

## *Loan Feasibility Study*

### **Church Ditch Water Authority (CDWA) 2017-2019 Capital Improvement Projects:**

**Leyden Flushing Structure  
Headgate 53 Retaining Wall  
Area 15 Ditch Lining  
Ford Street Siphon  
Legacy Farms Culvert**

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

Sponsored by the

 7/7/17  
Signed Date

Church Ditch Water Authority

in conjunction with the

Colorado Water Conservation Board

June 1, 2017

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**Church Ditch Water Authority**

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## Table of Contents

|                                                                |    |
|----------------------------------------------------------------|----|
| 1. Introduction and Project Need.....                          | 4  |
| 2. Project Sponsor.....                                        | 19 |
| 3. Project Service Area and Facilities.....                    | 19 |
| 4. Water Rights.....                                           | 20 |
| 5. Project Descriptions, Alternatives and Cost Estimates ..... | 20 |
| A. Modification of Leyden Flushing Structure .....             | 20 |
| B. Replacement of Headgate 53 Retaining Wall.....              | 23 |
| C. Installation of Ditch Lining in Area 15.....                | 25 |
| D. Repair/Replacement of Ford Street Siphon .....              | 27 |
| E. Replacement of Legacy Farms Culvert.....                    | 29 |
| 6. Implementation Schedule .....                               | 31 |
| 7. Permitting .....                                            | 31 |
| 8. Institutional Considerations.....                           | 32 |
| 9. Financial Analysis.....                                     | 32 |
| 10. Social and Physical Impacts .....                          | 35 |
| 11. Conclusions.....                                           | 37 |

## **List of Appendices**

|             |                                                                   |
|-------------|-------------------------------------------------------------------|
| Appendix A: | CWCB Loan Application                                             |
| Appendix B: | CDWA By-Laws                                                      |
| Appendix C: | State Engineer Diversion Reports for CDWA: 1952-2015              |
| Appendix D: | Preliminary Design Concept for Leyden Flushing Structure Project  |
| Appendix E: | Preliminary Design Concept for Headgate 53 Retaining Wall Project |
| Appendix F: | Preliminary Design Concept for Area 15 Ditch Lining Project       |
| Appendix G: | Preliminary Design Concept for Ford Street Siphon Project         |
| Appendix H: | Preliminary Design Concept for Legacy Farms Culvert Project       |
| Appendix I: | Economic Analysis                                                 |
| Appendix J: | Financial Statements and Budgets: 2011-2017                       |

**Feasibility Study  
Church Ditch Water Authority  
Capital Improvement Projects**

**1. Introduction and Project Need**

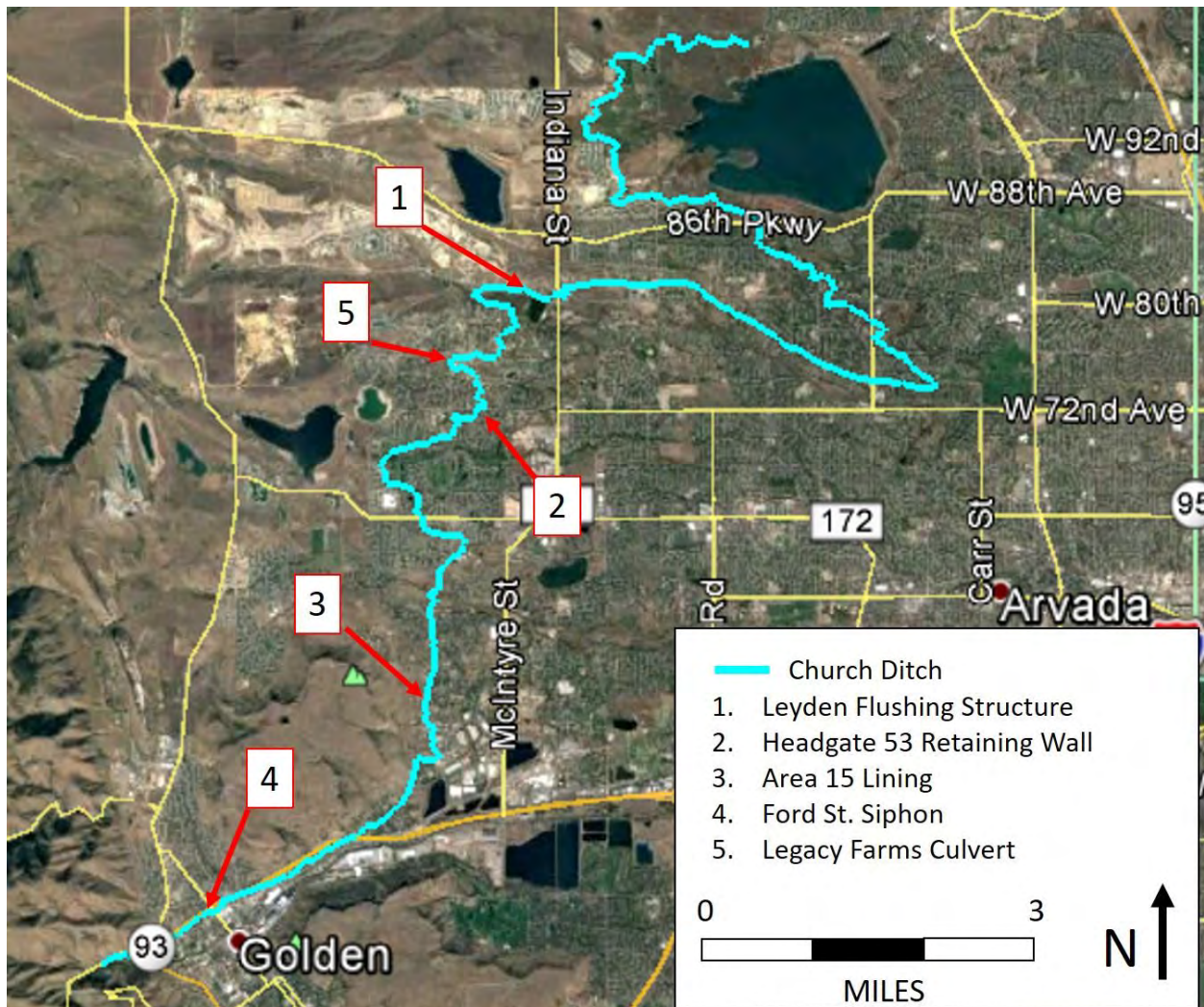
The Church Ditch Water Authority (CDWA), located in Jefferson County, is a political subdivision of the State of Colorado and a water authority operating pursuant to Section 29-1-204.2, C.R.S., that operates the Church Ditch, a 26-mile long carrier ditch. The ditch diverts from Clear Creek, just west of the Golden, Colorado and provides direct flow water for irrigation of livestock, hay crops and municipal use. The ditch has been in operation since 1865, was formed as a water authority by intergovernmental agreement between the cities of Northglenn and Westminster in 2004, and currently serves 97 contractual users (“inch-holders”).

CDWA and ERC created a Master Plan in 2009 to identify areas in need of maintenance, modification or replacement. CDWA is in the process of upgrading facilities throughout its system that where identified. These upgrades will improve operational efficiency and reduce maintenance requirements for CDWA. Improvements will modify existing facilities or replace facilities that are worn-out or damaged. Ultimately, these improvements will ensure efficient delivery of water to inch-holders. The following capital improvements are the highest-priority for the CDWA over the next two years (estimated project costs are shown in parenthesis):

1. Modification of the Leyden Creek flushing structure (\$205,500)
2. Replacement of the Headgate 53 retaining wall (\$527,600)
3. Installation of ditch lining in Area 15, a residential and industrial area (\$1,863,700)
4. Repair/replacement of the Ford Street Siphon (\$678,100)
5. Replacement of Legacy Farms culvert (\$305,100)

**Figure 1.1** presents a map of the CDWA system and the location of each project.

Figure 1.1. Church Ditch Water Authority System Map



In total, CDWA is requesting a loan of \$3,580,000 for these capital improvement projects. CDWA understands that in addition to this amount, CWCB will add a 1% loan service fee to the loan. **Appendix A** contains the Loan Application. The need for each project is explained below.

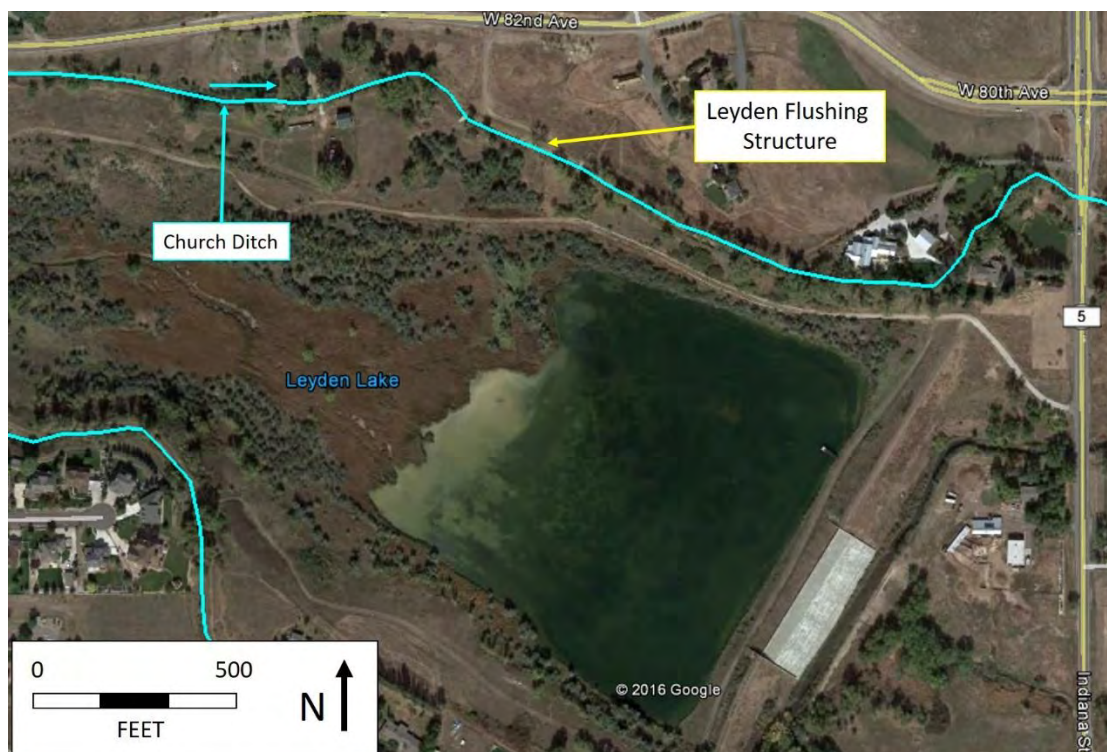
***A. Modification of the Leyden Creek Flushing Structure:***

The Leyden Creek Flushing Structure is located west of the intersection of W. 80<sup>th</sup> Avenue and Indiana Street in Arvada, Colorado. The structure is designed to improve water quality and reduce maintenance by capturing and removing sediment and debris from the Church Ditch. The structure also functions as a turn-out point for excess flows in the ditch. When large quantities of storm water enter the ditch, the Leyden Creek Flushing Structure can be used to divert these

flows into Leyden Lake. This protects the ditch downstream of the structure from erosion and scour damage. This also protects downstream properties from flooding when ditch capacity is overwhelmed.

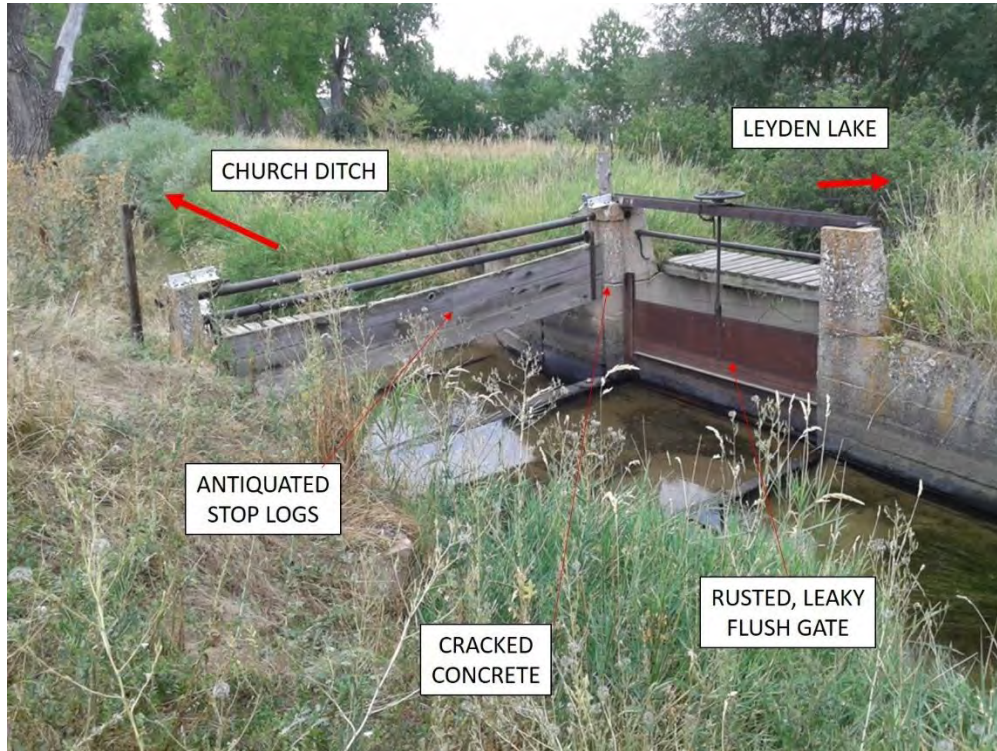
The existing flushing structure consists of a stop log structure where planks can be placed to back up water in the ditch. A 6-ft wide slide gate can be opened to flush sediment down a chute and into Leyden Lake. The structure is about 75 years old and is in need of repair and upgrade to improve operational efficiency and to ensure personnel safety. Some current issues include: the slide gate is rusted and leaky; concrete walls are chipped and cracked; the stop log structure is leaky, the structure is antiquated and difficult to operate; and the access bridges across the canal and chute are unstable and lack modern safety equipment. The flush gate bridge is potentially hazardous to personnel who must stand on a wooden access bridge above a 15-foot drop to operate the gate. **Figure 1.1** shows the location of the project. **Figures 1.2** and **1.3** present photographs of the Leyden Flushing Structure.

**Figure 1.1. Location of Leyden Flushing Structure**





**Figure 1.2. Leyden Flushing Structure (Facing East/Downstream Along Church Ditch)**



**Figure 1.3. Leyden Flushing Structure (Facing South Towards Flush Gate)**



Repairs on the flush structure have been made sporadically in the past to address major issues as these arose. A capital project to address all lingering issues will greatly improve the safety, efficiency and longevity of the structure.

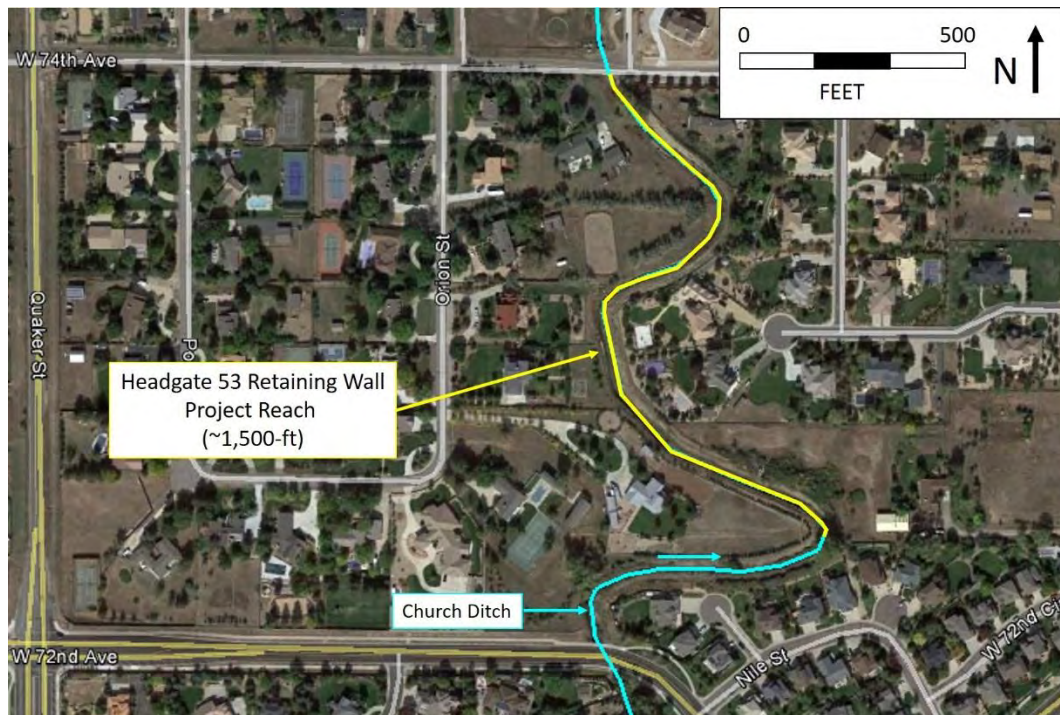
By making upgrades, CDWA would be able to operate the Leyden Creek Flush Structure in an efficient and safe manner. Sediment and debris can be trapped and flushed by new, modern gates. This will improve water quality in the downstream ditch. Excess flows can be passed through a modern overshot gate to protect the ditch and private property downstream of the structure. New OSHA-compliant bridges will provide CDWA personnel a safe and ergonomic means to easily operate and maintain the structure. This project is important because it is an opportunity to maximize efficiency, ensure safety and reduce maintenance in the ditch. As such, CDWA is requesting a loan in the amount of \$205,500 to design and construct an upgrade to the structure. Improvements would include new concrete headwalls, gates and bridges.

### ***B. Replacement of the Headgate 53 Retaining Wall***

The Headgate 53 retaining wall is a 1,500-foot concrete block wall that holds back steep, unstable ditch banks through a residential area. The retaining wall is between W. 74<sup>th</sup> Avenue and W. 72<sup>nd</sup> Avenue (east of Quaker Street) in Arvada, Colorado. As a result of the historical flooding that occurred in September 2013, a 1,500-foot section of the Church Ditch's up-ditch bank (or left bank when facing downstream) was severely eroded. Bank sloughing and deposition prevented free conveyance of water downstream. Emergency temporary repairs, conducted in 2014, consisted of installing a concrete-block retaining wall along the left bank of this section. The individual concrete blocks are 2 feet high by 2 feet wide by 6 feet long. The wall varies in height from about 6 feet (three stacked blocks) to 12 feet (six stacked blocks). The temporary wall has shown signs of instability most likely from the expansive clay soils in the bank. These soils shrink and swell with varying moisture and cause excessive pressures against the wall. The emergency repair did not include sufficient precautions to drain these soils and, as a result, the blocks are heaving and rotating. This represents a threat to CDWA water deliveries and also a potential public safety concern. **Figure 1.4** shows the location of the project. **Figures 1.5** and **1.6** presents photographs of the Headgate 53 retaining wall.



**Figure 1.4. Location of Headgate 53 Retaining Wall**



**Figure 1.5. Headgate 53 Retaining Wall (Facing West)**



**Figure 1.6. Headgate 53 Retaining Wall (Facing Upstream Along Church Ditch)**



The existing retaining wall should be replaced with a more permanent and robust solution that is designed to drain the expansive soils in the bank, minimize infiltration and erosion behind the wall and resist the forces associated with soil movement. In 2015, a 100-ft section of the wall that was actively failing was repaired. The repair design included free-draining granular material as a foundation and backfill behind the wall. Weep drains were also installed to provide additional drainage. A tie-back block (set perpendicular to the wall) was used as a deadman anchor to resist rotational forces. The current condition of the remaining 1,400 feet of block wall poses a significant risk to the ability of the Church Ditch to convey water. Further saturation of the area could result in additional instability and possible collapse of wall sections. This would block the ditch and reduce or prevent the ability of CDWA to deliver water to the 85% of inch-holders downstream of this section. Under current operations, maintenance personnel must constantly monitor this section (with daily observation) to guard against a wall failure.

A capital project to replace the temporary wall with a better design will greatly improve the reliability of the CDWA system to provide water. A new, stable wall would allow CDWA to convey water without constant monitoring, freeing up personnel for other duties. The new wall would enhance safe and reliable ditch operations. This project is important because it is an opportunity to restore this section of the Church Ditch to a condition that will allow for stable and continuous

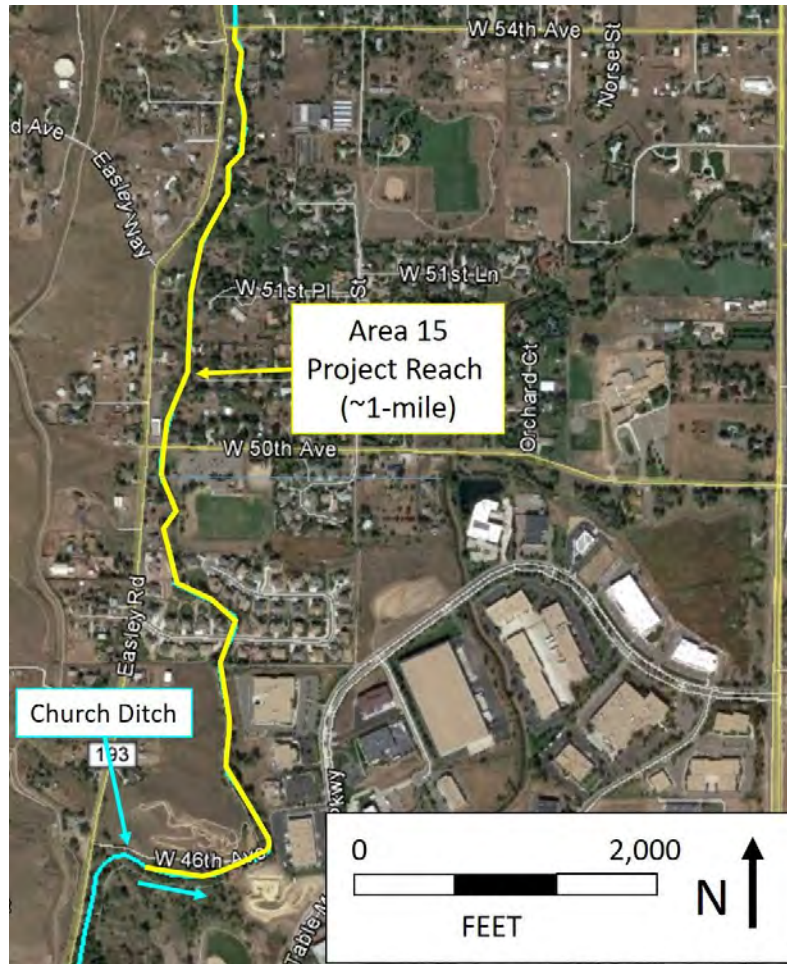


operation, significantly decreased monitoring needs, increased reliability of water delivery and enhanced public safety. To accomplish these ends, CDWA is requesting a loan in the amount of \$527,600 to repair the entire 1,500-foot section of retaining wall. This represents a “worst-case” scenario since the recently replaced 100-foot section could remain in place if the design for the remaining 1,400 feet is compatible with the 100-foot section.

