprised mostly of hay production for calf cow operations. Demand management here would look like applying just enough water to keep things green but not producing a crop. This would force a reduction in herd size. There is, however, a rapid conversion of ag ground to hemp, which is a row crop. The Conservation District reports about 2,000 acres in hemp this year in the region. Demand management might also cause producers to convert to small grain production (annual crop).

- Question – are the front range communities talking about growth control based on limited water availability? Maria Pastore offered the outlook from Colorado Springs. Colorado Springs uses a 50-year planning horizon and current projections show a doubling in population by 2070. They are pursuing development of their water supplies in the Homestake and Blue River systems. There has not been an increase in demand over the last 30 years. Colorado Springs currently diverts roughly 52,000 acre-feet annually from the west slope.

III. **Update on Consumptive Use Analysis.** Wendy Ryan, as technical consultant for the Conservation Districts, provided an update on the agriculture consumptive use analysis. The ditch inventories are ongoing – about 30 are now complete. The Districts are not intending to make these public but will provide the Advisory Committee with a copy of the Garfield Ditch inventory. This ditch is utilized by Colorado Parks and Wildlife at their State Wildlife area. The inventories are reportedly working; two ditches have applied for grant funding this year for infrastructure upgrades.

Wendy is waiting for results of modeling work being conducted by the CWCB as part of the Water Plan update. The Conservation Districts will provide the state with updated information gleaned from the ditch inventory work to improve the accuracy of the state's database as it relates to calculating the consumptive use gap. For example, irrigated acreage appears to be understated in the state's record compared to recent on the ground analysis.

The Conservation Districts are applying for a Water Plan grant to provide supplemental funding for their efforts. They will hear back on the $95,000 request in November.

Wendy presented results of an ag survey conducted by Colorado Cattleman's Association on stream management planning. Based on 288 responses, it appears, in summary, that respondents were somewhat knowledgeable about stream management plans, may are already participating in some kind of a planning process, and folks want a seat at the table.

IV. Future Meetings

Next Meeting October 2nd, 1:00 to 3:30 PM, Rifle Library
Remaining meeting schedule for 2019: December 4

Links to Important IWMP Resources

Past Meeting Minutes and Notes

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants
Last updated 8-20-19

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
October 2, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Meetings are open to the public. Laurie Rink, IWMP Project Manager, commented on the strong attendance at the Conservation Districts sponsored dinner and presentation on the Colorado River Risk study held in Rifle on 10/1/19. There was also an update on Garfield County Community Development's updates to the County Comprehensive Planning document. The Comp Plan sections on water and agriculture have been updated significantly and draft language was presented to the Planning Commission in late September. Updated planning documents will be shared with the IWMP focus groups for review and consideration as part of identifying IWMP projects and programs.

II. **The Analysis and Technical Updates to the Colorado Water Plan.** Russ Sands, Senior Program Manager and Greg Johnson, Section Chief, both of Water Supply Planning for the Colorado Water Conservation Board (CWCB) were joined by Kara Sobieski of Wilson Water Group in delivering the presentation. Their joint presentation can be accessed HERE. The full narrative report can be found HERE. Following is a brief synopsis of key points.

- **Purpose of the Updates.** This technical body of work, initiated in 2016 and completed in July of 2019, updates the state's framework for water supply and demand analyses. It has updated future water supply gaps, evaluated environmental and recreational use needs with new tools, and created updated tools, dataset and user interfaces. As prefaced by Jim Pokrandt, the Colorado Basin Roundtable (CBRT) and other Roundtables will be updating their Basin Implementation Plans (BIPs) using outputs from and tools provided by this body of work. Any policy updates by the CWCB will follow. As a note, work generated by this IWMP process will be incorporated into the CBRT updated BIP.
- **Major Updates.**
  - Planning Scenarios. Five future planning scenarios were developed for evaluation. These scenarios incorporate a number of variables including climate change projections, variable population growth, and innovation related to water use and consumption. Water supply gaps are portrayed as aggregated risks within each scenario. These scenarios include:
    - Business as Usual
    - Weak Economy
    - Cooperative Growth
    - Adaptive Innovation
    - Hot Growth
  - Updates to Municipal Water Usage. Water demands now reflect self-reported municipal water usage as required through House Bill 2010-1051. Gaps in supply are calculated as maximums to reflect how municipal water is planned as firm yields.

- A number of state-developed models and databases were employed to develop the technical updates – these are combined for use within what is referred to as the Colorado Decision Support System (CDSS). The hydrology model uses a monthly time-step to integrate regional-level detail that captures typical water operations in most basins. Some IWMP processes have taken the model and disaggregated it, conducted a more detailed analysis of water rights, and are providing this refined data to the state for future model updates.
- An improved method for calculating the agricultural gap for both current and future planning scenarios now utilizes surface water modeling tools. The "total ag gap" is currently defined as the total amount of water supply that needs to be diverted or pumped to meet the full crop irrigation requirement. Applying CDSS tools to this analysis allows for an overlay of the legal and physical supply as a refinement calculation, acknowledging that the required water supply may not be met from year to year. The "incremental gap analysis" quantifies how the gap (calculated as an average) may increase with future water supply shortages beyond what has been historically experienced. Both the total and incremental gaps are calculated statewide and for each basin. Some IWMPs are prioritizing data updates related to crop type and source of supply. The state's update generally captures the regional ag demands, but these could be refined at the local level if there is interest. The comment was made that having an overlay of dried up acreage from water court change cases would be useful.

