



S O U T H E A S T E R N C O L O R A D O

Water Conservancy District

"Your investment in water"

2010 – 2014 WATER CONSERVATION AND MANAGEMENT PLAN

I. Introduction

Water conservation is a multi-faceted concept. As such, it is difficult to define it as a single, all-encompassing definition. Traditionally, many water resource managers saw their reservoirs as a way to conserve water by storing and protecting it. This notion of conservation is supported by the dictionary definition of “conservation”: 1. act of preserving or protecting, as from loss, harm, or waste. 2. public protection and care of natural resources such as forests, rivers, and wildlife.

Although this definition is still applicable, water conservation is now more commonly portrayed as “the beneficial reduction in water use, waste, and loss to satisfy a particular purpose”, or, more broadly put, as “optimizing the use of current water supplies.” This may be the most practical definition of all. However water conservation is defined, it is much more extensive than just household practices like taking shorter showers or xeriscaping your landscape. While important, these characterize only a small portion of water conservation efforts.

Southeastern Colorado Water Conservancy District (District) is proud of its ongoing water conservation program. As a regional water provider, it is the District’s responsibility to show stewardship in water conservation and promote efficient use of this valuable resource. The District has continually expanded these efforts by adding both programs and staff to carry-out the programs.

The District has increased its public education program considerably through better distribution of water conservation information. Public education and outreach are pillars of its water conservation program. The core of the program consists of informational brochures, educational displays, and online resources. These materials are distributed at meetings, on tours, at display booths or by public request. The District discusses and emphasizes the importance of water conservation at every opportunity.

The District hosts water festivals, workshops, tours, and trainings that provide numerous educational opportunities for children, homeowners, and professionals. The District's Board of Directors also encourages and promotes water conservation and efficient water resource management through its policies and programs. The District is involved with many organizations that actively promote water conservation and education. The District is a member of and supports the Colorado Water Wise Council, the Irrigation Association, the Tamarisk Coalition, the Colorado Foundation for Water Education, and the Ditch and Reservoir Company Alliance.

Water conservation in Colorado is no longer seen as something to do only during times of drought. Drought responses such as watering restrictions and field fallowing are put into practice to manage short-term water shortages. However, water conservation has become and will continue to be instrumental in long-term water resource management.

Economic and demographic growth in southeastern Colorado is putting pressure on regional water providers because the development of new water supplies has not kept pace with the growth. Currently, the District provides supplemental water to approximately 620,000 water users in the Arkansas River Basin. This number is expected to increase to over 1.3 million by the year 2040. According to the Statewide Water Supply Initiative, an increase in municipal water demand of 98,000 acre-feet (AF) by 2030 is expected in the Arkansas River Basin. The District believes that water conservation, through an assortment of best management practices, policies, and educational efforts, will play an instrumental role in meeting the projected shortfall.

II. DESCRIPTION OF THE DISTRICT

The Southeastern Colorado Water Conservancy District was formed under Colorado State Statutes on April 29, 1958 by the District Court in Pueblo, Colorado (Appendix A- Water Conservancy Act). The District's purpose is to develop and administer the Fryingpan-Arkansas Project (Fry-Ark). The District holds the water rights to the Fry-Ark Project. These rights were originally estimated to yield approximately 80,400 acre-feet of water each year for agricultural, municipal, domestic, and industrial uses within the District.

The District contracted with the United States Department of Interior Bureau of Reclamation (Reclamation) for construction of the Fry-Ark Project (Appendix B – Bureau of Reclamation contract). Public Law 87-590 (Appendix C), the authorizing legislation for the Project, and the Repayment Contract (Appendix D) with the Bureau of Reclamation provides the principles that govern the Fry-Ark Project design and operations.

There are two distinct areas of the Fry-Ark Project. The west slope facilities are located in the Hunter Creek and Fryingpan River watersheds, and the east slope facilities are located in the Arkansas River watershed. The Project consists of diversions, conveyances, and storage facilities designed primarily to divert water from Colorado River tributaries on the west slope for use in the water-short areas in the Arkansas River Valley on the east slope (Appendix E – Fryingpan-Arkansas Project Map).

The District encompasses portions of Bent, Chaffee, Crowley, El Paso, Fremont, Kiowa, Prowers, Pueblo, and Otero counties. It is important to note that the boundaries of the District do not represent the entire counties, but only those portions where citizens petitioned the Court to become a part of the District. The District includes large metropolitan cities, small rural towns, and agricultural areas ranging from very small farms to large ranching operations. It truly is representative of “Rural America” where the agricultural sectors are suffering out-migration and the larger metropolitan areas are facing problems common to growing areas.

The District has grown steadily in population since its creation. Total population within the Arkansas basin in the year 2000 was 835,000. It is expected to grow by 55 percent to 1,300,000 in the year 2030. The majority of the population lives in the cities and towns that receive water from the Fry-Ark Project.

Over the last 29 years, the District has diverted an average of 54,700 acre-feet of water annually for use by cities, towns, municipalities, and ditch, canal, reservoir and irrigation companies within the District. In addition, the District provides water and return flows for well augmentation.

District activities are supported and financed by ad valorem taxes paid by taxpayers within the District boundaries. Property owners pay an ad valorem tax to support District operations and guarantee the repayment to the Federal government.

The District is governed by a 15-member Board of Directors that are appointed by district court judges. Each Director is appointed to a four-year term and can be reappointed. In 1985, Senate Bill 141 required that appointments be made based upon population within individual counties. El Paso county, the largest in population, is represented by five board members, Pueblo county has three; Bent, Chaffee, Fremont, Otero, and Crowley counties are represented by one board member each. One Board member represents both Kiowa and Prowers counties, the counties smallest in population. One at-large Board member is also appointed.

The District’s daily operations are managed by an Executive Director, with a staff that includes a Director of Engineering and Resource Management, Projects Coordinator, Finance Coordinator, Water Conservation Coordinator, Administrative Coordinator, Engineering Support Specialist, Administrative Associate, and a part-time Xeriscape Garden Coordinator.

The overriding priority of the District continues to be the annual fulfillment of its obligations as defined by statute and contract commitments with its water users and the United States. Among these priorities are ongoing commitments to water conservation.

As the largest wholesale water distributor in the area, District operations, to some degree, influence all water and related land resource activities in its service area. Policies

established by the Board of Directors consistently have been aimed at yielding maximum possible benefits to its water users through flexibility of operations and adaptability to changing needs. The District Board members and staff encourage policies of wise and efficient use of all available water supplies.

III. INVENTORY OF WATER RESOURCES

There are five storage dams and reservoirs on the Fry-Ark Project (Appendix F – District Map, Collection Site Map, and Project Facilities Capacities). Ruedi Dam and Reservoir, on the west slope of the Rocky Mountains, is located on the Fryingpan River just above Basalt, Colorado. Three dams and reservoirs are on the upper east slope: Sugar Loaf Dam, which forms Turquoise Lake, Twin Lakes Dam and Reservoir, and Mt. Elbert Forebay Dam and Reservoir. Pueblo Dam and Reservoir, the largest of the Fryingpan-Arkansas Project storage units, is located on the Arkansas River just west of Pueblo, Colorado. These reservoirs allow the District to divert and store its decreed Colorado River and Arkansas River Water. Sixteen diversion structures are located on the west slope and one on the east slope. The Project includes a total of nine tunnels having a combined length of 26.7 miles.

On the west slope Ruedi Dam and Reservoir provides storage of water for western Colorado users and replacement water for out-of-priority diversions to the east slope. This stored water can be released to regulate stream flows and preserve senior water rights in the area. It is also used for municipal and industrial purposes, irrigation, fish and wildlife enhancement, and recreation.

The North and South Side Collection Systems of the project divert and carry water from the Fryingpan and Roaring Fork River basins to the inlet portal of the Charles H. Boustead Tunnel. The 5.4 mile tunnel conveys the water from the collection systems through the Continental Divide into Turquoise Lake.