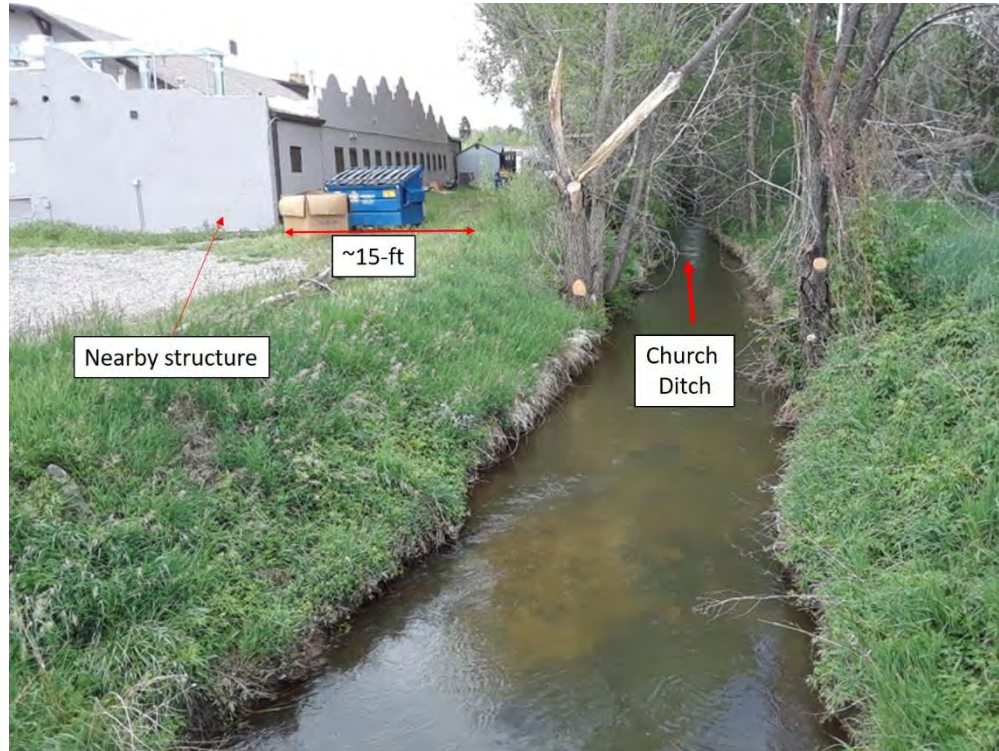
### ***C. Installation of Ditch Lining in Area 15, a Residential and Industrial Area***

Area 15 is a 1.0-mile section of the Church Ditch between 54<sup>th</sup> Avenue and 46<sup>th</sup> Avenue (east of Easley Road) in Arvada, Colorado. This section traverses residential and industrial areas where homes and businesses have been constructed adjacent to the ditch. Seepage has been a historic problem through this portion of the ditch. Through this area, seepage rates have been exacerbated by the construction of homes and industrial facilities with below-ground floors. Sump pumping and other dewatering by adjacent properties has resulted in increased water losses for CDWA. Seepage also occurs where the ditch bottom is higher than adjacent ground due to grading or natural topography. Seepage has the potential to cause damage to residents and business, and the local government have raised concern against CDWA alleging damages related to residential dewatering. **Figure 1.7** shows the project location. **Figures 1.8** and **1.9** presents photographs of the Area 15 section of the ditch.

**Figure 1.7. Location of Area 15**



**Figure 1.8. Area 15 Section of Church Ditch, Facing Downstream near W. 50<sup>th</sup> Ave**



**Figure 1.9. Seepage 50-ft South of Church Ditch in Area 15 (Facing West near W. 46<sup>th</sup> Ave)**





The Area 15 section of ditch should be lined or piped to prevent water losses and limit the potential for damage to adjacent property. The design should include a watertight conveyance structure (either concrete box culvert or a PVC membrane) to fit the existing channel geometry and be constructible within the confined limits of the ditch easement. CDWA has undertaken similar project in the past when developers have built structures adjacent to the ditch. Piping and/or lining have proven successful to prevent water loss and reduce complaints and allegations of damage against the ditch company. Maintenance is also generally reduced after the installation of piping or lining since the ditch will either be completely enclosed (in the case of a pipe) or regraded with banks laid back and/or stabilized (in the case of a buried liner).

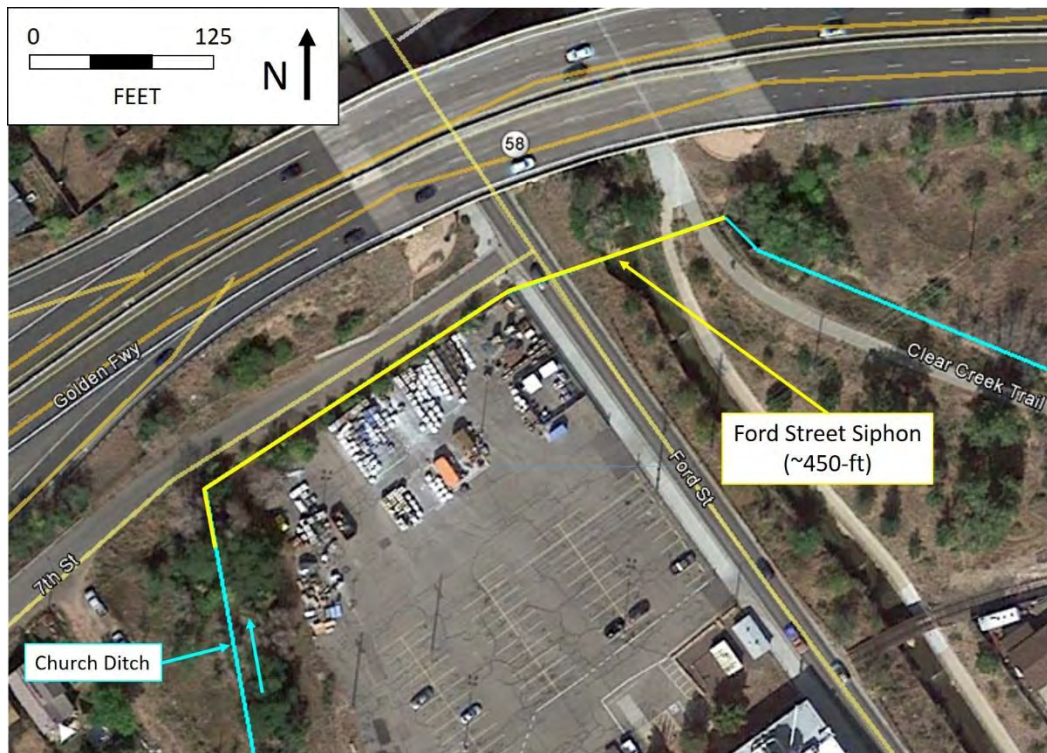
A capital project to line or pipe Area 15 will greatly improve the reliability of the CDWA system to provide water. A watertight ditch through this residential and industrial area would allow CDWA to convey water with limited losses to seepage. Lining or piping would also reduce possible claims against the ditch company from damage alleged by seepage or dewatering. This project is important because it is an opportunity to limit water losses and limit the potential for damage to property adjacent to the ditch. CDWA is therefore requesting a loan in the amount of \$1,863,700 to design and install watertight lining system through Area 15.

#### ***D. Inspection and Potential Repair/Replacement of the Ford Street Siphon***

The Ford Street siphon is an approximately 450-foot concrete pipe that carries the Church Ditch underneath Ford Street in Golden, Colorado. Ford Street is a two-lane city road in an industrial and residential area. The siphon is approximately 75 years old and in an unknown state of repair. The siphon is the only means of conveying water past Ford Street and into a piped section under the Clear Creek Trail. A failure of this structure would result in a complete blockage of delivery with no feasible opportunity for a temporary bypass. The result would leave 99% of Church Ditch inch-holders without water. **Figure 1.10** shows the project location. **Figures 1.11** and **1.12** presents photographs of the Ford Street siphon.



**Figure 1.10. Location of Ford Street Siphon**



**Figure 1.11. Ford Street Siphon Inlet**





**Figure 1.12. Ford Street Siphon Outlet**



The Ford Street siphon will be inspected to determine the condition of the structure. Based on the results of the inspection, repairs or a full replacement will be designed. Given the age of the siphon and its critical location (with no potential for temporary bypass), a replacement pipe is believed to be the best option to ensure continuous water delivery.

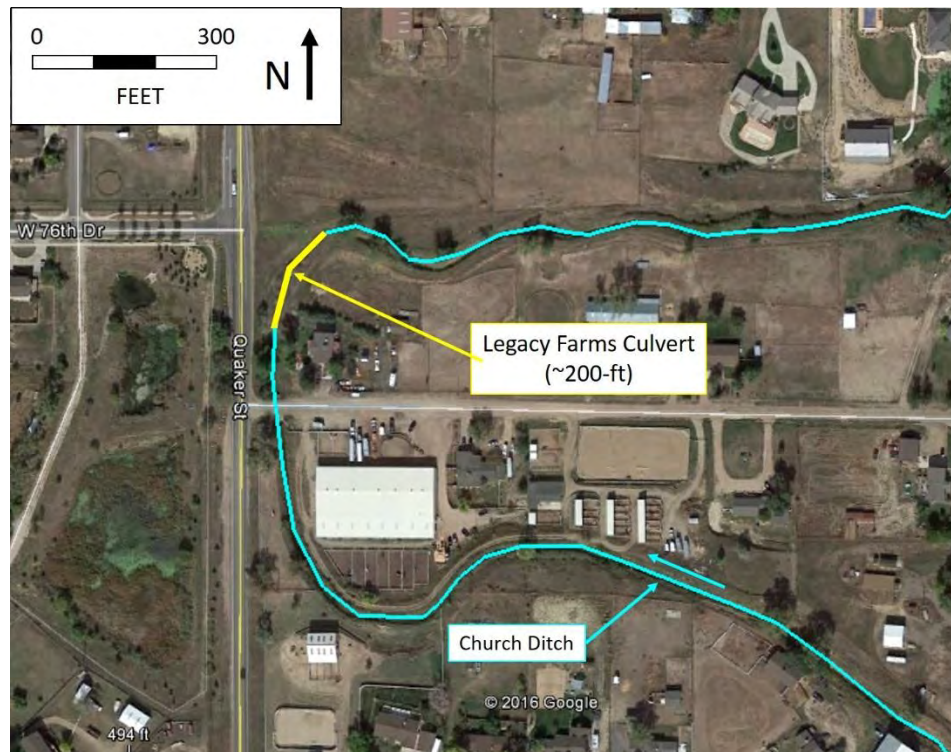
A capital project to inspect and replace the Ford Street siphon will dramatically improve the reliability of the Church Ditch system. This project is important because it is an opportunity to substantially upgrade one of the most essential pieces of infrastructure in the CDWA system. To prevent a catastrophic failure of the siphon and the resulting impact to 99% of inch-holders, CDWA is requesting a loan in the amount of \$678,100 to design and construct a replacement siphon.

#### ***E. Replacement of Legacy Farms Culvert***

The Legacy Farms culvert is a 200-foot long, 60-inch diameter corrugated metal pipe (CMP). The culvert is located southeast of W. 76<sup>th</sup> Drive and Quaker Street in Arvada, Colorado. The culvert carries the ditch past a steep bank that historically sloughed into the ditch and reduced conveyance capacity. The culvert was installed in 2010 as an emergency maintenance project to

address an immediate need for bank stabilization and to minimize maintenance in this reach. However, the pipe was improperly sized and is now a chokepoint with insufficient capacity to pass decreed canal flows with enough freeboard to prevent plugging. Furthermore, storm water runoff from adjacent development adds to the volume and causes ponding upstream of the culvert. This has the potential to inundate private property and roadways. To temporarily ease the problem, CDWA constructed a high-flow overflow channel to carry water around the pipe and back into the ditch. This bypass is an open channel that is subject to blockage from debris coming off the up-ditch bank. **Figure 1.13** shows the location of the culvert. **Figures 1.14** and **1.15** present photographs of the Legacy Farms Culvert.

**Figure 1.13. Legacy Farms Culvert (Facing Downstream)**

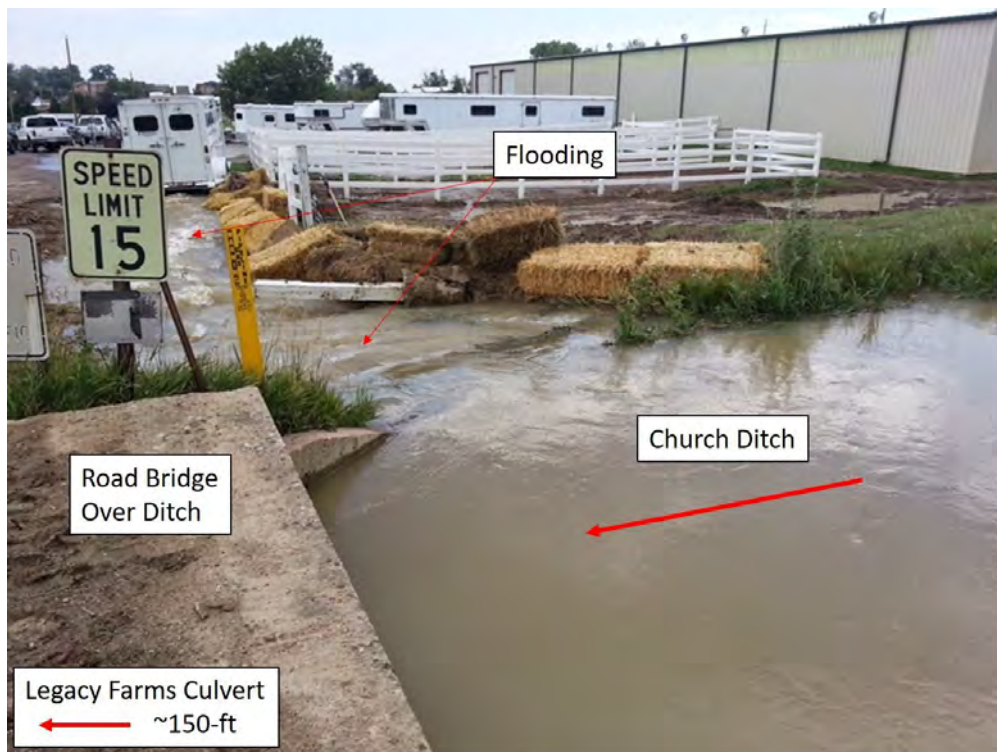




**Figure 1.14. Legacy Farms Culvert (Facing Downstream)**



**Figure 1.15. Flooding Upstream of Legacy Farms Culvert (Facing East)**



The Legacy Farms culvert should be replaced with a properly sized conduit to increase conveyance capacity, reduce maintenance and prevent flooding. The design will likely require a concrete box culvert to provide sufficient capacity and enough freeboard to prevent blockage. A properly sized culvert will also eliminate the need for the bypass channel and the associated maintenance headaches.

A capital project to replace the Legacy Farms culvert will greatly improve the reliability of the CDWA system while reducing the potential for damage claims against CDWA. This project is important because it is an opportunity to remove a known chokepoint in the system thereby increasing conveyance capacity, reducing maintenance and preventing potential flood damage to property adjacent to the ditch. To permanently alleviate the problem, CDWA is requesting a loan in the amount of \$305,100 to design and construct a new culvert to pass maximum normal flows with sufficient freeboard.

## **2. Project Sponsor**

The CDWA is a separate government entity, known as a water authority, formed pursuant to Section 29-1-204.2, C.R.S. **Appendix B** contains the CDWA By-Laws. The Church Ditch began operation in 1865 and currently provides water to 97 contractual users or “inch-holders.” The decreed flow is 113.03 cubic feet per second (cfs) which amounts to 5,863.83958 contractual inches. The majority of revenue is through annual assessments to contractual users. CDWA has the power to set annual assessments to be paid by the inch-holders and the power to cut off water deliveries to inch-holders that fail to pay their assessments. In addition to assessments, CDWA collects revenue from an intergovernmental agreement (IGA) with Northglenn, Westminster and Arvada for a storm bypass near the termination of the ditch. CDWA also collects revenue by contracting the maintenance of the Woman Creek Reservoir Authority.

## **3. Project Service Area and Facilities**

The Church Ditch is an approximately 26 miles long carrier ditch that delivers water from Clear Creek. The headworks are located at the mouth of Clear Creek Canyon, about ½ mile west of the intersection of Highway 93 and Highway 58 in Golden, Colorado. The ditch traverses a generally northeasterly direction through Jefferson County until it terminates at Dry Creek Valley Ditch, north of Standley Lake (near the intersection of Simms Street and W. 100<sup>th</sup> Avenue in Westminster, Colorado). The Church Ditch provides water for irrigation of livestock, hay crops and municipal use. A map of the CDWA system is presented above in **Figure 1.1**.

#### 4. Water Rights

The source of water for the CDWA is direct flow water rights out of Clear Creek. The water rights diverted at the headworks consist of six absolute rights with dates of appropriation ranging from 1862 to 1881. The total is 113.03 cfs as shown in **Table 4.1**

**Table 4.1. List of CDWA Water Rights**

| Admin No. | Priority Date | Amount (cfs) | Cumulative Total (cfs) |
|-----------|---------------|--------------|------------------------|
| 4535      | 6/1/1862      | 0.90         | 0.90                   |
| 5538      | 2/28/1865     | 41.43        | 42.33                  |
| 5615      | 5/16/1865     | 1.25         | 43.58                  |
| 10184     | 11/18/1877    | 18.26        | 61.84                  |
| 10546     | 11/15/1878    | 18.85        | 80.69                  |
| 11647     | 11/20/1881    | 32.34        | 113.03                 |

Records of the State Engineer's Office indicate that total average annual diversions are 10,500 acre-feet, based on record years 1952 through 2015. The maximum diversion rate during that time was 113 cfs for record years 1953 and 1971. These water rights are assumed to be sufficient to meet demand over the period of the loan. A summary of water rights and the State Engineer Diversion records for 1952-2015 are found in **Appendix C**.

#### 5. Project Descriptions and Alternatives

This section contains an analysis of potential project alternatives and descriptions of the selected alternative for each project. When evaluating alternatives for each project, the following criteria were used to select the best alternative: cost, maintenance requirements, operational efficiency, ease of construction (to included design and permitting) and longevity.

##### ***A. Modification of the Leyden Creek Flushing Structure:***

The purpose of this project is to upgrade and repair a critical component of CDWA water delivery infrastructure in order to maximize efficiency, ensure safety and reduce maintenance in the ditch. A new structure will make removing sediment from the ditch easier, safer and more effective. This will improve water quality, better protect land down ditch from flooding and reduce system maintenance. Three alternatives were considered:

1. The no-action alternative.
2. Repair existing structure by patching concrete, sealing around gates and stop log structure and

repairing existing bridges (approximately \$25,000).

3. Improve the structure by constructing new concrete headwalls and installing new access bridges and gates (approximately \$205,500).

**Alternative No. 1** was considered unacceptable because the structure has exceeded its expected useful life and will have to be repaired or replaced soon. Significant maintenance is required to keep the current structure functioning. Nevertheless, continued operation of the existing structure for sediment flushing is inefficient, arduous and potentially hazardous.

**Alternative No. 2** was ruled out because this work will only slightly extend the useful life of the structure. Patching cracks in concrete, sealing gaps around the gates and repairing the access bridges will be a quick fix that will increase safety and effectiveness. However, replacement in the near future is inevitable and any money spent on repairs is likely wasted. Furthermore, minor repairs will not increase the efficiency of operations. Using stop logs will still be a laborious way to flush sediment from the ditch.

**Alternative No. 3** was selected since it is considered to be a long-term reliable approach that will enhance the structure making sediment flushing safer, more efficient and easy. The proposed modifications will significantly reduce maintenance costs. Furthermore, CDWA already owns two new Rubicon gates that can be used in this project, allowing the work to be completed for a significant cost savings as compared to having to purchase new gates.

**The selected alternative, Alternative No. 3**, involves the following modifications:

1. Replace stop logs with a modern slide gate
2. Replace old flush gate with modern slide gate and overshoot gate to bypass flows more efficiently
3. Install steel access bridges with railings
4. Repair, replace and install new concrete to increase durability
5. Add security fencing to protect structure and limit trespassing

CDWA's engineering consultant, Ecological Resource Consultants, Inc. (ERC), has prepared a preliminary concept and budgetary cost estimate for **Alternative 3**. **Appendix D** contains a preliminary design concept. The estimated budgetary cost of the completed project is \$205,500. The cost breakdown is summarized in **Table 5.1**.

