COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT
2007-2008 GRANT APPLICATION FORM

Amended July 22, 2010

Florida Canal, Florida Canal Enlargement, Florida Co-operative Ditch, and Florida Farmers Ditch, Canal Seepage Reduction Program: Southwest Basin

Name of Water Activity/Project **River Basin Location**

$775,000		Basin Account		Yes
	X	Statewide Account		No
Amount of Funds Requested	Please Check Applicable Box		Approval Letter Signed By Roundtable Chair and Description of Results of Evaluation and Approval Process	

*** For the Basin Account, the Application Deadline is 60 Days Prior to the Bimonthly CWCB meeting. The CWCB meetings are posted at www.cwcb.state.co.us and are generally the third week of the month.**

*** For the Statewide Account, the Application Deadline is 60 Days Prior to the March and September CWCB Board Meetings.**

* In completing the application you may attach additional sheets if the form does not provide adequate space. If additional sheets are attached please be sure to reference the section number of the application that you are addressing (i.e., A.1. etc.).

Instructions: This application form must be submitted in electronic format (Microsoft Word or Original PDF are preferred). The application can be emailed or a disc can be mailed to the address at the end of the application form. The Water Supply Reserve Account Criteria and Guidelines can be found at http://cwcb.state.co.us/IWMD/. **The criteria and guidelines should be reviewed and followed when completing this application**. You may attach additional sheets as necessary to fully answer any question, or to provide additional information that you feel would be helpful in evaluating this application. Include with your application a cover letter summarizing your request for a grant. If you have difficulty with any part of the application, contact Todd Doherty of the Intrastate Water Management and Development (Colorado Water Conservation Board) for assistance, at (303) 866-3441 ext.3210 or email Todd at todd.doherty@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed water activity. If this is not the case, contact the Todd Doherty before completing this application.

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

1. Applicant Name(s): Florida Canal, Florida Farmers Ditch, Florida Enlargement Ditch, and the Florida Co-operative Ditch Companies

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

Taxpayer ID#: Email address: pfoster@wrightwater.com

Phone Numbers: Business: (970) 259-7411

Home:

Fax: (970) 259-8758

2. Person to contact regarding this application if different from above:

Name: Peter Foster, Wright Water Engineers, Inc.

Position/Title P.E., Engineer for Florida Mesa Canal Companies

3. Provide a brief description of your organization below: see "Description of Applicant" in Part 2 of Criteria and Guidance for required information.

The Florida Farmers Ditch Company was formed in 1889, and the Florida Canal Company was formed in 1893, in order to provide adjudicated irrigation water to agricultural water users on the Florida Mesa, near Durango, Colorado. The Florida Enlargement Canal Company and Florida Co-Operative Ditch Company was formed in 1908 and 1910 respectively, which expanded delivery of agricultural water to farmers on the Florida Mesa (a copy of the articles of incorporation and bylaws are attached). For purposes of this application, the Florida Farmers Ditch Company, the Florida Canal Company, the Florida Enlargement Canal Company and the Florida Co-Operative Ditch Company shall collectively be referred to as the Florida Mesa Canal Companies. The Florida Mesa Canal Companies are located in La Plata County (See Figure 1).

Collectively the Florida Mesa Canal Companies provide water to 329 shareholders serving 18,700 acres of irrigated agriculture. The Florida Farmers Ditch is decreed for 45 cfs, Florida Canal is decreed for 40 cfs, Florida Cooperative Ditch Company is decreed for 30 cfs, and the Florida Canal Enlargement is decreed for 40 cfs for a total decreed rate of flow of 155 cfs for irrigation purposes. In addition, the Florida Mesa Canal Companies provide water to Pastorius Reservoir, which is a Colorado State Wildlife Area. On average, the Florida Mesa Canal Companies deliver 24,125 Acre-Feet per year.

The Florida Mesa Canal Companies conveyance system includes 86.5 miles of canals, ditches and laterals (see Figure 2). In order to begin improvements to the conveyance system in 2009, the Florida Mesa Canal Companies have 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 Florida Mesa Canal Companies budgets are supplemented by the Florida Water Conservancy District (FWCD), which is the operating agency for the Florida Project.

In the 1930's, 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 Projects), which provides supplemental irrigation water for 19,450 acres of agricultural land. 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. 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 973 project users which during an average year are delivered approximately 24,360 AF of water to users located on the Florida Mesa. This project water is delivered through the conveyance system owned and operated by the Florida Mesa Canal Companies.