- **Observations Regarding Model Application.**
  - Climate and Ag. The methodology assessed three levels: current climate, an "in-between" condition, and hot and dry. The resulting effects of climate change on ag varied little at the lower elevations like the Grand Valley, significantly as higher crop demand at higher elevations, and somewhere in-between in the mid-elevation like the middle section of the Colorado River.
  - Conversion of Ag. The modeling accounts for planned and likely conversion of ag to municipal use, most of this occurs in the South Platte. Even with decreases in overall irrigated acreage, irrigation water requirements increase in a warmer future climate.
  - Municipal Demands. There was less population at the 2015 starting point for the analysis than projected in the previous water supply/demand analysis. There are also higher efficiencies in current municipal use due to conservation efforts promoted by the state and front range water providers.
  - Industrial water use statewide is roughly 15% of the combined municipal and industrial demand. Oil shale water needs were incorporated into this update, but there was some question about the projects used for the middle Colorado.
  - Climate Adjusted Hydrology. Modeling for future climate change indicates a shift in peak runoff to earlier in the season which may be too early for ag to benefit and result in late season shortages. The model updates did not, however, account for a higher ag demand with an elongation of the irrigation season. This may be taken up in the next version of technical updates.
- **Model Limitations.**
  - The monthly time step may not be sufficient for certain analyses, particularly short-duration environmental flow-related triggers. This detail could be developed at the regional level with IWMPs.
  - The Division of Water Resources database is quite extensive and applicable for regional-level analysis. However, there are many ungaged tributaries and sometimes unreported diversion records on the tributaries.
  - Groundwater pumping is held constant in the model, but this should not be an issue in the Colorado River Basin.
  - Operation of transbasin diversions in Colorado are held constant for the planning scenarios. Their operations could change pursuant to future drought contingency plan implementation.

- Results from this update should not be compared directly with output from previous iterations since different methods of analysis were employed.
- This exercise did not include any modeling of future projects that may lessen the gap. IWMPs and BIP updates are welcome to do this type of analysis.

- **Model Results (highlights)**
  - Municipal and industrial projected water supply gaps range from 245 to 740 KAF (thousand acre-feet). Most occur in the South Platte River Basin. There is no gap currently, but gaps occur with projected population growth and climate change. Some of the gap could be filled through additional conservation efforts. Overall per capita use has decreased statewide by about 5% over the last decade.
  - The Ag gap ranges from 2,213 to 3,379 KAF principally due to changes in climate-induced hydrology (18 to 43% over baseline). The incremental ag gap ranges from 23 to 1,053 KAF. The gaps are less when innovation is factored into the analysis.
  - Reservoir storage statewide goes almost to zero in the extreme scenario of hot growth.
  - Peak streamflows and annual volumes passing the Cameo diversion are diminished for most planning scenarios when compared to current, with peaks occurring about a month earlier. Drier conditions are most evident in late summer.
- **Environmental Flow Tool**
  The Environmental Flow Tool was improved for use by IWMPs and Roundtables. It groups 58 environmental and recreational (E&R) attributes into 6 macroattributes. The risk to the 6 macroattributes can be calculated for particular stream "nodes" through application of the planning scenarios. Nodes relevant to the middle Colorado River are located at Dotsero and Cameo gages. Chapter 4, Section 4 of the full technical report provides a detailed description of the impacts, including those that accrue to the 15-mile reach for T&E fish species.
  - Question – does the Environmental Flow Tool include an analysis like boatable days? Answer – the IBCC decided to not try and quantify the gaps for E&R uses. This current approach is incremental and allows for a comparison of current to future.
  - Question – how difficult is it to breakdown nodes to shorted stream segments? Answer – just an issue of time and money.
- **Update Results Specific to Middle Colorado River.**
  - Agriculture. 36,000 irrigated acres. Gap by 2050 projected to range from 26,000 to 45,000 AF. Incremental gap is 5,200 to 19,400 AF as an average; could also look at maximum gap for local IWMP planning purposes.
  - Municipal/Industrial. Projected 550 to 2,240 AF gap.
  - Reservoir storage future projections included Harvey Gap, Rifle Gap, Parachute and Roan Reservoirs.
  - See the streamflow future conditions for Dotsero and Cameo gages.
- **How the Technical Updates Could be Used for Middle Colorado IWMP**
  - Could change basic model constructs to fit our local planning objectives then run the state planning scenarios or other scenarios we construct.
  - Could rerun the 2050 projections with any of our own data.
  - Provide the state with refined data for future Water Plan technical updates.

