CWCB Loan Feasibility Study

Weld County Loan Replacement: Prior Purchase of Water Rights and Reservoir Storage

Water Activity Enterprise of the Groundwater Management Subdistrict of the Central Colorado Water Conservancy District

FEASIBILITY STUDY APPROVAL
Pursuant to Colorado Revised Statutes 37-60-121 &122, and in accordance with policies adopted by the Board, the CWCB staff has determined this Feasibility Study meets all applicable requirements for approval.

11/4/19
Date

Signed

PREPARED FOR:

COLORADO WATER CONSERVATION BOARD

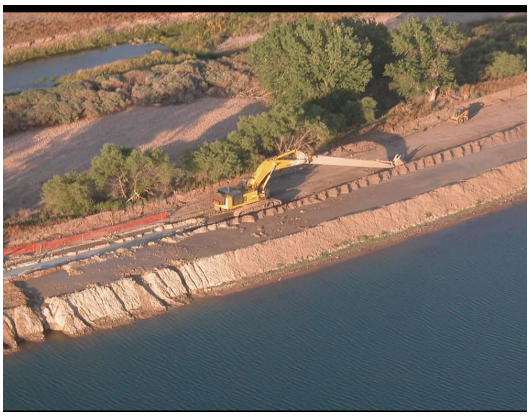
SEPTEMBER 2019

white sands water engineers, inc

CWCB Loan Feasibility Study

Hokestra Reservoir Project

Water Activity Enterprise of the Groundwater Management Subdistrict of the Central Colorado Water Conservancy District



The technical material in this report was prepared by or under the supervision and direction of the undersigned, whose seal as a Professional Engineer is affixed below

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1 Introduction

This report summarizes a feasibility study completed for the Central Colorado Water Conservancy District (Central) and the Water Activity Enterprise of Central's Groundwater Management Subdistrict ("GMS Enterprise", or "GMS"). Investigations were focused on the feasibility of GMS Enterprise acquiring a loan from the CWCB to cover the costs of a previously purchased storage reservoir and senior water rights as well as future improvements necessary to efficiently operate the reservoir.

Central and Weld County have worked cooperatively together for many years to develop water storage projects; these projects typically relate to County sand and gravel mining activities (the Couny mines sand and gravel for use in constructing roads). In early 2015 Central began discussions with Weld County about development of the Hokestra Reservoir Project. Hokestra Reservoir is at the location of an active sand and gravel mining operation near the intersection of U.S. Interstate 25 and State Highway 119. The Hokestra mining site consists of numerous excavated gravel pit "cells". Some of the cells expose the underlying alluvial groundwater and others have been either clay lined or have had slurry walls installed around their perimeters to isolate the pits from groundwater. Cells that expose groundwater require augmentation.

Early discussions with Weld County about acquisition of the Hokesta storage involved a third party, Town of Firestone, who was also interested in developing reservoir storage in the area. Eventually Firestone pursued other storage options at locations to the immediate east and the full amount of storage became available to Central. After Weld County completed an appraisal of water storage at the Hokestra site, Central and Weld County began working out terms of an arrangement whereby Central would acquire the Hokesta storage reservoirs along with 3.75 shares of the Rural Ditch Company, and Weld County would obtain a Class D allotment contract from the Groundwater Management Subdistrict to replace out of priority evaporative losses from the unlined gravel pit cells at the site. Payment of approximately $3.21 million from Central to Weld County was made to make the arrangement equitable (the payment was financed by Weld County in order to keep the acquisition portion of the Project separate from other Project components). Because the original agreement with Weld County integrated elements both within and outside the scope of the herein described Project, it was not possible at that time to isolate and finance it separately. Now that the agreement has been executed, however, that separation is possible. Acquisition of Hokestra Reservoir in 2018 completed the first phase of the Project development.

Central is initiating the second development phase of the Hokestra Reservoir Project which involves building the infrastructure required to efficiently store and release water from the Reservoir. Currently water can only be delivered into the Reservoir via a small lateral extending from the Rural Ditch, and water

can only be released via a temporary small capacity pump. Necessary improvements include two permanent pump stations to deliver directly from the Saint Vrain River and to release water from storage back to the river, interconnect pipelines between storage cells, electrical facilities and controls, meters and a control building/shop. In addition the permimeter of the storage cells require addional rip-rap protection in several areas.

GMS Enterprise is seeking to borrow $5,390,500 from the CWCB Water Project Loan Program to complete the Hokestra Reservoir Project. Funds from the CWCB loan will be used to pay in full GMS's remaining loan balance with Weld County (aproximately $2,875,000) and develop required infrastructure (approximately $2,515,500). The term of the loan from CWCB would be 30 years at an annual interest rate of 1.45 percent (the Loan Application is provided as **Appendix A**). Annual payments on the CWCB loan will be approximately $223,000.

This report provides a description of Central and GMS, their purpose and operations, GMS' need for the water supplies for which it is borrowing money, anticipated water availability from the Project, alternatives to developing the Project, the estimated current value of the assets that the loan from CWCB is being used to acquire and develo;p, and GMS Enterprise's assets, financial resources, and ability to repay the loan to CWCB.

White Sands Water Engineers, Inc. and staff at Central conducted this study and prepared this report at the request of the Board of Directors of Central and GMS

2 Hoekstra Reservoir and the Rural Ditch Company

Hokestra Reservoir is one of numerous former sand and gravel mining operations located along Boulder Creek and the St. Vrain River that have been reclaimed for purposes of water storage (**Figure 1**). The area is favorable for water storage because several different ditch systems can be used to divert and convey water from either Boulder Creek or the St. Vrain River. Central owns three of these reclaimed mining operations: Rinn Valley Reservoir, Shores Lakes, and Hokestra Reservoir.

2.1 Hokestra Reservoir

The Hokestra Pit sand and gravel mining operation is located just east of U.S. Interstate 25 in Section 2, Township 2 North, Range 68 West, and Section 35, Township 3 North, Range 68 West in Weld County (**Figure 2**). The lands where the mining operation are located were formerly agricultural farms that were irrigated using water supplies delivered by Rural Ditch. The Rural Ditch diverts water from Boulder Creek under very senior water rights at a location several miles to the west of the Hokestra site.

Hokestra Pit has been under development by Weld County since 1980 under Permit No. M-80-149 issued by the Colorado Mined Land Reclamation Board. Mined material is used by the County primarily for road construction and maintenance. Over the years, multiple mining cells have been excavated. Two bentonite slurry walls were constructed around four of the cells (Cell Nos. 3, 4, 5 and 6). A compacted clay liner was installed at a fifth cell (Cell No. 2). The slurry walls and clay liner isolate the interior of the cells from surrounding groundwater and have been approved for storage by the Division 1 Engineer (**Appendix A**).

Mining at Cell No. 2 of Hokestra Pit has been completed and is currently available for storage. Cell Nos. 5 and 6 have largely been completed and are also being used for storage, however when mining commences at Cell No. 3 there will be a period of time when Cell Nos. 5 and 6 must not be used. Mining at Cell No. 4 is in progress. All mining at the site is expected to be completed within approximately 10 years. Upon completion it is anticipated the combined storage at all of the Hokestra cells will total up to approximately 1,250 acre-feet.

2.2 Additional Reservoir Infrastructure Needs

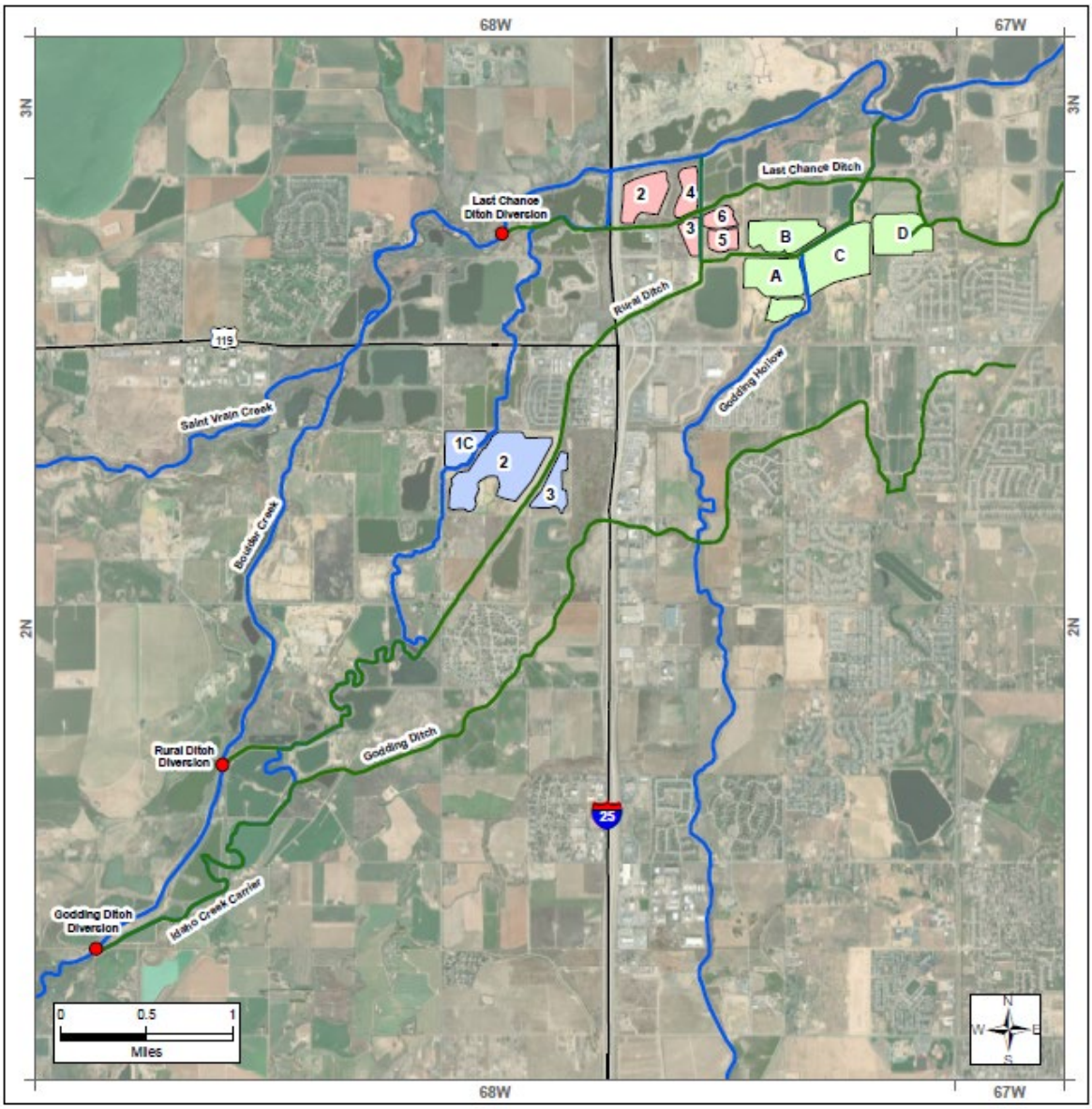
Over the past two years GMS has operated Hokestra Reservoir using temporary diesel pump systems at two of the three cells (Pond 2 and Ponds 5/6) to fill and release water from storage. These temporary systems will be replaced with vertical turbine pumps and variable frequency drives and equipped with a flow meter. In addition, a column pump at Ponds 5/6 will allow movements of water between reservoir cells and for release to the river. The pump systems will be equipped with SCADA to allow for control from remote locations. Rip rap around the perimeter of the ponds in the vicinity of the pump stations will be required to prevent erosion. Estimated costs for these infrastructure improvements total $2,515,500 and are itemized in **Table 1**.