On the eastern slope, Turquoise Lake and Sugar Loaf Dam are located east of the Continental Divide approximately five miles west of Leadville, Colorado. The lake provides storage capacity for regulation of Project water flowing from Boustead Tunnel. The Mt. Elbert Conduit, a 90 inch pipe nearly 11 miles long, transports water from Turquoise Lake to the Mt. Elbert Forebay. The Halfmoon Diversion Dam intercepts excess flows of Halfmoon Creek for diversion to the Mt. Elbert Conduit. Water delivered to the forebay is used to generate power at Mt. Elbert Pumped-Storage Powerplant. The powerplant is located in the northwestern corner of the lower lake of Twin Lakes. After passing through the powerplant, the water flows into Twin Lakes.

The new Twin Lakes Dam was constructed approximately 2,500 feet downstream from an older existing structure. From Twin Lakes, Project water flows down the Arkansas River to Pueblo Reservoir. Pueblo Reservoir is the terminal storage feature for the Fryingpan-Arkansas Project. From 1981 to 2009 the Project has imported an annual average of 54,700 acre-feet of water from the west slope to the Arkansas River.

IV. WATER BUDGET

A. Allocation Policy and Principles

All Fryingpan-Arkansas Project water allocations are administered by requirements of the Conservancy District Act and the Bureau of Reclamation Repayment Contract. The District has established rules and regulations that detail operating procedures. The procedures provide flexibility to water users at a reasonable cost that is set by the Bureau of Reclamation.

The Rules and Regulations for the District are stated in two documents: 1) Operating Principles, Fryingpan-Arkansas Project (Appendix G) oversees the construction of the Project and the diversion of water from the Fryingpan River and other tributaries of the Roaring Fork River to the Arkansas River Basin. 2) The Allocation Principles (Appendix H) govern the allocation of Project water throughout the District. The Allocation Principles are Court approved and the District Board of Directors approves the Allocation Policy (Appendix I), which are subject to the Allocation Principles.

In 2006, the Board of Directors amended the Allocation Policy. The Board added to the Policy Paragraph 14 to define how much Project water the District should keep in reserve for emergencies. In addition, a sentence was added to the end of Paragraph 13 to assess a surcharge to compensate for the absence of return flows from fully consumptive use of Project water for well augmentation, and that a portion of any agricultural allocation held for such use may be released to make up for the absence of return flows from such use.

In 2008, the Board of Directors amended the Allocation Policies by adding a sentence to the end of Paragraph 12 to state that Project water shall not be used to maintain or replace return flows from historical irrigation use of agricultural water rights in any change of such water rights from agricultural to municipal or other uses.

Project water supplements water supplies that are available to users from non-Project sources (privately owned decreed water rights). The demand for Project water increases in years when there is less non-Project water available in the basin. The Arkansas River is an over appropriated system with a continuous call on the river.

The Allocation Principles state that a minimum of 51 percent of Project water will be made available to municipal use, leaving 49 percent available to agricultural use. Historically, prior to 2002, allocation of Project water has been 77 percent agricultural use and 23 percent municipal use (Figures 1 and 2).

**Historical Allocations of Fry-Ark Project Water
1972 - 2003**

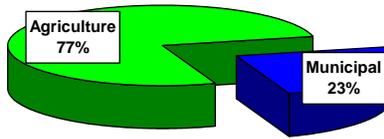


Figure 1

**Historical Allocations of Fry-Ark Project Water
1981 - 2002**

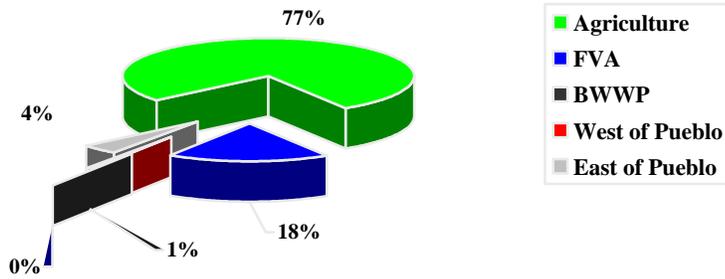


Figure 2

**Historical Allocations of Fry-Ark Project Water
2003 - 2009**

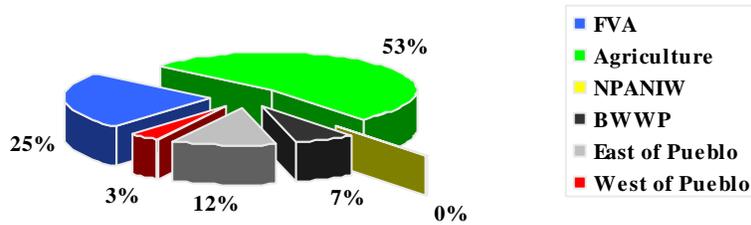


Figure 3

The first time in District history that municipalities requested their full 51 percent of Project water was in 2002 due to a drought. This in turn decreased the amount allocated to agricultural water users, who had previously been able to utilize the unallocated municipal water. This is an indication that water use within the District is changing more toward municipal than agriculture uses. (Figure 3)

Many of the irrigable acres located within the District have very senior water rights and consequently have not requested supplemental water from the District. Also, a portion of the District's irrigable acres have been taken out of production or are not eligible to receive a Project water allocation, because of sales and changes of use of their decreed water rights, or the land is considered "excess land" by the Reclamation Reform Act. It is the policy of the District not to use Project water to replace decreed water that has been sold. This results in a reduction of the total irrigable acreage that is eligible to receive Project water. However, in all but the wettest of years, total requests to the District for supplemental water for irrigation purposes exceed the available supply from the Project.

B. Not Previously Allocated Non-Irrigation Water (NPANIW)

In 2006, the Allocation Committee assessed the allocation of dried up lands and in accordance with the Allocation Principles, items G and H. Items G and H state "any increase in municipal and domestic allocations shall only occur if agricultural irrigated acreage, on which Project water has been used, is removed from irrigation, at which time the amount of Project water previously allocated to such acreage shall be allocated to other non-irrigation uses." The Principles state that such water "shall be allocated to other non-irrigation uses," and that "as irrigation water which is a primary source of water is converted to a non-agricultural use, the amount of Project water allocated to irrigation should be proportionately reduced and allocated to non-agricultural use."

This reallocation is based upon (a.) Permanently dried up lands, (b.) Acreage analysis: percentage of average annual Project water supply, and (c.) Annual Project water supply is variable. The analysis presented a new non-agricultural percentage of 3.59 percent.

Staff published a notice for acceptance of requests for allocation of not previously allocated non-irrigation water in newspapers within the District. Staff also mailed letters to entities within the District to present an application for a request of the 3.59 percent of a permanent allocation. A public meeting was held for questions regarding the allocation.

As a result, District Resolution No. 2007-1WR was passed on April 19, 2007 (Appendix J). The 3.59 percent was divided as follows:

- 2.18percent of the annual Project water supply to municipal and domestic use to the Arkansas Valley Conduit;
- 0.48percent to the Fountain Valley Pipeline;
- 0.27percent to the Arkansas Valley cities, towns and entities lying west of Pueblo;
- 0.34percent to the Pueblo West Metropolitan District; and
- 0.35percent to the City of Manitou Springs

Until the Arkansas Valley Conduit has the practical ability to use its 2.18 percent allocation, the 2.18 percent will be allocated as follows:

- 0.73percent shall be made available for use by the Arkansas Valley cities, towns, and entities lying east of Pueblo
- 1.45percent shall be made available to repay water owned to Colorado Springs Utilities under a 1998 Agreement (not to exceed a total of 9,289 acre-feet)

The NAPANIW allocation assisted in the shift in which municipalities began requesting their full amount of Project water. As stated in the allocation Operating Principles item 13, “The Project will be operated in such a manner that those in Eastern Colorado using Project water imported from the Colorado River Basin for domestic purposes shall have preference over those claiming or using water for any other purpose.”

C. Agricultural Water Allocations

It should be recognized that the supplemental water provided from the Project through the District to the various agricultural entities constitutes only a small percentage of their total water supply. All of the agricultural entities requesting an allocation of Project water have their own decreed water rights as their primary supply. They also own and maintain all of their conveyance facilities; including diversion dams, canals, laterals, and storage facilities. The District does not have any control over the water rights or the conveyance facilities that are owned by these entities.

