



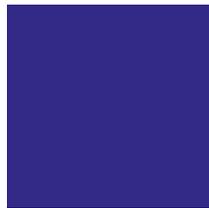
COLORADO
 Colorado Water
 Conservation Board
 Department of Natural Resources

FINAL REPORT

Prepared for
 Colorado Water Conservation Board // Denver, Colorado

Little Thompson Farm ATM Grant Completion Report

March 2018



Prepared by:



In association with:



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Prepared for
Colorado Water Conservation Board
March 7, 2018

FINAL



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- Larimer County: Alex Castino and Kerri Rollins
- Western Water Partnerships: Todd Doherty
- Brown and Caldwell: Isabelle Lheritier and Matt Lindburg
- Harvey Economics: Ben Norman and Ed Harvey
- Brad Walker
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List of Abbreviations

| | |
|----------------|-----------------------------------------------------------------------------------|
| AF | Acre-Foot (Water one foot deep covering one acre) |
| ATM | Alternative transfer method (used interchangeable with “water sharing agreement”) |
| Broomfield | City and County of Broomfield |
| C-BT | Colorado-Big Thompson project |
| CAWA | Colorado Agricultural Water Alliance |
| Company | Handy Ditch and Reservoir Company |
| County | Larimer County |
| CWCB | Colorado Water Conservation Board |
| CWP | Colorado’s Water Plan |
| Farm | Little Thompson Farm |
| Handy Shares | Handy Ditch and Reservoir Company shares |
| HE | Harvey Economics |
| IBCC | Inter-Basin Compact Committee |
| IDSCU | Integrated Decision Support Consumptive Use |
| LCDNR | Larimer County Department of Natural Resources |
| OLP | Open Lands Program, within Larimer County’s Department of Natural Resources |
| M&I | Municipal and industrial |
| Northern Water | Northern Colorado Water Conservancy District |
| Project Team | Larimer County staff, select board members, and the team of consultant experts. |
| SWSI | Statewide Water Supply Initiative |



Executive Summary

Colorado’s Water Dilemma

Larimer County and the northern Front Range have two primary water sources: 1) local rivers and tributaries that transport snowmelt and runoff, and 2) the Colorado-Big Thompson (C-BT) project that delivers water from west of the Continental Divide to reservoirs east of the Divide. The C-BT project was created more than 60 years ago to provide reliable, supplemental water supplies to meet the municipal and agricultural needs of this growing area of Colorado. In the semi-arid northern Front Range, these two water sources must meet all the water needs, sometimes placing different uses at odds with each other. Historically, farmers owned and controlled almost all the water. However, as the populations of cities and towns have boomed, municipalities have purchased farmland and its water and transferred the water from agricultural to municipal use to support this growth.

Recognizing this trend, Colorado’s leaders had the forethought to bring water users of all kinds together in 2015 to devise a plan for Colorado’s water future. Colorado’s Water Plan was the result, and it predicts that under the status quo, up to 700,000 acres of irrigated farmland may be dried to bolster municipal water supplies by 2050, including up to one-third of the irrigated farmland in the South Platte River Basin. To address this issue, Colorado’s Water Plan promotes the use of Alternative Transfer Methods (ATMs) for meeting water needs, which do not involve permanent dry-up of farmland. With the goals of 1) conserving a viable, irrigated farm in perpetuity, 2) offsetting the costs through piloting a water-sharing agreement with a municipal water provider, and 3) providing a catalyst for a viable model for future ATMs, Larimer County set out to execute the first perpetual agriculture-to-municipal ATM in the state.

With the CWCB’s support, Larimer County and the City and County of Broomfield implemented Colorado’s first perpetual agriculture-to-municipal ATM.

Navigating New Waters

Of the more than 50,000 acres conserved by Larimer County since 1996, when a citizen-initiated sales and use tax started generating funds to acquire open space in the county, Larimer County has conserved less than 1,000 acres of irrigated farmland. This has been primarily due to associated water rights of farmland being so cost prohibitive. Meanwhile, Larimer County’s farmland and water have been converted to other uses at a rate of 4,500 acres per year, threatening the scenic buffers to its growing communities created by farms, a sense of place, the local food supply, and a major contributor to the local economy. In 2016, Larimer County was given the opportunity to help curb this trend. It was approached by a willing landowner to purchase and conserve 211 acres of prime farmland with scenic vistas, wildlife habitat, a community buffer, and historic value, plus almost \$7 million of water rights. To determine if an ATM would be feasible for this farm, the Colorado Water Conservation Board (CWCB) funded a team of experts to help Larimer County and its citizen advisory boards compile the water, agricultural, and legal knowledge needed to design an agreement that would work for both the farm and a municipality, while meeting the above-stated goals.

Designing a new type of partnership required the project team to navigate new waters. Larimer County engaged various stakeholders to advise on the project, including local ditch boards, the farm lessee, and the Northern Colorado Water Conservancy District (Northern Water). These discussions were fruitful in informing the parameters of the ATM and providing on-the-ground checks and

balances for the team’s assumptions. One unexpected and beneficial result of these conversations was a rulemaking process initiated by Northern Water to provide guidelines for perpetual water-sharing agreements on C-BT water. Even when an ATM appeared feasible, according to the experts, Larimer County needed to find the right water-sharing partner with compatible water portfolio needs, financial capacity, and decision-maker support for trying something new and innovative. The project team met with more than two dozen water providers over two years, beginning with those closest to the farm, before broadening the search outside Larimer County but remaining within Northern Water’s boundaries and the South Platte River Basin. Ultimately, the City and County of Broomfield (Broomfield) rose to the top and ticked all the boxes of a successful water-sharing partner.

Getting to the final agreement, however, required extensive negotiations between Larimer County and Broomfield. The project team provided guidance to ensure the final deal would meet the above-stated goals for Larimer County, as well as the needs of Broomfield and the farmer. The team produced a Farm and Water Viability Plan to guide how the farm might be operated under the terms of the water-sharing agreement and remain viable into the future under various hydrologic and market conditions.

Ultimately, Larimer County and Broomfield reached a deal on a water-sharing agreement where Larimer County could conserve a viable 211-acre farm (see Figure 1) in perpetuity for about half of the initial purchase price, and Broomfield could acquire a dependable water supply and reliable drought, drought-recovery, and emergency water supply at a reduced cost.

Terms of the Agreement

Larimer County sold 115 C-BT units to Broomfield and retained a first right of refusal to lease back these units for assessment cost plus 10%, when available.

Larimer County retained 125 C-BT units, 80 of which are subject to an ATM (i.e., interruptible water supply agreement) that allows Broomfield to use the water 3 out of 10 years on a rolling basis.

- Broomfield paid 40% of the appraised value of the C-BT units up front for this right.
- Broomfield will pay a fee of \$225 per unit when it uses the water. This payment will be subject to a custom escalator beginning in 2028 that tracks the value of water.

The water-sharing agreement included the following additional terms:

- Broomfield must notify Larimer County it will be using the water by Jan. 31 of that water year.
- Broomfield may provide late notice to use the water up to June 1, as long as the farmer’s crop-related costs are reimbursed.
- Broomfield may not partially exercise the ATM; all 80 units must be taken and charged.
- The ATM water may not be sub-leased by Broomfield.
- Larimer County retained native Handy Ditch water and will likely obtain additional Handy shares with the proceeds of the ATM, to add redundancy to the farm’s viability.

A Model for Future ATMs

The CWCB provided \$230,175 in funding to support this project, enabling Larimer County and Broomfield to protect viable farmland while securing needed municipal water supplies. With the CWCB’s support, Larimer County and Broomfield implemented Colorado’s first perpetual agriculture-to-municipal ATM and added up to 195 acre-feet toward the ATM goal in Colorado’s Water Plan. Larimer County and the project team encourages the State 1) to continue supporting pilot projects like this that demonstrate to municipalities, water managers, farmers, and conservation organizations that cooperative agreements can successfully leverage valuable resources and fulfill multiple parties’ goals, and 2) to provide incentives and flexibility to entities creating partnerships like these.

Section 1

Introduction

1.1 The Importance of ATMs

Colorado’s Water Plan (CWP) identified a water supply gap of 600,000 to 1,000,000 acre-feet (AF) by 2050 for municipal and industrial users, the majority of which is expected to be met by extracting agricultural water for municipal use, a process referred to by many as “buy-and-dry.” Colorado’s Water Plan, via the Statewide Water Supply Initiative (SWSI), estimates that under the status quo, Colorado could lose up to 700,000 acres of irrigated farmland to meet municipal needs. In recognition of the enormous impacts this potential and looming loss, the Inter-Basin Compact Committee (IBCC) and basin roundtables concluded that the current status-quo path of buy-and-dry is not the best solution for Colorado. Across the state, water stakeholders express a common goal to minimize buy-and-dry in a way that respects property rights, recognizes the importance of agriculture in Colorado, and supports a sustainable agricultural industry—while identifying solutions to provide water for municipal needs. The IBCC and numerous other groups, including the Colorado Agricultural Water Alliance (CAWA), recognize a variety of alternative options that have the potential to appreciably decrease the projected permanent losses of irrigated acres in Colorado. Therefore, the CWP put forth as a goal to respect the contributions of the agricultural industry by maximizing options for alternatives to permanent agricultural dry-up and set a goal of sharing water through such alternative agreements to the tune of 50,000 AF by 2030, an amount of water that could serve up to 350,000 residents.¹

The CWP’s section on agricultural viability (Section 6.5.2.) calls for more transactions that allow for Alternative Transfer Methods (ATMs). The objectives include assisting young/new farmers entering the industry, working cooperatively with the land conservation community, and utilizing land preservation mechanisms such as conservation easements to protect and make farmland affordable for the next generation of farmers and ranchers. The IBCC calls for a program to facilitate agricultural viability and states that such a program should assist with:

- Deals, contracts, and other options for sharing agricultural water
- Strategies to remain market competitive
- Ways to achieve long-term certainty for both water lessors and lessees
- ATMs that allow the farmer to continue owning the land
- Opportunities to overcome entry barriers for young growers
- Perpetual agricultural agreements, such as conservation easements
- Other similar contractual agreements that allow for more long-term flexibility
- Funding opportunities for agricultural producers

This report describes in detail the ways in which the Little Thompson Farm project meets many of these goals and objectives. We hope that others who are interested in pursuing ATM projects will learn from our experience and build upon our work to implement their own projects and that the Colorado Water Conservation Board will continue to support such efforts working toward the CWP water sharing goal and moving ATMs forward as a viable, reliable water management and farm conservation tool.

¹ Colorado’s Water Plan Section 6.4 “Alternative Agricultural Transfers” on page 6-115.

1.2 Larimer County Open Lands as ATM Partner

1.2.1 Introduction to Larimer County Open Lands

Larimer County's Natural Resource Department's Open Lands Program (OLP) is a publicly-funded land conservation entity. It is funded through a ¼-cent sales and use tax and is guided by a 12-person citizen advisory board. The Larimer County Department of Natural Resources (LCDNR) currently employs 46 permanent and over 100 seasonal staff that support and implement the development, maintenance, and management of County open spaces and parks for recreation and conservation. The staff members who primarily negotiated and brought the water sharing project to fruition were the OLP program manager, Kerri Rollins, and land agent, Alexandra Castino. Additional acquisition staff and land stewardship staff from across LCDNR, as well as the County Attorney's office, also made important contributions. Ultimately over 25 county departments were involved in the success of this project.

LCOLP works with willing landowners to conserve land throughout the County using various conservation tools, including placing conservation easements on private properties and acquiring fee title to land, with the purpose of protecting the natural resource values including agriculture, scenic and open space, habitat and wetlands, historic and buffers to communities and other open spaces.

1.2.2 Larimer County and Irrigated Agriculture

OLP has conserved over 29,000 acres in fee acquisitions and over 20,000 acres in conservation easements. Less than 1,000 of the 50,000 acres conserved to date is irrigated farming, primarily because the associated water rights are cost-prohibitive for a program that receives approximately \$6 million in tax revenues per year for land conservation acquisitions, management, and staffing costs. Unfortunately, Larimer County's farmland has been and continues to be converted to other uses at a rate of 4,500 acres each year. Between 1997 and 2007, 8.4% of farmland in Larimer County was converted to a non-agricultural use, primarily residential. Larimer County has one of the fastest growing populations in the state and housing demands continue to rise. The loss of productive agricultural lands threatens a way of life in Larimer County, as well as a major component of the local economy.

Through various public planning efforts from 2012 to 2015, the OLP heard from citizens urging the County to acquire water rights to protect prime agricultural lands and provide land for emerging farmers and small-acreage farming. The Larimer County Agricultural Advisory Board, a citizen board of local farmers and ranchers, also advocated the protection of irrigated agricultural land by the County. The County heard the citizens and incorporated specific goals into the 2015 Open Lands Program Master Plan update to: conserve prime agricultural lands and their integral water portfolios by investigating innovative approaches; and to conserve or share water and provide increased opportunities for emerging farmers and ranchers.²

1.3 Little Thompson Farm Project History

Discussions began between Larimer County and the farm owners in June of 2014. The family, consisting of three siblings, wanted to learn how they could go about conserving the family farm as a working landscape while meeting their need to dispose of the property. Larimer County was interested in the property due to its agricultural, historic, scenic, community buffer, riparian and

² Larimer County Open Lands Master Plan, 2015. Pages 46-47.
https://www.larimer.org/sites/default/files/uploads/2017/larimer_county_open_land_master_plan_2015.pdf

educational values, but also realized that the outright purchase of the farm and its water would require creativity and partnerships to help offset the significant purchase cost of \$8.4 million.

In exploring options and potential tools for conserving this irrigated farm and its valuable water at a reduced cost, Larimer County learned of water sharing partnerships or ATMs that were being promoted by the state and discussed in local water groups like the Poudre Runs Through It, the Poudre River Sharing Group, and the South Platte Basin Roundtable.

1.3.1 Alternative Future for the Farm

Various acquisition obstacles required Larimer County to move forward in purchasing the farm before any work on partnerships or ATMs had been done. There were three backup contracts ready in case the deal fell through. Had that been the case, the farm's rich water supply of Colorado-Big Thompson (C-BT) and Handy Ditch shares worth over 80% of the \$8.4 million purchase price would have been stripped from the land. The cost of C-BT water, which is readily transferable from agricultural use to municipal and industrial uses by a simple contractual transfer, is largely only affordable to developers or municipalities. The Handy Ditch shares would likely also have been dedicated permanently to the local water district for residential use and could have served over 110 new urban or over 50 new rural residences.

To the County's knowledge, Larimer County was the only offer the family received that would have kept the land in active farming.

1.3.2 Taking the Leap

Once the property was under contract, Larimer County applied for and was awarded a CWCB ATM grant for just over \$178,000 in December 2015 to hire a consultant team, which came on board soon after the new year. The property did not end up closing until August 2016 after a land dispute was negated.

1.3.3 New Tool, New Rules

With the team on board, Larimer County began to propose some ideas to the Northern Colorado Water Conservancy District ("Northern Water") about what an ATM might look like on the C-BT water. These discussions spurred Northern Water to initiate a rulemaking process to develop rules for entering into perpetual ATMs, or "interruptible supply contracts" with C-BT water. Over the next year or so, the County, its consultants, and potential water partners testified in the rulemaking to encourage negotiating flexibility and even incentives to making ATMs a viable farm conservation tool and water portfolio asset. The farm owners testified about their support for water sharing due to its ability to offer landowners another tool to avoid buy-and-dry when selling their valuable water and land. Ultimately, even as the Northern Water rulemaking was wrapping up in August of 2016, and after a year of negotiating exclusively with water providers within Larimer County, the County had not yet identified a viable water sharing partner. It was decided to begin looking for a partner outside of Larimer County.

Section 2

Designing a Water Sharing Partnership

2.1 Larimer County's Project Team

The Colorado Water Conservation Board funded the team of experts through the 2015 ATM grant. This team of experts was pivotal to the success of this project by providing the missing farming, legal, economic, and water expertise the Larimer County needed to execute this first-of-its-kind ATM. The team and their roles are as follows:

- Todd Doherty, Western Water Partnerships – Project Manager for the team of experts, met with all potential partners and negotiated the final ATM with Broomfield, participated in fund development, Northern rulemaking, and public roll-out of ATM.
- Dan Brown & Sara Irby, Fischer, Brown, Bartlett & Gunn – Water Attorney that drafted the final Intergovernmental Agreement that brought the ATM to fruition, provided legal advice on the C-BT transaction and Northern Water rulemaking, participated in ATM partner meetings as well as Northern rulemaking and public roll-out of ATM.
- Matt Lindburg & Isabelle Lheritier, Brown & Caldwell – Provided consumptive use analysis that established the water supply portfolio for the ATM and drafted the Little Thompson Farm and Water Viability Plan, participated in fund development, ATM partner meetings, Northern rulemaking, and public roll-out of ATM.
- Ben Norman, Harvey Economics – Provided economic analysis that established the water supply portfolio for the ATM, developed the price escalator from a custom index, established the dry-year value of water, drafted the Little Thompson Farm and Water Viability Plan, participated in ATM partner meetings, Northern rulemaking, and public roll-out of ATM.
- Brad Walker, Ag Skill, Inc. – Provided agronomic and farm viability analysis that established the water supply portfolio and agricultural viability terms of ATM and the Little Thompson Farm and Water Viability Plan, liaison to the farm lessee, and participated in fund development, Northern rulemaking, and public roll-out of ATM.
- Volunteer liaisons and members of the team included Jason Brothers of the Larimer County Open Lands Advisory Board, and George Wallace of the Larimer County Agricultural Advisory Board. Both are subject matter experts and provided invaluable assistance.

2.2 Initial Technical Support

The initial technical support to the negotiating team focused on identifying water supply and economic conditions necessary to maintain the long-term viability of the farm considering the implications of an anticipated water sharing agreement.

2.2.1 Farm Operations

The Little Thompson Farm, comprising 211 acres, is located along Highway 287, one mile south of the Town of Berthoud and adjacent to and just north of the Little Thompson River in Larimer County. A map showing the general location of the farm and farm details are shown in Figure 1.

The irrigated area of the farm is served primarily by a center pivot and cornering machine that covers approximately 141 acres (see the Northern Field shown in Figure 1). Some areas northeast and south (see the Southern Field shown in Figure 1, approximately 35 acres) of the pivot are sometimes flood irrigated depending on the available water supply. The pivot-irrigated field was most recently planted in corn and sugar beets and is typically planted in each, half and half, on a rotational basis. The Southern Field has, at times, been planted in alfalfa and flood irrigated depending on the available water supply. In recent years, the lessee has planted this area in sorghum/Sudan grass or dryland wheat to avoid the need for irrigation.

The Little Thompson Farm was historically irrigated with 16 Handy Ditch and Reservoir Company shares (Handy shares) and 240 C-BT units since about the mid-1950s to the time Larimer County purchased it. Both sources of water are taken from the Big Thompson River at the Handy Ditch headgate and are delivered to the farm via the Handy Ditch and then the Dry Creek Lateral (see Figure 1).

The consultant team determined that the water supply of 16 Handy shares and 240 C-BT units is generally more than adequate to fully irrigate the Little Thompson Farm. Therefore, it was feasible for Larimer County to afford, from a water supply perspective, to sell some C-BT units (115) and share some other units (80) in some years, while still having sufficient water on the farm for corn and sugar beets, as well as crops that require less water. The engineering and economic analyses that informed these conclusions are described below. Additional details regarding the farm operations, water supply, farm viability, etc. are described in the Little Thompson Farm and Water Viability Plan included as Appendix A.

2.2.2 Engineering

The purpose of having an engineering partner was to evaluate the viability of the farm under various future water supply conditions resulting from the ATM agreement. If the water supply remaining on the farm (considering the ATM agreement) could still provide enough irrigation water to meet the water needs of various marketable crops, then the farm would be considered viable in the long-term.

To answer this question, Isabelle Lheritier and Matt Lindburg of Brown and Caldwell conducted a high-level consumptive use analysis to evaluate how often the full water demand of select crops could be met with varying levels of Handy Shares and C-BT units. With the County's budgetary constraints and the legal constraints on executing a perpetual ATM with the native Handy ditch water, the expert team decided to approach the consumptive use analysis by beginning with the more affordable, more restrictive Handy units, assuming they would stay on the farm and leaving open the option of acquiring additional, if available. With the Handy as a baseline, the consumptive use analysis looked at how many C-BT units were needed in relation to the Handy shares to fully irrigate a corn crop, or sorghum crop in drier conditions, over a span of years with different hydrologic and environmental conditions. The crops used in the consumptive use analysis were chosen by recommendation from the agronomist, Brad Walker with Ag Skill, Inc., and economist, Ben Norman with Harvey Economics. Corn and sorghum were selected because they reflect a range of high- and low-water use crops, represent the historical crops that have been grown on the farm, and are appropriate for the farm given the current market conditions, irrigation infrastructure, and soils. The amount of water needed to fully irrigate the selected crops was estimated using the Integrated Decision Support Consumptive Use model (IDSCU), modified Blaney-Criddle method.

The consumptive use analyses accounted for variability in water supply based on hydrologic conditions by using hydrologic data from a recent time-period with highly variable hydrologic conditions: the 1992 to 2002 time-period. This 11-year time-period included wet, normal, dry, and very dry years. Although there are some additional flood irrigated fields that are periodically irrigated on the property, only the 141 acres under the center pivot were considered in the analysis because those are irrigated consistently from year to year. Consumptive use modeling inputs included the available water supply (under the new water scenario), conveyance efficiency, climate conditions, acreage, irrigation practices, as well as the selected crop. Conveyance efficiency of the Handy Ditch was based on information from the ditch company. Ditch loss was assumed to be 50 percent, which is very conservative and reflective of dry-year conditions. Estimates of ditch loss from another study of the Handy system have cited conveyance loss rates as low as 11 to 15 percent.³ However, given the specific facilities used to convey water to the Little Thompson Farm and input from the ditch company, the study team determined that the use of more conservative ditch loss estimates of 25% or even 50% would be prudent for the analysis. The results of the analysis show that even with a more limited water supply resulting from the ATM agreement, the farm will remain viable.

The initial analysis estimated the number of C-BT units required to fully supply a corn crop on the farm based on various levels of Handy shares. The initial analyses were summarized in a matrix (shown below) that the team could use during discussions with potential water sharing partners. The matrix shows, for different levels of Handy ownership, the number of C-BT units required to grow a fully-watered corn crop. The example matrix shown below (Figure 2) assumes that 125 C-BT units are available in years when water is not being shared, and the green zone of the matrix indicates the number of years during the study period of 11 years when sufficient water would be available for a corn crop and the number of C-BT units needed to fully supply the crop. For example, at 16 Handy shares and 125 C-BT units, which is the non-ATM year C-BT supply, there is adequate supply for a fully-watered corn crop 5 out of 11 years. Larimer County may pursue purchasing, or leasing in some years, 6 additional Handy shares for a total of 22 Handy shares, in which case there is enough water for fully watered corn in 7 out of 11 years.

| | | Number of Years Met | | | | | | | | | | |
|--------------|----|-------------------------------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | | Number of C-BT Units Required for a Full Water Supply | | | | | | | | | | |
| Handy Shares | 16 | 68 | 96 | 117 | 123 | 124 | 138 | 170 | 201 | 220 | 245 | 363 |
| | 18 | 53 | 78 | 101 | 108 | 116 | 122 | 151 | 186 | 194 | 223 | 352 |
| | 20 | 39 | 63 | 85 | 94 | 108 | 108 | 131 | 169 | 171 | 210 | 342 |
| | 22 | 26 | 48 | 69 | 79 | 93 | 100 | 118 | 151 | 158 | 202 | 331 |
| | 24 | 13 | 33 | 53 | 64 | 79 | 92 | 108 | 136 | 145 | 194 | 321 |
| | 30 | 0 | 0 | 6 | 19 | 35 | 68 | 81 | 90 | 107 | 169 | 289 |

Figure 2. Matrix showing adequacy of water supply for growing corn under various levels of Handy and C-BT ownership

Additional information on engineering considerations and analyses associated with this project is provided in the Little Thompson Farm and Water Viability Plan in Appendix A.

³ Leonard Rice Engineers, Preliminary Engineering Report, Ditch-wide Analysis, Historical Water Use Under the Handy Ditch Company, August 10, 2005

2.2.3 Economics

Prior to the negotiations of the final ATM agreement, Ben Norman, the project economist with Harvey Economics, evaluated the economic sustainability of numerous farm and water scenarios. Some of the variables assessed included the amount of water for sale versus the amount of water in the ATM, the value of the water in the ATM given who “owned” and controlled it, differing cropping patterns, the inclusion of additional Handy shares, and various pricing options for the sale of the C-BT units including up-front payment versus recouping the up-front cost through the ATM-dry year payments over time. Ben worked closely with Matt and Isabelle (the engineers) and Brad Walker (the agronomist) to develop models that provided scenarios that simultaneously kept the farm financially viable while offering enough water to be sold and/or put into the ATM to attract a water partner and meet Larimer County’s budgetary needs for the conservation project. The scenarios discussed below reflect the final terms of the ATM agreement and the current five-year farm lease agreement between the tenant farmer and Larimer County.

2.2.3.1 Farm Financial Viability

It is the nature of the industry that not all farms are profitable every year. This may be due to several factors outside the farmer’s control such as weather, disease, or changes in commodity prices, in addition to certain management decisions. However, to remain as a viable business enterprise, a farm must have enough profitable years to offset the years with negative returns.

Since this farm is rented to a tenant farmer, a gross margin analysis is appropriate. The gross margin analysis looks at only the costs and revenues directly involved in growing a crop on the Little Thompson Farm. The fixed costs of the tenant farmer for items such as equipment or debt service are not considered as the tenant farmer is assumed to own or lease other properties and would not need to purchase any new equipment to grow a crop on this farm due to the farm’s size and proximity to other farming operations. Thus, considering this property as a marginal addition to a farmer’s other properties is the proper accounting stance.

The gross margin for the Little Thompson Farm is calculated for three scenarios; a wet year, a dry year, and a very dry year. These scenarios were developed by Brad Walker, the project agronomist of Ag Skill, Inc., based on the projected water supply in these years and predicted local market and environmental conditions under these scenarios. Although these scenarios have not historically occurred in equal proportion, the team acknowledges that it cannot predict future hydrologic or environmental conditions, and thus the analysis considers each scenario equally to ensure that the farm can be viable through a variety of conditions.

Different cropping patterns are considered for each scenario, reflecting the management decisions that would likely be made by the farmer in each case. Also, each scenario is analyzed for both a year where the ATM is activated and some of the water is diverted off the farm, and a non-ATM year where all the water stays on the farm.

In the wet year scenario, the tenant farmer is assumed to plant irrigated corn and sugar beets, plus some dryland milo and sorghum/Sudan grass. The corn receives 18 inches of irrigation water and the sugar beets receive 24 inches, for a total water use of about 276 AF.

For the dry year scenario, the farm still grows irrigated corn, but no longer grows sugar beets. The dryland milo and sorghum/Sudan grass acres expand to use the acres that were planted to sugar beets in the wet year scenario. The corn only receives 12 inches of irrigation water in this scenario, for a total water use of about 141 AF.

The very dry year scenario sees the corn replaced by wheat, which only receives 4 inches of irrigation water. The rest of the farm is still planted with dryland milo and sorghum/Sudan grass. The total water use in this scenario is only about 47 AF.

This analysis is based on several production and price assumptions, which are detailed below in Table 1. Each scenario's model attempts to represent the results of representative years (i.e. an average wet year, an average dry year, and an average very dry year). As such, the results are highly sensitive to many of the assumptions, particularly the prices of the crops used in the model. A change in the price of one or more of the crops can dramatically change the results.

Assumptions

The following table presents the major assumptions that underlie the farm financial model used to calculate the gross margin of the farm under each scenario.

| Table 1. Major Assumptions Underlying Farm Viability Calculations | | | | | |
|-------------------------------------------------------------------|-------|--------------------------|-----|----------|-----------------|
| Crops Grown | Units | Crop Yields (Units/Acre) | | | Price (\$/Unit) |
| | | Wet | Dry | Very Dry | |
| Corn | Bu | 210 | 170 | | \$4.00 |
| Milo | Bu | 100 | 100 | | \$4.00 |
| Sorghum/Sudan | Ton | 2 | 2 | 1.8 | \$80.00 |
| Sugar Beet | Ton | 42 | | | \$45.00 |
| Wheat | Bu | | | 60 | \$3.60 |

Note: Not all crops are grown in all scenarios

Source: Brad Walker, Centennial Ag Supply Co. Personal communication, June 2017.

Additionally, the model assumes various farm lease terms that are subject to negotiation between the tenant farmer and County and will likely evolve over time with the market and as the ATM is tested. The following assumptions, however, underlie the economic viability analysis and may be used as reference as farm lease terms continue to evolve over time. The model assumes a rental price of \$26,600 for the entire farm, both the irrigated and dryland sections. It also assumes that the rental payments are paid by the tenant farmer every non-ATM year and half of the rent (\$13,300) is refunded to the tenant farmer in every ATM year. The rent is split evenly across all 187.5 acres, with no difference between irrigated and dryland acres, for an average of about \$142 per acre. While this likely overestimates the rent for the dryland portion and underestimates the rent for the irrigated portion of the farm, it makes no difference for the overall farm profitability. Finally, the lease payments that the water provider pays to Larimer County to lease the water in ATM years, are retained by Larimer County and not shared with the tenant farmer, other than to refund the rental payment as discussed above.

Water Assumptions

As discussed previously, the farm originally had 16 Handy Ditch shares and 240 C-BT units. As part of the agreement with Broomfield, 115 C-BT units were sold, and 125 C-BT units were retained by Larimer County. Of those 125 units, 80 C-BT units were placed into an interruptible supply agreement or ATM, also with Broomfield. The following table shows the water currently available to the farm both with and without the water subject to the ATM. Based on previous analyses, this evaluation also assumes the purchase or lease of 6 additional Handy Ditch shares by the County.

| Water Source | ATM Water Used on Farm | | ATM Water Leased to City | |
|--------------|------------------------|------------|--------------------------|------------|
| | Shares/Unit | AF | Shares/Unit | AF |
| Handy Ditch | 22 | 210 | 22 | 210 |
| C-BT | 125 | 69 | 45 | 25 |
| Total | | 279 | | 235 |

Note: The number of acre feet associated with each source of water is based on the historical average yield per share from each source.

Source: Brown and Caldwell, January 2016. Harvey Economics, 2017.

Historically, a C-BT unit yields about 0.73 AF per unit⁴ at the source and a Handy Ditch share yields, on average, 9.5 AF per share at the head gate of the farm. The Handy Ditch Company charges a 25 percent shrinkage rate to C-BT water that is delivered through its system. Based on these numbers, we assume that about 44 AF less water will be delivered to the farm in years when the 80 C-BT units are leased through the ATM, no matter if the year is wet, dry, or very dry. Larimer County reserved a first right of refusal to lease back the 115 C-BT units it sold, when available, that may provide more water supply flexibility to the farmer than represented in these analyses. Additionally, in all scenarios, it is assumed that the farm loses the full 44 AF from the amount of water that it would receive without the ATM. This reflects the conservative nature of this analysis and that real-world conditions will likely be better than assumed here. This analysis intentionally assumed as many factors against the farm as possible to build in a cushion for the unknown and ensure long-term viability.

The water was distributed equally conservatively by developing the scenarios to use only the amount of water necessary to grow a fully irrigated crop of the type selected, rather than allocating all of the water available, which may or may not result in higher yields and therefore better margins. For example, the wet year scenario as analyzed uses about 276 AF, which is less than the 279 AF available in an average year. The same is true in the dry year scenario; this scenario uses about 141 AF, much less than the 174 AF that could be available even if the Handy Ditch losses were 50 percent instead of 25. In the very dry year case, this causes the farm to have almost no irrigation water. This conservative analysis shows that the farm has extra water and could still grow a full crop in less than average years for each scenario, giving the farm more financial flexibility in the ATM years when it may not typically get enough water to grow a full crop, resulting in lower yields.

Results

The financial impacts to the farm for each scenario under both the non-ATM and ATM years are presented below. Each scenario presents the acreage grown and the gross margin under the non-ATM and ATM years for each crop.

Wet Year Scenario

The financial impacts to the farm from the ATM being exercised during a wet year are illustrated in the following table. These results represent the difference in gross margin on the farm due to lowered yields caused by a more limited water supply.

⁴ C-BT Project Quota, Northern Colorado Water Conservancy District www.northernwater.org various years.

Table 3. Financial Results from the Wet Year Scenario

| Crops Grown | Acres | | Gross Margin | | | |
|---------------|-----------|---------|--------------|----------|------------|-----------------------------|
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Corn | 140.7 | | \$29,699 | \$19,727 | -\$9,972 | \$8 |
| Milo | | 6.5 | -\$284 | -\$284 | \$0 | \$461 |
| Sorghum/Sudan | | 7.8 | -\$71 | -\$71 | \$0 | \$553 |
| Sugar Beets | 32.5 | | \$23,756 | \$19,957 | -\$3,799 | -\$1,494 |
| Total | 173.2 | 14.3 | \$53,099 | \$39,328 | -\$13,771 | -\$471 |

Source: HE, 2017

Not surprisingly, the loss of 44 AF causes a large decline in the profitability of the farm. Of course, this is an extreme assumption in shrinkage given this wet year scenario but is maintained for consistency across the three scenarios. Given this assumption, the gross margin for corn drops by about one third, while the gross margin for sugar beets drops by about 15 percent. The returns from the dryland crops are unaffected. Overall, there is about a 25 percent drop in the total gross margin from the farm. However, the rent refund of \$13,300, almost equals the overall loss due to the lease water not being on the farm. This shows that in this scenario, the tenant farmer can almost be made whole by the rent refund. Also note that the farmer loses money on the dryland milo and sorghum. This is due to the way that the rental costs are distributed, with dryland being over-charged and irrigated land being under-charged. In Larimer County, irrigated land generally rents for about 5 times the amount for dryland. If the rental amount assigned to dryland is reduced and the amount assigned to irrigated land is increased up to the 5 to 1 ratio, then the two dryland crops will be profitable. However, any rent taken away from the dryland crops gets added to the irrigated crops, making them less profitable. Overall, this will make no difference to the total farm profitability.

Dry Year Scenario

The following table depicts the financial impact of the water lease in the dry year scenario. In this scenario, corn is the only irrigated crop.

Table 4. Financial Results from the Dry Year Scenario

| Crops Grown | Acres | | Gross Margin | | | |
|---------------|-----------|---------|--------------|----------|------------|-----------------------------|
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Corn | 140.7 | | \$8,649 | -\$4,899 | -\$13,548 | -\$3,567 |
| Milo | | 30.3 | -\$1,325 | -\$1,325 | \$0 | \$2,149 |
| Sorghum/Sudan | | 16.5 | -\$150 | -\$150 | \$0 | \$1,170 |
| Total | 140.7 | 46.8 | \$7,173 | -\$6,375 | -\$13,548 | -\$248 |

Source: HE, 2017

This scenario has the most dramatic difference between the non-ATM year and the ATM year. A profit of over \$8,600 becomes a loss of \$4,900 for the corn crop. In this scenario, there is just enough water applied to grow a corn crop, so the loss of over half the water has a dramatic impact on the

yield and the revenue. Overall a profit of about \$7,200 turns into a loss of around \$6,400. The rent refund offsets almost all the loss for this scenario, turning a large loss into a much smaller one.

Very Dry Year Scenario

Wheat replaces corn as the irrigated crop in the very dry year scenario; again, the dryland crops stay the same. The results for the very dry scenario are described in the following table.

| Table 5. Financial Results from the Very Dry Year Scenario | | | | | | |
|------------------------------------------------------------|-----------|---------|--------------|-----------|------------|-----------------------------|
| Crops Grown | Acres | | Gross Margin | | | |
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Wheat | 140.7 | | -\$16,387 | -\$23,054 | -\$6,667 | \$3,313 |
| Milo | | 30.3 | -\$4,961 | -\$4,961 | \$0 | \$2,149 |
| Sorghum/Sudan | | 16.5 | -\$414 | -\$414 | \$0 | \$1,170 |
| Total | 140.7 | 46.8 | -\$21,762 | -\$28,429 | -\$6,667 | \$6,633 |

Source: HE, 2017

In this scenario, there are no profitable crops. The non-ATM year in this scenario only uses about 47 AF of water, so in the ATM year, the farm is essentially without any irrigation water. This lack of water makes a bad situation worse. As this is the scenario with the least water applied overall, the loss of water has a much smaller impact to the farm, about \$6,700 compared to over \$13,000 difference in the other two scenarios. However, the rental refund of \$13,300 more than covers the impact of the ATM and is an improvement on the returns from a non-ATM year. From the point of view of the tenant farmer, a very dry year is the best year for the ATM to be exercised as the farmer would be better off than if the ATM were to be pulled in this year than if there were no ATM at all.