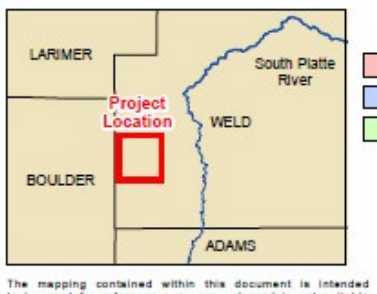
Table 1.
Estimated Hokestra Reservoir Infrastructure Costs

APCO Power (full site power)	$275,000
Pond 2	
Pond 2 VT Pump	$45,000
Pond 2 VFD, switchgear	$125,000
Pond 2 Meter	$10,000
Pond 2 Rip Rap	$150,000
SCADA	$15,000
Sub-Total	$345,000
Pond 5-6	
Outlet Facilities (either VT/VFD or Column Pump)	$750,000
Pond 5-6 Rip Rap	$500,000
Pond 5-6 Staff Gage	$50,000
SCADA	$15,000
Sub-Total	$1,315,000
Engineering (15%)	$290,250
Contingency (15%)	$290,250
Total	$2,515,500

2.3 Rural Ditch Shares

In addition to the purchase of storage at Hokestra Reservoir, Central is acquiring the 3.75 Rural Ditch shares historically used to irrigate the farms. The lands where Hokestra Pit is located historically comprised four irrigated farms with water provided to the farms from the Rural Ditch (**Figure 3**). Those shares will be changed in a Water Court process to allow for Central to use the water as augmentation supplies. On an average annual basis, the Rural Ditch shares are expected to yield approximately 180 acre-feet of fully consumable water.





The mapping contained within this document is intended to be used for reference purposes only and is not suitable for construction and/or surveying purposes.

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Hokestra Pit
Rinn Valley Water and Storage Reservoir
Shores Pond

FIGURE 1
GENERAL LOCATION

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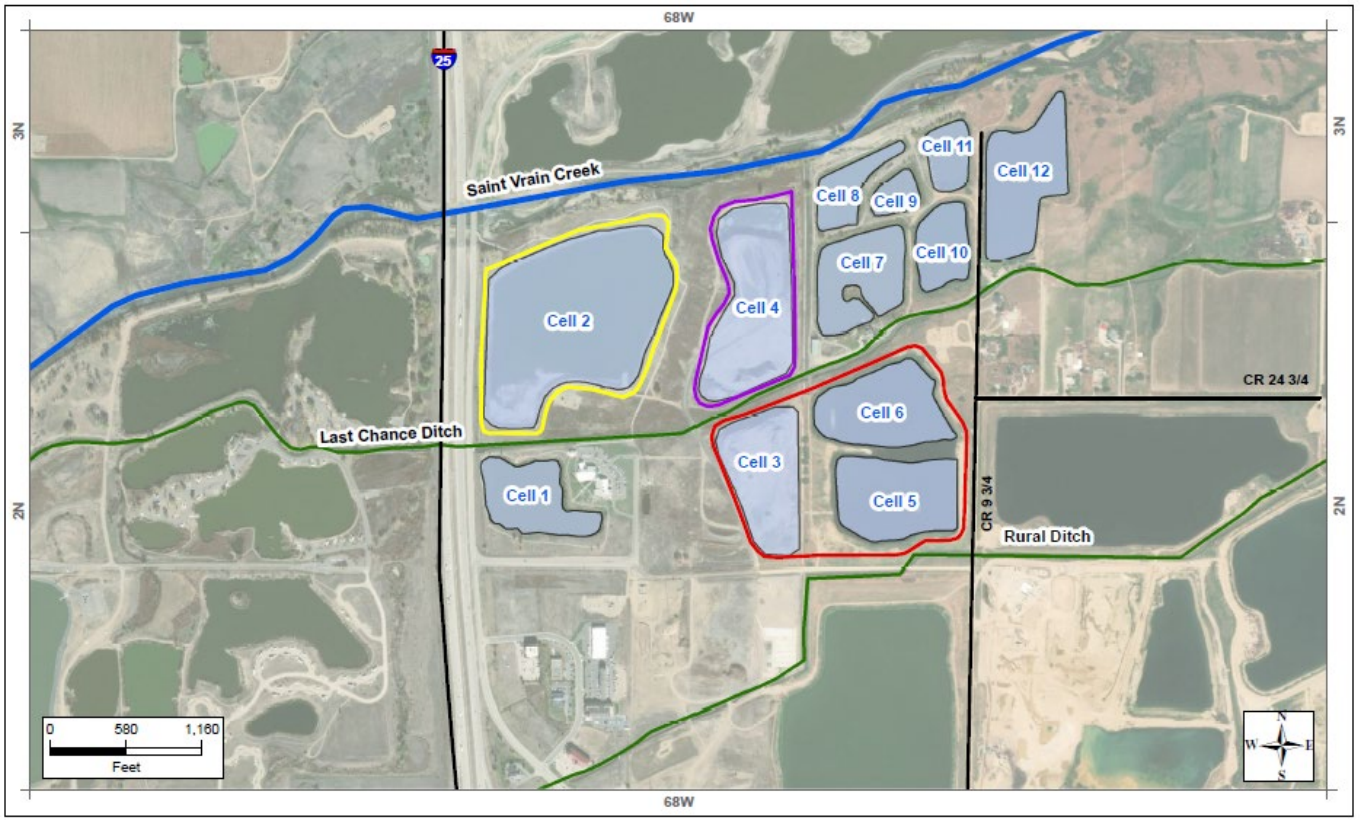