III. **Update on Consumptive Use Analysis.** Wendy Ryan, as technical consultant for the Conservation Districts, reported nearly 100 attendees at the Conservation District dinner and presentation on the Colorado River Risk Study the previous evening. The Conservation Districts applied for a Water Plan grant to provide supplemental funding for their efforts and it appears that the funding is being strongly considered. They will know in mid-November whether funding is forthcoming.

IV. **Update from Lotic Hydrological.** Seth reported on their intended efforts to dive into the workings of the state modelling work as presented today. The IWMP process, including stakeholder input, will examine whether the models need updating for our local planning purposes and, if so, whether we have the time and resources to do the updates or if that becomes a recommendation in the IWMP report. We intend to use the same five planning scenarios that the state used. Our analysis needs to be conducted at a daily timestep rather than monthly in order to understand E&R uses more accurately. The number of location at which this level of analysis occurs is under evaluation.

V. Future Meetings

Next Meeting December 4th, 1:00 to 3:30 PM, Rifle Library
Meeting schedule for 2020 TBD

Links to Important IWMP Resources

Past Meeting Minutes and Notes

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants
Last updated 10-23-19

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems and agriculture in the face of increased future demand and climate uncertainty.

Advisory Committee Meeting
December 4, 2019
Meeting Summary

I. **Introductions.** See the attached list of meeting invitees and attendees. Meetings are open to the public.

II. **Workshop Session on Selecting IWMP Goals and Objectives**

Click HERE to access the powerpoint presentation used during the workshop.

- **Setting the stage.** The Committee is being charged with developing overarching goals for the IWMP process. These goals can be described as vision-like: what do we want to see in our water future as a result of implementing the Plan? Goals developed by the Committee will be shared with the four Focus Groups that will, in turn, develop a set of measurable objectives designed to meet the goals. A solid set of goals and objectives will be useful in identifying and ultimately prioritizing IWMP recommendations (projects, processes, strategies and actions).
- **Review factors that initiated the IWMP process.** The group reviewed the initial mission statements that were included in the project proposals to consider whether they were still appropriate. A combined statement was presented for consideration. *To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems and sustainable agriculture in the face of increased future demand and climate uncertainty.* There was considerable discussion on use of the work "sustainable". This term can mean different things to different observers. Should it be changed to "sustain"? Or simply maintain? There was also a question on the strength of the words "in the face of" given that future demands and climate uncertainty are real.

  Seth handed out a series of graphics illustrating the mental models that each focus group developed earlier in the IWMP process. Seth also provided large format prints of a combined mental model that connected the results of the four individual models. He reminded the Committee about the purpose of the model and highlighted some of the themes that emerged. As an exercise, the Committee divided into three small groups to review the model and develop a list of points reflecting on why the IWMP process is important to the middle river. Topics and points that emerged from the discussions included:

  - Water and its use effects the local economy in many ways – not just restricted to environmental and recreational uses
  - Demand management will be important in our future
  - There is a need to educate our local population about the value of water
  - Collaboration will be required in order to achieve successes
  - How do we do more with less

- **Develop overarching goals for IWMP.** The three groups went through another exercise to brainstorm goal. At the conclusion of the exercise, the technical team sorted through the responses, grouped similar goals, pulled out responses that were more appropriately categorized as objectives or shared values, and attempted to summarize the results on the whiteboard. The results are as follows:

  Mission Statement: The Committee decided to drop the term "sustainable" before the word "agriculture". The Committee will continue to review and reflect upon the mission statement as IWMP work progresses. *To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems and agriculture in the face of increased future demand and climate uncertainty.*

  Goals: The following seven goals were derived from the numerous individual suggestions; there was considerable overlap between suggestions. The Committee spent some time wordsmithing the seven goals. It was agreed that the technical team would compile all of the individual suggestions to make sure all were sufficiently represented by the seven goals. A compilation with suggested edits and modifications will be sent out to the Committee later in the month for additional review and comment.

  1. *Foster a collaborative approach to water uses through shared stewardship.*
  2. *Maintain and enhance healthy watersheds, rivers and streams.*
  3. *Enhance responsible recreational use.*
  4. *Promote, preserve and protect agriculture.*
  5. *Increase resiliency in the regional water supply.*
  6. *Promote a resilient and diverse economy.*
  7. *Plan to adaptively meet impacts of a changing climate.*

  Objectives: A number of the suggested goals were found to fit better in the category of objectives. These possible objectives will be passed along to the appropriate focus groups for consideration.