As directed by District policies, Project water for use by irrigation ditches is allocated based upon an acre-foot per irrigated acre basis (Figure 4). Therefore, when demand exceeds supply each ditch receives a proportionate share of available Project water Project Water Allocations Acre-Feet Irrigation and Ditch Companies Service Areas (Appendix K).

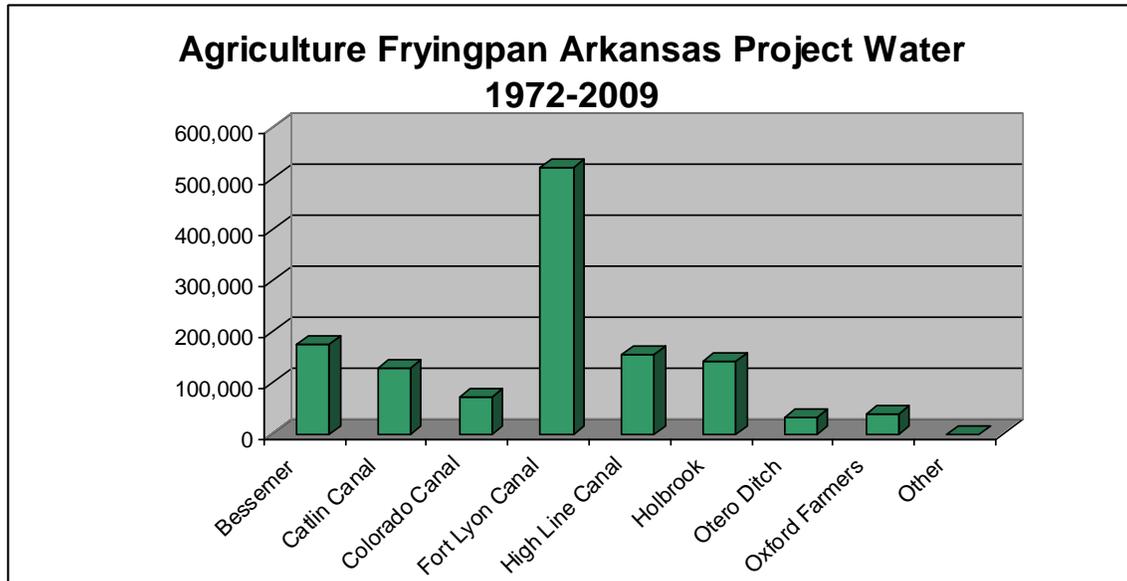


Figure 4

D. Municipal Water Allocations

NPANIW and municipal allocations are allocated first and are limited to 51 percent of the annual Project yield. The remainder of any excess municipal allocations is then allocated to agriculture. The Allocation Principles divide the 51 percent municipal allocations into four geographical or political areas. The municipal allocation of Project water is associated with the Arkansas Valley cities, towns and entities lying east of Pueblo (12 percent); cities, towns, and entities lying west of Pueblo (4 percent); the city of Pueblo (10 percent); and Fountain Valley Authority participants (25 percent) (Appendix L - Project Water Allocations Acre-Feet Municipal) and (Figure 5).

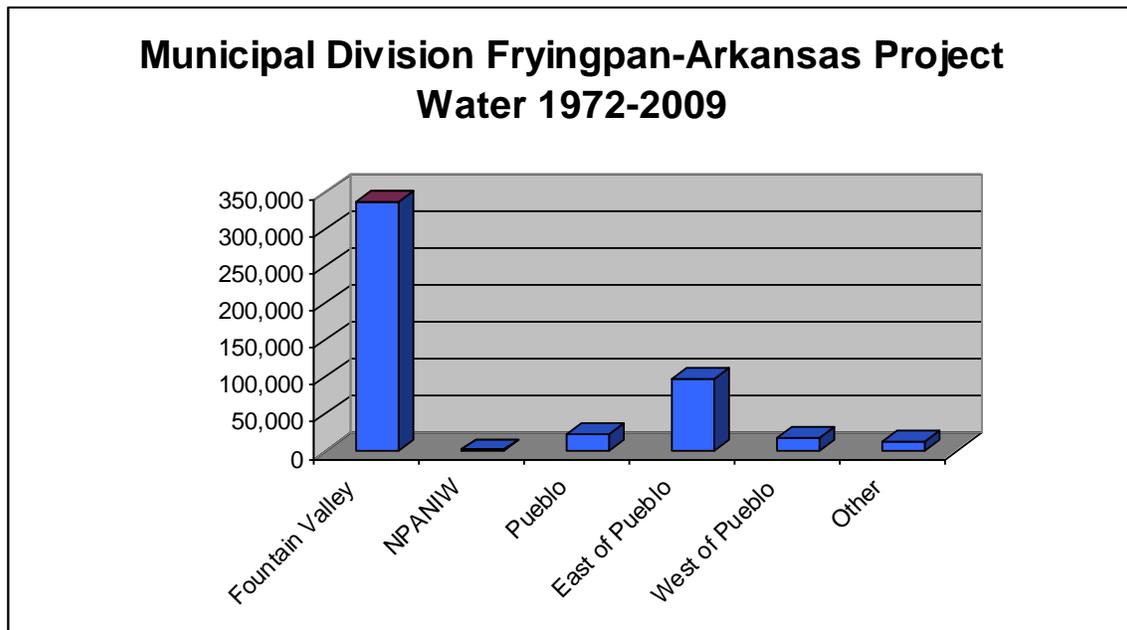


Figure 5

To encourage the efficient use of domestic water, municipal water users are not required to take a minimum amount of Project water in a given year. In the past, the Board acknowledged that it was unlikely any municipal entity receiving Project water would require its maximum allocation for a number of years. The District recognizes that the trend is currently changing over time and municipal demands are gradually increasing. Even if such full demand would not be asserted for many years, it would not constitute an abandonment of the municipal allocation. Undemanded water may be allocated first to other municipal and domestic users, thereafter offered to any other user on such basis as the Board of Directors determines.

At the current time, the District is considering a resolution to define how the apportionment of the 12% east of Pueblo allocation of Project water is determined. Municipal Project water will be allocated as a percentage of total water available. A reserve of three percent (3%) of the total twelve percent (12%) allocation available for east of Pueblo (0.36% of district-wide allocation) shall be maintained for unaccounted for

or unanticipated events. The percentage of total water available to entities lying east of Pueblo is illustrated in Figure 6.

Figure 6: Percentage of Total Water Available to East of Pueblo Entities

Entity	Percent of 12% Allocation	Percent of Total Allocation
96 Pipeline Co. (see paragraph E below)	0.36%	0.0433%
Avondale Water & Sanitation District	2.20%	0.2644%
Beehive Water Association	0.29%	0.0347%
Bents Fort Water Company	1.69%	0.2033%
Boone, Town of	0.66%	0.0789%
Cheraw, Town of	0.40%	0.0476%
Crowley County Water Association	6.68%	0.8016%
Crowley, Town of	0.35%	0.0422%
Eads, Town of	1.40%	0.1684%
East End Water Association	0.13%	0.0158%
Eureka Water Company	0.76%	0.0908%
Fayette Water Association	0.12%	0.0140%
Fowler, Town of	2.27%	0.2719%
Hancock Water Inc.	0.25%	0.0302%
Hasty Water Company	0.51%	0.0615%
Hilltop Water Company	0.54%	0.0649%
Holbrook Center Soft Water Association	0.09%	0.0104%
Homestead Improvement Association	0.12%	0.0147%
Joseph Corporation	0.47%	0.0564%
La Junta, City of	14.22%	1.7059%
Lamar, City of	16.66%	1.9992%
Las Animas, City of	6.70%	0.8043%
Manzanola, Town of	0.99%	0.1183%
May Valley Water Association	2.57%	0.3084%
McClave Water Association, Inc.	0.79%	0.0947%
Newdale-Grand Valley Water Company	0.87%	0.1044%
North Holbrook Water Company	0.11%	0.0135%
Olney Springs, Town of	0.73%	0.0877%
O'Neal Water Works	0.66%	0.0789%

