COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT APPLICATION FORM

Today's Date: June 29, 2015

Hess Lateral Improvement Project

Name of Water Activity/Project

Florida Consolidated Ditch Company

Name of Applicant

Southwest Basin Roundtable

Approving Basin Roundtable(s)
(If multiple basins specify amounts in parentheses.)

Amount from Statewide Account: $736,250

Amount from Basin Account(s): $38,750

Total WSRA Funds Requested: $775,000

FEIN: 84-0204321

Application Content

Required Exhibits

A. Statement of Work, Budget, and Schedule
B. Project Map
C. As Needed (i.e. letters of support, photos, maps, etc.)

Appendices – Reference Material

1. Program Information
2. Insurance Requirements
3. WSRA Standard Contract Information (Required for Projects Over $100,000)
4. W-9 Form (Required for All Projects Prior to Contracting)

Instructions

To receive funding from the Water Supply Reserve Account (WSRA), a proposed water activity must be approved by the local Basin Roundtable **AND** the Colorado Water Conservation Board (CWCB). The process for Basin Roundtable consideration and approval is outlined in materials in Appendix 1.

Once approved by the local Basin Roundtable, the applicant should submit this application **with a detailed statement of work including budget and schedule as Exhibit A** to CWCB staff by the application deadline.

WSRA applications are due with the roundtable letter of support 60 calendar days prior to the bi-monthly Board meeting at which it will be considered. Board meetings are held in January, March, May, July, September, and November. Meeting details, including scheduled dates, agendas, etc. are posted on the CWCB website at: http://cwcb.state.co.us Applications to the WSRA Basin Account are considered at every board meeting, while applications to the WSRA Statewide Account are only considered at the March and September board meetings.

When completing this application, the applicant should refer to the WSRA Criteria and Guidelines available at: http://cwcb.state.co.us/LoansGrants/water-supply-reserve-account-grants/Documents/WSRACriteriaGuidelines.pdf. In addition, the applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests .

The application, statement of work, budget, and schedule **must be submitted in electronic format** (Microsoft Word or text-enabled PDF are preferred) and can be emailed or mailed on a disk to:

Craig Godbout - WSRA Application
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203
Craig.godbout@state.co.us

If you have questions or need additional assistance, please contact Craig Godbout at: 303-866-3441 x3210 or craig.godbout@state.co.us.

Water Supply Reserve Account – Application Form
Revised October 2013

Part I. - Description of the Applicant (Project Sponsor or Owner);

1. Applicant Name(s): Florida Consolidated Ditch Company

Mailing address: c/o Wright Water Engineers, Inc.
1666 N. Main Avenue, Suite C
Durango, CO 81301

FEIN #: 84-0204321

Primary Contact: Peter Foster Position/Title: Senior Project Engineer

Email: pfoster@wrightwater.com

Phone Numbers: Cell: 970-749-0256 Office: 970-259-7411

Alternate Contact: Roger Cole Position/Title: FCDC Board President

Email: coleranchhay@durango.net

Phone Numbers: Cell: (970) 749-1692 Office:

2. Eligible entities for WSRA funds include the following. What type of entity is the Applicant?

[ ] Public (Government) – municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities and the local entity should be the grant recipient. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.

[ ] Public (Districts) – authorities, Title 32/special districts, (conservancy, conservation, and irrigation districts), and water activity enterprises.

[x] Private Incorporated – mutual ditch companies, homeowners associations, corporations.

[ ] Private individuals, partnerships, and sole proprietors are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.

[ ] Non-governmental organizations – broadly defined as any organization that is not part of the government.

3. Provide a brief description of your organization

The Florida Consolidated Ditch Company (FCDC) is located in the San Juan River/Animas River Basins of La Plata County, Colorado (see Figure 1). The FCDC is an incorporated mutual ditch company formed in 2014 through the consolidation of four existing mutual ditch companies (Canal Companies): The Florida Farmers Ditch Company (formed in 1889) and the Florida Canal Company (formed in 1893) were formed to provide adjudicated irrigation water to agricultural water users on the Florida Mesa, near Durango, Colorado. The Florida Enlargement Canal Company (1908) and Florida Co-Operative Ditch Company (1910) expanded delivery of agricultural water to farmers on the Florida Mesa.