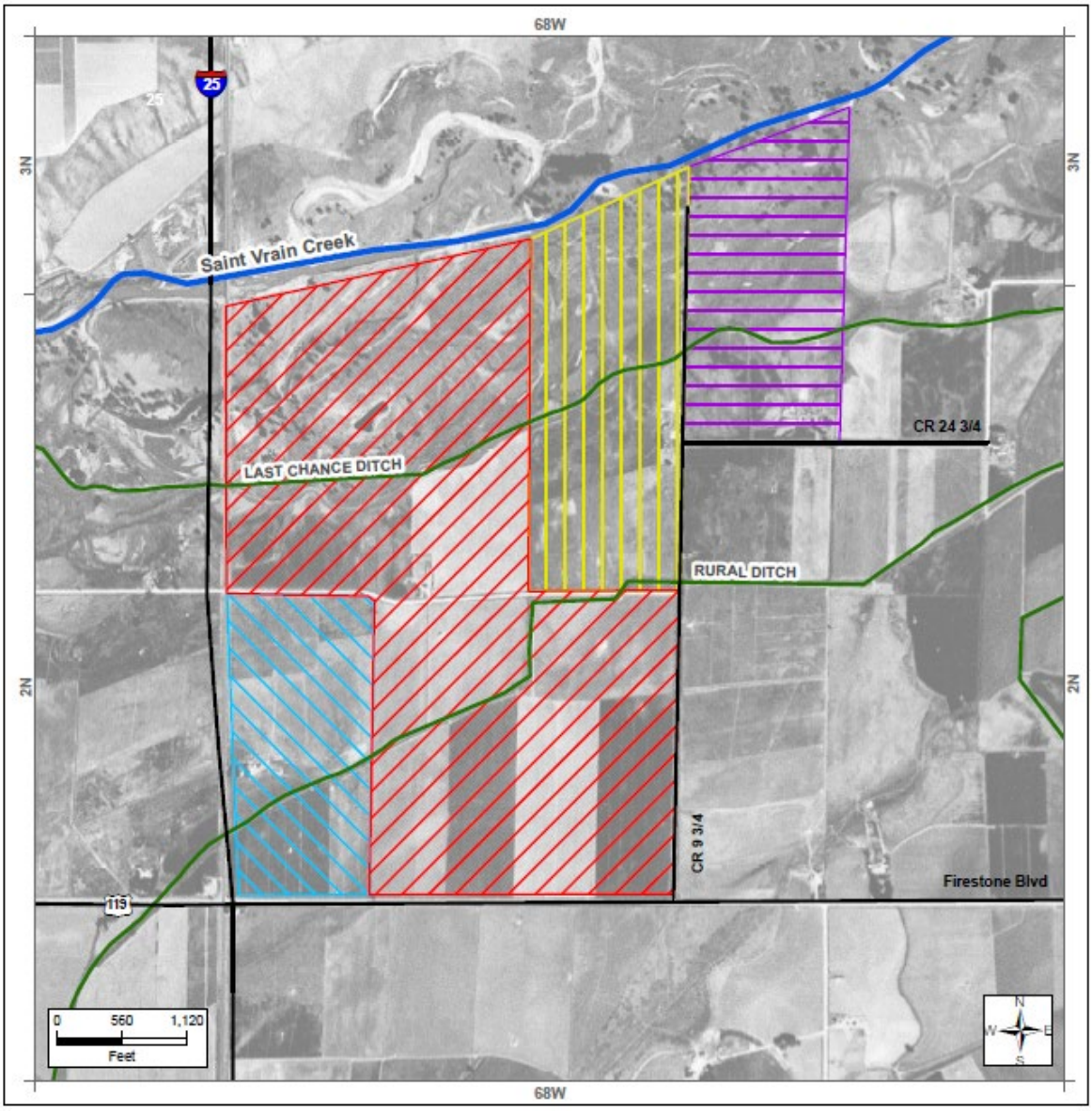

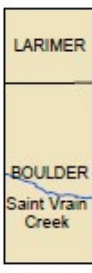

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September 2019

Adler Farm
Gould Farm
Slovek Farm
Villa Farm

Date of Photo: 09/25/1953

FIGURE 3
HISTORICAL FARMS

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2.4 Water Court Application in Case No. 17CW3202

A Water Court application was filed by Central with the District Court of Weld County in December 2017 (**Appendix B**). The application seeks to change the legal location and type of use of 3.75 shares in the Rural Ditch Company and seeks to appropriate a new storage right in Hokestra Reservoir. The claimed storage right is for an initial fill of Hokestra Reservoir of 1,250 acre-feet and the right to a single refill of 1,250 acre-feet. Points of diversion for the storage rights are the headgate of the Rural Ditch on Boulder Creek, the headgate of the Last Chance Ditch on St. Vrain Creek, and two additional inlet locations on St. Vrain Creek.

The case is currently pending before the Water Referee and Central anticipates a decree will be entered approving the change of water rights and new storage appropriation within approximately 18 months.

3 Central and the Groundwater Management Subdistrict

Central was formed in 1965 pursuant to the 1937 Water Conservancy Act of the State of Colorado (CRS 150-5). The District includes over 750 square miles in Adams, Weld, and Morgan Counties (**Figure 4**). The geographic boundary of Central generally includes lands in the South Platte River basin between Denver and Fort Morgan, Beebe Draw, and the lower portions of the Box Elder Creek and Lost Creek drainages. The boundaries of Central include portions of several cities and towns (e.g. Thornton, Brighton, Fort Lupton, Platteville, Greeley and Fort Morgan), numerous smaller rural communities (e.g., Gilcrest, LaSalle, Kersey and Hudson) and approximately 210,000 acres of irrigated agricultural lands supplied by surface water ditches and groundwater wells.

GMS was formed in 1973 as a subdistrict of Central through an amendment to the decree authorizing Central's formation. A purpose of GMS is coordination and operation of a plan for augmentation to replace depletions caused by the pumping of alluvial wells owned by constituent members. GMS boundaries are similar to the boundaries of the Central District but do not include the Lost Creek drainage. GMS operates the plan for augmentation decreed in Case No. 02CW335. There are currently 892 constituent wells in the GMS plan for augmentation plan distributed among 518 allotment contracts. GMS also replaces evaporative losses associated with two unlined gravel pits that expose groundwater to the atmosphere.

A second subdistrict of Central, the Well Augmentation Subdistrict (WAS) was formed in 2002 and operates a second augmentation plan to replace depletions associated with another roughly 300 alluvial groundwater wells.

Replacement water is made available to constituents of GMS through Class B, C and D allotment contracts that currently total approximately 67,000 acre-feet. Contracts are defined in terms of a volume of consumptive use which has been quantified based on a needs assessment for the lands identified in each contract. Current GMS irrigation contracts identify approximately 56,000 acres of irrigated land, and roughly one-half of the total area relies solely on groundwater for irrigation supplies. GMS may authorize additional contracts at the request of landowners within its boundaries and with approval of their respective Board of Directors.

Approximately 98 percent of GMS allotment contracts are for irrigation uses, primarily agricultural production. The remaining two percent of contracts are non-irrigation uses including stock watering, replacement of evaporative losses from mined gravel pits, commercial and industrial uses. GMS also enters into agreements to provide water for industrial uses (typically gravel mining and oil and gas exploration and development).

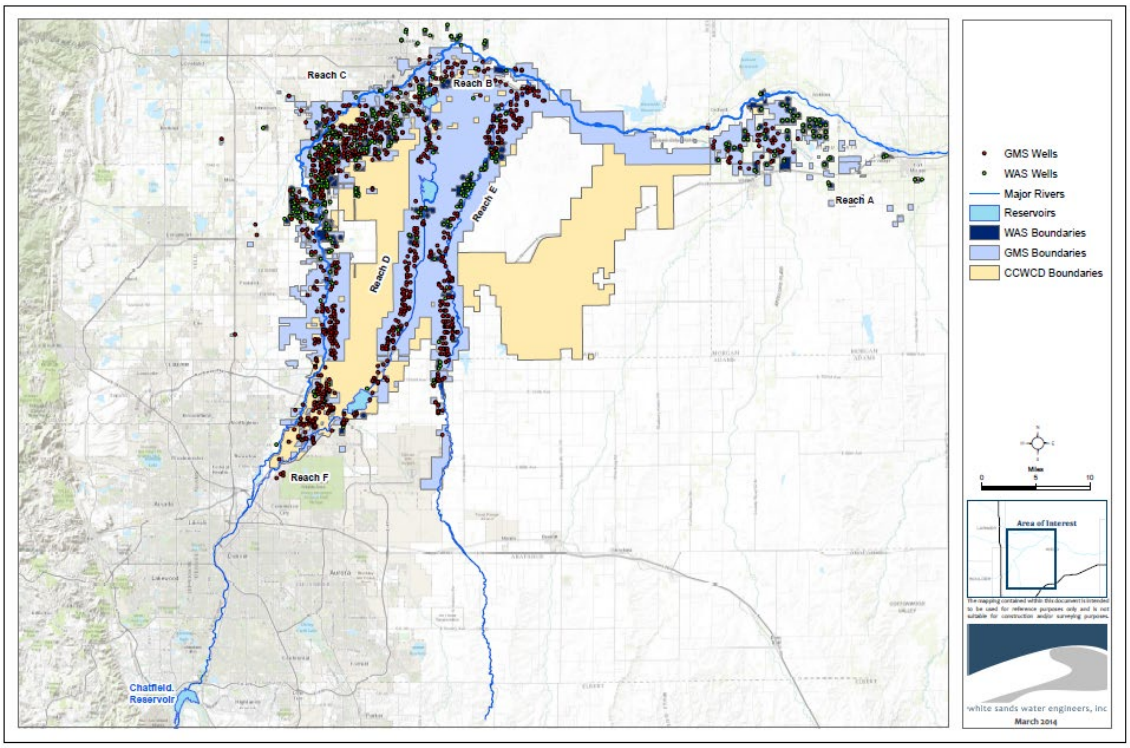


Figure 4. Boundaries of Central, GMS and WAS

3.1 Augmentation Plan Administrative Reaches

The GMS plan for augmentation is operated and accounted for using decreed administrative river reaches along the South Platte River that extend approximately from the headgate of the Fulton Ditch at the upper end, to the headgate of the Upper Platte & Beaver Canal on the lower end (**Figure 5**). There are six decreed river reaches identified in the GMS plan. The location of the depletive effect of pumping for each GMS well unlined gravel pit is assigned to one of these reaches. The GMS contracts are distributed across reaches as shown in **Figure 6**. Aggregation into administrative river reaches is required by the GMS augmentation plan decree and prevents injury to other water rights.