Entity	Percent of 12% Allocation	Percent of Total Allocation
Ordway, Town of	2.34%	0.2813%
Parkdale Water Association	0.06%	0.0070%
Patterson Valley Water Company	0.18%	0.0216%
Riverside Water Association	0.21%	0.0248%
Rocky Ford, City of	8.05%	0.9661%
Southside Water Association	0.07%	0.0088%
South Swink Water Company	1.10%	0.1319%
St. Charles Mesa Water District	17.47%	2.0964%
Sugar City, Town of	0.76%	0.0911%
Swink, Town of	1.31%	0.1569%
Valley Water Association	0.50%	0.0595%
Vroman Water Company	0.27%	0.0329%
West Grand Valley Water, Inc.	0.16%	0.0189%
West Holbrook Pipeline Association	0.03%	0.0036%
Wiley, Town of	0.91%	0.1089%
Reserved (see paragraph D)	3.00%	0.3602%
TOTAL	100.00%	12.0000%

Currently, the District is also considering defining the apportionment of the allocation of municipal carryover storage to the entities east of Pueblo. A reserve of three percent of the total 37,400 acre-feet allocated to entities lying east of Pueblo shall be maintained for unaccounted for or unanticipated events. This apportionment will be based on population. Figure 7 illustrates how the apportionment will be distributed.

Figure 7 Apportionment of the Allocation of Municipal Carryover Storage to Entities East of Pueblo

Entity	Percent of East of Pueblo Storage Allocation	Acre-Feet of Storage Based on Allocation of 37,400 af from Allocation Principle D
96 Pipeline Company	0.36%	135
Avondale Water & Sanitation District	2.20%	824
Beehive Water Association	0.29%	108
Bents Fort Water Company	1.69%	634
Boone, Town of	0.66%	246

Entity	Percent of East of Pueblo Storage Allocation	Acre-Feet of Storage Based on Allocation of 37,400 af from Allocation Principle D
Cheraw, Town of	0.40%	148
Crowley County Water Association	6.68%	2,498
Crowley, Town of	0.35%	131
Eads, Town of	1.40%	525
East End Water Association	0.13%	49
Eureka Water Company	0.76%	283
Fayette Water Association	0.12%	44
Fowler, Town of	2.27%	847
Hancock Water Inc.	0.25%	94
Hasty Water Company	0.51%	192
Hilltop Water Company	0.54%	202
Holbrook Center Soft Water Assn.	0.09%	32
Homestead Improvement Association	0.12%	46
Joseph Corporation	0.47%	176
La Junta, City of	14.22%	5,317
Lamar, City of	16.66%	6,231
Las Animas, City of	6.70%	2,507
Manzanola, Town of	0.99%	369
May Valley Water Association	2.57%	961
McClave Water Association, Inc.	0.79%	295
Newdale-Grand Valley Water Co.	0.87%	325
North Holbrook Water Company	0.11%	42
Olney Springs, Town of	0.73%	273
O'Neal Water Works	0.66%	246
Ordway, Town of	2.34%	877
Parkdale Water Association	0.06%	22
Patterson Valley Water Company	0.18%	67
Riverside Water Association	0.21%	77
Rocky Ford, City of	8.05%	3,011
Southside Water Association	0.07%	27
South Swink Water Company	1.10%	411

Entity	Percent of East of Pueblo Storage Allocation	Acre-Feet of Storage Based on Allocation of 37,400 af from Allocation Principle D
St. Charles Mesa Water District	17.47%	6,534
Sugar City, Town of	0.76%	284
Swink, Town of	1.31%	489
Valley Water Company	0.50%	186
Vroman Water Company	0.27%	103
West Grand Valley Water, Inc.	0.16%	59
West Holbrook Pipeline Association	0.03%	11
Wiley, Town of	0.91%	339
Reserve (see Paragraph D)	3.00%	1,123
TOTAL	100.00%	37,400

Defining the precise percentage of allocated water and storage space is beneficial to the entities that lies east of Pueblo because it allows each entity to know exactly what percentage of the Project water and storage space they would have for their water planning needs.

E. Water Conservation

The District encourages and assists municipal water users in developing and implementing Water Conservation and Drought Management Plans. Colorado Springs Utilities, Security Water and Sanitation District, and the cities of Fountain, Salida, Canon City, and Florence have provided summaries of their Water Conservation and Drought Management practices to the District. The Board of Water Works of Pueblo, St. Charles Mesa Water District, and the cities of La Junta and Lamar are currently in the process of updating their water conservation plans and these plans should be completed by 2011.

F. Accounting for the Delivery of Project Water

While the District allocates Project water, Reclamation is responsible for the accounting of the delivery of Project water. The District provides Reclamation and the State Division 2 Engineer’s Office with a listing of the annual allocation of Project Water. Deliveries are then coordinated by Reclamation in communication with the Division 2 Engineer’s Office as requests are made by ditch and canal companies and municipalities.

The price for Fry-Ark Project water is determined by Reclamation as directed by Reclamation policy and the Project Repayment Contract. Every four years rates are subject to adjustment depending upon the Ability to Pay Study and Repayment Analysis (Appendix M - Payment Capacity Analysis). Reclamation has not made revisions to the Payment Capacity Analysis since mid-1990s. In addition, Reclamation keeps specific

records regarding inflows, water use, and outflows and publishes an Annual Operating Plans Summary of actual operations.

G. Operation and Maintenance of the Fry-Ark Facilities

In order to keep the Project working efficiently, the District in conjunction with Reclamation plans and Reclamation performs ongoing maintenance on all Project facilities and major repairs and replacement of any improperly functioning equipment and infrastructure. This program is funded through the Ad Valorem taxes the District collects on a monthly basis and pays to Reclamation twice a year.

Recently, the West Slope collection system was upgraded with fiber optic cable and remote control system. This will allow the system to operate more effectively and efficiently and provides the ability to respond to changing water conditions very quickly resulting in more diversions and fewer issues with West Slope entities.

Reclamation in conjunction with the District performs annual reviews of the Project facilities and performs a major review every five years. As a result of these reviews the following major projects have been identified to be performed over the next five years:

- Repairs to the stilling basin at Sugar Loaf Dam
- Replacement of the roof to the Twin Lakes Outlet Works Control building
- Rehabilitation of a portion of the Bessemer Ditch

Another expected major project is the redesign and modification of the North Outlet Works at Pueblo Reservoir in conjunction with the Southern Delivery System conduit.

H. Fountain Valley Authority and Conduit

The Fountain Valley Authority (FVA) supplies supplemental Project water and non-Project water to the cities of Fountain, Security, Widefield, Colorado Springs, Stratmoor Hills. The District has a contract with Reclamation to administer the conveyance and repayment for the FVA. (Appendix N) The FVA is responsible for collecting the payment and provides it to the District to pay Reclamation.

The Fountain Valley Conduit begins at Pueblo Dam and ends near Academy Boulevard about 2 miles south of Colorado Springs. The conduit conveys approximately 20,100 acre-feet of project water annually to the communities. The Conduit is 45 miles long and ranges from 42-inches to 14-inches in diameter. It has five pumping plants, two regulating tanks, two surge tanks, and four terminal tanks. The capacity is 31 cfs. The Authority has a finished reservoir that holds 3 million gallons and a forebay that holds 1.1 million gallons. From these storage facilities the water is sent to a treatment plant and delivered to their customers.