**Table 5.1. Cost Estimate for CDWA Leyden Flushing Structure Project (Alternative 3)**

| Item                                                        | Unit                         | Quantity | Unit Cost | Subtotal  |
|-------------------------------------------------------------|------------------------------|----------|-----------|-----------|
| Demo of existing structure                                  | Lump Sum                     | 1        | \$20,000  | \$20,000  |
| Concrete (headwalls, new piers, etc)                        | Cubic Yard                   | 30       | \$1,000   | \$30,000  |
| Riprap                                                      | Cubic Yard                   | 25       | \$130     | \$3,200   |
| Access Bridges                                              | Lump Sum                     | 2        | \$3,000   | \$6,000   |
| Fencing                                                     | Linear Foot                  | 150      | \$30      | \$4,500   |
| Fencing Access Gates                                        | Lump Sum                     | 1        | \$300     | \$300     |
| Water control                                               | Lump Sum                     | 1        | \$30,000  | \$30,000  |
| Construction Subtotal                                       |                              |          |           | \$94,000  |
| Furnish & Install Fresno Slide Gate<br>(8-ft x 4-ft)        | Each                         | 1        | \$27,000  | \$27,000  |
| Install Rubicon Flume Gate                                  | Lump Sum                     | 1        | \$1,000   | \$1,000   |
| Install Rubicon Slide Gate                                  | Lump Sum                     | 1        | \$1,000   | \$1,000   |
| Materials Subtotal                                          |                              |          |           | \$29,000  |
| Mobilization/Demobilization                                 | 10% of construction subtotal |          |           | \$12,300  |
| Erosion Control and Reclamation                             | 2% of construction subtotal  |          |           | \$2,500   |
| Contractor Overhead/Profit                                  | 20% of construction subtotal |          |           | \$24,600  |
| Construction Management (Permitting,<br>Design, Inspection) | 15% of construction subtotal |          |           | \$18,500  |
| Additional Management and Contingency                       | 20% of construction subtotal |          |           | \$24,600  |
| Miscellaneous Subtotal                                      |                              |          |           | \$82,500  |
| TOTAL                                                       |                              |          |           | \$205,500 |

Note: Some values have been rounded for simplicity.



### ***B. Replacement of the Headgate 53 Retaining Wall***

The purpose of this project is to provide a means for the CDWA to continue providing water to inch-holders while minimizing the potential for slope failures in the project area. The project will allow for continuous, unmonitored operations, increased reliability of water delivery, and enhanced public safety. Four alternatives were considered:

1. The no-action alternative.
2. Convey this section of the ditch in a pipe (approximately \$2 million).
3. Reconstruct the diversion using sheet pile (approximately \$800,000).
4. Reconstruct the diversion using the existing concrete blocks (approximately \$527,600).

**Alternative No. 1** was considered unacceptable since the existing retaining wall will inevitably fail. The result would be that CDWA could not deliver water to its inch-holders. Each season, sections of the wall become visibly less stable. Under this alternative, CDWA will likely face the prospect of additional costs in time and money for emergency repairs and delays in water delivery. Ditch maintenance will likely increase as time goes on since ditch riders will need to closely monitor this section.

**Alternative No. 2** was ruled out due to cost. To pass CDWA's maximum normal flow of 113 cfs through this section (with sufficient freeboard to prevent blockage) requires a large pipe (at least 84 inches in diameter) or a concrete box culvert (CBC) at least 4 feet wide and 5 feet tall. Installing 1,500 linear feet of either of these would be prohibitively expensive to CDWA.

**Alternative No. 3** was ruled out due to difficulties with installation, maintenance and the impact to the local community. This alternative also does not make use of the concrete blocks which are already in place. To install sheet pile, the existing blocks would have to be removed and hauled away. Once this is done, sheet pile could be installed but with tremendous difficulty. The CDWA maintains an access road through this section on the side of the ditch opposite the retaining wall. Accessing the site with pile-driver equipment would involve traversing private property. This would be a very difficult, if not impossible, undertaking. Furthermore, the use of sheet pile will create a vertical drop from height into the ditch. This could create a safety hazard in an area of ditch located very close to residential neighborhoods.

**Alternative No. 4** was selected since it is considered to be the most cost-effective approach (as it makes use of materials already on site), and is relatively easy to construct. A similar technique was used successfully during the 2015 emergency repairs. As part of the repair, the concrete blocks will be placed in a stair-step fashion to increase stability and mitigate safety concerns from potential

trespassers.

The selected alternative, **Alternative No. 4**, involves the following construction method:

1. Remove the existing concrete blocks
2. Install granular, free-draining structural fill for subgrade foundation and backfill
3. Install weep drains to remove additional moisture from adjacent soils
4. Reinstall the existing concrete blocks with deadman anchors and/or stair-step configuration to increase stability and mitigate potential safety hazards

ERC has prepared a preliminary concept and budgetary cost estimate for **Alternative 4**. **Appendix E** contains a preliminary design concept. The estimated budgetary cost of the completed project is \$527,600. The cost breakdown is summarized in **Table 5.2**.

**Table 5.2. Cost Estimate for CDWA Headgate 53 Retaining Wall Project (Alternative 4)**

| Item                                                                      | Unit                         | Quantity | Unit Cost | Subtotal  |
|---------------------------------------------------------------------------|------------------------------|----------|-----------|-----------|
| Demo of existing wall                                                     | Lump Sum                     | 1        | \$20,000  | \$20,000  |
| Earthwork                                                                 | Cubic Yard                   | 580      | \$15      | \$8,700   |
| Install concrete blocks (5 high),<br>fill, fabric and drains <sup>1</sup> | Linear Foot                  | 700      | \$206     | \$144,200 |
| Install concrete blocks (3 high),<br>fill, fabric and drains <sup>1</sup> | Linear Foot                  | 850      | \$133     | \$113,000 |
| Water control                                                             | Lump Sum                     | 1        | \$30,000  | \$30,000  |
| Construction Subtotal                                                     |                              |          |           | \$315,900 |
| Mobilization/Demobilization                                               | 10% of construction subtotal |          |           | \$31,600  |
| Erosion Control and Reclamation                                           | 2% of construction subtotal  |          |           | \$6,300   |
| Contractor Overhead/Profit                                                | 20% of construction subtotal |          |           | \$63,200  |
| Construction Management (Permitting,<br>Design, Inspection)               | 15% of construction subtotal |          |           | \$47,400  |
| Additional Management and Contingency                                     | 20% of construction subtotal |          |           | \$63,200  |
| Miscellaneous Subtotal                                                    |                              |          |           | \$211,700 |
| TOTAL                                                                     |                              |          |           | \$527,600 |

1. Construction costs assume reuse of existing blocks.

Note: Some values have been rounded for simplicity.

### ***C. Installation of Ditch Lining in Area 15, a Residential and Industrial Area***

The purpose of this project is to limit water losses and prevent possible damage to property adjacent to the ditch. Three alternatives were considered:

1. The no-action alternative.
2. Place the ditch in a culvert through this section (approximately \$3,600,000).
3. Line the existing ditch section with PVC or similar liner (approximately \$1,863,700).

**Alternative No. 1** was considered unacceptable because this section of ditch is actively losing water and could cause property damage through seepage. Failure to address the issue will only result in continued lost water and greater potential property damage. Typical seepage rates of 2-4% could result in losses of over 400 acre-feet per year.

**Alternative No. 2** was ruled out because of the cost associated with piping the ditch through this section. To convey decreed flows with sufficient freeboard to prevent obstructions, the culvert would need to be an 8-ft by 5-ft concrete box culvert. Installing one mile of this culvert (including headwalls, wing walls and associated earthwork) would cost about twice the PVC lining alternative.

**Alternative No. 3** was selected, since it is the least expensive long-term reliable solution to prevent seepage. Other sections of Church Ditch have been lined using PVC liner with successful results. A lined section eliminates seepage and reduces maintenance since ditch banks will be stabilized as part of construction.

**The selected alternative, Alternative No. 3,** involves the following construction method:

1. Clear and grub area to remove vegetation
2. Grade ditch to geometry suitable for liner and/or stabilize steep banks
3. Install liner (PVC 40 mil or similar) and concrete blocks in areas with steep banks
4. Place fill over lining and restore canal banks

ERC has prepared a preliminary concept and budgetary cost estimate for **Alternative 3**. **Appendix F** contains a preliminary design concept. The estimated budgetary cost of the completed project is \$1,863,700. The cost breakdown is summarized in **Table 5.3**.

**Table 5.3. Cost Estimate for CDWA Area 15 Lining Project (Alternative 3)**

| Item                                                     | Unit                         | Quantity | Unit Cost | Subtotal    |
|----------------------------------------------------------|------------------------------|----------|-----------|-------------|
| Remove unsuitable material                               | Cubic Yard                   | 3,100    | \$15      | \$46,500    |
| Clear/grub                                               | Lump Sum                     | 1        | \$106,875 | \$106,900   |
| Earthwork, subgrade prep, shape ditch                    | Cubic Yard                   | 17,400   | \$15      | \$261,000   |
| Concrete block liner                                     | Each                         | 5,600    | \$75      | \$420,000   |
| Structural Fill                                          | Cubic Yard                   | 1,300    | \$15      | \$19,500    |
| 40 mil PVC liner                                         | Square Foot                  | 185,700  | \$1.25    | \$232,100   |
| Water control                                            | Lump Sum                     | 1        | \$30,000  | \$30,000    |
| Construction Subtotal                                    |                              |          |           | \$1,116,000 |
| Mobilization/Demobilization                              | 10% of construction subtotal |          |           | \$111,600   |
| Erosion Control and Reclamation                          | 2% of construction subtotal  |          |           | \$22,300    |
| Contractor Overhead/Profit                               | 20% of construction subtotal |          |           | \$223,200   |
| Construction Management (Permitting, Design, Inspection) | 15% of construction subtotal |          |           | \$167,400   |
| Additional Management and Contingency                    | 20% of construction subtotal |          |           | \$223,200   |
| Miscellaneous Subtotal                                   |                              |          |           | \$747,700   |
| TOTAL                                                    |                              |          |           | \$1,863,700 |

Note: Some values have been rounded for simplicity

#### ***D. Repair/Replacement of the Ford Street Siphon***

The purpose of this project is to upgrade an essential piece of infrastructure in the CDWA system in order to prevent a catastrophic failure of the siphon and ensure continuous water delivery. The proposed loan amount includes funding to inspect the siphon structure. Given the age of the structure (approximately 75 years old), it is highly probable that significant issues will be discovered. To remediate the anticipated problems, four alternatives were considered:

1. The no-action alternative.
2. Repair the existing siphon structure (approximately \$50,000).
3. Replace the existing structure with a new 3-pipe siphon system (approximately \$1,000,000).
4. Replace the existing pipe with a new siphon via “sliplining” (approximately \$678,100).

**Alternative No. 1** was considered unacceptable because the siphon is critical infrastructure that ensures deliveries to 99% of inch-holders. Failure of the siphon will stop flow for an extended period of time since a temporary bypass is not practical. Neglecting the anticipated issues given the age and external condition of the siphon will guarantee an eventual failure. This is an unacceptable risk.

**Alternative No. 2** was ruled out because repairs will only be a temporary fix. Given the age of the siphon and its importance as critical infrastructure, a full replacement of the structure is inevitable sometime soon. Economically, it is better to replace the structure soon rather than risk a major problem or failure during the water season. This would prevent deliveries and require very expensive emergency construction.

**Alternative No. 3** was ruled out due to cost. While a completely redesigned three-pipe siphon system would provide redundant capacity and easy maintenance, the estimated cost of the structure is significant. This does not anticipate the full cost of removing and replacing a section of Ford Street as well and the cost to relocate utilities. The siphon has functioned as a single pipe siphon for 75 years so it is assumed to be sufficient.

**Alternative No. 4** was selected since it is a cost-effective and relatively simple solution to prevent a catastrophic failure of the siphon during the water season. Sliplining results in a watertight seal and does not require special tools or equipment. Most pipeline contractors have the ability and expertise to use this technique. Sliplining will not require any demolition and will not impact Ford Street. This alternative provides an economical and effective solution that eliminates the complexity associated with a full structural demolition and replacement.

The selected alternative, **Alternative No. 4**, involves an initial inspection of the siphon structure by engineers during the off season when the siphon is dry. Assuming significant issues are noted, the structure will be replaced using a “sliplining” technique. Sliplining is accomplished by inserting a slightly smaller carrier pipe into the existing pipe. Pipe size and capacity will be analyzed during the design phase. The annular space between the pipes and transition joints will be grouted to create a watertight seal. New concrete headwalls, wing walls and footers will be built at the entrance and exit points.

ERC has prepared a preliminary concept and budgetary cost estimate for **Alternative 4**. **Appendix G** contains a preliminary design concept. The estimated budgetary cost of the completed project is \$452,600. The cost breakdown is summarized in **Table 5.4**.

**Table 5.4. Cost Estimate for CDWA Ford Street Siphon Project (Alternative 4)**

| Item                                                     | Unit                         | Quantity | Unit Cost | Subtotal  |
|----------------------------------------------------------|------------------------------|----------|-----------|-----------|
| Inspection of existing structure                         | Lump Sum                     | 1        | \$6,000   | \$6,000   |
| Demo of existing concrete headwalls, etc                 | Lump Sum                     | 1        | \$10,000  | \$10,000  |
| Replacement cost                                         | Linear Foot                  | 450      | \$800     | \$360,000 |
| Water control                                            | Lump Sum                     | 1        | \$30,000  | \$30,000  |
| Construction Subtotal                                    |                              |          |           | \$406,000 |
| Mobilization/Demobilization                              | 10% of construction subtotal |          |           | \$40,600  |
| Erosion Control and Reclamation                          | 2% of construction subtotal  |          |           | \$8,200   |
| Contractor Overhead                                      | 20% of construction subtotal |          |           | \$81,200  |
| Construction Management (Permitting, Design, Inspection) | 15% of construction subtotal |          |           | \$60,900  |
| Additional Management and Contingency                    | 20% of construction subtotal |          |           | \$81,200  |
| Miscellaneous Subtotal                                   |                              |          |           | \$272,100 |
| TOTAL                                                    |                              |          |           | \$678,100 |

Note: Some values have been rounded for simplicity

### ***E. Replacement of Legacy Farms Culvert***

The purpose of this project is to increase conveyance capacity, reduce maintenance and prevent potential flooding adjacent to this section of the ditch. A properly designed box culvert will carry flows through this area without risk of plugging from debris or bank failure and with less risk of flooding adjacent areas. Three alternatives were considered:

1. The no-action alternative.
2. Remove the existing CMP and install bank stabilization (approximately \$125,000).
3. Replace the existing CMP with a new concrete box culvert (approximately \$305,100).

**Alternative No. 1** was considered unacceptable because the existing CMP is undersized and cannot convey the normal operating flow and typical runoff. Failure to take action will result in the risk of flooding adjacent property. CDWA will also continue to face excessive maintenance burdens when the culvert plugs or the bypass channel fails. This currently costs a disproportionate amount of time and money.

**Alternative No. 2** was ruled out because storm water runoff from the road is enough to cause major erosion to the bank above the pipe. In 2010, CDWA decided to pipe the ditch to mitigate the reduction in capacity and increased maintenance due to bank sloughing. Returning this section to an open channel, which has proven to be a maintenance headache, is not an acceptable alternative.

**Alternative No. 3** was selected because piping this section of ditch is known to be the best way to address bank instability and stormwater inflow concerns that have previously caused blockages of the ditch. Resizing the pipe to convey the full decreed capacity of the ditch will reduce maintenance and mitigate flooding risk on adjacent properties. This alternative will also increase operational efficiency as ditch riders will not need to constantly monitor this section.

**The selected alternative, Alternative No. 3**, involves removing the existing pipe and installing a properly sized and designed cast-in-place concrete box culvert (likely 8-ft by 5-ft) with headwalls and wing walls.

ERC has prepared a preliminary concept and budgetary cost estimate for **Alternative 3. Appendix H** contains a preliminary design concept. The estimated budgetary cost of the completed project is \$305,100. The cost breakdown is summarized in **Table 5.5**.

**Table 5.5. Cost Estimate for CDWA Legacy Farms Culvert Project (Alternative 3)**

| Item                                                     | Unit                         | Quantity | Unit Cost | Subtotal  |
|----------------------------------------------------------|------------------------------|----------|-----------|-----------|
| Demo of existing pipe                                    | Lump Sum                     | 1        | \$10,000  | \$10,000  |
| Earthwork                                                | Cubic Yard                   | 50       | \$15      | \$750     |
| Concrete box culvert (8' x 5')                           | Linear Foot                  | 200      | \$600     | \$120,000 |
| Concrete (headwalls and wingwalls)                       | Cubic Yard                   | 20       | \$1,000   | \$20,000  |
| Riprap                                                   | Cubic Yard                   | 15       | \$130     | \$1,950   |
| Water control                                            | Lump Sum                     | 1        | \$30,000  | \$30,000  |
| Construction Subtotal                                    |                              |          |           | \$182,700 |
| Mobilization/Demobilization                              | 10% of construction subtotal |          |           | \$18,300  |
| Erosion Control and Reclamation                          | 2% of construction subtotal  |          |           | \$3,700   |
| Contractor Overhead                                      | 20% of construction subtotal |          |           | \$36,500  |
| Construction Management (Permitting, Design, Inspection) | 15% of construction subtotal |          |           | \$27,400  |
| Additional Management and Contingency                    | 20% of construction subtotal |          |           | \$36,500  |
| Miscellaneous Subtotal                                   |                              |          |           | \$122,400 |
| TOTAL                                                    |                              |          |           | \$305,100 |

Note: Some values have been rounded for simplicity



## 6. Implementation Schedule

CDWA has phased the project schedule to complete work during the next two off-seasons (2017-2019 with off-season for the ditch running from November through March of each year). The highest priority projects, the Leyden Creek Flushing Structure and the Headgate 53 retaining wall, will be designed in 2017 and constructed during the 2017-2018 off-season. The Ford Street siphon will be inspected this year to inform a final design and to prepare for the unique challenges associated with this project (such as permitting and traffic management). Final design for Ford Street, Area 15 and Legacy Farms will be completed in 2018 so that these projects can be constructed in the 2018-2019 off-season. **Table 6.1** presents the anticipated implementation schedule.

**Table 6.1. Anticipated Implementation Schedule of CDWA Capital Improvement Projects**

| Project                         | Design                      | Construction <sup>1</sup> | Target Completion Date |
|---------------------------------|-----------------------------|---------------------------|------------------------|
| Leyden Creek Flushing Structure | Summer 2017                 | Winter 2017               | March 31, 2018         |
| Headgate 53 Retaining Wall      | Summer 2017                 | Winter 2017               | March 31, 2018         |
| Area 15 Ditch Lining            | Spring 2018                 | Winter 2018               | March 31, 2019         |
| Ford Street Siphon <sup>2</sup> | Winter 2017/<br>Spring 2018 | Winter 2018               | March 31, 2019         |
| Legacy Farms Culvert            | Summer 2018                 | Winter 2018               | March 31, 2019         |

1. Construction window is during canal off-season: November 1 – March 31

2. Siphon structure inspection in Winter 2017 to inform replacement design

## 7. Permitting

All necessary easements and rights-of-way have been obtained, except for in the area around the Ford Street siphon. Additional permitting will likely be required for this project since replacing the structure may entail road closures, traffic control and close coordination with the City of Golden Public Works Department. CDWA expects to be exempt from 404 permitting by Statutory exemption, 33 CFR Section 323.4(a)(3) for construction and maintenance of irrigation ditches and associated facilities. This will be confirmed with the U.S. Army Corps of Engineers (USACE). If required, USACE 404, local floodplain, grading and storm water/erosion control permits will be obtained prior to the start of construction.

## 8. Institutional Considerations

Entities that are, or may be, involved in the design, construction, and financing of the project include:

***Church Ditch Water Authority (CDWA)***: financing and project management.

***Ecological Resource Consultants, Inc. (ERC)***: design and construction oversight.

***Colorado Water Conservation Board (CWCB)***: financing and construction.

The CDWA will be the lead for the financing, design, and construction of the project. CDWA will also be the entity entering into contracts and agreements with the various entities for the services provided by each. CDWA will contract directly with the appropriate firm(s) after a competitive bid process to award construction contracts.

## 9. Financial Analysis

CDWA is applying for a loan from the CWCB in the maximum amount of \$3,580,000. This covers the estimated project costs but does not include the CWCB's 1.0% loan service fee. The estimated costs for each project are summarized in **Table 9.1**.

**Table 9.1. Estimated Annual Project Costs**

| Year                     | Project                        | Estimated Project Costs |
|--------------------------|--------------------------------|-------------------------|
| 2017                     | Leyden Flushing Structure      | \$205,500               |
|                          | Headgate 53 Retaining Wall     | \$527,600               |
|                          | Ford Street Siphon Inspection  | \$6,000                 |
|                          | <b>2017 Total</b>              | <b>\$739,100</b>        |
| 2018                     | Area 15 Ditch Lining           | \$1,863,700             |
|                          | Ford Street Siphon Replacement | \$672,100               |
|                          | Legacy Farms Culvert           | \$305,100               |
|                          | <b>2018 Total</b>              | <b>\$2,840,900</b>      |
| <b>Project Total</b>     |                                | <b>\$3,580,000</b>      |
| <b>Total Loan Amount</b> |                                | <b>\$3,580,000</b>      |

Note: CWCB will add a 1% loan service fee to the total loan amount.

CDWA is requesting a 30-year loan from the CWCB to cover the full cost of the projects and the loan service fee. CDWA will cover any costs that exceed the estimated project costs. According to Ms. Anna Mauss of the CWCB Water Project Loan Program Finance Section, interest rates are based on a six-month running average that has not yet been officially set. She estimates that a conservative

interest rate for this loan will likely be 3.10%. This rate would result in annual payments of \$185,017.81, assuming the full loan amount was obtained at one time. **Table 9.2** presents a summary of the financial aspects of the project

**Table 9.2. Financial Summary**

|                                                                                    |              |
|------------------------------------------------------------------------------------|--------------|
| Estimated Project Costs                                                            | \$3,580,000  |
| Loan Amount (100% of Estimated Project Costs) <sup>1</sup>                         | \$3,580,000  |
| Estimated Annual Loan Payment Amount                                               | \$185,017.81 |
| Number of Inch-holders                                                             | 97           |
| Number of Inches                                                                   | 5,863.83958  |
| Decreed Flow                                                                       | 113 cfs      |
| Current Assessment per Share                                                       | \$135        |
| Future Assessment per Share - 2018                                                 | \$145        |
| Future Assessment per Share - 2019                                                 | \$155        |
| Future Assessment per Share - 2020                                                 | \$170        |
| Future Assessment per Share – 2021 <sup>2</sup>                                    | \$185        |
| Future Assessment per Share – 2022 <sup>2</sup>                                    | \$200        |
| Annual Project Cost per acre-foot<br>(Average annual diversions: 10,500 acre-feet) | \$17.62      |

1. CWCB will include 1% loan service fee to loan amount.

2. Board will assess budget in 2021 to determine need for increases in 2021 and 2022.

Since the only funding source for these projects is the CWCB loan (and CDWA reserves, if needed), CDWA will have no other debt service on these projects. Operation and maintenance costs are expected to decrease over time with the improvements described above and can be accommodated within the CDWA's existing budget.