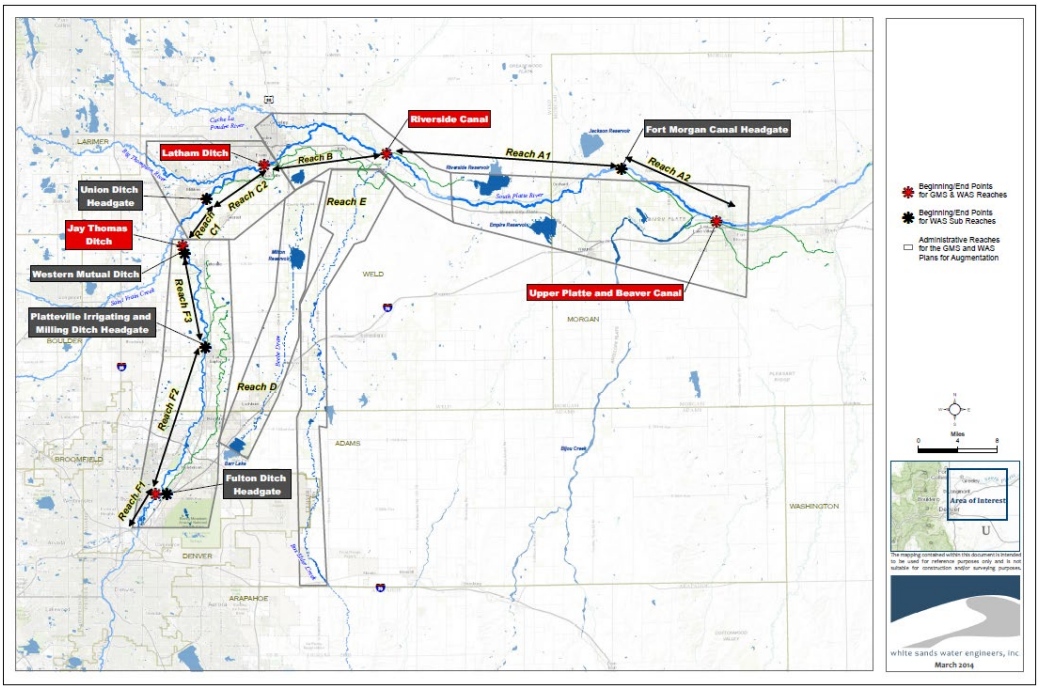


Figure 5. Augmentation Plan Administrative Reaches

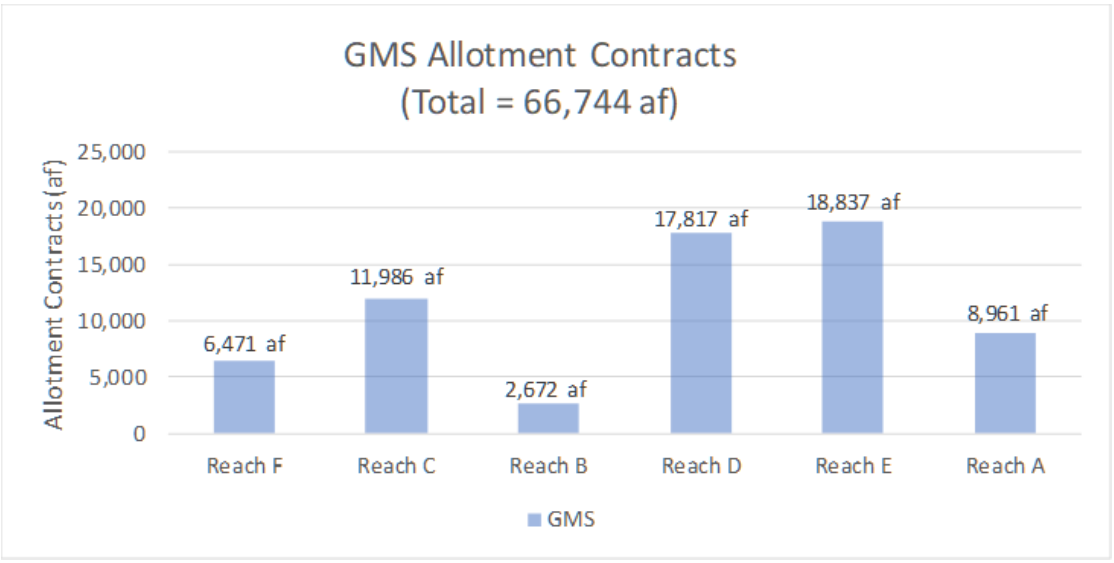


Figure 6. Geographic Distribution of GMS and WAS Allotment Contracts

3.2 Central's Existing Infrastructure and Water Supplies

The Central District spans a broad geographic area between Denver and Fort Morgan that includes the drainage of the South Platte River and several large tributaries (Boulder Creek, St. Vrain River, Big Thompson River, and Cache la Poudre River). The facilities and water rights utilized by Central, GMS and WAS to supply water and meet its constituent member's demands comprise an integrated system of infrastructure and direct flow, recharge, storage and exchange water rights. In addition to its ownership in a diverse portfolio of water rights, Central relies heavily on leases of water from other entities.

Central, GMS and WAS each own portfolios of water rights. The rights owned by Central are typically made available to the GMS and WAS subdistricts for augmentation and exchange uses. The water rights are located in Water Districts 1, 2, 3, 4, 5, 6 and 8, and include rights for direct flow diversion, storage, exchange and recharge. Some of the water rights have senior priorities, e.g. changed shares in numerous irrigation ditch and reservoir companies with water right priorities dating from the 1860s ,70s and 80s. The yield of these senior rights is reliable from year to year and well established. A majority of Central's water rights, however, have junior priority dates between the early 1980s through 2016. The junior priority rights are not as reliable, and yield varies significantly from year-to-year.

Central operates a wide variety of infrastructure and facilities to divert, capture, store and deliver water to meet its water demands. Included are numerous augmentation stations located on ditch systems, several storage reservoirs (shares in reservoir companies and storage developed from reclaimed gravel mines), many different recharge projects, augmentation wells, and the required pump stations, pipelines, canals and associated measurement and recording facilities necessary to control and account for water delivery. Central is also a major participant in the Chatfield Reservoir Reallocation Project which will provide water supplies at the District's uppermost end.

In addition to its water rights ownership, Central and its subdistricts routinely lease additional water supplies from a variety of entities. For example, Central relies heavily on fully consumable water discharged as effluent from a number of municipal water providers in the area. Central may, from time to time, also lease agricultural ditch shares, recharge accretions, and trans-mountain water subject to limitations of the underlying decrees adjudicated for those sources.

3.3 Yield of Existing System

The yield of Central's current water rights portfolio is difficult to estimate but can be approximated in different ways. Since all of Central's water rights are currently used in the GMS and WAS plans for augmentation, yield could be considered in terms the amount of annual well pumping that the rights can support. Over the past several years the GMS and WAS plans have operated at an average of approximately 50 percent of their full allocation contracts. However, recent years have also relied very

heavily on relatively short-term leases from other entities. Without those leases, recent allocations would likely have been in the range of 5 to 10 percent of contracted amounts. This would suggest the yield of Central's water rights is only on the order of 4,000 af to 8,000 af. Note that several conditional storage and recharge rights have not yet been fully developed, so this estimate is likely quite low.

Another way to estimate the yield of Central's current portfolio of water rights is to examine each right individually, then sum the estimated reliable annual yield for each right. For example, Central owns approximately 5,600 af of changed senior irrigation rights that are very reliable. Junior storage and recharge rights are less reliable, perhaps providing approximately 10 - 30 percent of decreed volumes after considering their junior priority, location, and with respect to recharge rights, accretion timing cannot be perfectly matched to demands. Under this approach the long-term average yield of Central's storage rights and recharge rights could be on the order of 9,400 af and 28,000 af, respectively (decrees for several storage reservoirs and recharge projects are included in this estimate, but those projects have not yet come online). Using this approach, the average yield of Central's existing portfolio of water rights may be up to approximately 43,000 af. However, since new yield of junior water rights cannot be projected to be available, this overestimates the benefit of the junior rights. Only firm yield can be included in projections for Central's augmentation plan and this is why Central has had to rely heavily on leased supplies.

4 Need for Additional Water Supplies

There are two components of Central's need for additional water supplies. One component is the amount of additional water necessary that would allow to authorize constituent members to pump the full amount of existing allotment contracts. In order for GMS to authorize full pumping, a firm supply of at least 67,000 af must be available over the length of the GMS projection period (6 years). As noted above, on an average basis Central's existing supplies may yield up to 43,000 acre-feet. However, only Central's changed senior rights can be expected to provide yield in every year (roughly 5,600 af). Use of junior storage and recharge rights must be relied on to develop additional firm yield during the projection period.

The second component of Central's need for additional water supplies is associated with augmentation needs and other water demands within the District boundaries not currently reflected in existing allotment contracts. Requests are routinely made to both GMS and WAS to provide additional augmentation supplies by way of new allotment contracts. Augmentation demands are increasing, as evidenced by:

- Sale of senior water rights. There is increasing pressure to remove senior water rights from irrigated agriculture. Alluvial groundwater supplies may be the only alternative to keep agricultural lands productive.
- Water-short farms and ditch systems. Several irrigation ditch systems within Central's boundaries do not have adequate and reliable water supplies from the South Platte River, even under average hydrologic conditions.
- Industrial needs. Increased oil and gas exploration and development activities have resulted in increased need for water supplies decreed for augmentation, commercial and/or industrial uses.
- Changing statutes: Legislative actions, such as SB-212/C.R.S. 37-92-602 (stormwater detention facilities) have increased the need for augmentation water supplies within Central's boundaries.

5 Water Available for a New Storage Right

GMS will divert water from Boulder Creek and St. Vrain Creek under the water right adjudicated in Case No. 17CW3202. Because this water right will have a junior priority, downstream calls will at times, limit the amount of water that can be diverted. Water available for diversion in the future was evaluated by examining historical streamflows in Boulder Creek and St. Vrain Creek (physical water availability) along with downstream call conditions (legal water availability). Streamflow and call conditions were examined over the period 1999 through 2009, which represents hydrologically wet, dry and average years.

Based on the results of our analysis of flows on the South Platte River and historical water right calls, unappropriated water is available to fill and refill the Central and GMS storage accounts. Estimated storable inflows over the period 1999 through 2009 are shown in **Table 2a** and **Table 2b** for diversion points on Boulder Creek and St. Vrain Creek, respectively. Water will likely not be available in the future every year because of Central's relatively junior water right priorities however this emphasizes the need for Central to store larger amounts during wet periods to carry-over supplies to drier periods.