  - *Prioritize multiple-use projects to fill gaps*
  - *Create a prioritization of consumptive water uses*
  - *Secure funding for implementation*
  - *Secure Shoshone and Cameo water rights*
  - *Develop more local storage*
  - *Protect the existing water rights system*
  - *Identify local opportunities/constraints for demand management programs*
  - *Educate residents and water users to become water stewards*
  - *Incentivize keeping local water supplies on the land and in the river*
  - *Promote personal water conservation*
  - *Incorporate knowledge and experience from similar efforts*
  - *Maintain and improve water quality in rivers and streams*
  - *Assist our communities in meeting water-quality related regulatory responsibilities*
  - *Develop a safety valve for Colorado in Interim Guidelines discussion if climate changes result in more variability that affects ability to deliver obligation to lower states*

  Our Shared Values: Several suggestions for goals better fit into a category of "shared values" or "how we do our work". These suggestions will be brought forth in ongoing stages of the IWMP process.

  - Work collaboratively with all water users in the watershed
  - Listen to everyone
  - Work by consensus

III. Future Meetings

Focus Group meetings will occur in the months of December through March. The next Advisory Committee Meeting will occur in April 2020 with a date and time TBD.

Links to Important IWMP Resources

Past Meeting Minutes and Notes

IWMP Fact Sheet
Water Education Colorado Headwater Magazine on Stream Management Plans (SMPs)
Chapter in Water Plan on SMPs
Colorado Basin Roundtable Table Basin Implementation Plan
MCWC IWMP Scope of Work
Mount Sopris, Bookcliff and South Side Conservation Districts IWMP Scope of Work
IWMP Community Engagement Plan
Lotic Hydrological Work Plan and Timeline
Colorado Mesa University Website for IWMP Framework Project

Middle Colorado Integrated Water Management Plan
Advisory Committee - Invited Participants
Last updated 12-12-19

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Integrated Water Management Planning in the Middle Colorado River

To improve security for all water uses in the Middle Colorado River by understanding and protecting existing uses, meeting shortages, and maintaining healthy riverine ecosystems in the face of increased future demand and climate uncertainty.

Consumptive Use Focus Group Meeting
January 9, 2019
Meeting Summary

I. **Attendees.**
Trent Hyatt – Community Development, Glenwood
Sheryl Bower – Community Development Director, Garfield County
Patrick Waller – Community Development, Garfield County
Lance Stewart – Town Administrator, De Beque
Sam Potter – West Divide Water Conservancy District
Maria Pastore – Colorado Springs Utilities
Dennis Davidson – Conservation Districts
Angie Fowler – SGM
Jim Pokrandt, Colorado River District and Colorado Basin Roundtable
Hannah Holm – Water Center at Colorado Mesa University
Seth Mason – Lotic Hydrological
Laurie Rink – Middle Colorado Watershed Council

II. **Discussion – What Kind of Planning Exercises/Outputs Could Benefit the Middle River?**

- Create a map that illustrated intakes/outfalls along the mainstem as an information tool.
- Inventory water rights by priority date – annotate with some intermediate concepts like compact limitations, ability to store, etc. Note that the priority system is reflective of available precipitation (i.e., north vs. south side of river differences).
- Analyses to inform land use planning. Garfield County is considering zoning as it relates to water availability for residential development (versus allowing water hauling). Create maps that illustrate water-limited regions that may not be conducive for higher density.
- Investigate industrial uses current and future. Oil/gas producers have purchased senior water rights from ag but have not yet exercised these rights for industrial uses; are leasing back for ag production. What impact will occur to system when/if these are exercised for industrial use?
- Capture the reality of water moving from ag to municipal uses when condition are really dry.
- Localized storage is critical for our area. Municipal interests may be good partners for small scale storage. Take a look at the restricted reservoir list as starting point for storage analysis.
- Build a consumptive use model to illustrate existing conditions, determining how much ag production and other uses we have now, and what kind of buffer is needed to protect all those uses as the system changes.

III. Mental Model Exercise

Seth is working with each of the focus groups to develop a "mental model" of different sectors of water use in the middle river. The purpose of the exercise is to explore relationships between water use, ecosystem health and the various good and services that humans derive from river-related goods and services, introducing our

individual perceptions around the value of these goods and services. Results from all of the focus groups will be combined in a larger model. This model will serve as an important tool as the group moves deeper into the assessment and project/program prioritization process of integrated water management planning. The focus group dove into the exercise, developing a web of relationships around the variety of consumptives uses for the basin.

III. Next Meeting

The group will be reconvened in another month or two to review the aggregated results of the mental model. Laurie will send out a poll for scheduling when the time is appropriate.

Integrated Water Management Planning in the Middle Colorado River

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Consumptive Use Focus Group Meeting
February 27, 2019
Meeting Summary

I. **Attendees**

Lance Stewart – Town Administrator, De Beque
Sam Potter – West Divide Water Conservancy District
Nathan Bell – Garfield County representative to CBRT
Raymond Langstaff – Bookcliff Conservation District
Angie Fowler – SGM
Justin Bilyeu – Shale Tech International
Charles and Angela Ryden – Bookcliff Conservation District and Colorado Farm Bureau District 10
Wendy Ryan – Colorado River Engineering
Scott Schreiber – Wright Water Engineers
Seth Mason – Lotic Hydrological
Laurie Rink – Middle Colorado Watershed Council

II. **Recap from January Meeting – Laurie Rink**

Many good suggestions were made at the last meeting in response to the question of desired study outputs. The consulting team plans to address these ideas during today's meeting discussion with feedback on if and how those will be addressed.