**Credit worthiness:** CDWA currently has only one outstanding loan. The loan is an Emergency Funding Loan from CWCB which funded multiple repair projects throughout the ditch system to repair damage sustained during the 2013 floods and where completed in 2015. The loan amount has been amended and totals \$230,950.54 for 30 years. The first annual payment of \$12,378.32 is due in 2017. **Table 9.3** shows the Financial Ratios for the CDWA and indicates strong ability to repay the loan.

**Table 9.3. Financial Ratios**

| <i><b>Financial Ratio</b></i>                                              | <i><b>Without the project</b></i> | <i><b>With the project</b></i> |
|----------------------------------------------------------------------------|-----------------------------------|--------------------------------|
| Operating Ratio (revenue/expense)                                          | 1.38                              | 1.06                           |
| Debit Service Coverage Ratio<br>(revenues-expenses)/debt service           | 7.10                              | 1.07                           |
| Cash Reserves to Current Expense                                           | 1.45                              | 1.13                           |
| Annual Cost per acre-foot<br>(Average annual diversions: 10,500 acre-feet) | \$59.15                           | \$76.77                        |

**Alternative financing considerations:** The CDWA has not investigated alternative financing sources.

**Collateral:** As security for the CWCB loan the CDWA can pledge assessment income and the projects themselves.

### ***Economic Analysis***

The economic benefit of the project is considerable. Option A, applying for the loan now and completing these projects immediately, results in loan payments of approximately \$185,000 (as described above). Option B, for comparison, involves waiting to complete these projects without a loan, which would require that the CDWA raise money for multiple years through special assessments. Assuming these projects are not completed in the next two years, it is likely that emergency repairs will be required in the next 5 years. If emergency repairs cost 20% more than routine repairs (to account for extra cost of delayed water deliveries, around-the-clock work, no-bid contracting, etc), the total project cost 5 years from now, estimating 2% inflation, would be approximately \$4,790,400 (including loan service fee). At 3.10% interest for 30 years, this would require an annual payment of approximately \$247,000.

To ascertain the importance of completing these capital projects now, a brief analysis was conducted to compare the present value of annual costs associated with each option.

The analysis uses a time frame of 75 years since this is the approximate life of new structures. The present value of Option A (completing the projects now) is the value of annual loan payments for 30 years plus the value of annual routine maintenance for 75 years.

The present value of Option B (completing the projects five years from now when they have failed) is the value of annual emergency maintenance for 5 years (to keep the structures operating as long as possible), plus the value of loan payments beginning five years from now (and lasting for 30 years), plus the value of routine maintenance for 70 years beginning 5 years in the future after work is completed.

The results are shown in **Table 9.4**. Details are presented in **Appendix I**.

**Table 9.4. Comparison of Present Value of Annual Costs over 75 Years for Each Option**

| Option | Present Value |
|--------|---------------|
| A      | \$4,448,721   |
| B      | \$5,328,644   |

The analysis shows that waiting five years to complete these projects could cost CDWA approximately \$879,900 dollars in additional maintenance and interest payments. These costs do not factor in the amount of water that would be lost to seepage or damage to adjacent property owners.

### ***Financial Summary***

The financial condition of CDWA is excellent. The company has no debt, other than the Emergency Funding Loan from the CWCB, and no outstanding obligations other than those listed in the financial statement found in **Appendix J**. For fiscal year (FY) 2017, CDWA estimates total operating revenues of \$855,369.73, normal operating expenses of \$621,119.00 and an operating balance of \$301,268.57. Cash reserves at the end of 2017 are forecast to be \$949,293.97. Company assessments rose in 2015 from \$90 to \$135 in anticipation of future capital improvements. This represents an annual assessment increase of \$45 or \$24.57 per acre-foot, based on average annual diversions 10,500 acre-feet. Future assessment increases are anticipated over the next five years as shown in **Table 9.2** above.

## **10. Social and Physical Impacts**

The projects described above will have no significant negative long-term social or physical impacts once construction is complete. Each project is designed to modify or replace an existing structure or ditch section so the proposed footprint will be very similar to the existing footprint. Each project will assure the continued operation of the currently existing ditch system. **Table 10.1** presents social and physical considerations.

**Table 10.1. Social and Physical Impacts for Each Project**

| <b>Project</b>                    | <b>Social Impacts</b>                                                                                             | <b>Physical Impacts</b>                                                                                                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Leyden Flushing Structure</b>  | Fencing around structure will not impact adjacent land use or recreation. No historical or archeological impacts. | Replacement structure will have same footprint. No permanent impacts outside of CDWA easement after construction.                                                                           |
| <b>Headgate 53 Retaining Wall</b> | No impacts to adjacent land use or recreation. No historical or archeological impacts.                            | Replacement structure will have same footprint. No permanent impacts outside of CDWA easement after construction. Stair-step configuration will eliminate vertical drop and enhance safety. |
| <b>Area 15 Ditch Lining</b>       | Lining/piping will reduce damage to adjacent property. No impacts to adjacent land or recreation.                 | No permanent impacts outside of CDWA easement after construction.                                                                                                                           |
| <b>Ford Street Siphon</b>         | No impacts to adjacent land use or recreation. No historical or archeological impacts.                            | Replacement structure will be buried. May require rerouting of local utilities. No permanent impacts outside of CDWA easement after construction.                                           |
| <b>Legacy Farms Culvert</b>       | No impacts to adjacent land use or recreation. No historical or archeological impacts.                            | Replacement structure will be buried. No permanent impacts outside of CDWA easement after construction.                                                                                     |

## **11. Conclusions**

The Church Ditch Water Authority is a political subdivision of the State of Colorado with the ability to enter into a contract with the CWCB for the purpose of obtaining a loan to undertake the five 2017-2019 Capital Improvement Projects described in this study. As such, CDWA is requesting a loan for \$3,580,000. This includes only the total estimated cost of the projects. It does not include the 1.0% loan service fee.

The projects described herein are technically and financially feasible and would provide for the continued delivery of water to inch-holders. Each project represents an opportunity to increase the efficiency of the CDWA system by increasing capacity, reducing maintenance and/or upgraded critical structures that have exceeded their service life. Existing rights-of-way and easements are adequate for the construction of these projects.

## **Appendix A**

### **CWCB Loan Application**



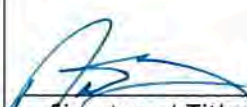


# COLORADO

Colorado Water  
Conservation Board

Department of Natural Resources

## Water Project Loan Program

|                                                                                                                                                                                                                                                                                           |                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application Type</b>                                                                                                                                                                                                                                                                   |                                                                                                                                               |
| <input type="checkbox"/> Prequalification (Attach 3 years of financial statements)                                                                                                                                                                                                        | <input checked="" type="checkbox"/> Loan Approval (Attach Loan Feasibility Study)                                                             |
| <b>Agency/Company Information</b>                                                                                                                                                                                                                                                         |                                                                                                                                               |
| Company / Borrower Name: Church Ditch Water Authority (CDWA)                                                                                                                                                                                                                              |                                                                                                                                               |
| Authorized Agent & Title: Nathan McCoy, General Manager                                                                                                                                                                                                                                   |                                                                                                                                               |
| Address: 14025 W. 82nd Avenue, Arvada CO 80005                                                                                                                                                                                                                                            |                                                                                                                                               |
| Phone: ( 303 ) 423-6010                                                                                                                                                                                                                                                                   | Email: nmccoy@churchditch.org                                                                                                                 |
| Organization Type: <input type="checkbox"/> Ditch Co, <input type="checkbox"/> District, <input type="checkbox"/> Municipality                                                                                                                                                            | Incorporated? <input type="checkbox"/> YES                                                                                                    |
| <input checked="" type="checkbox"/> Other: Water Authority                                                                                                                                                                                                                                | <input checked="" type="checkbox"/> NO                                                                                                        |
| County: Jefferson                                                                                                                                                                                                                                                                         | Number of Shares/Taps: 97                                                                                                                     |
| Water District: Clear Creek                                                                                                                                                                                                                                                               | Avg. Water Diverted/Yr 10,500 acre-feet                                                                                                       |
| Number of Shareholders/Customers Served:                                                                                                                                                                                                                                                  | Current Assessment per Share \$ 135.00 (Ditch Co)                                                                                             |
| Federal ID Number: 32-0131714                                                                                                                                                                                                                                                             | Average monthly water bill \$ (Municipality)                                                                                                  |
| <b>Contact Information</b>                                                                                                                                                                                                                                                                |                                                                                                                                               |
| Project Representative: Nathan McCoy, CDWA General Manager                                                                                                                                                                                                                                |                                                                                                                                               |
| Phone: ( 303 ) 423-6010                                                                                                                                                                                                                                                                   | Email: nmccoy@churchditch.org                                                                                                                 |
| Engineer: James Koehler, Ecological Resource Consultants, Inc. (ERC)                                                                                                                                                                                                                      |                                                                                                                                               |
| Phone: ( 303 ) 679-4820                                                                                                                                                                                                                                                                   | Email: james@erccolorado.net                                                                                                                  |
| Attorney: Hilary Graham, Hoffmann, Parker, Wilson & Carberry, P.C                                                                                                                                                                                                                         |                                                                                                                                               |
| Phone: ( 303 ) 825-6444                                                                                                                                                                                                                                                                   | Email: hmg@hpwclaw.com                                                                                                                        |
| <b>Project Information</b>                                                                                                                                                                                                                                                                |                                                                                                                                               |
| Project Name: 2017-2019 CDWA Capital Improvement Projects                                                                                                                                                                                                                                 |                                                                                                                                               |
| Brief Description of Project: (Attach separate sheets if needed)                                                                                                                                                                                                                          |                                                                                                                                               |
| CDWA is requesting a loan to complete five important capital improvement projects: Leyden Flushing Structure, Headgate 53 Retaining Wall Replacement, Area 15 Ditch Lining, Ford Street Siphon Replacement, and Legacy Farms Culvert Replacement. See Loan Feasibility Study for details. |                                                                                                                                               |
| General Location: (Attach Map of Area)                                                                                                                                                                                                                                                    |                                                                                                                                               |
| See Loan Feasibility Study.                                                                                                                                                                                                                                                               |                                                                                                                                               |
| Estimated Engineering Costs: \$537,000                                                                                                                                                                                                                                                    | Estimated Construction Costs: \$3,043,000                                                                                                     |
| Other Costs (Describe Above):                                                                                                                                                                                                                                                             | Estimated Total Project Costs: \$3,580,000                                                                                                    |
| Requested Loan Amount: \$3,580,000                                                                                                                                                                                                                                                        | Requested Loan Term (10, 20, or 30 years): 30 Years                                                                                           |
| Project Start Date(s) Design: Summer 2017                                                                                                                                                                                                                                                 | Construction: Complete by March 31, 2019                                                                                                      |
| <b>Signature</b>                                                                                                                                                                                                                                                                          |                                                                                                                                               |
| <br>Signature / Title General Manager 5-26-17<br>Date                                                                                                                                                  | Return to: Finance Section Attn: Anna Mauss<br>1313 Sherman St #718<br>Denver, CO 80203<br>Ph. 303/866.3449<br>e-mail: anna.mauss@state.co.us |

## **Appendix B**

### **CDWA By-Laws**

BY-LAWS OF  
THE CHURCH DITCH WATER AUTHORITY

Section 1. **Principal Business and Operations.** The principal business and operations of the Authority shall be as set forth in the Establishing Contract creating the Church Ditch Water Authority.

Section 2. **Officers.** The officers of the Authority shall be as set forth in the Establishing Contract creating the Church Ditch Water Authority, and as described herein as follows:

A. **President.** Consistent with Article IV of the Establishing Contract, the President shall be chief executive officer of the Authority and shall preside at all meetings of the Directors and Contractual Users, preserving the decorum and decide all questions of order. If a member transgresses the rules of the Board, the President shall call him to order, in which case he shall be seated but shall be permitted to explain and to appeal the President's ruling to the Board. The President signs all contracts and the Minutes of meetings after they shall have been approved and adopted and shall countersign all warrants drawn by the Secretary/Treasurer before they shall become valid, and shall perform all such other duties as usually pertain to the office of Presidents of like quasi-governmental entities.

The President shall preside at all meetings of the Board, except as otherwise delegated by the Board, and shall execute all legal instruments of the Authority.

B. **Vice-President.** Consistent with Article IV of the Establishing Contract, in the absence or inability of the President or the Secretary/Treasurer to discharge the duties of their office, the Vice-President shall act in their place and have and exercise all the powers of the President and the Secretary/Treasurer only in the absence of the Secretary/Treasurer.

C. **Secretary.** Consistent with Article IV of the Establishing Contract, the Secretary shall maintain the official records of the Authority, including the minutes of any meetings, and other records as described in the Establishing Contract, or as otherwise prescribed by the Board.

D. **Treasurer.** Consistent with Article IV of the Establishing Contract, the Treasurer shall serve as the financial officer of the Authority, and shall draw all orders or warrants for accounts when audited and countersign the same when signed by the President. He/She shall do and perform such other acts and duties as may be required of him/her by the Board of Directors, and shall perform such other duties as usually pertain to the office of Secretary in like quasi-governmental entities.

The Treasurer shall also be the custodian of and receive all moneys, bonds, notes and other property of the Authority, and may delegate these to another officer of the

Authority. All moneys received by the Treasurer shall forthwith be deposited in the name of the Authority in the Bank or Banks to be designated by the Board of Directors. The Treasurer shall pay out no money except upon the order of the President, when countersigned by the Secretary. The Treasurer shall do and perform all other acts and duties required of him/her by the Board of Directors and usually pertaining to the office of Treasurers of like Companies. The Books of the Treasurer shall be open at all reasonable times for the inspection and examination of any Contractual User of the Authority.

Section 3. No Contractual User who is in attendance at a Board meeting shall be allowed to speak or become actively involved in a Board meeting until and unless called upon by a Board member.

Section 4. **Duties of the Manager of the Church Ditch Water Authority.** The Manager may be delegated the operation and maintenance of the Church Ditch and supervision of field personnel. The Manager works under the direction of the Board and follows those duties outlined in the Rules and Regulations.

Section 5. **Duties of the Ditch Rider.** The Ditch Rider receives instruction and information regarding inflow and outflow of water from the Church Ditch and receives instruction regarding water allocation from the Superintendent or the Board of Directors. The Ditch Rider works under the direct supervision of the Superintendent, or in his absence the Board of Directors and follows those duties outlined in the Rules and Regulations.

## **Appendix C**

### **State Engineer Diversion Reports for the Church Ditch 1952-2015**

## Annual Water Diversion Report

**Structure Name:** CHURCH DITCH **Division:** 1 **Water District:** 7 **Structure Id:** 540  
**Location:** Q10 Q40 Q160 Section Twnshp Range PM  
 NW NE 32 3S 70W S  
 Distance From Section Lines: From N/S Line: From E/W Line:  
 UTM Coordinates (NAD 83): Northing (UTM y): 4400304 Easting (UTM x): 478991 Spotted from PLSS distances from section lines  
 Latitude/Longitude (decimal degrees): 39.752388 -105.245240

| IYR  | Identifier | FDU     | LDU     | DWC | Max Q/Date   | NOBS | NUS | Nov    | Dec  | Jan  | Feb  | Mar    | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct    | Annual Total | Unit |
|------|------------|---------|---------|-----|--------------|------|-----|--------|------|------|------|--------|---------|---------|---------|---------|---------|---------|--------|--------------|------|
| 1952 | Total      | 1952-04 | 09-1952 | 124 | 110.00 06-22 | 77   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 79.34   | 3913.45 | 5309.83 | 3510.80 | 2421.85 | 222.15  | 0.00   | 15457.42     | AF   |
| 1953 | Total      | 1953-05 | 08-1953 | 96  | 113.00 06-19 | 94   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1285.31 | 5823.56 | 3346.16 | 1676.06 | 0.00    | 0.00   | 12131.09     | AF   |
| 1954 | Total      | 1954-03 | 07-1954 | 134 | 46.00 05-17  | 77   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 706.13 | 952.08  | 1904.16 | 1894.24 | 505.79  | 0.00    | 0.00    | 0.00   | 5962.40      | AF   |
| 1955 | Total      | 1955-05 | 10-1955 | 141 | 58.00 07-24  | 114  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1432.09 | 2602.35 | 2852.27 | 2828.47 | 1485.64 | 17.85  | 11218.68     | AF   |
| 1956 | Total      | 1956-05 | 08-1956 | 109 | 105.00 06-09 | 89   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2965.33 | 4163.37 | 2138.21 | 1473.74 | 0.00    | 0.00   | 10740.65     | AF   |
| 1957 | Total      | 1957-04 | 09-1957 | 127 | 95.00 07-09  | 129  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 1158.36 | 1642.34 | 2705.49 | 5313.80 | 3187.49 | 638.69  | 0.00   | 14646.16     | AF   |
| 1958 | Total      | 1958-04 | 07-1958 | 97  | 85.00 06-14  | 95   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 841.00  | 1840.69 | 3681.38 | 1705.81 | 0.00    | 0.00    | 0.00   | 8068.88      | AF   |
| 1959 | Total      | 1959-03 | 08-1959 | 127 | 99.00 06-21  | 121  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 541.50 | 529.60  | 2864.17 | 5375.29 | 2566.65 | 880.67  | 0.00    | 0.00   | 12757.87     | AF   |
| 1960 | Total      | 1960-03 | 08-1960 | 143 | 90.00 06-12  | 135  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 743.81 | 1945.81 | 3225.17 | 4956.77 | 2997.07 | 664.47  | 0.00    | 0.00   | 14533.10     | AF   |
| 1961 | Total      | 1961-04 | 09-1961 | 158 | 76.00 05-16  | 159  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 589.10  | 3016.90 | 3012.94 | 2981.20 | 3108.14 | 2265.16 | 0.00   | 14973.44     | AF   |
| 1962 | Total      | 1962-04 | 08-1962 | 116 | 100.00 07-01 | 117  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 1253.57 | 4197.09 | 5069.83 | 3723.03 | 281.66  | 0.00    | 0.00   | 14525.17     | AF   |
| 1963 | Total      | 1963-05 | 09-1963 | 93  | 80.00 06-16  | 71   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1650.27 | 3122.03 | 515.71  | 1035.39 | 1860.52 | 0.00   | 8183.92      | AF   |
| 1964 | Total      | 1964-05 | 08-1964 | 84  | 89.00 06-01  | 69   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1713.74 | 4191.14 | 2475.41 | 547.45  | 0.00    | 0.00   | 8927.73      | AF   |
| 1965 | Total      | 1965-04 | 09-1965 | 133 | 90.00 07-01  | 128  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 327.28  | 2866.16 | 4690.98 | 3861.87 | 1410.27 | 1757.38 | 0.00   | 14913.94     | AF   |
| 1966 | Total      | 1966-05 | 07-1966 | 81  | 54.00 06-12  | 65   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1969.62 | 3006.99 | 2530.95 | 0.00    | 0.00    | 0.00   | 7507.55      | AF   |
| 1967 | Total      | 1967-05 | 08-1967 | 85  | 90.00 06-30  | 75   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1616.55 | 5200.74 | 3395.75 | 444.30  | 0.00    | 0.00   | 10657.34     | AF   |
| 1968 | Total      | 1968-05 | 08-1968 | 116 | 98.00 05-26  | 115  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 3106.16 | 5414.96 | 2828.47 | 2015.24 | 0.00    | 0.00   | 13364.82     | AF   |
| 1969 | Total      | 1969-05 | 08-1969 | 85  | 84.80 07-05  | 117  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1587.20 | 1861.91 | 3818.83 | 1383.89 | 0.00    | 0.00   | 8651.83      | AF   |
| 1970 | Total      | 1969-11 | 10-1970 | 115 | 85.00 06-10  | 184  | 0   | 456.21 | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2544.83 | 3248.97 | 4353.78 | 1211.92 | 0.00    | 610.92 | 12426.63     | AF   |
| 1971 | Total      | 1971-05 | 10-1971 | 115 | 113.00 07-03 | 184  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1959.70 | 3707.16 | 4661.23 | 1112.74 | 0.00    | 698.19 | 12139.02     | AF   |
| 1972 | Total      | 1972-05 | 07-1972 | 73  | 72.88 06-09  | 184  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1342.61 | 3885.42 | 2083.09 | 0.00    | 0.00    | 0.00   | 7311.12      | AF   |
| 1973 | Total      | 1973-04 | 08-1973 | 97  | 88.00 06-22  | 183  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 516.70  | 236.04  | 4394.44 | 4122.31 | 2526.98 | 0.00    | 0.00   | 11796.47     | AF   |
| 1974 | Total      | 1974-04 | 08-1974 | 111 | 84.50 06-16  | 95   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 444.30  | 3809.31 | 4492.63 | 3298.56 | 1176.22 | 0.00    | 0.00   | 13221.02     | AF   |
| 1975 | Total      | 1975-04 | 08-1975 | 130 | 108.00 07-01 | 144  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 1269.44 | 1859.53 | 4498.58 | 5009.33 | 2450.61 | 0.00    | 0.00   | 15087.49     | AF   |
| 1976 | Total      | 1976-05 | 10-1976 | 109 | 82.00 06-12  | 153  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1985.48 | 3433.44 | 2644.01 | 1228.78 | 214.22  | 894.56 | 10400.48     | AF   |
| 1977 | Total      | 1977-05 | 07-1977 | 71  | 66.00 06-07  | 78   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2471.44 | 2997.07 | 587.12  | 0.00    | 0.00    | 0.00   | 6055.63      | AF   |
| 1978 | Total      | 1978-05 | 08-1978 | 92  | 84.00 06-02  | 93   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2439.71 | 4242.71 | 3122.03 | 733.90  | 0.00    | 0.00   | 10538.34     | AF   |
| 1979 | Total      | 1979-05 | 09-1979 | 116 | 76.00 07-14  | 120  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2195.74 | 2100.53 | 3661.54 | 2541.86 | 142.81  | 0.00   | 10642.47     | AF   |
| 1980 | Total      | 1980-06 | 09-1980 | 89  | 80.00 07-08  | 96   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 0.00    | 3477.08 | 3929.31 | 1985.09 | 113.06  | 0.00   | 9504.54      | AF   |
| 1981 | Total      | 1981-05 | 07-1981 | 62  | 82.00 06-08  | 65   | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 491.91  | 3989.81 | 1908.13 | 0.00    | 0.00    | 0.00   | 6389.85      | AF   |
| 1982 | Total      | 1982-05 | 10-1982 | 159 | 92.10        | 160  | 0   | 0.00   | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1605.45 | 4893.89 | 4137.38 | 2737.23 | 2067.60 | 952.08 | 16393.63     | AF   |