4. If the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here. Not Applicable

Part B. - Description of the Water Activity – Please Refer to Criteria and Guidance Document for Eligibly Requirements

1. Name of water activity/project:

Florida Canal, Florida Canal Enlargement, Florida Co-operative Ditch, and Florida Farmers Canal Seepage Reduction Program

[ ] Environmental compliance and feasibility study

[X] Technical Assistance regarding permitting, feasibility studies, and environmental compliance

[ ] Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects

Study or Analysis of:

- [ ] Structural project or activity
- [ ] Nonstructural project or activity
- [ ] Consumptive project or activity
- [ ] Nonconsumptive project or activity

[X] Structural and/ or nonstructural water project or activity

2. Describe how the water activity meets these **Threshold Criteria.**

1. The water activity meets the eligibility requirements outlined in Part 2 of the Criteria and Guidelines.

   The applicants are mutual ditch companies, and the work proposed is for design and construction of a ditch lining and piping program; all of which are eligible under SB-06-179.

2. The water activity is consistent with Section 37-75-102 Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

   This design and construction program is for canals and ditches with existing decreed water rights and will not result in an expansion of irrigated acreage. The work proposed shall not injure vested absolute or conditional water rights and will be in compliance with C.R.S. 37-75-102.

3. 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.

   This water activity was evaluated and unanimously approved by the Southwest Basins Roundtable at their January 14, 2009 meeting. A funding recommendation letter dated January 16, 2009 and an updated letter was forwarded July 8, 2010 (attached) by the Southwest Basins Roundtable Chair.

4. The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

   Major findings for the entire state from the Statewide Water Supply Initiative (SWSI) indicate a need for: (1) increased conservation and efficiency needed to meet future water supplies; and (2) the ability of smaller, rural water providers and agricultural water users to adequately address their existing and future water needs, which is significantly affected by their financial capability.

   In regard to the Dolores/San Juan and San Miguel River Basins, the SWSI recommends improved agricultural conservation (efficiency) including ditch lining programs to increase delivery to users and provide agricultural firming (SWSI, Table 10-28 Potential Future Dolores/San Juan/San Miguel Basin Water Management Option).

   Specifically for the Florida Basin, the Water Supply and Needs Report for the Dolores/San Juan/San Miguel Basin (June 2006) identified the need for the development of augmentation water supplies (Table 8-3, Detailed Identified Projects). In addition, the Water Supply Needs Report for the Identified Projects and Processes for the Dolores/San Juan/San Miguel Basin has been updated to include the Canal Seepage Reduction Program.

   A comprehensive water conservation and management plan has been developed for the canal companies and the FWCD. The conservation and management plan solicited input from other governmental entities and the public. Per the management plan, the proposed project would increase conveyance efficiencies and firm up agricultural water deliveries through canal lining, conservation, and more efficient administration. The plan also recommended the development of augmentation, municipal and industrial water supplies and the development of hydropower to meet future sustainable water and energy supplies and create additional revenue sources for the irrigators. The goal of the development of additional revenue supplies is to promote the continued existence of the canal companies and associated agricultural irrigated acreage.

3. For Applications that include a request for funds from the Statewide Account, describe how the water activity meets the **Evaluation Criteria**. See Part 3 of Criteria and Guidelines.

In response to the Evaluation Criteria:

Promoting Collaboration and Cooperation

(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.

By increasing the efficiency of the Florida Mesa canal conveyance system, supplemental releases of water from Lemon Reservoir will be reduced. The reduction in project releases from Lemon Reservoir for the Florida Mesa Canal Companies will increase water available for the agricultural users and for future beneficial uses in the basin including: augmentation, M&I, water for fish and wildlife habitat, recreation, wetlands, etc.

(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 entities represented in the application include Florida Canal, Florida Canal Enlargement, Florida Co-operative Ditch, and the Florida Farmers Ditch. The activity will promote cooperation between the four canal and ditch companies, the FWCD, the Southern Ute Indian Tribe, the Natural Resource Conservation Service, Colorado Division of Wildlife, City of Durango, CWCB Instream Flow Program, La Plata County and the USBR. This program will address intrabasin needs as described in 3(a) above.

Facilitating Water Activity Implementation

(c) 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).

Up to this point in time, the Florida Mesa Canal Companies have not had the resources to conduct the needed improvements to their conveyance facilities. Through the Water Conservation and Management Planning process, the ditch companies and their respective users realized they needed to increase the efficiency of their delivery system to reduce water loss and meet multiple future needs. Thus, the Florida Mesa Canal Companies have doubled their assessments and have increased the annual appropriations requests from the FWCD in order to start making improvements to the canal conveyance system.

The proposed improvements detailed by the USBR in the R&B study (in 2008 dollars) totals $20,000,000. Given the large amount of funding required, the Florida Canal Companies are seeking funds from a multitude of sources including: doubling the shareholder assessments, increased annual FWCD appropriations request, applying for a USBR Water for America Challenge Grant, application to the Southwest Basin Roundtable and the Statewide Basin Roundtable. This funding is critical for the project to get off the ground.

(d) There is an urgency of need for the water activity and/or any compelling "window of opportunity" that may be missed without funding from the Account.