In the 1930s, the U.S. Bureau of Reclamation (USBR) conducted feasibility studies for construction of the Florida Project, and Lemon Reservoir was constructed in 1963 (as part of the Colorado River Storage Project), which provides supplemental and sole-supply Project water to irrigate up to 19,450 acres of agricultural land, most of which is located on the Florida Mesa and is served by the FCDC conveyance system. Lemon Reservoir is approximately 0.5 miles wide and 3 miles long with a surface area of 622 acres, and the total capacity of the reservoir is 40,146 acre-feet (AF). In addition to the construction of Lemon Dam, the USBR work included rebuilding the Florida Farmers Diversion Dam, enlarging 3.9 miles of the Florida Farmers Ditch to its confluence with the Florida Canal, enlarging 1.8 miles of the Florida Canal, and building a new lateral system to serve about 3,360 acres of land on the southeast portion of the Florida Mesa. Including the Southern Ute Indian Tribe, there are 1,125 Project water users.

The FCDC provides water from the Florida River to 280 shareholders and serves 18,700 acres of irrigated agriculture. The total of the pre-Compact water rights decreed for the four ditches is 155 cfs for irrigation purposes (Table 3). In addition, the FCDC provides water to Pastorius Reservoir, which is a Colorado State Wildlife Area. Based on Colorado Division of Water Resources diversion records (1964-2014) for the Florida Canal and Florida Farmers Ditch, during an average year the FCDC system carries 26,400 AF of adjudicated water and 16,600 AF of Project water between April and October, or 43,000 AF per irrigation season.

The FCDC conveyance system includes 82 miles of canals, ditches and laterals. In order to begin improvements to the conveyance system in 2009, the Canal Companies assessed a fee of $1,200 per cfs, which represents an increase of 100 percent over the 2008 annual assessment of $600 per cfs. The FCDC has since raised the annual assessment to $1,460 per cfs. The FCDC budget is supplemented by the Florida Water Conservancy District (FWCD), which is the operating agency for the Florida Project.

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

N/A

5. Successful applicants will have to execute a contract with the CWCB prior to beginning work on the portion of the project funded by the WSRA grant. In order to expedite the contracting process the CWCB has established a standard contract with provisions the applicant must adhere to. A link to this standard contract is included in Appendix 3. Please review this contract and check the appropriate box.

   [X] The Applicant will be able to contract with the CWCB using the Standard Contract

   [ ] The Applicant has reviewed the standard contract and has some questions/issues/concerns. Please be aware that any deviation from the standard contract could result in a significant delay between grant approval and the funds being available.

6. The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

   N/A

Part II. - Description of the Water Activity/Project

1. What is the primary purpose of this grant application? (Please check only one)

	Nonconsumptive (Environmental or Recreational)
X	Agricultural
	Municipal/Industrial
	Needs Assessment
	Education
	Other Explain:

2. If you feel this project addresses multiple purposes please explain.

This is an irrigation efficiency project that primarily addresses agricultural purposes (firming pre-Compact water supply, maintaining the irrigation season length in times of drought and reducing electricity costs for farmers) but also benefits environmental and municipal and industrial purposes by virtue of saving water for these other uses and increasing the water quality of return flows to the Animas River.

3. Is this project primarily a study or implementation of a water activity/project? (Please check only one)

	Study	X	Implementation

4. To catalog measurable results achieved with WSRA funds can you provide any of the following numbers?

	New Storage Created (acre-feet)
	New Annual Water Supplies Developed, Consumptive or Nonconsumptive (acre-feet)
662 during drought	Existing Storage Preserved or Enhanced (acre-feet)
	Length of Stream Restored or Protected (linear feet)
17,400	Length of Pipe/Canal Built or Improved (linear feet)
662	Efficiency Savings (acre-feet/year)
	Area of Restored or Preserved Habitat (acres)
136.8	Other -- Explain: Total Dissolved Solids (salt) load to Animas River reduced (tons)

4. To help us map WSRA projects please include a map (Exhibit B) and provide the general coordinates below:

Latitude: 37.200629 Longitude: -107.806598

5. Please provide an overview/summary of the proposed water activity (no more than one page). Include a description of the overall water activity and specifically what the WSRA funding will be used for. A full **Statement of Work** with a detailed budget and schedule is required as **Exhibit A** of this application.

The purposes of this project are to 1) improve the efficiency of the canal conveyance system and reduce ditch loss through seepage and evaporation, 2) provide irrigation water at reduced operational expense to promote continued commercial agricultural uses, 3) firm the agricultural pre-Compact water supplies through increased efficiency as opposed to developing additional water supplies (i.e. enlarging Lemon Reservoir), 4) develop additional sources of water for other beneficial uses in the basin, and 5) increase water quality by reducing the salt load into the Animas River.

The Hess Lateral, part of the FCDC water conveyance system, is located 7 miles south of Durango, CO on the Florida Mesa, within the Florida Water Conservancy District (Figure 2). The Hess Lateral serves approximately 75 water users irrigating over 1,500 acres of primarily hay and pasture lands. The Hess Lateral is a 3.3 mile-long open ditch that delivers up to 17.5 cfs of irrigation water.

