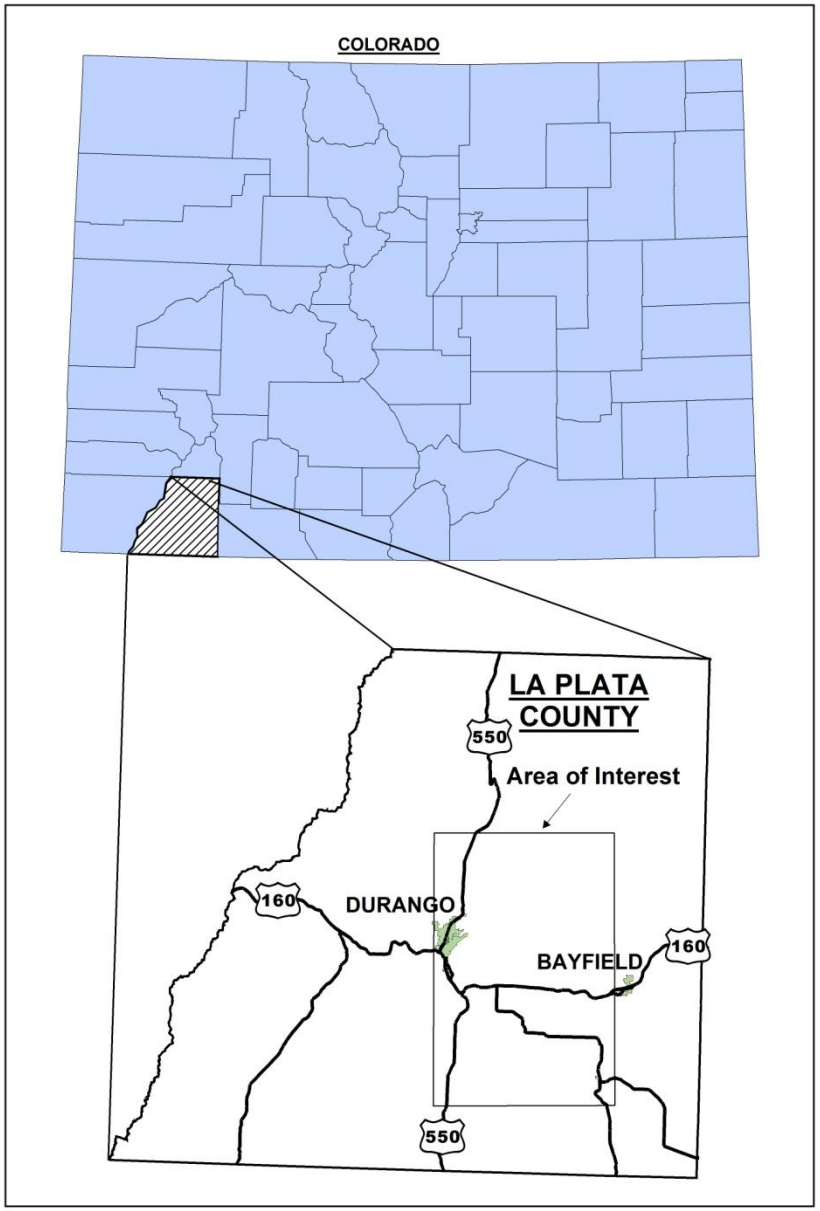
CWCB Presentation

Florida Mesa Canal Companies Water Seepage Reduction Program



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WWE
WRIGHT WATER ENGINEERS, INC.
2490 W. 26TH AVENUE, SUITE C
DURANGO, CO. 81301
(970) 259-7411