Based on the monitoring program, over time there has been a trend of increasing water losses in the canal conveyance system. This is partly due to: aging infrastructure, urbanization, and the oil and gas industry constructing a large number of utilities including gas pipelines under the canal conveyance

system. For example in 1988, the USBR R&B Study estimated seepage losses of approximately 8,400 AF. Based on the monitoring program over the last seven years losses are averaging 11,600 AF per year.

(e) The length of time needed to implement the water activity; preference will be given to activities, which can be implemented in the least amount of time taking into consideration the complexity of the activity.

The length of time to construct the initial proposed improvements is 3 years beginning in 2010 and concluding in the fall of 2012.

(f) The applicant has the expertise and ability to implement the proposed activity.

The Canal Companies and the FWCD have an excellent track record implementing water conservation and management programs. These programs include a water measurement and monitoring program, a dry year storage program, a computerized irrigation information system program, geographical information system mapping programs, and others. In 2002, the FWCD received awards from the local Soil Conservation District, NRCS, CDPHE, and the USBR for the Missionary Ridge wildfire rehabilitation project. The applicant has retained Wright Water Engineers, Inc. (Professional Engineers) to design and oversee the improvements.

(g) The applicant is providing matching funds and the amount of matching funds or is obtaining partial funding from other sources and the amount and source of such other funds or is providing demonstrable in-kind contributions.

The applicant is providing $41,703 cash in matching funds plus $9,000 in-kind matching funds for Phase 2 of the project. The FWCD has expended $19,700 for the development of new water rights. In addition, $100,000 from the Southwest Basins Roundtable and $30,000 water conservation field services program grant from the USBR is also included as matching fund. The applicant has been encouraged to reapply for a $300,000 grant from the USBR. As this water activity progresses additional funding sources will be pursued.

(h) The applicant has a demonstrated need for financial assistance based on the inability or difficulty obtaining funding elsewhere.

The applicant has a demonstrated need for financial assistance because the irrigation canals deliver agricultural water only. The number of customers is relatively few compared to municipalities with a large customer base; therefore, distribution of large canal improvement costs over a small customer base makes repayment contracts prohibitively expensive. As pointed out in the SWSI 1 (page 8-2) agricultural water users will have difficulty funding water development projects.

<u>Meeting Water Management Goals and Objectives and Identified Water Needs</u>

(i) The water activity helps complete a needs assessment, including consumptive and/or non-consumptive needs, that was not fully funded from other sources.

This water activity helps complete a needs assessment as detailed in the USBR R&B Study, the Water Conservation and Management Plan, and the SWSI 1. Major findings for the entire state from the SWSI indicate a need for: (1) increased conservation and efficiency needed to meet future water supplies; and (2) the ability of smaller, rural water providers and agricultural water users to adequately address their existing and future water needs, which is significantly affected by their financial capability.

In regard to the Dolores/San Juan and San Miguel River Basins, the SWSI recommends improved agricultural conservation (efficiency) including ditch lining programs to increase delivery to users and provide agricultural firming (SWSI, Table 10-28 Potential Future Dolores/San Juan/San Miguel Basin

Water Management Option).

Specifically for the Florida Basin, the Water Supply and Needs Report for the Dolores/San Juan/San Miguel Basin (June 2006) identified the need for the development of augmentation water supplies (Table 8-3, Detailed Identified Projects). In addition, the Water Supply Needs Report for the Identified Projects and Processes for the Dolores/San Juan/San Miguel Basin has been updated to include the Canal Seepage Reduction Program.

This water activity promotes increased efficiency through reduction in canal conveyance losses. In addition, through increases in efficiency, water will be provided for other beneficial uses including augmentation and other beneficial uses in the Florida Basin.

(j) This water activity meets management objectives identified in the Statewide Water Supply Initiative.

As discussed in a) by increasing the efficiency of the Florida Mesa Canal Conveyance System, supplemental releases of water from Lemon Reservoir will be reduced. The reduction in project releases from Lemon Reservoir for the Florida Mesa Canal Companies will increase water available for the agricultural users and for future beneficial uses in the basin including: augmentation, M&I, water for fish and wildlife habitat, recreation, wetlands, etc. This water activity will: sustainably meet M&I demands, sustainably meet agricultural demands, optimize existing and future water supplies, enhance recreational opportunities, provide for environmental enhancements, provide for operational flexibility, and comply with all applicable laws, regulations and water rights.

Increasing the efficiency of the canal system is less expensive than developing additional water supplies, i.e. enlarging Lemon Reservoir. Thus, this water activity promotes cost effectiveness.

The increase in efficiency will also provide additional water to agricultural users at a lower cost per acre foot thus promoting sustainable agriculture and protecting cultural values,

(k) The water activity promotes water conservation and efficiency.

By reducing canal conveyance losses this water activity promotes water conservation and efficiency.

(l) The applicant has an existing water conservation plan.

The applicants have a water conservation and management plan, written in 2006.

(m) The water activity will make new water available for use.