This project entails replacing the Hess Lateral open earth-lined ditch with buried gravity-pressurized pipeline. This will reduce seepage losses and will provide pressurized water to existing sprinkler systems on the Lateral. The pressurized pipeline will eliminate most of the energy currently used for pumping and will provide the opportunity for pressurized systems to be installed on fields that are currently flood irrigated, further increasing water efficiency and reducing salt leaching. The Natural Resources Conservation Service (NRCS) estimates a load reduction of total dissolved solids from this project of 136.8 tons per year.

The Colorado Department of Transportation (CDOT) plans on expanding Colorado Highway 550 in the near future. This expansion requires relocating approximately 10,000 feet of the Hess Lateral to outside of the Highway Right-of-Way. CDOT is cooperating with the FCDC on the relocation and has committed $950,000 to the project. Funding is requested to leverage CDOT's participation and replace the full 3.3 mile-long open ditch with pressurized pipe.

Specifically, WSRA funding is requested as described below:

1. Basin Account request: Funding will be used for CWCB Water Project Loan Program feasibility study. This feasibility study requires a registered Professional Engineer to perform an alternatives analysis and to provide a stamped preliminary engineering design to a 30% design-level for the selected alternative. It also includes a financial feasibility component.
2. Statewide Account request: Funding will be used for: 1) completion of preliminary engineering design and the CWCB Water Project Loan feasibility study, 2) final engineering design, 3) preparation of project plans and specifications, 4) final environmental permitting, 5) construction of the canal and ditch lining project, and 6) engineering services during construction.

Part III. – Threshold and Evaluation Criteria

1. Describe how the water activity meets these **Threshold Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines.)

   a) The water activity is consistent with Section 37-75-102 Colorado Revised Statutes.[1]

   This design and construction project is for a ditch with existing decreed water rights and will not result in an expansion of irrigated acreage. Return flows from the Hess Lateral accrue to the Animas River just upstream of the New Mexico state line. This reach of the Animas River I under-appropriated and is designated as non-critical by the State Engineer's Office. Reduction in return flows from increased irrigation efficiency shall not impact or injure vested absolute or conditional water rights and will be in compliance with C.R.S. 37-75-102.

   b) The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRTs evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

   Please refer to the attached letter of approval from the SW Basin Roundtable dated July 17, 2015.

[1] 37-75-102. Water rights - protections. (1) It is the policy of the General Assembly that the current system of allocating water within Colorado shall not be superseded, abrogated, or otherwise impaired by this article. Nothing in this article shall be interpreted to repeal or in any manner amend the existing water rights adjudication system. The General Assembly affirms the state constitution's recognition of water rights as a private usufructuary property right, and this article is not intended to restrict the ability of the holder of a water right to use or to dispose of that water right in any manner permitted under Colorado law. (2) The General Assembly affirms the protections for contractual and property rights recognized by the contract and takings protections under the state constitution and related statutes. This article shall not be implemented in any way that would diminish, impair, or cause injury to any property or contractual right created by intergovernmental agreements, contracts, stipulations among parties to water cases, terms and conditions in water decrees, or any other similar document related to the allocation or use of water. This article shall not be construed to supersede, abrogate, or cause injury to vested water rights or decreed conditional water rights. The General Assembly affirms that this article does not impair, limit, or otherwise affect the rights of persons or entities to enter into agreements, contracts, or memoranda of understanding with other persons or entities relating to the appropriation, movement, or use of water under other provisions of law.

c) The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes.[2] The Basin Roundtable Chairs shall include in their approval letters for particular WSRA grant applications a description of how the water activity will assist in meeting the water supply needs identified in the basin roundtable's consumptive and/or non-consumptive needs assessments.

Major recommendations for the entire state from the Statewide Water Supply Initiative (SWSI) included: (1) actively encouraging projects to address multiple purposes and (2) supporting the implementation of multi-purpose agricultural water projects. The Southwest Basin Roundtable (Basin), in its July 2014 needs assessment report, also observed the importance of projects that address multiple purposes. The report recommended integration of consumptive and non-consumptive needs into its Identified Projects and Processes (IPP) database in order to provide the Basin with tools to explore opportunities that meet both need types.