The Colorado Basin Roundtable (CBRT) Next Steps committee met earlier in the month to formulate a plan for addressing drought contingency planning and water demand management strategies for the Colorado River basin. It was noted that some of the outputs from that body of work could inform the IWMP process while the reverse is also true. There is also a third phase of the Lake Powell Risk study underway by the Colorado River District and others, with results forthcoming in early summer and fall.

III. **Update on Ag Consumptive Use Analysis - Wendy Ryan**

Ag Expo, held earlier in the month, was a great success.

A couple of ditch inventories have been completed with results being presented to the ditch companies. The ditch companies are being provided current information on cost-share programs for repair and upgrade work and proposal development is underway. Field work associated with the inventories is currently suspended, but expected to start up in a couple of weeks as the weather improves. Information like crop type and acres of irrigated land is being collected.

Sam Potter expressed concern regarding the lower threshold of 10 cfs for conducting a ditchwide inventory; this may not capture some of the more senior irrigation systems, particularly on the south side of the river. Wendy said that tributary calling structures and pre-Compact water rights will be more thoroughly analyzed. Sam noted

that many of the tributaries on the south side are over-appropriated, even with pre-Compact rights, so any analyses by this study effort or others underway (e.g., Powell Risk Study) may over-estimate the amount of physical water available under a Compact call. It would be good to know what our pre-Compact physical water yields are compared to paper water yields.

IV. Hydrological Scenario Development – Seth Mason

The team will be developing hydrological scenarios to help assess the following:

- a characterization of current conditions;
- localized effects from exposure to identified future risks; and
- needs to offset or mitigate unacceptable risks.

The Colorado Decision Support System (CDSS) will be used as the base framework for characterizing current conditions, incorporating any changes that come out of the Conservation District ag inventory work. Because of budgetary constraints, it is still difficult to nail down how detailed the base model will be, how the tributaries will be incorporated into the mainstem, and if model refinements can be expected. The team will do its best to quantify tributary yields based on historic flow and diversion data.

Angie Fowler briefed the group on the CBRT demand management work which is an outgrowth of drought contingency planning. Several subcommittees of the CBRT have been formed to work on the topic, assuming that any DCP measures would be temporary, voluntary, compensated and equitable. The subcommittee is looking for output from the IWMP to inform the formulation of demand management principles. Specific input will include an identification and quantification of critical water needs for the middle river mainstem.

As noted by Seth, the original scope for the IWMP did not contemplate companion efforts like the continued work on the Lake Powell Risk Study, DCP, or demand management, but the team wants to be as responsive to these efforts as possible and to incorporate their findings as appropriate.

Seth provided a set of SWSI Update Fact sheets to the group describing:

- Scenario Planning and Gap Analysis Methodology;
- Agricultural Diversion Demand Management Methodology; and
- Municipal and Self-Supplied Industrial Demand Methodology.

Five scenarios are being modeled as part of the update. Results are expected to be available by June 2019. Wendy and Seth will be reviewing the models, once they are made available, to see what water rights were used, how population growth was factored in, and generally to decide how well these models work for the middle river or if refinements are needed.

In response to the request for a map of input/outputs to illustrate the plumbing of the middle river, Seth shared a series of different graphical examples of how a plumbing diagram could look. The group seemed to like the schematic graphic with some geographic orientation as well as the graphic that illustrated relative contributions of flow by line thickness.

V. Mental Model Exercise

Seth worked with each of the focus groups to develop a "mental model" of different sectors of water use in the middle river. He passed out a "distilled" version of the model that the consumptive focus group developed last meeting. The mental model will serve as a reality check for the consulting team to be sure, at a macro-scale, that the hydrologic simulation and scenario testing models will be sufficient for capturing effects on the web of relationships identified by the group. The committee pointed out a few clarifications for Seth to incorporate.

VI. Next Meeting

The group will be reconvened in the summer after the team has seen the updated SWSI scenario planning outputs.

Integrated Water Management Planning in the Middle Colorado River

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Consumptive Use Focus Group Meeting
September 12, 2019
Meeting Summary

I. **Attendees**

Sam Potter – West Divide Water Conservancy District
Nathan Bell – Garfield County representative to CBRT
Raymond Langstaff – Bookcliff Conservation District
Dennis Davidson – Conservation Districts
Brian Rusche – City of Rifle
Justin Bilyeu – Shale Tech International
Maria Pastore – Colorado Springs Utility
Wendy Ryan – Colorado River Engineering
Scott Schreiber – Wright Water Engineers
Seth Mason – Lotic Hydrological
Laurie Rink – Middle Colorado Watershed Council

II. **Review of Ecosystem Provisioning Goods and Services**

Seth (Lotic Hydrological) explained that the evaluation of provisioning services is basically an assessment of water availability/supply and unmet demand/shortages due to supply constraints, water rights administration, or infrastructure limitations. Water and infrastructure needs/gaps are being assessed in a few ways:

- Infrastructure surveys. Per Wendy Ryan, about 30 out of 100 ditch inventories are complete. There has been push back or disinterest from ditches in the Roan/Parachute Creeks. If folks request an inventory, it will be completed regardless of system size. The Conservation Districts are treating the inventories as confidential, however, much of what is reported is a matter of public record.
- Colorado Division of Water Resources diversion and irrigated lands records + SWSI Update findings and characterizations of future population/climate/development conditions (draft published in late July). Findings to date indicate that the acreage component found in the individual decrees is generally underestimated by the state in its hydrological model (CWCB). It may be that the total acreage irrigated under a single ditch system is correct in the state model, but simply inaccurately parsed by parcel. Of interest would be to obtain 1950s aerial photography (a period of abundant water) and compare it to today's irrigated acreage to see any trends. Seth asked if the group is still interested in providing the state with more accurate irrigated acreage figures for a future model update? Further, should we be cross-checking the state's assumptions for future scenario projections around ag and municipal use? Group indicated YES – so possible recommendation is to improve the accuracy of the state's data records for modeling purposes.
    - Irrigated Acreage Data. Wendy suggested that a correction factor could be offered to the state to update irrigated acreage for our area in the next round of updates, or a hand tabulation of corrections.

- Irrigation Type/Efficiency. An improvement in this dataset should provide a reality check on the state's assumptions. For example, the state assumes that as water availability goes up then efficiencies go down – this may not be true in our area. Sam added that we need a better idea of availability versus reliability of supply in order to justify future investments in efficiency upgrades.
- Industry Future Uses. Justin agreed to help evaluate projections for future use. He suspects that the need for natural gas out of the Piceance will stagnate or decline over the next 10 years. Liquid oil needs will emerge in roughly 10 to 20+ years, with Utah first, Piceance next. The Roan and Parachute Creeks have lots of resource – there is industry ownership on the south side of the mainstem in Cache, Beaver and Porcupine Creeks. As oil and gas industry grows, current ag will be dried up to exercise senior water rights in industry ownership. This could also result in:
    - Less water in the carry ditch;
    - Reduced groundwater recharge;
    - Need for more storage on the tribs to maintain historic return flows and augment consumptive uses.
- Municipal Future Uses. Brian reported that Rifle just amended its water efficiency plan and is now updating its Comprehensive Development Plan. Although there is no specific section on water, the City is trying to link water and land use. There are new tiers of water use for PUDs. Rifle has plenty of water to grow into and capacity at the water treatment plant but wants to encourage water-sensitive development. Rifle recognizes its future economy is more recreation than ag-based. The group agreed it would be useful to aggregate data on hauled water for residential and commercial use in the county.

III. Discussion on Economic Viability of Agriculture and Demand Management

In starting to discuss demand management and what that might look like in the middle Colorado, a number of observations about historic changes in area agriculture were noted:

- The area used to support cash crops like small grains, corn, and sugar beets; wheat was grown on the south side of the river. There was a livestock auction house and slaughterhouse in Rifle. Probably close to 60,000 head of cattle (now 5,000) and 100,000 sheep (now less than 5,000) that were historically raised. Numbers have decreased with changes in the structure of public lands grazing.
- The federal Conservation Reserve Program (CRP), designed to take erodible land our of production and put it back into grass, was a popular program here about 35 years ago. It was a 10-year contract that paid farmers a rental payment to replace lost profits. Although limited to 25% of the farmable ground per county, it was popular.
- Subsidies from the federal government to support ag were (and continue to be) provided in recognition that money infused in ag has a several-fold multiplier effort by way of local economic development.

Currently there are about 70,000 acres of irrigated ag in county. Most of this produces hay for local horses and cattle. Hobby farms with horses, of which there are many in the county, spend more money locally per animal than cattle production. Note that horses are used recreationally rather than considered an agricultural commodity.

The group discussed whether it's worth conducting a region-specific economic analysis of agriculture. It was noted that CSU and the state's Department of Ag have numbers that could be used. There was a cost benefit analysis conducted by the BOR for the Silt Project. Also work currently underway by Water Banking Workgroup. There is also a CSU report on the economic effects of increased ag efficiencies.

Seth asked the group what it may want to consider by way of demand management (DM) recommendations.

- Sam noted that while DM may be attractive in that it can result in more wet water in the mainstem, there is a need to offset the cumulative negative effects. Perhaps the recommendation should be worded to include a "net zero effect on users". He thinks that DM is not possible without changes to the current water law system.
- Raymond suggested that the lower basin first needs to agree to use only the 7.5 MAF delivered rather than 8.5 MAF. He's also concerned about a call on Rifle Gap Reservoir being a CRSP reservoir.

- Wendy indicated that the CDs plan to survey the ag community on what they would need from a DM plan in order to participate.