| IYR  | Identifier | FDU     | LDU     | DWC | Max Q/Date  | NOBS | NUS | Nov   | Dec  | Jan  | Feb  | Mar    | Apr     | May     | Jun     | Jul     | Aug     | Sep     | Oct     | Annual Total | Unit |
|------|------------|---------|---------|-----|-------------|------|-----|-------|------|------|------|--------|---------|---------|---------|---------|---------|---------|---------|--------------|------|
| 1983 | Total      | 1983-04 | 10-1983 | 157 | 78.00 07-19 | 161  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 113.06  | 355.05  | 1499.53 | 3205.34 | 3871.99 | 3154.56 | 2251.23 | 14450.75     | AF   |
| 1984 | Total      | 1984-05 | 10-1984 | 158 | 82.40       | 159  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1664.91 | 3525.28 | 4436.40 | 4470.02 | 3532.81 | 733.90  | 18363.30     | AF   |
| 1985 | Total      | 1985-03 | 10-1985 | 156 | 86.90       | 158  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 190.42 | 2177.86 | 3690.10 | 4502.88 | 3018.31 | 1558.63 | 0.00    | 99.18   | 15237.39     | AF   |
| 1986 | Total      | 1986-04 | 09-1986 | 149 | 84.23       | 150  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 521.07  | 2966.42 | 4524.64 | 4352.20 | 2496.83 | 1056.61 | 0.00    | 15917.77     | AF   |
| 1987 | Total      | 1987-04 | 09-1987 | 115 | 85.00 06-27 | 118  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 63.47   | 1853.58 | 3411.82 | 2372.39 | 1326.76 | 5.75    | 0.00    | 9033.77      | AF   |
| 1988 | Total      | 1988-04 | 08-1988 | 113 | 81.30       | 117  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 816.41  | 2663.44 | 3801.38 | 2881.63 | 763.05  | 0.00    | 0.00    | 10925.91     | AF   |
| 1989 | Total      | 1989-04 | 09-1989 | 137 | 87.60       | 139  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 590.69  | 3303.32 | 3770.97 | 2926.56 | 1973.82 | 411.97  | 0.00    | 12977.33     | AF   |
| 1990 | Total      | 1990-04 | 09-1990 | 154 | 75.60       | 156  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 1215.65 | 2591.74 | 3833.11 | 3063.52 | 1243.48 | 431.21  | 0.00    | 12378.71     | AF   |
| 1991 | Total      | 1991-05 | 10-1991 | 127 | 81.14       | 130  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1967.28 | 3217.48 | 2657.00 | 2412.91 | 504.03  | 27.99   | 10786.67     | AF   |
| 1992 | Total      | 1992-04 | 08-1992 | 121 | 78.38       | 124  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 834.40  | 3445.82 | 3344.64 | 3118.58 | 661.76  | 0.00    | 0.00    | 11405.18     | AF   |
| 1993 | Total      | 1993-05 | 09-1993 | 134 | 73.00       | 136  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1521.42 | 3423.16 | 3250.75 | 1994.67 | 702.08  | 0.00    | 10892.08     | AF   |
| 1994 | Total      | 1994-04 | 07-1994 | 86  | 108.52      | 87   | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 69.92   | 3492.36 | 3951.94 | 1412.41 | 0.00    | 0.00    | 0.00    | 8926.63      | AF   |
| 1995 | Total      | 1995-04 | 10-1995 | 183 | 65.12       | 179  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 232.74  | 2328.71 | 1644.86 | 3290.53 | 3664.63 | 1719.87 | 2031.34 | 14912.69     | AF   |
| 1996 | Total      | 1996-05 | 10-1996 | 133 | 69.66       | 135  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1171.25 | 1988.03 | 1751.57 | 712.64  | 50.66   | 759.52  | 6433.65      | AF   |
| 1997 | Total      | 1997-05 | 10-1997 | 145 | 44.42       | 146  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 894.11  | 1819.70 | 1907.34 | 623.53  | 538.99  | 118.19  | 5901.87      | AF   |
| 1998 | Total      | 1998-05 | 10-1998 | 127 | 56.80       | 129  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 645.77  | 2302.05 | 3094.66 | 2801.89 | 640.59  | 330.49  | 9815.45      | AF   |
| 1999 | Total      | 1999-05 | 10-1999 | 159 | 52.29       | 160  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 777.73  | 1919.24 | 2278.85 | 2009.41 | 1584.16 | 843.98  | 9413.37      | AF   |
| 2000 | Total      | 2000-05 | 08-2000 | 82  | 16.07 06-29 | 83   | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 307.12  | 537.42  | 654.57  | 17.28   | 0.00    | 0.00    | 1516.38      | AF   |
| 2001 | Total      | 2001-05 | 09-2001 | 106 | 70.30       | 108  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1191.29 | 3338.45 | 1899.80 | 2432.58 | 10.26   | 0.00    | 8872.37      | AF   |
| 2002 | Total      | 2002-05 | 06-2002 | 18  | 43.10       | 19   | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 59.70   | 1269.48 | 0.00    | 0.00    | 0.00    | 0.00    | 1329.19      | AF   |
| 2003 | Total      | 2003-05 | 10-2003 | 143 | 81.91       | 148  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2801.17 | 2288.97 | 3250.81 | 1052.68 | 2156.44 | 203.28  | 11753.36     | AF   |
| 2004 | Total      | 2004-05 | 10-2004 | 129 | 70.27       | 131  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1794.39 | 2872.68 | 2598.35 | 828.22  | 5.75    | 1581.48 | 9680.87      | AF   |
| 2005 | Total      | 2005-05 | 08-2005 | 110 | 51.32       | 111  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1998.15 | 2103.72 | 2769.83 | 1407.39 | 0.00    | 0.00    | 8279.10      | AF   |
| 2006 | Total      | 2006-04 | 10-2006 | 134 | 78.27       | 135  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 300.30  | 2704.42 | 3257.60 | 3070.45 | 1170.23 | 0.00    | 579.61  | 11082.61     | AF   |
| 2007 | Total      | 2007-05 | 09-2007 | 121 | 48.25       | 122  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 869.53  | 1773.03 | 2764.01 | 2328.51 | 556.77  | 0.00    | 8291.84      | AF   |
| 2008 | Total      | 2008-05 | 09-2008 | 126 | 55.24       | 128  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 620.09  | 2653.64 | 3071.10 | 2650.62 | 786.40  | 0.00    | 9781.84      | AF   |
| 2009 | Total      | 2009-05 | 08-2009 | 106 | 43.00       | 107  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1215.09 | 1566.53 | 2006.97 | 1434.04 | 0.00    | 0.00    | 6222.63      | AF   |
| 2010 | Total      | 2010-06 | 08-2010 | 81  | 60.90       | 82   | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 0.00    | 2159.19 | 3109.30 | 2215.50 | 0.00    | 0.00    | 7483.99      | AF   |
| 2011 | Total      | 2011-05 | 10-2011 | 166 | 60.90 07-07 | 167  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 1681.41 | 2630.66 | 3201.37 | 2877.48 | 2023.37 | 1043.78 | 13458.07     | AF   |
| 2012 | Total      | 2011-11 | 09-2012 | 100 | 49.80 05-20 | 41   | 64  | 68.71 | 0.00 | 0.00 | 0.00 | 0.00   | 375.79  | 2640.44 | 2083.18 | 802.53  | 245.77  | 129.10  | 0.00    | 6345.52      | AF   |
| 2013 | Total      | 2013-05 | 09-2013 | 122 | 81.00 06-05 | 153  | 0   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 2289.12 | 3349.74 | 2336.21 | 856.32  | 410.99  | 0.00    | 9242.37      | AF   |
| 2014 | Total      | 2014-06 | 10-2014 | 113 | 48.30 07-03 | 0    | 133 | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 0.00    | 763.65  | 2403.29 | 2242.37 | 1840.75 | 497.12  | 7747.18      | AF   |
| 2015 | Total      | 2015-06 | 09-2015 | 88  | 35.98 08-17 | 0    | 89  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00   | 0.00    | 0.00    | 904.16  | 1459.58 | 1813.83 | 73.34   | 0.00    | 4250.91      | AF   |

| IYR | Identifier | FDU | LDU | DWC | Max Q/Date | NOBS NUS | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Annual<br>Total | Unit |
|-----|------------|-----|-----|-----|------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|
|-----|------------|-----|-----|-----|------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|

**Legend for identifier string coding:**

Source (S): 1 - Natural Streamflow, 2 - Reservoir Storage, 3 - Ground water (wells), 4 - Transbasin, 5 - Non-stream (springs, run-off), 6 - Combined, 7 - Transdistrict, 8 - Re-used, 9 - Multiple, R - Remeasured and rediverted

From (F): From structure WDID

Use (U): 0 - Storage, 1 - Irrigation, 2 - Municipal, 3 - Commercial, 4 - Industrial, 5 - Recreation, 6 - Fishery, 7 - Fire, 8 - Domestic, 9 - Stock, A - Augmentation, B - Export from basin, C - Cumulative accretion to river, D - Cumulative depletion from river, E - Evaporation, F - Federal reserve, G - Geothermal, H - Household use only, K - Snow making, M - Minimum streamflow, N - Net effect of river, P - Power generation, Q - Other, R - Recharge, S - Export from state, T - Transmountain export, W - Wildlife, X - All beneficial use

Diversion Type (T): 0 - Administrative record only, 1 - Exchange, 2 - Trade, 3 - Carrier, 4 - Alternate point of diversion, 5 - Re-used, 6 - Replacement to river, 7 - Released by river, 8 - Released to stream, A - Augmented, G - Geothermal, S - Reservoir substitution

Group (G): Group structure WDID

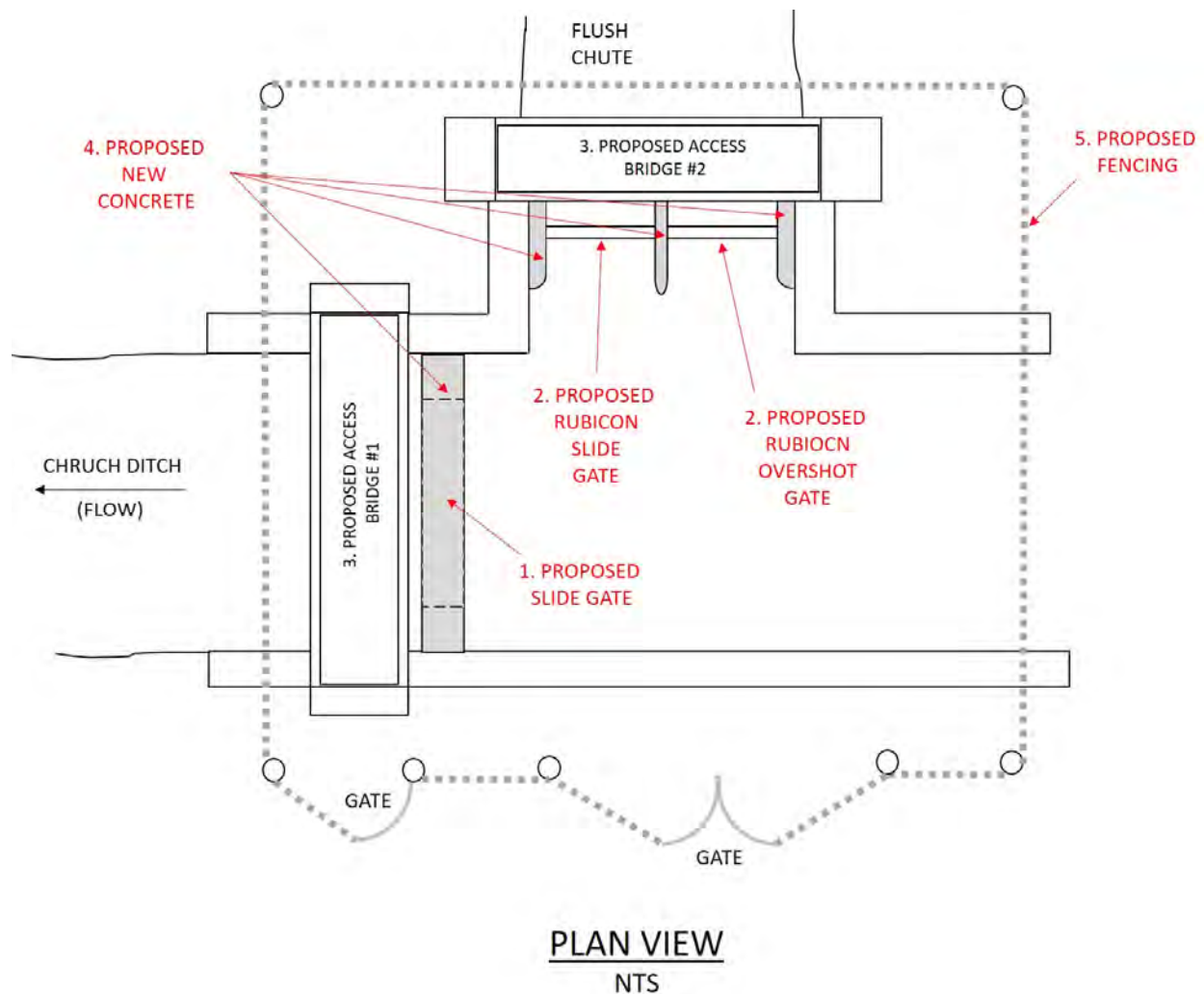


## **Appendix D**

### **Preliminary Design Concept for Leyden Flushing Structure Project**

**The selected alternative, Alternative No. 3,** for the Leyden Flushing Structure project involves the following modifications:

1. Replace stop logs with a modern slide gate
2. Replace old flush gate with modern (Rubicon) slide gate and (Rubicon) overshoot gate to bypass flows more efficiently
3. Install steel access bridges with railings
4. Repair, replace and install new concrete to increase durability
5. Add security fencing to protect structure and safeguard public

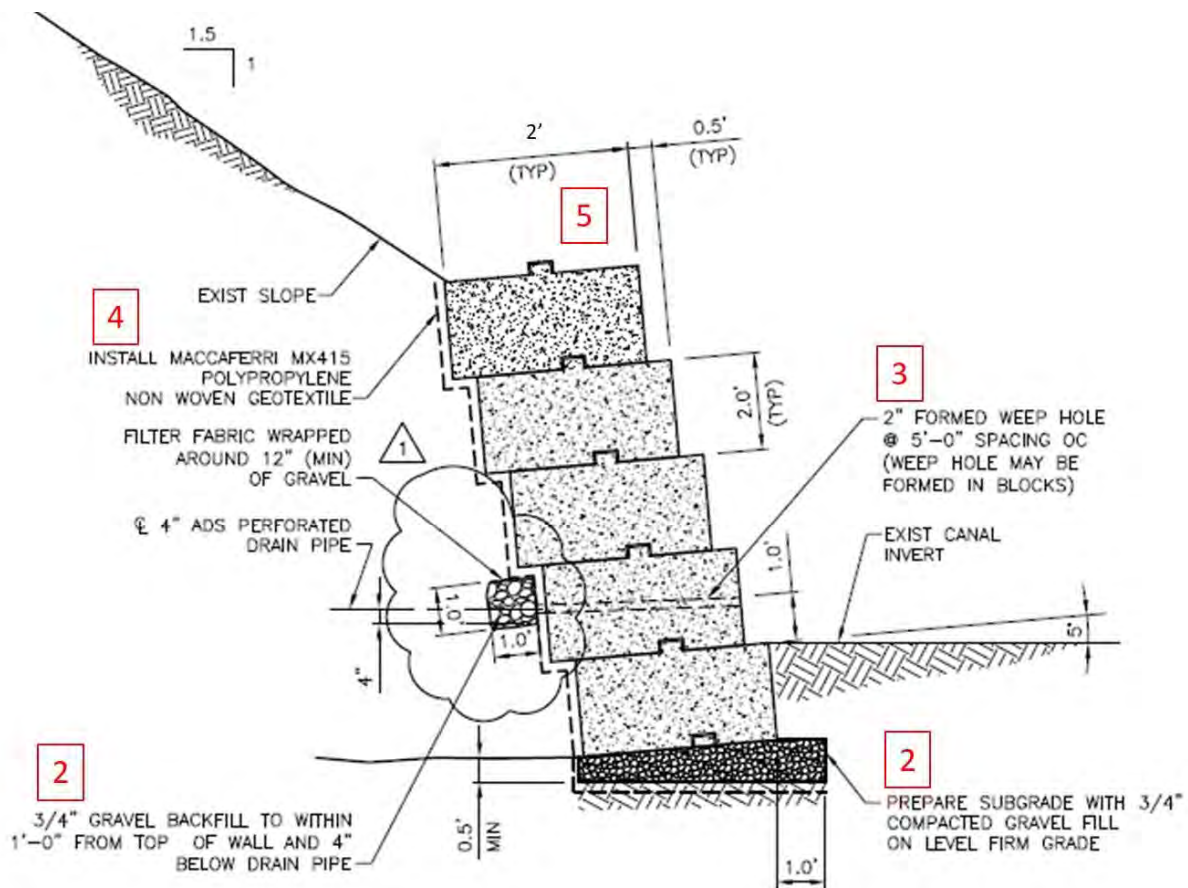


## **Appendix E**

### **Preliminary Design Concept for Headgate 53 Retaining Wall Project**

**The selected alternative, Alternative No. 4,** for the Headgate 53 Retaining Wall project involves the following construction methods:

1. Remove the existing concrete blocks
2. Install granular, free-draining structural fill for subgrade foundation and backfill
3. Install weep drains to remove additional moisture from adjacent soils
4. Install geotextile to prevent clogging
5. Reinstall the existing concrete blocks with deadman anchors and/or stair-step configuration to increase stability and mitigate potential safety hazards



SECTION A-A  
TYPICAL SECTION THRU EMBANKMENT  
NOT TO SCALE

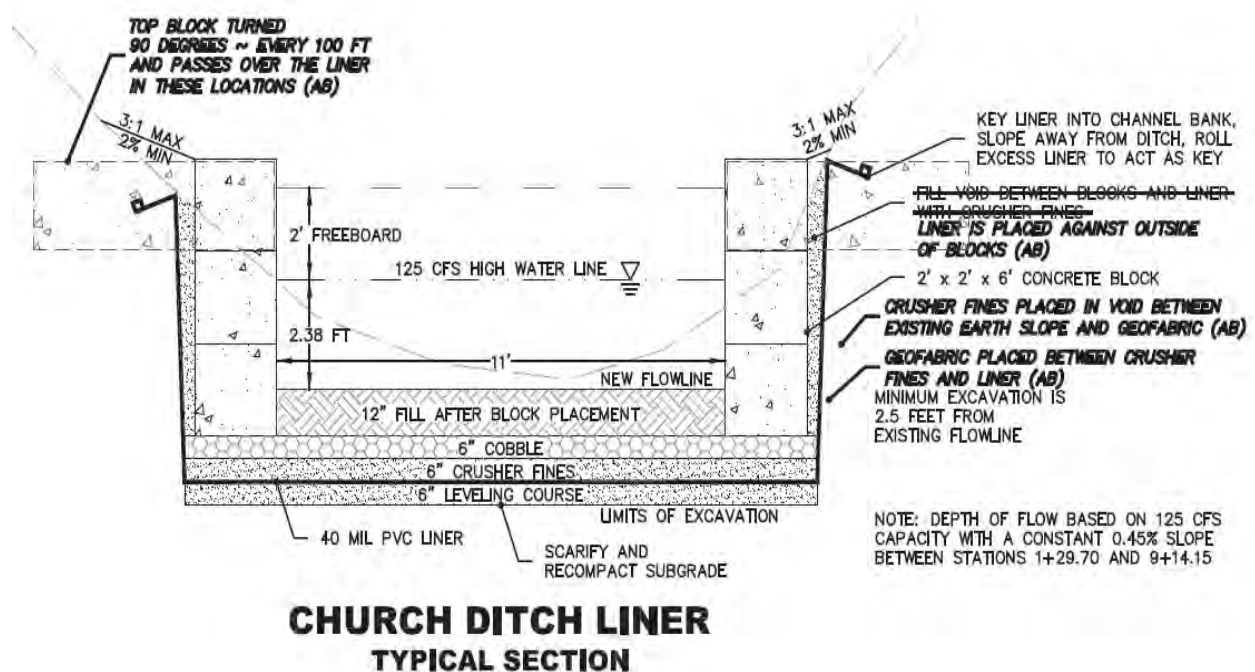
## **Appendix F**

### **Preliminary Design Concept for Area 15 Ditch Lining Project**

The selected alternative, **Alternative No. 3**, for the Area 15 Ditch Lining Project involves the following construction method:

1. Clear and grub area to remove vegetation
2. Grade ditch to geometry suitable for liner (approx. 3H:1V side slopes) and or stabilize steep banks
3. Install liner (PVC 40 mil or similar) and concrete blocks in areas with steep banks
4. Place fill over lining and restore canal banks

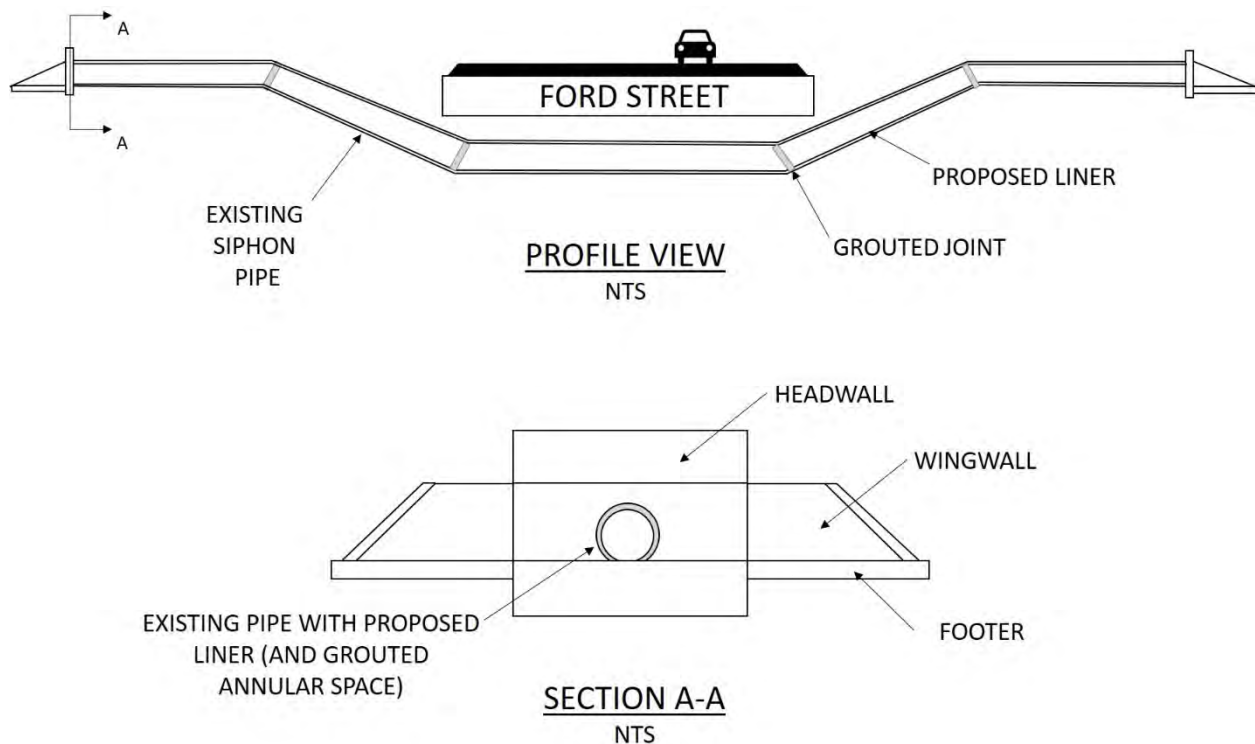
This detail was used successfully by a developer who built homes adjacent to the ditch.