V. EXISTING WATER-MANAGEMENT MEASURES

A. Policies and Procedures

Figure 8
Winter Water Program

Year	Accumulated Acre Feet
1975-76	107,009.86
1976-77	107,245.69
1977-78	No Program
1978-79	94,900.66
1979-80	123,464.02
1980-81	139,404.52
1981-82	134,845.21
1982-83	188,976.93
1983-84	196,516.02
1984-85	180,555.76
1985-86	190,934.73
1986-87	216,886.16
1987-88	186,929.02
1988-89	148,072.07
1989-90	129,583.97
1990-91	144,625.26
1991-92	159,335.16
1992-93	163,409.39
1993-94	154,289.15
1994-95	153,749.42
1995-96	177,589.91
1996-97	161,706.17
1997-98	124,607.18
1998-99	174,646.36
1999-00	178,579.18
2000-01	158,389.91
2001-02	134,664.53
2002-03	74,774.81
2003-04	81,439.25
2004-05	116,464.72
2005-06	111,384.10
2006-07	149,576.56
2007-08	153,034.86
2008-09	140,355.94

1. Winter Water Storage Program

The Winter Water Storage Program (WWSP) began as a voluntary three month program in 1975. Figure 8 shows the year and acre-feet accumulated for the WWSP. In 1976, it again ran for a three month period. With the experience and data gained each year, refinements and adjustments were made to the WWSP with the goal of arriving at an equitable means of apportioning the water stored during the non-irrigation months among the program participants and avoiding injury to non-participants. The WWSP utilizes Project facilities to store water for entities that do not have storage facilities.

A Cooperative Program was negotiated and was agreed upon by all parties. In 1984, the participants petitioned the Water Court for a permanent decree. Fifteen years later, on November 10, 1990 the Interlocutory Final Decree (Appendix O) for the WWSP was signed. This marked an incredible milestone for the Fryingpan-Arkansas Project and its original intent of aiding the arid southeastern portion of Colorado to prosper by using water conservation measures.

The Division Engineer's office and Reclamation play an enormous role in the continuing success of the WWSP. The participating entities in the WWSP include; Amity Mutual Irrigation Company, Bessemer Irrigating Ditch Company, Catlin Canal Company, Colorado Canal Company (including, Lake Henry Reservoir Company and Lake Meredith Reservoir Company), High Line Canal Company, Holbrook Mutual Irrigating Company, Fort Lyon Canal Company, Las Animas Consolidated Canal Company, Oxford Farmers Ditch Company, Riverside Dairy Ditch, and West Pueblo Ditch.

The Winter Water Storage reports for the current year are accessible on the District's website.

Figure 7

2. Southeastern Colorado Water Activity Enterprise Fry-Ark Project Water Return Flow Sales

Pursuant to the District's repayment contract with the United States, the District retains dominion and control over Fry-Ark Project water return flows. All return flows are claimed and reserved for use within the District boundaries. The District, by resolution, created the Southeastern Colorado Water Activity Enterprise to administer the sale of Project water return flows. On February 15, 1996, the Enterprise approved a "Policy Concerning the Sale of Return Flows from Fryingpan-Arkansas Project Water" This policy has been amended and the current version is as of April 15, 2004 (Appendix P).

The objective of this policy is to maximize the sale and use of Project water return flows. Agricultural return flows are used primarily for well augmentation purposes. Return flows from the delivery of first-use Project water are currently made available to well owners throughout the District as a source for replacement water for out-of-priority well depletions. However, the Fountain Valley Authority on Fountain Creek and the Board of Water Works of Pueblo municipal return flows are exchanged back into Pueblo Reservoir. Due to low return flows, reduced imports and increased storage by municipal users the return flows have declined over the last several years.

Return flows are important in helping well owners meet their in-state responsibilities to off-set depletions to surface water supplies. The District has worked to better utilize return flows so that other supplies can be used for meeting future demands. It is estimated that forty percent of agricultural Project water delivered at the headgates are returned to the Arkansas River as return flows. Previously, the District allocated only the quantity of Project return flows expected to accrue to the River during the current plan year from Project deliveries that occurred in previous years, as well as the current plan year. The Division 2 Engineer Office has developed a Ground Water Accounting Model that is used to route return flows to the river over the next twenty year period. This model has enabled the District to adopt a "Time Forward" policy for allocating Fry-Ark agricultural return flows. This is possible because the timing and magnitude of these return flows are similar to, but opposite of the timing and magnitude of the well depletions.

The Time Forward allocation of Project water return flows has enabled the District and the Division Engineer Office to estimate what the amount of return flows will be in the future based on the current year's allocations. Return Flow allocations are based on what projected deliveries will be. The District is able to allocate not only the return flows expected to accrue during the coming year, but can also allocate those that are expected to accrue in future years. This "Time Forward" allocation of return flows represents a resource that can be used to replace stream depletions caused by well pumping in any given year. Hence, the Division Engineer's office doesn't have to require the well associations to encumber as much money as surety against those future depletions because they have already purchased future replacement water supplies from the District. Also, the District charges less money per acre-foot of future return flows than what the Division Engineer's office requires as surety against future replacement water to offset

future depletions. The well owners are able to accomplish the same objective at a reduced cost.

The policy is a win – win for well associations because they can purchase future return flow accretions, which is a less expensive means of assuring post plan depletions that need to be replaced. The policy is also a win-win for the District because a ready market exists for all projected return flows from agricultural allocations, which means more revenue from return flow sales. It also allows the return to a single annual return flow allocation procedure in future years. It is also a win – win situation for senior ditches and the State of Kansas, because it provides for a more reliable basis to assure replacement of post-plan depletions by well users.

Historically the predominant irrigation methods consisted of earthen canals and laterals that supplied water to farms where it was distributed by means of furrow irrigation which use siphon tubes or gated pipe. The use of more efficient irrigation methods, such as lining off-farm ditches and laterals or replacing them with pipelines to supply sprinkler and drip irrigation systems has become more prominent over the last decade in the Arkansas Valley.

These efficient irrigation practices are a concern to the Colorado State Engineer's office. The State of Colorado is proposing new rules to ensure that irrigation improvements that use surface supplies do not increase consumptive use or reduce return flows to the detriment of water users in the State of Kansas, raising the specter of more legal action over the Arkansas River Compact. The State Engineer's office has worked closely with irrigators and agricultural water providers to draft a set of Irrigation Improvement Rules to govern the use of more efficient irrigation practices. (Appendix Q)

The Rules provide that those who intend to make irrigation system improvements can develop plans to maintain historical return flow patterns by using other sources of water available to them. Some have speculated that ditch companies may begin exercising their first right of refusal for a portion of the Fry-Ark Project return flows they generate to replace depletions created by more efficient irrigation methods.

3. Allocation Policy Review and Process

Adjustments made to the District's Project Water Allocation Policy and Process has allowed for the more efficient use of Project water and Project storage facilities. In years past, irrigation entities would be required to submit a request for Project Water in early April of each year and were then allocated their share of Project water. Each entity would pay for their full allocated share in May without knowing what their true need for Project water would look like during the latter part of the summer when the supplemental Project water was traditionally used. The old up-front buy it all in May approach would force each entity to estimate what their respective needs would be. In some cases, entities would purchase too much Project water, if it turned out to be a wet year, and they would have to use the water by a prescribed date or lose it. In 1997, the District adjusted this process to allow each irrigation entity to delay their final purchase decision until July 15. This new process allows for better water purchase decisions and less water waste.

In addition, it keeps Project water unallocated and in storage longer if it's not needed in the current irrigation season.

In 1998, the District amended the Water Allocation Policy. Prior to that date Project water allocated for agricultural purposes had to be used before May 1, of the following year, if not used the allotment would be considered to be canceled by the entity. The policy was amended to eighty percent of any allocation of Project water purchased for agriculture must be used by November 1 of the current year. The remaining twenty percent must be used by May 1 of the following year. If Project water allocations are not used by the specified dates, the allocation is canceled. This is commonly known as the 80 / 20 rule. The District Board may waive this rule if conditions permit.

On April 15, 2004, the District amended the Water Allocation Policy another time. It is now the District's policy to accommodate reasonable requests for extension of these deadlines in certain circumstances. When considering such requests, the District will consider that water committed to augmentation plans often requires long-term storage. Approved carry-over storage past May 1 of the following year of Project water allocated for agriculture shall be subject to appropriate evaporation and transportation charges and to financial surcharges similar to those paid for municipal carry-over storage.