Once again, these results are highly dependent on the prices for the various crops. For example, a milo price that is only a dollar higher per bushel would make it a profitable crop in every scenario. The commodity prices are set on the world market and have no relationship to the weather conditions in Colorado. The results for individual years as presented in these three scenarios show that the farm can have considerably differing results based on the scenario. However, over the longer term, there will be years that mimic each of these scenarios and many years that are in between the scenarios. And, two of the scenarios (wet and dry) assume a water use that is less than the water that is available to the farm. This provides a conservative analysis and suggests that the farm may have more water (and higher profitability) under the ATM year portion of the scenarios. The long-term viability is examined below.

Long Term Viability

The permutations and combinations of the three scenarios, with and without the ATM being exercised, all within a 3-in-10-year period, are myriad. Two example decades are examined for demonstration purposes; an average decade and a severely dry decade. The average decade looks at a ten-year period with three wet, four dry and three very dry years, much like the study period chosen for the engineering analysis above of 1992-2002 with more proportional dry and very dry than wet years. There are three ATM years during the period, one occurring during each of the three hydrologic scenarios. Although it is unlikely that Broomfield would use one of their 3-in-10-years on a wet year, including this scenario in the analysis helped inform the team whether a hydrologic requirement needed to be included in the sharing agreement to restrict the water provider's exercise

of the ATM to dry and/or very dry years. The severe decade investigates a ten-year period with five dry and five very dry years. The ATM is exercised once during a dry year and exercised twice during the very dry years. The severe decade is meant to demonstrate a close-to-worst-case scenario to ensure farm viability in severe and prolonged drought conditions and is not intended to be representative of either historical conditions or a prediction for future conditions. The rent is partially refunded in all ATM years as assumed above, for consistency.

Over the ten years of the average decade, the gross margins in the individual years range from a loss of about \$15,100 to a profit of over \$53,000. The total gross margin over that time-period is around \$128,600, for an average annual gross margin of \$12,900. For comparison, the same farm with an identical water portfolio and no ATM years would have a total gross margin over the same time-period of about \$122,700, or \$5,900 less than the ATM farm. This is because, in a very dry year, the ATM is more profitable than growing crops.

In the severe decade, the annual gross margins with the ATM range from a loss of \$14,300 to a profit of over \$7,100 but sum to a total gross margin of almost \$60,000. The corresponding average annual gross margin is about negative \$6,000. In comparison, the same farm with an identical water portfolio without an ATM would have a total gross margin over that time-period of about negative \$7,300. Again, this is due to the increased profitability of an ATM year as compared to a very dry year farming.

As can be seen in the severe decade, it is possible to have a decade where the average annual gross margin is negative. However, so long as a decade has at least two wet years and no more than 5 very dry years, it will have a positive gross margin. Ultimately, one wet year can offset about 3 very dry years. This shows that under the scenarios that were examined, it is very likely that the Little Thompson Farm will remain a viable agricultural operation in the long term with the ATM exercised 3 out of every 10 years.

Ultimately, if the ATM is exercised in only the very dry years of the scenarios, regardless of the decade, the Little Thompson Farm will be better off financially than if there were no ATM in place because of the financial benefits to the farmer and landlord of the reduced rent obligation and the dry-year payment generated in an ATM year, in addition to the up-front capital generated from Broomfield's 40% buy-in to the ATM.

While the ATM, when exercised in a wet year, reduces the financial boon of that wet year, the ATM when exercised in a very dry year leaves the farmer financially better off than growing crops. It may be that the steep risk-reward cycle typical of farming is smoothed out a bit by the ATM, and farming becomes a more even-keeled venture with an ATM in place.

2.2.3.2 Dry Year Water Value

Introduction

The dry-year value of a water right is the largest component of the total purchase price for the ATM. Currently, many providers with the resources to enter an ATM have lots of water in wet years. Any new shares purchased by those providers would only be used in dry years and be worth very little in wet years when the provider would not have any use for the water and might (if the legal constraints on the water would allow) rent this superfluous water out to agricultural use to cover annual assessments. The demand on this water is low because more water in wet years is just not that valuable to anyone. This is particularly the case for C-BT. Superfluous native ditch water is also rented back to agriculture in the short-term after the water is transferred to an M&I provider, until the provider can accumulate enough of that type of ditch water to take a block through water court for permanent change to M&I uses. Under current law, that water may not return to agricultural uses

even on a year-by-year basis when the hydrologic conditions would make that water useless to the water provider.

New purchases of C-BT units are generally for the dry-year yield. The other major water source within the C-BT district boundaries is native water rights from various east-slope tributaries. While these native sources may yield more water than C-BT per share in wet or average years, they generally have unreliable yields in dry or very-dry years and later in the growing season. This is the reason the C-BT water was brought across the continental divide in the first place, for increased reliability. So, the market price for C-BT and other water is essentially based on the dry-year yield as well as ease and cost of transferring the water right from agricultural to municipal uses.

C-BT units will likely only continue to increase in price and decrease in availability into the future. We have seen historically that once the units change hands in ownership from agriculture to M&I providers, those units are permanently off the market. C-BT was originally owned 70 to 80 percent by agricultural producers and has now changed hands to almost 80 percent M&I providers. M&I providers already need the C-BT water before they buy it – in fact this is a requirement that must be met for Northern Water to approve the transfer of ownership. As the northern Front Range has continued to grow, the price that M&I providers are willing to pay to secure reliable water continues to rise. C-BT is already out of reach of most if not all agricultural users, and many small water providers are being priced out as well. As we're seeing, this eventually leaves developers and large providers as the only buyers. For a developer, the water purchase price is only one component of a project's overall cost, and the developer may be willing and able to pay higher prices for water to complete that project as he/she can pass that cost on to the home buyer in the strong housing market.

Methodology

To calculate the dry-year value, the cost of one C-BT unit was financed over time to determine an annual cost for the water. Then this annual cost was combined with the number of years (3 in 10) that the water was being used by, or of value, to the provider. That is, the total amount paid in all years is allocated to the years where the water is used by the provider. As the provider must pay the whole amount to be able to use the water in just the certain years that they need it, this is the actual value of the unit for those years. Finally, the present value of these annual water values (only in the years where the water was used) was computed to obtain the dry-year value of the unit.

Results

Depending on the financing and discounting assumptions, the dry year value of the unit is between 60 percent and 80 percent of the total purchase value of the unit. This analysis is highly sensitive to the interest and discount rates (i.e. a small change in either one, or especially a change in the ratio of the two, can have a large effect on the calculations of the dry year value). However, for discount and interest rates in the range of 2 percent to 5 percent, the dry year value of 60 percent to 80 percent is valid.

2.3 Getting to the Final Water Supply Agreement

The project team's initial approach was to develop an interruptible water supply agreement using all or most of the Little Thompson Farm's 240 C-BT units with a municipal water provider near the farm. Generally, the concept was for the ATM partner to use the water up to 3 out of every 10 years (presumably drought years) with the farm utilizing the water the other 7 out of 10 years. As described in Section 2.2.3.2, the value of the dry-year water was thought to be 60 to 80 percent of the water right's overall value. At the appraised value of \$26,000/C-BT unit, this would equate to a

price of \$18,200 to \$20,800 per share for a water provider to be able to use the water during drought periods. If all 240 C-BT units were involved in the deal, the dry-year value should be \$4.3 to \$5 million.

2.3.1 Identifying Water Sharing Partners

Todd Doherty, the consultant team lead with Western Water Partnerships, worked closely with the Larimer County staff and other members of the project team to strategize an approach and decide which municipal water providers to contact as potential partners for this first-of-its-kind deal. Todd, County staff, and members of the consultant team, (“negotiating team”) sought out and negotiated with various water providers throughout the Northern Water boundary: 25 in total, 11 of which the County and team members met with in-person at least once. Of course, all these entities were waiting for Northern’s new rules regarding ATMs – most notably on how an ATM might count towards the cap calculation on C-BT units. Once adopted, the conversation took on a more earnest tone. Each of these meetings began with the negotiating team educating the M&I provider about the potential mechanics and considerations of an agriculture-to-M&I water sharing arrangement. Then, if the M&I provider was interested in the concept, the negotiating team proceeded with negotiating a water sharing agreement that would ensure a viable farm into the future and meet the needs of the M&I provider, while hopefully creating a model interruptible supply/ATM contract. The goal was that this tool, if done right, could be used by private landowners and municipal entities to work with each other and negotiate water transfers that keep working farmland viable while providing a reliable drought water supply to M&I users.

The negotiating team quickly learned that each M&I entity, while all interested in water, share few other characteristics. Each provider the team spoke with had different water supply goals and portfolios, varying policies around fulfilling its water needs, as well as differing water infrastructure and budgetary constraints. These differences in turn affected what the M&I providers wanted to see in a water agreement. Some differences include:

- *Small providers and fast-growing municipalities.* These communities appeared to be more interested in obtaining base water supplies to help fuel the active and anticipated large growth.
- *Fast growing rural-domestic water districts.* Like the small and fast-growing municipalities, the rural-domestic water providers appeared to be more interested in obtaining base water supplies. Further, these entities have boards of directors with low risk tolerance and low motivation to consider straying from the conventional water acquisition methods.
- *Communities with C-BT Cap Limitations.* In addition to the water providers that were contacted, there were many that expressed interest but were either at or near their C-BT cap limitations as determined by Northern Water.
- *Municipalities with relatively secure water supplies.* These water providers had a fairly secure water portfolio to fill existing and future water needs without being capped out on C-BT, and sought to increase firm yield, water supply reliability, or drought/drought-recovery supplies, were the most promising ATM partners. Unanticipated factors such as climate change or delays in water projects may have influenced these water managers to rethink their systems’ firm yield calculations and pursue more resiliency.

In some cases, even of the M&I providers that had the resources to complete the deal, the need for the dry-year water, the staff willing to negotiate and follow through with this complex deal, many lacked the institutional support either from their leadership, boards, or both, to try something this new and different. It’s possible that with more public awareness of buy-and-dry, these water providers will receive pressure from their constituents to acquire water without drying up farms, and

the leadership might become more willing to participate in an ATM in the future. The County hopes that this first successful project will provide a template to work from and help minimize institutional barriers to executing something similar.

2.3.2 Northern Rulemaking Process

As mentioned previously, prior to initiating the ATM project, Larimer County contacted Northern Water to make sure a perpetual agricultural-to-municipal interruptible water supply agreement involving C-BT was permitted in accordance with all Northern Water's rules, regulations and policies. While the rules (Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts, August 11, 2016), are included in entirety in Appendix B, below are some of the highlights that pertain to new interruptible water supply contracts. It should be noted that the rules also included provisions pertaining to existing subcontracts and bridge supply subcontracts (not perpetual), that are not the focus of the summarized portions below.

- All C-BT subcontracts must be approved by the Northern Water Board.
- A subcontract involving C-BT will be considered in calculations of C-BT ownership limitations if water will be used for non-irrigation purposes (i.e. counts towards their C-BT 'cap').
- The non-irrigation use of C-BT water is allowed for 3 out of 10 years. In the event of a prolonged drought, the non-irrigation use may be extended beyond 3 out of 10 years on a case-by-case basis with Northern Water Board's approval. The Board understood that droughts are unpredictable and often do not fit within an arbitrary three or five-year period (e.g. California drought lasted from late 2011 to 2016). Examples of triggers that indicate prolonged drought conditions include a municipality imposing strict lawn watering restrictions, a governor issued drought declaration, or a C-BT quota based upon supply limitations rather than anticipated demand.
- Agreement is transferrable to other parties (assuming all parties agree and is approved by Northern Water).

2.4 Stakeholder Perspectives

Throughout the process of vetting, negotiating, and executing an ATM, the project team heard various perspectives on ATMs and the terms of the ATM agreement by the various stakeholders. The perspectives of these stakeholders and groups are described below.

2.4.1 City and County of Broomfield

Although the City and County of Broomfield was an excellent fit as a project partner based on location, infrastructure, C-BT ownership and cap availability, as well as City Council support for sustainable practices, conservation and preservation of open space, the concept of participating in a new ATM was not met with immediate acceptance. The initial presentation of the concept was very broad, offering several different ideas on how the ATM agreement could be constructed. It was only after a few months of reviewing the initial concepts and estimating how a feasible agreement could work and be accepted by Broomfield citizens and City Management that Broomfield reached back out to Larimer County to begin working toward an ATM that could be successful for all the involved parties.

Broomfield's current and future water demands were analyzed to make certain the C-BT units included in the ATM would have a positive impact on the City's water supply and would not hinder any type of development. The amount of water included in the ATM was a welcome and viable fit to

support potential dry-year water demands in the city, especially in the period while Broomfield is developing storage and water firming capability in Chimney Hollow Reservoir.

It was also extremely important for Broomfield to ensure the Farm and Water Viability Plan was sound. Much care was taken to respect the needs of Larimer County as well as the tenant farmer, while negotiating as responsible, budget conscious stewards of the citizens of Broomfield. Both parties spent many hours investigating and addressing any potential obstacles. The auxiliary support provided by the funds in the CWCB loan played a major role in Broomfield's confidence in the project. The expert advice and information provided by Larimer County's team was invaluable.

Overall, the addition of the ATM units to Broomfield's portfolio was an excellent fit. The nature of the agreement allowed Broomfield to purchase C-BT units at a fraction of the full market value. The units will help aid Broomfield in times of drought and drought recovery. Plus, the ATM agreement was structured in a way that does not penalize Broomfield for years in which we do not call on the ATM units. Broomfield believes that the ATM will prove to be very successful for all parties moving forward.

2.4.2 Ditch Company

Members of the project team attended several meetings of the Handy Ditch board throughout the vetting and negotiation of the ATM and had periodic discussions with the ditch superintendent and members of the board. In general, the Company was supportive of the ATM concept and would like to see as much water as possible stay in the ditch and in agricultural uses. Given what nearly happened to all the C-BT and Handy Shares on this farm, the Board commended the County for trying something different to conserve the farm in perpetuity and keep as much of the water on the farm as possible. The Dry Creek Lateral (the lateral that delivers water to the Little Thompson Farm) has a relatively high amount of conveyance loss, and the Company is concerned about delivering water to the end of the lateral if Handy shares or C-BT units are removed from the service area. To increase delivery efficiency, the water users at the end of the ditch generally coordinate their water orders, and the Company would like to see that continue. If, over time, more water is transferred out of the Dry Creek Lateral service area, the Company would be interested in partnering with Larimer County to develop strategies or projects to maintain or increase delivery efficiency.

2.4.3 Farmer/Operator

As is often the case with the introduction of something new, along with many supporters there was also opposition to this project. A water provider rejected the County's request to consider being a partner on the ATM because in their perspective, the success of this ATM would only result in more competition in an already competitive water market and make acquiring water through conventional means even more difficult for small providers and water districts.

Another small sect of opponents to this ATM were farmers downstream of the Little Thompson Farm that rely on return flows from C-BT into the Little Thompson River for their irrigation water. The team advised that in ensuring a viable irrigated farm in perpetuity, the County retained a sufficient water supply, after the sale and even when the ATM is exercised, to allow irrigation to continue similarly to how it has been done historically on the farm, and in most years, there will be no perceptible impact to the Little Thompson River. However, the County does not deny that this deal will, at times, result in a reduction in water flowing off the farm into the Little Thompson River, to some extent. The Little Thompson River is unfortunately already highly impacted by a pattern of transfers and land conversions away from agriculture in the area. This is partly because there is no legal obligation for water users on the Little Thompson River to maintain return flows from trans-mountain diversions, such as C-BT. Alternative transfers are an alternative to buy and dry that prevent the permanent dry-up and land conversion of productive farmland. However, ATMs are still transfers, and while they

can spread and absorb some of the impacts of municipal participation in agricultural water, they do not eliminate it entirely. The County is continuing to look at ways to further improve the health of the Little Thompson watershed.

Section 3

The Final Agreement

3.1 Negotiations

The negotiating team began by consulting first with the team of experts to establish acceptable ranges, with confirmation from County leadership, on the most important potential terms of the agreement to achieve the County's goals of preserving a viable irrigated farm, obtaining a strong financial partnership, and creating a good model for future water sharing deals. Once it was clear from initial discussions that a potential M&I partner was interested in discussing the specifics of a deal, the negotiating team dove into proposing the County's most important terms while retaining flexibility in areas of less importance to the County that might create opportunity for the M&I provider to extract more value from the deal and get to "yes". The agreement of both parties on the final ATM required a give-and-take approach on many terms. A few of the more negotiated terms are highlighted below.

ATM Value

Water providers pushed for a proportional 30 percent buy-in payment to the 3-in-10-year use right. The County had been advised by the economist that the dry-year value of water is between 60 to 80 percent of its full value. Larimer County pushed hard for a higher-than-proportional buy-in price while accepting that the full dry-year value of water was likely diminished by the conditions and terms the County wanted placed on the water provider's use of the ATM as compared to owning the units outright, for example notice timeline for using the water, inability to re-lease the units or use a portion, and the lease payment. These terms and conditions were important to ensuring the farm's viability, and therefore justified a lower up-front payment for the ATM.

Dry-Year Payment

The County pushed hard for a dry-year payment in addition to the up-front payment for the ATM to ensure the farm viability and preserve the financial health of the deal. The dry year payment adds to the farm's viability two-fold: providing a disincentive to the M&I partner using the water when the water is not truly needed and helping cover ATM-year costs/losses on the farm such as weed management and lower yields. The economic team provided support for a healthy dry-year payment by demonstrating the astronomical prices of historical dry-year lease rates in drought and drought-recovery years. The \$225/unit ATM-year payment met the County's farm viability and financial needs while providing value to Broomfield in securing a below market rental price. The dry-year payment was also tied to the price escalator described in Section 3.3 to ensure fairness to both parties as the economy and price of water changes over the life of this perpetual agreement. In recognition, however, of Broomfield's perspective that before Broomfield ever utilizes the ATM, the dry-year payment could sky-rocket with the escalator, the parties agreed to a delayed implementation on the escalator – to begin in 2028.

Sale of C-BT

While the team initially thought the ATM deal would be a dry-year interruptible water supply agreement involving all or most of the 240 C-BT units, reluctance amongst municipal water providers to pay a premium of 60 to 80 percent of the total water value necessitated an alternative approach. As indicated in the engineering section above, the team analyzed the historic water deliveries and

farm production to determine how much water the farm needs in certain hydrologic years. Based on this analysis, the team determined a combination of selling some C-BT, with the acquisition of additional Handy Ditch shares and the ATM agreement, the integrity of the irrigated farm could be maintained while providing Larimer County with the necessary funds to recoup a significant portion of its initial investment when it purchased the property.

The negotiating team continually heard from potential partners about their desire to purchase outright a large portion of the 240 C-BT units. The parties agreed to transfer 115 units of C-BT, less than half the 240 C-BT units. The financial return of selling those units enabled the County to keep 45 C-BT units out of the ATM and acquire additional Handy Shares. The 45 units plus the additional Handy contribute to the farm's viability by making the ATM less of an "all-or-nothing" arrangement and allowing for higher crop production in years when the ATM is utilized. The sale of the C-BT units also ultimately provided the "carrot" the water provider needed to commit the time and resources necessary to negotiate and execute this first-of-its-kind deal.

Notice

Notification deadlines were another point of negotiation that contributed to the ATM valuation discussions. A later deadline benefits the municipality while an earlier deadline benefits the farm. The team came to a compromise of an early initial notice deadline, and then a "late notice" deadline that the water provider can utilize so long as the provider reimburses the farmer for costs incurred because of their late notice. This helps reduce the impact to the farmer of a late notice by making him/her whole and provides a disincentive to the water provider utilizing the late notice when there is no unanticipated urgent or emergency need. This compromise gave both parties what they wanted to some extent while acknowledging the needs of the other.

3.2 Terms

The agreement between Larimer County and Broomfield is a combination sale of C-BT units and an interruptible supply agreement. Larimer County and Broomfield settled on a water sharing partnership on 195 C-BT units that achieved the goals of both entities and established a model for farmers and conservation entities to work together with municipal and industrial water providers to keep working farms viable while meeting Colorado's impending M&I water supply gap. Below are the key elements of the agreement:

Sale of C-BT:

To provide an incentive to Broomfield to enter into an ATM agreement, Larimer County sold Broomfield 115 Colorado-Big Thompson (C-BT) units outright for the appraised value of \$26,000/unit, with Broomfield paying \$25,550/unit, and CWCB ATM grant funding \$450/unit for a total payment to Larimer County of \$2,990,000.

Larimer County retained a right of first refusal to lease back these 115 C-BT units any time Broomfield is putting them up for lease, for assessment costs plus a 10 percent administrative fee, thereby providing additional water supplies for the farm. Larimer County will use these proceeds to acquire approximately 6 shares of Handy Ditch water to offset the loss of the 115 C-BT units.

ATM Agreement:

Larimer County executed a water sharing agreement with Broomfield on 80 C-BT units. The purchase price for this water sharing portion was \$10,400/unit (40% of \$26,000) for a total of \$832,000. The following conditions apply:

1. Larimer County remains the allottee (owner) of the ATM water subject to Broomfield's right to lease the water 3 out of 10 years for municipal and industrial uses. The 10-year period is based on a rolling 10-year period, described in Appendix C.
2. ATM Payments: Broomfield agreed to pay the assessment costs to Northern Water plus a dry-year lease payment of \$225/unit to Larimer County in the years Broomfield uses the water. This rental fee will be subject to the price escalator, described in Section 3.3 below, beginning in 2028. The current dry-year lease payment amount for 80 C-BT units at \$225/unit (prior to the implementation of the escalator) is \$18,000.
3. Broomfield will notify Larimer County by January 31st if it intends to use the ATM water that year. After January 31st up until June 1st, Broomfield may give "Late Notice" and use the water, so long as Broomfield reimburses all crop-related expenses incurred after January 31st through the date of Late Notice, including but not limited to purchase or planting/application of seed, fertilizer, labor expense, equipment use/rental, and such other reasonable expenses. June 1st is the last practical time for the farmer to plant an alternative crop that would reach harvest maturity that season.
4. Broomfield is not required to exercise its option for the 80 C-BT units any year and will not be charged during the years of non-use. Broomfield must take and pay for all 80 C-BT units when it does exercise the option (no partial exercise).
5. When Broomfield exercises its option for the 80 C-BT units, Broomfield agrees not to lease the water or any portion to others.
6. During periods of prolonged drought, Larimer County agreed to evaluate, in good faith and consistent with its goal of maintaining the Little Thompson Farm as a viable, working, irrigated farm, allowing Broomfield to use the ATM water more than 3 out of every 10 years. This will require Broomfield and Larimer County to request permission from Northern Water to allow for non-agricultural water use for greater than 3 out of every 10 years.

Financial Breakdown:

The financial breakdown of the project costs for Larimer County prior to and after the ATM, including financial leveraging from all sources, is as follows:

| Description | Value | Cost to Larimer County | Amount Leveraged | Source |
|--------------------------------------------|--------------------|------------------------|------------------------|------------------------------------------|
| Land, Minerals, Improvements, Handy Shares | \$2,340,000 | \$2,060,000 | \$100,000 \$180,000 | Larimer County Berthoud Negotiated |
| 240 C-BT Units | \$6,240,000 | \$6,240,000 | | Larimer County |
| Total | \$8,580,000 | \$8,300,000 | \$280,000 or 3% | |

| Table 7. Project Cost After ATM | | | | |
|--------------------------------------------|--------------------|------------------------|--------------------------|---------------------------------------------------------|
| Description | Value | Cost to Larimer County | Amount Leveraged | Source |
| Land, Minerals, Improvements, Handy Shares | \$2,340,000 | \$2,060,000 | \$100,000 \$180,000 | Larimer County Berthoud Negotiated |
| C-BT Water | | | | |
| 45 Units | \$1,170,000 | \$1,170,000 | | Larimer County |
| 115 Units | \$2,990,000 | | \$2,938,250 \$51,750 | Broomfield CWCB |
| 80 Units | \$2,080,000 | \$1,148,000 | \$832,000 \$100,000 | Larimer County Broomfield Gates Family Foundation |
| Total | \$8,580,000 | \$3,738,000 | \$4,842,000 = 56% | |

3.3 Lease Rate Escalator

The purpose of a lease price escalator is to protect both sides of the deal from being adversely affected due to changes in the price of the leased product, in this case, water. Over time, the prevailing price of water can and will change and the parties will want to track that change, so that neither side in the deal is unfairly disadvantaged. To this end, escalators are built around the underlying factors that drive the price of the good. In this agreement, the lease price of the water will be adjusted every year, after an initial ten-year grace period, based on the lease price escalator.

For example, over the past 30 years (1985 to 2015), the purchase price of C-BT units has increased at an average annual rate of 13 percent per year. However, this growth has not been smooth; the annual price changes range from a 33 percent drop in price to a 114 percent increase. These prices generally reflect the drought cycle and water availability in northeastern Colorado. The lease prices for C-BT water generally follow the same trends, but with more variability between wet and dry years. Locking in a price during any one of those 30 years would expose each side to being “short-changed” in several years. Using an example lease price of \$250, in a normal to wet year, when the market lease price is just the assessment costs, the lessee is paying over \$200 more than they should per unit. Conversely, in a drought year, when the lease price is over \$500 per unit, the lessor is losing out. The escalator ensures that the lease price mimics the market price to avoid significant over and under payments.

A lease price escalator can track the underlying price drivers while removing much of the volatility associated with the large year-to-year price changes. The two component indices chosen for this escalator, the price of corn and the municipal cost index (MCI) have very different levels of volatility. The average annual growth rate from 1985 to 2015 in the price of corn index was 1.5 percent, while for the municipal cost index, it was 2.6 percent. However, the annual price changes for corn ranged from negative 33 percent to 40 percent while the range for the municipal cost index was from negative 2 percent to 3 percent. Combining these two indices by averaging them brings the volatility down considerably. The combined index has an average annual growth rate of 2.2 percent, with a range of negative 17 percent to 17 percent. Additionally, applying a 5-year moving average brings

the volatility down even more, to a range of negative 3 percent to 8 percent. Overall, the lease price escalator brings the volatility range down from negative 33 percent and 114 percent to negative 3 percent and 8 percent.

Overall, the lease price escalator developed by the economics team tracks the underlying price drivers of the water market while reducing the volatility that is inherent in that market.⁵ Additionally, it is the fairest method for both sides to avoid either side being “short-changed” by changes in the price of water.

⁵ For more information about the development of the price escalator, see Harvey Economics’ memo at Appendix C.

Section 4

Farm and Water Viability Plan

The project team assembled the “Little Thompson Farm and Water Viability Plan” (July 19, 2017, see Appendix A) addressing the sustainability and future viability of the farm from an economic, water, and agronomic perspective. The plan provides operational recommendations from a water supply and irrigation perspective so that combined farming sales revenues and water lease/sales revenues will sustain the operational costs of the farm in the long-term. The plan also provides recommendations for operating under multiple water supply scenarios, including years with a full water supply and years where the ATM agreement is exercised. The intent of this plan is not to be an operational plan for the farm or the farmer, but rather to provide guidance on how to maximize the use and management of the water and land in such a way that it benefits all parties and fulfills the multiple purposes for which the land and water were conserved.

The farm and water viability plan showed that from an economic, water, and agronomic perspective, the farm would be viable under the ATM agreement and with the new water supply portfolio. Although the agreement limits the water supply compared to the historical supply, particularly in years where the ATM is exercised, the crop yields based on the new water supply and the dry year payment for the use of the water in ATM years, benefit the farm in the long-term.

Some technical concerns were addressed during the process from others outside of the project team. One such technical concern was related to future water deliveries to the end of the Dry Creek Lateral, where Little Thompson Farm is located. If future sales of C-BT from other farms at the end of the lateral occur, it could impact conveyance losses and potentially the ability to provide the same per-share amount of water to the end-of-lateral farms. This concern may be addressed in the future by considering lining the lateral or enclosing it in a pipeline and maintaining the current practice of coordinated water deliveries to the farm(s) throughout the ditch, and particularly at the end of the ditch.

Section 5

Lessons Learned and Future Considerations

Throughout this innovative project, the team learned a great deal to advance the knowledge base concerning ATMs. This section describes “lessons learned” by the team and highlights potential issues to be considered by entities interested in establishing ATMs. An overarching lesson and recommendation by the team is for the State to continue supporting pilot projects such as this to demonstrate to cities, water managers, farmers, and conservation organizations that these projects can be done successfully, leveraging valuable resources to fulfill the goals of multiple parties.

5.1 Legal Hurdles/Barriers to Replication

5.1.1 Northern Rulemaking

This project, being the first of its kind in the state, overcame many hurdles to get to the finish line. As previously discussed in Section 1, something that was not anticipated when the project began was that, although C-BT water is uniquely fungible (and does not require water court to change or add uses), it is administered by Northern Water who formulates rules and regulations that bind C-BT. When the idea of a perpetual interruptible supply agreement was broached with Northern Water staff, they thought this was unique enough from their typical year-by-year lease arrangements that they would require more review and oversight. As a result, the team navigated an unexpected rulemaking process with Northern Water that delayed the ATM, but also provided some benefits. One was that the rulemaking notices alerted everyone in the C-BT system of the County’s ATM project and brought more leads to the team. It also allowed the team to engage directly with the rulemaking process and invite potential municipal partners to do so as well. This gave a voice to the parties negotiating an interruptible supply agreement while they could still impact the rules that would affect the deal. Throughout the rulemaking, the team requested various incentives to make an interruptible supply agreement more attractive to water providers compared with an outright purchase of C-BT water. Ultimately, some of the proposed incentives were not included in the rulemaking. The team was offered some flexibility with being able to exceed 3 out of every 10 years with the ATM if drought conditions justified it, but compared to a sale, that was not quite sufficient for potential partners. As a result, the team needed to provide incentives to partners in the form of an outright sale of some amount of C-BT to make the investment of time and effort into the ATM worthwhile. The team recommends that Northern Water’s Board reevaluate possible incentives to include in its rules to make ATMs more attractive and competitive compared with outright sale, including flexibility on the cap calculation for ATM water, favorable annual assessments for ATM water, and flexibility on carry-over capacity by the ATM user in or after ATM years. These types of considerations may enhance the value of future ATMs and lessen the need for outright sales of C-BT.

5.1.2 Direct Flow Rights

Widespread use of ATMs will likely require additional tools that facilitate the transfer of water back and forth between municipal and agricultural uses. At this time, to execute a long-term ATM on direct flow rights, the right must be changed to allow multiple uses, meaning the two users (farmer and water provider) would be required to change the use of the ATM water in water court to allow the ATM water to be used in a flexible fashion for both irrigation and municipal and industrial uses on a year-by-year basis. While water court does allow water users to provide input on the terms and conditions of a water court decree, and to prevent injury to their water rights, changing a water right in water court can be an expensive, time consuming and uncertain process. Such cost and uncertainty are expected to drastically reduce the likelihood of ATMs being adopted more broadly. Legislation and other measures aimed at reducing the cost and uncertainty of changing water in water court for ATM purposes, while still, of course, protecting other water rights from injury, should be considered. One example, HB16-1228, is a bill passed in 2016 that, among other things, provided additional certainty to water users seeking to change water rights to multiple and as yet potentially unknown uses. Likely additional legislative, financial assistance and other measures will be needed to facilitate the large-scale implementation of ATMs. Short-term options, such as Interruptible Water Supply Agreements allowed under CRS 37-92-309, are not adequate when the goal is a long-term water sharing arrangement such as the ATM agreement between Larimer County or Broomfield. The County needed to accomplish long-term or perpetual land conservation and certainty for the farmer, and Broomfield needed to have access to reliable water allowing them to sell water taps that are supported by permanent supplies. The team is hopeful that legislators and water courts participants will be receptive and innovative in developing long-term alternatives that help avoid dry-up or purely short-term arrangements. This change would be consistent with Colorado's Water Plan's goal of putting 50,000 AF in ATMs as one solution to the projected water supply gap.

5.1.3 Delivery Efficiency Impacts from Water Transfers

In discussions with the stakeholders and potential water partners, the team interacted with several local ditch companies and came to realize that although C-BT does not have return flow obligations, removing C-BT units from these ditch systems can impact their operational viability. When considering the alternative of 240 C-BT units being removed from the Handy Ditch system, the Handy board was supportive of Larimer County trying to keep as much of the water in the ditch as possible to keep the farm viable. Like more and more ditches in the state, the Handy Ditch has had some municipal influence, with local water providers accepting Handy shares in exchange for water taps, and with eventual plans to change those shares to permanent M&I use. Currently, many of those shares are being run through the ditch and leased to local agriculture or used to irrigate city parks. A critical mass of shares needs to remain in the ditch before it's operation is severely impacted.

Municipally impacted ditch systems may be able to reduce impacts by sharing the burden of municipal impacts across the ditch, either through an ATM that could be negotiated by the ditch company on behalf of the shareholders (or a subset of shareholders) in exchange for some type of compensation. This type of arrangement could be done as an alternative to a complete change in use, or in conjunction with one. Ditch companies will need to be forceful in the conveyance loss assumptions used in chance cases to make sure that enough water is left in the ditch to operate – particularly given the potential for non-ditch water like C-BT that greatly affects operations but does not need to go through water court to leave the ditch. This concept was recommended by a local water provider during the team's search for a partner and could be a future solution for Handy and other local ditches. Permanent dry-up for M&I drought mitigation/recovery and emergency water

supply may be better addressed through more flexible water court policies, rules, or incentives to ditch companies.

5.2 Public Perception & Political Will

5.2.1 Educating and Obtaining Support of Leadership

It was critical to the success of this project that staff educate the decision makers continually and often and have a well thought out backup plan if the ATM could not be executed for any number of reasons. County staff, with the invaluable support of the expert team, was able to secure the support of County leadership via consistent informational meetings and strategizing sessions. This continuous communication allowed staff to benefit from a wide range of subject matter and political expertise from County leadership, and provided the confidence needed to negotiate the best possible deal knowing the range of acceptable terms that leadership would support. Strong political support was an important factor for the County to even attempt to implement this project given the large investment of staff time and resources and the complicated nature of negotiating a new and innovative conservation project.

5.2.1.1 Public Support

The County had to overcome, to some extent, the public perception that doing an ATM agreement was essentially buying and drying a farm. A strategy LCDNR used with the public and leadership was to lay out the options it had in front of it when LCDNR decided to explore an ATM to conserve the farm juxtaposed with the financial realities of the farm and water and the Open Space tax. The County always had the option of conserving the farm and water the way it was, but that would essentially have bankrupted the program for several years and prevented LCDNR from pursuing new or existing conservation opportunities during that timeframe. LCDNR also realizes that other publicly funded conservation organizations have pursued farm conservation but have had much more tax funding than the County and hence can purchase the land and water outright without the need for partners. Many of these examples include farms that were purchased before prices on water had skyrocketed, and they generally no longer conserve the expensive C-BT with farmland because of the cost. LCDNR chose the option that had the greatest chance of keeping the most viable farming operation possible through a creative partnership, meeting multiple conservation and water supply objectives that serve the whole Front Range, minimize the impacts to the farm, and responsibly steward county tax dollars by leveraging to spread County dollars further.

5.2.1.2 Out of County Partners

The County also received criticism for partnering with a water provider outside the county. Staff pursued a partnership with Larimer County water providers exclusively for a year before turning attention to potential partners outside of the county. Ultimately, the team was unable to negotiate a deal with the entities within Larimer County that met the goals for the project. The team would advise other entities that pursue this sort of arrangement to begin as locally as possible to the farm and exhaust those opportunities before moving outward. The intrinsic value of keeping viable farmland close to the community involved in the water sharing deal may also add to the value of the arrangement, particularly in municipalities, which tend to have multiple objectives such as those with an open space initiative that also have unmet water needs, or a water district with board members that also farm in the same ditches as the farm being conserved. Although Broomfield is outside of Larimer County, it is still within Northern Water's boundaries and the South Platte Basin. Supplying Broomfield with needed water supplies benefits the basin and prevents more farms in Larimer County from being targeted for buy and dry to fill that need.

5.2.1.3 Continued Education

Staff are hopeful that those who attend the County's educational programming, public presentations, or take the time to learn more about the project on their own will understand that the team brokered the best deal possible with the tools it had for conserving this farm. The team's primary goal was to conserve a viable farm in perpetuity. As feedback or criticism is received about the final deal, the County finds it is important to acknowledge that although it is not perfect, it is a starting point in an otherwise uncharted area. The County hopes others will use this project as an example and improve upon it, and that citizens will continue to be engaged on this issue and communicate to their water provider that they are interested in making a concerted effort to enter into water sharing agreements, rather than buy and dry, to obtain needed water supplies.