By reducing water conveyance losses, the water activity will increase deliveries to commercial agricultural users and reduce supplemental releases of project water from Lemon Reservoir. The reduction in releases from Lemon Reservoir will ultimately provide a source of water for other beneficial uses for current and future water needs.

(n) The water activity involves reoperation, enlargement, or rehabilitation of existing facilities.

The proposed water activity involves reoperation and improvements of existing facilities through lining of portions of the canal conveyance system

<u>The Water Activity Addresses Issues of Statewide Value</u>

(o) The water activity helps sustain agriculture, and open space, or meets environmental or recreational needs.

The water activity helps sustain agriculture through more efficient conveyance of irrigation water to the farmers who need it. The lining of the portions of the canal conveyance system will provide additional water at less cost, thus helping to ensure continued irrigated agriculture and the preservation of open space.

(p) 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 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. Thus, this activity promotes maximum utilization of state waters.

(q) 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 under this project may be used for wetlands and wildlife purposes in the future.

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

The water activity provides a high level of benefit to Colorado in relationship to the amount of funds requested through improvements in agricultural efficiency and increased agricultural production. The water activity optimizes the use of water providing water for a wide variety of uses that benefit the State of Colorado.

(s) 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.

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 a lack of augmentation supplies in the Florida River, which results in friction among water interests including the CWCB instream flow. This water activity will optimize water supplies and provide water supplies for future beneficial uses including augmentation and fisheries, thus benefiting the CWCB instream flow program.

(t) The water activity helps support the State's economic vitality and competitiveness in national and international markets.

The water activity supports the state economic vitality through promoting sustainable agriculture. In addition, this water activity will provide water supplies for a wide variety of uses including municipal and industrial uses. The Florida River basin is located within the San Juan Basin, one of the largest gas producing basins in the country and the largest gas producing basin in the State of Colorado. Providing

water supplies for the oil and gas industry will assist in the state's economic vitality.

4. Please provide an overview of the water project or activity to be funded including – type of activity, statement of what the activity is intended to accomplish, the need for the activity, the problems and opportunities to be addressed, expectations of the participants, why the activity is important, the service area or geographic location, and any relevant issues etc. Please include any relevant TABOR issues that may affect the Contracting Entity. Please refer to Part 2 of Criteria and Guidance document for additional detail on information to include.

Location: The service area of the Florida Mesa Canal Companies is on the Florida Mesa, which is located within La Plata County, Colorado (see Figure 1). A portion of the City of Durango is located within the Florida Mesa Canal Company service area. The land on the Florida Mesa is mostly utilized for agricultural purposes such as farming and ranching. In addition, the Florida Mesa is located in a geological structure known as the San Juan Basin. The San Juan Basin is a major producer of coal bed methane.

Residential development within the Florida Mesa has been occurring. According to the U.S. Bureau of Census, La Plata County population has grown from 32,284 people in 1990 to 43,941 people in 2000. This represents an average annual increase of 3.6 percent per year. The 3.6 percent annual increase is a conservatively low representative of the population increase on the Florida Mesa, due to the availability of land for development and the close proximity to the City of Durango.

Historically irrigated acreage near Elmore's Corner, located along Highway 160 east of Durango, and at Sunnyside Farms, located along Highway 550 south of Durango, is being transferred from irrigated farmland to subdivisions. Most homes are dependent on private wells as a source of water. Generally, subdivisions consist of lots greater than 3 acres in size due to the lack of a central water system and the rural nature of the area. The southern portion of the Florida Mesa is located within the boundary of the Southern Ute Indian Reservation.

Agricultural crops cultivated on the Florida Mesa include alfalfa, pasture grasses, silage corn, spring grain, and winter wheat. According to the FWCD crop census total irrigated acreage served by the project was 16,396 acres. Of this acreage, the largest crops were pasture grass (45 percent); other hay (36.5 percent) and alfalfa hay (13.4 percent). Other crops, at less then 2 percent of total acreage each, included silage, wheat, barley, corn, and oats.

Water Activity Overview:

The proposed water activity includes 1 task.

Water Activity Task 1: Construction of Seepage Reduction Project

Funds are requested to construct ditch lining in the Florida Conveyance System.

Purpose: The purpose of the ditch lining task is to: 1) improve the efficiency of the canal conveyance system and reduce ditch loss, 2) provide irrigation water at reduced operational expense to promote continued commercial agricultural uses, 3) firming the agricultural water supplies through increased efficiency as opposed to developing additional water supplies (i.e. enlarging Lemon Reservoir) and 4) develop a additional sources of water for other beneficial uses in the basin.

Need: Overall conveyance losses for the canals and ditches on the Florida Mesa have averaged 24 percent over the last eight years (the period of record for the FWCD water monitoring program). The losses have ranged as low as 18 percent per year and as high as 31 percent per year.