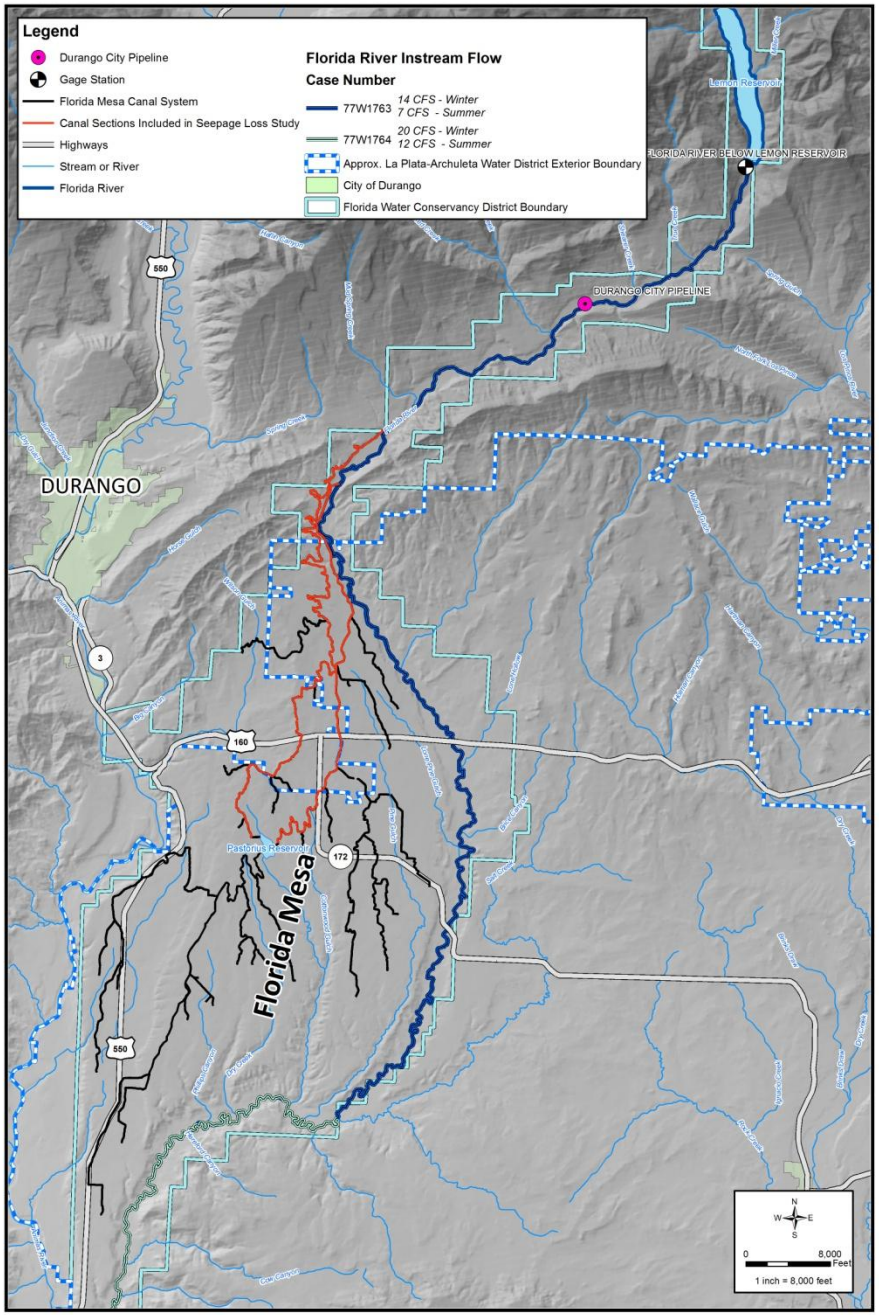
LA PLATA COUNTY, COLORADO

REGIONAL LOCATION MAP

FLORIDA MESA CANAL COMPANY

Project No.
061-110.040