The Basin's March 2015 draft IPP list included the following projects that are directly relevant to the proposed Hess Lateral water activity, in numerical order:

- Ditch Company Improvement and Efficiency Projects (Multi-Basin IPP No. 4-MB)
- Florida Water Conservancy District – Irrigation system efficiency improvements by the Florida Mesa Ditch Companies that would firm up agricultural delivery and provide additional water supply for those other uses in Lemon Reservoir through the reduction of losses in the delivery system (IPP No. 4-A).
- Lemon Reservoir Ditch Companies Improvements – There is the potential to upgrade these ditches (lining and piping) to conserve water in Lemon for decreed purposes (IPP No. 13-A).
- Animas Watershed Partnership – The Partnership members are stewards in protecting and improving the quality of water resources in the Animas Watershed (IPP No. 22-A).
- Hess Ditch Lateral Replacement (IPP No. 28-A).

The Hess Lateral Improvement Project is listed as one of the Basin IPPs. It is also a multi-purpose project that has benefits for irrigation efficiency, water quality, firming supply for agricultural producers, reduced operations and maintenance costs, and reduced electricity costs currently incurred by irrigators who are pumping for sprinkler irrigation.

[2] 37-75-104 (2)(c). Using data and information from the Statewide Water Supply Initiative and other appropriate sources and in cooperation with the on-going Statewide Water Supply Initiative, develop a basin-wide consumptive and nonconsumptive water supply needs assessment, conduct an analysis of available unappropriated waters within the basin, and propose projects or methods, both structural and nonstructural, for meeting those needs and utilizing those unappropriated waters where appropriate. Basin Roundtables shall actively seek the input and advice of affected local governments, water providers, and other interested stakeholders and persons in establishing its needs assessment, and shall propose projects or methods for meeting those needs. Recommendations from this assessment shall be forwarded to the Interbasin Compact Committee and other basin roundtables for analysis and consideration after the General Assembly has approved the Interbasin Compact Charter.

d) Matching Requirement: For requests from the **Statewide Fund**, the applicants will be required to demonstrate a **25 percent** (or greater) match of the total grant request from the other sources, including by not limited to Basin Funds. A minimum match of 5% of the total grant amount shall be from Basin funds. A minimum match of 5% of the total grant amount must come from the applicant or 3rd party sources. Sources of matching funds include but are not limited to Basin Funds, in-kind services, funding from other sources, and/or direct cash match. Past expenditures directly related to the project may be considered as matching funds if the expenditures occurred within 9 months of the date the contract or purchase order between the applicant and the State of Colorado is executed. Please describe the source(s) of matching funds. (NOTE: These matching funds should also be reflected in your Detailed Budget in **Exhibit A** of this application)

Funding Entity	Amount	Percent of Total Grant Request	Percent of Project Total Cost
Colorado Department of Transportation (CDOT)	$ 950,000	123%	38%
CWCB Water Project Loan	$775,000	100%	31%
WSRA Statewide Fund	$736,250	95%	29%
SW Basin Fund	$38,750	5%	2%
TOTAL	**$2,500,000**		**100%**

As shown in the table above, matching funds for this project come will from CDOT (see attached letter of commitment) and a CWCB Water Project loan (see attached loan pre-qualification application and letter of approval). The ratio of loan to total grant request (SW Basin Fund + Statewide Fund) is 1:1. The SW Basin Fund request is 5% of the total grant request.

2. For Applications that include a request for funds from the **Statewide Account**, describe how the water activity/project meets all applicable **Evaluation Criteria.** (Detailed in Part 3 of the Water Supply Reserve Account Criteria and Guidelines and repeated below.) Projects will be assessed on how well they meet the Evaluation Criteria. **Please attach additional pages as necessary.**

Evaluation Criteria – the following criteria will be utilized to further evaluate the merits of the water activity proposed for funding from the Statewide Account. In evaluation of proposed water activities, preference will be given to projects that meet one or more criteria from each of the three "tiers" or categories. Each "tier" is grouped in level of importance. For instance, projects that meet Tier 1 criteria will outweigh projects that only meet Tier 3 criteria. The applicant should also refer to the Supplemental Scoring Matrix applied to Evaluation Criteria Tiers 1-3 for Statewide Account requests. WSRA grant requests for projects that may qualify for loans through the CWCB loan program will receive preference in the Statewide Evaluation Criteria if the grant request is part of a CWCB loan/WSRA grant package. For these CWCB loan/WSRA grant packages, the applicant must have a CWCB loan/WSRA grant ratio of 1:1 or higher. Preference will be given to those with a higher loan/grant ratio.

Tier 1: Promoting Collaboration/Cooperation and Meeting Water Management Goals and Identified Water Needs

a. The water activity addresses multiple needs or issues, including consumptive and/or non-consumptive needs, or the needs and issues of multiple interests or multiple basins. This can be demonstrated by obtaining letters of support from other basin roundtables (in addition to an approval letter from the sponsoring basin).