Table 2a
Diversion from Boulder Creek - Water Availability (Storable Inflows) at Hokestra Reservoir (af)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1999	1,529	1,743	1,603	1,845	1,666	521	414	1,845	1,785	371	1,119	1,226	15,668
2000	1,845	1,785	1,845	1,845	1,726	1,845	869	55	0	0	0	0	11,813
2001	0	0	995	1,795	1,666	375	1,549	797	605	22	0	0	7,805
2002	26	326	681	937	509	368	51	0	0	0	0	0	2,899
2003	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	35	0	1,012	0	0	0	1,046
2006	119	0	0	0	119	294	0	0	0	0	0	0	532
2007	0	0	260	547	417	0	245	1,845	774	0	0	0	4,087
2008	0	0	664	1,162	0	0	0	0	0	0	70	0	1,896
2009	0	0	567	0	0	0	357	238	1,726	500	0	0	3,388
Max	1,845	1,785	1,845	1,845	1,726	1,845	1,549	1,845	1,785	500	1,119	1,226	15,668
Avg	320	350	601	739	555	309	320	434	536	81	108	111	4,467

Table 2b
Diversion from St. Vrain Creek - Water Availability (Storable Inflows) at Hokestra Reservoir (af)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1999	2,313	2,755	2,602	3,074	2,777	799	502	1,823	979	101	1,637	1,952	21,314
2000	2,081	2,126	2,196	2,196	2,055	2,196	1,677	66	0	0	0	0	14,595
2001	0	0	1,169	2,194	1,990	410	2,038	934	628	125	0	843	10,332
2002	458	462	663	914	504	357	52	0	0	0	0	0	3,409
2003	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	35	0	442	0	0	0	477
2006	163	0	0	0	198	511	0	0	0	0	0	0	872
2007	0	0	501	983	694	0	403	1,934	625	0	0	0	5,140
2008	0	0	1,111	1,859	0	0	0	0	0	0	35	0	3,005
2009	0	0	889	0	0	0	571	179	510	264	51	202	2,665
Max	2,313	2,755	2,602	3,074	2,777	2,196	2,038	1,934	979	264	1,637	1,952	21,314
Avg	456	486	830	1,020	747	388	480	449	289	45	157	272	5,619

6 Alternatives Analysis

6.1 No Action

Under this alternative GMS would not implement the second development phase of the Hokestra Reservoir Project (infrastructure development). This alternative is unacceptable because it does not initiate construction of the infrastructure necessary to operate the Hokestra Reservoir in an efficient manner.

6.2 Reduced Project Scope

Under this alternative GMS would not develop the full storage capacity at the Hokestra Reservoir site. Instead, a portion of the storage would be marketed and sold to a third party (proceeds could then be used to develop the infrastructure necessary to efficiently operate the reduced storage volume). This alterative is unacceptable because it does not develop the additional storage capacity needed by GMS.

6.3 Preferred Alternative

The alternative preferred by GMS is fully develop the Hokestra Reservoir Project. Funds from the CWCB loan will be used to develop the Hokestra Reservoir Project including the facilities described in Section 2.2 above.

7 Financial Analysis of the GMS Water Activity Enterprise

GMS maintains three separate funds for purposes of their financial operations: 1) the General Fund is used to fund daily operations at GMS including salaries and benefits of staff, and to acquire water rights and develop water storage and recharge projects, 2) the Water Activity Enterprise Fund is used to fund operations of the GMS plan for augmentation, and specifically water leases (ditch shares, recharge, effluent), and 3) the Debt Service Fund is used to repay voter-approved loans and other debt that may be carried by GMS. Property taxes are generally used to supply the General Fund and the Debt Service Fund, whereas member assessments are used to supply the Water Activity Enterprise Fund.

The primary sources of revenues obtained by the GMS Water Activity Enterprise are from annual Class B, C and D member assessments for the GMS plan for augmentation, property taxes (Weld, Morgan and Adams counties) and leases of water to outside entities. Those revenues are used to purchase, lease and develop water rights, as well as to operate the GMS plan for augmentation plan. In 2018 the annual revenues of the GMS Enterprise $2.403 million, and revenues are projected to be $3.940 million in 2019. Budgeted revenues for 2020 are projected to be $2.093 million, but this estimate does not yet include revenue generated from any water leases to outside entities.

Comparative financial information for the GMS Enterprise over the period 2015 – 2019 is shown in **Table 3**. Detailed financial statements and reports from an independent auditor for the years 2016 - 2018 are provided as **Appendix C.** GMS Enterprise's financial budget for 2019 is provided as **Appendix D**.

Table 3
Comparative Historical Financial Information

Notes		2015	2016	2017	2018	Estimated 2019	Budgeted 2020
	Beginning Balance	$ 1,472,012	$ 1,521,485	$ 1,606,839	$ 1,113,678	$ 1,198,076	$ 2,330,747
	Revenues						
	Assessments	$ 1,514,212	$ 1,491,464	$ 1,750,737	$ 1,753,574	$ 1,780,881	$ 1,780,000
	Water Leases	$ 154,602	$ 23,250	$ 14,316	$ 510,381	$ 1,821,738	$ -
	Property Tax	$ -	$ -	$ 85,585	$ 110,766	$ 148,305	$ 188,000
	Earnings on Investment	$ 1,324	$ 5,806	$ 14,745	$ 31,245	$ 30,000	$ 30,000
1	Nissen Gravel Sale	$ -	$ -	$ -	$ -	$ 50,000	$ 50,000
	Miscellaneous	$ 97,847	$ 48,138	$ 169,685	$ 187,747	$ 108,686	$ 45,000
	Total Revenues	$ 1,767,985	$ 1,568,658	$ 2,035,068	$ 2,593,713	$ 3,939,610	$ 2,093,000
2	Adjustments	$ 13,554	$ 225,530	$ (106,518)	$ (191,033)	$ -	$ -
	Total Revenues	$ 1,781,539	$ 1,794,188	$ 1,928,550	$ 2,402,680	$ 3,939,610	$ 2,093,000
	Expenditures						
3	Personnel	$ 177,613	$ 154,196	$ 411,813	$ -	$ -	$ -
	Capital Expenses	$ 5,635	$ 8,635	$ 1,667	$ -	$ 518,470	$ 205,000
	Operating Fees	$ 527,677	$ 455,520	$ 491,870	$ 577,629	$ 250,000	$ 300,000
	Water Leases	$ 1,021,141	$ 1,090,483	$ 1,516,361	$ 1,222,184	$ 1,520,000	$ 1,817,000
4 , 5	Annual Loan Payments	$ -	$ -	$ -	$ 518,469	$ 518,469	$ 525,541
	Total Expenditures	$ 1,732,066	$ 1,708,834	$ 2,421,711	$ 2,318,282	$ 2,806,939	$ 2,847,541
	Ending Balance	$ 1,521,485	$ 1,606,839	$ 1,113,678	$ 1,198,076	$ 2,330,747	$ 1,576,206

1 Minimum annual payment.
2 Audit adjustment from cash basis to modified accrual
3 New requirements for recording GASB 68 Pension Expense, never listed before
4 Two loans issued in 2018: Nissen $2.5M, Hokestra $3.025M. Payments $215,796 and $302,673, respectively.
5 Reflects new CWCB loan for the Hokestra Resrvoir Project.

8 Value of Hokestra Reservoir and Rural Ditch Shares

A formal appraisal of Hokestra Reservoir and the Rural Ditch shares acquired from Weld County in 2018 has not been conducted. However, the following provides a reasonable estimate of the value of those assets based on current market conditions.

8.1 Hokestra Reservoir

Over the past 10 years we have assisted Central in evaluating numerous water storage projects and senior water rights along the South Platte River and its tributaries. Different infrastructure needs at these projects result in different unit storage costs, but costs for "finished" storage typically range from approximately $4,500 to over $6,500 per acre-foot. Costs for unfinished storage, where additional infrastructure (e.g., inlet and outlet works) needs to be completed, range from approximately $2,700 to over $4,000 per acre-foot. Hokestra Reservoir is a functioning storage reservoir, although Central is planning several structural improvements to facilitate operations. A conservatively low unit value for the existing facility is approximately $3,500 per af, suggesting a value of $4.375 million for the 1,250 acre-foot reservoir prior to the planned infrastructure improvements. After the new infrastructure is completed and assuming a conservatively low unit value of $5,500 per acre-foot, a conservative estimate of the value of the completed project will be approximately $6.875 million.

8.2 Rural Ditch Shares

The cost for senior water rights along the South Platte River and its tributaries has increased dramatically in recent years. On a unit cost basis, recent transactions have been reported at over $20,000 per af of historical consumptive use for water rights diverting from the South Platte River near Denver, and at over $15,000 per af for water rights diverting near Platteville. Transactions for water rights on tributaries such as Boulder Creek and St. Vrain Creek are somewhat lower, typically in the $7,500 to $10,000 per af of historical consumptive use. If the 3.75 shares Rural Ditch acquired by Central are conservatively valued at $7,500 per af, then this suggests a value of $1.35 million for the expected 180 af of yield.

8.3 Total Value

A conservative estimate of the value of Hokestra Reservoir is $6.875 million. A reasonable estimate of the value of the Rural Ditch shares acquired when the storage facilities were acquired is approximately $1.35 million. The conservatively low estimate of the total value of the Project, including the senior water rights is approximately $8.225 million.

9 Loan Request, Credit Worthiness, and Collateral

The GMS Water Activity Enterprise is requesting a 30-year loan for $5,390,500.