FIGURE
1



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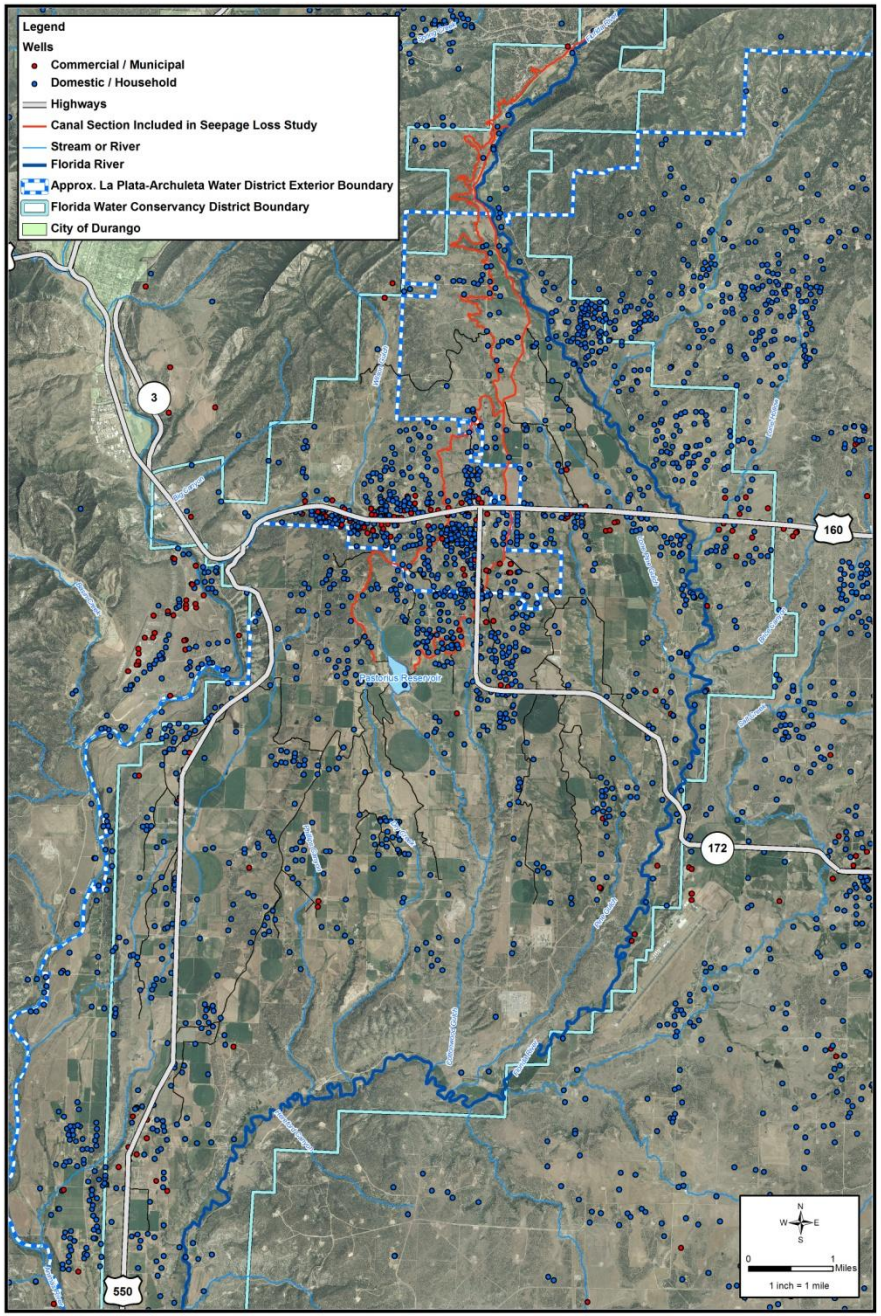
FLORIDA MESA CANAL SYSTEM