5.3 Negotiating an ATM: Successful Tips, Tricks, and Tools

5.3.1 Establish and Pursue Goals with an Open Mind About Implementation

There were various approaches that helped the team ultimately settle on a water sharing arrangement that served multiple goals but looked little like what was anticipated when the project began. What ultimately helped the team finalize the deal was to set clear project goals that everyone agreed upon. The goals gave the team a framework to work from. The team did not accept proposals that, although they might have accomplished other things for the County, ultimately did not serve the goals of the project. The goals guided the negotiations and the process. Although there seemed to be a clear path for implementing the goals at the outset, the team did not stick too firmly to that specific path but was flexible in veering off the path when doing so served the project goals. Likewise, the water partner's (i.e. Broomfield's) goals, drove the method for implementation as well. Some aspects of the final deal were important to Broomfield that the County had not previously considered. Rather than discounting something the team had not considered before; the team explored those ideas further and continued to evaluate them with the goals in mind. The team was flexible on the tradeoffs that ultimately lead to the final deal. This required the team to provide an incentive to the water partner that the team had not originally planned and to move some things around. Future teams negotiating similar water sharing arrangements should keep this flexible approach in mind to achieve successful outcomes.

5.3.2 Minimize the Cooks and Trust Your Team

Once the team reached the point of negotiating the details, the County ensured that the team members were well-informed about the project goals and range of possible terms to achieve those goals, and then stepped back and let members of the negotiating team engage with Broomfield to work out the details. This stepping back and trusting the team allowed the project to be a success because a smaller group was able to negotiate more directly and work out the details. Both parties understood that the decisionmakers would have the opportunity to contribute later and negotiate the finer points, but the bulk of the deal was already defined to provide a basis for the smaller fine-tuning. Having something more concrete to work from was critical to getting to a final deal. The team found that in meetings when there were too many representatives of each organization, it made the necessary work of thinking outside of the box and coming up with creative solutions impossible. This was imperative to come to a solution to some of the seemingly contrary goals that the two entities had for this project. For this project, the deal was ultimately agreed upon in a one-on-one meeting with Broomfield staff and Western Water Partnerships representing Larimer County.

5.4 Summary of Lessons Learned

ATMs have been discussed for over 10 years in Colorado, mostly on a theoretical level. For ATMs to be a viable tool to water resource managers in Colorado, projects like this will need to demonstrate to cities, water managers, farmers, land trusts and publicly-funded open space programs that ATMs can help these entities achieve their respective goals in a cooperative manner and at a lower cost than if they were to act alone. As with any new technology or concept, to be accepted and adopted, potential users need to have confidence that it is worth their investment of time and money. This is especially critical considering the high value and sometimes significant risks associated with land and water rights transactions. Through pilot/demonstration projects, the State can help encourage “innovators” and “early adopters” such as Larimer County and Broomfield to consider adopting ATMs to meet their organization’s goals and objectives.

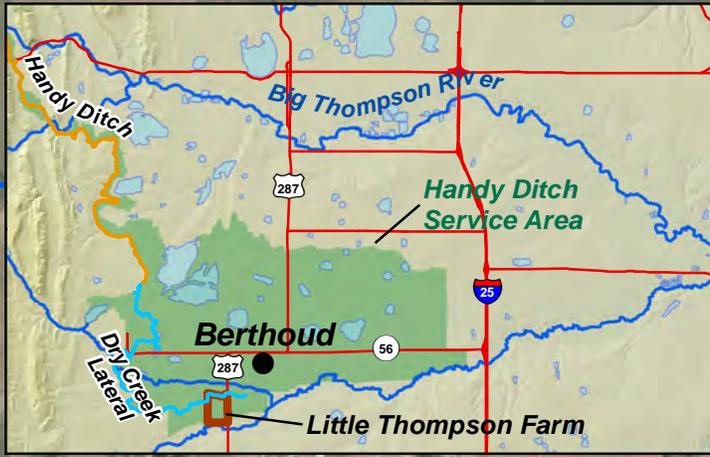
While the success of this project hinged on many critical pieces, the project team would offer the following advice to future ATM negotiators, Dedicate the staff time to get it done right, have a Plan B, educate decisionmakers and anticipate obstacles, accept that you can’t please everyone, and be willing to compromise but stick to your goals. Additionally, nothing will ever change if we don’t try new, scary, seemingly impossible things!

Section 6

Limitations

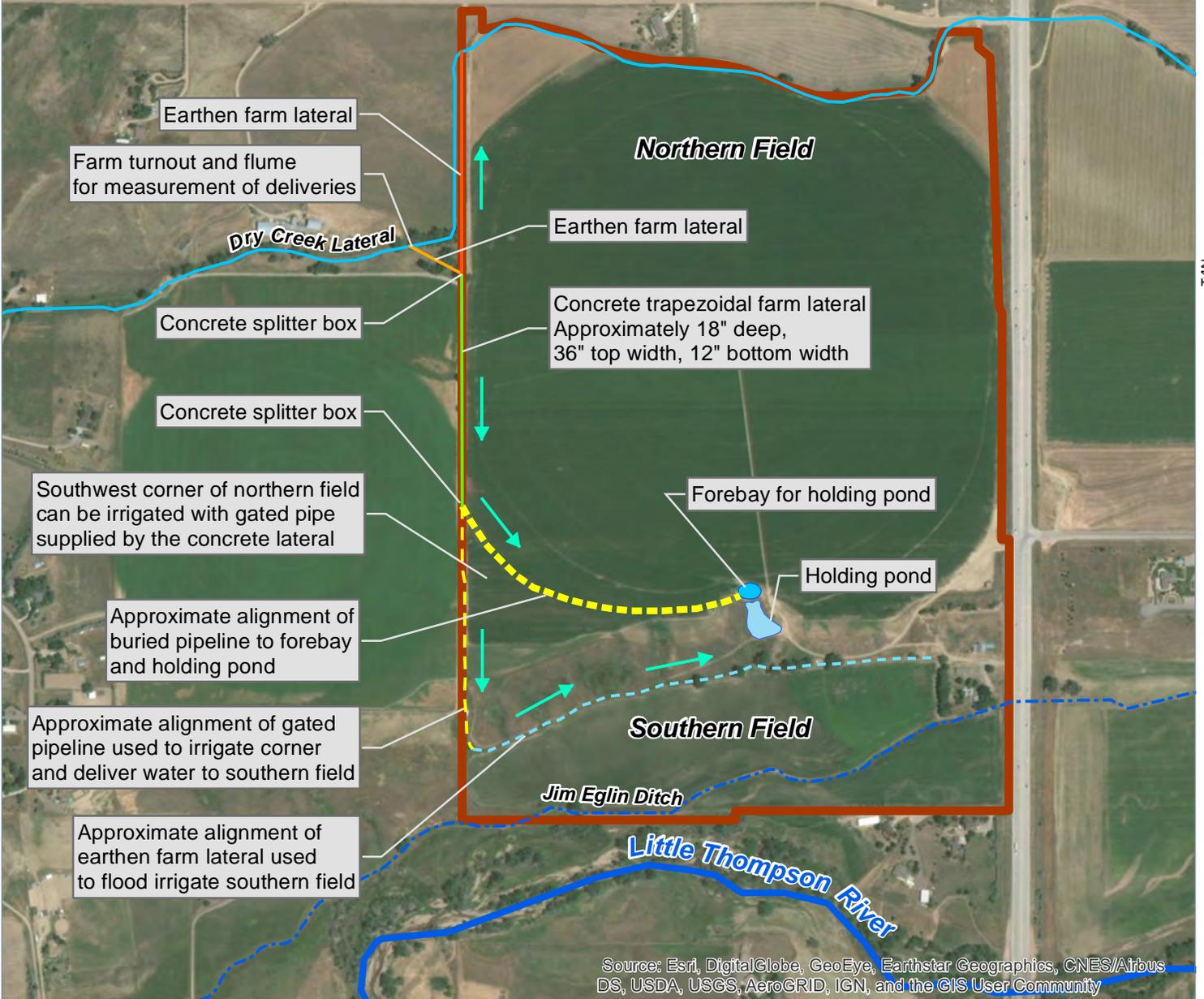
This document was prepared solely for Colorado Water Conservation Board in accordance with professional standards at the time the services were performed and in accordance with the contract between Colorado Water Conservation Board and Larimer County dated December 4, 2015. This document is governed by the specific scope of work authorized by Colorado Water Conservation Board; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Colorado Water Conservation Board and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Further, Larimer County and its consulting team make 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. All data, drawings, documents, or information contained in this report have been prepared exclusively for the person or entity to whom it was addressed and may not be relied upon by any other person or entity without the prior written consent of Larimer County unless otherwise provided by the Agreement pursuant to which these services were provided.



Legend

Little Thompson Farm



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Larimer County ATM
Little Thompson Farm

Date: January 2018
Project: 148912

Notes: Projection: UTM Zone 13, 1983
North American Datum (meters).



Figure 1

Little Thompson Farm

Appendix A: Little Thompson Farm and Water Viability Plan

Little Thompson Farm and Water Viability Plan

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Introduction

The Larimer County Open Lands Master Plan (2014) (“Master Plan”) established a goal to conserve irrigated agricultural lands for local food and crop production, as well as the other values agricultural lands can provide including wildlife habitat and movement corridors, scenic buffers, community separators, historic values, educational opportunities and other cultural values and rural character. A key part of irrigated agricultural land conservation includes protecting its associated water rights which can be quite valuable, especially along Colorado’s Northern Front Range. To accomplish this goal while responsibly stewarding public funds, the Master Plan specifically identifies investigating innovative approaches and partnerships that meet multiple purposes to conserve irrigated farm lands.

In August 2016, Larimer County Department of Natural Resources (“LCDNR”) acquired a property and associated water rights historically owned by the Malchow family (note that the property was previously known as the Malchow Farm and is currently known as the Little Thompson Farm). Upon purchasing the Little Thompson Farm (“Farm”), LCDNR engaged in a process to develop a first-of-its-kind water sharing agreement with a municipal partner through the Larimer County Open Space Alternative Transfer Method (“ATM”) Pilot Project (“Project”) funded by the Colorado Water Conservation Board (“CWCB”). The Project involved finding a municipal partner to share a portion of the water associated with the farm during certain periods (likely during drought and drought recovery years) while retaining a viable irrigated farming operation with the water going to irrigated agriculture in most years. To accomplish this goal, LCDNR developed an ATM agreement with a water provider that provides for the continued use of the majority of the water for agricultural irrigation in most years, with periodic use by the municipality. This allowed the LCDNR to conserve the food and crop production value of the farm and allowed the municipality to secure an emergency and drought water supply without having to own the water outright, which often requires the purchase of agricultural water rights and permanent drying of productive lands.

This Little Thompson Farm and Water Viability Plan (“Plan”) was written to inform strategies for maintaining the viability of the Little Thompson Farm into the future. It provides operational recommendations from a water supply and irrigation perspective so that combined farming sales revenues and water lease/sales revenues will sustain the operational costs of the farm in the long term. The Plan also provides recommendations for operations for multiple water supply scenarios, including years with a full water supply and years that the municipality uses some of the water for off-farm uses pursuant to the ATM.

The Plan should be used as a guide for the management of the water and land; ***it is not meant to be prescriptive nor limiting in the use of either.*** The intent of the Plan is to provide guidance on how to maximize the use and management of the water and land in such a way that it benefits all parties and fulfills the multiple purposes for which the land and water were conserved.

Farm Description and Historical Operations

Location

The Farm, comprising 211 acres, is located along Highway 287, one mile south of the Town of Berthoud and just north of the Little Thompson River in Larimer County. The short legal description of the property is: The North $\frac{1}{2}$ of the Southwest $\frac{1}{4}$ of Section 27, Township 4 North, Range 69W of the 6th P.M., and Lot 1A of the Second Amended Malchow MRD No 93-EX0382.

Cropping

The irrigated area of the Farm is served primarily by a center pivot that covers approximately 141 acres (see the Northern Field shown in **Figure 1**). The straight part of the center pivot irrigates approximately 104 acres. Approximately 37 additional acres are irrigated from the cornering machine that extends beyond the straight-line segment of the pivot, resulting in a total of 141 acres. Some areas to the south and northeast of the pivot are sometimes flood irrigated depending on the available water supply. The pivot-irrigated field was most recently planted in corn and sugar beets and is typically planted in each half and half on a rotational basis. The southern end of the Farm is level to gently sloping bottomland. The Southern Field, approximately 35 acres separated from the center pivot by a lateral ditch, grasslands, and row of cottonwood trees, also shown on **Figure 1**. The Southern Field has, at times, been planted in alfalfa and flood irrigated depending on the available water supply and potentially utilizes the sub-soil moisture in the southern-most parts of the field. In recent years, the lessee has planted this area in sorghum/Sudan grass or dryland wheat to avoid the need for irrigation.

Soils and Slopes

A Land Evaluation-Site Assessment was completed for the Little Thompson Farm (Appendix C of the Little Thompson Farm Stewardship Plan, September 22, 2016). The overall rating of cropland quality was good/excellent, in large part due to the prevalence of Class II (highly productive) soils and water availability. Class II soils represent 81 percent of the property, and are characterized as deep, well-drained, with a surface layer of loam or sandy loam to clay loam and sandy loam, with a subsoil of loam to silty, sandy or clay loam and slopes of 0-3%. These soils are mainly suitable for corn, sugar beets, barley, alfalfa, beans and wheat under current market conditions (however, other crops can be considered in the future). The Southern Field immediately north of the Little Thompson River is comprised primarily of Class II with some Class III soils along the northern boundary of the field. Class III soils are deep to moderately deep, well- to poorly-drained, with a surface layer of loam to clay loam, a subsoil of loam to clay and slopes of 3-5%, and mainly suitable for corn, sugar beets, barley, alfalfa, beans, wheat and some more suitable for pasture in the current market conditions (again, other crops may be considered on the Southern Field in the future). While Class III soils can encompass soils with slopes steeper than Class II, it appears that none of the soils in the Southern Field are at slopes severe enough to cause erosional problems or issues that would decrease the production value of the Southern Field.

Water Portfolio

The Little Thompson Farm was historically irrigated with 16 Handy Ditch and Reservoir Company shares (“Handy shares”) and 240 Colorado-Big Thompson (“C-BT”) units prior to its purchase by LCDNR. Both sources of water are taken from the Big Thompson River at the Handy Ditch headgate and are delivered to the farm via the Handy Ditch and then the Dry Creek Lateral.

Water Deliveries

The Handy Ditch headgate is located on the south side of the Big Thompson River in the SE ¼ SW ¼ of Section 3, Township 5 North, Range 70 West of the 6th P.M. The Dry Creek Lateral is unlined and is approximately 8 miles long. The Farm is near the end of the lateral, and the lateral runs along the north property boundary once it reaches the Farm. The Farm is the second-to-last head gate on the Dry Creek Lateral, which ends just on the east side of Highway 287.

Water is delivered to irrigators based on orders placed with the Handy Ditch Company (“Company”). The Company distributes water based on orders from shareholders and on a pro-rata basis according to share ownership. There are 900 total shares in the Company outstanding.

The Company diverts and delivers water from their direct flow rights in the early part of the irrigation season when stream flows are typically more plentiful. When flows in the river diminish and senior water rights prevent the Handy from diverting their direct flow rights, the Company will deliver the issue water from water stored in their reservoirs. Once storage water is depleted, C-BT supplies will be delivered to shareholders with C-BT contracts.

Water Quantity – Issued

The amount of Handy Ditch Company water available for distribution to shareholders is based on an annual “issue” of water made by the Company’s Board of Directors. The Company announces an initial issue of water in April or May once they have assessed the amount of water stored in their reservoirs. The issue is made in terms of “cfs (cubic feet per second) per share” and represents the amount of water that is available for delivery for each share of stock in the Company. A 1 cfs issue is equivalent to a delivery of 1.9835 acre-feet per share for irrigation season.

When Company reservoirs fill to capacity, the Company will typically issue 3 cfs at the beginning of the irrigation season. The Company may also make additional issues as the irrigation season unfolds based on the water supply situation. In very dry years when little to no water has been stored, no issue is typically granted. In average years, the Company issues 4 or 5 cfs total throughout the season, and in wet years, 6 cfs per share may be issued.

The Little Thompson Farm, by virtue of its 16 Handy Ditch shares, would be entitled to 31.7 acre-feet of water under a 1 cfs issue. As discussed below, with a typical 3 cfs issue at the beginning of the irrigation season, the Little Thompson Farm would be entitled to about 95 acre-feet of delivery by virtue of its 16 Handy Ditch shares. Below is the basic equation used to calculate the volume of delivery (in acre-feet) based on cfs issued:

$$\text{Volume of delivery (acre-ft)} = \text{Number of Handy Shares} \times \text{Issue (cfs/share)} \times 1.9835 \text{ (acre-ft/share)}$$

The amount of C-BT supply available to contract holders is evaluated at various times during each year by the Northern Colorado Water Conservancy District (“Northern Water”). Northern sets “quotas” of C-BT, which describes the amount of water that will be available in the coming year. The quota is the percentage of water compared to a full allocation that will be delivered for each unit of C-BT. A full allocation would entitle C-BT contract holders to receive 1 acre-foot of water for each unit of C-BT. A quota of 60%, for example, would then translate to an allocation of 0.6 acre-feet of water for each unit of C-BT.

Quota determinations are made based on a number of factors including the amount of water stored in C-BT and non-C-BT reservoirs, water content of snowpack, projected spring runoff, soil moisture conditions, and estimated water needs in future years.

In November, Northern will set an initial “quota” with respect to deliveries of C-BT in the following year. The November quota is typically set at 50 to 60%. The quota is subsequently re-evaluated in April and is normally increased. Depending on the water supply situation, the quota is sometimes

increased beyond the April determination. Historical records of C-BT quotas are available on Northern's website. The average quota for 1957 through 2014 was 74%. Between 2000 and 2014, the quota averaged 76%.

Water Quantity – Delivered

The Company generally delivers various water to shareholders and C-BT contract holders in a specific order. The Company will typically divert and deliver water associated with their direct flow rights early in the irrigation season. When river flow rates or senior calls diminish the amount of water available under the direct flow rights, storage water will be delivered to shareholders (the Company stores water in Ryan Gulch, Welch, and Hertha Reservoirs). Towards the latter end of the irrigation season when storage supplies are depleted, C-BT supplies are delivered to contract holders.

Seepage losses in the Handy Ditch and Dry Creek Lateral are an important consideration in determining the quantity of water that will be delivered to the farm. The seepage losses are assessed by the Company differently depending on the source of water. C-BT water is assessed a 25% loss rate, and this rate is specified in the Company Bylaws, which are attached as **Exhibit A**. Seepage losses from Company direct flow and storage supplies vary and can be as high as 50% in dry years. It should be noted that some prior engineering studies assumed much lower seepage loss rates between 11% and 15% (Leaf Engineering, 2002; Leonard Rice Engineers, 2005; TZA Water Engineers, 2002). The 50% dry-year loss rate cited above was provided by the Company board during their December 1, 2016 meeting. Coordinated deliveries among irrigators on the Dry Creek Lateral have been important, especially in dry years, to maintain a wetted ditch, which helps convey water down the ditch at a higher rate, and keeps seepage losses at a smaller proportion of the overall flow in the lateral. If water deliveries were not coordinated and water was instead delivered to individual land owners at different times, the flow rate in the lateral would be less, and a higher proportion of the flow would be lost to seepage.

Distribution of Water for Irrigation

Fields and irrigation infrastructure on the Farm are shown in **Figure 1**, and conveyance of water is described below.

Irrigation water is delivered to the Farm via the Dry Creek Lateral, and the farm turnout is located just west of the Northern Field. Water is delivered to the farm from the turnout via a short earthen ditch. A Parshall flume for water measurement is installed in the earthen ditch just downstream of the farm turnout. The earthen ditch delivers water to a concrete splitter box located on the west side of the Northern Field. From the splitter box, water is conveyed south via concrete-lined lateral that runs along the west property boundary. In addition, water can also be conveyed to the north via an earthen ditch from the splitter box to flood irrigate the northeast corner of the Northern Field. Another concrete splitter box is located at the southern end of the concrete lateral. From this splitter box, water can either be conveyed through an underground pipe to a forebay and holding/settling pond a $\frac{1}{4}$ of a mile to the east or it can be conveyed through surface pipe to fields on the southern part of the property.

Water conveyed via the underground pipeline is delivered first to a small forebay. It appears that the sediments have been removed from the forebay in the past, and that the function of the forebay is to allow some settlement and removal of sediment before water enters the holding pond and to help prevent sprinkler clogging in the center pivot. From the forebay, water passes through a culvert and into a holding pond where it is then pumped to the center pivot on the Northern Field. It appears the holding pond is unlined. However, holding ponds like the one at the Little Thompson Farm tend to have relatively low seepage rates because fine sediments accumulate in the bottom of the pond over time and reduce permeability of soils lining the pond. A diversion gate is also present at the southern

end of the holding pond, but the gate does not appear to be functional. It appears that the gate may have been used in the past to release water from the holding pond for irrigation of the Southern Field. The current farm tenant has mentioned that water from the holding pond can be released via an overflow to irrigate eastern parts of the Southern Field.

The current farm tenant has historically focused water and irrigation management on the center pivot and has not prioritized irrigation on flood-irrigated fields. When the center pivot is not operating due to maintenance issues or rainfall, water supplies to the farm are typically not curtailed for operational reasons (if water was not delivered to the farm, it would need to be spilled back to the river to prevent ditch/lateral overflows and flooding issues). When the center pivot is not operating, water deliveries have been distributed to either the Southern Field or the northwestern part of the Northern Field that is not reached by the center pivot.

The Northern Field is irrigated via a center pivot. The Southern Fields can be irrigated via flood methods. The center pivot irrigation infrastructure includes a 2003 Zimmatic pivot that is supplied via a pump at the holding pond. Flood irrigation infrastructure includes the irrigation pipe and laterals to convey water to the flood-irrigated fields.

Typically, 2 cfs has been ordered to supply the center pivot on the Little Thompson Farm. The table below was developed to show the estimated number of days that the center pivot could run with different levels of issue from the Company, assuming 16 Handy shares and a center pivot flow rate of 2 cfs. Note that requested deliveries in excess of 2 cfs to irrigate the Southern Field would potentially lower the number of center pivot operational days shown in **Table 1** below.

Table 1. Estimated Time of Center Pivot Operation for Various Levels of Handy Issue

| Issue (cfs) | Issue volume (AF) | Center pivot flow rate (cfs) | Days of center pivot operation (24 hrs) |
|-------------|-------------------|------------------------------|-----------------------------------------|
| 1 | 32 | 2 | 8 |
| 2 | 63 | 2 | 16 |
| 3 | 95 | 2 | 24 |
| 4 | 127 | 2 | 32 |
| 5 | 159 | 2 | 40 |
| 6 | 190 | 2 | 48 |

The C-BT units historically used on the Farm will allow additional days of center pivot operation once the direct flow and storage supplies associated with Handy shares are depleted. **Table 2** shows the number of additional days that the center pivot could be run assuming 240 units of C-BT ownership, various levels of C-BT yield, and a 2 cfs flow rate in the center pivot.

Table 2. Estimated Additional Time of Center Pivot Operation for Various Levels of C-BT Yield

| C-BT yield (AF/unit) | C-BT volume at turnout (AF) (assuming 25% loss) | Additional days of center pivot operation (24 hrs) |
|----------------------|-------------------------------------------------|----------------------------------------------------|
| 0.5 | 90 | 23 |
| 0.6 | 108 | 27 |
| 0.7 | 126 | 32 |
| 0.8 | 144 | 36 |
| 0.9 | 162 | 41 |
| 1 | 180 | 45 |

Description of the Water Sharing Agreement

Water Supply

The Project includes an agreement with the City of Broomfield (“City”) allowing for the continued use of the irrigation water on the agricultural lands, while providing for the periodic leasing of that water for municipal and industrial (M&I) use. This Agreement is attached as **Exhibit B**. The terms of the agreement include: (a) 115 C-BT units to be sold from LCDNR to the City, (b) 80 C-BT units to be available for leasing to the City periodically and otherwise available to the Farm for irrigation, and (c) 45 C-BT units retained in LCDNR’s ownership for irrigation. The Agreement also provides Larimer County with a perpetual first right of refusal to lease the 115 C-BT units if the City does not intend to use the water in a given year at the agreed upon rate of the Northern Water municipal assessment rate and transfer fees, plus a 10% administrative fee. C-BT water is a contract water right that is administered by Northern Water and its contract water status allows it to be fully consumable and used for both irrigation and municipal use on a year-by-year basis.

LCDNR also has 16 Handy Ditch shares that will remain on the farm for irrigation purposes. LCDNR plans to purchase 6 additional Handy shares to supplement the irrigation water supply on the Farm. See **Table 3** below for a summary of the original and planned water ownership and use.

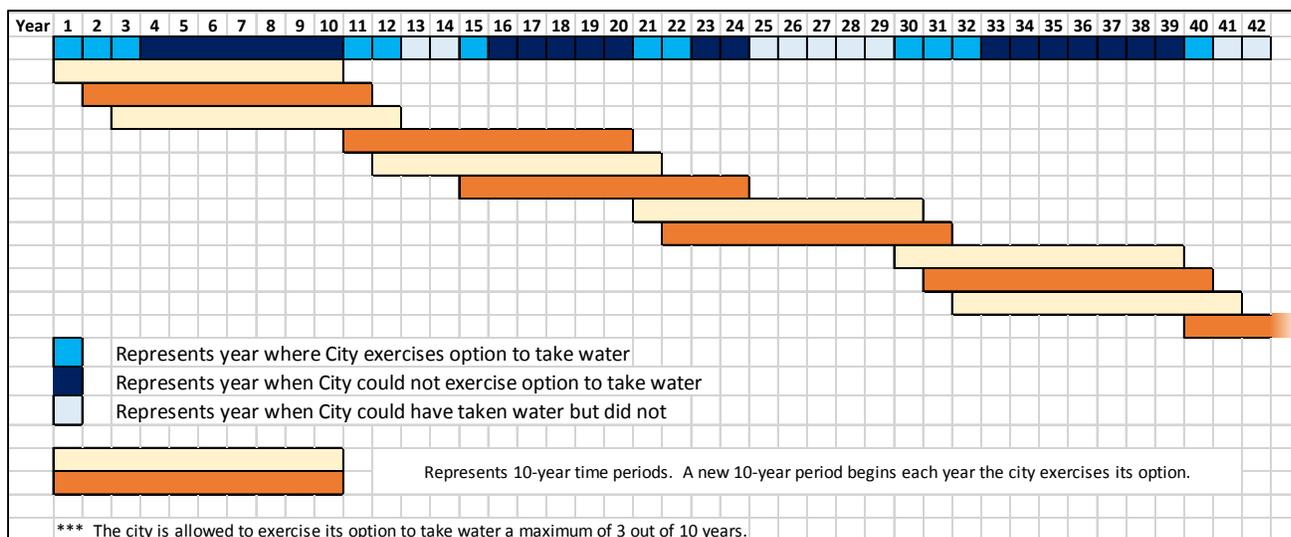
Table 3. Summary of Original and Planned Water Ownership and Use

| Water Source | Previous Ownership and Use | Future Ownership and Use |
|--------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handy Shares | <ul style="list-style-type: none"> • 16 shares for irrigation | <ul style="list-style-type: none"> • 22 shares for irrigation (16 original shares plus 6 additional shares to be acquired) |
| C-BT Units | <ul style="list-style-type: none"> • 240 units for irrigation | <ul style="list-style-type: none"> • 115 C-BT units sold to Broomfield with first right to lease-back for irrigation • 80 C-BT units used primarily for irrigation, subject to periodic M&I use • 45 C-BT units for irrigation |

Northern Water’s Rules for Sharing Water

Northern Water, the entity that provides and governs C-BT water, has rules regarding the use of that water when it is subject to an interruptible supply agreement (or ATM). Northern Water’s rules are included in **Exhibit C**. When the primary (interruptible) use is irrigation and the secondary use is non-irrigation (M&I), the secondary use of the associated C-BT water is limited to a maximum of 3 out of 10 years over a rolling 10-year period. A rolling 10-year period is defined as the period beginning the year the City initiates its option to receive the 80 C-BT units in the ATM (“ATM Units”). Once a 10-year period is initiated, the City may exercise its right to take those C-BT units up to 3 times during this period. **Figure 2** below illustrates how the 10-year rolling period works and examples of how the 3 years the City utilizes the ATM Units might line up. It shows hypothetical years during which the City used the ATM Units, years during which the City could not use ATM Units because they had already used the Units the maximum of 3 years in the 10-year rolling period, and hypothetical years when the City could have implemented the ATM but did not. For example, in **Figure 2**, the City would have hypothetically implemented the ATM in years 1, 2, and 3 and would not be able to implement the ATM again until year 11 since the ATM would have been used in 3 years of the last 10 until year 11 is reached.

Figure 2. Illustration of 10-year Rolling Period



Northern Water’s 3 out of 10-year rule does allow for a few exceptions for the M&I user in the interruptible supply agreement to use the water for non-irrigation purposes for additional years above the 3 years out of 10, provided there is sufficient demonstration of drought and associated need for the water supplies. The Agreement between LCDNR and the City acknowledges that, should the parties agree to the terms in good faith, the ATM Units may be used additional years above the 3-in-10. Overall, the Northern Water rules provide for flexibility in developing an interruptible water supply agreement to meet the purpose of these agreements, to keep the water regularly in agriculture, and provide true dry-year water supplies to the M&I provider.

Notices and Timelines

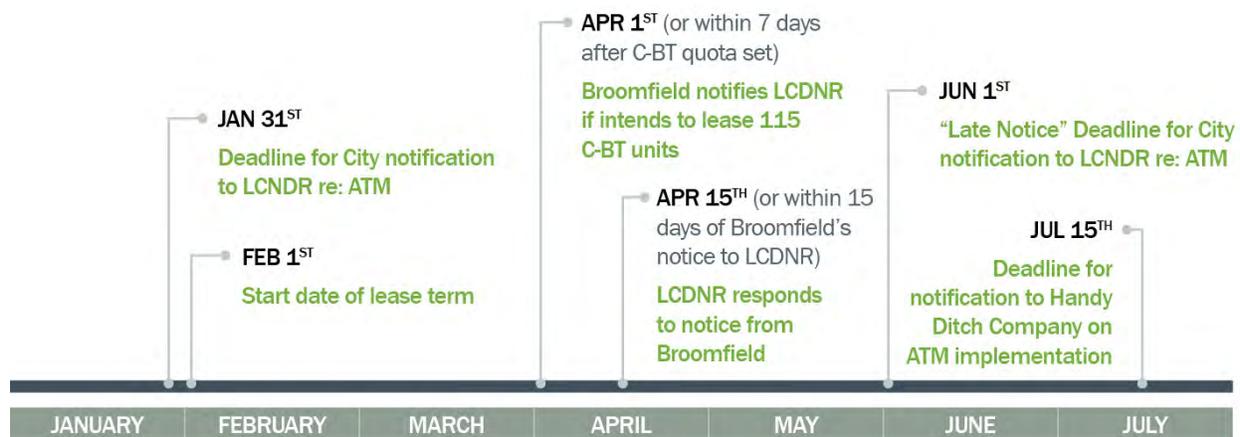
The agreement between LCDNR and the City includes notification requirements related to the use of the ATM Units.

- When the ATM is enacted, Broomfield is required to pay for all of the ATM Units in a given year.
- In years when the City intends to exercise its option to use the ATM Units, the City must notify LCDNR of its intention prior to January 31st of that year.
- However, the City may also exercise its option after January 31st up until June 1st (“Late Notice”). In that case, the City would notify LCDNR of its intent to exercise its option as soon as it makes the determination to use the water to allow for farm planning (e.g. rental of alternative water sources). Also, the City would reimburse LCDNR for all expenses incurred because of the Late Notice, including but not limited to the purchase or planting/application of seed and/or fertilizer, as well as labor expenses, equipment use/rental costs, and such other reasonable expenses incurred prior to the Late Notice.

The Farm lease between LCDNR and a farm lessee will be adjusted accordingly to coincide with the ATM lease notification requirements.

When the ATM Units will be used by the City, the Handy Ditch board needs to be notified no later than July 15th of that year per the Company’s bylaws (attached as **Exhibit A**). The Company requires notification to request the C-BT units to be delivered through their system. The Company also needs to know how many C-BT units are being used to complete their water accounting appropriately. To activate the transfer to the City, a CD4 card (example included as **Exhibit D**) will need to be completed and submitted to Northern Water which can be done at any time during the year.

Figure 3. Timeline Illustrating Deadlines



Contact names regarding notifications are provided below. Contact information is included in the **Contact Information** section at the end of this plan.

- Broomfield
- Handy Ditch Company
- Northern Water
- Larimer County Department of Natural Resources

Potential Changes in Water Supply and Operations

Brown and Caldwell conducted a consumptive use analysis to better understand the current and future adequacy of total water supplies to the Little Thompson Farm. As described previously, the Farm will irrigate using a combination of Handy shares and C-BT units. Consumptive use analyses representing different levels of Handy share ownership were used to evaluate how the Farm might operate under various water supply scenarios. It was also used to estimate how many C-BT units would be needed in relation to the number of Handy shares to fully irrigate a corn or sorghum crop in different years. Corn and sorghum were selected because they represent a range of high- and low-water use crops, represent the historical crops that have been grown on the farm, and are appropriate for the Farm given the current market conditions, irrigation infrastructure, and soils. The consumptive use analyses also accounted for variability in supplies based on hydrologic conditions and included wet, normal, dry, and very dry years from historical data. Only the 141 acres under the center pivot were considered in the analysis.

Handy Supply

Currently, the Farm uses 16 Handy shares, and LCDNR plans to acquire 6 more for a total of 22 Handy shares. Brown and Caldwell, in the below analysis, assumed a conservative ditch loss of 50 percent for Handy shares based on discussions with the Company. Estimates of ditch loss from other

studies of the Handy system have cited conveyance loss rates as low as 11 to 15 percent (Leonard Rice Engineers, 2005). However, given the specific facilities used to convey water to the Little Thompson Farm and input from the ditch company, the study team determined that the use of more conservative ditch loss estimates of 25 or even 50 percent would be prudent for the analysis, especially if additional water rights at the end of the Dry Creek Lateral are sold in the future and less water is needed at the end of the ditch. The analysis also used historical hydrologic conditions over the 1992-2002 time-period because this time period reflects a variety of wet, dry, very dry, and average hydrologic years, and provides insights regarding the adequacy of irrigation supplies under a variety of conditions. The water supply conditions of average, wet, dry, and very dry for each year are related to the estimated number of C-BT units needed to fully supply the crop. The C-BT unit values are based on the results of the historical consumptive use model, which relies on water supply conditions such as precipitation, Handy Ditch deliveries, temperature, and soil moisture. The analysis focused on water needs for corn (for grain production) since it is the main crop historically grown on the farm and is a water-intensive crop, so provides a more conservative starting point.

The results of this analysis are shown in the tables below. The summary of results reflects the number of C-BT units needed to fully irrigate the 141 acres irrigated by the center pivot and, based on the adequacy of water supplies, also includes potential water operations alternatives.

Table 4. Potential Farm and Water Operations Assuming 125 units of C-BT can be used for irrigation (including 80 ATM Units), and 22 Handy Ditch shares

| Year | Water Supply Conditions | Number of C-BT units needed to fully supply corn crop * | Water operations |
|------|-------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1992 | average | 100 | Grow corn. Use all the water for irrigation |
| 1993 | wet | 26 | Grow corn. Use Handy water for irrigation, lease 80 C-BT units to other users |
| 1994 | average | 118 | Grow corn. Use all the water for irrigation |
| 1995 | wet | 48 | Grow corn. Use Handy water for irrigation, potentially lease 80 C-BT units to other users |
| 1996 | average | 93 | Grow corn. Use all the water for irrigation |
| 1997 | average | 79 | Grow corn. Use all the water for irrigation |
| 1998 | dry | 151 | Possibly grow water-short corn crop, lease supply to finish the crop, or lease all of the water to other users |
| 1999 | average | 69 | Grow corn. Use all the water for irrigation |
| 2000 | very dry | 202 | Fallow and lease all the water to other users |
| 2001 | dry | 158 | Possibly grow water-short corn crop, lease supply to finish the crop, or lease all of the water to other users |
| 2002 | very dry | 331 | Fallow and lease all the water to other users |

* Assumes 22 Handy Ditch shares at 50 percent loss.

Summary of Table 4:

- In wetter Years 2 and 4, (2 of 11), when the number of C-BT units required to grow corn is approximately equal to or less than 45, the 80 C-BT units could be leased on the open market as an additional income stream for the farm, and the remaining water could still support a full corn crop.
- In Years 1, 3, 5, 6, and 8 (5 of 11), when the estimated number of C-BT units needed to grow corn is between 45 and 125, corn was assumed to be grown using the full water supply for irrigation.