4. Not Previously Allocated Non-Irrigation Water (NPANIW)

The District has had to address the drying-up of agricultural acreage due to the sale of water rights on the Colorado Canal. The Allocation Principles state that “any increase in municipal and domestic allocations shall only occur if agricultural irrigated acreage, on which Project water has been used, is removed from irrigation, at which time the amount of Project water previously allocated to such acreage shall be allocated to other non-irrigation uses.” The Principles further state that such water “shall be allocated to other non-irrigation uses,” and that “as irrigation water which is a primary source of water is converted to a non-agricultural use, the amount of Project water allocated to irrigation should be proportionately reduced and allocated to non-agricultural use.”

The reallocation of NPANIW is based on permanently dried up lands, the percentage of average annual Project water supply is analyzed, and the amount of variable annual Project water supply. The criteria used for calculating these acreages are: The most acreage irrigated as reported by the entity in their applications for Project water in a given year and whether the entity received an allocation of Project water in that year. Figure 9 illustrates how the percentages for NPANIW were configured.

Figure 9

DRIED UP LANDS WORKSHEET			
6/28/2006			
From Allocation Principles			
Current Ag Percentage equals 49%			
	Reported	Percent	Percent
	Acres	of Ag	of Total
Total acres	227,500	100%	49.00%
Dried up	16,649	7.32%	3.59%
Remaining Ag	210,851	92.68%	45.41%
Current Municipal			51.00%
New Non-Ag			3.59%
Estimate of average annual amount of water involved			
Based upon an estimated 52,400 AF average allocation,			
3.59 percent times 52,400 AF equals 1,881 AF average.			

B. Cooperative Programs

1. United States Geological Survey Cooperative Programs

The District participates in several cooperative programs and studies with the U.S. Geological Survey (USGS). These programs include: collection of stream-flow data, groundwater level data, continuous specific conductance data, water-quality study of the Arkansas River Basin, long-term water quality monitoring network, and Pueblo Reservoir water quality monitoring

In 2006, the District received funding from Reclamation to support the installation of three new SNOTEL (SNOpack TELemetry) sites. SNOTEL sites are remote automated sites that transmit daily data. Each site will measure snow water equivalent, snow depth, accumulated precipitation, and air temperature. One site is located in the Fry-Ark collection system near the Chapman Control area. The second site is located between Prophyry Creek and South Colony, south of the town of Howard near Hayden Pass Road. The third site is in the Cottonwood Pass/St. Elmo area. This site was chosen because an existing snow course is located in this area and it provides historical data that can be used for correlation of data.

This project has supplemented the existing SNOTEL sites in the Arkansas River basin by assisting the District to meet short and long-term objectives of water management. The project has provided additional beneficial data on the snowpack and climatic conditions that affect the water resources within the Fry-Ark Project and the Arkansas River basin.

2. Satellite Stream Gauging Program

Through the State of Colorado's Satellite Stream Gauging Program the District can provide almost instantaneous river readings from strategic locations. In addition, the District can assist in the rapid dissemination of data between the State (Division) Engineer, Reclamation, and other related agencies through the cooperation of a coordinated computer system. The District has simplified the process to access the stream gauging information by providing links to the various stream gauge locations. The links are available on the District's agriculture water conservation website; www.secowaterwise.org.

3. Voluntary Flow Program on the Arkansas River

It was noted in 1989, that commercial and private boating was increasing, as was the number of fishermen on the Arkansas River, above Pueblo Reservoir. An organization was formed to help develop and manage water and land uses on the upper Arkansas River. To answer the need for better management along the river corridor, the Bureau of Land Management, the Colorado Department of Parks and with other outdoor recreation interests formed the management organization known as the Arkansas Headwaters Recreation Area (AHRA).

The AHRA is assisted by a Citizen Task Force. The task force reviews area issues and helps to give direction to the AHRA staff. This task force is made up of volunteer citizen members throughout the basin with representation from anglers, environmental groups,

cattlemen, water users, local governments, private boaters, and commercial rafting companies.

Prior to 1989, the rafting companies had found that during the latter part of summer, river flows became so low they were unable to continue their rafting trips. They also noticed that river flows would increase as water users made their releases to the various entities downstream. Early in 1991, the rafting companies approached the AHRA with an idea of a “Volunteer Flow Program.”

AHRA, Colorado Department of Natural Resources, Reclamation, and the District were all instrumental in helping coordinate the annual “Volunteer Flow Program” on the upper Arkansas River. The fact that the District owned the Fryingpan-Arkansas Project water right decrees that would be used to establish the flow program made the District an important partner in the flow program.

Each year, after careful consideration of the recommendations of the Department of Natural Resources, the District approves the Department’s recommendations asking Reclamation for its approval and suggests the administration of the releases be handled by the State of Colorado Water Resources Division Engineer for Division 2. The District also requires that the flow program be “subject to the availability of water.”

In 1992, the Department of Natural Resources recommended that the Division of Parks and outdoor recreation interests use funds collected from the commercial rafting companies to pay for replacement of evaporative water losses caused by the summer augmentation. This repayment is only necessary when the flows released are not actually needed by the District or Reclamation. The funds to pay for this replacement are obtained from the commercial rafting companies yearly licensing fees.

The Volunteer Flow Program continues today, with flows in April and May designed to provide conditions favorable to Trout egg hatching and fly emergence. It also holds August flows at the 700 cfs target. Flow reduction only occurs when flows would otherwise be greater than a defined threshold and when reduction will be compatible with the operation of the Fryingpan-Arkansas Project and rights of the water right owners.

The Volunteer Flow Program has become a model of joint state, federal, and local management and cooperation. The success demonstrates the ability of diverse interests to work together toward a shared goal. At the same time, its success in attracting visitors has challenged the ability to manage the resource over the long-term for all of its biologic, recreation, and economic values. The development and implementation of flow management recommendations is an example of this ability. Without the commitment and cooperation of Reclamation, the Bureau of Land Management, the District, local governments, and water users flow management for recreation and wildlife purposes in the upper Arkansas River would not have occurred.

4. Tamarisk Control Program

On June 19, 2003 the District Board of Directors adopted a resolution authorizing the District to participate in the continued pursuit of a western-wide tamarisk control program using a regional approach. The District Board supported the efforts to pass legislation providing the financial tools for the implementation of regional projects for the control of tamarisk and other non-native plants impacting western rivers.

District staff was appointed to represent the Arkansas River basin on the Board of Directors of the Tamarisk Coalition. The Coalition is a non-profit alliance working to restore riparian lands. The Tamarisk Coalition is taking the lead in developing a collaborative effort between the western states and is developing partnerships with governmental agencies for control of this non-native invasive tree species. In September 2004, the Board of Directors unanimously supported a resolution to financially contribute to the Tamarisk Coalition and to take a leadership role to begin a comprehensive project on the control of tamarisk in the Arkansas River basin. (Appendix R – Tamarisk Resolution)

The District has assumed a leadership position in the region in the efforts to control invasive tamarisk and Russian olive trees and river restoration projects. The District received grant funding from the Colorado Water Conservation Board and from Bent County through a grant from the Department of Local Affairs to develop a strategic plan for the entire Arkansas River watershed. The District worked with over thirty entities, known as the Technical Advisory Team to develop the Arkansas River Watershed Invasive Plants Plan (ARKWIPP). The ARKWIPP was completed in the fall of 2008 and was approved by the State Weed Coordinator. The entire ARKWIPP plan and mapping project can be reviewed on the educational website developed for the basin at www.arkwipp.org.

The development of the ARKWIPP has assisted entities in the watershed to pursue additional federal and state funding for control and restoration projects. In May 2009, the District received \$150,000 in funding through the Colorado Water Conservation Board (CWCB) Tamarisk and Russian Olive Grant Program to implement the ARKWIPP. The ARKWIPP Technical Advisory Team identified six priority areas in which to implement the ARKWIPP. Using these grant funds the District is working with four projects that were prioritized for implementation by the Technical Advisory Team. Other Team members have received CWCB grant funds to implement the other two priority sites. CWCB has provided \$350,000 in funding to the Arkansas basin to address this problem.

The District's ARKWIPP Riparian Restoration Project is supporting control and restoration activities for these projects:

1. City of Pueblo at Lake Minnequa and Fountain Creek.
2. North La Junta Conservancy District on the main stem of the Arkansas River through the City of La Junta.
3. Arkansas River Conservancy District on the main stem of the Arkansas River along the Las Animas levee.