FLORIDA MESA CANAL COMPANY

Project No. 061-110.040

FIGURE 2



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

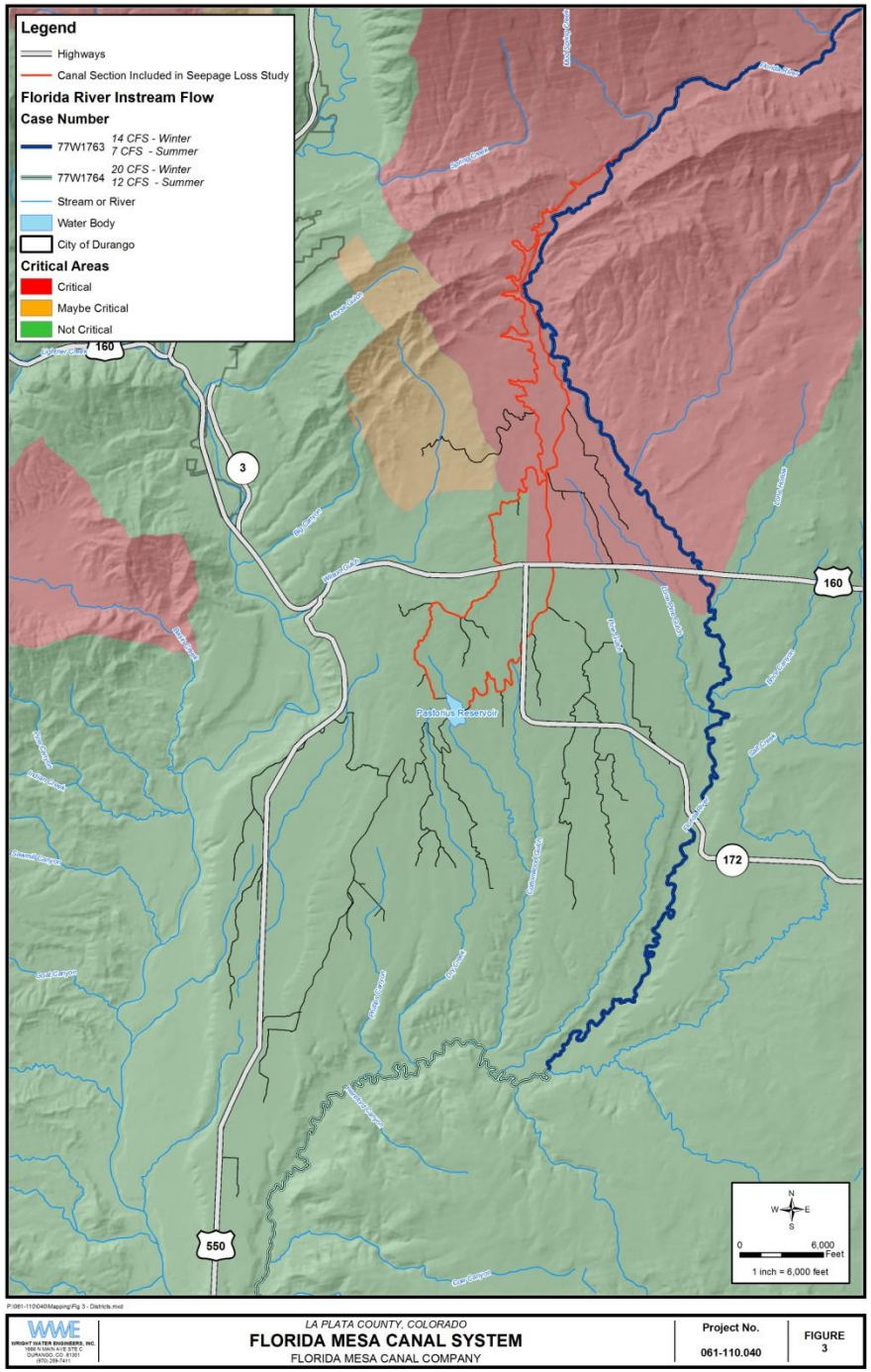
LA PLATA COUNTY, COLORADO

FLORIDA MESA CANAL SYSTEM

FLORIDA MESA CANAL COMPANY

Project No.
061-110.040

FIGURE
4



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

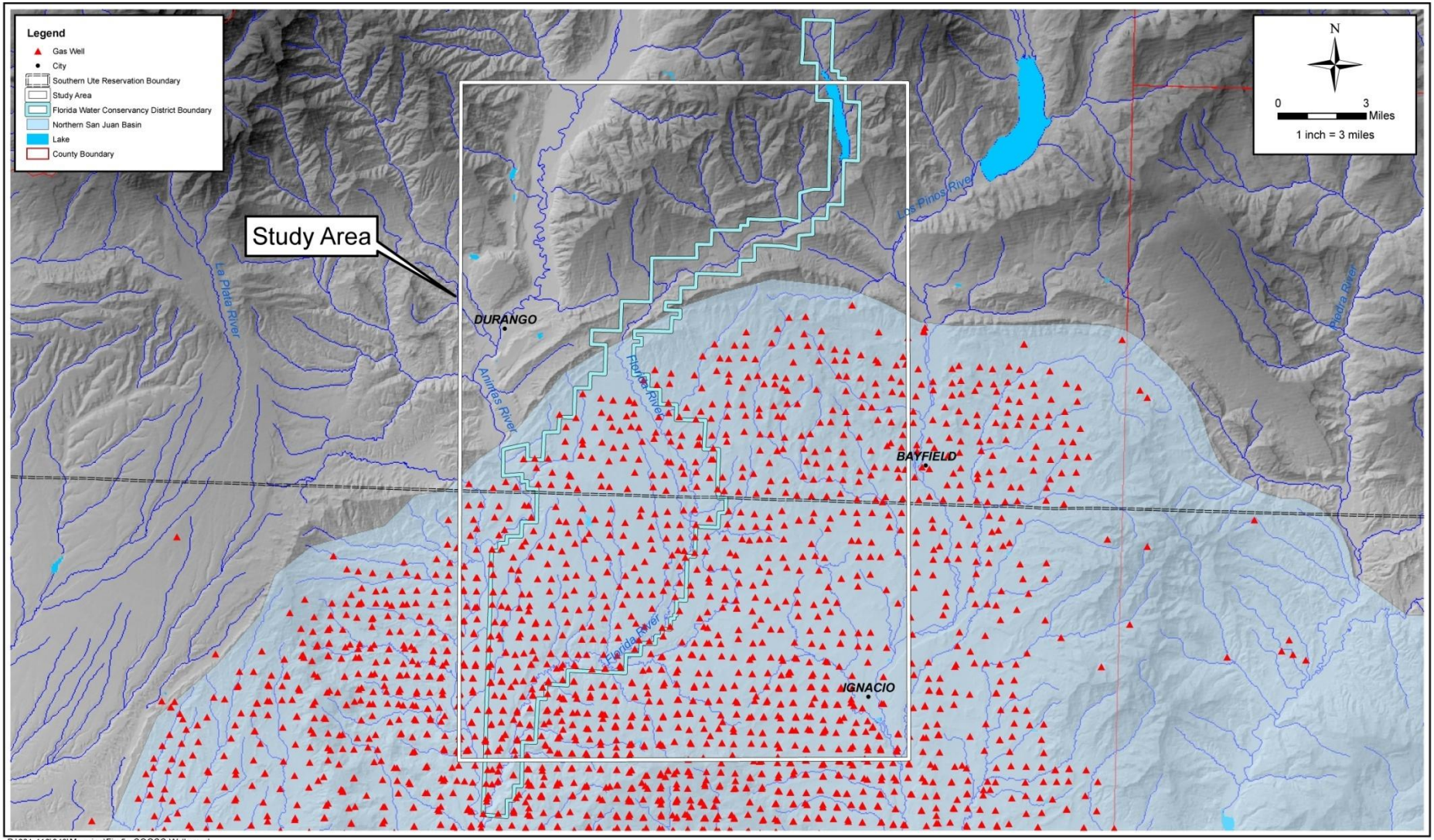
LA PLATA COUNTY, COLORADO

FLORIDA MESA CANAL SYSTEM

FLORIDA MESA CANAL COMPANY

Project No.
061-110.040

FIGURE
3



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WWE
Wright Water Engineers, Inc.
1666 N. Main Ave., Ste.C
Durango, CO 81301
(970) 259-7411 ph 259-8758 fx

LA PLATA AND ARCHULETA COUNTIES, COLORADO

Gas Wells in the Northern San Juan Basin and Boundary of the Florida Water Conservancy District

PROJECT NO.
001.015-250

FIGURE
5

Florida Mesa Canal Companies

- 4 Canal Companies
- Consists of over 85 miles of canals and laterals
- Serves 19,500 acres of land
- Conveys both adjudicated water and project water
  - 329 shareholders of adjudicated water
  - 973 project users including the Southern Ute Indian Tribe
- Canals divert on average 48,500 AF of Water

Florida Canal Co's (Cont'd).