- In drier Years 7 and 10 (2 of 11) when the estimated number of C-BT units required to grow corn was greater than 125 but less than 160, a water-short crop of corn could be grown, additional water could be leased to finish the crop, the land could be partially fallowed, or the field could be fully fallowed and all the water could be leased on the open market if not being used by the City.
- In the driest Year 9 and 11 (2 of 11) when the estimated number of C-BT units required to grow corn was greater than 160, the land could be fallowed and all the water could be leased to other users if not being used by the City. Alternatively, instead of fallowing, a dryland crop such as Sudan grass could be planted with the potential that a minimal amount of water from the Handy shares and timely rains could help sustain the crop.

Again, corn was used in the above projections as the most water-thirsty crop example, but there are numerous other scenarios of crops that could be grown on the site that require less water, an example of which is described below in **Table 5**: “Alternatives for Farming Under Water Short Conditions”.

Sorghum was analyzed as an alternative crop that might be grown in drier years, or when the 80 C-BT units are being used by the City. For the same time-period of 1992-2002, **Table 5** below indicates which years may have been suitable for growing sorghum instead of corn, since sorghum is a less water-intensive crop. Sorghum is also generally less profitable than corn, therefore the table assumes a preference for growing corn if an adequate water supply is available.

Table 5. Alternatives for Farming Under Water Short Conditions Assuming 125 units of C-BT can be used for irrigation (including 80 ATM Units), and 22 Handy Ditch shares

| Year | Water Supply Conditions | Number of C-BT units needed to fully supply corn crop * | Number of C-BT units needed to fully supply sorghum crop * | Water operations |
|------|-------------------------|---------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 1992 | average | 100 | 39 | Grow corn. Use all the water for irrigation |
| 1993 | wet | 26 | 0 | Grow corn. Use Handy Ditch for irrigation, lease 80 C-BT units to other users |
| 1994 | average | 118 | 32 | Grow corn. Use all the water for irrigation |
| 1995 | wet | 48 | 13 | Grow corn. Use Handy water for irrigation, potentially lease 80 C-BT units to other users |
| 1996 | average | 93 | 28 | Grow corn. Use all the water for irrigation |
| 1997 | average | 79 | 6 | Grow corn. Use all the water for irrigation |
| 1998 | dry | 151 | 76 | Possibly grow water-short corn crop or grow fully-irrigated sorghum. Use all the water for irrigation |
| 1999 | average | 69 | 8 | Grow corn. Use all the water for irrigation |
| 2000 | very dry | 202 | 125 | Potentially grow fully-irrigated sorghum or fallow and lease all the water to other users. |
| 2001 | dry | 158 | 100 | Possibly grow water-short corn crop or grow fully-irrigated sorghum. Use all the water for irrigation |
| 2002 | very dry | 331 | 247 | Fallow and lease all the water to other users |

* Assumes 22 Handy Ditch shares at 50 percent loss.

Summary of Table 5:

- In **Years 7 and 10**, the two years with average to slightly dry conditions, when the water supply would be right on the cusp of providing a full water supply for corn, an alternative of growing sorghum or another low-water crop may be a good option to get a full yield.

For reference information regarding comparative irrigation information for various crops, **Table 6** describes the net irrigation requirements for typical crops grown in northeast Colorado. Net irrigation requirement is the amount of water a crop will consume if fully irrigated minus the effective precipitation. The net irrigation requirement does not account for delivery efficiencies associated with irrigation or ditch systems. Most of the data in **Table 6** were derived from work conducted on the South Platte Decision Support System and are described in a technical memorandum entitled “Task 59.2 – Irrigation Requirements at Climate Stations”. Data describing sorghum irrigation requirements were developed using a crop consumptive use model.

Table 6. Net Irrigation Requirements for Various Crops Typically Grown in Northeast Colorado

| | Alfalfa | Corn (grain) | Dry Beans | Grass Pasture | Small Grains | Sugar Beets | Sorghum |
|---------------------------------------|---------|-----------------|--------------|------------------|-----------------|----------------|---------|
| Net Irrigation Water Requirement (in) | 24.6 | 16.6 | 12.2 | 26.3 | 15.1 | 18.7 | 13.2 |

Variable Climate Conditions

It should be noted that the water operations alternatives presented in **Tables 4** and **5** above are relevant from a farming perspective in the context of historical climate conditions. However, Broomfield may or may not choose to implement the ATM during times when water supplies for farming are low (i.e. times when it makes the most sense to fallow from a farming perspective). Ideally, Broomfield and LCDNR will communicate early in the water year (December-January) to evaluate their water needs and plan each year.

Additionally, the historical use analyses used to better understand the adequacy of the water supply to the Little Thompson Farm are based on a historical study period, where climate conditions, hydrologic conditions, and ditch diversions were known. However, future farm and water operations will be based on fewer pieces of known information. For example, climate conditions and precipitation amounts during an upcoming irrigation season will be unknown during the winter and spring when farm planning occurs. Consumptive use analyses based on historical conditions can be useful for identifying potential alternatives and tradeoffs, but may have limited value in predicting the alternative that should be chosen prior to the start of the farming season. Indicators such as snowfall totals and runoff forecasts should be useful in considering operational alternatives. Efficient and timely irrigation practices may also help stretch water supplies and provide water to crops when it is most needed and these are discussed in more detail in the Agronomic/Sustainability Considerations section below.

Little Thompson Farm Financial Viability

It is the nature of the industry that not all farms are profitable every year. This may be due to a number of factors outside the farmer's control such as weather, disease, or changes in commodity prices, in addition to certain management decisions. However, to remain as a viable business enterprise, a farm must have enough profitable years to offset the years with negative returns.

Since this farm is rented to a tenant farmer, a gross margin analysis is appropriate. The gross margin analysis looks at only the costs and revenues directly involved in growing a crop on the Little Thompson Farm. The fixed costs of the tenant farmer for items such as equipment or debt service are not considered as the tenant farmer is assumed to own or lease other properties and would not need to purchase any new equipment to grow a crop on this farm, due to the farm's size and proximity to other farming operations. Thus, considering this property as a marginal addition to a farmer's other properties is the proper accounting stance.

The gross margin for the Little Thompson Farm is calculated for three scenarios; a wet year, a dry year, and a very dry year. These scenarios were developed by Brad Walker of Ag Skill, Inc., based on his experience with the property and expertise about the local market and environmental conditions. Although these scenarios have not historically occurred in equal proportion, the team acknowledges that it cannot predict future hydrologic or environmental conditions, and thus the analysis considers each scenario equally to ensure that the farm can be viable not only under ideal or even marginal environmental conditions, but also across prolonged dry periods and even severe droughts.

Different cropping patterns are considered for each scenario, reflecting the management decisions that would likely be made in each case. Also, each scenario is analyzed for both a year where the ATM is activated and some of the water is diverted to a municipality, and a year where all the water stays on the farm. While vetting the ATM project to test the farm's viability, the team needed to make assumptions about the on-the-ground impacts to the farming operations of the ATM agreement, including the resulting terms of the farm lease once the ATM agreement is executed. One of the assumptions underlying the analysis below is that the rental payment would be partially refunded to the farmer in ATM years. Ultimately, Larimer County and the tenant farmer agreed to slightly different terms in the 2018 farm lease, but will continue to re-evaluate these terms as impacts to the farm are tested on-the-ground. This reflects the conservative nature of this analysis and that real-world conditions will likely be better than assumed here. This analysis intentionally assumed as many factors against the farm as possible to build in a cushion for the unknown and ensure resilient viability.

In the wet year scenario, the tenant farmer is assumed to plant irrigated corn and sugar beets, plus some dryland milo and sorghum/Sudan grass. The corn receives 18 inches of irrigation water and the sugar beets receive 24 inches, for a total water use of about 276 AF.

For the dry year scenario, the farm still grows irrigated corn, but no longer grows sugar beets. The dryland milo and sorghum/Sudan grass acres expand to use the acres that were planted to sugar beets in the wet year scenario. The corn only receives 12 inches of irrigation water in this scenario, for a total water use of about 141 AF.

The very dry year scenario sees the corn replaced by wheat, which only receives 4 inches of irrigation water. The rest of the farm is still planted with dryland milo and sorghum/Sudan grass. The total water use in this scenario is only about 47 AF.

This analysis is based on a number of production and price assumptions, which are detailed below in Table 1. Each scenario's models attempt to represent the results of representative years (i.e. an average wet year, an average dry year, and an average very dry year). As such, the results are highly

sensitive to many of the assumptions, particularly the prices of the crops used in the model. A change in the price of one or more of the crops can dramatically change the results.

Assumptions

The following table presents the major assumptions that underlie the farm financial model used to calculate the gross margin of the farm under each scenario.

| Table 7. Major Assumptions Underlying Farm Viability Calculations | | | | | |
|--------------------------------------------------------------------------|-------|--------------------------|-----|----------|-----------------|
| Crops Grown | Units | Crop Yields (Units/Acre) | | | Price (\$/Unit) |
| | | Wet | Dry | Very Dry | |
| Corn | bu | 210 | 170 | | \$4.00 |
| Milo | bu | 100 | 100 | | \$4.00 |
| Sorghum/Sudan | ton | 2 | 2 | 1.8 | \$80.00 |
| Sugar Beet | ton | 42 | | | \$45.00 |
| Wheat | bu | | | 60 | \$3.60 |

Note: Not all crops are grown in all scenarios

Source: Brad Walker, Centennial Ag Supply Co. Personal communication, June 2017.

Additionally, the model assumes various farm lease arrangements as discussed above that are subject to negotiation between the tenant farmer and County and will likely evolve over time with the market and as the ATM is tested. The following assumptions, however, underlie the economic viability analysis and may be used as reference as farm lease terms continue to evolve over time. The model assumes a rental amount of \$26,600 for the entire farm, both the irrigated and dryland sections. It also assumes that the rental payments are paid by the tenant farmer every non-ATM year and half of the rent (\$13,300) is refunded to the tenant farmer in every ATM year. The rent is split evenly across all 187.5 acres, with no difference between irrigated and dryland acres, for an average of about \$142 per acre. While this overestimates the rent for the dryland portion and underestimates the rent for the irrigated portion of the farm, it makes no difference for the overall farm profitability. Finally, the lease payments that the water provider pays to Larimer County to lease the water in ATM years, are retained by Larimer County and not shared with the tenant farmer, other than to refund the rental payment as discussed above.

Water Assumptions

As discussed previously, the farm originally had 16 Handy Ditch shares and 240 C-BT units. As part of the agreement with Broomfield, 115 C-BT units were sold and 125 C-BT units were retained by Larimer County. Of those 125 units, 80 C-BT units were placed into an interruptible supply agreement or ATM, also with Broomfield. The following table shows the water currently available to the farm both with and without the water subject to the ATM. Based on previous analyses, this evaluation also assumes the purchase of 6 additional Handy Ditch shares by the County.

| Table 8. Average Water Availability on the Little Thompson Farm | | | | |
|------------------------------------------------------------------------|-------------------------------|------------|---------------------------------|------------|
| Water Source | ATM Water Used on Farm | | ATM Water Leased to City | |
| | Shares/Unit | AF | Shares/Unit | AF |
| Handy Ditch | 22 | 210 | 22 | 210 |
| C-BT | 125 | 69 | 45 | 25 |
| Total | | 279 | | 235 |

Note: The number of acre feet associated with each source of water is based on the historical average yield per share from each source. Source: Brown and Caldwell, January 2016. Harvey Economics, 2017.

Historically, a C-BT unit yields about 0.73 AF per unit ¹ at the source and a Handy Ditch share yields, on average, 9.5 AF per share at the head gate of the farm. The Handy Ditch Company charges a 25 percent shrinkage rate to C-BT water that is delivered through its system. Based on these numbers, we assume that about 44 AF less water will be delivered to the farm in years when the 80 C-BT units are leased through the ATM, no matter if the year is wet, dry, or very dry. Larimer County reserved a first right of refusal to lease back the 115 C-BT units when available, as discussed below, that may provide more water supply flexibility to the farmer than represented in these analyses. Additionally, in all scenarios, it is assumed that the farm loses the full 44 AF from the amount of water that it would receive without the ATM.

The water was distributed equally conservatively in that the scenarios were developed using the amount of water necessary to grow a full crop for the type of crop selected, not allocating all of the water available in each average year, which may or may not result in higher yields. For example, the wet year scenario uses about 276 AF, less than the 279 AF available in an average year. The same is true in a dry year scenario; this scenario uses about 141 AF, much less than the 174 AF that could be available even if the Handy Ditch losses were 50 percent instead of 25. In the very dry year case, this causes the farm to have almost no irrigation water. This conservative analysis shows that the farm has extra water and could still grow a full crop in less than average years for each scenario, giving the farm more financial flexibility in the ATM years when it may not typically get enough water to grow a full crop, resulting in lower yields.

Results

The financial impacts to the farm for each scenario under both the non-ATM and ATM years are presented below. Each scenario presents the acreage grown and the gross margin under the non-ATM and ATM years for each crop.

Wet Year Scenario

The financial impacts to the farm from the ATM being exercised during a wet year are illustrated in the following table. These results represent the difference in gross margin on the farm due to lowered yields caused by a more limited water supply.

¹ C-BT Project Quota, Northern Colorado Water Conservancy District www.northernwater.org various years.

| Table 9. Financial Results from the Wet Year Scenario | | | | | | |
|--------------------------------------------------------------|------------------|----------------|---------------------|-----------------|-------------------|------------------------------------|
| Crops Grown | Acres | | Gross Margin | | | |
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Corn | 140.7 | | \$29,699 | \$19,727 | -\$9,972 | \$8 |
| Milo | | 6.5 | -\$284 | -\$284 | \$0 | \$461 |
| Sorghum/Sudan | | 7.8 | -\$71 | -\$71 | \$0 | \$553 |
| Sugar Beets | 32.5 | | \$23,756 | \$19,957 | -\$3,799 | -\$1,494 |
| Total | 173.2 | 14.3 | \$53,099 | \$39,328 | -\$13,771 | -\$471 |

Source: HE, 2017

Not surprisingly, the loss of 44 AF causes a large decline in the profitability of the farm. Of course, this is an extreme assumption in shrinkage given this wet year scenario, but is maintained for consistency across the three scenarios. Given this assumption, the gross margin for corn drops by about one third, while the gross margin for sugar beets drops by about 15 percent. The returns from the dryland crops are unaffected. Overall, there is about a 25 percent drop in the total gross margin from the farm. However, the rent refund of \$13,300, almost equals the overall loss due to the lease water not being on the farm. This shows that in this scenario, the tenant farmer can almost be made whole by the rent refund. Also note that the farmer loses money on the dryland milo and sorghum. This is due to the way that the rental costs are distributed, with dryland being over-charged and irrigated land being under-charged. In Larimer County, irrigated land generally rents for about 5 times the amount for dryland. If the rental amount assigned to dryland is reduced and the amount assigned to irrigated land is increased up to the 5 to 1 ratio, then the two dryland crops will be profitable. However, any rent taken away from the dryland crops gets added to the irrigated crops, making them less profitable. Overall, this will make no difference to the total farm profitability.

Dry Year Scenario

The following table depicts the financial impact of the water lease in the dry year scenario. In this scenario, corn is the only irrigated crop.

| Table 10. Financial Results from the Dry Year Scenario | | | | | | |
|---------------------------------------------------------------|------------------|----------------|---------------------|-----------------|-------------------|------------------------------------|
| Crops Grown | Acres | | Gross Margin | | | |
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Corn | 140.7 | | \$8,649 | -\$4,899 | -\$13,548 | -\$3,567 |
| Milo | | 30.3 | -\$1,325 | -\$1,325 | \$0 | \$2,149 |
| Sorghum/Sudan | | 16.5 | -\$150 | -\$150 | \$0 | \$1,170 |
| Total | 140.7 | 46.8 | \$7,173 | -\$6,375 | -\$13,548 | -\$248 |

Source: HE, 2017

This scenario has the most dramatic difference between the non-ATM year and the ATM year. A profit of over \$8,600 becomes a loss of \$4,900 for the corn crop. In this scenario, there is just enough water applied to grow a corn crop, so the loss of over half the water has a dramatic impact on the yield and the revenue. Overall a profit of about \$7,200 turns into a loss of around \$6,400. The rent refund offsets almost all of the loss for this scenario, turning a large loss into a much smaller one.

Very Dry Year Scenario

Wheat replaces corn as the irrigated crop in the very dry year scenario; again, the dryland crops stay the same. The results for the very dry scenario are described in the following table.

| Table 11. Financial Results from the Very Dry Year Scenario | | | | | | |
|--------------------------------------------------------------------|--------------|-------------|------------------|------------------|-----------------|-----------------------------|
| Crops Grown | Acres | | Gross Margin | | | |
| | Irrigated | Dryland | Non-ATM | ATM | Difference | Difference with Rent Refund |
| Wheat | 140.7 | | -\$16,387 | -\$23,054 | -\$6,667 | \$3,313 |
| Milo | | 30.3 | -\$4,961 | -\$4,961 | \$0 | \$2,149 |
| Sorghum/Sudan | | 16.5 | -\$414 | -\$414 | \$0 | \$1,170 |
| Total | 140.7 | 46.8 | -\$21,762 | -\$28,429 | -\$6,667 | \$6,633 |

Source: HE, 2017

In this scenario, there are no profitable crops. The non-ATM year in this scenario only uses about 47 AF of water, so in the ATM year, the farm is essentially without any irrigation water. This lack of water makes a bad situation worse. As this is the scenario with the least water applied overall, the loss of water has a much smaller impact to the farm, about \$6,700 compared to over \$13,000 difference in the other two scenarios. However, the rental refund of \$13,300 more than covers the impact of the ATM and is actually an improvement on the returns from a non-ATM year. From the point of view of the tenant farmer, a very dry year is the best year for the ATM to be exercised as the farmer would be better off than if the ATM were to be pulled in this year than if there were no ATM at all.

Once again, these results are highly dependent on the prices for the various crops. For example, a milo price that is only a dollar higher per bushel would make it a profitable crop in every scenario. The commodity prices are set on the world market and have no relationship to the weather conditions in Colorado. The results for individual years as presented in these three scenarios show that the farm can have considerably differing results based on the scenario. However, over the longer term, there will be years that mimic each of these scenarios and many years that are in between the scenarios. And, two of the scenarios (wet and dry) assume a water use that is less than the water that is available to the farm. This provides a conservative analysis and suggests that the farm may have more water (and higher profitability) under the ATM year portion of the scenarios. The long-term viability is examined below.

Long Term Viability

The permutations and combinations of the three scenarios, with and without the ATM being exercised, all within a 3-in-10 year period are myriad. Two example decades are examined for demonstration purposes; an average decade and a severely dry decade. The average decade looks at a ten-year period with three wet, four dry and three very dry years, much like the study period chosen for the engineering analysis above of 1992-2002 with more proportional dry and very dry than wet years. There are three ATM years during the period, one occurring during each of the three hydrologic scenarios. Although it is unlikely that Broomfield would use one of their 3-in-10 years on a wet year, this analysis helped inform the team whether some kind of hydrologic requirement needed to be included in the agreement that restricted the water provider's exercise of the ATM to dry and/or very dry years. The severe decade investigates a ten-year period with five dry and five very dry years. The ATM is exercised once during a dry year and exercised twice during the very dry years. The severe decade is meant to demonstrate a close-to-worst-case scenario to ensure farm viability in severe and prolonged drought conditions and is not intended to be representative of either historical conditions or a prediction for future conditions. The rent is refunded in all ATM years as assumed above, for consistency.

Over the ten years of the average decade, the gross margins in the individual years range from a loss of about \$15,100 to a profit of over \$53,000. The total gross margin over that time-period is around \$128,600, for an average annual gross margin of \$12,900. For comparison, the same farm with an identical water portfolio and no ATM years would have a total gross margin over that time period of about \$122,700. This is because in a very dry year, the ATM is more profitable than growing crops.

In the severe decade, the annual gross margins with the ATM range from a loss of \$14,300 to a profit of over \$7,100, but sum to a total gross margin of almost \$60,000. The corresponding average annual gross margin is about negative \$6,000. In comparison, the same farm with an identical water portfolio without an ATM would have a total gross margin over that time-period of about negative \$7,300. Again, this is due to the increased profitability of an ATM year as compared to a very dry year farming.

As can be seen in the severe decade, it is possible to have a decade where the average annual gross margin is negative. However, as long as a decade has at least two wet years and no more than 5 very dry years, it will have a positive gross margin. Ultimately, one wet year can offset about 3 very dry years. This shows that under the scenarios that were examined, it is very likely that the Little Thompson Farm will remain a viable agricultural operation in the long term with the ATM exercised 3 out of every 10 years.

Ultimately, if the ATM is exercised in only the very dry years of the scenarios, regardless of the decade, the Little Thompson Farm will be better off financially than if there were no ATM in place because of the financial benefits to the farmer and landlord of the reduced rent obligation and the dry-year payment generated in an ATM year, in addition to the up-front capital generated from Broomfield's 40% buy-in to the ATM.

While the ATM, when exercised in a wet year, reduces the financial boon of that wet year, the ATM when exercised in a very dry year leaves the farmer financially better off than growing crops. It may be that the steep risk-reward cycle typical of farming is smoothed out a bit by the ATM, and farming becomes a more even-keeled venture with an ATM in place.

Agronomic/Sustainability Considerations

During years when the Farm is fallowed or partially-fallowed, several agronomic and maintenance activities should be considered for the infrastructure and overall health of the farm. Several activities during fallow years and years following a fallow year are listed below:

- During fallow years
 - Dryland sorghum or Sudan grass could be planted to maintain soil health, reduce weed problems, and potentially generate revenue. If timely rains occur, it is possible that the sorghum would produce a yield that offsets costs.
 - If no crop is planted, weed controls should be implemented via herbicide or tillage to prevent the establishment of noxious weeds.
 - If tillage activities are implemented to control weeds, it can also be useful for preventing soil erosion if the tillage forms large clods of soil. In addition, creating a rough soil surface can help enhance infiltration of rainfall into the soil profile.
 - Weed control should also be conducted in the holding pond and earthen laterals.
 - Irrigation equipment should be inspected and necessary maintenance should be conducted.
 - Establishment of a cover crop and leaving crop residue on the soil will be important to prevent wind erosion. In addition, these practices help to maintain soil permeability/fertility and (in the case of cover crops) to control weeds.
- After fallow years
 - It is possible that the water content in the soil profile will be depleted somewhat after a fallow year if a cover crop is planted or if excessive evaporation from the soil surface occurs. Early season irrigations of up to 6” may be necessary to refill the soil profile.

Farming Technology Improvements (BMPs)

The Farm has been in operation and been economically viable for many years. Even so, farming and irrigation technology and strategies can be implemented that could improve the irrigation efficiency, water use efficiency, and yield of crops grown on the farm. LCDNR should evaluate the feasibility, costs and potential return of farming technology improvements prior to implementation. Below is a list of potential farming technologies or strategies that could be considered. Note that the ability to implement some of the technologies and strategies may be dependent on the farming equipment available to the tenant who is farming the property.

- Lateral lining: The Dry Creek Lateral currently loses a significant amount of water to seepage. Lining the lateral with a synthetic membrane or concrete liner, or enclosing the lateral in a buried pipeline, would significantly reduce or eliminate conveyance losses and improve the water supply to the farm. In addition, polyacrylamide (PAM) chemical sealants have been researched as a potential means for reducing ditch seepage losses, and could be considered by LCDNR. It is possible that outside funding from USBR, CWCB, etc. could be obtained to assist with the costs of lining or piping. LCDNR would need to work with the Dry Creek Lateral Ditch Company in doing this work.
- No-till practices: No or limited tillage practices could be implemented to increase the amount of residue left on the soil surface and to minimize soil disturbance. These practices reduce

water lost from direct evaporation from the soil, improve soil health, and reduce fuel and other costs associated with repeated tillage operations.

- Contour farming: Planting rows perpendicular to the slope of the land surface can reduce runoff and erosion potential and enhance infiltration of precipitation and irrigation water.
- Drip irrigation: Drip irrigation reduces evaporate losses and can increase irrigation efficiency to nearly 100%. Drip irrigation can be expensive to install and is sometimes implemented on irregularly shaped fields that cannot be efficiently irrigated via flood or center pivot methods. It is possible that the southern fields, in particular, would be suitable for drip irrigation.
- Soil moisture and ET monitoring: Monitoring the soil water budget and ET rates can provide information on the optimal times and amounts to irrigate and to minimize losses to deep percolation and evaporation.
- Precision Mobile Drip Irrigation: http://tlirr.com/products/precision_mobile_drip_irrigation/
- Drought tolerant crops: Corn hybrids and other crops that require less water should be considered given that the Farm will receive less water in the future. Drought tolerant hybrids could be particularly useful in years when the ATM is implemented and the field is either farmed or partially fallowed.
- GPS guidance systems

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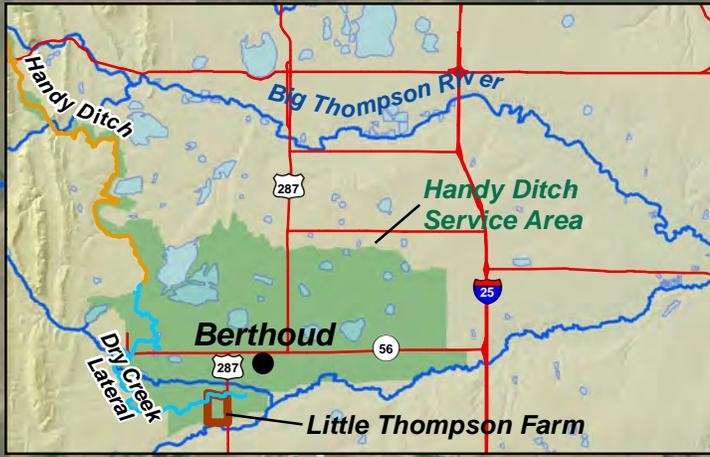
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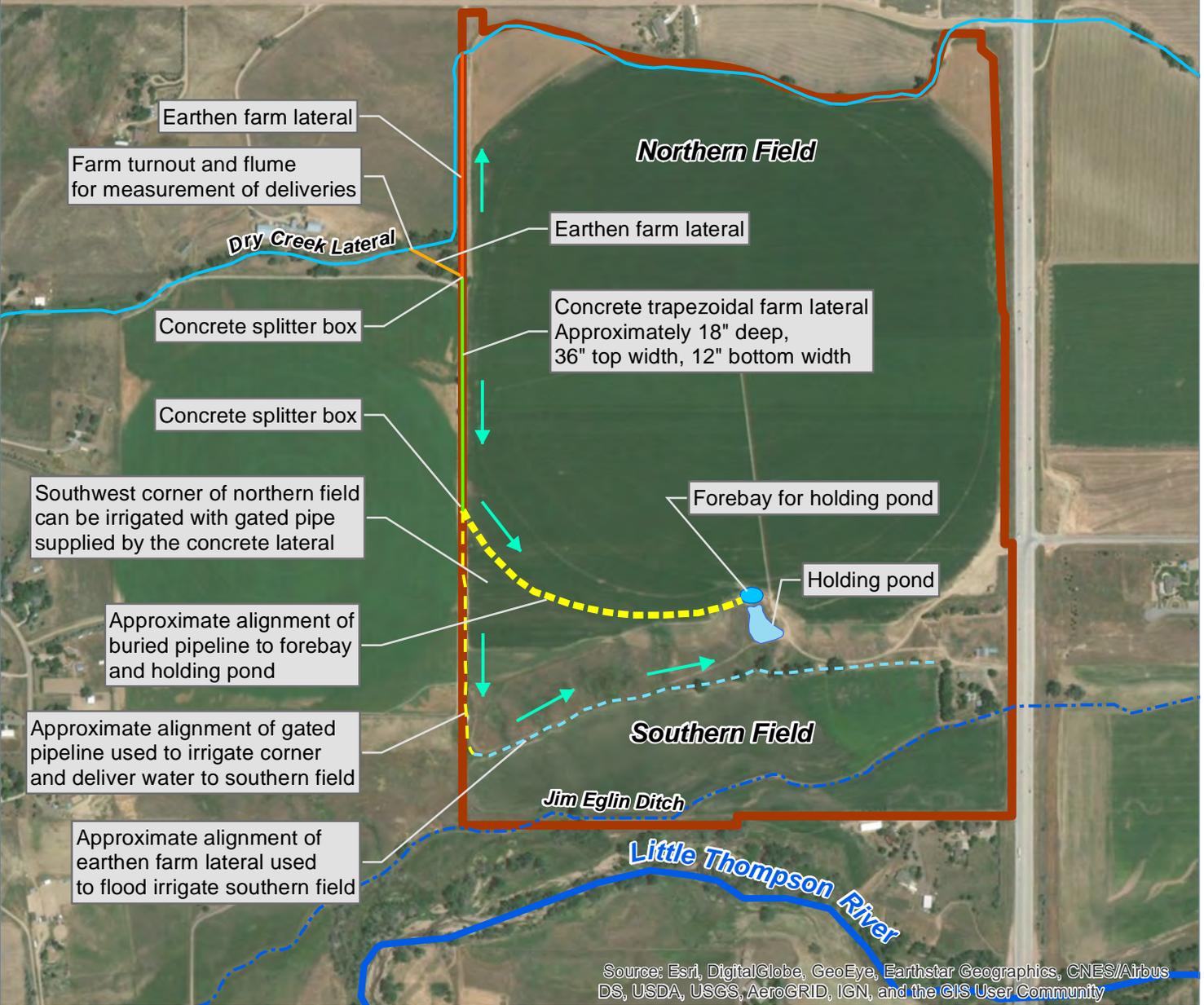
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Legend

Little Thompson Farm



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Larimer County ATM
Little Thompson Farm

Date: January 2018
Project: 148912

Notes: Projection: UTM Zone 13, 1983
North American Datum (meters).



Figure 1

Little Thompson Farm

Exhibit A

Handy Ditch Company Bylaws

BYLAWS
OF
THE HANDY DITCH COMPANY¹

An annual meeting of stockholders of the Handy Ditch Company shall be held on the fourth Saturday in February of each year in the Town of Berthoud at a time and place designated by the Board of Directors of the Company.² Notice of this meeting and any other meeting of stockholders will be by publication in a local newspaper not more than thirty (30) days and not less than ten (10) days before the meeting and by written notice mailed to each stockholder at his/her address of record thirty (30) days before the scheduled meeting. The notice will include the date, time, and location of meeting within the Town of Berthoud and the matters to be considered.

At every meeting of stockholders, each stockholder will be entitled to as many votes as he/she has shares in the Company and the valid proxies of other shareholders.

A majority of the outstanding shares represented in person or by proxy will constitute a quorum at any meeting of stockholders. In the event that a quorum is not present at a scheduled meeting, those shareholders present may adjourn the meeting to some other time. Until a valid meeting of stockholders is held, the Board of Directors will continue in office and are authorized to make such assessments on the capital stock and other charges necessary for the operation and maintenance of the Company.

Election of Directors shall be by cumulative voting. Each shareholder may cast his/her votes for one or more nominees of his/her choice. The nominees to the vacancies on the Board receiving the most votes shall be declared elected.

Special meetings of the stockholders may be called by the Board of Directors or by written request of thirty (30) shareholders representing at least 20 percent of the shares outstanding.

A meeting of stockholders shall be conducted according to Robert's Rules of Order. The order of business at all such meetings, shall include, as far as possible, the following:

1. The President shall appoint a Credentials Committee to determine whether there is a quorum by tallying and recording the shares represented by person and by proxy.
2. Recitation of the Call of the Meeting.
3. Reading and disposal of any unapproved minutes.
4. Reports by the following:
 - a. President
 - b. Secretary-Treasurer
 - c. Superintendent
5. Levy of assessments and charges.
6. Unfinished business.
7. New business as stated in Call.
8. Nomination and election of members to the Board as vacancies permit.

Each share of the capital stock which shall have been issued shall be subject to an annual pro rata assessment for the purposes of providing funds for the following:

1. The operation and maintenance of the Company for the ensuing year.
2. Capital improvement including water rights.
3. Retirement of debts and obligations.
4. Other lawful activities.

The amount of such assessment to be determined by a vote of the stockholders at the annual stockholders' meeting; and the stockholders shall have the power, at a special meeting called for that purpose, to levy any special assessment necessary to meet the Company's obligations. Also, the stockholders at the annual meeting may levy charges for the use of facilities of the Company.

¹ The bylaws were last adopted February 2, 1980; and subsequent amendments are footnoted.

² Date of annual meeting changed on February 6, 1982.

All assessments and other charges that are not paid by the time designated at the annual meeting of stockholders shall be delinquent and draw interest at the rate of one and one-half (1½) percent per month or portion thereof until paid. Stockholders who shall become in arrears in the payment of any assessment or charge shall not receive or be entitled to receive any water or to vote at any stockholders' meeting until as such arrears shall have been fully paid. The Board is empowered to rent the water issued to any share of stock that is delinquent and to apply the funds received to the amount, remitting to the stockholder any funds in excess of that owed to the company. The Board also has the authority to declare that the delinquent share of stock be forfeited and sold as herein provided.

At any time after such default, the Secretary-Treasurer may make demand for payment thereof by written notice either served or delivered in person or by mailing the same to the last known address of the stockholder so in default, at least thirty (30) days prior to the time when such forfeiture is to take place. After the Board has ordered forfeiture of the stock, notice shall be published in a local newspaper, at least once a week for not less than two (2) weeks prior to the date of sale, stating that said stock will be sold at a public auction to the highest bidder. All proceeds over and above the amount due on the stock sold, including interests and costs and expenses of forfeitures, notice and sale chargeable against such stock shall be paid to the delinquent stockholder.

The remedy of the Company by forfeiture and sale of stock shall not be obligatory or exclusive, for at any time after default suit may be brought and maintained by and in the name of the Company against any stockholder for the amount of any assessment or charge past due and unpaid, together with interest thereon. The fact that any such suit has been brought or judgment obtained, which remains unsatisfied, shall not take away or postpone the right of the Company to proceed by forfeiture and sale of stock, as described above.

Transfer of stock shall be made upon the books of the Company only upon application of the holders or owners, by endorsement on the certificate, and upon the surrender of the certificate for such shares; and all surrendered shares shall be canceled and filed by the Secretary; provided, that fractional interests in shares in the Company smaller than one-quarter of the share may not be transferred, and that no stock shall be transferred until all the assessments, interest and charges due or authorized thereon shall have been paid. No stock certificate shall be issued in case of stated to be lost except upon receipt of a satisfactory bond on indemnity against such lost certificate.³

Any change of water right, change of point of diversion, augmentation plan, change of right of way, or other change in the quantity, quality, direction or rate of flow in the stream, unless directed by a court of appropriate jurisdiction or by the State Engineer or his Division Engineer, Water Commissioner, or deputies or any alteration in the right of way making maintenance of the ditch more difficult, shall first require approval of the Board of Directors. Such approval may only be given upon the assurance that no other water right shall be diminished in quantity or quality. The Directors may act in behalf of the members in asserting, protecting and defending the water right of any or all such members.

Any stockholder ("Applicant") desiring a change of water right as defined in the Water Right Determination and Administration Act of 1969 (as may hereafter be amended), including but not limited to, a change in point of diversion or place of use of any water that the applicant is entitled to receive as a result of stock ownership must first make a written application to the directors of the Company. A change of water right shall include the use of water the shareholder is entitled to as a result of stock ownership as augmentation water in a plan for augmentation of exchange. The request should detail the requested change and include adequate terms and conditions to prevent injury to the Company and its shareholders. If, in the reasonable opinion of the directors, such change may be approved without injury to the Company and all of its stockholders, the directors shall then approve the change application subject to necessary terms and conditions. In evaluating whether the requested change of water rights can be made without injury to the Company and its shareholders, the Company may obtain an engineering and legal analysis of the requested change by the applicant and the terms and conditions offered by the applicant. The Company shall evaluate the application for change of water right within a reasonable amount of time.

No application for approval of a change of water right or plan for augmentation as described above may be made to the District Court for Water Division No. 1, State of Colorado ("Water Court"), unless the

³ This paragraph rewritten and adopted February 20, 1999.

⁴ Beginning with paragraph: "Any stockholder (applicant)" to here – 3 paragraphs - adopted February 24, 2007

same has been approved by the Company. If an application has been approved by the Company, the applicant must include terms and conditions at least as stringent as those approved by the Company in an application to the Water Court.

An applicant for a change of water right must reimburse the Company for the Company's reasonable costs and fees, including a charge for time spent by the directors and Company employees in analyzing the application to the Company and in any judicial litigation that follows. This specifically includes a challenge to the Company's denial of an application. Prior to analyzing the proposed change, the Company shall obtain an estimate of the costs. The Company shall make said estimate of cost within 30 days of submission of an application and the applicant shall have 30 days after receipt of the estimate from the Company to make the deposit. The Company shall not take final action on any application until, and unless, the applicant makes said deposit. If the estimate and deposit needs to be adjusted by further payment or reimbursement, said adjustment shall be made upon the completion of the analysis. In no event shall the Company be required to finally approve or disapprove the application until all fees incurred by the Company are reimbursed.⁴

If any portion of these bylaws is declared void by a court of law, the remaining portions of the bylaws shall remain in full force and unaffected.