This water activity will increase the efficiency of irrigation water conveyance and on-farm application, resulting in 1) increased supply and firming of supply due to a reduction in seepage and evaporative losses and 2) a firmer supply for agricultural producers (the Hess Lateral is at the end of the 82-mile FCDC system). More efficient on-farm use of irrigation water will come from the pressurization gained by piping the current open ditch, which will allow conversion of currently flood-irrigated lands to sprinkler application and thus conserve additional water.

Increasing the efficiency of the Hess Lateral ditch will increase water supply. Supplemental releases of water from Lemon Reservoir in order to maintain or prolong the irrigation season will be reduced. The reduction in Florida Project water releases from Lemon Reservoir will firm agricultural supply for other FCDC shareholders and will be used to close the gaps of other water needs within the FWCD. The FWCD has a decree for 114 AF of Project water that may be used for augmentation and a decree for 2500 AF of Project water that may be used for a variety of uses after satisfying irrigation rights including augmentation, municipal and industrial (M&I), fire, fish and wildlife. Lemon Reservoir currently provides a source of donated water from these non-irrigation pools for CWCB-decreed instream flows on the Florida River.

In addition to these needs addressed by the Hess project, more efficient on-farm application methods will improve the water quality of return flows to the Animas River. The Natural Resources Conservation Service estimated that the Hess Lateral Improvement Project will reduce the load of total dissolved solids (salts) by 136.8 tons.

b. The number and types of entities represented in the application and the degree to which the activity will promote cooperation and collaboration among traditional consumptive water interests and/or non-consumptive interests, and if applicable, the degree to which the water activity is effective in addressing intrabasin or interbasin needs or issues.

The proposed Hess Lateral Improvement Project will address a diversity of water supply needs within the Florida River basin as described in 2(a) and as identified by the IPPs listed in 1(c) above. The project also addresses the multi-basin IPP 4-MB as detailed in 1(c). The environmental, water quality improvement aspect of this project (detailed in 2(a)) has benefits to the Animas and San Juan Rivers within the Southwest Basin. This project firms agricultural water supply, thus protecting pre-Compact rights (Table 3).

The interests of stakeholders represented in the application include the 75 shareholders on the Hess Lateral, the additional 200+ shareholders in the Florida Consolidated Ditch Company, the 1,125 Florida Project water users including the Southern Ute Indian Tribe, and the Florida Water Conservancy District. The activity will promote cooperation between the FCDC, the FWCD, the Southern Ute Indian Tribe, the Colorado Department of Transportation, the Natural Resources Conservation Service, the Colorado Division of Wildlife, La Plata County and the USBR, as all of these entities will participate in some manner in the activity.

c. The water activity helps implement projects and processes identified as helping meet Colorado's future water needs, and/or addresses the gap areas between available water supply and future need as identified in SWSI or a roundtable's basin-wide water needs assessment.

As described in Part III, 1(c) above, major recommendations for the entire state from the Statewide Water Supply Initiative (SWSI) included: (1) actively encouraging projects to address multiple purposes and (2) supporting the implementation of multi-purpose agricultural water projects. The Southwest Basin Roundtable (Basin), in its July 2014 needs assessment report, also observed the importance of projects that address multiple purposes. The report recommended integration of consumptive and non-consumptive needs into its Identified Projects and Processes (IPP) database in order to provide the Basin with tools to explore opportunities that meet both need types.

Directly relevant to the proposed Hess Lateral water activity, the Basin's March 2015 draft IPP list included the following projects in numerical order:

- Ditch Company Improvement and Efficiency Projects (Multi-Basin IPP No. 4-MB)

- Florida Water Conservancy District – Irrigation system efficiency improvements by the Florida Mesa Ditch Companies that would firm up agricultural delivery and provide additional water supply for those other uses in Lemon Reservoir through the reduction of losses in the delivery system (IPP No. 4-A).

- Lemon Reservoir Ditch Companies Improvements – There is the potential to upgrade these ditches (lining and piping) to conserve water in Lemon for decreed purposes (IPP No. 13-A).

- Animas Watershed Partnership – The Partnership members are stewards in protecting and improving the quality of water resources in the Animas Watershed (IPP No. 22-A).

- Hess Ditch Lateral Replacement (IPP No. 28-A).

The Hess Lateral Improvement Project is listed as one of the Basin IPPs. It is also a multi-purpose project that has benefits for irrigation efficiency, water quality, firming supply for agricultural producers, reduced operations and maintenance costs, and reduced electricity costs currently incurred by irrigators who are pumping for sprinkler irrigation.