- Canal Companies formed between 1889 and 1903
- All of the water rights owned by the Canal Companies are precompact water rights.
- Water Measurement Program by the District has estimated up to 11,000 af of losses through canal seepage and administrative waste.
- Canal Companies have recognized need to improve canal conveyance system and have doubled the assessments from $600/cfs to $1,200/cfs.

Previous Studies

- 1988 USBR Rehabilitation and Betterment Study
  - Reclamation proposed piping and lining 68.7 miles of the canal conveyance systems for a total cost of $20 million ($2008) with an estimated reduction in ditch loss of 4,100 AF/year.
  - Recognized need for generating additional revenue sources for future canal company improvements.
  - Identified potential location for hydropower potential
  - Recognized need of Centralized Water System to Serve Florida Mesa

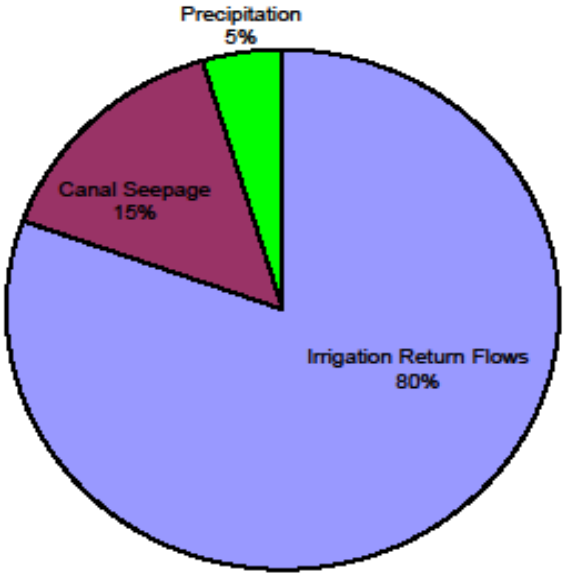
Previous Studies (Cont'd)

- USGS, 1995, Ground-Water Resources of the Florida Mesa Area, La Plata County Co.
  - Rapid population growth in La Plata County has caused an increase on groundwater as a source of supply for suburban and rural residents.
  - The predominant source of groundwater are shallow terrace deposits in the upper part of the Nacimiento and Animas Formations.
  - The primary sources of recharge to the shallow aquifer is precipitation and irrigation water Seepage and Return Flow.
  - As irrigation on the Florida Mesa becomes more urbanized, groundwater recharge may be reduced causing declining groundwater levels