## **Appendix G**

### **Preliminary Design Concept for Ford Street Siphon Project**

**The selected alternative, Alternative No. 4,** for the Ford Street Siphon involves an initial inspection of the siphon structure by engineers during the off season when the siphon is dry. Assuming significant issues are noted, the structure will be replaced using a “sliplining” technique. Sliplining is accomplished by inserting a slightly smaller carrier pipe into the existing pipe. The annular space between the pipes and transition joints will be grouted to create a watertight seal. New concrete headwalls, wing walls and footers will be built at the entrance and exit points.

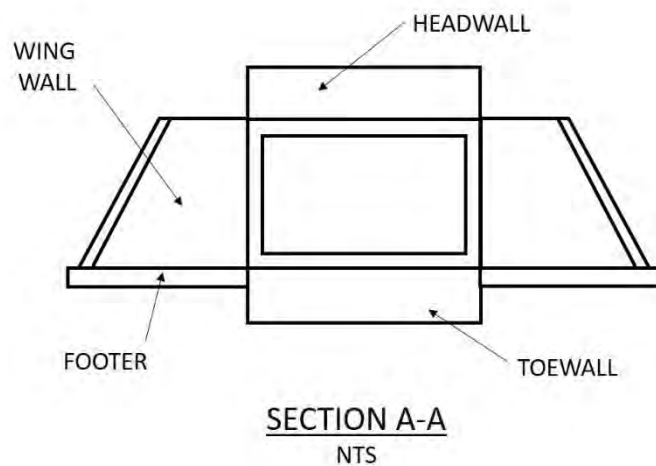
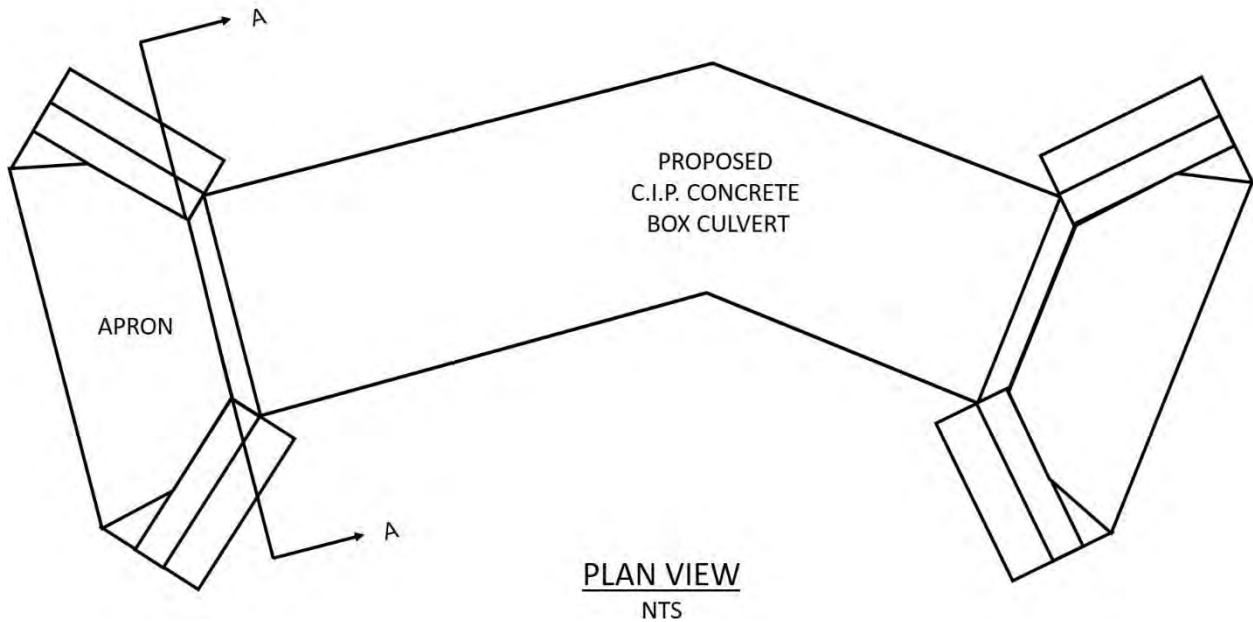




## **Appendix H**

### **Preliminary Design Concept for Legacy Farms Culvert Project**

**The selected alternative, Alternative No. 3,** for the Legacy Farms Culvert involves removing the existing pipe and installing a properly sized and designed cast-in-place (CIP) concrete box culvert (likely 8-ft by 5-ft) with headwalls and wing walls similar to the conceptual detail below.



## **Appendix I**

### **Economic Analysis**

**Option A: Apply for CWCB loan today and complete projects immediately.**

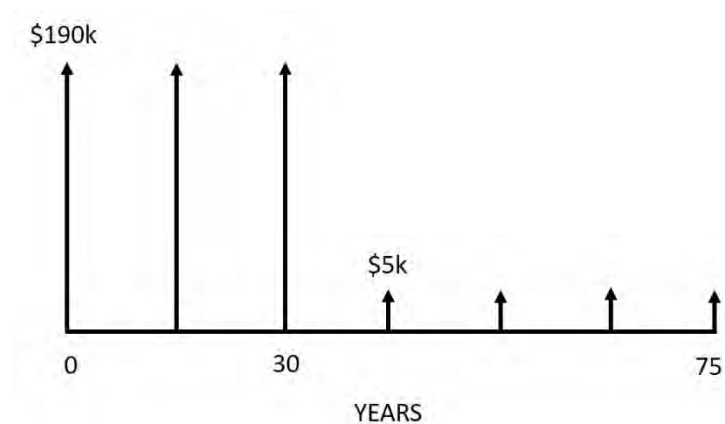
Cost of projects: \$3,580,000

Cost of loan: \$3,615,800 (includes 1% loan service fee)

Annual payments: \$185,000 (assumes 3.10% interest rate)

Costs: \$185,000 in loan payments for 30 years (Year 0 to Year 30)

\$5,000 in annual routine maintenance for 75 years (Year 0 to Year 75)



Present cost of 30 years of loan payments beginning now:

$$P_{Yr\ 0-30} = \$190,000 (P/A, 2\%, 30) = \$4,255,335$$

Present cost of 75 years of routine maintenance costs beginning now:

$$P_{Yr\ 0-75} = \$5,000 (P/A, 2\%, 75) = \$193,386$$

Present cost of Option A:

$$P = P_{Yr\ 0-30} + P_{Yr\ 0-75} = \$4,448,721$$

**Option B: Wait until structures fail (within 5 years) then apply for CWCB loan to complete emergency replacement.**

Cost of projects in 5 years: \$4,743,000 (20% more than Option A because this is emergency construction. Also includes 2% inflation over 5 years)

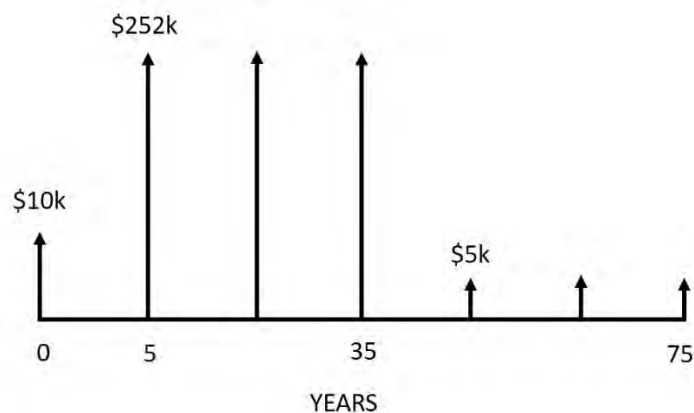
Cost of loan in 5 years: \$4,790,400 (includes 1% loan service fee)

Annual payments: \$247,000 (assumes 3.10% interest rate)

Costs: \$10,000 annual emergency/additional maintenance to keep structures operating (Year 0 to Year 5)

\$247,000 in loan payments for 30 years (Year 5 to Year 35)

\$5,000 in annual routine maintenance for 70 years (Year 5 to Year 75)



Present cost of five years of emergency/additional maintenance:

$$P_{Yr 0-5} = \$10,000 (P/A, 2\%, 5) = \$47,135$$

Present cost of 30 years of loan payments beginning 5 years in future:

$$P_{Yr 5-35} = \$252,000 (P/A, 2\%, 30) * (P/F, 2\%, 5) = \$5,111,697$$

Present cost of 70 years of routine maintenance costs beginning 5 years in the future:

$$P_{Yr 5-75} = \$5,000 (P/A, 2\%, 70) * (P/F, 2\%, 5) = \$169,812$$

Present cost of Option B:

$$P = P_{Yr 0-5} + P_{Yr 5-35} + P_{Yr 5-75} = \$5,328,644$$

**Notes:**

Uniform Series Present Worth:

$$(P/A, i \%, n) = \frac{(1+i)^n - 1}{i(1+i)^n}$$

Single Payment Present Worth:

$$(P/F, i \%, n) = (1 + i)^{-n}$$

where:

P = present worth

A = annual payment

F = future worth

$i$  = effective interest rate

n = number of compounding periods

Source: Lindeburg, M.R, Civil Engineering Reference Manual (15<sup>th</sup> Ed.), *Engineering Economic Analysis*

INTERGOVERNMENTAL AGREEMENT

This Intergovernmental Agreement is made this 29<sup>th</sup> day of October, 2004, by and between the City of Northglenn, Colorado, a Colorado home municipal corporation ("Northglenn") and the City of Westminster, Colorado, a Colorado home municipal corporation ("Westminster"). The parties shall be referred to collectively as the "Cities."

**RECITALS**

A. Northglenn incorporated the Church Ditch Company (the "Company"), a Colorado corporation, formed to operate and maintain the Church Ditch (the "Ditch"), a carrier ditch organized pursuant to C.R.S. § 7-42-101, *et seq.* The Company owns miscellaneous real and personal property interests associated with the Ditch;

B. Northglenn owns a two-thirds interest and Westminster owns a one-third interest as tenants in common in the water rights, and diversion structures associated with the Ditch, fee title of certain easements, rights-of-way, licenses and other real property interests associated with the Ditch, as well as certain prescriptive rights associated with the Ditch. The water rights and diversion structures owned by the Cities are those identified in **Exhibit A**, attached hereto and incorporated herein by this reference. An index of those known interests in property is attached hereto as **Exhibit B**, and incorporated herein by this reference;

C. The financial interest and control of the assets of the Company is vested in Northglenn;

D. The Company is currently responsible for the delivery of water via the Ditch to certain interest holders known by the Company as "Inch-holders." Said Inch-holders have the contractual right to receive the water rights owned by the Cities, and put the water to beneficial use in order to protect the Cities' interest in the water rights contracted to the Inch-holders. Said Inch-Holders are further responsible for paying sufficient rates to cover the cost of developing and operating the Ditch;

E. The Ditch is operated and maintained by the Company with revenues received through carriage rates pursuant to the Company's water delivery contracts with the Inch-holders;

F. The Cities hold certain contractual rights as "Inch-holders", which gives each of the Cities the right to use that amount of water stated in their respective contracts, but the contractual right to use such water does not govern the amount of control allowed each City, and is separate and distinct from the financial interest, control of the assets, and management of the Company and the various rights associated with the Ditch as described in Paragraph C. above; and

G. The Cities desire to create a water authority within the meaning of C.R.S. § 29-1-204.2 in order to effect the development of water resources, systems and facilities associated with the Church Ditch for the benefit of the Cities and the Inch-holders, and to convey all interests of the Cities and the Company to the water authority, as set forth in more detail herein.

## AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Cities agree as follows:

1. Establishment of the Church Ditch Water Authority. The Cities hereby determine to establish a water authority pursuant to C.R.S. § 29-1-204.2, as more particularly set forth in the Establishing Contract for the Church Ditch Water Authority, attached hereto as **Exhibit C**, and incorporated herein by this reference. The Church Ditch Water Authority is determined to be established in order to effect the development of water resources, systems and facilities associated with the Church Ditch for the benefit of the Cities and the Inch-holders.

2. Public Notification. The Cities each hereby determine to provide at least fifteen (15) days' notice to all Inch-holders of the regular City Council meeting of both the City of Northglenn and the City of Westminster at which the Establishment Contract will be considered to allow and encourage public comment on the creation of the Church Ditch Water Authority. Such notification shall be sent to the last known address of each Inch-holder via regular first class mail, and such notification shall also be published in a newspaper of general circulation in each County in which the Church Ditch is located

3. Governance of the Church Ditch Water Authority. The Church Ditch Water Authority shall be governed by a Board of Directors consisting of two Directors appointed by the City Manager of the City of Northglenn, and one Director appointed by the City Manager of the City of Westminster.

4. Conveyance of Real and Personal Property by the Cities and the Company to the Authority. Within thirty (30) days of the establishment of the Church Ditch Water Authority, the Cities and the Company shall convey all real and personal property interests to the Authority as follows:

- (a) The Cities shall convey via Bargain and Sale Deed their respective interests as tenants in common in the real property of the Church Ditch, including any fee ownership, permanent easements, licenses, prescriptive rights, and any other interests in real property to the Authority. An index of those known interests in property is attached hereto as **Exhibit B**, and incorporated herein by this reference;
- (b) The Cities shall further convey via Bargain and Sale Deed their respective interests as tenants in common in any water rights, diversion structures, and any other tangible property interests to the Authority. The decrees



identifying those known water rights and diversion structures are attached hereto as **Exhibit A**, and incorporated herein by this reference;

- (c) The Company, by and through its representatives of the Cities sitting as the Companies' Board of Directors, shall convey via Bargain and Sale Deed any real property interests, any interest in personal property, any financial assets, any water rights, and any diversion structures, if any, to the Authority. A list of such personal property is attached hereto as **Exhibit D**, and incorporated herein by this reference.

5. Conveyance and Delegation by the Company of all Rights and Obligations. Within thirty (30) days of the establishment of the Church Ditch Water Authority, the Company, by and through its representatives of the Cities sitting as the Companies' Board of Directors, shall further do the following:

- (a) It shall convey via Bargain and Sale Deed all other assets not included in the conveyances above to the Authority. Such assets may include, but not be limited to, any rights in existing contracts, and any intangible rights not specifically identified in Exhibits A through E.
- (b) It shall further delegate and assign all rights, liabilities and obligations of the Company whatsoever, both known and unknown, to the Authority.

6. Acceptance by the Authority. Following the establishment of the Authority in accordance with this Agreement and the Establishing Contract, the Authority shall accept all real and personal property rights, water rights, diversion structures, contract rights, and all tangible and intangible assets, rights, liabilities and obligations of the Company and the Cities conveyed, delegated and assigned to it by the Company and the Cities pursuant to Paragraphs 3 and 4 of this Agreement.

7. Operation of the Church Ditch by the Authority. The Church Ditch Water Authority shall be subject to the following operational guidelines:

- (a) *Control of the Board of Directors.* As set forth in Paragraph 2 of this Agreement, the Board of Directors, consisting of three (3) persons, shall consist of two (2) Directors appointed by the City Manager of the City of Northglenn, and one (1) Director appointed by the City Manager of the City of Westminster. The control of the Board of Directors shall remain subject to the two-thirds (2/3) control by the City of Northglenn, and may only be modified by written amendment to this Agreement.
- (b) *Contractual Users.* The "Inch-holders" shall be hereafter known by the Authority as "Contractual Users" and shall have the same contractual relationship, including the same contractual rights and obligations with the Church Ditch Water Authority that the contractual users previously enjoyed with the Church Ditch Company, except as otherwise provided in subparagraph (e) of this Paragraph 7.

- (c) *Contractual Rights of the Cities.* The Cities' contractual rights to receive water from the Authority shall be governed in the same manner as the contractual rights of other Contractual Users' rights, and nothing in the creation of the Authority is intended to give the Cities any additional rights to receive water from the Church Ditch.
- (d) *Insurance Coverage.* The Authority shall cause insurance coverage to be provided by the Colorado Intergovernmental Risk Sharing Agency ("CIRSA").
- (e) *Rate-Setting.* The Authority shall be authorized to set carriage rates for the water delivery contracts and in accordance with the provisions of Colorado Constitution Article XIV, Section 18(2)(a) and C.R.S. § 29-1-204.2. The Authority shall be required to hold noticed public hearings to establish a procedure and criteria for rate-setting, which criteria and procedure shall then be duly adopted by the Authority by Resolution.

8. Dissolution of the Church Ditch Company. Upon the creation of the Authority in accordance with this Agreement and the Establishing Contract, the Company, by and through its representatives of the Cities sitting as the Companies' Board of Directors, shall move to dissolve the Church Ditch Company pursuant to the provisions of Colorado law.

9. Termination or Change in Membership of Water Authority.

- (a) *Sale or Conveyance of Interest in the Authority.* Nothing in this Agreement shall be construed to prevent the Cities, or each of them in their sole discretion, from selling or otherwise conveying their interests in the Church Ditch Water Authority to another political subdivision authorized by Colorado law to enter the Authority contract pursuant to C.R.S. § 29-1-204.2(3)(n). However, such a sale or conveyance shall require a written amendment to this Agreement, which approval shall not be unreasonably withheld, in order to memorialize any new contractual arrangements that may arise from the sale or conveyance of a City's interest in the Authority.
- (b) *Dissolution of the Authority.* The Authority may be dissolved by action of the governing bodies of both Cities. In the event of such dissolution, all right, title and interest of the Authority in the legal and equitable interests in real or personal property, both tangible and intangible, shall be distributed pro rata among the Cities as tenants in common based upon the number of Directors of the Authority from each City, except that any assets owned by the Company at the time of the execution of this Agreement, which assets are wholly owned by the City of Northglenn, shall be conveyed back to the City of Northglenn. It is the intent of this Paragraph 9, section (b) that the interests of the Cities upon dissolution of the Authority shall be in the same proportion as the respective interests of the Cities existed upon creation of the Authority.

- (c) *Rights of the Contractual Users Upon Dissolution.* Any dissolution of the Authority, including the distribution of the assets and interests thereof, shall be subject to the contractual rights of the Contractual Users of the Authority, as defined hereinabove.

10. General Provisions.

a. Notices. All notices, demands, requests, or other communications required under this Agreement which are in writing shall be deemed to be received only if delivered personally or mailed by registered or certified mail, return receipt requested, in a postage-paid envelope, or sent by facsimile transmission, or sent by Federal Express addressed to the party at the address it has designated below or to such other address as any party may from time to time designate to the others by notice given pursuant to this paragraph.

The address and facsimile phone number of the City of Northglenn is:

11701 Community Center Drive  
Box 330061  
Northglenn, Colorado 80233  
Fax: 303-450-8902

with copy to: Herbert C. Phillips, City Attorney  
Hayes, Phillips, Hoffmann & Carberry, P.C.  
1350 17<sup>th</sup> Street, Suite 450  
Denver, Colorado 80202  
Fax: 303-825-1269

The address and facsimile phone number of the City of Westminster is:

4800 West 92<sup>nd</sup> Avenue  
Westminster, Colorado 80031  
Fax: 303-430-1809

with copy to: Martin McCullough, City Attorney  
4800 West 92<sup>nd</sup> Avenue  
Westminster, Colorado 80031  
Fax: 303-430-1809

Any party may change the address for notice by notice to the other parties as specified herein. Any such notice, demand, request or other communication shall be deemed to have been given upon such personal delivery, facsimile transmission, or three (3) days following when the same is mailed or sent by regular mail, or one (1) day following when the same is sent by overnight delivery.

b. Choice of Law. This Agreement shall be interpreted and construed in accordance with the laws of the State of Colorado.

c. Invalidity of Terms. If any term, claim, clause or provision of this Agreement shall be judged to be invalid, the validity and effect of any other term, claim, clause or provision shall not be affected; and such invalid term, claim, clause or provision shall be deemed deleted from this Agreement in a manner to give effect to the remaining terms, claims, clauses or provisions.

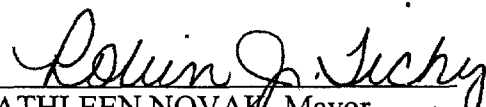
d. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be considered an original for all purposes, and all of which when taken together shall constitute one and the same Agreement.

e. Authority. Each of the undersigned represents as to itself that each has the authority to execute this Agreement.

f. Entire Agreement. This Agreement constitutes the entire understanding, contract, and agreement between the parties as to the subject matters herein set forth, and this Agreement only supersedes prior written or oral understandings, agreements, and commitments, formal or informal, relative thereto between all the parties hereto. No change, modification, alteration, or amendment to this Agreement shall be binding upon the parties except as specifically expressed in writing, making reference to this Agreement and signed by all of the parties hereto agreeing to be bound thereby.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date stated above.