Credit worthiness of GMS is demonstrated by the financial information provided as **Appendix D** and as summarized in **Table 3** Central, GMS and WAS have successfully participated in numerous loans from the CWCB since 2002.

The value of Hokestra Reservoir and the Rural Ditch shares is significantly greater than the amount proposed to be borrowed from CWCB (value of approximately $8.225 million vs. loan of $5.3905 million). GMS proposes that collateral for the loan will be in the form of a pro-rated value of finished storage at Hokestra Reservoir. Specifically, 980 af of finished storage valued at $5,500 per af equals $5.3905 million. Therefore, collateral for this loan will be in the form 980 af of finished storage at the Hokestra Reservoir facility.

10 Conclusions

The GMS Board of Directors has determined that replacing their existing loan with Weld County is economically prudent. This report provides a description of how funds from a CWCB loan would be used, the probable benefit to GMS, and the financial capacity of GMS to repay the loan from CWCB.

11 Limitations

This document was prepared for Colorado Water Conservation Board in accordance with professional standards at the time the services were performed and in accordance with a contract between White Sands Water Engineers, Inc. and Central Colorado Water Conservancy District. The document is governed by the specific scope of work authorized by Central; it is not intended to be relied upon by any other party except for the Colorado Water Conservation Board. White Sands Water Engineers, Inc. makes no warranties, express or implied, with respect to this document, except for those, if any, contained in the agreement pursuant to which the document was prepared. Any party that relies on this document, except those authorized herein or under the terms of the contract between Central and White Sands Water Engineers, Inc. does so at its own risk. Further, we have relied on information or instructions provided by Central and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Appendix A
CWCB Loan Application

Appendix B

Application Filed in Case No. 17CW3202

DISTRICT COURT, WATER DIVISION 1, WELD COUNTY, COLORADO 9th Street & 9th Avenue P.O. Box 2038 Greeley, CO 80632	
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: **THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF WELD, STATE OF COLORADO, AND THE GROUND WATER MANAGEMENT SUBDISTRICT OF THE CENTRAL COLORADO WATER CONSERVANCY DISTRICT;** IN WELD COUNTY.	▲COURT USE ONLY▲
Kelly J. Custer, #27247 Wesley S. Knoll, # 48747 Lawrence Jones Custer Grasmick LLP 5245 Ronald Reagan Blvd., Suite 1 Johnstown, CO 80534 Phone: 970-622-8181 Email: kelly@ljcglaw.com; wes@ljcglaw.com	**Case No. 17CW3202**
CORRECTED APPLICATION FOR STORAGE WATER RIGHTS AND CHANGE OF WATER RIGHTS	

Co-Applicants, the Board of County Commissioners of the County of Weld, State of Colorado, ("Weld County"), and the Ground Water Management Subdistrict of the Central Colorado Water Conservancy District, ("Central"), by and through their attorneys, Lawrence Jones Custer Grasmick LLP, hereby submit the following corrected application for storage water rights and change of water rights:

1. Names, addresses and telephone numbers of Applicants:

   The Board of County Commissioners of the County of Weld, State of Colorado (hereinafter "Weld County"), P.O. Box 758, 915 10th Street, Greeley, CO 80632, 970-304-6496.

   Ground Water Management Subdistrict of the Central Colorado Water Conservancy District, (hereinafter "Central"), 3209 West 28th Street, Greeley, CO 80634, (970) 330-4540.

CLAIM FOR CONDITIONAL AND ABSOLUTE WATER STORAGE RIGHTS

2. Name of Reservoir: Hokestra Pit

2.1. Legal Description of Location: In the N ½ of Section 2, Township 2 North, Range 68 West, and the S ½ of Section 35, Township 3 North, Range 68 West, 6th P.M., Weld County, Colorado.

2.2. Sources: Water tributary to the South Platte River from Boulder Creek, Idaho Creek, and the St. Vrain River.

3. Points of Diversion:

3.1. Last Chance Ditch river headgate located on St. Vrain Creek in the SE¼ NW¼ Section 3, Township 2 North, Range 68 West of the 6th P.M., Weld County, Colorado.

3.2. Rural Ditch river headgate located on Boulder Creek in the NE¼ Section 20, Township 2 North, Range 68 West of the 6th P.M., Weld County, Colorado.

3.3. Rural Ditch headgate located on Idaho Creek in the SE¼ of Section 16, Township 2 North, Range 68 West, 6th P.M., Weld County, Colorado.

3.4. Idaho Creek Carrier diversion structure located on Boulder Creek in the SW¼ of Section 29, Township 2 North, Range 68 West, 6th P.M., Weld County, Colorado, which on information and belief is owned by The Godding Ditch Company.

3.5. St. Vrain River Inlet No.1 located on the south bank of St. Vrain Creek in the SW¼ Section 35, Township 3 North, Range 68 West, 6th P.M., Weld County, Colorado.

3.6. St. Vrain River Inlet No. 2 located on the south bank of St. Vrain Creek in the SE¼ Section 35, Township 3 North, Range 68 West, 6th P.M., Weld County, Colorado.

4. Date of appropriation: September 21, 2006.

4.1. How appropriation was initiated: By formation of intent to appropriate water for beneficial uses, acquisition and revision of Division of Reclamation and Mining Safety permit, by the passing of resolutions by the Board of County Commissioners of Weld County and the Board of Directors of Central, by the construction of a clay liner and two slurry walls to create storage space, by the diversion and storage of water, and the filing of this application.

5. Amounts claimed:

5.1. 1250 acre-feet, with one annual refill of 1250 acre-feet. Of these amounts, 423.4 acre-feet of the initial fill is claimed as absolute, and the remaining amounts are claimed as conditional.

5.2. Last Chance Ditch: 50 cfs, conditional.

5.3. Rural Ditch headgate on Boulder Creek: 30 cfs, of which 12.73 cfs is claimed as absolute, which flow rate was recorded on December 14, 2016, and the remaining amount is claimed as conditional.

5.4. Rural Ditch headgate on Idaho Creek: 30 cfs, conditional.

5.5. Idaho Creek Carrier: 30 cfs, conditional.

5.6. St. Vrain River Inlet No. 1: 25 cfs, of which 7.32 cfs is claimed as absolute, which flow rate was recorded on May 24, 2017, and the remaining amount is claimed as conditional.

5.7. St. Vrain River Inlet No. 2: 25 cfs, conditional.

6. Proposed Uses: Augmentation, agricultural, industrial, mineral resource development, mining operations and construction of public works projects including operating air emissions control devices; controlling fugitive particulate emissions; washing and processing sand, gravel and aggregate; washing equipment; accounting for evaporative losses of water from mined materials stockpiled or removed from the site; irrigating and reclaiming mine site; maintaining wetlands; construction and maintenance of roads, irrigation of landscaping, reclamation of construction sites for public facilities, fire suppression, emergency response, recreation and piscatorial uses within the storage cells, recharge, replacement, irrigation, municipal, and exchange. Applicants claim the right to totally consume the water stored, either by first use, successive use, or disposition. The water right may be used as a source of substitution and replacement supply in the plans for augmentation in Case No. 02CW335 (Ground Water Management Subdistrict of the Central Colorado Water Conservancy District ("GMS")) and Case No. 03CW99 (Well Augmentation Subdistrict of the Central Colorado Water Conservancy District ("WAS")), and such other decreed augmentation plans or substitute water supply plans as Applicants shall obtain, for replacing ground water depletions and return flows. The water right may be leased to others for use.

7. Remarks: Weld County and Central have entered into an agreement by which Weld County will sell the Hokestra Pit to Central along with the 3.75 shares of the Rural Ditch Company described below in this application. A clay liner and two slurry walls have been constructed around the cells which comprise the Hokestra Pit, and all three have been tested and approved by the Office of the State Engineer.

CLAIM FOR CHANGE OF WATER RIGHT

8. Decreed water right for which change is sought:

8.1. Name of Structure: Rural Ditch.

8.2. Date of original and subsequent decrees: CA 1336, June 2, 1882, Boulder County District Court; Case No. 84CW412, August 30, 1985, Water Division No. 1.

8.3. Legal description of location: On Boulder Creek in the NE¼ Section 20, Township 2 North, Range 68 West of the 6th P.M., Weld County, Colorado.

8.4. Source: Boulder Creek through Idaho Creek

8.5. Appropriation Dates: May 5, 1862 and March 10, 1863

8.6. Total amount decreed to structure: 22.75 cfs (1862) and 60.25 cfs (1863)

8.7. Decreed use: Irrigation

8.8. Amount of water that Applicants intend to change: 3.75 shares out of the outstanding 50 shares of the Rural Ditch Company represented by stock certificate nos. 317, 330, 356, and 360 (subject to change upon re-issuance) owned by Weld County. ("Shares").

9. Historical use: The Shares were historically used to irrigate portions of four separate farms as described below. The areas irrigated are shown on the attached **Figure 1**.

9.1. Adler Farm. One of the Shares was used along with four other shares on approximately 299.3 acres located in the NW ¼ and the E ½ of the SW ¼ and the West ½ of the SE ¼, Section 2, Township 2 North, Range 68 West; along with a parcel located in the SW ¼ of Section 35, Township 3 North, Range 68 West, 6th P.M., Weld County.

9.2. Gould Farm. One of the Shares was used along with one other share on approximately 65.8 acres located in the West ½ of the NE ¼ of Section 2, Township 2 North, Range 68 West of the 6th P.M., Weld County.

9.3. Slovek Farm. One-quarter of the Shares was used along with three-quarters of a share on approximately 51.9 acres in the SE ¼ of the SE ¼ of Section 35, Township 3 North, Range 68 West, and the NE ¼ of the NE ¼ of Section 2, Township 2 North, Range 689 West, of the 6th P.M., Weld County.