Each shareholder having water accruing to him from any source shall be entitled to a prorated share of the capacity in the canal of the Company. The prorated share shall be the portion that these shares represent of the total shares using the canal at the particular time.

The affairs of the Company will be managed and directed by a Board of five (5) members who are stockholders in the Company. Two (2) Directors shall be elected to serve one (1) year, two (2) Directors to serve for two (2) years, and one (1) Director for three (3) years. As the terms of these Directors expire, the term of Directors shall be three (3) years, except for Directors either appointed or elected to serve out a vacancy created on the Board.

When any vacancy shall occur among the members of the Board, the remaining Directors shall appoint a person to serve until the next annual meeting of stockholders, at which time the stockholders will elect a Director to serve out the term of the Director whose office became vacant.

The responsibilities and duties of the Board of Directors are as follows:

1. Selection and delegation of authority to manage the Company according to the bylaws.
2. Determination of matters of policy in the management of the Company not delegated by these bylaws.
3. Control of expenditures.
4. Collection of funds due the Company.
5. Incurring debts as required for the normal operation of the Company.
6. Having annual audits of the Secretary-Treasurer account and providing these reports to the shareholders.
7. Control of Operation and Shareholder Certificate records.

As soon as practicable after the annual meeting of stockholders, the Board shall elect one of its members to be President and one to be Vice President. The Board also shall elect a Secretary-Treasurer who need not be a member of the Board or a shareholder.

Members of the Board shall attend the meetings and participate in all decisions that confront the Company. Three members of the Board must be present to constitute a quorum of the Board of Directors. If a member of the Board refuses to fulfill his appointed duties by not attending meetings or by not voting, the other members, by a majority vote, may declare the office vacant and appoint a new member.

A meeting of the Board may be called by the President or Secretary-Treasurer or by the request of two other members of the Board. However, unless the meeting is a regular meeting, three (3) days written notice shall be required.

The Board of Directors may be compensated as directors by the stockholders. The Secretary-Treasurer may be compensated at the discretion of the Board.

⁴ Beginning with paragraph: "Any stockholder (applicant)" to here – Pg 2 - 3 paragraphs - adopted February 24, 2007

The President shall preside at all meetings of the Board and of the stockholders. He shall execute all instruments on behalf of the Company. He shall be an ex-officio member of all committees and shall perform all duties prescribed by the Board.

The Vice President shall perform the duties of the President in his absence.

The Secretary-Treasurer shall perform the following duties:

1. Keep minutes of all meetings.
2. Keep in order all records of the Company.
3. Attest signatures of the officials of the Company on documents.
4. Collect all assessments and charges due the Company and deposit them in a depository designated by the Board.
5. Disburse funds upon order of the Board.
6. Make a complete annual report of business transactions and at such other times as requested by the Board.
7. Perform such other duties as may be prescribed by the Board.

The Board may appoint a Superintendent whose responsibilities shall be as follows:

1. Carry out the management functions assigned to him according to the policies of the Board.
2. Be in charge of maintenance and repairs of the facilities.
3. Manage the receiving and distribution of water, keeping complete records that are to be submitted to the Board annually or as requested.
4. Supervise all employed help.
5. Report to the President and follow the Board's instructions as are given him.

The following resolution to these Bylaws was adopted by the shareholders on February 25, 1984:

The Handy Ditch Company shall indemnify and hold harmless the members of the Board of Directors and Officers and Superintendent or ditch rider employed by the Company against any and all loss and damage that said Directors, Officers, employees, Superintendent or ditch rider may incur as a result of any legal action filed against them arising out of their performance of their duties for the Company and against any and all claims made against them by virtue of their status as a Director, Officer, employee, Superintendent or ditch rider of the Company, whether said claim be founded in tort or in contract.

This indemnification resolution shall include not only the amounts of any judgments entered against them in any court of competent jurisdiction, but also all court costs and attorney fees incurred by or charged against said Directors, Officers, employees, Superintendent or ditch rider as a result of any legal action being filed against them by any person arising out of the performance of their duties or their status as above described. The term "indemnify and hold harmless," as used herein, shall include, by way of example but not by way of limitation, the authority to pay the amount of any judgment or assessment entered or levied against any Director, Officer, employee, Superintendent or ditch rider without the necessity of the person against whom the judgment or assessment is levied having to pay the same and thereafter seeking reimbursement. The same shall apply to attorney fees for representation in any such suit or proceeding.

The foregoing Resolution to indemnify and hold harmless the Directors, Officers, employees, Superintendent or ditch rider of the Company shall not apply to any such person who is determined by any jury verdict or Court finding in any legal action filed against him/her to have been guilty of willful or wanton misconduct, gross neglect of duty, intentional wrong or criminal act. At any time that it shall appear, in the judgment of the Board of Directors, that it is probable that a person indemnified hereunder was guilty of willful or criminal misconduct, gross neglect of duty, intentional wrong or criminal act, the Company may, at that time, determine not to pay any further attorney fees for said party's representation.

These Bylaws may be amended or repealed at any annual meeting or special meeting of the stockholders held for this purpose.

**Rules and Procedures
of
The Handy Ditch Company**

This letter is published for the purpose of informing water users on the Upper Handy, Hertha, Loveland Lake, Welch, Dry Creek, Lower Handy, Sunny Slope, McIntyre, Whipple and Sunnyside of the rules and procedures governing the delivery of irrigation water. Stockholders that lease their farms or water are requested to forward this letter to their tenants.

1. Assessments

The stockholders of the ditch companies vote for an annual assessment per share of the stock to pay for operation and maintenance of the ditches. A bill for each assessment is presented each spring. Individuals who do not own stock in the ditch serving them and who wish to have foreign deliveries must pay an assessment equal to the one share of stock. Assessments and other charges must be paid in full before any water will be released to that party. Late fees will be charged at the rate of 1.5% per month.

2. Ordering Water

- A. Water orders must be placed before 2:30 p.m. the day before the water is to be delivered, changed, or stopped. If you want water for Sunday or Monday the order must be placed by 2:30 p.m. on Saturday. No orders will be taken on Sunday. Orders must be for a definite number of days or until ordered off.
- B. All water orders must be placed through the Superintendent of **The Handy Ditch at (970) 669-8826**.
- C. The following information is required when placing a water order:
 - 1. Stockholder's name or landowners name
 - 2. Headgate number. It is essential that headgate numbers be used when placing a water order. Water orders are communicated to the ditch riders in writing and it is clearer to use a number rather than a description. If you are unsure about your headgate number(s), the superintendent or ditch rider will help you determine your number(s)
 - 3. Ditch or lateral
 - 4. Amount of water expressed in Cubic Feet per Second (cfs)
 - 5. Number of days to run or until ordered off
 - 6. Phone number and best time to reach the person ordering the water

Please keep in mind, the greatest cause of errors is incomplete or confusing information.

3. Superintendent's Office Hours

Barring an emergency or urgency on the ditch, the Superintendent will be at the telephone number **(970) 669-8826** from 1:00 p.m. to 2:30 p.m. each day **except on Sunday. Orders for Sunday or Monday must be placed on Saturday.** At other times, calls are answered with voice mail. Please leave all information, your phone number, and a time to reach you.

4. Maximum/Minimum Orders

The smallest amount of water that can be delivered under Colorado Law is 0.5 cfs. The shortest time-span water can be delivered is 24 hours. Adjustment of a headgate by anyone other than an employee is strictly prohibited.

Deliveries will not be made into a ditch beyond its capacity. Should a ditch rider become aware that a ditch is overflowing, the delivery will be reduced to a safe level. Charges will continue as ordered until changed by the person placing the order as outlined above.

5. Responsibility for Flowing Water

The ditch companies are responsible for the water until it passes the measuring device into the users ditch. From there, the user is responsible for the condition of their ditch and for keeping their water controlled.

All water users irrigating must capture their own waste water. This means a well-maintained ditch that will not overflow and cause crop damage or property damage to others. If one ditch is used by more than one user, the person irrigating and having waste water would be responsible for that ditch. If a problem arises

from waste water, please contact the point source.

6. Condition of User's Ditch

In fairness to each stockholder, I make every effort to accurately measure the water delivered to each user. The most frequent problem facing the ditch riders is uncleaned, clogged ditches that cause the water to back up into the measuring device, thereby prohibiting accurate measurement and delivery. In such cases, the water will be turned off and no further deliveries will be made until the ditch is conditioned for free-flow from the measuring device.

7. Hands-Off Rule

Under Colorado law, it is a civil offense for unauthorized personnel to adjust any ditch facility. It is a ditch rider's responsibility to manage the ditch system and deliver ordered water to the users. Changing a headgate setting, adjusting a check structure, or pumping unordered water has an effect on the entire ditch. It will cause an overage or shortage for others, possible damage to ditches, and additional work for the ditch rider. In some cases it will amount to outright theft of a valuable commodity. We do not desire to lock headgates, but evidence of tampering will produce an immediate lock.

8. Metered Water

Users of water above Welch Lake that measure water by meter will be charged for the amount registered on the meter totalizer. Unfortunately, a different approach must be used for meters below the lakes. In order not to short other users, enough water must be released to supply the maximum capacity of the metered pump. The water is lost to the stockholders whether it is pumped or not. The metered pump will be charged, instead of the amount recorded on the meter.

9. Water Transfers

Any water transferred for the use by anyone other than a stockholder's tenant will only be accepted by written notice to the Superintendent of The Handy Ditch Company. Handy, Loveland Lake and Sunnyslope water can only be transferred to someone on those three systems. Colorado Big Thompson (CBT) project water can be transferred anyplace in the Conservancy District as well as in the Handy Ditch System. Transfers will be accepted at any time. CBT transfers will be accepted only until July 15th.

The following information is required to effect a transfer:

1. Owner of the water
2. Kind of water being transferred (Handy, Loveland Lake, Sunnyslope or CBT)
3. Amount of water being transferred, expressed as Acre Feet, cfs, or as the full issue of shares of stock
4. CBT water being transferred out of the Handy system must state the ditch company that will carry the water to be transferred
5. Transferee's name
6. Owner's signature

10. Method of Accounting for Transferred Water

- A. CBT water transferred out of the Handy System will be debited to its owner and no further accounting is required.
- B. Any water transferred within the Handy System will be carried on the transferee's account. Any party that received Handy water from the transfer also receives the credit. At the end of the season, a running charge will be sent to every individual who ran water over the amount of available credit.

11. CBT Project Water Issues

CBT Project Water is supplemental water. A unit of CBT water is equal to the maximum issue of one Acre Foot of water per year. Each Spring, the Northern Colorado Water Conservancy District Board of Directors considers the amount of native water available, water in their lakes, and other factors, and they make an issue of supplemental water. The issue is expressed as a percentage of maximum. The issues are then made available for delivery to the ditch company serving the owners. The Handy Ditch Company converts the

Acre Foot issue to cfs (divides by two) and charges each owner for shrinkage (25%). The amount remaining is available for delivery. As an example: in a 50% issue year, the owner of 20 units of CBT water is subject to this computation: $20 \times 0.5 = 10$; divided by 2 = 5 cfs; $\times .75 = 3.75$ cfs available.

All CBT users must own or rent a minimum of 1/4 share of Handy Ditch stock to be able to use the ditch system for delivery of their water.

12. Carrying Charges and Direct Run Water

- A. When the Handy Water Decreases allow diversion of enough water to fill all user orders, we are on "Direct Run" (no charge is made against your number of shares). When user orders exceed the amount of water Handy is allowed to divert from the river, Direct Run stops and we go on "Charge" (charge is then made against your number of shares). **Only Owners of Handy (or leasee) stock qualify for Direct Run water.**
- B. At the end of each season, all water run by each user is totaled. Loveland Lake and Sunnyslope stockholders on their respective ditches receive no running charges for their issue. Everyone else, including CBT users, incur running charges. Handy stockholders receive a credit of four (4) cfs (8 Acre Feet) for each share of Handy stock held. Total water run, less the four cfs credit, is subject to running charges per cfs. This credit is not figured on CBT water delivered to anyone.
- C. Laterals have individual systems of running charges in addition to the Handy charges. If in doubt, please check with the lateral ditch to determine how running charges are incurred.

13. Water Measurement

- A. An Acre Foot of water is a volume that will cover on acre, one foot deep.
- B. A cubic foot per second (cfs) is a measure of flow of water. One cfs flowing for 24 hours will cover one acre, two feet deep. Therefore, we use the equation $1 \text{ cfs} = 2 \text{ AF}$. One cfs flowing for 24 hours will cover one acre, two feet deep.
- C. The two most common measurement devices on the system are Parshall Flumes and Cipolletti Weirs. Both devices require a free-flow condition and a measurement of depth. A table must then be entered with depth on flow and width of device to determine the cfs flowing. Simply reading the depth of flow on the staff will not give a direct reading of rate of flow.

Mark Mazza, Superintendent
The Handy Ditch Company
June, 2015

Exhibit B

Intergovernmental Agreement

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Angela Myers, Clerk & Recorder, Larimer County, CO

INTERGOVERNMENTAL AGREEMENT

**By and between
The City and County of Broomfield and
Larimer County
For the Sale and Shared Use of Colorado-Big Thompson Units**

This Intergovernmental Agreement (“Agreement”) is made and entered into and effective as of the Effective Date (as defined in Section 24 below) by and between the **City and County of Broomfield**, a Colorado municipal corporation and county (“Broomfield” or “City”), and the **Board of County Commissioners of Larimer County, Colorado**, a governmental subdivision of the State of Colorado (“Larimer County” or “County”). Broomfield and Larimer County may be collectively referred to herein as the “Parties” or individually as a “Party.”

RECITALS

WHEREAS, the Parties are authorized pursuant to Article XIV, Section 18(2)(a) of the Constitution of the State of Colorado and C.R.S. § 29-1-201, *et. seq.* to contract with any political subdivision of the State of Colorado concerning any function, service or facility lawfully authorized to each of the contracting parties, including the sharing of costs; and

WHEREAS, Broomfield is responsible for providing a long-term and dependable potable water supply for its citizens and others served by Broomfield; and

WHEREAS, to this end Broomfield is seeking water supplies to meet its anticipated needs, including drought, drought recovery and emergency water supply needs; and

WHEREAS, the citizens of Larimer County, through the Help Preserve Open Spaces ballot initiative and subsequent extensions and its Larimer County Open Lands Program (“LCOLP”) has, as part of its mandate, the task of preserving and protecting significant open space, natural areas, wildlife habitat, and developing parks and trails for future generations. As part of this mandate, Larimer County should seek to conserve working farmland and water within the County; and

WHEREAS, in furtherance of the LCOLP’s efforts to conserve valuable working farmland, Larimer County purchased an irrigated farm of approximately 211 acres

✓ Please Return to Alex Castro, engineering x5710

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Angela Myers, Clerk & Recorder, Larimer County, CO

located in the NW $\frac{1}{4}$ and the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 27, Township 4 North, Range 69 West of the 6th P.M., Larimer County, Colorado, as more particularly described in **Exhibit A**, which is attached hereto and incorporated herein by this reference (hereinafter the “Little Thompson Farm”) together with 240 Northern Colorado Water Conservancy District Colorado-Big Thompson Acre-Foot Units under Allotment Contract numbers 7855, 7856, and 7857, 16 shares of capital stock in The Handy Ditch Company, and 20 shares of capital stock in the Dry Creek Lateral Ditch Company; and

WHEREAS, Larimer County is obtaining grant funding in the amount of \$450 per unit toward the cost of the 115 Northern Colorado Water Conservancy District Colorado-Big Thompson Acre-Foot Units to be sold to Broomfield, bringing the total compensation for the 115 units to Two Million Nine Hundred and Ninety Thousand Dollars (\$2,990,000.00); and

WHEREAS, as part of the LCOLP and its effort to economically and efficiently conserve working farmland, Larimer County applied for, and received, a grant of funds from the Colorado Water Conservation Board’s Alternative Agricultural Transfer Methods Grant Program for the purpose of developing a water “sharing”—or interruptible supply agreement—with a municipal water provider; and

WHEREAS, the recently adopted Colorado Water Plan and the South Platte Basin Implementation Plan both identify “interruptible supply agreements” for the sharing of water, in particular, between agricultural water users and municipal water providers, as a promising “alternative transfer method” (“ATM”) to assist in meeting Colorado’s future water supply needs; and

WHEREAS, the recently adopted South Platte Implementation Plan states a goal of minimizing traditional agricultural dry-up and maximizing the use of ATMs to the extent practical and reliable; and

WHEREAS, Larimer County has evaluated the Little Thompson Farm’s long-term water needs and concluded that it can remain an economically viable, working, irrigated farm using an interruptible water supply on terms and conditions set forth in Section 4 below; and

WHEREAS, in furtherance of the Parties’ goals, functions and services, and in recognition of the Statewide benefits that accrue from ATM transfers that reduce the need to permanently fallow or convert productive farmlands, the Parties have agreed to enter

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Angela Myers, Clerk & Recorder, Larimer County, CO

into the following Agreement.

NOW, THEREFORE, in consideration of the promises and covenants of the Parties, and other consideration, the receipt and adequacy of which is confessed and acknowledged, it is agreed by and between Broomfield and Larimer County as follows:

AGREEMENT

1. **RECITALS.** The foregoing Recitals are incorporated into and made a part of this Agreement as if fully set forth herein.
2. **AUTHORITY.** This Agreement has been duly adopted by the Parties' governing bodies and the undersigned representatives are authorized to execute this Agreement on behalf of each respective Party.
3. **SALE OF 115 C-BT UNITS TO BROOMFIELD.** Contingent upon the approval by the Northern Colorado Water Conservancy District ("NCWCD") of the sale and transfer of 115 of the County's C-BT Units, and also contingent upon NCWCD approval of the "Subcontracting Agreement" defined and set forth below in Section 4 of this Agreement, Larimer County agrees to sell Broomfield One Hundred and Fifteen (115) of the Two Hundred and Forty (240) NCWCD Colorado-Big Thompson Acre-Foot Units ("C-BT Units") acquired with the Little Thompson Farm, as follows:
 - 3.1. Units to be Transferred. Larimer County will sell and Broomfield will buy One Hundred and Fifteen (115) acre-foot CB-T Units currently allocated to Larimer County under NCWCD Allotment Contract number 7857 ("115 Units").
 - 3.2. Consideration. Broomfield shall pay Larimer County Two Million Nine Hundred Thirty Eight Thousand Two Hundred Fifty Dollars (\$2,938,250.00) (the "Purchase Price") to acquire the 115 Units from Larimer County.
 - 3.3. NCWCD Approval. Following the Effective Date, the Parties shall promptly work cooperatively to coordinate and seek approval from the NCWCD Board of Directors for: 1) the transfer of the 115 Units; and 2) the "Subcontracting Agreement" (set forth below in Section 4 of this Agreement) in accordance with NCWCD's "Rule Governing the Subcontracting of Beneficial Use of Colorado Big Thompson Project Allotment Contracts" as it now exists or may be modified prior to Closing, as follows: The Parties shall work expeditiously and in good

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Angela Myers, Clerk & Recorder, Larimer County, CO

faith with NCWCD and its staff and shall timely provide all relevant information and documentation needed for the NCWCD's staff to schedule the questions of approval of both the transfer of the 115 Units and the Subcontracting Agreement on the agenda for the next available NCWCD Board of Directors meeting. The Parties agree, and the request for approval to the Board of Directors of the NCWCD shall so state, that NCWCD's approval of the transfer of the 115 Units and NCWCD's approval of the Subcontracting Agreement must take place simultaneously, and if either request for approval is to be denied by the NCWCD Board of Directors, for reasons that the Parties cannot remedy in accordance with subparagraph 3.5, the Parties agree to withdraw both requests and the Agreement will be considered null and void.

3.3.1. *Transfer Application and Related Documents.* The Parties shall cooperatively prepare the transfer application to be filed with NCWCD to transfer the 115 Units to Broomfield, and shall also cooperate and coordinate with each other concerning the preparation and submittal of all other documents required or requested by NCWCD to facilitate the transfer of the 115 Units to Broomfield.

3.3.2. *Transfer Fee.* Broomfield shall pay the transfer fee(s) and related costs charged by NCWCD to transfer the 115 Units.

3.3.3. *Assessments of NCWCD.* Larimer County has paid the 2017 NCWCD annual assessments. Broomfield shall pay the 2018 assessments for the 115 Units and all assessments thereafter. Broomfield shall have use of the 115 Units upon Closing, subject to the existing lease of the 115 Units which expires on January 1, 2018.

3.3.4. *Proof of Ownership.* Larimer County warrants that it is the owner of the 115 Units free and clear of any liens and encumbrances and shall timely provide NCWCD and Broomfield with an Ownership Report or Attorney Opinion on ownership and encumbrances related to the 115 Units at the County's expense. Such Ownership Report and/or Attorney Opinion shall be in a form satisfactory to NCWCD.

3.4. Right to Lease 115 Units. Larimer County shall have the first right to lease the 115 Units on a year-to-year basis during years when Broomfield elects to lease the water attributable to the 115 Units. At Closing, the Parties shall execute a

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lease substantially in the form of the lease attached hereto as **Exhibit F**. The Parties shall also provide to NCWCD a copy of the executed lease or such other document satisfactory to the Parties and NCWCD evidencing the existence of Larimer County's first right to lease that will attach as a Claim of Lien, as defined by NCWCD's rules and regulations, on the 115 units and serve as notice to third parties that may seek to purchase or lease the 115 Units.

3.5. Transfer of 115 Units Subject to NCWCD Approval of Subcontracting Agreement. The Parties expressly understand and agree that the sale and transfer of the 115 Units is contingent upon NCWCD's approval of the Subcontracting Agreement described below in Section 4. To this end, consistent with subparagraph 3.3 above, the Parties shall seek and obtain NCWCD's approval of the transfer of the 115 Units at the same time, or after, the Subcontracting Agreement is, or has been, approved by NCWCD. In the event that approval of the transfer of the 115 Units or approval of the Subcontracting Agreement, or both, is/are denied by the NCWCD, the Parties shall, in good faith, seek to remedy any deficiencies (including any modifications that are required to this Agreement) and request approval of the transfer of the 115 Units and the Subcontracting Agreement at subsequent meeting(s) of the Board of Directors of the NCWCD. If for any reason the NCWCD Board refuses to approve either the transfer of the 115 Units or the Subcontracting Agreement for reasons that the Parties cannot remedy to the satisfaction of the Board to obtain both approvals, this entire Agreement shall be null and void and of no further force and effect, and the Escrow Deposit described below in Section 5, including any accrued interest thereon, shall be returned to Broomfield pursuant to the Escrow Agreement. Closing in this matter shall be final as to Broomfield's rights to the 115 Units, which shall not be affected by any future withdrawal by NCWCD of approval of the Subcontracting Agreement.

4. **SUBCONTRACTING AGREEMENT**. This Section 4 of the Agreement sets forth the rights and obligations of the Parties concerning the subcontracting or "shared" use of the ATM Units ("Subcontracting Agreement"). Larimer County agrees to subcontract with Broomfield in a manner that will allow the Parties to share the beneficial use of Eighty (80) of the C-BT Units acquired by Larimer County with the Little Thompson Farm and remaining in Larimer County's ownership under NCWCD Allotment Contract Number 7856 ("ATM Units"). The Parties agree this sharing will be in a manner consistent with this Agreement and the NCWCD "Rules Governing the Subcontracting of Beneficial Use of the Colorado-Big Thompson Project

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Allotment Contracts” effective August 11, 2016, as such Rules may be amended prior to the approval of this Subcontracting Agreement by the NCWCD Board (“Subcontracting Rules”). A copy of the Subcontracting Rules in effect on the Effective Date of this Agreement is attached hereto and incorporated herein as **Exhibit B**. If, at any time following Closing under Section 6 herein, NCWCD revises or rescinds the Subcontracting Rules and NCWCD asserts the revisions or rescission apply to this Subcontracting Agreement and a Party or the Parties determine that the revisions or rescission substantially alters the Subcontracting Agreement and/or frustrates the purpose and intent of the Parties as described in Section 4.1, below, the Parties agree to in good faith seek to amend the Subcontracting Agreement or otherwise remedy the implications of the revisions to or rescission of the Subcontracting Rules so as to conform as closely as possible to the original purpose and intent of the Parties, and if this requires an amendment to the Subcontracting Agreement, the Parties agree to promptly request renewed approval of the Subcontracting Agreement at the next meeting(s) of the Board of Directors of the NCWCD.

- 4.1. Purpose and Intent. The purpose and intent of this Subcontracting Agreement is to share the beneficial use of the ATM Units to the mutual benefit of the Parties by the County’s granting Broomfield the option to elect to use the ATM Units for 3 years out of every 10 years (based on a rolling 10-year period), or more frequently in accordance with Section 4.3.4, below, to assist in meeting its anticipated short term drought, drought recovery and emergency water supply needs. The County will retain its ability to use the water in the years when Broomfield’s option to use the ATM Units is not exercised. **Exhibit C**, attached hereto and incorporated herein, provides a further description and illustration of the 10 year rolling period to be used in this Agreement.
- 4.2. Consideration. As consideration for the right to subcontract to use the ATM Units, Broomfield shall pay to Larimer County Eight Hundred and Thirty-Two Thousand Dollars (\$832,000.00) (“ATM Purchase Price”).
- 4.3. Broomfield’s Use of the ATM Units. In those years where Broomfield intends to exercise its option to use the water attributable to the ATM Units, Broomfield must notify Larimer County in writing of its intention to exercise the option for that year prior to January 31st, however, Broomfield may also elect to exercise its option after January 31st up until June 1st (“Late Notice”), but only if: (1) Broomfield notifies the County of its intention to exercise its option as soon as

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Broomfield makes the determination to use the water in order to allow for farm planning (e.g. rental of alternative sources); and (2) Broomfield reimburses the County for all crop-related expenses incurred after January 31st through the date on which Broomfield provides the County with the Late Notice, including but not limited to the purchase or planting/application of seed, fertilizer, labor expense, equipment use/rental, and such other reasonable expenses incurred prior to the Late Notice. The following additional terms and conditions shall apply in years when Broomfield elects to exercise its option to use the water attributable to ATM Units.

- 4.3.1. *Option Applies to all ATM Units.* Broomfield's option to elect to use ATM Units in any year shall apply to all 80 ATM Units; there shall be no partial exercise of the option to use only a portion of the ATM Units.
- 4.3.2. *ATM Payment.* Broomfield shall pay Larimer County a fee ("ATM Payment") each year that Broomfield exercises its right to use the ATM Units. The ATM Payment will start at Eighteen Thousand Dollars (\$18,000.00) (\$225.00 per ATM Unit). Beginning in 2028, with no "catch-up", the ATM Payment shall be adjusted in accordance with the price adjustment formula attached hereto as **Exhibit D**.
- 4.3.3. *ATM Units Assessments.* The County shall timely pay the NCWCD assessments, transfer fees and other related fees related to the ATM Units ("NCWCD ATM Unit Fees"). Broomfield shall, within 30 days of being invoiced by the County, reimburse the County for the NCWCD ATM Unit Fees for the years in which Broomfield uses the water attributable to the ATM Units. If the County fails to timely pay the NCWCD ATM Unit Fees when due, Broomfield shall have the right to make such payment(s) and cause NCWCD to remove any lien by NCWCD for the failure to pay the NCWCD ATM Unit Fees, and, in such event, the County shall reimburse Broomfield for all costs, expenses, and reasonable attorneys' fees incurred in paying the NCWCD ATM Unit Fees and obtaining the release of any lien by NCWCD for failure to pay assessments. Any such sums may be deducted by Broomfield from any future payment due to the County under this Agreement. In any year in which the County fails to make any required payment to Northern by March 15th, and, after giving notice to the County, Broomfield reasonably believes it must make such payment to avoid potential loss or forfeiture of the ATM Units, and such payment is made by Broomfield, Broomfield shall be entitled to elect to use the ATM Units under

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this Subcontracting Agreement without making any additional payments under paragraphs 4.3 or 4.3.2. If without good cause the County fails to timely pay the NCWCD assessments and any other related fees and costs to NCWCD for a period of three (3) consecutive years and, after giving notice to the County, Broomfield has made such payments pursuant to this subparagraph, upon request by Broomfield, Broomfield and the County agree to negotiate in good faith to transfer the ATM Units to Broomfield subject to NCWCD approval. In the event Broomfield fails to reimburse the County for the ATM Unit Fees in years when Broomfield uses the water attributable to when due, and after providing written notice to Broomfield of its failure to pay, the County may request that the NCWCD curtail delivery of the water attributable to the ATM Units to Broomfield until such payments are made.

4.3.4. *Limitations on Use.* Consistent with the requirements of the Subcontracting Rules, the Parties agree that Broomfield's use of the ATM Units is limited to no more than 3 years out of every 10 years, using a rolling 10-year period (as further described and illustrated in **Exhibit C** attached hereto). However, Larimer County agrees that during periods of prolonged drought, and should Broomfield request it, the County will evaluate, in good faith and consistent with its goal of maintaining the Little Thompson Farm as a viable, working, irrigated farm, allowing Broomfield to use the ATM Units in excess of 3 out of every 10 years under the specific circumstances identified in paragraph 5.6.1 of the Subcontracting Rules, attached as **Exhibit B**. Nothing herein is intended to prevent the Parties from agreeing to seek, by separate agreement, prior authorization from NCWCD to provide certainty as to additional drought, drought recovery and emergency situations in which NCWCD would authorize Broomfield to use the water attributable to the ATM Units more than 3 out of every 10 years (not already specifically mentioned in paragraph 5.6.1 of the Subcontracting Rules) and consistent with the purpose and intent of this Subcontracting Agreement as set forth in subparagraph 4.1 above.

4.3.5. *No Rental of ATM Units.* As the intent of this Subcontracting Agreement is to provide Broomfield with an additional drought, drought recovery, and emergency source of water, Broomfield shall not exercise its option to use the water attributable to the ATM Units as a means of creating or increasing a supply of water for rental to any third party(ies) or for purposes of renting the water attributable to the ATM Units to any third party unless such

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party(ies) is or will be using the water attributable to the ATM Units to provide said water to provide water to Broomfield and its citizens and others served by Broomfield. Nothing in this paragraph shall prevent Broomfield from allowing the use of the ATM Units by a governmental entity or entities, such as an enterprise, with the purpose and obligation to provide municipal water to Broomfield and its citizens and others served by Broomfield.

4.3.6. *Subcontracting Rules.* The Parties agree and understand that this Subcontracting Agreement is subject to all of the rules and requirements of the Subcontracting Rules and shall be construed accordingly. The Subcontracting Rules which apply to this Agreement are attached hereto as **Exhibit B** and incorporated herein as if fully set forth and shall be considered part of this Subcontracting Agreement. Without limiting the generality of the foregoing statement, the Parties acknowledge and shall comply with the requirements of Sections 5.4 through 5.6 of the Subcontracting Rules in **Exhibit B**.

4.4. Subcontracting Agreement Subject to NCWCD Approval. The Parties shall seek NCWCD approval of the Subcontracting Agreement in accordance with subparagraph 3.3 above. If the NCWCD Board refuses to approve either or both the transfer of the 115 Units or the Subcontracting Agreement for reasons that the Parties cannot remedy, this entire Agreement shall be null and void and of no further force and effect and the ATM Payment shall be returned to Broomfield, as more particularly provided in subparagraph 3.5, above.

4.5. Parties' Compliance with NCWCD Rules. The Parties further understand and agree that it shall be each Party's continuing responsibility to comply with all of the NCWCD's rules, regulations, requirements and policies, and that each shall be responsible for its own legal and physical ability to take delivery of the water attributable to ATM Units when said Party is using the same. This Agreement provides no guarantee of water, and the timing, location and amount of water delivered shall be coordinated individually with NCWCD. If, at any time following Closing under Section 6 herein, approval of the Subcontracting Agreement is withdrawn by the NCWCD due to changes to or rescission of the Subcontracting Rules or other reasons, the Parties shall, in good faith, seek to remedy the implications of the alteration to the Subcontracting Rules so as to conform as closely as possible to the original purpose and intent of the Parties as described in Section 4.1 above, and if this requires an amendment to the

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Subcontracting Agreement, the Parties agree to promptly request renewed approval of the Subcontracting Agreement at the next meeting(s) of the Board of Directors of the NCWCD. Closing in this matter shall be final as to Broomfield's rights to the 115 Units, which shall not be affected by any future withdrawal by NCWCD of approval of the Subcontracting Agreement.

- 4.6. Transfer Fee. The Parties shall split equally the transfer fee(s) and related costs charged by NCWCD for the review of the Subcontracting Agreement for the 80 ATM Units.
- 4.7. No liens or Encumbrances: Broomfield and the County agree that Broomfield's rights under this Agreement shall constitute a lien upon and encumber the ATM Units. Unless Broomfield's prior written consent is given, the County shall not suffer or allow any other lien or encumbrance to attach to the ATM Units except the Conservation Easement explicitly referenced in Section 8 below. If the County suffers or allows a lien or encumbrance to attach to the ATM Units without the prior written consent of Broomfield, Broomfield after notice to the County giving the County 60 days to release the lien or encumbrance, shall have the right to cause any such lien holder or encumbrancer to release the ATM Units free of the lien or encumbrance, and, in such event, Broomfield shall be entitled to recover from the County all of Broomfield's costs, expenses, and reasonable attorneys' fees incurred in obtaining the release of such lien or encumbrance.
- 4.8. Term. The terms of this Subcontracting Agreement shall be perpetual.
5. **ESCROW.** On or before August 10, 2017, Broomfield shall deposit the Purchase Price and the ATM Purchase Price ("Escrow Deposit") into an escrow account ("Escrow Account") with Colorado Escrow and Title Services, LLC ("Escrow Agent"), together with the Escrow Agreement ("Escrow Agreement"), in the form attached hereto as **Exhibit E** signed by Broomfield, the County, and the Escrow Agent and consistent with the terms and conditions of this Agreement.
6. **CLOSING.** Closing of escrow (the "Closing") shall take place promptly after both of the following occur: 1) the NCWCD Board approves the transfer of the 115 Units pursuant to its transfer rules and policies and Broomfield receives written notification that approval is final; and 2) the NCWCD Board approves the Subcontracting Agreement set forth in Section 4 of this Agreement in accordance with NCWCD's Subcontracting Rules in the form in which they now exist in **Exhibit B** or as they

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may be modified prior to Closing. Within two (2) business days of receipt of both approvals from NCWCD, the Parties shall jointly provide the Escrow Agent written confirmation that the approvals have occurred, and authorization for the Escrow Agent to distribute the Escrow Deposit to Larimer County consistent with the terms of the Escrow Agreement. Written Confirmation of NCWCD approvals may be provided electronically in conformance with Section 10 of this Agreement. Closing in this matter shall be final as to Broomfield's rights to the 115 Units, which shall not be affected by any future withdrawal by NCWCD of approval of the Subcontracting Agreement.

7. **DEFAULT.** If either Party is in default, the other Party shall first provide notice to the defaulting Party of the nature of the default and the defaulting Party shall have thirty (30) days to correct or otherwise remedy the default. In the event the defaulting Party does not correct or remedy the default, the non-defaulting Party may elect to treat this Agreement as terminated, or the non-defaulting Party may elect to treat this Agreement as being in full force and effect and shall have the right to an action for specific performance or damages or both, and such other remedies as may be available to the non-defaulting Party. In the event of any litigation arising out of this Agreement, the court may award all reasonable costs and expenses, including attorney's fees to the prevailing party.

8. **ASSIGNMENT; CONVEYANCE OF LITTLE THOMPSON FARM; CONVEYANCE OF ATM UNITS.**

8.1. Assignment of Agreement. The Parties may not assign this Agreement without prior written consent from the other Party and approval of the NCWCD Board of Directors. The foregoing notwithstanding, and despite anything in this Agreement that might be construed to the contrary, it is understood and agreed that this Agreement may be assigned or conveyed by Broomfield to a governmental entity or entities, such as an enterprise, with the purpose and obligation to provide municipal water to Broomfield and its citizens and others served by Broomfield. Further, the County may assign this Agreement, subject to Broomfield's consent which shall not be unreasonably withheld or delayed, to an unrelated third party that acquires the Little Thompson Farm, provided said third party explicitly accepts and adopts in writing the terms of this Agreement.

8.2. Conveyance of Little Thompson Farm. The County may convey the Little Thompson Farm to an unrelated third party. In that event, the County may place a

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Conservation Easement on the Little Thompson Farm and, subject to Broomfield's approval which shall not unreasonably be withheld or delayed, the associated water rights, including the 80 ATM Units, to ensure that the uses of the farm and water remain consistent with the conservation purposes stated in the Conservation Easement. Any such Conservation Easement shall specifically refer to, and shall be subject to this Agreement, including, but not limited to, Section 4, above.