Previous studies: The Water Conservation and Management Plan and the USBR Rehabilitation and

Betterment (R&B) Study. The Water Conservation and Management Plan and the USBR R&B Study identified roughly $20 million of improvements including ditch lining and piping projects. The R&B Study calculated a reduction of over 4,100 AF in canal conveyance losses. In addition a Ditch Loss Study and a Well Impact study have been completed.

5. Please summarize the proposed scope of work. Please refer to Part 2 of the Criteria and Guidance document for detailed requirements. On the following page, there is an example format for the Scope of Work. You can use the example format or your own format, provided that comparable information is included.

The scope of work and budget is summarized in Table 1 and includes: 1) selection of lined sections based on the ditch loss study, 2) preliminary environmental permitting, 3) Preliminary engineering design, 4) final engineering design, 5) preparation of project plans and specifications and 6) services during construction, and 7) final environmental permitting and construction of the canal and ditch lining project.

Items 1) through 5) listed above have been funded by the CWCB and the notice to proceed was granted on March 11, 2010. This application is for items nos. 6) and 7) which include services during construction, final environmental permitting and construction of the ditch lining project.

Personnel

Florida Mesa Canal Companies
Florida Water Conservancy District
Wright Water Engineers, Inc.
United States Bureau of Reclamation
Natural Resource Conservation Service

Contractors to be determined and will be required to have experience and expertise in ditch lining projects.

Budget

See Table 1 attachment

Schedule

See Table 2 attachment

6. Water Availability and Sustainability – this information is needed to assess the viability and effectiveness of the water project or activity. Please provide a description of each water supply source to be utilized for, or the water body to be affected by, the water activity. For water supply sources being utilized, describe its location, yield, extent of development, and water right status. For water bodies being affected, describe its location, extent of development, and the expected effect of the water activity on the water body, in either case, the analysis should take into consideration a reasonable range of hydrologic variation.

The Florida River including Lemon Reservoir is the source of water for the Florida Mesa. The annual yield of the Florida River at Lemon Dam is approximately 71,700 AF per year for an average year and 26,150 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.

The Florida Farmers Ditch is decreed for 45 cfs, Florida Canal is decreed for 40 cfs, Florida Cooperative Ditch Company is decreed for 30 cfs, and the Florida Canal Enlargement is decreed for 40 cfs for a total decreed rate of flow of 155 cfs for irrigation purposes. The water rights associated with the Florida Mesa Canal Companies is provided in Table 3.

On average, the adjudicated water rights of the Florida Mesa Canal Companies divert 24,125 Acre-Feet per year and the Florida Project delivers 24,360 AF of water to the Florida Mesa through the Florida Mesa Canal Company canal conveyance system. Thus, a total of 48,485 AF of adjudicated and project water is delivered through the Florida Mesa Canal Companies conveyance system. During the 2002 drought, 26,156 AF of both adjudicated and project water was diverted by the Florida Mesa Canal Companies.

As discussed above, for purposes of this grant application the term ditch loss reflects both seepage loss and administrative waste. The average annual diversion of 48,485 AF multiplied by an average ditch loss of 24 percent, results in 11,600 AF of water lost per year through administrative waste and seepage. During a dry year, the average loss of 31 percent results in an annual ditch loss of roughly 8,100 AF per year.

The USBR R&B study estimated the proposed lining and piping program could reduce water losses in the canal conveyance system by over 4,100 AF per year. A one percent reduction in ditch loss during an average year should yield approximately 500 AF per year and in a dry year (2002) 260 AF per year of water. Since a reduction in ditch loss yields appreciable amounts of water during both average and dry years, the yield of water from reducing ditch loss is sustainable.

7. Please provide a brief narrative of any related or relevant previous studies.

In 1988, the U.S. Bureau of Reclamation (USBR) conducted the Florida Rehabilitation and Betterment 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 to cost $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 Florida R&B project was not pursued.

The FWCD adopted a water conservation plan in January of 1989. A number of the items put forth in the plan have been 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 Canal Companies have 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.

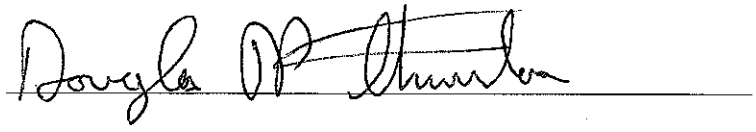
The Bureau of Reclamation conducted a surface water budget in 1994, written by Darrel Dyke of the Denver Technical Service Center. However, the water budget was generalized, and literature (or estimated) values were used for seepage and administrative losses.

In December 2006, Wright Water Engineers, Inc. authored a Water Conservation and Management Plan. The Water Conservation and Management Plan provides a comprehensive summary of all work done on the Florida Mesa. Costs from the Bureau of Reclamation 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. Findings and priorities established in the Water Conservation and Management Plan is the basis for this grant proposal. In 2010 Wright Water Engineers, Inc. authored a Ditch Loss Study and a Well Impact Study.