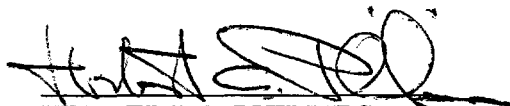
**CITY OF NORTHGLENN, COLORADO**

By:   
KATHLEEN NOVAK, Mayor  
Mayor Pro-Term 10-14-04

ATTEST:

  
DIANA L. LENTZ, CMC  
City Clerk

APPROVED AS TO FORM:

  
HERBERT C. PHILLIPS  
City Attorney

CITY OF WESTMINSTER, COLORADO

By: Nancy McNally  
NANCY McNALLY, Mayor

ATTEST:

Michele Kelley  
MICHELE KELLEY, City Clerk

APPROVED AS TO FORM:

Jeffery  
Legal Counsel - Special Water Counsel

EXHIBIT "A"

0130.52

10073

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16-16.6  
FILM1092

WILLIAM SOKOL  
COUNTY RECORDER  
ADAMS COUNTY, COLO.

CONTRACT

903K 2267 PG 166

AUG 22 8 00 AM '78

1-8

THIS CONTRACT, made and entered into this 1st day of June, 1978, by and between the GOLDEN, RALSTON CREEK AND CHURCH DITCH COMPANY (CHURCH), a Colorado Corporation, and THE CITY OF NORTHEGLEN, COLORADO (NORTHEGLEN), a Colorado Municipal Corporation,

WITNESSETH:

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U.S. DEPT. OF JUSTICE

WHEREAS, CHURCH is the owner of the Golden City and Ralston Creek Ditch, to which have been decreed the following decreed water rights:

- a. The Swadley Ditch, priority No. 21 from Clear Creek in former water district No. 7, for 0.90 cubic feet of water per second of time for irrigation purposes with an appropriation date of June 1, 1862, transferred to the Golden City and Ralston Creek Ditch by decree dated September 23, 1912;
- b. The Golden City and Ralston Creek Ditch, priority No. 40 from Clear Creek in former water district No. 7, for 41.43 cubic feet of water per second of time for irrigation purposes with an appropriation date of February 28, 1865;
- c. The Swadley Ditch, priority No. 44 from Clear Creek in former water district No. 7, for 1.25 cubic feet of water per second of time for irrigation purposes with an appropriation date of May 16, 1865, transferred to the Golden City and Ralston Creek Ditch by decree dated September 23, 1912;
- d. The Golden City and Ralston Creek Ditch, priority No. 62 from Clear Creek in former water district No. 7, for 18.26 cubic feet of water per second of time for irrigation purposes with an appropriation date of November 18, 1877;
- e. The Golden City and Ralston Creek Ditch, priority No. 65 from Clear Creek in former water district No. 7, for 18.85 cubic feet of water per second of time for irrigation purposes with an appropriation date of November 15, 1878;



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f. The Golden City and Ralston Creek Ditch, priority no. 66 from Clear Creek in former water district No. 7, for 32.34 cubic feet of water per second of time for irrigation purposes with an appropriation date of November 20, 1881;

g. The Golden City and Ralston Creek Ditch, priority no. 22 from Ralston Creek in former water district No. 7, for 185.0 cubic feet of water per second of time for irrigation purposes with an appropriation date of November 18, 1877;

h. The Golden City and Ralston Creek Ditch, priority no. 74 from Clear Creek in former water district No. 7, for 100.12 cubic feet of water per second of time for irrigation purposes with an appropriation date of March 16, 1886;

i. The Golden City and Ralston Creek Ditch, priority no. 74a from Clear Creek in former water district No. 7, for 88.27 cubic feet of water per second of time, conditional, for irrigation purposes with an appropriation date of March 16, 1886; and

j. The Golden City and Ralston Creek Ditch, priority no. 23a from Ralston Creek in former water district No. 7, for 315.0 cubic feet of water per second of time, conditional, for irrigation purposes with an appropriation date of December 5, 1892.

WHEREAS, CHURCH is operated as a carrier ditch company, and has outstanding statutory rights for the purchase of five thousand, seven hundred, ten and 64/100 (5,710.64) "inches" of water under the subject water rights, at the rate of 50 "inches" per cubic foot per second; and

WHEREAS, NORTHGLENN desires to acquire CHURCH's interests in the Golden City and Ralston Creek Ditch, including the subject water rights and all lands, easements, ditch structures and rights of way used in connection therewith, for use in NORTHGLENN's municipal water utility system;

NOW, THEREFORE, in consideration of the premises and the covenants herein below set forth, CHURCH and NORTHGLENN agree as follows:

1. GRANT. CHURCH agrees to sell to NORTHGLENN, and NORTHGLENN agrees to buy from CHURCH, upon the terms and conditions contained herein, all of CHURCH's right, title and interest in and to the Golden City and Ralston Creek Ditch, including the subject water rights, and all land, easements, ditch structures and rights of way used in connection therewith for the conveyance of water, but not including the caretaker's house, with all rights, duties and obligations thereto pertaining.

2. PURCHASE PRICE. NORTHGLENN shall pay to CHURCH Five Hundred Thousand Dollars (\$500,000.00), and the payment thereof shall be in the following manner:

a. Five Thousand Dollars (\$5,000.00), previously paid, receipt of which is hereby acknowledged.

b. Forty-five Thousand Dollars (\$45,000.00) to be paid within sixty (60) days following shareholder approval hereof as provided herein.

c. The remainder to be paid in nine (9) annual installments on or before January 5 of each year commencing in 1979, each installment to be in the amount of Fifty Thousand Dollars (\$50,000.00) plus interest at the rate of six percent (6%) per annum.

3. POSSESSION AND CLOSING. Closing shall be held at a time and place convenient to CHURCH and NORTHGLENN within thirty (30) days after the final payment is made by NORTHGLENN. Conveyance shall be by Quit Claim Deed. Possession of the subject properties shall be deemed to be in NORTHGLENN upon shareholder approval hereof and payment in accordance with paragraph 2.b. hereof.

4. TAXES.

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a. Real and personal property taxes, if any, attributable to the subject interest shall be the responsibility of NORTHGLENN after the date hereof. 4

b. Income taxes, if any, attributable to payments received by CHURCH under this CONTRACT shall be the sole responsibility of CHURCH.

5. RECORDS. CHURCH shall make available to NORTHGLENN and its attorneys all records, files, abstracts and documents pertaining to the subject properties in the possession of CHURCH or its attorneys.

6. REMEDIES. Time is of the essence hereof, and if any payment or other condition hereof is not made, tendered or performed as herein provided, there shall be the following remedies:

a. In the event a payment or any other condition hereof is not made, tendered or performed by NORTHGLENN, then this CONTRACT shall be null and void and of no effect, and all parties hereto released from all obligations hereunder, and all payments made hereon shall be retained on behalf of CHURCH as liquidated damages.

b. In the event that CHURCH fails to perform any condition hereof as provided herein, then NORTHGLENN may, at its election, treat the CONTRACT as terminated by mutual consent, and all payments made hereon shall be returned to NORTHGLENN; provided, however, that NORTHGLENN may, at its election, treat this CONTRACT as being in full force and effect with the right to an action for specific performance and damages.

7. ASSIGNMENT AND OPERATION.

a. This CONTRACT shall not be assigned by NORTHGLENN without the prior written approval of CHURCH.

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b. NORTHGLENN agrees that NORTHGLENN and its successors assigns and lessees shall operate the Church Ditch and the priorities awarded thereto only in such a manner as is necessary to meet and fulfill the obligations imposed by statute and by contracts in full force and effect as of the date of this CONTRACT; NORTHGLENN agrees to operate the Church Ditch so as not to cause a reduction in the supply of water available to the Croke Canal, as determined by The Farmers Reservoir and Irrigation Company (FRICO), so long as the Croke Canal is owned by FRICO and its shareholders as a mutual ditch company, and is not owned by a municipality; NORTHGLENN further agrees to replace any water lost by FRICO because of any change in the operation of said Church Ditch from the FRICO method of operation that existed on the date of this CONTRACT.

c. NORTHGLENN and FRICO shall enter into an agreement providing for the actual, physical operation and management of the Church Ditch and water rights by employees of FRICO, at the election of FRICO, which shall thereafter be renewed from year to year as the two of them shall agree.

d. NORTHGLENN agrees to prosecute or defend, on behalf of itself and FRICO, CHURCH, their Boards of Directors, their officers or directors individually, any legal proceedings arising out of or necessitated by this CONTRACT at no expense to FRICO, CHURCH, their Boards of Directors or their officers or directors individually, however FRICO, CHURCH, their Boards of Directors, their officers or directors individually shall have the right at all times to be represented and participate in any such proceedings through independent legal counsel selected and paid by them; FRICO and CHURCH hereby consents to the joinder of NORTHGLENN in any such proceedings and to the substitution of NORTHGLENN for FRICO or CHURCH in such proceedings with the right to raise any and all claims and defenses available to FRICO or CHURCH in such proceedings.

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8. CONDEMNATION. This CONTRACT shall be deemed terminated by mutual consent, and all payments made hereon shall be returned to NORTHGLENN, should condemnation suits concerning the Standley Lake Division of FRICO which are pending on the date of this CONTRACT result in the taking of the Properties which are the subject of this CONTRACT.

9. SHAREHOLDER APPROVAL. Execution hereof by the officers of CHURCH shall constitute their certification that the Board of Directors of CHURCH has approved this CONTRACT subject to shareholder approval, and CHURCH agrees to promptly initiate procedures for a special shareholders' meeting at which the approval or rejection of this CONTRACT will be considered and submitted for vote. CHURCH, its officers and Board of Directors covenant that they shall make no other agreements respecting disposition of the subject properties pending final shareholder action. Shareholder approval of this CONTRACT shall be deemed met when a two-thirds (2/3) majority of the shareholders of CHURCH vote in favor of approval, otherwise the CONTRACT shall be deemed rejected. In the event that CHURCH shareholders have not taken action within one hundred twenty (120) days of the date of this CONTRACT, then this CONTRACT shall be null and void.

10. FURTHER ENCUMBRANCES. CHURCH shall not knowingly mortgage, sell or otherwise encumber the subject properties during the term hereof.

11. AUTHORITY. In the event that any provision of this CONTRACT, or the sale of the subject property by CHURCH to NORTHGLENN upon the terms and conditions of this CONTRACT, is determined to be beyond the authority of CHURCH, its Board of Directors or any of its Directors individually then this CONTRACT shall be null and void and all payments made hereon shall be returned to NORTHGLENN; in the event that by executing this CONTRACT, or by approving its execution or by approving the sale of the subject property upon the terms

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and conditions of this CONTRACT, FRICO, CHURCH, their Boards of Directors acting as such, or any of their officers or directors acting individually is determined to be liable to any party for damages, then NORTHGLENN shall indemnify and save and hold harmless FRICO, CHURCH, their Boards of Directors, and their officers and directors individually, from any loss as a result of such determination; in the event that such indemnification is determined to be invalid, then this CONTRACT shall be null and void, and all payments made hereon shall be returned to NORTHGLENN.

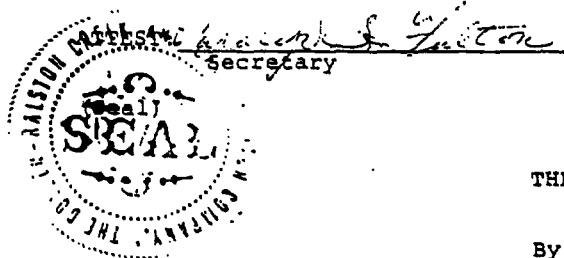
12. MERGER OF AGREEMENTS. This CONTRACT contains the entire agreement of the parties. The contract previously executed by CHURCH and NORTHGLENN providing for the sale of the subject properties by CHURCH to NORTHGLENN, dated April 6, 1978, recorded at Book 2228, Page 187, Adams County, Colorado, to the extent inconsistent herewith, shall be null and void.

Attached hereto are a certified copy of an Ordinance duly adopted by the City Council of NORTHGLENN, and a certified copy of a resolution duly adopted by the Board of Directors of CHURCH, both approving the sale and purchase of the subject property upon the terms and conditions contained heron.

Executed the day and year first above written.

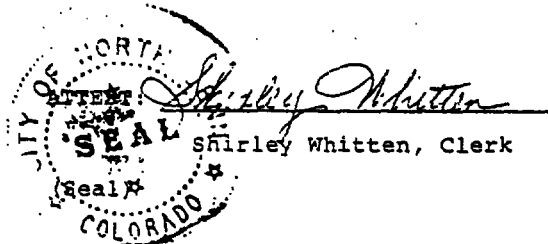
THE GOLDEN, RALSTON CREEK AND  
CHURCH COMPANY

By Adolph Bohlender  
Adolph Bohlender, President



THE CITY OF NORTHGLENN, COLORADO

By Alvin B. Thomas  
Alvin B. Thomas, Mayor



79110472

STATE OF COLORADO )  
COUNTY OF ADAMS ) SS.

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BOOK 2267 PG 173

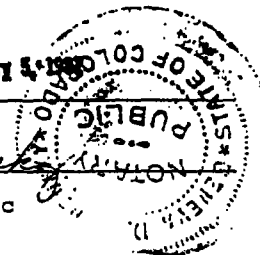
8

The foregoing instrument was acknowledged before me this  
2nd day of August, 1978, by Adolph Bohlender  
as President of The Golden, Ralston Creek and Church Ditch Company,  
a Colorado corporation.

Witness my hand and official seal.

My commission expires: My Commission expires February 5, 1980

James D. Sandusky  
Notary Public



STATE OF COLORADO )  
COUNTY OF ADAMS ) SS.

The foregoing instrument was acknowledged before me this  
1st day of June, 1978, by Alvin B. Thomas and  
Shirley Whitten, Mayor and Clerk respectively of the City of  
Northglenn, both of whom certify that the execution of this  
Contract has been authorized by a duly adopted ordinance of  
the City Council of the City of Northglenn.

Witness my hand and official seal.

My commission expires: Sept 8, 1980

Charles L. Sharp, Jr.  
Notary Public






## CERTIFICATION

I, Joan M. Baker, do hereby certify that the attached copy of Ordinance No. 501, Series of 1978, is a true and exact copy of the original ordinance passed by the City Council of the City of Northglenn at their regular Council Meeting Thursday, April 6, 1978.

April 7th, 1978

  
JOAN M. BAKER  
Deputy City Clerk

APR 7 11 35 AM '78

NOTARIAL  
OFFICE  
OF THE  
COUNTY CLERK  
NORTHGLENN, COLORADO

B 126886

# Online COLORADO'S

## Decision Support Systems

Overview

View Data

Products

Documentation

News

District 7

## Tabulation Report

08/13/2004

| Name of Structure       | Typ | Name of Source | WD | - - | L O C A T I O N | - - | Use    | Net Abs    | Net Cond | AltP/Exch | U Adj | Date       | P Adj | Date | Appro      | Date | Or |
|-------------------------|-----|----------------|----|-----|-----------------|-----|--------|------------|----------|-----------|-------|------------|-------|------|------------|------|----|
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.004     | C     | 10/04/1884 |       |      | 05/16/1860 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.014     | C     | 10/04/1884 |       |      | 05/31/1860 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.048     | C     | 10/04/1884 |       |      | 06/01/1860 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.175     | C     | 10/04/1884 |       |      | 07/01/1860 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.310     | C     | 10/04/1884 |       |      | 08/31/1860 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.310     | C     | 10/04/1884 |       |      | 08/31/1860 |      |    |
| CHURCH DITCH RALSTON CR | D   | RALSTON CREEK  | 7  | SE  | SE              | NW  | 2 3 S  | 70 W S IMC |          | 0.006     | C     | 10/04/1884 |       |      | 04/10/1861 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 4.790     | C     | 10/04/1884 |       |      | 05/02/1861 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.430     | C     | 10/04/1884 |       |      | 05/02/1861 |      |    |
| CHURCH DITCH RALSTON CR | D   | RALSTON CREEK  | 7  | SE  | SE              | NW  | 2 3 S  | 70 W S IMC |          | 4.536     | C     | 10/04/1884 |       |      | 06/29/1861 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 22.097    | C     | 10/04/1884 |       |      | 11/01/1861 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC | 0.900    | 0.001     | C     | 10/04/1884 |       |      | 06/01/1862 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 1.007     | C     | 10/04/1884 |       |      | 06/14/1862 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.080     | C     | 10/04/1884 |       |      | 06/20/1862 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.080     | C     | 10/04/1884 |       |      | 06/20/1862 |      |    |
| CHURCH DITCH RALSTON CR | D   | RALSTON CREEK  | 7  | SE  | SE              | NW  | 2 3 S  | 70 W S IMC |          | 0.059     | C     | 10/04/1884 |       |      | 07/04/1862 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.007     | C     | 10/04/1884 |       |      | 05/28/1863 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.012     | C     | 10/04/1884 |       |      | 06/20/1863 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 5.645     | C     | 10/04/1884 |       |      | 11/05/1863 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.044     | C     | 10/04/1884 |       |      | 06/14/1864 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.135     | C     | 10/04/1884 |       |      | 06/20/1864 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.940     | C     | 10/04/1884 |       |      | 06/30/1864 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.940     | C     | 10/04/1884 |       |      | 06/30/1864 |      |    |
| CHURCH DITCH RALSTON CR | D   | RALSTON CREEK  | 7  | SE  | SE              | NW  | 2 3 S  | 70 W S IMC |          |           | C     | 10/04/1884 |       |      | 02/28/1865 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC | 41.430   | 0.019     | C     | 10/04/1884 |       |      | 04/23/1865 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.006     | C     | 10/04/1884 |       |      | 05/06/1865 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.004     | C     | 10/04/1884 |       |      | 05/16/1865 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC | 1.250    | 8.291     | C     | 10/04/1884 |       |      | 03/05/1867 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          |           | C     | 10/04/1884 |       |      | 05/31/1868 |      |    |
| CHURCHES DITCH          | D   | RALSTON CREEK  | 7  |     | SE              | 32  | 2 S    | 70 W S I   | 5.840    |           |       | 10/04/1884 |       |      | 05/31/1868 |      |    |
| CHURCHES RES            | R   | RALSTON CREEK  | 7  |     | SE              | 32  | 2 S    | 70 W S I   |          | 0.078     | C     | 10/04/1884 |       |      | 11/05/1868 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.028     | C     | 10/04/1884 |       |      | 05/24/1870 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          | 0.678     | C     | 10/04/1884 |       |      | 04/01/1872 |      |    |
| CHURCH DITCH            | D   | CLEAR CREEK    | 7  | SE  | NW              | NE  | 32 3 S | 70 W S IMC |          |           | C     | 10/04/1884 |       |      | 05/20/1873 |      |    |
| CHURCHES DITCH          | D   | RALSTON CREEK  | 7  |     | SE              | 32  | 2 S    | 70 W S I   | 2.890    |           |       |            |       |      |            |      |    |

8/13/2004

## HydroBase Web Interface

|                         |   |                |   |    |    |    |    |    |    |    |   |     |         |         |            |            |            |
|-------------------------|---|----------------|---|----|----|----|----|----|----|----|---|-----|---------|---------|------------|------------|------------|
| CHURCHES RES            | R | RALSTON CREEK  | 7 | SE | 32 | 2  | S  | 70 | W  | S  | I |     |         |         | 10/04/1884 | 05/20/1873 |            |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 8.731   | C          | 10/04/1884 | 04/05/1874 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 18.260  | C          | 10/04/1884 | 11/18/1877 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 18.850  | C          | 10/04/1884 | 11/15/1878 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 32.340  | C          | 10/04/1884 | 11/20/1881 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     |         |            | 10/04/1884 | 12/20/1881 |
| CHURCHS LOWER LAKE      | R | CLEAR CREEK    | 7 | NW | SE | 11 | 2  | S  | 69 | W  | S | IMC | 80.440  | A       | 12/19/1900 | 03/02/1882 |            |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 0.840   | C          | 10/09/1895 | 10/04/1884 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 1.478   | C          | 10/09/1895 | 10/04/1884 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 0.853   | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH RALSTON CR | D | RALSTON CREEK  | 7 | SE | SE | NW | 2  | 3  | S  | 70 | W | S   | IMC     | 194.620 | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 211.000 | C          | 05/13/1936 | 10/09/1895 |
| CHURCHS LOWER LAKE      | R | CLEAR CREEK    | 7 | NW | SE | 11 | 2  | S  | 69 | W  | S | IMC | 149.080 | A       | 05/13/1936 | 10/09/1895 |            |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 4.000   | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 100.120 | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 67.120  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 20.300  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 50.600  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 20.300  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 211.000 | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 50.600  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | SE | NW | 2  | 3  | S  | 70 | W | S   | IMC     | 20.300  | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 110.880 | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 110.880 | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH RALSTON CR | D | RALSTON CREEK  | 7 | SE | SE | NW | 2  | 3  | S  | 70 | W | S   |         |         | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         |         | C          | 05/13/1936 | 10/09/1895 |
| CHURCH DITCH RALSTON CR | D | RALSTON CREEK  | 7 | SE | SE | NW | 2  | 3  | S  | 70 | W | S   |         |         | C          | 05/13/1936 | 10/09/1895 |
| CHURCH WELL NO 9        | W | GRNDWTR-EXEMPT | 7 | SE | NE | NW | 21 | 2  | S  | 70 | W | S   | S       | 0.022   | C          | 12/31/1983 | 12/31/1943 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IM      |         | C          | 10/04/1884 | 06/01/1962 |
| CHURCH SPRING WELL 13   | W | GRNDWTR-EXEMPT | 7 | NE | NE | NE | 24 | 2  | S  | 70 | W | S   | S       | 0.011   | C          | 12/31/1984 | 12/31/1962 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IM      |         | C          | 10/04/1884 | 02/28/1965 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 76.000  | C          | 12/31/1981 | 12/31/1980 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 62.000  | C          | 12/31/1982 | 12/31/1981 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 20.000  | C          | 12/31/1986 | 06/28/1982 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 66.462  | C          | 12/31/1988 | 12/31/1986 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 200.000 | C          | 12/31/1988 | 03/04/1988 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 25.000  | C          | 12/31/1988 | 06/10/1988 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 30.800  | C          | 12/31/1988 | 12/30/1988 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     |         | C          | 12/31/1989 | 12/31/1988 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   |         | 75.000  | C          | 12/31/1989 | 12/14/1984 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 2.000   | C          | 12/31/1989 | 08/31/1989 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 6.000   | C          | 12/31/1990 | 12/31/1990 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 226.760 | C          | 12/31/1993 | 12/22/1993 |
| CHURCH DITCH            | D | CLEAR CREEK    | 7 | SE | NW | NE | 32 | 3  | S  | 70 | W | S   | IMC     | 226.760 | C          | 12/31/1993 | 12/22/1993 |
| CHURCH DITCH RALSTON CR | D | RALSTON CREEK  | 7 | SE | SE | NW | 2  | 3  | S  | 70 | W | S   | IMC     |         |            |            |            |