4. Prowers County on the main stem of the Arkansas River from the town of Holly east to the Kansas border.

The total cost of the project is \$576,612 with many local entities providing matching funds and in-kind donations. The project will be completed in June of 2011.

5. Intergovernmental Agreement (IGA) between the Southeastern Colorado Water Conservancy District, Upper Arkansas Water Conservancy District, and the City of Aurora

In May 2004, an historic agreement between the District, the City of Aurora, and the Upper Arkansas Water Conservancy District (UAWCD) was finalized. The participating entities negotiated terms and conditions based on the concept of preserving and improving the water resources of the Arkansas River basin.

The impacts of the change and transfer of these water rights were defined and agreed to by negotiation. The amount of combined water rights that can be transferred out of the Arkansas basin was reduced by 1,650 acre-feet. The District and UAWCD negotiated with the City of Aurora, although Aurora would agree to leave some water (1,650 acre feet) in the basin, this alone did not address the potential damages from the transfer of the remaining water. Compensatory measures needed to be instituted to deal with that potential damage.

The final agreements changed the timing and methods of transfer. Aurora agreed to contributions of water and storage to eliminate the impacts of water transfers in dry years. Part of this contribution included two “pools”, which would store water for use in dry years to remove the 1874 call of the Rocky Ford Ditch. These two storage pools, a total of 4,500 acre-feet, will also be available for use by the conservancy districts. This allows the districts to enhance the size of the “pools” in wet years and enables Aurora’s junior water right to continue to divert water from the Rocky Ford Ditch.

The restrictions on future water use in the Arkansas Valley were written into the agreements:

- Aurora may not purchase water rights from the Arkansas Valley for 40 years.
- The maximum total amount that may be removed in any year is 54,000 acre-feet.
 - Fifty percent of this water originates outside the Arkansas Basin.
 - Presently, the remainder comes from present and past water purchases in the Arkansas Basin.
 - To meet this pipeline capacity the balance must come from temporary leases – approximately 8,300 acre-feet.
- Temporary leases are limited to a maximum of 10,000 acre-feet per year.
- Temporary leases can only be executed when Aurora’s storage capacity is below 60 percent and must be used to improve their storage capacity - not for immediate use.
- Use of temporary leases requires the implementation of “increasing block rate structure” for Aurora’s water users to encourage conservation.
- Use of temporary leases requires implementation of mandatory outdoor water restrictions on Aurora’s water users.

With these restrictions, the damaging effects upon native water flow in the Arkansas River basin will be reduced.

Aurora also entered into an agreement for reuse of its existing water supplies to meet its future needs. These efforts must reduce Aurora's demand on out-of-basin sources for water before it can attempt to claim water rights in the Arkansas River Basin after 2043. In this agreement, Aurora is required to "enhance and enlarge" its reuse efforts to meet future demand. The City is building the Prairie Waters Project to meet this requirement. The Prairie Waters Project will withdraw Aurora's existing water rights from riverbank wells along the South Platte River just north of Brighton. Once complete in late 2010, the Prairie Waters Project will increase Aurora's water supply by 20 percent; delivering up to 10,000 acre-feet (about 3.3 billion gallons) of water per year.

This IGA required formation of the Regional Resource Planning Group, comprised of the negotiating entities and other Arkansas Valley constituents to develop procedures for enhancing and protecting Arkansas Valley water resources. The agreements mark a historic and dramatic departure from the past practices in mitigation to a basin of origin. To that end, these agreements may change the way other basins negotiate and operate.

6. Agriculture to Urban Transfer Model

In June 2008, the District contracted with Aqua Engineering to develop a model for agriculture water transfers to urban. This effort was funded by the CWCB and in cooperation with the Arkansas Basin Roundtable. Many Roundtable members participated in the process. A committee studied how to make water transfers work better for all involved. A template of general and voluntary guidelines was developed that considered how a water transfer influences the type of mitigation that may be needed. The template could be used not only by water buyers and sellers, but also by communities and other third parties who would be affected by such deals. The Arkansas Basin Roundtable adopted the report at their June 2009 meeting.

7. Transit Loss Study

This District has recently contracted to conduct a Transit Loss Study project with Livingston Professional Services, LLC. The District received grant funding from CWCB, local funding from many of the canal and ditch companies and in-kind donation from the Division 2 Engineer's office to support the project. The study will provide updated and scientifically-based transit loss and travel time estimates for use in the Fry-Ark Project water management/delivery. The study will cover the reach of the Arkansas River from Pueblo Reservoir to John Martin Reservoir, a distance of about 141 river miles and is scheduled to be completed by the end of 2010.

The benefits to an improved model of measuring transit loss are numerous. It will allow for an improved ability to administer reservoir releases and thus protect the water rights of all water users. It will improve hydrologic information that affects the "engineering" aspects of future water transfers, water-management decisions, etc. In addition, it will

help to assure compliance with the Arkansas River Compact and enhance the operation and management of the Fry-Ark Project.

8. Monitoring and Modeling to Enhance Agriculture and Environment

The District has financially supported Colorado State University in a study titled “Toward Optimal Water Management in Colorado’s Lower Arkansas River Valley.” Extensive field data and modeling tools are being developed and incorporated into a decision-making framework that focuses on meeting multiple criteria:

1. Maximize the net economic benefits to agricultural production via reduction in salinity and water-logging.
2. Minimize salt and selenium concentrations in the river at key locations, including the Colorado-Kansas state line.
3. Maximize “liberate” water via reduction in non-beneficial consumptive use from high water tables under fallow alluvial land and from invasive phreatophyte vegetation (tamarisks) along the river corridor.

9. The Upper Colorado River Endangered Fish Recovery Program

The Upper Colorado River Endangered Fish Recovery Program has been developed to aid the recovery of four species of endangered fish. The four species occupy the Colorado River in the “15 –Mile Reach,” a segment of the river that extends from the confluence of the Gunnison River upstream 15 miles to the Grand Valley Irrigation Company Diversion Dam near Palisade, Colorado. In 1999, the United States Fish and Wildlife Service completed the “15-Mile Reach Programmatic Biological Opinion” or the PBO.

The PBO requires the State to annually provide 10,825 acre-feet of water per year (10825 Water) to the 15-Mile Reach in the summer and fall months when the Colorado River stream flow is substantially impacted by upstream water diversions. The commitment to provide the 10825 Water is divided equally between East Slope and West Slope water users, with each responsible to supply 5,412.5 acre-feet per year on a permanent basis. In the interim Denver Water and the Colorado River Water Conservation District (River District) agreed to provide the 10825 Water. This agreement expired in December 2009. Furthermore, the PBO requires the water users to have in place a permanent agreement that identifies how the 10825 Water will be delivered to the 15-Mile Reach before the expiration of the current agreement.

In the past, West Slope and East Slope water users have independently considered various separate alternatives to supply the 5,412.5 acre-feet of water that is required for each group. Numerous structural and non-structural alternatives have been investigated by different stakeholder groups, at differing levels of detail.

In 2004, Grand River Consulting completed a study for the River District, Denver Water and Northern Colorado Water Conservancy District (Northern District): Comparison of Water Supply Alternatives Associated with the Upper Colorado River Endangered Fish Recovery Program. The objective of this assessment was to compare six specific 10825 Water alternatives that were of interest at the time of the study.

At the end of 2006, a broad coalition of East and West Slope water providers agreed to work together to provide a final effort to analyze and compare a broader list of alternatives. This comparative analysis was envisioned to be developed in an open, unbiased process in order to potentially build support from across the state to enable an informed and smooth transition into the NEPA process.

Under the direction of the committee, a “Phase 1 Screening Assessment” of 10825 Water alternatives was initiated. This screening study recommends a specific list of 10825 Water Alternatives that warrant more detailed analysis and investigation in the Phase 2 Study.

The “10825 Work Group” was developed and from that group an Executive Committee comprised of representatives of the River District, Denver Water, Northern Water and the Southeastern Colorado Water Conservancy District was formed. The Executive Committee provides communications with Grand River Consulting, who is conducting the studies.