8. Additional Information – If you feel you would like to add any additional pertinent information please feel free to do so here.

The ultimate objectives are: 1) to save water through improved water conservation, 2) provide irrigation water at reduced operational expense to promote continued commercial agricultural uses, 3) develop additional sources of revenue to sustain the water conveyance system, 4) firming the agricultural water supplies through increased efficiency as opposed to developing additional water supplies (i.e. enlarging Lemon Reservoir).

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

Signature of Applicant: 

Print Applicant's Name: Doug Thurston, President, Florida Farmers Ditch Co.

Project Title: Florida Canal Companies Seepage Reduction Program: Southwest Basin

Date: July 23, 2010

Return this application to:

Mr. Todd Doherty
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 600
Denver, CO 80203

To submit applications by Email, send to: todd.doherty@state.co.us

Table 1
Project Budget -- Amended July, 2010

Florida Mesa Canal Companies Water Loss Reduction Project			
Task	Labor and Direct Costs	In Kind	Total Project Costs
Engineering Design and Services During Contracting	$225,000		$225,000
Define project sections from ditch loss study			
Preliminary Environmental Permitting - Wetlands Delineations, Archeological Surveys			
Preliminary Engineering Design			
Final Engineering Design			
Preparation of project plans and specifications			
Services during bidding			
Florida Mesa Canal Companies Water Loss Reduction Project - Phase 1	$165,303	$6,400	$171,703
Construction of Canal and Ditch Lining (1)	$775,000	$9,000	$784,000
Acquisition of Water Rights		$19,700	$19,700
Sub-Total			**$1,200,403**
USBR Grant Funding as of 5/1/10			$30,000
Florida Mesa Canal Companies Water Loss Reduction Project - Phase 1 ($ 41,703 Canal Cos and FWCD, $ 100,000 CWCB Contribution)			$141,703
Matching Funds - Florida Mesa Canal Co. In Kind Construction Observation			$9,000
Matching Funds - FWCD Expenditures - Previous 9 Months			$19,700
Sub-Total Matching Funds			$200,403
Total Requested Funds			**$1,000,000**
Funds Provided by CWCB - Notice to Proceed March, 2010			**$225,000**
Net Additional Fund Request CWCB			**$775,000**
Total Matching Funds as a Percent of Total Project Costs			20%

Notes:
1) Includes construction observation, environmental permitting and archeological permitting if needed.

Table 2

Project Schedule -- Amended July, 2010

Schedule of Work and Task Completion

	2010				2011				2012			
	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec	Jan-Mar	Apr-Jun	July-Sep	Oct-Dec
Engineering Design and Services During Contracting												
Define project sections from ditch loss study		X										
Preliminary Environmental Permiting - Wetlands Delineations, Archeological Surveys		X	X	X								
Preliminary Engineering Design			X	X								
Final Engineering Design			X	X								
Preparation of project plans and specifications				X	X							
Services during bidding					X							
Construction of Canal and Ditch Lining Project [(1)]								X	X	X		X

Table 3

Florida Mesa Canal Companies Water Loss Reduction Project

Water Rights Tabulation for Florida Canal and Florida Farmers Ditch

FLORIDA CANAL

WATER RIGHTS TRANSACTION INFORMATION

	ADMINISTRATIVE NUMBER	ADJUDICATION DATE	APPROPRIATION DATE	COURT NUMBER	DECREED RATE (CFS)	DECREED VOLUME (AF)	ADJUDICATION TYPE	STATUS	USES	COMMENT
Florida Canal	14152.00000	11/8/1923	1888-09-29	CA1751	24			O	IRR	
	15774.00000	11/8/1923	1893-03-09	CA1751	16			O	IRR	
	22428.00000	11/8/1923	5/29/1911	CA1751		970		O	IRR	Pastorius Reservoir
Florida Canal Enlargement	20890.00000	11/8/1923	3/13/1907	B-1751	31			O	IRR	Alternate Point of Diversion Taken in the Florida Farmers Ditch
	20890.00000	11/8/1923	3/13/1907	CA1751	40			O	IRR	
Total					**80**					

FLORIDA FARMERS DITCH

WATER RIGHTS TRANSACTION INFORMATION

	ADMINISTRATIVE NUMBER	ADJUDICATION DATE	APPROPRIATION DATE	COURT NUMBER	DECREED RATE (CFS)	DECREED VOLUME (AF)	ADJUDICATION TYPE	STATUS	USES	COMMENT
Florida Farmers Ditch	12392.00000	11/8/1923	1883-12-05	CA1751	12.08			O	IRR	
	13649.00000	11/8/1923	1887-05-15	CA1751	1.33			O	IRR	
	14016.00000	11/8/1923	1888-05-16	CA1751	8.58			O	IRR	
	14291.00000	11/8/1923	1889-02-15	CA1751	23			O	IRR	
	20890.00000	11/8/1923	3/13/1907	W0306	31			O	IRR	Alternate Point of Diversion from Florida Canal Enlargement
	35219.00000	3/21/1966	6/5/1946	B-1751	110			S	IRR	Decreed to provide adjucated water rights to acreage with sole supply
Florida Coop Ditch	22228.00000	11/8/1923	11/10/1910	B-1751	4			O	IRR	
	22228.00000	11/8/1923	11/10/1910	CA1751	26			O	IRR	
Total					**75**					