IV. Next Meeting

Laurie briefed the group on a series of interviews that she has conducted with the several water commissioners that work in the study area as well as the local wildlife managers. Based on their input, she has assembled a table that lists various options that could be explored for small scale storage. This table will be sent to the group in advance of the next meeting. The focus group plans to meet in a month or so to discuss the table and to continue the discussion of recommendations.

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Consumptive Use Focus Group Meeting
January 13, 2020
Meeting Summary

I. **Attendees**

Sam Potter – West Divide Water Conservancy District
Dennis Davidson – Conservation Districts
Brian Rusche – City of Rifle
Ron Dodd – Silt Rancher
Dave Erickson – Aspen Valley Land Trust
Sara Dunn – Balcomb and Green
Maria Pastore – Colorado Springs Utility
Wendy Ryan – Colorado River Engineering
Scott Schreiber – Wright Water Engineers
Seth Mason – Lotic Hydrological
Laurie Rink – Middle Colorado Watershed Council

II. **Focus Group Path Forward**

Laurie briefed the group on the process underway:

1) Selection of IWMP goals by the Advisory Committee – an initial set is complete but subject to final review and possible reworking by the Committee. This is an iterative process.
2) Section of objectives by the Focus Groups – the task at hand for today's meeting of the Consumptive Focus Group.
3) Identification of projects, processes, strategies and actions (collectively recommendations) that the group will work on at its February meeting followed by a prioritization of those recommendation in March.

III. Review from December Advisory Committee Meeting

The group reviewed the current mission statement, focusing on how agriculture is characterized, based on concerns raised at the December Ad Comm meeting. The group settled on replacing the section that reads "…and maintaining healthy riverine ecosystems and agriculture…" with "…and promoting healthy riverine ecosystems and agriculture…". Promoting rather than maintaining contemplates improvement, expansion, diversification, etc. as versus keeping a status quo. This change will be presented to the Ad Comm for its approval.

Next the group reviewed the eight goal statements. The following revision was discussed and will be advanced to the Ad Comm for further consideration:

- Maintain, or enhance, ~~where appropriate~~, healthy watersheds, rivers and streams.

Later in the conversation a suggestion was made to include a new goal that embodied conservation principles. Possible language could include:

- Promote wise use and conservation of water. OR. Properly use water resources without abuse.

Sam reminded the group about his dissatisfaction with some of the assumptions used in the Water Plan Technical Updates model (from CWCB presentation to Ad Comm, October 2019). Seth and Wendy agreed to review the modelling questions raised at the October meeting and provide recommendations to CWCB on how to better represent conditions in the middle river for future model updates.

IV. Objectives Setting Discussion

The consulting team developed a table for use by the group containing 1) possible objectives, 2) possible criteria for evaluating whether the objectives are met, and 3) possible recommendation (projects, processes, activities, and strategies). The table was constructed using feedback collected from the Ad Comm and Focus Group during earlier meetings, and using materials contained in the Garfield County Comp Plan draft updates. It was meant to provide examples for the group to consider. After some discussion, the following objectives were identified. Note that the group did not discuss all possible objectives offered in the draft table.

- Promote resiliency in local water supply in anticipation of future population growth and changes in industrial uses.
- Promote resiliency in local water supply in anticipation of climate change.
- Upgrade water diversion, delivery and application infrastructure.
- Disincentivize conversion of ag land and water to other uses.
- Maximize municipal use and reuse of potable water.
- Develop tools to diversify uses of ag land while preserving ag values.
- Make new production technologies available for ag use.

Recommendations developed by the group were as follows:

- Develop small-scale water storage in the tributaries.
- Increase funding sources for infrastructure upgrades.
- Increase technical assistance capacity (i.e., design and grant writing assistance) for ag producers willing to upgrade infrastructure.
- Create local markets for locally-produced ag products.
- Tailor ag outreach programs to include information on the advantages of and legal mechanisms for leasing (or similar) water for other uses.
- Pilot ATMs in the watershed.
- Develop and promote a local market for water leasing (both ag and municipal water).

Maria offered that Colorado Springs Utility has experience with application of ATMs and would be willing to make a presentation on their experience with these tools to our group.

Laurie presented another table containing a list of possible new, expanded, or rehabilitated water storage projects within the watershed. The group was asked to review the table and provide feedback on any that are worthy of further investigation. Dave commented that beaver analog structures should be added to the list. Other responses and ideas should be submitted to Laurie over the next couple of weeks.

The consulting team will work with the set of objectives and recommendation offered today and develop a revised table for the group to continue working with in February.

V. Next Meeting

The group will meet next on February 18, 1:30 PM.