Query and formatting took 0.63 seconds.  
HydroBase output generated on: 2004-08-13 09:08:01 MDT

8/13/2004

# EXHIBIT "B"

|                                                                         |     |
|-------------------------------------------------------------------------|-----|
| HEIMBECHER, DAVE, 5/4/92 & 9/8/92                                       | 610 |
| HEIMBECHER, DAVE, EASEMENT VACATION - 2/1/99                            | 610 |
| KELLER, WILLIAM J. & WILLA D. 5/25/93                                   | 610 |
| KELLER, WILLIAM J. & WILLA D. 6/24/93                                   | 610 |
| LAKECREST VENTURE QUIT CLAIM DEED 1/12/00                               | 610 |
| NEWMAN, RICHARD & HELEN, CD RELOCATION, QUAKER ST & W 70TH AV - 7/16/92 | 610 |
| SADDLEBROOK BY REMINGTON HOMES, QUIT CLAIM DEED TRACT R 3/10/04         | 610 |
| SHELLWOOD DEVELOPMENT, FOX HAVEN FARMS - 5/11/00                        | 610 |
| XREF: SHELLWOOD DEVELOPMENT & CITY OF ARVADA                            |     |
| SUMMERTREE LANE LTD, CITIES OF WESTMINSTER & NORTHGLENN - 2/16/99       | 610 |
|                                                                         |     |
| ADOLPH COORS COMPANY BOX CULVERT CROSSING #86-3 - 2/12/86               | 615 |
| ADOLPH COORS COMPANY EASEMENT 11/19/91                                  | 615 |
| ARVADA, CITY OF, CITIES OF NORTHGLENN & WESTMINSTER                     | 615 |
| WEST WOODS NINE NON-EXCLUSIVE EASEMENT 4/17/00                          |     |
| ARVADA, CITY OF, ACCESS EASEMENT 7/7/91                                 | 615 |
| ARVADA, CITY OF, AUGMENTATION STATION #83-4 - 10/12/83                  | 615 |
| ARVADA, CITY OF, BLUNN TRANSMISSION LINE #83-5A - 7/26/83 & 1/5/84      | 615 |
| ARVADA, CITY OF, PEDESTRIAN & BIKE CROSSING 6/7/82                      | 615 |
| CHURCH DITCH CO. STREET DEDICATION NORTH FOOTHILLS 10/29/87             | 615 |
| COORS TECHNOLOGY CENTER STREET DEDICATION 7/18/91                       | 615 |
| CORNMAN, SUSAN J., STARWOOD ACRES EASEMENT AGREEMENT 11/28/00           | 615 |
| XREF: LITTMAN, MICHAEL A.                                               |     |
| COUNTRYSIDE INVESTORS, CITY OF WESTMINSTER                              | 615 |
| BOX CULVERT EXTENSION W 100TH AV & SIMMS ST - 9/9/85 #85-2              |     |
| COUNTRYSIDE INVESTORS, CITY OF WESTMINSTER                              | 615 |
| BOX CULVERT EXTENSION W 100TH AV & SIMMS ST - 11/16/83 #83-2            |     |
| COUNTRYSIDE INVESTORS, CITY OF WESTMINSTER                              | 615 |
| WATER LINE CROSSING W 100TH AV & SIMMS ST - 11/7/83 #83-1               |     |
| DRY CREEK VALLEY DITCH CO. & CHURCH DITCH COMPANY                       | 615 |
| COUNTRYSIDE VENTURE 5/21/85                                             |     |
| FARMERS HIGH LINE NON-EXCLUSIVE EASEMENT - 12/9/99                      | 615 |
| GENESEE COMPANY, WWR PARCEL D, LOT 57 - 6/16/94                         | 615 |
| GOLDEN, CITY OF, JEFFCO TRAIL NON-EXCLUSIVE EASEMENT - 2/2/04           | 615 |
| GRAHAM, MARK S. & LINDA, STONE VIEW SUBDIVISION - 1/8/98                | 615 |
| GRANO, DONNA, NON-EXCLUSIVE EASEMENT - 11/26/96                         | 615 |
| HARR, RICKY, BEVERLY BROOKS ESTATES, NON-EXCLUSIVE ESMT - 7/28/98       | 615 |
| HEIMBECHER, DAVE - EASEMENT DEDICATION, 2/1/99                          | 615 |
| HEIMBECHER, DAVE, 5/23/96                                               | 615 |
| JEFFERSON, COUNTY OF, ACCESS AGREEMENT - 8/1/01                         | 615 |
| JEFFERSON, COUNTY OF, STANDLEY LAKE PARK #83-6 - 1/31/84                | 615 |

|                                                                                                  |     |
|--------------------------------------------------------------------------------------------------|-----|
| LAKECREST VENTURE, CITY OF ARVADA, SIMMS & 83RD #84-2 - 6/16/86                                  | 615 |
| LAKECREST VENTURE, CITY OF ARVADA, SIMMS & 84TH #83-7 - 11/30/83                                 | 615 |
| LAKECREST VENTURE, CITY OF ARVADA, SIMMS & 84TH #83-7A - 2/20/84                                 | 615 |
| LAKECREST VENTURE, CITY OF ARVADA, SIMMS & 84TH #83-8 - 2/15/83                                  | 615 |
| LAKECREST VENTURE, CITY OF ARVADA, SIMMS & 86TH #83-3 - 11/15/83                                 | 615 |
| NORTH TABLE MTN WATER & SAN DIST, MCINTYRE & 50TH AVE - 7/6/79                                   | 615 |
| NORTH TABLE MTN WATER & SAN DIST, ULYSSES & 60TH AVE. - 5/25/82                                  | 615 |
| NORTHRIDGE CAPITAL, LLC, CITY OF NORTHGLENN & CITY OF WESTMINSTER<br>NON-EXCLUSIVE EASEMENT 4/01 | 615 |
| NOWICKI, TERRY & CINDY, MTCE & OPERATION EASEMENT 6/10/86                                        | 615 |
| OCHSNER, CHARLES S. & NORTH FOOTHILLS ESTATES - 9/10/87                                          | 615 |
| PETTUS/ASPREY, WWR LOT 15, BLK 1 - 11/4/96                                                       | 615 |
| PUBLIC SERVICE CO. OF COLORADO UNDERGROUND LINES #86-5 - 12/3/86                                 | 615 |
| PUBLIC SERVICE CO., 3980 EASLEY RD. #85-3 - 1/15/86                                              | 615 |
| PUBLIC SERVICE CO. UNDERGROUND ELECTRIC LINE W 100TH & SIMMS #83-9                               | 615 |
| PULTE HOME CORPORATION, CLAYCUTOFF WALL 6/10/86 #86-4                                            | 615 |
| PULTE HOME CORPORATION & COUNTRYSIDE INVESTORS 5/21/85                                           | 615 |
| RALSTON VALLEY W & S DISTRICT, 16" WATER MAIN - 3/10/81                                          | 615 |
| RALSTON VALLEY W & S DISTRICT, SANITARY SEWER PIPELINE - 11/12/81                                | 615 |
| ROBINSON, GEORGE, CONCRETE BOX CULVERT #85-1 - 2/7/85                                            | 615 |
| SADDLEBROOK BY REMINGTON HOMES, NON-EXCLUSIVE EASEMENT - 3/10/04                                 | 615 |
| SCHLESSMAN, MARK, CONCRETE BOX CULVERT #86-2 - 3/5/86                                            | 615 |
| SUMMERTREE LANE LTD., CITY OF BROOMFIELD - 7/13/95                                               | 615 |
| UNITED CABLE TV OF COLORADO - 11/16/82                                                           | 615 |
| WEST WOODS RANCH QUIT CLAIM DEEDS                                                                | 615 |
| WESTMINSTER, CITY OF, AUGMENTATION STA. - 3/4/82                                                 | 615 |
| WWR LTD PARTNERSHIP, CITIES OF NORTHGLENN & WESTMINSTER                                          | 615 |

## EXHIBIT "C"

**ESTABLISHING CONTRACT FOR THE  
CHURCH DITCH WATER AUTHORITY**

The undersigned, desiring to create the Church Ditch Water Authority, a water authority, a body corporate and politic, a separate governmental entity, a political subdivision and a public corporation of the State of Colorado, pursuant to Section 18(2)(a) and (2)(b) of Article XIV, Constitution of the State of Colorado, and to C.R.S. § 29-1-204.2, as amended (the "Act"), by this Establishing Contract, by and between the City of Westminster, a Colorado municipal corporation and the City of Northglenn, a Colorado municipal corporation (the "Members"), authorized by law to own and operate water systems, hereby agree:

**ARTICLE I****Name**

The name of the entity hereby established shall be Church Ditch Water Authority (the "Authority").

**ARTICLE II****Purpose and Powers**

The purpose of the Authority is to effect the development of water resources, systems and facilities in whole or in part for the benefit of the Members and their inhabitants, and others, including the Contractual Users of the Church Ditch, through the operation, maintenance and continued development of the Church Ditch. The functions, services and general powers of the Authority are, to the extent permitted by law, as follows:

(a) To acquire, construct, manage, maintain, or operate water systems, facilities, works or other improvements, or to acquire a leasehold or any other interest therein, including without limitation dams, reservoirs, other storage facilities, ditches, canals, treatment facilities, and transmission and collection facilities.

(b) To acquire, hold, lease (as lessor or lessee), sell, or otherwise dispose of any legal or equitable interest in real or personal property, specifically including water rights, by contract or otherwise and water stock, utilized for the authorized purposes of the Authority, including water treatment, distribution, and wastewater disposal.

(c) To conduct its business and affairs for the benefit of the Members and their inhabitants and others, in the discretion of the Board of Directors.

(d) To enter into, make and perform contracts of every kind with Members, the United States, any state or political subdivision thereof, or any city, town, municipality, city and county, any special district formed pursuant to Title 32, C.R.S. or any predecessor thereof, or with any individual, individual firm, association, partnership, corporation, or any other organization of any kind with the capacity to contract for any of the purposes contemplated under this contract.

(e) To employ agents and employees.

(f) To incur debts, liabilities, or obligations to the extent and in the manner permitted by law and as provided herein, and to borrow money and, from time to time, to make, accept, endorse, execute, issue and deliver bonds, notes and other obligations of the Authority for monies borrowed or in payment for the property acquired, or for any of the other authorized purposes of the Authority, and as provided by law, and to the extent permitted by law to secure the payment of any such obligations by mortgage, pledge, deed, indenture, agreement, or other collateral instrument, or by other lien upon, assignment of, or agreement in regard to, all or any part of the properties, rights, assets, contracts, easements, revenues and privileges of the Authority. The bonds, notes and any other obligations of the Authority shall not themselves be the debts, liabilities or obligations of the Members.

(g) To buy, lease, construct, appropriate, contract for, invest in, and otherwise acquire, and to own, hold, maintain, equip, operate, manage, improve, develop, and deal in and with, and to sell, lease exchange, transfer, convey and otherwise dispose of and to mortgage, pledge, hypothecate and otherwise encumber real and personal property of every kind, tangible and intangible, utilized for the purposes of the Authority.

(h) To have and to exercise the power of eminent domain and, in the manner provided by law to condemn property for use as rights-of-way only if such property is not owned by any public utility and devoted to such public use pursuant to state authority.

(i) To construct and maintain works and establish and maintain facilities across or along any public street or highway, provided the Authority shall promptly restore any such street or highway to its former state of usefulness.

(j) To fix, maintain and revise fees, rates and charges for the use of the Authority's functions, services (including, without limitation, water carriage service) or facilities, and for waters conveyed or treated thereby, and to adopt, by resolution, reasonable regulations for the public welfare and pertaining to such facilities and waters, including, without limitation, the use and protection of such facilities and waters.

(k) To sue and be sued in the name of the Authority and to participate in all manner of legal and administrative proceedings including, but not limited to, proceedings in the water courts of the State of Colorado.

(l) To have and use a corporate seal.

(m) In general, to exercise all powers which are now conferred by law upon a water authority organized pursuant to the Act, or essential to the provision of its functions, services and facilities, subject to such limitations as are or may be prescribed by law.



(n) To permit other municipalities, special districts or political subdivisions of this state that are authorized to supply water to enter the contract at the sole discretion of the Board of Directors, subject to fulfilling any and all conditions of the contract establishing the entity, and subject to fulfilling any other conditions deemed necessary by the Board of Directors in its sole discretion.

(o) The powers of the Authority shall not include indemnification of property owners or others affected for any losses or damages incurred, including reasonable attorneys fees, or that may subsequently be caused by or which result from actions of the Authority.

### **ARTICLE III**

#### **Board of Directors and Powers**

1. Board of Directors. All legislative power, as hereinafter defined, of the Authority shall be vested in a Board of Directors (the "Board" and the "Directors"). Each Director shall be a person designated by the City Manager of the Member which the Director represents. There shall be two (2) Directors designated by the City Manager of the City of Northglenn and one (1) Director designated by the City Manager of Westminster.

2. Initial Directors. The name, address, and Member represented of each of the initial Directors is as listed in **Exhibit A** which is attached hereto and incorporated herein.

3. Tenure of Directors. Each Director shall serve until replaced by the Member which the Director represents.

4. Vacancy. A vacancy occurring on the Board, whether such vacancy be the result of resignation, removal by the governing body of the Member, or for any other reason, shall be filled by the selection of a successor Director in the same manner as is provided in paragraph 1 of this Article.

5. Compensation. Directors shall not receive compensation for their services from the Authority.

6. Meetings. Regular meetings of the Board shall be held at such place, on such day, and at such hour as the Board shall, by resolution, from time to time establish. Special meetings may be held at any time and at any place within the State of Colorado either (a) when attended by Directors representing all Members or (b) upon seventy-two (72) hours written notice either hand delivered or sent by first-class mail, postage prepaid, to the home or place of employment of each Director, unless such notice be waived in writing by a Director or alternate of any Member not represented at such meeting. The President or Vice President may, and on the written request of one of the Directors, shall, call a special meeting of the Board.

7. Quorum. A majority of the number of Directors in office shall constitute a quorum for the transaction of business, but if less than a majority of the Directors then in office is present at a meeting, a majority of the Directors present, or if none are present, the Secretary

or other officer, may adjourn the meeting to a different time and place, and in such case the Secretary shall notify absent Directors of the time and place of such adjourned meeting.

8. Powers. The powers and duties of the Board ("Legislative Power"), which shall be exercised by approval of a majority of the Directors present unless otherwise specified, provided a quorum is present, shall be:

(a) To govern the business and affairs of the Authority and to establish, by a vote of at least two-thirds (2/3) of the Directors present, the policies of the Authority.

(b) To exercise all power of the Authority, including but not limited to:

(i) adopting an operating budget based upon the price previously fixed by the Board of County Commissioners for the purchase of water from the Church Ditch.

(ii) establishing a procedure and criteria by resolution for setting carriage rates for water delivery contracts, and setting said carriage rates in the event the price fixed by the Board of County Commissioners as of the date of the creation of this Authority is not sufficient to finance the proper operation and maintenance of the Church Ditch in accordance with the Authority's rules and regulations, including the costs of administrative and professional services.

(iii) establishing a method of assessment in the event carriage rates are not sufficient to finance the proper operation and maintenance of the Church Ditch in accordance with the Authority's rules and regulations, including costs of administrative and professional services. Any assessment approved by a majority of the Directors present shall be prorated among the Members according to the number of Directors for each Member.

(iv) ensuring the delivery of water to the Contractual Users of the Church Ditch pursuant to such rules and regulations as may be established by the Authority.

(c) To comply with the provisions of C.R.S. Parts 1, 5 and 6, Article 1, Title 29, as amended.

(d) To keep minutes of its proceedings.

(e) To establish bylaws of the Board and adopt, by resolution, regulations respecting the exercise of the Authority's powers and purposes.

(f) To authorize the employment of such employees, agents, consultants, and contractors, as in the discretion of the Board may be necessary, subject to the limitations of any adopted budget or assessment.

9. Voting, General Rule. Except where another method of voting is specified, each Director shall be entitled to one (1) vote.

#### **ARTICLE IV Officers and Powers**

1. Officers. The officers of the Authority shall be a President, Vice President, Secretary, Treasurer, and such other officers and assistant officers as may be authorized by the Board from time to time to perform such duties as may be approved by the Board. Officers of the Authority other than the President and Vice President need not be Directors. Each officer shall be elected upon a vote of the majority of the Board and shall serve for a term of one (1) calendar year (except that the terms of the initial officers may be less than one (1) full year) or until his/her successor is duly appointed.

2. Removal of Officers. Any officer elected by the Board may be removed from such office by the Board, with or without cause, upon the vote of a majority of the Board.

3. Duties of Officers. In addition to duties designated by the Board, the duties of the officers shall include the following:

(a) The President shall preside at all meetings of the Board, except as otherwise delegated by the Board, and shall execute all legal instruments of the Authority.

(b) The Vice President shall, in the absence of the President, or in the event of his/her inability or refusal to act, perform the duties of the President and when so acting shall have all the powers of and be subject to all the restrictions upon the President. The Vice President shall also perform such other duties as may be prescribed by the Board from time to time.

(c) The Secretary shall maintain the official records of the Authority, including the minutes of the meetings of the Board and the Executive Committee, and a register of the names and addresses of the Members, Directors and officers and shall issue notice of meetings, attest and affix the corporate seal to all documents of the Authority and perform such other duties as the Board may prescribe from time to time.

(d) The Treasurer shall serve as financial officer of the Authority and except as the Board may otherwise decide by resolution, shall be responsible for the receipt, custody, investment and disbursement of the Authority's funds and securities and for duties incident to the office of the Treasurer, and shall perform such other duties as the Board may prescribe from time to time.

4. Bonds. The Treasurer and any other officer, employee or agent of the Authority charged with responsibility for the custody of any of its funds or property shall give a fidelity bond in such sum and with such surety as the Board shall determine. The Board in its discretion may also require any other officer, agent or employee of the Authority to give a fidelity bond in

such amount and with such surety as it shall determine. The cost of such fidelity bond shall be an expense payable by the Authority.

## **ARTICLE V**

### **Successor in Interest to the Church Ditch Company**

The Authority shall be the successor in interest to the Church Ditch Company, a corporate entity previously organized by the City of Northglenn to operate and maintain the Church Ditch. As such, and to the extent permitted by law, the Authority shall be entitled to all rights and privileges and shall assume all obligations and liabilities of the Church Ditch Company under any existing contracts, and shall also assume all other obligations and liabilities of the Church Ditch Company, except to the extent the Authority is specifically authorized to engage in rate-setting pursuant to Article II, subsection (j) of this Establishing Contract.

## **ARTICLE VI**

### **Indemnification**

The Authority shall, to the extent permitted and within the limitations of the Colorado Governmental Immunity Act, indemnify and defend each Director, officer and employee of the Authority in connection with any claim or actual or threatened suit, action, or proceeding in which he/she may be involved in his/her official capacity by reason of his/her being or having been such Director, officer or employee, or by reason of any action or omission by him/her in any such capacity. The Authority shall have no obligation to indemnify and defend any such Director, officer or employee for any claim, suit, action or proceeding arising out of criminal offenses or willful and wanton misconduct of each Director, officer, or employee.

## **ARTICLE VII**

### **Amendment**

Except as hereinafter provided, this Contract and the contractual obligations and rights hereunder, shall continue in full force and effect until amended or modified by action of the governing bodies of all of the Members.

## **ARTICLE VIII**

### **Term, Termination and Withdrawal**

1. Term. This Contract shall remain in full force and effect until rescinded or terminated by action of the governing bodies.

2. Termination. In the event of the rescission or termination of this Contract and the dissolution of the Authority, all right, title and interest of the Authority in the General Assets (as hereinafter defined) of the Authority shall be conveyed to the Members who are such at the time of rescission or termination tenants-in-common subject to any outstanding liens, mortgages or other pledges of such General Assets. The interest in the General Assets of the Authority conveyed to each Member shall be distributed pro rata among the Members based upon the number of Directors for each Member. The terms "General Assets" as used herein shall include

all legal and equitable interests in real or personal property, tangible or intangible of the Authority. In no event may this Contract be rescinded or terminated or the Authority dissolved if the Authority has bonds, notes or other obligations outstanding, unless provision for full payment of such obligations, by escrow or otherwise, has been made, not in contravention of the terms of such obligations.

#### ARTICLE IX Severability

If any provision of this Contract or the application thereof to any party, person, or circumstances is held invalid, such invalidity shall not affect other provisions or applications of this Contract which can be given effect without the invalid provision or application, and to this end the provisions of this Contract, and each and every provision thereof, are declared to be severable.

#### ARTICLE X Execution of Contract

This Contract may be executed in several counterparts, each of which will be an original but all of which together shall constitute one and the same Contract.

IN WITNESS WHEREOF, the undersigned Members have caused this instrument to be executed as of this 29<sup>th</sup> day of October, 2004.

CITY OF NORTHGLENN, COLORADO

By: Kathleen Novak  
KATHLEEN NOVAK, Mayor 10-14-04  
Mayor Pro-Tem

ATTEST:

Diana L. Lentz  
DIANA L. LENTZ, CMC, City Clerk

APPROVED AS TO FORM:

Herbert C. Phillips  
HERBERT C. PHILLIPS, City Attorney

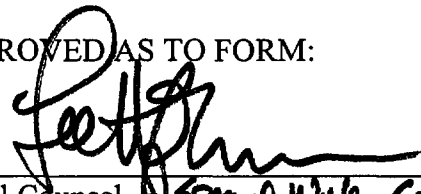
CITY OF WESTMINSTER, COLORADO

By:   
NANCY McNALLY, Mayor

ATTEST:

  
MICHELE KELLEY, City Clerk

APPROVED AS TO FORM:

  
Legal Counsel *& Special Water Counsel*

**EXHIBIT "A"**

**Dale Kralicek, President**

City of Northglenn  
11701 Community Center Drive  
Northglenn, CO 80233

**Amy Stecyk, Vice President and General Manager**

City of Northglenn  
11701 Community Center Drive  
Northglenn, CO 80233

**Dan Strietelmeier**

City of Westminster  
4800 W. 92<sup>nd</sup> Avenue  
Westminster, CO 80031



**EXHIBIT "D"**

**Church Ditch Personal Property**

**Winch for 1994 4x4 Pickup**

**1999 Dodge Ram Pickup 2500**

**2001 Dodge Ram Pickup 1500 Quad Cab 4x4**

**2001 Eco Trailer**

**Miscellaneous Hand Tools and Equipment**