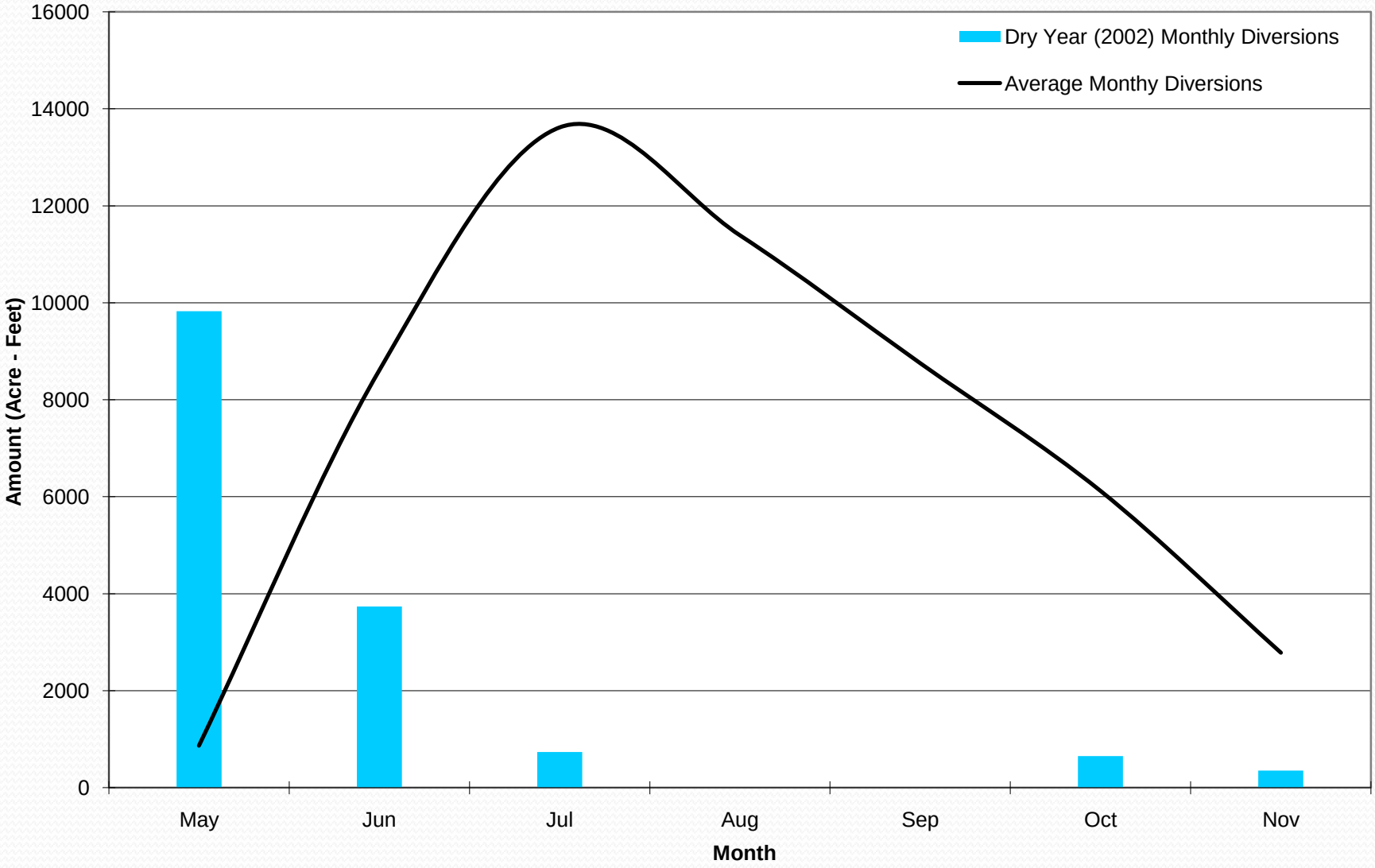
Florida Mesa Area, La Plata County, Colorado

Components of Ground Water Recharge

Source: U.S Geological Survey, Groundwater Resources of the Florida Mesa Area, La Plata County, Colorado Water-Resource Investigation Report 95-4190



Florida Canal Companies
Monthly Diversions- Florida Canal and Florida Farmers Ditch
Average and Dry Year (2002)



Previous Studies (Cont'd)

- 2006 Canal Companies and FWCD developed a Water Conservation and Management Plan.
  - Identified candidate measures including
  - Ditch loss study to prioritize lining projects proposed in R&B study.
  - Installation of additional water measuring devices, telemetry, and automated gates.
  - Further assess hydropower feasibility
  - Conduct ditch lining project.
  - Develop municipal and industrial water supply.

Previous Studies (Cont'd)

- Statewide Water Supply Initiative identified:
  - Increased conservation and efficiency and recommended ditch lining programs
  - Recognized ability of agricultural water users to meet existing and future water needs.
  - Also recommended developing additional water supplies in the Florida Basin for augmentation and M&I.