- 8.3. Conveyance of 80 ATM Units. The County may convey the 80 ATM Units to an unrelated third party. In the event the County conveys the ATM Units to a third party for use(s) other than the irrigation of the Little Thompson Farm, Broomfield may elect to terminate the Subcontracting Agreement herein, in which case the County shall pay to Broomfield 40% of any proceeds from the conveyance of the 80 ATM Units to said third party. The County shall promptly notify Broomfield of its intent to convey the 80 ATM Units to a third party for use(s) other than irrigation of the Little Thompson Farm, the name of the third party, and the terms of the conveyance. Upon notification by the County of the County's intent to convey the 80 ATM Units to a third party for use(s) other than irrigation of the Little Thompson Farm and the terms of said conveyance, Broomfield shall promptly notify the County whether Broomfield elects to terminate the Subcontracting Agreement upon the conveyance of the 80 ATM Units.
- 8.4. Conveyance of 115 Units. Following Closing and transfer to Broomfield of the 115 Units, Broomfield may lease, assign or transfer said 115 Units to a third party subject to NCWCD approval, and provided said third party explicitly accepts and adopts in writing the County's first right to lease said 115 Units under subparagraph 3.4 herein.
9. **BROOMFIELD'S RIGHT OF FIRST REFUSAL.** In the event the County elects to sell the ATM Units separate from the Little Thompson Farm, Broomfield shall have the right to purchase all or any portion of the ATM Units upon the same terms and conditions and purchase price offered to or by the County by or to any third party for the purchase of all or any portion of the ATM Units. The County shall promptly notify Broomfield in writing of the County's intent to sell to a third party all or any portion of said ATM Units separate from the Little Thompson Farm, the name of the third party, and the terms of the proposed sale. Broomfield shall have fifteen (15) days after Broomfield's receipt of any such notice to give notice to the County of Broomfield's intent to exercise the right of first refusal granted herein.

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10. NOTICE. All notices, demands, or other written communication required or permitted to be given by this Agreement shall be by electronic mail, hand delivered, or sent by certified or registered mail, postage prepaid, and return receipt requested, to the parties as follows, or to such other address as a Party may designate by notice to the other Party:

If to Larimer County:

Director of Natural Resources
1800 S CR 31
Loveland, CO 80537
Telephone: 970-619-4560
E-mail: gbuffington@larimer.org

With a copy to:

Larimer County Attorney's Office
Attention: Jeannine Haag, County Attorney
224 Canyon Avenue, Suite 200
Fort Collins, CO 80521
Telephone: 970-498-7450
Email: jeanninehaag@larimer.org

AND

Daniel K. Brown
Fischer, Brown, Bartlett & Gunn, P.C.
1319 West Prospect Road
Fort Collins, CO 80525
Telephone: 970 401-9000 x 212
Email: danbrown@fbgpc.com

AND

Open Lands Program Manager
Larimer County of Natural Resources Dept.
1800 S CR 31
Loveland, CO 80537

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Telephone: 970-619-4577
E-mail: krollins@larimer.org

If to Broomfield:

Director of Public Works
City and County of Broomfield
One Des Combes Drive
Broomfield, CO 80020
E-mail: dallen@broomfield.org
publicworks@broomfield.org

With a copy to:

Harvey W. Curtis
Harvey W. Curtis and Associates
8310 South Valley Highway, Suite 230
Englewood, CO 80112
Telephone: 303 292-1144
E-mail: hcurtis@curtis-law.com

AND

Water Resources Manager
City and County of Broomfield
4395 West 144th Avenue
Broomfield, CO 80023
Telephone: 303-464-5605
E-mail: mcalvert@broomfield.org

11. NO WAIVER OF IMMUNITY; LIABILITY. Notwithstanding any other provision to the contrary, nothing herein shall constitute a waiver, express or implied, of any of the immunities, rights, benefits, protection, or other provisions of the Colorado Governmental Immunity Act ("CGIA"), C.R.S. §24-10-101, *et seq.*, as applicable, as now or hereafter amended nor shall any portion of this Agreement be deemed to have created a duty of care which did not previously exist with respect to any person not a party to this Agreement. Subject to the limits, notice requirements,

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immunities, rights, benefits, defenses, limitations, and protections of the CGIA, each party agrees to be responsible and assume liability for losses, costs (including reasonable attorney's fees), demands, or actions caused by its own wrongful or negligent acts and omissions, and those of its officers, agents and employees acting in the course of their employment in connection therewith.

12. **OBLIGATIONS SUBJECT TO APPROPRIATION.** The obligations of Broomfield and of the County to commit or expend funds after calendar year 2017 are subject to and conditioned upon the annual appropriation of funds sufficient and intended to carry out said obligations by the Broomfield City Council and the Larimer County Board of County Commissioners, respectively, in the City's and County's sole discretion.
13. **GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado. The forum for any dispute regarding this Agreement shall be in the Weld County District Court, State of Colorado.
14. **COMPLETE AGREEMENT.** This Agreement consists of all the agreements, understandings, and promises between the Parties, and there are no agreements, understandings or promises between the Parties other than those set forth in this Agreement. This Agreement governs 195 C-BT Units (the 115 C-BT Units under NCWCD Allotment contract number 7857 plus the 80 ATM Units under NCWCD allotment contract number 7856) of the 240 C-BT Units associated with Little Thompson Farm. The remaining 45 C-BT Units under NCWCD Allotment contract number 7855, 16 shares of capital stock in The Handy Ditch Company, and 20 shares of capital stock in the Dry Creek Lateral Ditch Company associated with the Little Thompson Farm are not subject to this Agreement.
15. **BROKER FEES.** The Parties hereto covenant that no brokerage fees are due to anyone based on the transactions in this Agreement.
16. **SURVIVAL OF TERMS.** The terms of this Agreement, including, but not limited to, Section 3.4 and Section 4, above, shall survive the Closing under Section 6.
17. **LIBERAL CONSTRUCTION.** Any general rule of construction to the contrary notwithstanding, this Agreement shall be liberally construed in favor of the grant to effect the Purpose and Intent set forth in Section 4.1, above. If any provision in this Agreement is found to be ambiguous, an interpretation consistent with the Purpose and Intent that would

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render the provision valid shall be favored over any interpretation that would render it invalid.

18. **AMENDMENTS.** Any amendments or modifications to this Agreement must be in writing and executed by all parties to be valid and binding.
19. **NO THIRD PARTY BENEFICIARIES.** This Agreement shall inure only to the benefit of the signatories below. There are no third party beneficiaries intended under this Agreement.
20. **COUNTERPARTS.** This Agreement may be executed in counterparts and, as so executed, shall constitute one Agreement, binding on the Parties, even though all the Parties have not signed the same counterpart. Any counterpart of this Agreement which has attached to it separate signature pages, which altogether contain the signatures of all the Parties, shall be deemed a fully executed instrument.
21. **RECORDATION.** Upon receipt of the approvals from NCWCD described in subparagraphs 3.7 and 4.5 above, this Agreement shall be recorded by Larimer County at the County's expense with the Larimer County Clerk and Recorder and shall be recorded at Broomfield's expense with the Broomfield County Clerk and Recorder. A copy of the Agreement recorded by a Party shall be provided by that Party to the other Party.
22. **BINDING EFFECT.** This Agreement, when executed and delivered, shall bind the Parties and their successors and assigns.
23. **SEVERABILITY.** If any provision of this Agreement is invalidated by any court of competent jurisdiction, the remaining provisions shall continue in full force and effect.
24. **EFFECTIVE DATE.** The "Effective Date" shall be the date on which this Agreement is executed by Broomfield or by the County, whichever is later in time.
25. **CAPTIONS.** The captions in this Agreement are for the convenience of the Parties and the captions shall have no meaning, force, or effect.

IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date as set forth above.

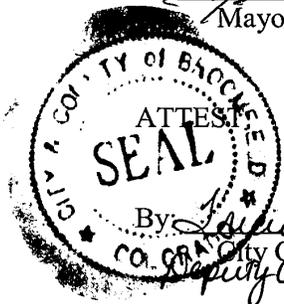
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THE CITY AND COUNTY
OF BROOMFIELD

BOARD OF COUNTY COMMISSIONERS
LARIMER COUNTY, COLORADO

By: [Signature]
Mayor

By: [Signature]
Chair, Lew Gaiter III



ATTEST:

By: [Signature]
Deputy Clerk of the Board



APPROVED AS TO FORM FOR BROOMFIELD:

By: [Signature]
City and County Attorney - ASSISTANT

DATE: 7-27-17
APPROVED AS TO FORM:
[Signature]
DEPUTY COUNTY ATTORNEY

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Exhibit A

PROPERTY DESCRIPTION

THE NORTH ½ OF THE SOUTHWEST ¼ OF SECTION 27, TOWNSHIP 4 NORTH,
RANGE 69 WEST OF THE 6TH P.M., COUNTY OF LARIMER, STATE OF
COLORADO.

INCLUDING OUTLOT A, WAGON WHEEL MONUMENT SUBDIVISION,
ACCORDING TO THE PLAT RECORDED SEPTEMBER 25, 1980 IN BOOK 2873
AT PAGE 107 COUNTY OF LARIMER, STATE OF COLORADO.

AND

LOT 1A OF SECOND AMENDED MALCHOW M.R.D. NO. 93-EX0382, RECORDED
JUNE 10, 2014 AT RECEPTION NO. 20140030214, BEING A PART OF THE
NORTHWEST ¼ OF SECTION 27, TOWNSHIP 4 NORTH, RANGE 69 WEST OF
THE 6TH P.M., COUNTY OF LARIMER, STATE OF COLORADO.

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Exhibit B

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Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

Historical Background

Since 1938 the Northern Colorado Water Conservancy District (Northern Water) has issued Allotment Contracts to provide for the beneficial use of water yielded from the Colorado-Big Thompson (C-BT) Project by water users located within Northern Water boundaries. Those beneficial uses include irrigation, domestic, municipal, and industrial uses. The Northern Water Board of Directors (Board) issues Allotment Contracts in accordance with Northern Water's defined rules, regulations, policies and procedures. C-BT Project water is intended to supplement an Allottee's existing non-C-BT Project water supply portfolio.

The finite water supply available to meet future water needs within Northern Water boundaries, when combined with the ever-increasing demands for water, requires that water users strive to accomplish the maximum beneficial use of all available water supplies in the region. These factors, coupled with the recognized ability to transfer C-BT Project water contribute to the functionality, utility, and value of C-BT Project water. As pressures on existing water supplies increase, various water users are entering into innovative water sharing agreements such as interruptible water supply contracts. These agreements, when entered into by an Allottee utilizing water yielded from a C-BT Project Allotment Contract, represent the subcontracting of beneficial use of the water yielded from that Allotment Contract.

Further complicating these transactions is Northern Water's requirement that the beneficial use of water yielded from the C-BT Project be accomplished in full compliance with the terms and conditions of the Allotment Contract, the Water Conservancy Act, the terms and conditions of the contractual documents between Northern Water and the United States Bureau of Reclamation that govern the operation and administration of the C-BT Project, and Northern Water's rules, regulations, policies, and procedures.

It has become apparent to Northern Water that there are instances when the beneficial use of C-BT Project Allotment Contracts may be subcontracted by the Allottee to one or more water users. As such, it is the responsibility of the Board to assure that these Subcontracts result in C-BT Project water being used in accordance with all controlling rules, regulations, policies, procedures, statutes, and contractual requirements while also meeting the responsibilities, and obligations of Northern Water. To assure compliance with statutes, the terms and conditions of the contractual documents associated with the C-BT Project, and the terms and conditions of the involved Allotment Contract(s), and to assure the Board is meeting its obligations and responsibilities, the Subcontracting of the beneficial use of C-BT Project water yielded from the Allotment Contract by an Allottee must be done only with the full knowledge and approval of the Board.

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This Rule is promulgated to clearly state the Board's requirements associated with existing, currently proposed, and future Subcontracts for the beneficial use of C-BT Project water yielded from an Allotment Contract.

Rule

1.0 Rule Purpose

- 1.1 This Rule defines the requirements of Northern Water pertaining to the Subcontracting of the beneficial use of water yielded by a C-BT Project Allotment Contract by the Allotment Contract owner (referred to herein as the Allottee) to another water user (referred to herein as the Subcontractor).

2.0 Rule Definitions

- 2.1 Account Entity - An Account Entity may be comprised of a single C-BT Project water user, or multiple C-BT Project water users. In most instances, one or more Allotment Contracts have been certified for delivery through an Account Entity's respective quota account. An Account Entity may have multiple physical delivery points from the C-BT Project. For some agricultural Water Users, a "C-BT carrier" may be synonymous with an Account Entity having the same name.
- 2.2 Acre Foot Unit (AFU) - Unit of measurement used for the allocation of C-BT Project water to an Allottee in an Allotment Contract. An AFU receives 1/310,000th of the water annually declared to be available from the C-BT Project by the Board. Historically, an AFU annually yields 0.5 to 1.0 acre feet per AFU.
- 2.3 Allotment Contract - The contract between the Allottee and Northern Water that allocates C-BT Project water to the Allottee for a specified beneficial use. Allotment Contracts are issued on an AFU basis.
- 2.4 Allottee - An entity (person, corporation, company, or otherwise) that owns one or more Allotment Contracts for C-BT Project Water as issued by Northern Water. For purposes of this Rule, the Allottee is the entity subcontracting water to another water user (the Subcontractor).
- 2.5 Base Supply - Any permanent non-C-BT Project water supply held and/or controlled by a water user or an Allottee.
- 2.6 Board - Northern Colorado Water Conservancy District Board of Directors
- 2.7 C-BT - Colorado-Big Thompson
- 2.8 Forfeiture - As stated in 37-45-134 (c) C.R.S.

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- 2.9 Irrigation – The application of water for beneficial use, without waste for the primary purpose of growing and producing crops to be harvested, or consumed by livestock, including pasture lands, and for uses incidental to the primary production of such crops.
- 2.10 Northern Water - Northern Colorado Water Conservancy District
- 2.11 Quota Water - The amount of C-BT Project water declared available each year by the Board from the yield of the C-BT Project to an Allottee through the determination of the annual quota. The declared quota represents the percentage of an acre-foot of C-BT Project water made available for each AFU owned by the Allottee.
- 2.12 Rule 11 Charge - The payment due to Northern Water resulting from some Seasonal Transfers in accordance with Northern Water Rule 11.
- 2.13 Seasonal Transfer - The transfer of Quota Water through Northern Water's administrative process. This transfer may be done electronically through Northern Water's accounting system Allottee interface or through the use of a CD-4 card.
- 2.14 Subcontract – For purposes of this Rule, any type of agreement (contract, lease, or otherwise) or concurrent agreements that transfer the beneficial use of an Allottee's C-BT Project water to a Subcontractor for an aggregate time period of two years or longer. The Subsections to this Section provide additional definition concerning Subcontracts.
 - 2.14.1 Bridge Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water for a predetermined and definite period of time. As an example, a Subcontractor might need the interim water supply in anticipation of a new water supply project becoming operational, as an emergency supply in response to failed infrastructure or water quality issues, or as a supply to meet a temporary demand.
 - 2.14.2 Interruptible Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water under certain conditions for the duration of the Subcontract. As an example, an Interruptible Supply Subcontract may provide water to a municipal or industrial supplier during a drought period or during certain years following a drought. For the purposes of this Rule, an Interruptible Supply Subcontract is not to provide yield from the C-BT Project to the Subcontractor each and every year.
 - 2.14.3 Other Subcontract - Any Subcontract that provides the Subcontractor C-BT Project water that is not either an Interruptible Supply or Bridge Supply Subcontract.

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2.15 Subcontractor - An entity (person, corporation, company, partnership, limited liability company or other legally defined entity) that is Subcontracting for the beneficial use of C-BT Project water from an Allottee. The Subcontractor may or may not be an Allottee. However, a Subcontractor must have a defined beneficial use of C-BT Project water within the boundaries of Northern Water and comply with all applicable rules, regulations, guidelines, policies and procedures of Northern Water.

2.16 Tract - A unit of land identified by Northern Water in a Class D Allotment Contract.

3.0 Required Approval of Subcontracts

3.1 All Subcontracts, as defined in Section 2.14, entered into after the effective date of this Rule are prohibited without the approval of the Board pursuant to this Rule. Subcontracts representing internal trades of C-BT Project water for other water of similar value or arrangements where a water supplier provides treated water service in exchange for receiving C-BT Project water from an Allottee resulting in the beneficial use of C-BT Project water being primarily made by the Allottee will be exempt from this Rule subsequent to Northern Water making such a determination after its review of the Subcontract.

3.2 Subcontracts that are in existence as of the effective date of this Rule shall be exempt from this Rule if: (A) the Allottee provides a copy of the executed Subcontract to Northern Water within nine months of the effective date of this Rule, and (B) Northern Water determines the Subcontract does not contain terms or conditions that violate statutes, rules that existed at the time of the Subcontract, or applicable contract conditions associated with the beneficial use of C-BT Project water. Northern Water will take no enforcement action regarding a Subcontract that has been provided pursuant to this Rule until Northern Water's review of the Subcontract is complete and Northern Water either: confirms in writing that the Subcontract is exempt from this Rule, or informs the Allottee in writing of the violation(s). Northern Water will only consider a Subcontract exempt from this Rule if Northern Water has affirmatively stated so in writing. Once notified by Northern Water of a violation(s), the Allottee shall have six months to amend the Subcontract to correct the violation(s).

4.0 Request for Exemption From or Approval of a Subcontract(s)

4.1 An Allottee seeking exemption from or approval of a Subcontract(s) must follow the Procedures for this Rule. The administrative fee assessed by Northern Water to review a Subcontract shall be determined as described in the Procedures to this Rule.

5.0 Criteria Used for Subcontract Review and Approval

5.1 The Board's review and approval of Subcontracts shall be limited and applicable only to those terms and conditions of the Subcontract which pertain to the

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beneficial use of water yielded by an Allotment Contract, shall be on a specific case-by-case basis, and shall incorporate consideration of all rules, regulations, policies and procedures that govern, or are related to, the approval and issuance of an Allotment Contract.

- 5.2 The Board may approve or deny approval of any Subcontract for the beneficial use of water yielded by an Allotment Contract. In the event the Board of Directors denies approval of such a Subcontract, the Board shall state the bases for the denial.
- 5.3 The Board may approve a Bridge Supply Subcontract or Other Subcontract for a maximum term of five years except as provided below. The Board will consider requests to reapprove a Subcontract if its previous approval has expired or will expire. The Board is not obligated to reapprove a Subcontract. However, if a Subcontractor identifies a specific water supply project that is under development and will provide a future water supply for the Subcontractor, the Board may approve a Bridge Supply Subcontract for a term longer than five years. The term for any such Subcontract approved for longer than five years may be for: (A) a fixed term reasonably anticipated to coincide with the completion of the water supply project; or (B) an indefinite term to terminate upon completion of the water supply project. In any event, a Subcontract shall not exceed five years following the denial of an indispensable permit approval for said water supply project, or the Subcontractor's decision not to move forward with or continue its participation in the water supply project. Completion of a water supply project shall mean completion of project infrastructure and operation of the project as necessary to produce the anticipated water supply yield of the Project.
- 5.4 The Board will only consider approval of a Subcontract if the Subcontractor meets the following minimum requirements:
- 5.4.1 The C-BT Project water described in the Subcontract will be considered in calculations of AFU ownership limitations for the Subcontractor if water will be used for non-irrigation purposes. The Subcontractor cannot exceed its limitation for the ownership of Allotment contracted AFUs when considering both AFUs owned through its Allotment Contract(s) and the water represented by the Subcontract. In the case of a water supply emergency which temporarily affects the Subcontractors' base supply, the Board may choose to consider a proposed Subcontract of specified and limited duration disregarding AFU ownership limitations.
- 5.4.2 The Northern Water 1995 Interim Ownership Limitation Guidelines, or whatever then existing Northern Water ownership limitation policy or rule, will be used as the primary criteria in evaluating Subcontractor ownership limitations when the Subcontractor is using water for purposes other than irrigation. A simplified example of a C-BT ownership limitation calculation is included in Appendix A to this Rule. C-BT ownership limitations shall

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not be applied when the beneficial use of the C-BT Project water by the Subcontractor is for irrigation.

- 5.4.3 The Subcontractor must be in compliance with the conditions in the Northern Water 1997 Base Water Supply Policy, or with whatever then existing Northern Water base water supply policy or rule that is in place.
- 5.5 A Subcontract will only be considered for approval if the Subcontract meets the following minimum requirements:
- 5.5.1 Requires C-BT Project water only be placed to beneficial use on land situated within the boundaries of Northern Water.
- 5.5.2 Assures use will be for a beneficial use(s) approved by Northern Water.
- 5.5.3 Requires that C-BT Project water not be reused, and any return flows resulting from its initial use, if and when they occur, must be returned within the boundaries of Northern Water.
- 5.5.4 The Subcontract is based on AFUs.
- 5.5.5 The AFUs associated with the proposed Subcontract plus the aggregated sum of AFUs associated with all previous Subcontracts associated with a specific Allotment Contract do not exceed the total number of AFUs associated with that Allotment Contract.
- 5.5.6 Does not create a joint or undivided interest or other form of concurrent property interest in a C-BT Project Allotment Contract beyond that which is provided in the Allotment Contract.
- 5.5.7 Does not include a provision requiring the Allotment Contract be transferred to the Subcontractor unless such transfer is contingent upon the review and approval by the Board.
- 5.5.8 Limits the sale of the Subcontractor's base supply to a maximum of 15% during the pendency of the Subcontract and, furthermore, provides that no base supply be sold or transferred outside the boundaries of Northern Water.
- 5.5.9 Recognizes Northern Water's authority to prevent the annual certification of C-BT Project water to the Allottee's designated Account Entity if an Allottee is not in good standing with the Allotment Contract or this Rule.
- 5.5.10 Recognizes Northern Water will not arbitrate any disputes, if such occur, between the Allottee and Subcontractor.

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- 5.5.11 Provides adequate terms and conditions needed to address existing or future encumbrances on the subject Allotment Contract and specifically eliminates any and all liability to Northern Water resulting from the enforcement of those encumbrances by the Allottee, the Subcontractor, or other parties that may hold or have interest in such encumbrances.
- 5.5.12 Does not create liability for Northern Water.
- 5.5.13 Does not contain terms or conditions that violate rules, regulations, policies and procedures of Northern Water.
- 5.6 In addition, the Board will only consider an Interruptible Supply Subcontract that meets the following additional minimum requirements:
 - 5.6.1 When the Allottee's use is irrigation and the Subcontract use is non-irrigation, the Subcontract must limit the Subcontractor's use of the associated C-BT Project water to a maximum of 3 out of 10 years (rolling 10-year period) except as provided for as follows: On a case by case basis, the Board may consider approval of a Subcontract that allows the Subcontractor's use of the associated C-BT Project water more than a maximum of 3 out of 10 years if the Subcontract contains additional requirements prior to the Subcontractor's usage more than a maximum of 3 out of 10 years. These requirements may include, but are not limited to: (A) restrictions on lawn watering to less than 3 days per week; (B) a Governor-issued drought declaration for the water supplier's geographical region; or (C) a C-BT quota based upon supply limitations rather than anticipated demand. However, when the Allottee is using water for non-irrigation purposes and Subcontracting for irrigation purposes, there will not be a limit on the number of years water can be used for irrigation purposes.
 - 5.6.2 Is the only Subcontract between the Allottee and Subcontractor associated with a specific tract of irrigated land.
 - 5.6.3 Confirms that the Allottee issuing the Subcontract will not rent C-BT Project water to the Subcontractor outside the terms of the proposed Subcontract or through previously entered Subcontracts.

6.0 Enforcement Action

- 6.1 In the event Northern Water learns of a Subcontract for the beneficial use of water yielded by an Allotment Contract that has not been previously exempted or approved by the Board in accordance with Section 3.1 or been exempted within the allowable period of time described in Section 3.2 of this Rule, Northern Water shall deny delivery of C-BT Project water to the Subcontractor or beneficiary of the Subcontract. Further, Northern Water will deny the transfer and delivery of C-BT Project water that would result in the Subcontractor receiving the benefits of the

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Subcontract by any other means of transfer, including but not limited to, two-party or multiple-party transfers that may utilize the annual rental or lease program administered by Northern Water.

7.0 Other Considerations Associated with Subcontracts

- 7.1 The C-BT Project water associated with a Subcontract will not be considered a demand or commitment to serve in the calculations to determine the ownership limitations for C-BT Project water for the Allottee.
- 7.2 Use of water by the Subcontractor shall be subject to a Northern Water Rule 11 Charge if applicable.
- 7.3 The Board will not approve transfer of an Allotment Contract or any of the associated AFUs of an Allotment Contract until any and all encumbrances represented by the Subcontract are either released, or the new Allottee accepts the encumbrances represented by the Subcontract.
- 7.4 Northern Water shall notify the Subcontractor of any Allotment Contract Transfer applications received from the Allottee that are connected to the Subcontract. In the event all or a portion of an Allotment Contract associated with a Subcontract is being considered for forfeiture by the Board, Northern Water shall notify the Subcontractor of the hearing and subsequent decision concerning forfeiture, but will not recognize the Subcontract as an encumbrance on the Allotment Contract when disposing of forfeited AFUs.
- 7.5 C-BT Project water seasonally transferred from an Allottee to a Subcontractor (as described by a Subcontract) must use the same administrative procedures as seasonally transferred "rental" water. The transfer request must be accompanied by adequate documentation indicating that the seasonal transfer is associated with the specified Subcontract. The Subcontract will be considered as having been fully operated even if only a portion of the water under a Subcontract is seasonally transferred.

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**Appendix A - Simplified Example of A C-BT Ownership Limitation
Calculation For A Hypothetical Water Supplier Who Owns 200 Units and
Has a Subcontract for 100 units 3 in 10 Years**

Water Supplier Information

| | Average Yield (AF/YR) | Firm Yield (AF/YR) |
|--------------|-----------------------------|--------------------------|
| Ditch A | 100 | 40 |
| Ditch B | <u>200</u> | <u>100</u> |
| Total | 300 | 140 |

- Current C-BT Unit Ownership is 200 units.
- Subcontract for 100 units 3 in 10 years. This results in 30 units available in average years and 100 units in dry years.
- Total Water Demand is 500 AF/YR.

Ownership Limitation Calculation

| Row | <u>Average Yield Method</u> | Formula | |
|-----|-----------------------------------------------|-----------|-------------|
| A | Total Water Demand X 2 | | 1000 |
| B | Average Yield of Native Supplies | | <u>-300</u> |
| C | Maximum Number of C-BT Units | A - B | 700 |
| D | Currently Owned C-BT Units | | -200 |
| E | Subcontracted C-BT Units Available on Average | | <u>-30</u> |
| F | Additional C-BT Units | C - D - E | 470 |

| Row | <u>Firm Yield Method</u> | Formula | |
|-----|------------------------------------------------------|-----------|-------------|
| A | Total Water Demand | | 500 |
| B | Firm Yield of Native Supplies | | <u>-140</u> |
| C | Maximum Volume of C-BT | A - B | <u>360</u> |
| D | Maximum Number of C-BT Units | C X 2 | 720 |
| E | Currently Owned C-BT Units | | -200 |
| F | Subcontracted C-BT Units Available During a Dry Year | | <u>-100</u> |
| G | Additional C-BT Units | D - E - F | 420 |

**Additional C-BT Units Available - Use the
Smaller of the Average and Firm Yield Method** **420**

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Procedures for the Rule Governing the Subcontracting Of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

1.0 Purpose of Procedures and Potential Future Modifications to the Procedures

- 1.1 To provide additional direction for implementing the Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts (Rule) (Effective Date: August 11, 2016).
- 1.2 To assist Allottees and other water users in understanding the administration of the Rule.
- 1.3 The Board may modify the provisions of the Procedures by a resolution or motion duly adopted at any regular Board meeting.

2.0 Definitions – Terms used in the Procedures shall have the same meaning as in the Rule governing the Subcontracting of Beneficial Use adopted concurrently with the Procedures.

3.0 Allottee Submittal Requirements and Fees

- 3.1 To facilitate the review and, if applicable, the approval of a Subcontract, adequate information and documentation must be submitted to Northern Water. Needed information and documentation include:
 - 3.1.1 Allottee name, address, contact name, contact telephone number, and contact e-mail address.
 - 3.1.2 A copy of the proposed or signed Subcontract. The Allottee may redact financial arrangements and other proprietary information from the Subcontract provided sufficient information is retained for the Board to make a determination as to whether the Subcontract is in compliance with the Rule or is exempt from the Rule.
 - 3.1.3 In accordance with Rule Section 3.2, the Allottee may submit a proposed amended draft of an existing Subcontract entered into prior to the adoption of the Rule that corrects known violations of the existing Subcontract pursuant to Rule requirements.
- 3.2 All Subcontract information and documentation shall be submitted to:

Northern Water
c/o General Manager
220 Water Avenue
Berthoud, CO 80513

Procedures for Subcontracting of Allotment Contracts Rule
August 11, 2016

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3.3 Fee to Review

- 3.3.1 There will be no fee to review the request for exemption from the Rule.
- 3.3.2 The fee to review a proposed Subcontract under the Rule shall be two and one half times the fee charged for the transfer of an allotment contract or such future fee as the Board may adopt from time to time.

4.0 Request for Exemption from the Rule

4.1 Northern Water Staff Evaluation

- 4.1.1 Staff will assure that all necessary information has been submitted in accordance with Section 3 of the Procedures.
- 4.1.2 Within 30 business days following submittal staff will consider compliance with the Rule criteria. If Northern Water staff believes there is a term(s) in the Subcontract which would bar or delay the Board from a determination that the Subcontract is exempt from the Rule, staff will notify the Allottee of such term(s) and suggest or allow the Allottee to propose an alternative Subcontract term(s) to correct the violation(s). The Allottee will make the final decision as to the Subcontract (original or modified) that is submitted to the Board for consideration for exemption.

4.2. Board Consideration

- 4.2.1 Not later than 60 days after an initial submittal of an existing (or modified) Subcontract entered into prior to the adoption of the Rule, staff shall provide a recommendation to the Board at a regularly scheduled Board meeting whether the existing Subcontract submitted: 1) should be considered exempt from the Rule; or 2) should not be considered exempt from the Rule.
- 4.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should or should not be considered exempt from the Rule.
- 4.2.3 Upon review of the information and documentation provided by the Allottee, the Board shall make a determination whether the existing Subcontract is exempt from the Rule. If the Board determines the Subcontract is not exempt and violations may be corrected, it will provide direction concerning what violations of the Rule must be corrected for the Subcontract to be exempt from the Rule.
- 4.2.4 The Allottee shall have six months from the date of Northern Water's notice as to the exempt status to amend or modify the Subcontract to correct violations identified by the Board and resubmit a request for a Board determination that the Subcontract is exempt.

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4.2.5 If the Subcontract that the Board exempts under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

5.0 Request for Approval of a Subcontract in Accordance with the Rule

5.1 Northern Water Staff Evaluation

5.1.1 Staff will assure that the administrative fee has been paid and all necessary information has been submitted in accordance with Section 3 of these Procedures. The proposed Subcontract will not be reviewed until the administrative fee has been paid.

5.1.2 Within 30 business days following submittal staff will evaluate compliance with Rule and Procedures requirements. If staff believes there are violations of Rule or Procedures requirements, staff will notify the Allottee of such violations and propose, or allow the Allottee to propose, new draft language to correct the violations. The Allottee will make the final decision concerning Subcontract language that is submitted to the Board for consideration and approval.

5.2 Board Consideration

5.2.1 Not later than 60 days after an initial submittal staff will make recommendations to the Board concerning approving or the bases for denying approval of the Subcontract as submitted.

5.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should be approved or denied.

5.2.3 In accordance with the Rule the Board may approve or not approve the Subcontract. If the Board does not approve the Subcontract, it will provide the bases why the Subcontract was not approved. The Allottee may address the Board concerns and resubmit a Subcontract for approval. No additional fees will be assessed for resubmitted, modified proposed Subcontracts.

5.2.4 If the Subcontract that the Board approves under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

6.0 Future Violation of the Rule and Enforcement Actions

6.1 Within 10 days after becoming aware of a violation, or potential violation, of the Rule Northern Water staff will provide notice of such a violation to the Allottee

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and Subcontractor via certified mail. The Allottee shall respond to Northern Water in writing within 10 days of receipt of such notification describing the action the Allottee and/or Subcontractor will undertake to correct the violation. If the violation is not corrected, Northern Water staff will recommend to the Board the enforcement of the Rule. Consideration of the violation shall be placed on the agenda of the next regularly scheduled Board meeting or as soon thereafter as can be scheduled with the Allottee and other affected parties, and the Board may take action concerning staff's recommendation at that Board meeting.

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Exhibit C

10-Year Rolling Period

For the purpose of this Agreement, a 10-year rolling period is defined as a 10-year period of time that begins when Broomfield first exercises its option to use the ATM water and is updated annually. Unless otherwise agreed, Broomfield is limited to exercise its option 3 years in any 10-year rolling period.

The graphic below illustrates a range of scenarios where Broomfield can exercise its option for the ATM water over a period of 25 years. For example, if Broomfield exercised its option in 2020 (Year 3), it could exercise its right two additional times through 2029 (Year 12).

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Exhibit D

Description of and Instruction for Calculating the Escalator for the ATM Payment

MEMORANDUM

TO: TODD DOHERTY

FROM: BEN NORMAN, HARVEY ECONOMICS

DATE: APRIL 21, 2017

RE: LEASE ESCALATOR CALCULATION
INSTRUCTIONS

Introduction

Briefly, the transaction between Larimer County and Broomfield involves the sale of a number of Colorado-Big Thompson (C-BT) units and an agreement between the two parties to enter into a perpetual water lease agreement for a further number of C-BT units. For an upfront fee, Broomfield has the option to lease this further number of C-BT units for three out of ten years on a rolling ten-year period basis. The lease price of the water will be adjusted every year, based on the lease price escalator.

Harvey Economics was tasked with developing an escalator for the lease price of water in this agreement. After the initial base price is agreed upon between Larimer and the Broomfield, an agreement must be reached about how the base water price will be adjusted each time the water is leased. This escalator is important because either party may worry that they will be "short-changed" in a long term deal. Over time, the prevailing price of water can and will change and the parties will want to track that change, so that neither side in the deal is unfairly disadvantaged. To this end, escalators are built around the underlying factors that drive the price of the good, in this case, water.

Lease Escalator

This section describes the steps for calculating the lease price escalator.

Price of Corn

The origin of the corn price is USDA's National Agricultural Statistics Service's (NASS) prices

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report titled "Agricultural Prices."

The report is available from the NASS website (www.nass.usda.gov) under the Data and Statistics drop down menu, accessible by clicking the Economic and Prices link. Agricultural Prices is the first link under the Prices Reports heading. These reports are archived and available electronically from the Mann library at Cornell University. In fact, the NASS link sends you to the archive at Cornell. The monthly reports are available back to the 1960s.

Annual Average Corn Price

The annual average corn price for the US is available in the November issue in the table entitled "Market Year Average Prices Received for Corn – States and United States: Marketing Years xxxx and yyyy," where xxxx and yyyy represent the previous two years. However, this requires you to open the November edition for each year that you need the data. There is an easier method of retrieving the data, described below:

Historic Corn Price Archive

The USDA's Economic Research Service (ERS) maintains a Feed Grains Database that includes a table of historical corn prices.

From the ERS website (<http://www.ers.usda.gov>), click on the data tab (at the top), and then scroll down to the Feed Grains Database. Click on the link and it will take you to an overview page. Click on the "Feed Grains: Yearbook Tables" link to get to the tables. Scroll down and click on the Feed Grains Data-Recent link. Clicking this link will open an Excel spreadsheet. In the spreadsheet, go to the tab labeled FGYearbookTable09. This table contains corn and sorghum prices; the corn price is in the top table. Use the value in the "Wt avg" column (the right-most column). The dates represent a marketing year. Choose the value where the year in the escalator corresponds with the latest year in the two-year marketing year (e.g. if you are looking for the 2015 value, use the 2014/15 marketing year).

Purpose

The intent of this index is to act as a proxy for the change in the amount of money that farmers would receive if they used their water to farm. The price that farmers receive for their crops is an indicator of the amount of revenue that they will forego by leasing their water. Corn was chosen because it is the predominant crop in the area, and as the price of corn increases, the value of water increases, as farmers will now require more money for water leasing to be more attractive than farming. Any successor index will need to have these same characteristics: availability, relevance to the area, and a positive relationship to farmers' revenues.

Rational for Choosing National Price

The national price of corn was chosen over the Colorado price for two reasons. Firstly, the national price is less subject to large annual fluctuations than the Colorado price, and secondly, it

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is probably that the national corn price statistical series will outlast the Colorado statistical series.