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Consumptive Use Focus Group Meeting
February 18, 2020
Meeting Summary

I. Attendees

Sam Potter – West Divide Water Conservancy District
Dennis Davidson – Conservation Districts
Brian Rusche – City of Rifle
Peter Dodd – Silt Rancher
Sara Dunn – Balcomb and Green
James Heath – Division Water Resources
Richard VanGytenbeek – Trout Unlimited
Raymond Langstaff – Bookcliff Conservation District
Justin Bilyeu – Shale Tech International
Wendy Ryan – Colorado River Engineering
Scott Schreiber – Wright Water Engineers
Seth Mason – Lotic Hydrological
Laurie Rink – Middle Colorado Watershed Council

II. Update on Preliminary Findings from Technical Updates to Water Plan

Wendy Ryan presented results of her analysis of the Water Plan Technical Updates (link to Powerpoint presentation). The updates compare five forecasted planning scenarios to the current baseline condition. Wendy pulled information from the updates to examine the five scenarios and their effects on: 1) streamflows, and 2) irrigated acreage, at four locations in the watershed: Elk Creek at New Castle, Colorado River below Glenwood, W. Divide Creek near Rifle, and Battlement Creek near Parachute. Scenarios D (adaptive innovation) and E (hot growth) resulted in the highest degree of impact as these two scenarios apply hotter, drier climate projections. Wendy then used the updates combined with recently developed data from the infrastructure inventory to evaluate: 1) changes in irrigation efficiency losses, 2) changes in irrigation requirements, and 3) tributary shortages, in each of the three water districts in our area (#39, 45 and 70). District 45 appears to suffer the largest degree of impact.

There was discussion about next steps and how this modeling effort can be used to inform the IWMP process. Wendy suggested adding potential storage projects, like Kendig Reservoir, to the model to determine its effects on tribs on the south side of the river. The model could also be used to determine the effects of any irrigation efficiency projects that the group may identify. It was also suggested that the planning forecasts could inform future land use planning/zoning in the county by showing where drying effects could be most severe.

Dennis observed that the baseline planning scenario reflects the current situation where irrigation application can provide some degree of salt flushing from the soils. If less water is applied in the future, what happens to

the flushing function? It was noted that salt flushing is not considered a beneficial use by the state, rather it's considered waste.

III. Identification of Recommendations

The group worked through the draft table of objectives and recommendations.

- Secure Shoshone water right/Secure county money. Who is this recommendation directed to? County, munis? Sara agreed to talk with CRD staff to craft language consistent with CRD's efforts on this initiative. Perhaps this includes supporting the mil levy increase for CRD.
- New storage projects.
    - Yes, Kendig is still on the table but not ready to highlight as a specific solution.
    - There needs to be an analysis of the alternatives, starting with list of small-scale storage projects, to look at all possibilities before narrowing the field, including feasibility and fatal flaw analyses. Two different categories of storage should be assessed: 1) for multiple use, and 2) to increase efficiencies or stretch supplies for a small subset of users. The study should also look at diversification of storage, for example return flow storage or beaver pond storage.
- Specific water efficiency projects. Wendy will evaluate opportunities based on infrastructure inventory results. Upgrades to infrastructure on Silt Mesa is possible but also need to address regional drinking water issues. Want to avoid proliferation of small acreage residential land use if drinking water taps are made available. Is there a way to plan for a controlled water supply?
- Local market for water leasing.
    - Brian thought this concept could start with the municipalities that acquire water rights through land-use change dedications. He mentioned that Rifle has built up a portfolio of water rights in this regard and may be in a position to offer these for lease to interests who would use it locally for instream flow augmentation, irrigation, etc. He suggested talking to their water rights attorneys to get more information on Rifle's specific experience with the concept.
    - On a similar note, the question arose of County 1041 powers and could they be used to limit water export from the basin.
- Explore ag incentive mechanisms.
    - The topic of irrigation scheduling was introduced here as a way to use water more efficiently. It was noted that this practice would not work well in District #45. Properties on Silt Mesa below Harvey Gap or on Rifle Creek below Rifle Gap may provide some opportunity for piloting timed irrigation. Any pilot should also include monies for instrumentation, automation and project administration and also consider addition of more CoAgMet stations.
    - James asked where additional gaging would be helpful; gages at the bottom of Divide Creek, Dry Hollow and Mamm Creek were suggested. In recognition that USGS has been removing gages from its network over the last decade, support continued operation of all USGS gages currently in operation in the watershed. Recommend additional funding for water commissioners to assist with more precise water administration/management.
    - Contact Young Farmers Alliance, Alex Funk, and/or Kate Greenberg to see if they know of incentive programs operating elsewhere that could be considered in our area.
- Coordinate infrastructure upgrades, efficiency projects and water quality and habitat restoration.
    - Rehabilitating diversion structures for fish passage is a good example. Any work like this should add automated operating and measuring capabilities. Tompkins ditch is a good project currently in the works.
    - James asked whether ditch lining to control salinity is under consideration. Dennis replied that NRCS continues to promote this work using federal salinity dollars. They work on 3 to 4 salinity related project a year on Silt Mesa.
    - Dennis posed the question of how best to engage landowners to allow for exchange of information on assistance programs. How can we disseminate results of the IWMP work to them? Consider a bi-annual event to match up producers with possible project funders/partners.

IV. Next Meeting

An updated table of recommendations will be completed by the technical team and circulated with the group for additional comment. No future meetings of the focus group are planned at this time.