Additionally, the Hess Lateral project will help meet the growing M&I water need within the FWCD as water savings from increased irrigation efficiency can be used for augmentation purposes, a decreed use of Project water. Currently, the FWCD has 14 third-party contracts in place or in process for a total of 45.5 acre-feet of water annually for municipal and commercial well augmentation use. As residential and commercial development continue to increase within the FWCD, the demand for augmentation water continues to grow. The Hess Lateral Improvement Project will help provide water supply for those uses while maintaining the water supply for agricultural water use.

Tier 2: Facilitating Water Activity Implementation

d. **Funding from this Account will reduce the uncertainty that the water activity will be implemented. For this criterion the applicant should discuss how receiving funding from the Account will make a significant difference in the implementation of the water activity (i.e., how will receiving funding enable the water activity to move forward or the inability obtaining funding elsewhere).**

Approximately 1.9 miles of the 3.3 mile-long Hess Lateral must be moved in the next year out of the CDOT Highway 550 right-of-way (ROW) for the Hwy 550 corridor widening project. CDOT is in the process of acquiring the needed easements for this, and has committed $950,000 to the FCDC specifically for engineering design review and construction of a like, open earth-lined ditch. With this committed funding as match, the FCDC wishes to acquire the additional funding needed to improve the entire length of the Hess Lateral, including those sections that are not in the CDOT ROW, in order to capitalize on the opportunity for increased water efficiency, water supply and water quality gains, in addition to a host of other benefits previously described.

The FCDC has explored, and will continue to explore, several other sources of grant funding, such as from the NRCS and the USBR. The FCDC submitted an unsuccessful application to the NRCS Regional Conservation Partnership Program (RCPP) for this project last year. The NRCS will provide technical assistance to individual irrigators throughout this Hess Lateral Improvement Project to support upgrades to individual service lines.

In summary, the FCDC has not been able to identify any other sources of funding in addition to CDOT. Thus, without this requested WSRA funding, the improvement activity would likely not occur and the FCDC will have only portions of a new, similar earth-lined ditch.

e. The amount of matching funds provided by the applicant via direct contributions, demonstrable in-kind contributions, and/or other sources demonstrates a significant & appropriate commitment to the project.

CDOT is providing $950,000 to the project. The applicant is providing $775,000 through debt service payment on a CWCB Water Project Loan. This represents 69% of the total estimated project cost. The applicant is requesting 31% of the total estimated project cost as a grant from the WSRA account.

Tier 3: The Water Activity Addresses Other Issues of Statewide Value and Maximizes Benefits

f. The water activity helps sustain agriculture & open space, or meets environmental or recreational needs.

This activity meets the following needs:

1. **Sustains agriculture**. Encasing the Hess Lateral in pipe will provide gains in efficiency of irrigation water conveyance through a reduction in seepage and evaporative losses. These efficiencies will provide a firmer supply for agricultural producers (the Hess Lateral is at the end of the 82-mile FCDC system) and the ability to extend the irrigation season or maintain in years of drought. The efficiencies will also increase water supply available for other agricultural users within the FCDC.
2. **Meets environmental needs**. The NRCS recently estimated that the influx of total dissolved solids (salts) into the Animas River from Hess Lateral irrigation return flows was approximately 136.8 tons per year. Encasing the Hess Lateral in pipe will pressurize the flow, allowing current flood-irrigators to convert to other irrigation practices such as center-pivot sprinklers or side rolls which will substantially curtail the leaching of salts. (Currently the electrical cost for pumping is prohibitive for some irrigators to convert from flood irrigation.) These on-farm efficiency improvements will also result in more water available for instream uses.
3. **Meets M&I needs**. There is an increasing demand for Project water to augment residential and commercial wells as those uses increase within the FWCD. The FWCD has a decreed 2500 AF water right to use savings from efficiency improvements such as this project to supply water for multiple uses.
4. **Promotes maximum utilization of state waters**. The Hess Lateral Improvement Project is an efficiency project that will provide benefits for agricultural, environmental and M&I water use as described above and will benefit downstream users in New Mexico and the Lower Basin states through increased water quality.

g. The water activity assists in the administration of compact-entitled waters or addresses problems related to compact entitled waters and compact compliance and the degree to which the activity promotes maximum utilization of state waters.

The four ditch companies that consolidated to become the FCDC: Florida Farmers, Florida Co-operative, Florida Canal and Florida Canal Enlargement, all have water rights with appropriation dates that predate the Colorado River Compact. The proposed water activity helps sustain continued

irrigation under pre-compact water rights. In addition, return flows that accrue to the Animas and Florida River may not be utilized before entering New Mexico. This project will additionally benefit downstream users through increased water quality (reduction in leached salts). Thus this activity promotes maximum utilization of state waters.

h. The water activity assists in the recovery of threatened and endangered wildlife species or Colorado State species of concern.