Municipal Cost Data Index

The Municipal Cost Data Index comes from American City and County magazine. While this information is primarily intended for city and county employees, there are no restrictions on who can register and access the data.

Obtaining data from the Municipal Cost Data Index

To obtain the data, go to the magazine's website (<http://americancityandcounty.com>) and click on the Cost Index at the top. Either log in or register for the site (Note: Other is a value response to the employment questions). Scroll to the bottom of the Municipal Cost Index page to the Municipal Cost Index Archives section. Click on the appropriate year and use the December value as that year's value.

Purpose

The intent of this index was to provide a balance to the farm-side index by including a municipal-side index. This index should track the costs of running a municipality and reflect the impacts of inflation on the cost of providing municipal services.

Escalator Calculation

Below are detailed instructions to calculate the five-year moving average of the composite index and the ten-year lease rate escalator.

Calculating the Five-Year Average

- 1) Determine the latest year that you have data for both the price of corn and the municipal cost index. This is the final year of the combined dataset.
 - a. Ensure you have data for all the years back to (2027) and including the final year for both the price of corn and the municipal cost index.
 - b. The initial year is the first year of the dataset; i.e. 2027
 - c. Use the initial year (2027) as the base year for the indices.
- 2) Convert both the Municipal Cost Index (or successor) and the Corn Prices into an index using the same base year.
 - a. For the Municipal Cost Index, divide each year's index value by the base year value and multiply by 100.
 - b. For the corn price, divide each year's price by the price from the base year.
 - i. If this was done correctly, the base year index value would be 100 for each index.
- 3) Combine the Municipal Cost Index and the newly created Corn Price Index by averaging the two index values for each year to create a new composite index.

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- a. For each year, add the index values for both the Corn Price Index (created in step 4b) and the Municipal Cost Index (from step 4a) and then divide the total by two.
- b. The result of these calculations is the composite index.
- 4) Create a five-year moving average of the composite index.
 - a. Calculate the five-year average for a year by adding together that year's value with the previous four years' values, and divide the result by five.
 - i. You will need five years' worth of data to do this calculation, so it is not possible to calculate the five-year average for the first four years of the composite index.
 - b. Continue to calculate the next year's five-year average until you reach the final year.
- 5) To calculate the lease rate escalator, divide the value of the five-year average from the final year by the five-year average from the initial year (2027).
 - a. The final year's five-year average is the average of the final year and the previous four years.
- 6) To obtain the lease rate, multiple the original lease rate (\$225/unit) by the lease rate escalator calculated in step 5.
 - a. For example, if the previous lease rate was \$100, and the lease rate escalator was 1.59 (a 59% increase over the period), then the new lease rate would be \$159.

The steps detailed in this memo will allow anyone to update the lease rate escalator and determine the proper lease price for the water.

Data Sources

HE identified individual selection criteria for picking data series or indices which should be considered in a composite index. Criteria for a good price driver include simplicity, intuitiveness and availability. Simplicity refers to the ease of including the price driver data in the calculations of the final index; the more complicated the calculations, the less likely that the index will be updated properly. The intuitive criterion is important due to logic and expectations; an intuitive price driver is one that logically should be included whether it is simple or complex as it clearly ought to have an impact on prices. Additionally, if people understand a particular driver and expect it to be included in the index, its inclusion will increase the likelihood that the index will be understood and accepted. The availability criterion means that the price drivers are regularly available data from a reputable source.

Based on these criteria, HE chose two price drivers, a crop price index and a municipal cost index. Together, these two drivers reflect the situations faced by a farmer as well as by a municipality, without adding unnecessary complexity. A fuller description of each component price index is provided below.

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Crop Price Index. A farmer's annual revenue is based on the amount of crop that they grow and the price of that crop. The higher the price, the more revenue a farmer will receive for a given amount of production. If a farmer leases their water, and is unable to produce a crop, they would prefer to do it in a year with low crop prices, when they would give up less revenue. Therefore, the price that farmers receive for their crops is an indicator of the amount of revenue that they will forego by leasing their water. As the crop price index increases, the price of water is expected to increase since farmers will require more money for water leasing to be more attractive than farming. The predominant crop grown in on the particular farm in this agreement is corn therefore HE developed a crop price index based on the price of corn. The price of corn was obtained from the USDA.¹

Municipal Cost Index. The Municipal Cost Index is produced by American City and County Magazine and is designed to show the effects of inflation on the cost of providing municipal services. As the cost of providing municipal services increases, an increasing price paid for water will represent the same percentage cost to municipalities. Farmers will expect them to pay more for water since that municipality is paying more for everything.

Composite Index. HE applied the two component indices with equal weighting to generate the preliminary composite index. Before the indices could be combined, they both had to be set to the same base year (the base year for both indices was set to 1982) to ensure that both indices were on the same scale. HE then calculated the five-year moving average of the preliminary composite index to smooth out any single year aberrations, generating the final composite index. The average annual change from 1984 to 2015 is 2.1 percent. In a single year the highest increase was 8.4 percent and the lowest was negative 2.5 percent.

Conclusion

HE investigated water lease-price drivers in Larimer County with the aim of developing a lease-price escalator for a long-term water lease. We found two indices that satisfy the criteria and combined them into a composite index designed to escalate the lease price of a long-term lease. This escalator will be useful to account for changes in water lease prices over time to ensure that one side is not unfairly disadvantaged by changes in the price of water.

¹ Agricultural Prices. USDA, National Agricultural Statistics Service. November edition, Various years.
https://www.nass.usda.gov/Statistics_by_Subject/Economics_and_Prices/index.php

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Exhibit E

ESCROW AGREEMENT FOR INTERGOVERNMENTAL AGREEMENT FOR SALE AND SHARED USE OF C-BT UNITS

1. **PARTIES.** The parties to this Escrow Agreement are the **CITY AND COUNTY OF BROOMFIELD, a Colorado municipal corporation and county** ("Broomfield"), **THE BOARD OF COUNTY COMMISSIONERS OF LARIMER COUNTY, COLORADO, a governmental subdivision of the State of Colorado** ("County"), and **COLORADO ESCROW AND TITLE SERVICES, LLC** ("Escrow Agent").
2. **RECITAL.** Broomfield and the County have entered into an Intergovernmental Agreement ("IGA") for the transfer of 115 Units ("115 CBT Units") and for the shared use of 80 Units (the "ATM Units") in the Colorado Big Thompson Project which is operated by the Northern Colorado Water Conservancy District ("Northern"). The IGA is attached to this Escrow Agreement.
3. **DEPOSIT INTO ESCROW.** On or before August 10, 2017, Broomfield will deposit \$3,770,250.00 (the "Escrow Deposit") with the Escrow Agent, said amount representing \$2,938,250.00 for Broomfield's portion of the purchase of the 115 CBT Units, and \$832,000.00 as consideration for the right to subcontract to use the ATM Units. The Escrow Agent shall place the Escrow Deposit in an interest-bearing account, and disperse any interest in accordance with this Agreement.
4. **ESCROW ACCOUNT FEES.** Broomfield and the County shall each pay \$150.00 to the Escrow Agent, for a total of \$300.00, as consideration for this Escrow Agreement. The County's portion of this expense shall be deducted from the Escrow Deposit prior to the distribution of proceeds to the County.
5. **CONDITIONS FOR CLOSING.** All of the Escrow Deposit shall be released by the Escrow Agent from the escrow account to the County within seven (7) days after Broomfield and the County jointly deliver written notice to Escrow Agent that they have received:
 - a. Written approval by Northern of the transfer of 115 CBT Units to Broomfield;
 - b. Any and all other documents required for the transfer of the 115 CBT Units; and
 - c. Written approval by Northern of the subcontracting agreement for the ATM Units set forth in Section 4 of the IGA.
6. **DISTRIBUTION OF FUNDS.** Within seven (7) days of the written notice from Broomfield and the County, the Escrow Deposit shall be distributed as follows:

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- \$3,770,250.00 to the County minus the County's Escrow Account Fees described above in Section 4.

- Any interest accrued on the Escrow Deposit during the period of time the Escrow Deposit is escrowed with the Escrow Agent shall be released to Broomfield at the time the Escrow Deposit is released to the County.

7. **FAILURE TO CLOSE.** In the event the conditions in paragraph 5 and in the IGA are not satisfied on or before October 31, 2017, or upon joint notice from Broomfield and the County that the IGA has been terminated by its terms, Escrow Agent shall deliver all funds in the escrow account, along with any interest accrued thereto, to Broomfield, unless the County and Broomfield extend that deadline and provide written notice thereof to the Escrow Agent. This Escrow Agreement may be extended upon written approval by all parties.

8. **ADDITIONAL DOCUMENTS OR ACTION.** The parties agree to execute any additional documents and to take any additional action necessary to carry out this Escrow Agreement.

9. **INDEMNIFICATION.** In the event of any conflicting demand upon it in connection with this Escrow Agreement, Escrow Agent may continue to hold the escrowed funds until receipt of instructions from the County and Broomfield or until a final order by a court of competent jurisdiction resolving the subject dispute. Escrow Agent shall be entitled to rely upon any such final order. If for any reason the County and Broomfield fail to resolve such dispute, Escrow Agent may, at its discretion, commence a civil action to interplead any conflicting demands made upon it. Escrow Agent's deposit with a court of competent jurisdiction of the escrowed funds shall relieve Escrow Agent from all further liability and responsibility hereunder. The County and Broomfield, to the extent permitted by law, agree to indemnify and save Escrow Agent harmless against all costs, damages, attorney's fees, expenses and liabilities which Escrow Agent may incur or sustain in connection with this Escrow Agreement, including any interpleaded action brought by Escrow Agent. Escrow Agent shall not be liable for any act it may do or omit to do hereunder while acting in good faith and in the exercise of its reasonable judgment, and any act done or omitted by Escrow Agent pursuant to the advice of its attorney shall be conclusive of such good faith and reasonable judgment.

10. **NOTICES.** Any notice required or permitted by this Escrow Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified or registered mail, postage and fees prepaid, addressed to the party to whom such notice is intended to be given at the address as has been previously furnished in the IGA or otherwise in writing to the other party or parties. Such notice shall be deemed to have been given when deposited in the U.S. Mail.

11. **TIME OF THE ESSENCE.** Time is of the essence to all performance required by this Escrow Agreement.

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12. **PARAGRAPH CAPTIONS.** The captions of the paragraphs are set forth only for convenience and reference, and are not intended in any way to define, limit, or describe the scope or intent of this Escrow Agreement.

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**CITY AND COUNTY OF BROOMFIELD, A COLORADO MUNICIPAL CORPORATION
AND COUNTY**

Charles Ozaki
CHARLES OZAKI
CITY AND COUNTY MANAGER
DATE SIGNED: 7/28, 2017
ADDRESS: One DesCombes Drive, Broomfield, CO 80020

ATTEST

Ingrid Begenas
CITY AND COUNTY CLERK
SEAL

APPROVED AS TO FORM:
[Signature]
CITY AND COUNTY ATTORNEY - ASSISTANT

**BOARD OF COUNTY COMMISSIONERS OF LARIMER COUNTY, COLORADO, A
GOVERNMENTAL SUBDIVISION OF THE STATE OF COLORADO**

[Signature]
LEW GATER III
BOARD CHAIR
DATE SIGNED: August 1, 2017
ADDRESS: 200 W Oak Street, Fort Collins, CO 80521



ATTEST:
[Signature]
DEPUTY CLERK OF THE BOARD

DATE: 8/1/17

APPROVED AS TO FORM:

[Signature]
COUNTY ATTORNEY
Deputy

DATE: 7-27-17

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**ESCROW AGENT:
COLORADO ESCROW AND TITLE SERVICES, LLC
BY: _____
Title: _____
DATE SIGNED: _____, 2017
ADDRESS: 520 Main Street, Suite C, Longmont, CO 80501**

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Exhibit F

LEASE AGREEMENT Lease of Colorado-Big Thompson Units

This Lease Agreement ("Lease") is made and entered into this _____ day of _____, 2017 by and between the **City and County of Broomfield**, a Colorado municipal corporation and county ("Broomfield" or "City"), and the **Board of County Commissioners of Larimer County, Colorado**, a governmental subdivision of the State of Colorado ("Larimer County" or "County"). Broomfield and Larimer County may be collectively referred to herein as the "Parties" or individually as a "Party."

RECITALS

WHEREAS, as part of a separate agreement entitled "Intergovernmental Agreement by and between the City and County of Broomfield and Larimer County for the Sale and Shared Use of Colorado-Big Thompson Units" dated _____, 2017, the County conveyed 115 Colorado-Big Thompson (C-BT) Units to Broomfield ("115 Units" or "Leased Units") represented by Northern Colorado Water Conservancy District ("NCWCD") Allotment Contract no. 7857; and

WHEREAS, pursuant to Section 3.4 of that separate agreement, Broomfield and the County agreed that the County was reserving a first right of refusal to lease the 115 Units represented by Allotment Contract no. 7857 in years when Broomfield elects to lease the water attributable to the 115 Units; and

WHEREAS, the purpose of this Lease is to set forth the terms and conditions of the County's right of first refusal to lease the 115 Units; and

WHEREAS, the 115 Units are administered by NCWCD and all transfers, either temporary or permanent, are subject to approval by the NCWCD Board of Directors.

NOW, THEREFORE, in consideration of the promises and covenants of the Parties, and other consideration, the receipt and adequacy of which is confessed and acknowledged, it is agreed by and between Broomfield and Larimer County as follows:

AGREEMENT

5. **RECITALS**. The foregoing Recitals are incorporated into and made a part of this Lease as if fully set forth herein.

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6. **AUTHORITY.** This Lease has been duly adopted by the Parties' governing bodies and the undersigned representatives are authorized to execute this Lease on behalf of each respective Party.
7. **PROVISION OF LEASE TO NORTHERN.** Promptly after execution of this Lease, the County shall provide to NCWCD a copy of the executed Lease or such other documents satisfactory to the Parties and NCWCD evidencing the existence of the Lease that will constitute a Claim of Lien, as defined by NCWCD's rules and regulations, on the 115 Units in NCWCD's records for Allotment Contract no. 7857 and serve as notice to third parties that may seek to purchase or lease the 115 Units.

8. **LEASE OF 115 C-BT UNITS TO BROOMFIELD.** Contingent upon the approval by NCWCD of the sale and transfer of the 115 Units to Broomfield, the County shall have a perpetual right of first refusal to lease the 115 Units on a year-to-year basis during years when Broomfield elects to lease the water attributable to the 115 Units, as follows:

8.1. Notice to Lease. In such years when Broomfield determines, in its sole discretion, that it is electing to lease all or any portion of the water attributable to the 115 Units, Broomfield shall notify the County of its intention in writing pursuant to Section 7, below, and such notice shall include the number of units being offered for lease and the lease price per unit ("Lease Price") for those units ("Notice to Lease"). Broomfield shall provide such Notice to Lease to the County promptly after the decision is made by Broomfield to lease the water attributable to all or any portion of the 115 Units and Broomfield shall endeavor in good faith to provide the Notice to Lease within seven (7) days after NCWCD's second setting of the quota for C-BT units for that year.

8.2. Exercise of Right of First Refusal to Lease. Upon Receipt of the Notice to Lease from Broomfield, Larimer County shall have fifteen (15) days to notify Broomfield in writing pursuant to Section 7, below, of its intention to exercise its right to lease all or any portion of the units being offered for lease and shall specify the number of units the County will lease ("Leased Units"). The County shall also promptly pay Broomfield the Lease Price.

8.3. Lease Price. The Lease Price shall equal the equivalent of the NCWCD municipal Assessments rate and transfer fees for the Leased Units, plus a 10% administrative fee.

8.4. NCWCD Documentation. The Parties agree to cooperate and coordinate concerning the prompt preparation and submittal of the CD-4 card, and/or such other documentation required by NCWCD to allow the County to utilize the water attributable to the Leased Units when the County exercises its right of first refusal to lease.

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9. **NO LIENS OR ENCUMBRANCES.** Broomfield and the County agree the County's rights under this Lease shall constitute a Claim of Lien, as defined by NCWCD's rules and regulations, upon and shall encumber the 115 Units. Unless the County's prior written consent is given, Broomfield shall not suffer or allow any other lien or encumbrance to attach to the 115 Units, except for bonds issued by Broomfield or its enterprise(s) which bonds are secured by Broomfield's water service infrastructure, water contract rights, and water rights. If Broomfield suffers or allows an unauthorized lien or encumbrance to attach to the 115 Units without the prior written consent of the County, the County, after notice to Broomfield giving Broomfield 60 days to release the lien or encumbrance, shall have the right to cause any such lien holder or encumbrancer to release the 115 Units free of the lien or encumbrance, and, in such event, the County shall be entitled to recover from Broomfield all of the County's costs, expenses, and reasonable attorneys' fees incurred in obtaining the release of such lien or encumbrance.
10. **ASSIGNMENT.** Upon the written consent of the other Party, which shall not be unreasonably delayed or withheld, a Party may assign its rights under this Lease subject to NCWCD approval. Assignment of this Lease by Larimer County shall be restricted to the owner of the Little Thompson Farm for agricultural irrigation.
11. **NOTICE.** All notices, demands, or other written communication required or permitted to be given by either Party to the other Party shall be made in writing and: hand delivered; sent by first class United States mail, postage prepaid, addressed as follows; or via electronic mail addressed as follows, or to such other address as a Party may designate by notice to the other Party:

If to Larimer County:

Gary Buffington, Director of Natural Resources
1800 S CR 31
Loveland, CO 80537
Telephone: 970-619-4560
E-mail: gbuffington@larimer.org

With a copy to:

Larimer County Attorney's Office
Attention: Jeannine Haag, County Attorney
224 Canyon Avenue, Suite 200
Fort Collins, CO 80521
Telephone: 970-498-7450
Email: jeanninehaag@larimer.org

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AND

Daniel K. Brown
Fischer, Brown, Bartlett & Gunn, P.C.
1319 West Prospect Road
Fort Collins, CO 80525
Telephone: 970 401-9000 x 212
Email: danbrown@fbgpc.com

AND

Kerri Rollins, Open Lands Program Manager
Larimer County of Natural Resources Dept
1800 S CR 31
Loveland, CO 80537
Telephone: 970-619-4577
E-mail: krollins@larimer.org

If to Broomfield:

Director of Public Works
City and County of Broomfield
One Des Combes Drive
Broomfield, CO 80020
E-mail: dallen@broomfield.org

With a copy to:

Harvey W. Curtis
Harvey W. Curtis and Associates
8310 South Valley Highway, Suite 230
Englewood, CO 80112
Telephone: 303 292-1144
E-mail: hcurtis@curtis-law.com

AND

Water Resources Manager
City and County of Broomfield
4395 West 144th Avenue
Broomfield, CO 80023
Telephone: 303-464-5605

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E-mail: mcalvert@broomfield.org

12. **ENTIRE AGREEMENT.** This Lease represents the entire agreement between the Parties on the matters set forth herein and supersedes all prior negotiations, representations or agreements respecting said matters whether written or verbal, other than those set forth in the _____, 2017 Intergovernmental Agreement by and between the City and County of Broomfield and Larimer County for the Sale and Shared Use of Colorado-Big Thompson Units.
13. **NO WAIVER OF IMMUNITY; LIABILITY.** Notwithstanding any other provision to the contrary, nothing herein shall constitute a waiver, express or implied, of any of the immunities, rights, benefits, protection, or other provisions of the Colorado Governmental Immunity Act ("CGIA"), C.R.S. §24-10-101, *et seq.*, as applicable, as now or hereafter amended nor shall any portion of this Lease be deemed to have created a duty of care which did not previously exist with respect to any person not a party to this Lease. Subject to the limits, notice requirements, immunities, rights, benefits, defenses, limitations, and protections of the CGIA, each Party agrees to be responsible and assume liability for losses, costs (including reasonable attorney's fees), demands, or actions caused by its own wrongful or negligent acts and omissions, and those of that Party's officers, agents and employees acting in the course of their employment in connection therewith.
14. **OBLIGATIONS SUBJECT TO APPROPRIATION.** The obligations of the County to commit or expend funds after calendar year 2017 are subject to and conditioned upon the annual appropriation of funds sufficient and intended to carry out said obligations by the Larimer County Board of County Commissioners, in the County's sole discretion.
15. **GOVERNING LAW.** This Lease shall be governed by and construed in accordance with the laws of the State of Colorado. The forum for any dispute regarding this Lease shall be in the Weld County District Court, State of Colorado.
16. **AMENDMENTS.** Any amendments or modifications to this Lease must be in writing and executed by the Parties to be valid and binding.
17. **NO THIRD PARTY BENEFICIARIES.** This Lease shall inure only to the benefit of the signatories below. There are no third party beneficiaries intended under this Lease.
18. **COUNTERPARTS.** This Lease may be executed in counterparts and, as so executed, shall constitute one Lease, binding on the Parties, even though all the Parties have not signed the same counterpart. Any counterpart of this Lease which has attached to it separate signature pages, which altogether contain the signatures of all the Parties, shall be deemed a fully executed instrument.

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19. **BINDING EFFECT.** This Lease, when executed, shall bind the Parties and their successors and assigns.

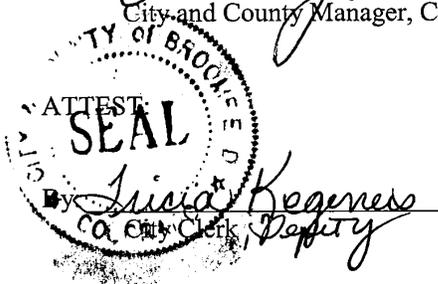
20. **SEVERABILITY.** If any provision of this Lease is invalidated by any court of competent jurisdiction, the remaining provisions shall continue in full force and effect.

21. **CAPTIONS.** The captions in this Lease are for the convenience of the Parties and the captions shall have no meaning, force, or effect.

IN WITNESS WHEREOF the Parties hereto have executed this Lease as of the day and year first above written.

THE CITY AND COUNTY
OF BROOMFIELD

By: Charles Ozaki
City and County Manager, Charles Ozaki

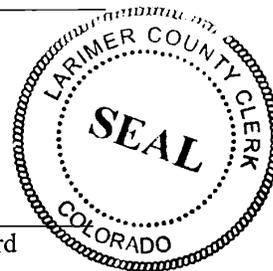


APPROVED AS TO FORM
FOR BROOMFIELD:

By: [Signature]
City and County Attorney -
ASSISTANT

BOARD OF COUNTY COMMISSIONERS
LARIMER COUNTY, COLORADO

By: [Signature]
Chair, Lew Gaiter III



ATTEST:
By: [Signature]
Deputy Clerk of the Board

APPROVED AS TO FORM
FOR COUNTY:

By: [Signature]
Deputy County Attorney

Exhibit C

Northern Colorado Water Conservancy District's Water Rules

Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

Historical Background

Since 1938 the Northern Colorado Water Conservancy District (Northern Water) has issued Allotment Contracts to provide for the beneficial use of water yielded from the Colorado-Big Thompson (C-BT) Project by water users located within Northern Water boundaries. Those beneficial uses include irrigation, domestic, municipal, and industrial uses. The Northern Water Board of Directors (Board) issues Allotment Contracts in accordance with Northern Water's defined rules, regulations, policies and procedures. C-BT Project water is intended to supplement an Allottee's existing non-C-BT Project water supply portfolio.

The finite water supply available to meet future water needs within Northern Water boundaries, when combined with the ever-increasing demands for water, requires that water users strive to accomplish the maximum beneficial use of all available water supplies in the region. These factors, coupled with the recognized ability to transfer C-BT Project water contribute to the functionality, utility, and value of C-BT Project water. As pressures on existing water supplies increase, various water users are entering into innovative water sharing agreements such as interruptible water supply contracts. These agreements, when entered into by an Allottee utilizing water yielded from a C-BT Project Allotment Contract, represent the subcontracting of beneficial use of the water yielded from that Allotment Contract.

Further complicating these transactions is Northern Water's requirement that the beneficial use of water yielded from the C-BT Project be accomplished in full compliance with the terms and conditions of the Allotment Contract, the Water Conservancy Act, the terms and conditions of the contractual documents between Northern Water and the United States Bureau of Reclamation that govern the operation and administration of the C-BT Project, and Northern Water's rules, regulations, policies, and procedures.

It has become apparent to Northern Water that there are instances when the beneficial use of C-BT Project Allotment Contracts may be subcontracted by the Allottee to one or more water users. As such, it is the responsibility of the Board to assure that these Subcontracts result in C-BT Project water being used in accordance with all controlling rules, regulations, policies, procedures, statutes, and contractual requirements while also meeting the responsibilities, and obligations of Northern Water. To assure compliance with statutes, the terms and conditions of the contractual documents associated with the C-BT Project, and the terms and conditions of the involved Allotment Contract(s), and to assure the Board is meeting its obligations and responsibilities, the Subcontracting of the beneficial use of C-BT Project water yielded from the Allotment Contract by an Allottee must be done only with the full knowledge and approval of the Board.

This Rule is promulgated to clearly state the Board's requirements associated with existing, currently proposed, and future Subcontracts for the beneficial use of C-BT Project water yielded from an Allotment Contract.

Rule

1.0 Rule Purpose

- 1.1 This Rule defines the requirements of Northern Water pertaining to the Subcontracting of the beneficial use of water yielded by a C-BT Project Allotment Contract by the Allotment Contract owner (referred to herein as the Allottee) to another water user (referred to herein as the Subcontractor).

2.0 Rule Definitions

- 2.1 Account Entity - An Account Entity may be comprised of a single C-BT Project water user, or multiple C-BT Project water users. In most instances, one or more Allotment Contracts have been certified for delivery through an Account Entity's respective quota account. An Account Entity may have multiple physical delivery points from the C-BT Project. For some agricultural Water Users, a "C-BT carrier" may be synonymous with an Account Entity having the same name.
- 2.2 Acre Foot Unit (AFU) - Unit of measurement used for the allocation of C-BT Project water to an Allottee in an Allotment Contract. An AFU receives 1/310,000th of the water annually declared to be available from the C-BT Project by the Board. Historically, an AFU annually yields 0.5 to 1.0 acre feet per AFU.
- 2.3 Allotment Contract - The contract between the Allottee and Northern Water that allocates C-BT Project water to the Allottee for a specified beneficial use. Allotment Contracts are issued on an AFU basis.
- 2.4 Allottee - An entity (person, corporation, company, or otherwise) that owns one or more Allotment Contracts for C-BT Project Water as issued by Northern Water. For purposes of this Rule, the Allottee is the entity subcontracting water to another water user (the Subcontractor).
- 2.5 Base Supply - Any permanent non-C-BT Project water supply held and/or controlled by a water user or an Allottee.
- 2.6 Board – Northern Colorado Water Conservancy District Board of Directors
- 2.7 C-BT - Colorado-Big Thompson
- 2.8 Forfeiture – As stated in 37-45-134 (c) C.R.S.

- 2.9 Irrigation – The application of water for beneficial use, without waste for the primary purpose of growing and producing crops to be harvested, or consumed by livestock, including pasture lands, and for uses incidental to the primary production of such crops.
- 2.10 Northern Water - Northern Colorado Water Conservancy District
- 2.11 Quota Water - The amount of C-BT Project water declared available each year by the Board from the yield of the C-BT Project to an Allottee through the determination of the annual quota. The declared quota represents the percentage of an acre-foot of C-BT Project water made available for each AFU owned by the Allottee.
- 2.12 Rule 11 Charge - The payment due to Northern Water resulting from some Seasonal Transfers in accordance with Northern Water Rule 11.
- 2.13 Seasonal Transfer - The transfer of Quota Water through Northern Water’s administrative process. This transfer may be done electronically through Northern Water’s accounting system Allottee interface or through the use of a CD-4 card.
- 2.14 Subcontract – For purposes of this Rule, any type of agreement (contract, lease, or otherwise) or concurrent agreements that transfer the beneficial use of an Allottee’s C-BT Project water to a Subcontractor for an aggregate time period of two years or longer. The Subsections to this Section provide additional definition concerning Subcontracts.
- 2.14.1 Bridge Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water for a predetermined and definite period of time. As an example, a Subcontractor might need the interim water supply in anticipation of a new water supply project becoming operational, as an emergency supply in response to failed infrastructure or water quality issues, or as a supply to meet a temporary demand.
- 2.14.2 Interruptible Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water under certain conditions for the duration of the Subcontract. As an example, an Interruptible Supply Subcontract may provide water to a municipal or industrial supplier during a drought period or during certain years following a drought. For the purposes of this Rule, an Interruptible Supply Subcontract is not to provide yield from the C-BT Project to the Subcontractor each and every year.
- 2.14.3 Other Subcontract - Any Subcontract that provides the Subcontractor C-BT Project water that is not either an Interruptible Supply or Bridge Supply Subcontract.

- 2.15 Subcontractor - An entity (person, corporation, company, partnership, limited liability company or other legally defined entity) that is Subcontracting for the beneficial use of C-BT Project water from an Allottee. The Subcontractor may or may not be an Allottee. However, a Subcontractor must have a defined beneficial use of C-BT Project water within the boundaries of Northern Water and comply with all applicable rules, regulations, guidelines, policies and procedures of Northern Water.
- 2.16 Tract - A unit of land identified by Northern Water in a Class D Allotment Contract.

3.0 Required Approval of Subcontracts

- 3.1 All Subcontracts, as defined in Section 2.14, entered into after the effective date of this Rule are prohibited without the approval of the Board pursuant to this Rule. Subcontracts representing internal trades of C-BT Project water for other water of similar value or arrangements where a water supplier provides treated water service in exchange for receiving C-BT Project water from an Allottee resulting in the beneficial use of C-BT Project water being primarily made by the Allottee will be exempt from this Rule subsequent to Northern Water making such a determination after its review of the Subcontract.
- 3.2 Subcontracts that are in existence as of the effective date of this Rule shall be exempt from this Rule if: (A) the Allottee provides a copy of the executed Subcontract to Northern Water within nine months of the effective date of this Rule, and (B) Northern Water determines the Subcontract does not contain terms or conditions that violate statutes, rules that existed at the time of the Subcontract, or applicable contract conditions associated with the beneficial use of C-BT Project water. Northern Water will take no enforcement action regarding a Subcontract that has been provided pursuant to this Rule until Northern Water's review of the Subcontract is complete and Northern Water either: confirms in writing that the Subcontract is exempt from this Rule, or informs the Allottee in writing of the violation(s). Northern Water will only consider a Subcontract exempt from this Rule if Northern Water has affirmatively stated so in writing. Once notified by Northern Water of a violation(s), the Allottee shall have six months to amend the Subcontract to correct the violation(s).

4.0 Request for Exemption From or Approval of a Subcontract(s)

- 4.1 An Allottee seeking exemption from or approval of a Subcontract(s) must follow the Procedures for this Rule. The administrative fee assessed by Northern Water to review a Subcontract shall be determined as described in the Procedures to this Rule.

5.0 Criteria Used for Subcontract Review and Approval

- 5.1 The Board's review and approval of Subcontracts shall be limited and applicable only to those terms and conditions of the Subcontract which pertain to the

beneficial use of water yielded by an Allotment Contract, shall be on a specific case-by-case basis, and shall incorporate consideration of all rules, regulations, policies and procedures that govern, or are related to, the approval and issuance of an Allotment Contract.

- 5.2 The Board may approve or deny approval of any Subcontract for the beneficial use of water yielded by an Allotment Contract. In the event the Board of Directors denies approval of such a Subcontract, the Board shall state the bases for the denial.
- 5.3 The Board may approve a Bridge Supply Subcontract or Other Subcontract for a maximum term of five years except as provided below. The Board will consider requests to reapprove a Subcontract if its previous approval has expired or will expire. The Board is not obligated to reapprove a Subcontract. However, if a Subcontractor identifies a specific water supply project that is under development and will provide a future water supply for the Subcontractor, the Board may approve a Bridge Supply Subcontract for a term longer than five years. The term for any such Subcontract approved for longer than five years may be for: (A) a fixed term reasonably anticipated to coincide with the completion of the water supply project; or (B) an indefinite term to terminate upon completion of the water supply project. In any event, a Subcontract shall not exceed five years following the denial of an indispensable permit approval for said water supply project, or the Subcontractor's decision not to move forward with or continue its participation in the water supply project. Completion of a water supply project shall mean completion of project infrastructure and operation of the project as necessary to produce the anticipated water supply yield of the Project.
- 5.4 The Board will only consider approval of a Subcontract if the Subcontractor meets the following minimum requirements:
 - 5.4.1 The C-BT Project water described in the Subcontract will be considered in calculations of AFU ownership limitations for the Subcontractor if water will be used for non-irrigation purposes. The Subcontractor cannot exceed its limitation for the ownership of Allotment contracted AFUs when considering both AFUs owned through its Allotment Contract(s) and the water represented by the Subcontract. In the case of a water supply emergency which temporarily affects the Subcontractors' base supply, the Board may choose to consider a proposed Subcontract of specified and limited duration disregarding AFU ownership limitations.
 - 5.4.2 The Northern Water 1995 Interim Ownership Limitation Guidelines, or whatever then existing Northern Water ownership limitation policy or rule, will be used as the primary criteria in evaluating Subcontractor ownership limitations when the Subcontractor is using water for purposes other than irrigation. A simplified example of a C-BT ownership limitation calculation is included in Appendix A to this Rule. C-BT ownership limitations shall

not be applied when the beneficial use of the C-BT Project water by the Subcontractor is for irrigation.

5.4.3 The Subcontractor must be in compliance with the conditions in the Northern Water 1997 Base Water Supply Policy, or with whatever then existing Northern Water base water supply policy or rule that is in place.

5.5 A Subcontract will only be considered for approval if the Subcontract meets the following minimum requirements:

5.5.1 Requires C-BT Project water only be placed to beneficial use on land situated within the boundaries of Northern Water.

5.5.2 Assures use will be for a beneficial use(s) approved by Northern Water.

5.5.3 Requires that C-BT Project water not be reused, and any return flows resulting from its initial use, if and when they occur, must be returned within the boundaries of Northern Water.

5.5.4 The Subcontract is based on AFUs.

5.5.5 The AFUs associated with the proposed Subcontract plus the aggregated sum of AFUs associated with all previous Subcontracts associated with a specific Allotment Contract do not exceed the total number of AFUs associated with that Allotment Contract.

5.5.6 Does not create a joint or undivided interest or other form of concurrent property interest in a C-BT Project Allotment Contract beyond that which is provided in the Allotment Contract.

5.5.7 Does not include a provision requiring the Allotment Contract be transferred to the Subcontractor unless such transfer is contingent upon the review and approval by the Board.

5.5.8 Limits the sale of the Subcontractor's base supply to a maximum of 15% during the pendency of the Subcontract and, furthermore, provides that no base supply be sold or transferred outside the boundaries of Northern Water.

5.5.9 Recognizes Northern Water's authority to prevent the annual certification of C-BT Project water to the Allottee's designated Account Entity if an Allottee is not in good standing with the Allotment Contract or this Rule.

5.5.10 Recognizes Northern Water will not arbitrate any disputes, if such occur, between the Allottee and Subcontractor.

- 5.5.11 Provides adequate terms and conditions needed to address existing or future encumbrances on the subject Allotment Contract and specifically eliminates any and all liability to Northern Water resulting from the enforcement of those encumbrances by the Allottee, the Subcontractor, or other parties that may hold or have interest in such encumbrances.
 - 5.5.12 Does not create liability for Northern Water.
 - 5.5.13 Does not contain terms or conditions that violate rules, regulations, policies and procedures of Northern Water.
- 5.6 In addition, the Board will only consider an Interruptible Supply Subcontract that meets the following additional minimum requirements:
- 5.6.1 When the Allottee's use is irrigation and the Subcontract use is non-irrigation, the Subcontract must limit the Subcontractor's use of the associated C-BT Project water to a maximum of 3 out of 10 years (rolling 10-year period) except as provided for as follows: On a case by case basis, the Board may consider approval of a Subcontract that allows the Subcontractor's use of the associated C-BT Project water more than a maximum of 3 out of 10 years if the Subcontract contains additional requirements prior to the Subcontractor's usage more than a maximum of 3 out of 10 years. These requirements may include, but are not limited to: (A) restrictions on lawn watering to less than 3 days per week; (B) a Governor-issued drought declaration for the water supplier's geographical region; or (C) a C-BT quota based upon supply limitations rather than anticipated demand. However, when the Allottee is using water for non-irrigation purposes and Subcontracting for irrigation purposes, there will not be a limit on the number of years water can be used for irrigation purposes.
 - 5.6.2 Is the only Subcontract between the Allottee and Subcontractor associated with a specific tract of irrigated land.
 - 5.6.3 Confirms that the Allottee issuing the Subcontract will not rent C-BT Project water to the Subcontractor outside the terms of the proposed Subcontract or through previously entered Subcontracts.