9.4. Villa Farm. One and one-half of the Shares was used on approximately 64.7 acres in the West ½ of the SW ¼ of Section 2, Township 2 North, Range 68 West of the 6th P.M., Weld County.

10. Proposed change:

10.1. Use. Applicants seek to change the use of the water rights represented by the Shares to include augmentation, recharge, replacement, industrial, municipal, and exchange, in addition to the decreed irrigation use, with the right to totally consume the consumable portion of the water, either by first use, successive use, or disposition. All diversions attributable to the Shares shall be made through the river headgate of the Rural Ditch. The Shares may be used as a source of substitution and replacement supply in the plans for augmentation in Case No. 02CW335 (Ground Water

Management Subdistrict of the Central Colorado Water Conservancy District ("GMS")) and Case No. 03CW99 (Well Augmentation Subdistrict of the Central Colorado Water Conservancy District ("WAS")), and such other decreed augmentation plans or substitute water supply plans as Applicants shall obtain, for replacing ground water depletions and return flows. The Shares may be leased to others for use. Fully consumable water associated with the water delivered under the Shares may be used directly, or after storage, recharge or exchange, consistent with the terms and conditions of Central storage and recharge decrees including but not limited to Case Nos. 81CW382, 82CW413, 83CW184, 85CW370, 87CW304, 88CW127, 92CW021, 92CW165, 94CW96, 94CW97, 94CW199, 00CW83, 01CW48, 02CW269, 02CW270, 05CW331, and 12CW304-A.

10.2. Storage at Rinn Valley Parcel: L.G. Everist, Inc. is in the process of mining and constructing lined storage reservoirs on lands located in Section 10, Township 2 North, Range 68 West of the 6th P.M., Weld County. The Shares can be delivered directly to Rinn Valley via the Rural Ditch. The Central Colorado Water Conservancy District and L.G. Everist, Inc. have entered into a Purchase and Sale Agreement that includes the future storage reservoirs. An application has been filed in Case No. 16CW3119 for water rights at the reservoirs. Central may take delivery of the Shares at these storage reservoirs and make releases for the uses claimed herein.

10.3. Storage at Hokestra Pit: Weld County is in the process of mining and constructing lined storage reservoirs collectively referred to as the Hokestra Pit, the location of which is described above. Central and Weld County entered into an Agreement dated June 22, 2015 which allows Central to store the Shares at the Hokestra Pit. The Shares can be delivered directly to Hokestra Pit via the Rural Ditch. Central may take delivery of the Shares at these storage reservoirs and make releases for the uses claimed herein.

10.4. Storage at Shores Lake: Central owns and operates the Shores Lake located in the SE ¼ of the NE ¼ and E ½ of the SE ¼ of Section 2, the W ½ of the SW ¼ and S ½ of the NW ¼ and SW ¼ of the NE ¼ of Section 1, all in Township 2 North, Range 68 West of the 6th P.M., Weld County, Colorado. The Shares can be delivered directly to Shores Lake via the Rural Ditch. Central may take delivery of the Shares at these storage reservoirs and make releases for the uses claimed herein.

10.5. Dry up. The historically irrigated area which is attributable to the 3.75 shares is 170.5 acres. The dry up needed on each of the historically irrigated farms is as follows: Slovek: 13.0 acres; Gould: 32.9 acres; Villa: 64.7 acres; Adler 59.9 acres. Acreage equal to or exceeding these areas has been permanently removed from irrigation due to development and/or mining activities and is dried up. A figure showing the areas dried up is attached as **Figure 2**.

10.6. Diversion Period. April 1 through October 31.

10.7. Farm Headgate Delivery. Farm headgate deliveries attributable to the Shares averaged a total of 361.3 acre-feet assuming a 10% ditch loss for the ditch. This amount is preliminary and subject to modification upwards or downwards as additional information becomes available to Applicants.

10.8. Historical Consumptive Use. The historical consumptive use was determined using the following study periods: Adler: 1950 through 1998; Gould and Slovek: 1950 through 1986; Villa: 1950 through 1996. The consumptive use of the Shares was determined to be an average of 212.7 acre-feet per year, with an average annual consumptive use per share of 56.7 acre-feet. This amount is preliminary and subject to modification upwards or downwards as additional information becomes available to Applicants.

10.9. Return Flows. Total return flows from historical use of the Shares averaged 148.6 acre-feet per year and historically occurred as surface and subsurface return flows for all of the historical farms except the Villa farm. Return flows were assumed to be 100 percent subsurface for the Villa farm pursuant to a stipulation entered in Case No. 02CW335, the GMS Plan for Augmentation. Surface return flows from historical use of the Shares averaged 36.1 acre-feet per year. The lagged subsurface return flows from historical use of the Shares averaged 112.4 acre-feet per year. These amounts are preliminary and subject to modification upwards or downwards as additional information becomes available to Applicants. The timing of lagged return flows will be determined using AWAS parameters and the Glover equation.

11. Diversion Records: Applicants' engineering consultants have reviewed records of diversions by the Rural Ditch Company and Applicants will rely on the records in the quantification of the historical use of the water rights. Copies of the records will be provided to any party on request.

12. Return flows: Applicants will replace the historical return flow portion of the water rights. Applicants hereby appropriate the use of the historical return flows of the water rights and the return flows will be replaced when there is a call senior to the date of the filing of this application. The return flows will be used for the changed uses described herein. The sources of return flow replacement include any sources available to Applicants including but not limited to a portion of the Shares and the sources described in the cases listed in paragraph 10.1 above.

13. Proposed terms and conditions for delivery of the Shares through the Rural Ditch:

13.1. Applicants may take delivery of the Shares at any of the following points of delivery: 1) the Shores Pond B Inlet Structure, located at a point in the SE¼ of the NE¼ of Section 2, Township 2 North, Range 68 West of the 6th P.M. in Weld County, Colorado (Shores Reservoir is owned by Central and is described in the decree in Case No. 00CW83, Water Division No. 1); 2) an augmentation structure located near the downstream end of the Rural Ditch at a point in the NE¼ NE¼ NW¼ of Section 1, Township 2 North, Range 68 West, 6th P.M., Weld County, Colorado; 3) a future

augmentation/bypass structure to be constructed by the Rural Ditch Company at or near its river headgate on Boulder Creek; 4) a future augmentation structure associated with the City of Firestone's plans to construct drainage to St. Vrain Creek near the downstream end of the Rural Ditch; 5) a future Shores Pond C Inlet Structure; 6) future storage reservoirs located on the Rinn Valley Parcel described in ¶10.2, which property is currently owned by L.G. Everist, Inc.; and 7) Hokestra Pit, located in the North ½ of Section 2, Township 2 North, Range 68 West of the 6th P.M., in Weld County, Colorado, from which the Shares may be delivered to St. Vrain Creek.

13.2. The Shares shall be subject to transit loss in the Rural Ditch as determined by the ditch rider, applying the same percentage to all shareholders. In the event that Applicants take delivery of the Shares at the future augmentation station at the river headgate, the ditch loss portion of the delivery shall remain in the ditch.

13.3. The diversion season applicable to the Shares shall be the same as the season for all shareholders.

13.4. Central entered executed a Second Amendment to the Operating Agreement with the Rural Ditch Company on or about December 8, 2017, which governs Central's deliveries of the Shares.

14. Names and addresses of owners, if other than Applicants, of land on which structures are or will be located:

Last Chance Ditch Company 11955 Weld County Rd. 15, Longmont, CO 80504.
Rural Ditch Company, PO Box 1826 Longmont, CO 80502-1826.
Town of Firestone, 151 Grant Avenue, Firestone, CO 80520.
L.G. Everist, Inc., 7321 E. 88th Ave., Suite 200, Henderson, CO 80640.
The Godding Ditch Company, PO Box 1826 Longmont, CO 80502-1026

Respectfully submitted: January 4, 2018

LAWRENCE JONES CUSTER GRASMICK LLP

Digitally signed by Wes Knoll
DN: cn=Wes Knoll, o=Lawrence Jones Custer Grasmick, ou, email=wes@ljcglaw.com, c=US
Date: 2018.01.04 11:00:43 -07'00'

Kelly J. Custer, #27247
Wesley S. Knoll, #48747
Attorneys for Applicants

Pursuant to Rule 121, a printed or printable copy of the document bearing the original, electronic, or scanned signature is on file at the offices of Lawrence Jones Custer Grasmick LLP

VERIFICATION

STATE OF COLORADO)
) ss.
COUNTY OF Weld)

I, William Mihelich, P.E. being first duly sworn upon oath, deposes and states that he is the District Engineer for the Co-Applicant, Central, that he has read the foregoing and that the contents contained therein are true and correct to the best of his information, knowledge and belief.

William Mihelich

Subscribed and sworn to before me this 3 day of January, 2018, by William Mihelich

WITNESS my hand and official seal.
My Commission Expires: May 13, 2021

TAMMY J RUSCH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20134030345
MY COMMISSION EXPIRES MAY 13, 2021

Notary Public

VERIFICATION

STATE OF COLORADO)
) ss.
COUNTY OF WELD)

I, Steve Moreno being first duly sworn upon oath, deposes and states that he is the Chair of the Weld County Board of County Commissioners, he has read the foregoing and that the contents contained therein are true and correct to the best of his information, knowledge and belief.