The Southwest Willow Flycatcher is present in the study area. In addition, two endangered species of fish (Colorado Pike Minnow and Razor Back Sucker) are located in the San Juan River downstream of the project area. Currently, there is not readily available water supply for wetland mitigation or wildlife enhancement or rehabilitation projects in the Florida River Basin. Water supplies made available through efficiencies gained by this project may be used for wetlands and wildlife purposes in the future.

i. The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested.

This water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested as follows:

a) The project was identified as a Southwest Basin IPP, and CDOT is contributing 40% of the total project cost. The project cost estimate was based on estimates provided by CDOT and the NRCS and reviewed by a licensed professional engineer at the conceptual level.

b) The applicant has an excellent track record of implementing similar projects with quantified water savings. Recently, the applicant successfully completed two similar large-scale conveyance system efficiency improvements at the head of the system. These projects were also grant-funded and total project cost was $1,611,500 (1.13 miles) and $1,928,200 (1.10 miles). These projects were completed on budget and on time. Between 2012 and 2013 the USBR conducted a pre- and post-ditch loss study on one of the ditch improvement (ditch lining) projects to quantify water savings from the improvements. The *Water Savings Verification Results for Florida Farmers Ditch Company Canal Lining Project*, USBR Report WEEG-11-141, was published in October 2014. The report found a 95% savings from the pre-project seepage water loss (12.77 AF per day reduced to 0.63 AF per day), or a total average irrigation season savings of 1,499 AF/year from one of the two projects. Applying a 95% savings to the second project increases the average irrigation season savings to a total of nearly 3,000 AF per year.

   The Hess Lateral project, at 3.3 miles, is estimated to have a lower project cost due to efficiencies gained in doing the entire length at once, due to leverage work CDOT has already completed, and due to lessons learned from the first two projects.

c) The applicant has retained the professional engineering firm Wright Water Engineers to design and oversee the project. WWE has a depth of experience with similar projects. In addition, the applicant

has active participation from the highway engineering company HDR which has a depth of experience with coordinating highway projects including right-of-way utilities mitigation.

d) The water activity is complimentary to and supports the CWCB instream flow program: there are two instream flow water rights in the Florida River held by the CWCB. The lower reach of the Florida River is currently administered as a under appropriated stream (non-critical) allowing for commercial well permits without plans of augmentation. As discussed above there is an increasing demand for augmentation supplies in the Florida River, which results in friction among water interests including the CWCB instream flow. This water activity will optimize current water supplies and provide water supplies for future beneficial uses including augmentation and fisheries, thus benefiting the CWCB instream flow program. Lemon Reservoir is currently a source of donation for the CWCB Florida River decreed instream flow water right.

j. The water activity is complimentary to or assists in the implementation of other CWCB programs.

The water activity is complimentary to or assists in the implementation of other CWCB programs by providing more water available for the instream flow reaches on the Florida River, as discussed in paragraph i (d) above.

Part IV. – Required Supporting Material

1. **Water Rights, Availability, and Sustainability** – This information is needed to assess the viability of the water project or activity. Please provide a description of the water supply source to be utilized, or the water body to be affected by, the water activity. This should include a description of applicable water rights, and water rights issues, and the name/location of water bodies affected by the water activity.

The Florida River, including Lemon Reservoir, is the source of water for the Florida Mesa. The mean annual yield of the Florida River below Lemon Dam is approximately 69,000 AF and 25,500 AF during a very dry year (2002 drought).

Florida River natural streamflow is used for adjudicated water rights of the Florida Mesa Canals. When natural streamflow declines and the adjudicated water is curtailed, Florida Project water is released from Lemon Reservoir as supplemental water for the Florida Mesa Canals. Irrigators on the Florida Mesa that do not have adjudicated water rights rely on Project water releases for their sole supply.

The FCDC is decreed a total of 155 cfs for irrigation purposes. These are pre-Compact water rights, a list of which is provided in Table 3.

On average, the adjudicated water rights of the Florida Mesa Canal Companies divert 26,400 AF per year and the Florida Project delivers 16,600 AF of water to the Florida Mesa through the FCDC canal conveyance system. Thus a total of 43,000 AF of adjudicated and Project water is delivered through the Florida Mesa Canal Companies conveyance system during an average irrigation season. During the 2002 drought, 26,156 AF of both adjudicated and Project water was diverted by the Florida Mesa Canal Companies.