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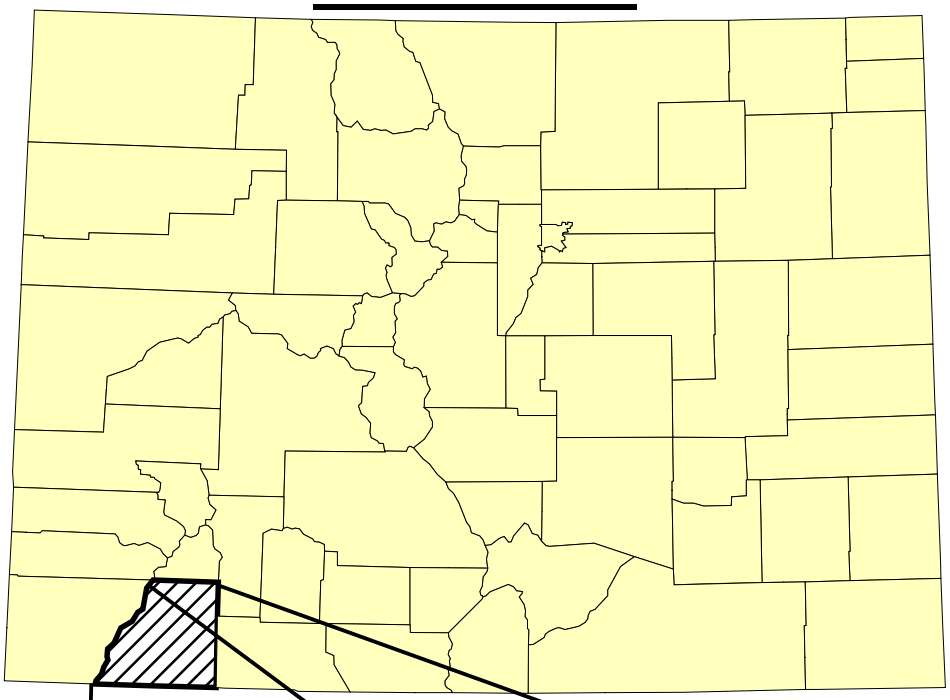

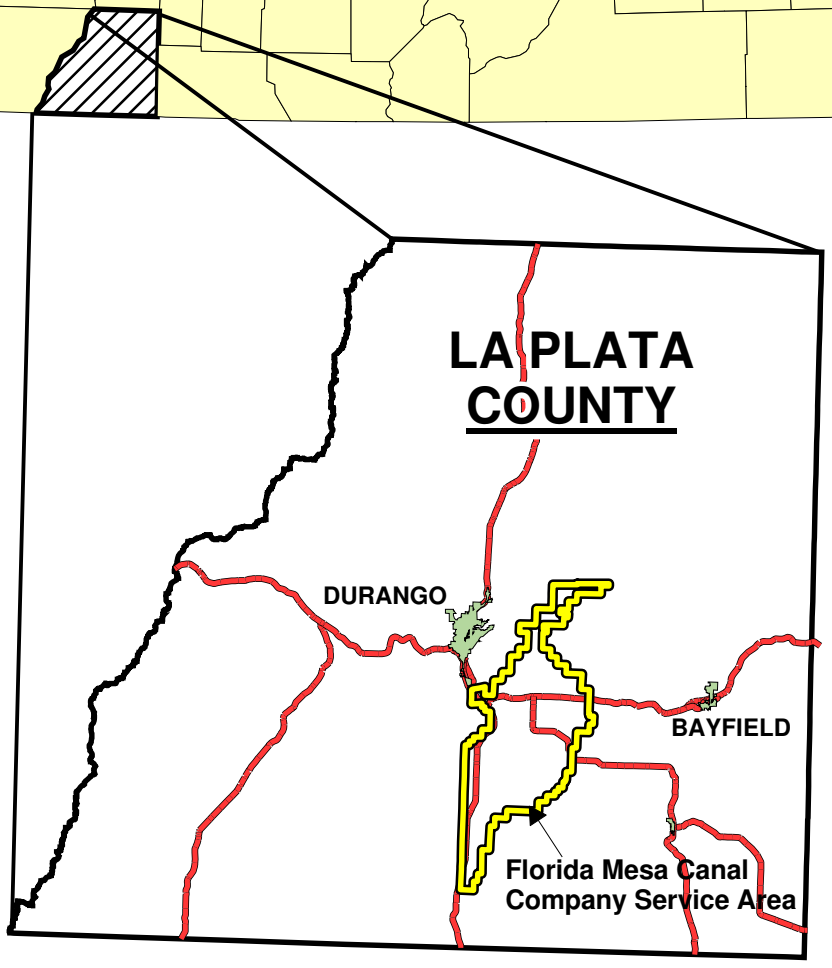

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WRIGHT WATER ENGINEERS, INC.
1666 N MAIN AVE STE C
DURANGO, CO. 81301
(970) 259-7411