Steve Moreno

Steve Moreno, Chair

Subscribed and sworn to before me this 4th day of January, 2018, by Steve Moreno as Chair of the Weld County Board of County Commissioners

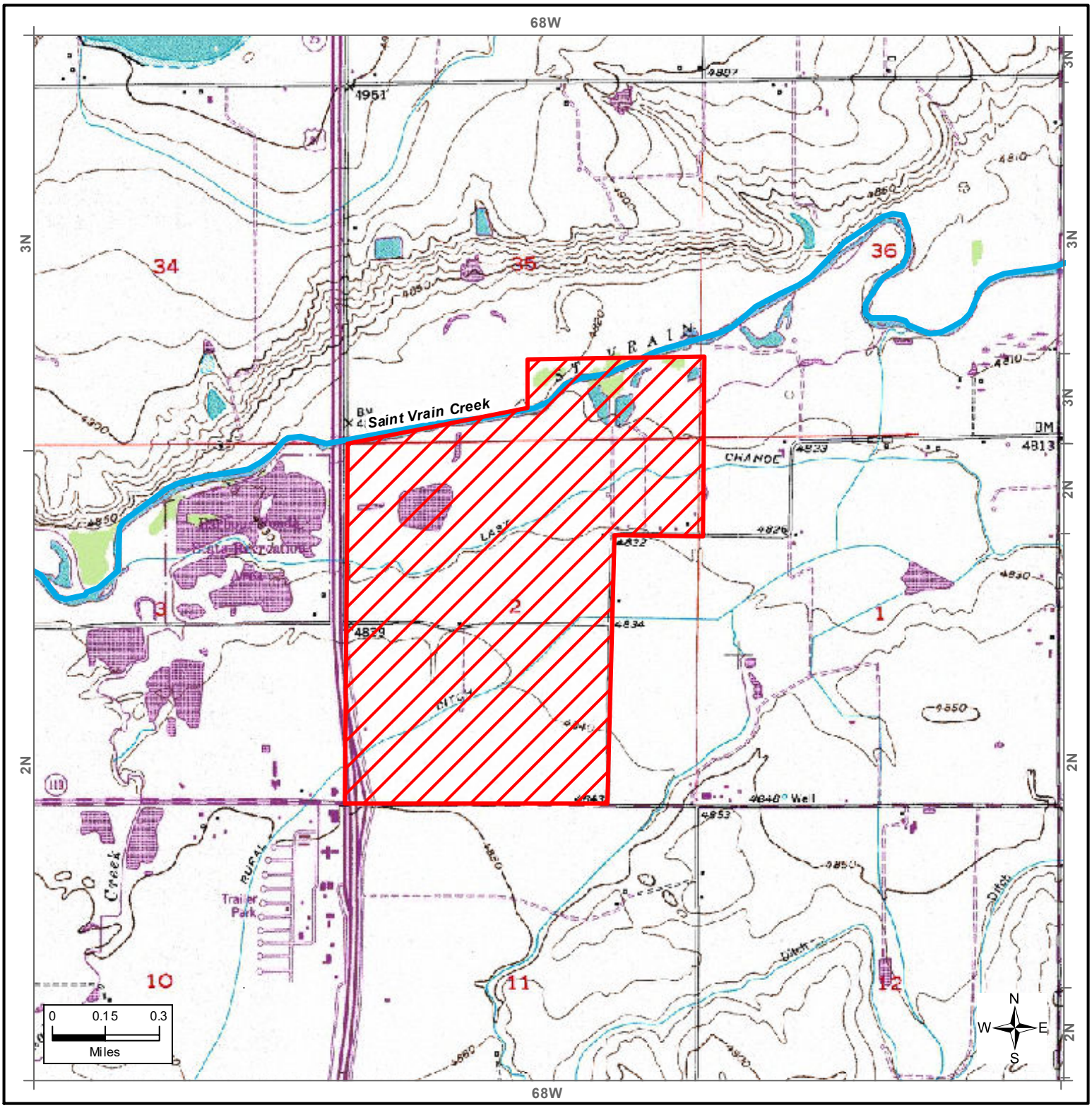
WITNESS my hand and official seal.
My Commission Expires: 12-2-18

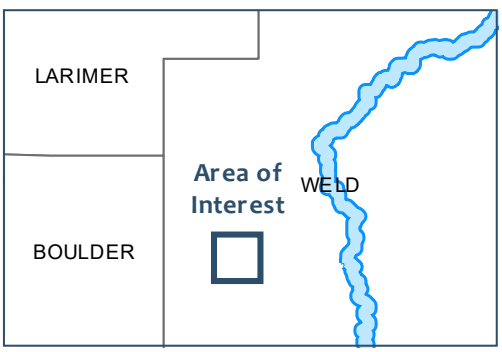
KARLA FORD
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19984029774
MY COMMISSION EXPIRES DECEMBER 2, 2018

Karla Ford

Notary Public

Pursuant to Rule 121, a printed or printable copy of the document bearing the original, electronic, or scanned signature is on file at the offices of *Lawrence Jones Custer Grasmick LLP*





Location of Use

Figure 1: Location of Use of Weld County Shares

The mapping contained within this document is intended to be used for reference purposes only and is not suitable for construction and/or surveying purposes.

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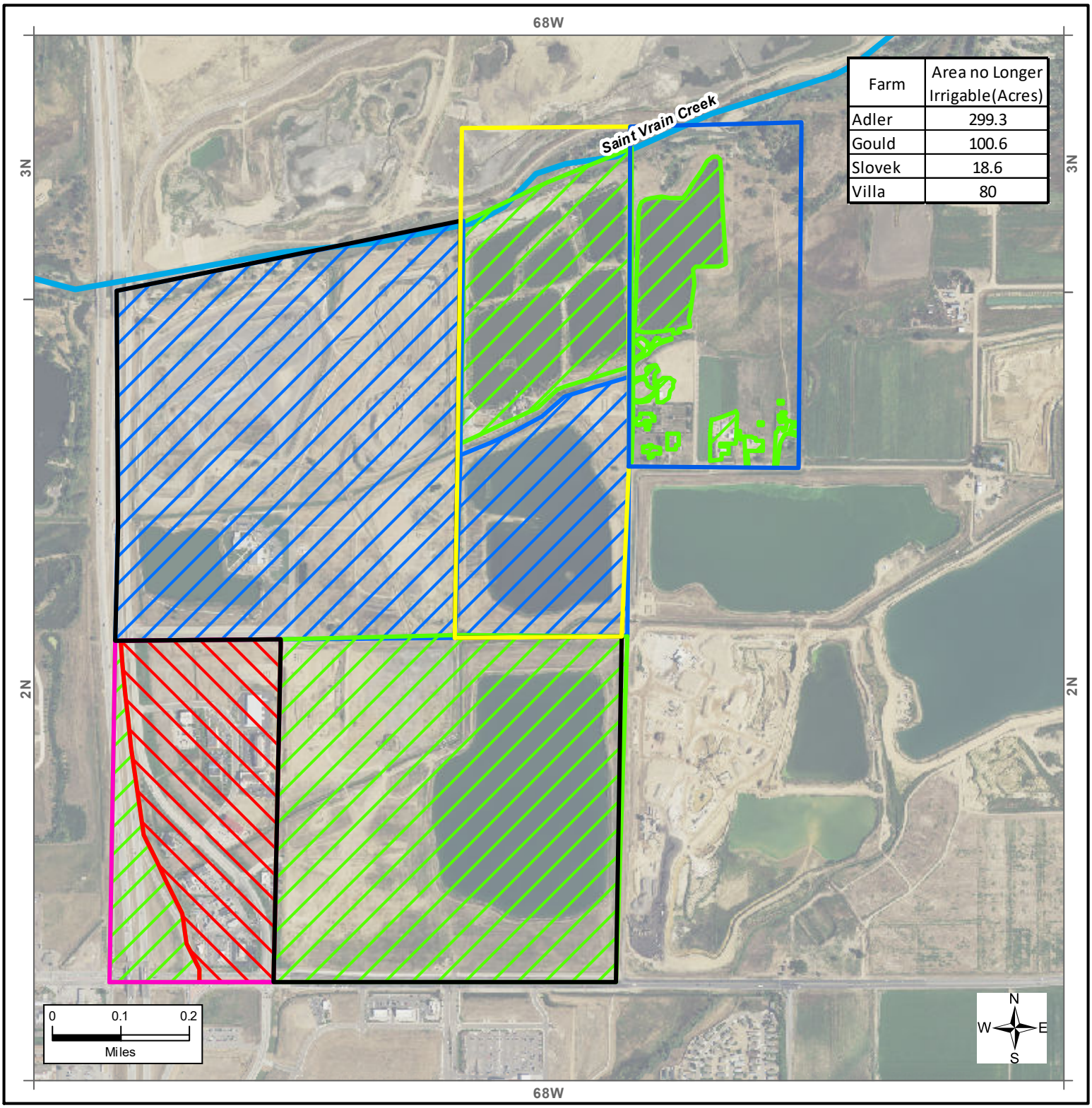

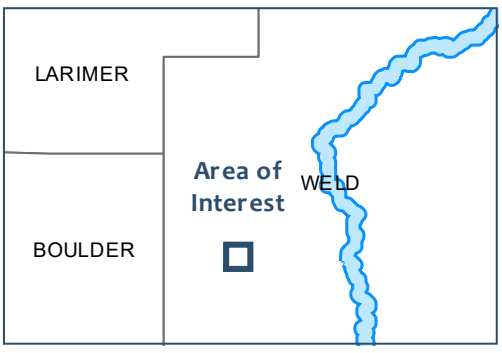

Adler Farm
Gould Farm
Slovek Farm
Villa Farm
Developed Area
Area Covered by Dry-Up Covenants
Area Owned by Applicant

Figure 2
Dry-Up Areas by Farm

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