On average, the Hess Lateral conveys approximately 12% of the FCDC system water: 2,855 AF/year of adjudicated water (10.8% of the FCDC total adjudicated water) and 2,238 AF/year of Project water (13.5% of the total Project water delivered through the FCDC system).

The NRCS, using its Farm Irrigation Rating Tool model, estimated a 13 percent loss from the Hess Lateral due to seepage. The total average annual diversion of 5,093 AF multiplied by an average ditch loss of 13 percent results in 662 AF of adjudicated and Project water lost each year through seepage.

2. Please provide a brief narrative of any related studies or permitting issues.

   a. In 1988, a USBR conducted the Retrofit Appraisal Study (R&B Study). Numerous options for rehabilitation of the aging canal system were outlined, including: Clean and reshape the canal prism; Rehabilitate the canal prism and install compacted earth lining; Rehabilitate the canal prism and install a non-reinforced concrete lining; Replace the canal with pipeline sized to take advantage of available gravity-induced pressure; Replace the existing canal with a pipeline to eliminate the canal and its associated maintenance. Costs to implement recommendations of the R&B study were estimated at $10,685,000 (1988 dollars), which would have required a repayment contract from the irrigators. Due to the high cost proposed in the study, inability to pay for the improvements, and lack of community support, the recommendations of the R&B study were not pursued.

   b. The FWCD adopted a water conservation plan in January of 1989. A number of the FCDC water

conservation and management measures put forth in the plan were completed, including the installation of water measuring devices at selected sites and the installation of a hydropower unit at Lemon Dam. Based on the plan, the FCDC has been using Polyacrylamide (PAM) to reduce seepage in the Canals in selected canal reaches; however, PAM only has a one-year life span, and needs to be re-applied annually.

c. The Bureau of Reclamation conducted a surface water budget study in 1994, written by Darrel Dyke of the Denver Technical Service Center. However, the water budget was generalized, and literature (or estimated) values were used for seepage and administrative losses.

d. In December 2006, Wright Water Engineers, Inc. (WWE) authored a Water Conservation and Management Plan for the FWCD and the FCDC. The Water Conservation and Management Plan provides a comprehensive summary of all work done on the Florida Mesa. Costs from the R&B Study were updated to 2006 dollars, summaries were provided from public meetings held during 2006, and recommendations were provided for a road map to completion of the canal rehabilitation project that included conducting a ditch loss study.

e. In October 2010, WWE authored a ditch loss study that evaluated historical flow data and canal O&M records to identify sections of the conveyance system primarily north of Pastorius Reservoir experiencing significant water loss. The study also examined soil characteristics and prioritized the loss sections that had high soil permeability. The study provided a review of potential environmental impacts of performing improvements and conceptual cost estimates to make the improvements. As a result of this study, the FCDC developed a ditch improvement program for the study area and has used this since 2010 as its basis for prioritizing ditch improvement projects and seeking funding for the ditch improvement projects similar to the Hess Lateral project. The Hess Lateral is located south of the study area.

f. Between 2012 and 2013 the USBR conducted a pre- and post-ditch loss study on one of the ditch improvement (ditch lining) projects to quantify water savings from the improvements. The *Water Savings Verification Results for Florida Farmers Ditch Company Canal Lining Project*, USBR Report WEEG-11-141, was published in October 2014. The report found a 95% savings from the pre-project seepage water loss (12.77 AF per day reduced to 0.63 AF per day), or a total average irrigation season savings of 1,499 AF/year.

3. Statement of Work, Detailed Budget, and Project Schedule

The statement of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the statement of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. **Please note that costs incurred prior to execution of a contract or purchase order are not subject to reimbursement**. All WSRA funds are disbursed on a reimbursement basis after review invoices and appropriate backup material.

Please provide a detailed statement of work using the template in Exhibit A. Additional sections or modifications may be included as necessary. Please define all acronyms and include page numbers.

Please see the attached Scope of Work, Budget and Project Schedule

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report may contain photographs, summaries of meetings and engineering reports/designs.

PAYMENT

Payment will be made based on actual expenditures and invoicing by the applicant. Invoices from any other entity (i.e. subcontractors) cannot be processed by the State. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 10 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed. All products, data and information developed as a result of this grant must be provided to the CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and help promote the development of a common technical platform.

The above statements are true to the best of my knowledge:

Signature of Applicant:

Roger Cole

Print Applicant's Name: Roger Cole, Florida Consolidated Ditch Company Board President on behalf of the Florida Consolidated Ditch Company

Project Title: Hess Lateral Improvement Project

Return an electronic version (hardcopy may also be submitted) of this application to:

Craig Godbout – WSRA Application
Colorado Water Conservation Board
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Denver, CO 80203
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