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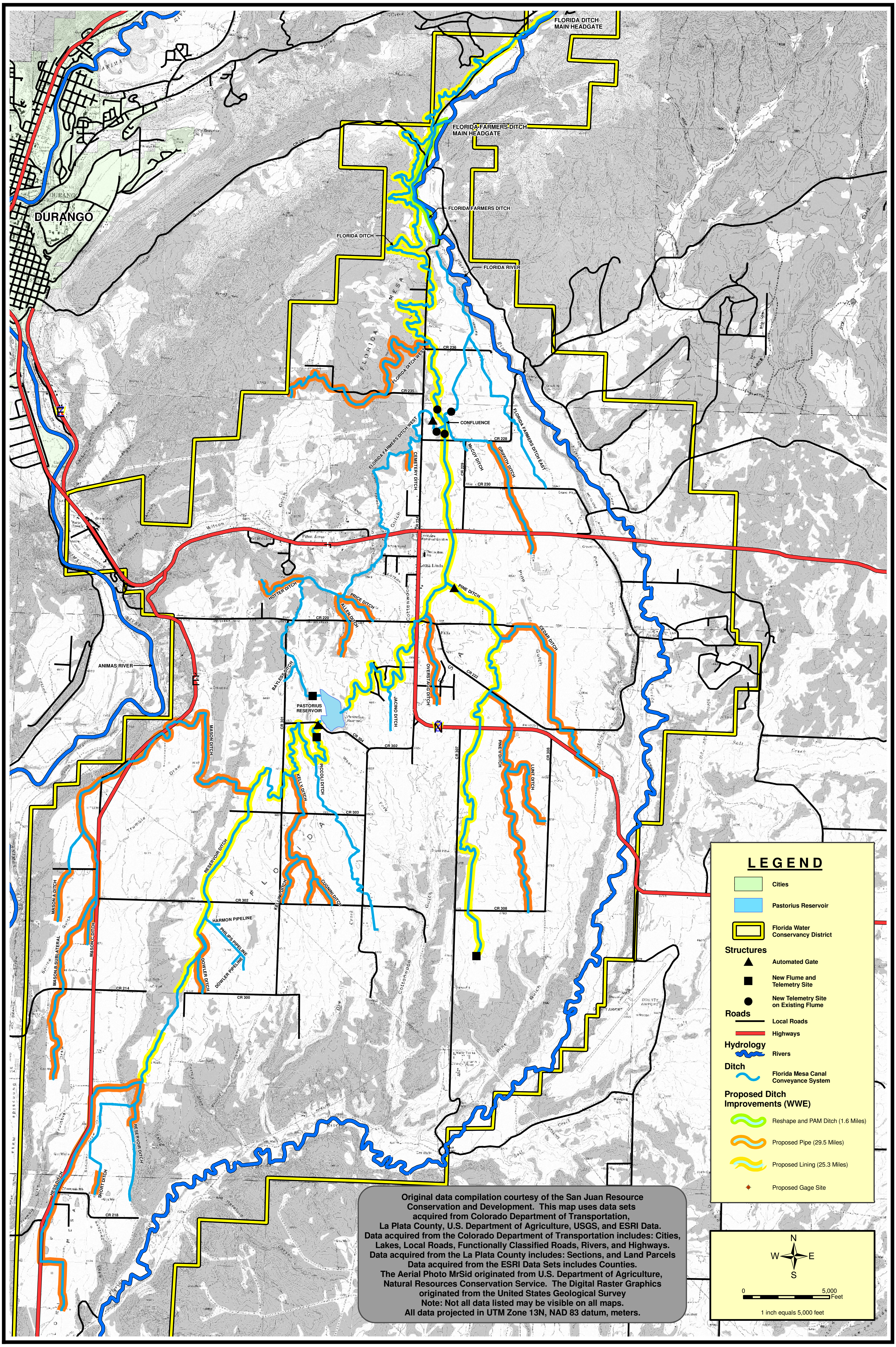
GENERAL LOCATION MAP

FIGURE
1



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WRIGHT WATER ENGINEERS, INC.
1666 N MAIN AVE STE C
DURANGO, CO. 81301
(970) 259-7411

FLORIDA DITCH IRRIGATION SYSTEM PROPOSED IMPROVEMENTS

Project No. 061-110.040

FIGURE 2