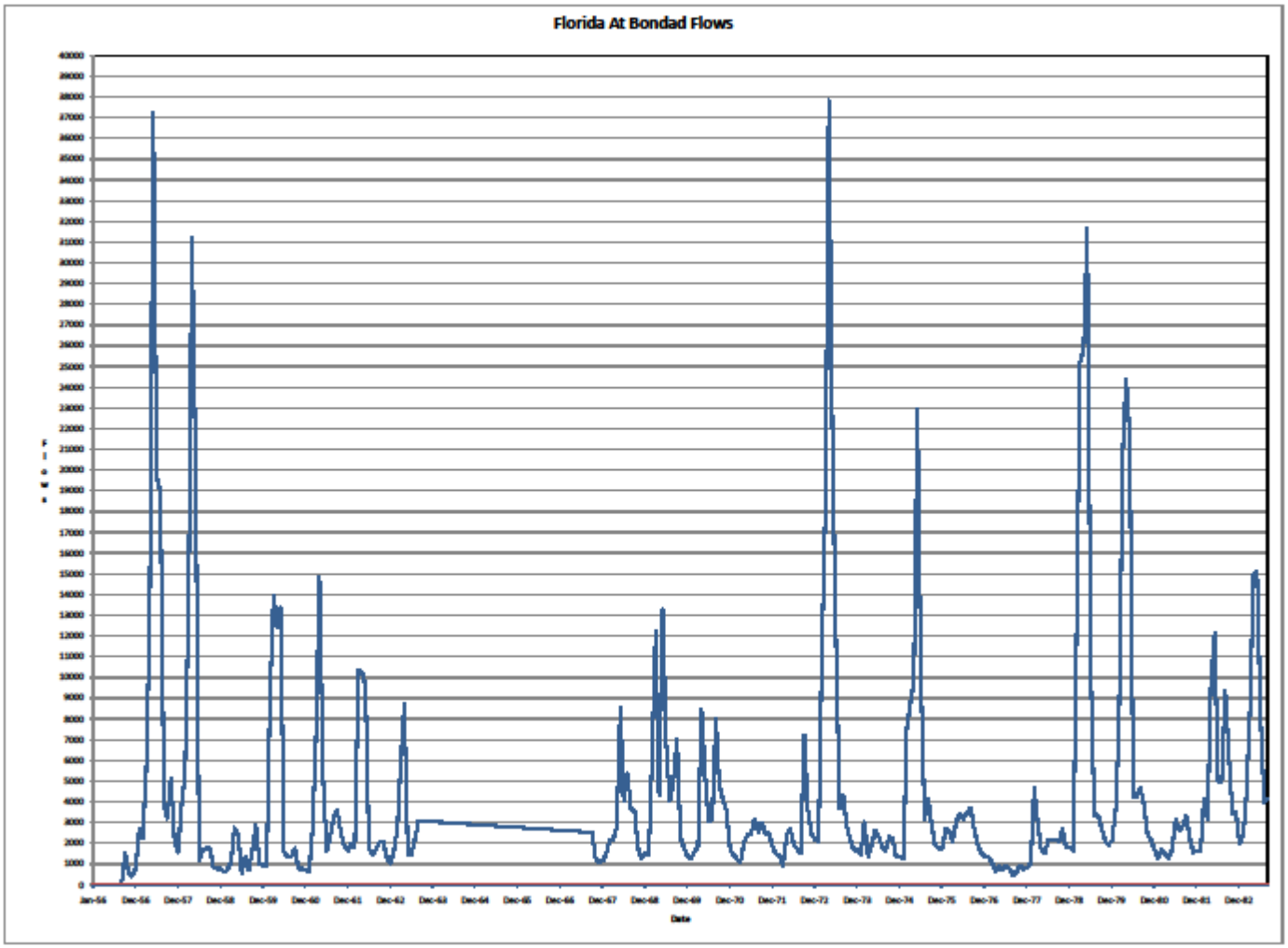
Problem

- Numerous Domestic and Commercial Wells On the Florida Mesa
- Shallow Terrace Aquifer has limited Recharge and Storage Groundwater Supply is not firm and susceptible to shortages and drought
- Area Deemed Non-Critical By DWR Allowing Commercial and Domestic Wells Without the Requirement of an Augmentation Plan
- Drainage Basin In Need of M&I and Augmentation Water Supply

Solution

- Interim
  - Firm Irrigation Water Supply Through Increasing Efficiency of Delivery System
  - Target Lining Efforts in Areas of Least Impact to Wells
  - Provide M&I Pool in Lemon Reservoir to:
    - Provide augmentation water supply
    - Provide Raw Water Supply for Future Centralized Water System
    - Received decree for Lemon Reservoir to Store M&I Water
- Long Term
  - Provide a Centralized Water System (Archuleta-La Plata Water District, City of Durango, etc.)

Questions


Florida At Bondad Flows
Date

Florida River Flows Versus CWCB Instream Flow Water Right
Source: USBR- Reservoir Release Data - Lemon Reservoir