6.0 Enforcement Action

- 6.1 In the event Northern Water learns of a Subcontract for the beneficial use of water yielded by an Allotment Contract that has not been previously exempted or approved by the Board in accordance with Section 3.1 or been exempted within the allowable period of time described in Section 3.2 of this Rule, Northern Water shall deny delivery of C-BT Project water to the Subcontractor or beneficiary of the Subcontract. Further, Northern Water will deny the transfer and delivery of C-BT Project water that would result in the Subcontractor receiving the benefits of the

Subcontract by any other means of transfer, including but not limited to, two-party or multiple-party transfers that may utilize the annual rental or lease program administered by Northern Water.

7.0 Other Considerations Associated with Subcontracts

- 7.1 The C-BT Project water associated with a Subcontract will not be considered a demand or commitment to serve in the calculations to determine the ownership limitations for C-BT Project water for the Allottee.
- 7.2 Use of water by the Subcontractor shall be subject to a Northern Water Rule 11 Charge if applicable.
- 7.3 The Board will not approve transfer of an Allotment Contract or any of the associated AFUs of an Allotment Contract until any and all encumbrances represented by the Subcontract are either released, or the new Allottee accepts the encumbrances represented by the Subcontract.
- 7.4 Northern Water shall notify the Subcontractor of any Allotment Contract Transfer applications received from the Allottee that are connected to the Subcontract. In the event all or a portion of an Allotment Contract associated with a Subcontract is being considered for forfeiture by the Board, Northern Water shall notify the Subcontractor of the hearing and subsequent decision concerning forfeiture, but will not recognize the Subcontract as an encumbrance on the Allotment Contract when disposing of forfeited AFUs.
- 7.5 C-BT Project water seasonally transferred from an Allottee to a Subcontractor (as described by a Subcontract) must use the same administrative procedures as seasonally transferred “rental” water. The transfer request must be accompanied by adequate documentation indicating that the seasonal transfer is associated with the specified Subcontract. The Subcontract will be considered as having been fully operated even if only a portion of the water under a Subcontract is seasonally transferred.

**Appendix A - Simplified Example of A C-BT Ownership Limitation
Calculation For A Hypothetical Water Supplier Who Owns 200 Units and
Has a Subcontract for 100 units 3 in 10 Years**

Water Supplier Information

| | Average Yield (AF/YR) | Firm Yield (AF/YR) |
|----------------|--------------------------------------|-----------------------------------|
| Ditch A | 100 | 40 |
| Ditch B | <u>200</u> | <u>100</u> |
| Total | 300 | 140 |

- **Current C-BT Unit Ownership is 200 units.**
- **Subcontract for 100 units 3 in 10 years. This results in 30 units available in average years and 100 units in dry years.**
- **Total Water Demand is 500 AF/YR.**

Ownership Limitation Calculation

| Row | <u>Average Yield Method</u> | Formula | |
|------------|-----------------------------------------------|----------------|-------------|
| A | Total Water Demand X 2 | | 1000 |
| B | Average Yield of Native Supplies | | <u>-300</u> |
| C | Maximum Number of C-BT Units | A - B | 700 |
| D | Currently Owned C-BT Units | | -200 |
| E | Subcontracted C-BT Units Available on Average | | <u>-30</u> |
| F | Additional C-BT Units | C - D - E | 470 |

| Row | <u>Firm Yield Method</u> | Formula | |
|------------|------------------------------------------------------|----------------|-------------|
| A | Total Water Demand | | 500 |
| B | Firm Yield of Native Supplies | | <u>-140</u> |
| C | Maximum Volume of C-BT | A - B | <u>360</u> |
| D | Maximum Number of C-BT Units | C X 2 | 720 |
| E | Currently Owned C-BT Units | | -200 |
| F | Subcontracted C-BT Units Available During a Dry Year | | <u>-100</u> |
| G | Additional C-BT Units | D - E- F | 420 |

**Additional C-BT Units Available - Use the
Smaller of the Average and Firm Yield Method** **420**

Procedures for the Rule Governing the Subcontracting Of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

1.0 Purpose of Procedures and Potential Future Modifications to the Procedures

- 1.1 To provide additional direction for implementing the Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts (Rule) (Effective Date: August 11, 2016).
- 1.2 To assist Allottees and other water users in understanding the administration of the Rule.
- 1.3 The Board may modify the provisions of the Procedures by a resolution or motion duly adopted at any regular Board meeting.

2.0 Definitions – Terms used in the Procedures shall have the same meaning as in the Rule governing the Subcontracting of Beneficial Use adopted concurrently with the Procedures.

3.0 Allottee Submittal Requirements and Fees

- 3.1 To facilitate the review and, if applicable, the approval of a Subcontract, adequate information and documentation must be submitted to Northern Water. Needed information and documentation include:
 - 3.1.1 Allottee name, address, contact name, contact telephone number, and contact e-mail address.
 - 3.1.2 A copy of the proposed or signed Subcontract. The Allottee may redact financial arrangements and other proprietary information from the Subcontract provided sufficient information is retained for the Board to make a determination as to whether the Subcontract is in compliance with the Rule or is exempt from the Rule.
 - 3.1.3 In accordance with Rule Section 3.2, the Allottee may submit a proposed amended draft of an existing Subcontract entered into prior to the adoption of the Rule that corrects known violations of the existing Subcontract pursuant to Rule requirements.
- 3.2 All Subcontract information and documentation shall be submitted to:

Northern Water
c/o General Manager
220 Water Avenue
Berthoud, CO 80513

3.3 Fee to Review

3.3.1 There will be no fee to review the request for exemption from the Rule.

3.3.2 The fee to review a proposed Subcontract under the Rule shall be two and one half times the fee charged for the transfer of an allotment contract or such future fee as the Board may adopt from time to time.

4.0 Request for Exemption from the Rule

4.1 Northern Water Staff Evaluation

4.1.1 Staff will assure that all necessary information has been submitted in accordance with Section 3 of the Procedures.

4.1.2 Within 30 business days following submittal staff will consider compliance with the Rule criteria. If Northern Water staff believes there is a term(s) in the Subcontract which would bar or delay the Board from a determination that the Subcontract is exempt from the Rule, staff will notify the Allottee of such term(s) and suggest or allow the Allottee to propose an alternative Subcontract term(s) to correct the violation(s). The Allottee will make the final decision as to the Subcontract (original or modified) that is submitted to the Board for consideration for exemption.

4.2. Board Consideration

4.2.1 Not later than 60 days after an initial submittal of an existing (or modified) Subcontract entered into prior to the adoption of the Rule, staff shall provide a recommendation to the Board at a regularly scheduled Board meeting whether the existing Subcontract submitted: 1) should be considered exempt from the Rule; or 2) should not be considered exempt from the Rule.

4.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should or should not be considered exempt from the Rule.

4.2.3 Upon review of the information and documentation provided by the Allottee, the Board shall make a determination whether the existing Subcontract is exempt from the Rule. If the Board determines the Subcontract is not exempt and violations may be corrected, it will provide direction concerning what violations of the Rule must be corrected for the Subcontract to be exempt from the Rule.

4.2.4 The Allottee shall have six months from the date of Northern Water's notice as to the exempt status to amend or modify the Subcontract to correct violations identified by the Board and resubmit a request for a Board determination that the Subcontract is exempt.

- 4.2.5 If the Subcontract that the Board exempts under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

5.0 Request for Approval of a Subcontract in Accordance with the Rule

5.1 Northern Water Staff Evaluation

- 5.1.1 Staff will assure that the administrative fee has been paid and all necessary information has been submitted in accordance with Section 3 of these Procedures. The proposed Subcontract will not be reviewed until the administrative fee has been paid.
- 5.1.2 Within 30 business days following submittal staff will evaluate compliance with Rule and Procedures requirements. If staff believes there are violations of Rule or Procedures requirements, staff will notify the Allottee of such violations and propose, or allow the Allottee to propose, new draft language to correct the violations. The Allottee will make the final decision concerning Subcontract language that is submitted to the Board for consideration and approval.

5.2 Board Consideration

- 5.2.1 Not later than 60 days after an initial submittal staff will make recommendations to the Board concerning approving or the bases for denying approval of the Subcontract as submitted.
- 5.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should be approved or denied.
- 5.2.3 In accordance with the Rule the Board may approve or not approve the Subcontract. If the Board does not approve the Subcontract, it will provide the bases why the Subcontract was not approved. The Allottee may address the Board concerns and resubmit a Subcontract for approval. No additional fees will be assessed for resubmitted, modified proposed Subcontracts.
- 5.2.4 If the Subcontract that the Board approves under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

6.0 Future Violation of the Rule and Enforcement Actions

- 6.1 Within 10 days after becoming aware of a violation, or potential violation, of the Rule Northern Water staff will provide notice of such a violation to the Allottee

and Subcontractor via certified mail. The Allottee shall respond to Northern Water in writing within 10 days of receipt of such notification describing the action the Allottee and/or Subcontractor will undertake to correct the violation. If the violation is not corrected, Northern Water staff will recommend to the Board the enforcement of the Rule. Consideration of the violation shall be placed on the agenda of the next regularly scheduled Board meeting or as soon thereafter as can be scheduled with the Allottee and other affected parties, and the Board may take action concerning staff's recommendation at that Board meeting.

Exhibit D

CD4 Card

Appendix B: Northern Colorado Water Conservancy District's Water Rules

Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

Historical Background

Since 1938 the Northern Colorado Water Conservancy District (Northern Water) has issued Allotment Contracts to provide for the beneficial use of water yielded from the Colorado-Big Thompson (C-BT) Project by water users located within Northern Water boundaries. Those beneficial uses include irrigation, domestic, municipal, and industrial uses. The Northern Water Board of Directors (Board) issues Allotment Contracts in accordance with Northern Water's defined rules, regulations, policies and procedures. C-BT Project water is intended to supplement an Allottee's existing non-C-BT Project water supply portfolio.

The finite water supply available to meet future water needs within Northern Water boundaries, when combined with the ever-increasing demands for water, requires that water users strive to accomplish the maximum beneficial use of all available water supplies in the region. These factors, coupled with the recognized ability to transfer C-BT Project water contribute to the functionality, utility, and value of C-BT Project water. As pressures on existing water supplies increase, various water users are entering into innovative water sharing agreements such as interruptible water supply contracts. These agreements, when entered into by an Allottee utilizing water yielded from a C-BT Project Allotment Contract, represent the subcontracting of beneficial use of the water yielded from that Allotment Contract.

Further complicating these transactions is Northern Water's requirement that the beneficial use of water yielded from the C-BT Project be accomplished in full compliance with the terms and conditions of the Allotment Contract, the Water Conservancy Act, the terms and conditions of the contractual documents between Northern Water and the United States Bureau of Reclamation that govern the operation and administration of the C-BT Project, and Northern Water's rules, regulations, policies, and procedures.

It has become apparent to Northern Water that there are instances when the beneficial use of C-BT Project Allotment Contracts may be subcontracted by the Allottee to one or more water users. As such, it is the responsibility of the Board to assure that these Subcontracts result in C-BT Project water being used in accordance with all controlling rules, regulations, policies, procedures, statutes, and contractual requirements while also meeting the responsibilities, and obligations of Northern Water. To assure compliance with statutes, the terms and conditions of the contractual documents associated with the C-BT Project, and the terms and conditions of the involved Allotment Contract(s), and to assure the Board is meeting its obligations and responsibilities, the Subcontracting of the beneficial use of C-BT Project water yielded from the Allotment Contract by an Allottee must be done only with the full knowledge and approval of the Board.

This Rule is promulgated to clearly state the Board's requirements associated with existing, currently proposed, and future Subcontracts for the beneficial use of C-BT Project water yielded from an Allotment Contract.

Rule

1.0 Rule Purpose

- 1.1 This Rule defines the requirements of Northern Water pertaining to the Subcontracting of the beneficial use of water yielded by a C-BT Project Allotment Contract by the Allotment Contract owner (referred to herein as the Allottee) to another water user (referred to herein as the Subcontractor).

2.0 Rule Definitions

- 2.1 Account Entity - An Account Entity may be comprised of a single C-BT Project water user, or multiple C-BT Project water users. In most instances, one or more Allotment Contracts have been certified for delivery through an Account Entity's respective quota account. An Account Entity may have multiple physical delivery points from the C-BT Project. For some agricultural Water Users, a "C-BT carrier" may be synonymous with an Account Entity having the same name.
- 2.2 Acre Foot Unit (AFU) - Unit of measurement used for the allocation of C-BT Project water to an Allottee in an Allotment Contract. An AFU receives 1/310,000th of the water annually declared to be available from the C-BT Project by the Board. Historically, an AFU annually yields 0.5 to 1.0 acre feet per AFU.
- 2.3 Allotment Contract - The contract between the Allottee and Northern Water that allocates C-BT Project water to the Allottee for a specified beneficial use. Allotment Contracts are issued on an AFU basis.
- 2.4 Allottee - An entity (person, corporation, company, or otherwise) that owns one or more Allotment Contracts for C-BT Project Water as issued by Northern Water. For purposes of this Rule, the Allottee is the entity subcontracting water to another water user (the Subcontractor).
- 2.5 Base Supply - Any permanent non-C-BT Project water supply held and/or controlled by a water user or an Allottee.
- 2.6 Board – Northern Colorado Water Conservancy District Board of Directors
- 2.7 C-BT - Colorado-Big Thompson
- 2.8 Forfeiture – As stated in 37-45-134 (c) C.R.S.

- 2.9 Irrigation – The application of water for beneficial use, without waste for the primary purpose of growing and producing crops to be harvested, or consumed by livestock, including pasture lands, and for uses incidental to the primary production of such crops.
- 2.10 Northern Water - Northern Colorado Water Conservancy District
- 2.11 Quota Water - The amount of C-BT Project water declared available each year by the Board from the yield of the C-BT Project to an Allottee through the determination of the annual quota. The declared quota represents the percentage of an acre-foot of C-BT Project water made available for each AFU owned by the Allottee.
- 2.12 Rule 11 Charge - The payment due to Northern Water resulting from some Seasonal Transfers in accordance with Northern Water Rule 11.
- 2.13 Seasonal Transfer - The transfer of Quota Water through Northern Water’s administrative process. This transfer may be done electronically through Northern Water’s accounting system Allottee interface or through the use of a CD-4 card.
- 2.14 Subcontract – For purposes of this Rule, any type of agreement (contract, lease, or otherwise) or concurrent agreements that transfer the beneficial use of an Allottee’s C-BT Project water to a Subcontractor for an aggregate time period of two years or longer. The Subsections to this Section provide additional definition concerning Subcontracts.
- 2.14.1 Bridge Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water for a predetermined and definite period of time. As an example, a Subcontractor might need the interim water supply in anticipation of a new water supply project becoming operational, as an emergency supply in response to failed infrastructure or water quality issues, or as a supply to meet a temporary demand.
- 2.14.2 Interruptible Supply Subcontract - This type of Subcontract provides the Subcontractor C-BT Project water under certain conditions for the duration of the Subcontract. As an example, an Interruptible Supply Subcontract may provide water to a municipal or industrial supplier during a drought period or during certain years following a drought. For the purposes of this Rule, an Interruptible Supply Subcontract is not to provide yield from the C-BT Project to the Subcontractor each and every year.
- 2.14.3 Other Subcontract - Any Subcontract that provides the Subcontractor C-BT Project water that is not either an Interruptible Supply or Bridge Supply Subcontract.

- 2.15 Subcontractor - An entity (person, corporation, company, partnership, limited liability company or other legally defined entity) that is Subcontracting for the beneficial use of C-BT Project water from an Allottee. The Subcontractor may or may not be an Allottee. However, a Subcontractor must have a defined beneficial use of C-BT Project water within the boundaries of Northern Water and comply with all applicable rules, regulations, guidelines, policies and procedures of Northern Water.
- 2.16 Tract - A unit of land identified by Northern Water in a Class D Allotment Contract.

3.0 Required Approval of Subcontracts

- 3.1 All Subcontracts, as defined in Section 2.14, entered into after the effective date of this Rule are prohibited without the approval of the Board pursuant to this Rule. Subcontracts representing internal trades of C-BT Project water for other water of similar value or arrangements where a water supplier provides treated water service in exchange for receiving C-BT Project water from an Allottee resulting in the beneficial use of C-BT Project water being primarily made by the Allottee will be exempt from this Rule subsequent to Northern Water making such a determination after its review of the Subcontract.
- 3.2 Subcontracts that are in existence as of the effective date of this Rule shall be exempt from this Rule if: (A) the Allottee provides a copy of the executed Subcontract to Northern Water within nine months of the effective date of this Rule, and (B) Northern Water determines the Subcontract does not contain terms or conditions that violate statutes, rules that existed at the time of the Subcontract, or applicable contract conditions associated with the beneficial use of C-BT Project water. Northern Water will take no enforcement action regarding a Subcontract that has been provided pursuant to this Rule until Northern Water's review of the Subcontract is complete and Northern Water either: confirms in writing that the Subcontract is exempt from this Rule, or informs the Allottee in writing of the violation(s). Northern Water will only consider a Subcontract exempt from this Rule if Northern Water has affirmatively stated so in writing. Once notified by Northern Water of a violation(s), the Allottee shall have six months to amend the Subcontract to correct the violation(s).

4.0 Request for Exemption From or Approval of a Subcontract(s)

- 4.1 An Allottee seeking exemption from or approval of a Subcontract(s) must follow the Procedures for this Rule. The administrative fee assessed by Northern Water to review a Subcontract shall be determined as described in the Procedures to this Rule.

5.0 Criteria Used for Subcontract Review and Approval

- 5.1 The Board's review and approval of Subcontracts shall be limited and applicable only to those terms and conditions of the Subcontract which pertain to the

beneficial use of water yielded by an Allotment Contract, shall be on a specific case-by-case basis, and shall incorporate consideration of all rules, regulations, policies and procedures that govern, or are related to, the approval and issuance of an Allotment Contract.

- 5.2 The Board may approve or deny approval of any Subcontract for the beneficial use of water yielded by an Allotment Contract. In the event the Board of Directors denies approval of such a Subcontract, the Board shall state the bases for the denial.
- 5.3 The Board may approve a Bridge Supply Subcontract or Other Subcontract for a maximum term of five years except as provided below. The Board will consider requests to reapprove a Subcontract if its previous approval has expired or will expire. The Board is not obligated to reapprove a Subcontract. However, if a Subcontractor identifies a specific water supply project that is under development and will provide a future water supply for the Subcontractor, the Board may approve a Bridge Supply Subcontract for a term longer than five years. The term for any such Subcontract approved for longer than five years may be for: (A) a fixed term reasonably anticipated to coincide with the completion of the water supply project; or (B) an indefinite term to terminate upon completion of the water supply project. In any event, a Subcontract shall not exceed five years following the denial of an indispensable permit approval for said water supply project, or the Subcontractor's decision not to move forward with or continue its participation in the water supply project. Completion of a water supply project shall mean completion of project infrastructure and operation of the project as necessary to produce the anticipated water supply yield of the Project.
- 5.4 The Board will only consider approval of a Subcontract if the Subcontractor meets the following minimum requirements:
 - 5.4.1 The C-BT Project water described in the Subcontract will be considered in calculations of AFU ownership limitations for the Subcontractor if water will be used for non-irrigation purposes. The Subcontractor cannot exceed its limitation for the ownership of Allotment contracted AFUs when considering both AFUs owned through its Allotment Contract(s) and the water represented by the Subcontract. In the case of a water supply emergency which temporarily affects the Subcontractors' base supply, the Board may choose to consider a proposed Subcontract of specified and limited duration disregarding AFU ownership limitations.
 - 5.4.2 The Northern Water 1995 Interim Ownership Limitation Guidelines, or whatever then existing Northern Water ownership limitation policy or rule, will be used as the primary criteria in evaluating Subcontractor ownership limitations when the Subcontractor is using water for purposes other than irrigation. A simplified example of a C-BT ownership limitation calculation is included in Appendix A to this Rule. C-BT ownership limitations shall

not be applied when the beneficial use of the C-BT Project water by the Subcontractor is for irrigation.

5.4.3 The Subcontractor must be in compliance with the conditions in the Northern Water 1997 Base Water Supply Policy, or with whatever then existing Northern Water base water supply policy or rule that is in place.

5.5 A Subcontract will only be considered for approval if the Subcontract meets the following minimum requirements:

5.5.1 Requires C-BT Project water only be placed to beneficial use on land situated within the boundaries of Northern Water.

5.5.2 Assures use will be for a beneficial use(s) approved by Northern Water.

5.5.3 Requires that C-BT Project water not be reused, and any return flows resulting from its initial use, if and when they occur, must be returned within the boundaries of Northern Water.

5.5.4 The Subcontract is based on AFUs.

5.5.5 The AFUs associated with the proposed Subcontract plus the aggregated sum of AFUs associated with all previous Subcontracts associated with a specific Allotment Contract do not exceed the total number of AFUs associated with that Allotment Contract.

5.5.6 Does not create a joint or undivided interest or other form of concurrent property interest in a C-BT Project Allotment Contract beyond that which is provided in the Allotment Contract.

5.5.7 Does not include a provision requiring the Allotment Contract be transferred to the Subcontractor unless such transfer is contingent upon the review and approval by the Board.

5.5.8 Limits the sale of the Subcontractor's base supply to a maximum of 15% during the pendency of the Subcontract and, furthermore, provides that no base supply be sold or transferred outside the boundaries of Northern Water.

5.5.9 Recognizes Northern Water's authority to prevent the annual certification of C-BT Project water to the Allottee's designated Account Entity if an Allottee is not in good standing with the Allotment Contract or this Rule.

5.5.10 Recognizes Northern Water will not arbitrate any disputes, if such occur, between the Allottee and Subcontractor.

- 5.5.11 Provides adequate terms and conditions needed to address existing or future encumbrances on the subject Allotment Contract and specifically eliminates any and all liability to Northern Water resulting from the enforcement of those encumbrances by the Allottee, the Subcontractor, or other parties that may hold or have interest in such encumbrances.
 - 5.5.12 Does not create liability for Northern Water.
 - 5.5.13 Does not contain terms or conditions that violate rules, regulations, policies and procedures of Northern Water.
- 5.6 In addition, the Board will only consider an Interruptible Supply Subcontract that meets the following additional minimum requirements:
- 5.6.1 When the Allottee's use is irrigation and the Subcontract use is non-irrigation, the Subcontract must limit the Subcontractor's use of the associated C-BT Project water to a maximum of 3 out of 10 years (rolling 10-year period) except as provided for as follows: On a case by case basis, the Board may consider approval of a Subcontract that allows the Subcontractor's use of the associated C-BT Project water more than a maximum of 3 out of 10 years if the Subcontract contains additional requirements prior to the Subcontractor's usage more than a maximum of 3 out of 10 years. These requirements may include, but are not limited to: (A) restrictions on lawn watering to less than 3 days per week; (B) a Governor-issued drought declaration for the water supplier's geographical region; or (C) a C-BT quota based upon supply limitations rather than anticipated demand. However, when the Allottee is using water for non-irrigation purposes and Subcontracting for irrigation purposes, there will not be a limit on the number of years water can be used for irrigation purposes.
 - 5.6.2 Is the only Subcontract between the Allottee and Subcontractor associated with a specific tract of irrigated land.
 - 5.6.3 Confirms that the Allottee issuing the Subcontract will not rent C-BT Project water to the Subcontractor outside the terms of the proposed Subcontract or through previously entered Subcontracts.

6.0 Enforcement Action

- 6.1 In the event Northern Water learns of a Subcontract for the beneficial use of water yielded by an Allotment Contract that has not been previously exempted or approved by the Board in accordance with Section 3.1 or been exempted within the allowable period of time described in Section 3.2 of this Rule, Northern Water shall deny delivery of C-BT Project water to the Subcontractor or beneficiary of the Subcontract. Further, Northern Water will deny the transfer and delivery of C-BT Project water that would result in the Subcontractor receiving the benefits of the

Subcontract by any other means of transfer, including but not limited to, two-party or multiple-party transfers that may utilize the annual rental or lease program administered by Northern Water.

7.0 Other Considerations Associated with Subcontracts

- 7.1 The C-BT Project water associated with a Subcontract will not be considered a demand or commitment to serve in the calculations to determine the ownership limitations for C-BT Project water for the Allottee.
- 7.2 Use of water by the Subcontractor shall be subject to a Northern Water Rule 11 Charge if applicable.
- 7.3 The Board will not approve transfer of an Allotment Contract or any of the associated AFUs of an Allotment Contract until any and all encumbrances represented by the Subcontract are either released, or the new Allottee accepts the encumbrances represented by the Subcontract.
- 7.4 Northern Water shall notify the Subcontractor of any Allotment Contract Transfer applications received from the Allottee that are connected to the Subcontract. In the event all or a portion of an Allotment Contract associated with a Subcontract is being considered for forfeiture by the Board, Northern Water shall notify the Subcontractor of the hearing and subsequent decision concerning forfeiture, but will not recognize the Subcontract as an encumbrance on the Allotment Contract when disposing of forfeited AFUs.
- 7.5 C-BT Project water seasonally transferred from an Allottee to a Subcontractor (as described by a Subcontract) must use the same administrative procedures as seasonally transferred “rental” water. The transfer request must be accompanied by adequate documentation indicating that the seasonal transfer is associated with the specified Subcontract. The Subcontract will be considered as having been fully operated even if only a portion of the water under a Subcontract is seasonally transferred.

**Appendix A - Simplified Example of A C-BT Ownership Limitation
Calculation For A Hypothetical Water Supplier Who Owns 200 Units and
Has a Subcontract for 100 units 3 in 10 Years**

Water Supplier Information

| | Average Yield (AF/YR) | Firm Yield (AF/YR) |
|----------------|--------------------------------------|-----------------------------------|
| Ditch A | 100 | 40 |
| Ditch B | <u>200</u> | <u>100</u> |
| Total | 300 | 140 |

- **Current C-BT Unit Ownership is 200 units.**
- **Subcontract for 100 units 3 in 10 years. This results in 30 units available in average years and 100 units in dry years.**
- **Total Water Demand is 500 AF/YR.**

Ownership Limitation Calculation

| Row | <u>Average Yield Method</u> | Formula | |
|------------|-----------------------------------------------|----------------|-------------|
| A | Total Water Demand X 2 | | 1000 |
| B | Average Yield of Native Supplies | | <u>-300</u> |
| C | Maximum Number of C-BT Units | A - B | 700 |
| D | Currently Owned C-BT Units | | -200 |
| E | Subcontracted C-BT Units Available on Average | | <u>-30</u> |
| F | Additional C-BT Units | C - D - E | 470 |

| Row | <u>Firm Yield Method</u> | Formula | |
|------------|------------------------------------------------------|----------------|-------------|
| A | Total Water Demand | | 500 |
| B | Firm Yield of Native Supplies | | <u>-140</u> |
| C | Maximum Volume of C-BT | A - B | <u>360</u> |
| D | Maximum Number of C-BT Units | C X 2 | 720 |
| E | Currently Owned C-BT Units | | -200 |
| F | Subcontracted C-BT Units Available During a Dry Year | | <u>-100</u> |
| G | Additional C-BT Units | D - E- F | 420 |

**Additional C-BT Units Available - Use the
Smaller of the Average and Firm Yield Method** **420**

Procedures for the Rule Governing the Subcontracting Of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts

(Effective Date: August 11, 2016)

1.0 Purpose of Procedures and Potential Future Modifications to the Procedures

- 1.1 To provide additional direction for implementing the Rule Governing the Subcontracting of Beneficial Use of Colorado-Big Thompson Project Allotment Contracts (Rule) (Effective Date: August 11, 2016).
- 1.2 To assist Allottees and other water users in understanding the administration of the Rule.
- 1.3 The Board may modify the provisions of the Procedures by a resolution or motion duly adopted at any regular Board meeting.

2.0 Definitions – Terms used in the Procedures shall have the same meaning as in the Rule governing the Subcontracting of Beneficial Use adopted concurrently with the Procedures.

3.0 Allottee Submittal Requirements and Fees

- 3.1 To facilitate the review and, if applicable, the approval of a Subcontract, adequate information and documentation must be submitted to Northern Water. Needed information and documentation include:
 - 3.1.1 Allottee name, address, contact name, contact telephone number, and contact e-mail address.
 - 3.1.2 A copy of the proposed or signed Subcontract. The Allottee may redact financial arrangements and other proprietary information from the Subcontract provided sufficient information is retained for the Board to make a determination as to whether the Subcontract is in compliance with the Rule or is exempt from the Rule.
 - 3.1.3 In accordance with Rule Section 3.2, the Allottee may submit a proposed amended draft of an existing Subcontract entered into prior to the adoption of the Rule that corrects known violations of the existing Subcontract pursuant to Rule requirements.
- 3.2 All Subcontract information and documentation shall be submitted to:

Northern Water
c/o General Manager
220 Water Avenue
Berthoud, CO 80513

3.3 Fee to Review

3.3.1 There will be no fee to review the request for exemption from the Rule.

3.3.2 The fee to review a proposed Subcontract under the Rule shall be two and one half times the fee charged for the transfer of an allotment contract or such future fee as the Board may adopt from time to time.

4.0 Request for Exemption from the Rule

4.1 Northern Water Staff Evaluation

4.1.1 Staff will assure that all necessary information has been submitted in accordance with Section 3 of the Procedures.

4.1.2 Within 30 business days following submittal staff will consider compliance with the Rule criteria. If Northern Water staff believes there is a term(s) in the Subcontract which would bar or delay the Board from a determination that the Subcontract is exempt from the Rule, staff will notify the Allottee of such term(s) and suggest or allow the Allottee to propose an alternative Subcontract term(s) to correct the violation(s). The Allottee will make the final decision as to the Subcontract (original or modified) that is submitted to the Board for consideration for exemption.

4.2. Board Consideration

4.2.1 Not later than 60 days after an initial submittal of an existing (or modified) Subcontract entered into prior to the adoption of the Rule, staff shall provide a recommendation to the Board at a regularly scheduled Board meeting whether the existing Subcontract submitted: 1) should be considered exempt from the Rule; or 2) should not be considered exempt from the Rule.

4.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should or should not be considered exempt from the Rule.

4.2.3 Upon review of the information and documentation provided by the Allottee, the Board shall make a determination whether the existing Subcontract is exempt from the Rule. If the Board determines the Subcontract is not exempt and violations may be corrected, it will provide direction concerning what violations of the Rule must be corrected for the Subcontract to be exempt from the Rule.

4.2.4 The Allottee shall have six months from the date of Northern Water's notice as to the exempt status to amend or modify the Subcontract to correct violations identified by the Board and resubmit a request for a Board determination that the Subcontract is exempt.

- 4.2.5 If the Subcontract that the Board exempts under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

5.0 Request for Approval of a Subcontract in Accordance with the Rule

5.1 Northern Water Staff Evaluation

- 5.1.1 Staff will assure that the administrative fee has been paid and all necessary information has been submitted in accordance with Section 3 of these Procedures. The proposed Subcontract will not be reviewed until the administrative fee has been paid.
- 5.1.2 Within 30 business days following submittal staff will evaluate compliance with Rule and Procedures requirements. If staff believes there are violations of Rule or Procedures requirements, staff will notify the Allottee of such violations and propose, or allow the Allottee to propose, new draft language to correct the violations. The Allottee will make the final decision concerning Subcontract language that is submitted to the Board for consideration and approval.

5.2 Board Consideration

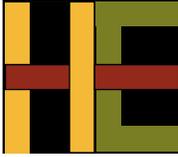
- 5.2.1 Not later than 60 days after an initial submittal staff will make recommendations to the Board concerning approving or the bases for denying approval of the Subcontract as submitted.
- 5.2.2 The Allottee or any other person or entity may make written or verbal comments to the Board concerning why the Subcontract should be approved or denied.
- 5.2.3 In accordance with the Rule the Board may approve or not approve the Subcontract. If the Board does not approve the Subcontract, it will provide the bases why the Subcontract was not approved. The Allottee may address the Board concerns and resubmit a Subcontract for approval. No additional fees will be assessed for resubmitted, modified proposed Subcontracts.
- 5.2.4 If the Subcontract that the Board approves under the Rule has not been signed by the parties at the time of approval, the Allottee will provide Northern Water a copy of the fully executed Subcontract with all required signatures.

6.0 Future Violation of the Rule and Enforcement Actions

- 6.1 Within 10 days after becoming aware of a violation, or potential violation, of the Rule Northern Water staff will provide notice of such a violation to the Allottee

and Subcontractor via certified mail. The Allottee shall respond to Northern Water in writing within 10 days of receipt of such notification describing the action the Allottee and/or Subcontractor will undertake to correct the violation. If the violation is not corrected, Northern Water staff will recommend to the Board the enforcement of the Rule. Consideration of the violation shall be placed on the agenda of the next regularly scheduled Board meeting or as soon thereafter as can be scheduled with the Allottee and other affected parties, and the Board may take action concerning staff's recommendation at that Board meeting.

Appendix C: Lease Rate Escalator Memorandum



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MEMORANDUM

TO: WESTERN WATER PARTNERSHIPS

FROM: HARVEY ECONOMICS

DATE: DECEMBER 7, 2016

RE: LEASE RATE ESCALATOR

Introduction

Briefly, the transaction between Larimer County (Larimer) and the City and County of Broomfield (Broomfield) involves the sale of a number of Colorado-Big Thompson (C-BT) units and an agreement between the two parties to enter into a perpetual water lease agreement for a further number of C-BT units. For an upfront fee, Broomfield has the option to lease this further number of C-BT units for three out of ten years on a rolling ten-year period basis. The lease price of the water will be adjusted every year, based on the lease price escalator.

Harvey Economics (HE) was tasked with developing an escalator for the lease price of water in this agreement. After the initial base price is agreed upon between Larimer and the Broomfield, an agreement must be reached about how the base water price will be adjusted for each future lease period. This escalator is important because either party may worry that they will be “short-changed” in a long term deal. Over time, the prevailing price of water can and will change and the parties will want to track that change, so that neither side in the deal is unfairly disadvantaged. To this end, escalators are built around the underlying factors that drive the price of the good, in this case, water.

Data Sources

HE identified individual selection criteria for picking data series or indices which should be considered in a composite index. Criteria for a good price driver include simplicity, intuitiveness and availability. Simplicity refers to the ease of including the price driver data in the calculations of the final index; the more complicated the calculations, the less likely that the index will be updated properly. The intuitive criterion is important due to logic and expectations; an intuitive price driver is one that logically should be included whether it is simple or complex as it clearly ought to have an impact on prices. Additionally, if people understand a particular driver and expect it to be included in the index, its inclusion will increase the likelihood that the index will

be understood and accepted. The availability criterion means that the price drivers are regularly available data from a reputable source.

Based on these criteria, HE chose two price drivers, a crop price index and a municipal cost index. Together, these two drivers reflect the situations faced by a farmer as well as by a municipality, without adding unnecessary complexity. A fuller description of each component price index is provided below.

Crop Price Index. A farmer's annual revenue is based on the amount of crop that they grow and the price of that crop. The higher the price, the more revenue a farmer will receive for a given amount of production. If a farmer leases their water, and is unable to produce a crop, they would prefer to do it in a year with low crop prices, when they would give up less revenue. Therefore, the price that farmers receive for their crops is an indicator of the amount of revenue that they will forego by leasing their water. As the crop price index increases, the price of water is expected to increase since farmers will require more money for water leasing to be more attractive than farming. The predominant crop grown in on the particular farm in this agreement is corn therefore HE developed a crop price index based on the price of corn. The price of corn was obtained from the USDA.¹

Municipal Cost Index. The Municipal Cost Index is produced by American City and County Magazine and is designed to show the effects of inflation on the cost of providing municipal services. As the cost of providing municipal services increases, an increasing price paid for water will represent the same percentage cost to municipalities. Farmers will expect them to pay more for water since that municipality is paying more for everything.

Composite Index. HE applied the two component indices with equal weighting to generate the preliminary composite index. Before the indices could be combined, they both had to be set to the same base year (the base year for both indices was set to 1982) to ensure that both indices were on the same scale. HE then calculated the five-year moving average of the preliminary composite index to smooth out any single year aberrations, generating the final composite index. The average annual change from 1984 to 2015 is 2.1 percent. In a single year the highest increase was 8.4 percent and the lowest was negative 2.5 percent.

Conclusion

HE investigated water lease-price drivers in Larimer County with the aim of developing a lease-price escalator for a long-term water lease. We found two indices that satisfy the criteria and combined them into a composite index designed to escalate the lease price of a long-term lease.

¹ Agricultural Prices. USDA, National Agricultural Statistics Service. November edition, Various years. https://www.nass.usda.gov/Statistics_by_Subject/Economics_and_Prices/index.php

This escalator will be useful to account for changes in water lease prices over time to ensure that one side is not unfairly disadvantaged by changes in the price of water.



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Conservation Board

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