The objective of the Phase 2 Study is to investigate alternatives that can provide the 10825 Water to the 15-Mile Reach on a permanent basis. The study will provide a preliminary assessment of structural and non-structural 10825 Alternatives that is consistent with the requirements of the NEPA.

In the Phase 2 Study, the Consultant will develop and evaluate alternatives that meet the following project objectives:

- Provide a permanent supply of 10825 Water to meet the West and East Slope requirements within the 15-Mile Reach.
- Do not reduce the water supply or the yield that is available to any West or East Slope water user.

Results of the Phase 2 alternatives evaluation will be reviewed by the project stakeholders. A final list of potential 10825 Alternatives will be developed based upon comments from stakeholders. An evaluation of the final alternatives will be presented in a summary report.

C. Public Education

1. Education Outreach Program

The District has taken huge strides in keeping the public and others fully informed on the operation of the Fryingpan-Arkansas Project and other key water-related matters through the publication of specific reports, news releases, and agency reports. The official proceedings of the District and information on current legislative matters are regularly distributed. The District has provided updated information to persons responsible for the operations, maintenance, and planning through educational courses and tours.

The District currently focuses on disseminating information electronically through the www.secwcd.org website. The information available on the website is:

- Board Meetings
 - Agendas
 - Minutes
 - Work Sessions
- Board of Directors
 - Photos, date appointed and representation area
 - SECWCD Committees and members
 - Executive
 - Allocation
 - Arkansas Valley Conduit
 - Finance
 - Human Relations
 - Preferred Storage Option Plan Implementation
 - Resource and Engineering Planning
 - SECWCD Past Board Presidents
- Fryngpan – Arkansas Project Allocations
 - Operating Principles
 - Water Allocation Policy
 - Policy Concerning Sale of Return Flows from Fry-Ark Project Water
 - Allocation Calendar
- History
 - Early History
 - Authorization of the Fry-Ark Project
 - Description of the Project
 - Facilities
 - West Slope Features
 - East Slope Features
 - Project Water Rights
 - Operating Principles
 - Creation of SECWCD
 - Demand for Project Water
 - Allocation History
 - Use and Reuse of Project Water
 - Winter Water Storage Program
 - Financial Obligation
 - Project Highlights
 - District Map
- Project Highlights
 - Timeline for the Project
- Reports
 - Finance
 - Fry-Ark Project
 - Arkansas Valley Conduit
 - Preferred Storage Option Plan

- Arkansas River Compact Administration 1980 Operating Plan Recommendations
- District Boundaries Map
- Meetings and Events
- Legislation
 - Colorado State
 - General Assembly
 - Colorado Water Congress
- Arkansas Valley Conduit
 - Login Page for Participants
 - Arkansas Valley Reports
- Winter Water Storage Program
 - Meeting Minutes
 - Winter Water Reports
- Tamarisk
 - The Problem
 - Problem Solutions
 - Strategic Plan
 - Links
 - Funding Opportunities
 - Manage Your Problem
 - Tamarisk Maps
 - Research
 - Education
 - Events
 - Volunteers
 - Who We Are
 - Contact
 - Task Force Login
- SECOWaterWise
 - COAgMet Weather Data and Reports
 - COAgMet Evapotranspiration
 - Who We Are
 - Research
 - Evapotranspiration Information
 - Resources
 - Events
 - Contact Us
- Xeriscape
 - Xeriscape Information
 - Irrigation Technology
 - Grasses
 - Plant Database
 - Resources
 - Contact
- Facilities

- Room Rental Forms and Rates
- Water Links
 - Federal Agencies
 - National Associations and Organizations
 - Colorado General Assembly and State Laws
 - Colorado Congressional Offices
 - Colorado State Agencies
 - Colorado Water Associations, Organizations, and Districts
 - Additional Organizations
- Water Terms

Appendix S features samples of District’s education program brochures and website information.

For the past fifteen years, the District has co-sponsored and has taken a leadership role in planning the Arkansas River Basin Water Forum. The Forum is held annually in varying locations throughout the Arkansas basin. The purpose of the Forum is to educate water users and interested citizens about the key water-related issues in the basin.

The District provides funding and coordination for annual Children’s Water Festivals. The Children’s Water Festivals focus on educating fourth grade level students on water concepts, uses, and conservation.

In addition, the District offers tours of the Fry-Ark Project collection systems, west and east slope facilities, and the lower Arkansas River valley agricultural areas. The focus of the tours is to provide background information and to demonstrate how the Fryingpan-Arkansas Project functions.

2. Development of a Demonstration Xeriscape Garden

The District has created a three acre Demonstration Xeriscape Garden at its Administration Building. The garden’s purpose is to educate the public on the principles of xeriscape and to demonstrate that a low-water garden can be beautiful and functional. The garden provides unlimited access to the public. The garden features interpretive signs stating the purpose of the garden and the xeriscape concepts. The plants in the garden are labeled with the botanical and common names. The Demonstration Xeriscape Garden also displays thirty Experimental Grass Plots. The plots are used to demonstrate how various alternative turf grasses perform when irrigated with different measured amounts of water. The garden encourages the efficient use of water by exhibiting subsurface drip and drip irrigation methods, evapotranspiration irrigation schedulers, soil moisture probes, mixed precipitation sprinkler heads and rain and wind shut off devices.

The District has a part-time Xeriscape Garden Coordinator, who is responsible for maintaining the garden plants and irrigation technology. In addition, the Coordinator provides educational programs to many interested constituents throughout the basin. The District provides xeriscape information to the public through the creation of brochures, presentations, tours, classes, and workshops.

The District has also developed a website specifically for the Demonstration Garden. The website provides lists of plants, suppliers, conservation tips, and a calendar of upcoming educational opportunities. The website also features photographs of various plants in the garden and lists the plants' characteristics. It contains a search feature in which a visitor can search for a plant by its attributes. The website address is www.secwcdxeriscape.org.

In 2003, the District was the recipient of the Bureau of Reclamation, Great Plains Regional Director's Water Conservation Field Services Program Award. The award was given in recognition of exceptional efforts on implementing a Xeriscape Demonstration Garden and developing an outstanding education program.

3. Designation of Water Conservation Coordinator

In January 2004, the District established the position of Water Conservation Coordinator. The Water Conservation Coordinator provides outreach and education pertaining to water conservation to the constituents of the District. The District has also hired a part-time Xeriscape Garden Coordinator.

The Water Conservation Coordinator is responsible for developing the conservation plan for the District. The Water Conservation Coordinator and Xeriscape Garden Coordinator work together to develop the education programs included in the water conservation plan. The programs are in the form of workshops, seminars, presentations, and educational websites. These programs are provided to various organizations throughout the District. The District has assisted several towns and cities in the District in designing and implementing Demonstration Xeriscape Gardens.

The Water Conservation Coordinator is also responsible for working with the Colorado Water Conservation Board and Reclamation to disseminate information on water conservation programs. In addition, the Water Conservation Coordinator serves on the Board of Directors for the Colorado Water Wise Council for the past seven years. The Council promotes the wise use of the state's water resources by providing education and resources throughout the state. The Council is embarking on an exciting project to develop a Best Management Guide for Water Conservation for the State with funding from CWCB. The Guide should be completed in 2011.

D. Planning for Future Storage and Supply Projects

1. Preferred Storage Options Plan (PSOP)

A Water and Storage Needs Assessment Report led the District and the communities throughout the District to further study water needs in the Arkansas River Basin. The participants analyzed many different alternatives for providing future water supplies, worked with agricultural and municipal water providers, recreation interests, local environmental groups, and state and federal resource agencies, to devise a plan to prepare the District to meet water needs in the basin into the year 2040.

In 2001, the District completed the study that provided a recommended implementation plan for the potential for the enlargement of Pueblo Reservoir Dam (Appendix T – Preferred Storage Options Plan (PSOP) Final Draft Report). The study evaluated more than thirty different alternatives to meet the projected demand. The study concluded that efforts should be focused on the use and expansion of existing Fry-Ark Project facilities to meet future demands.

An enlarged Pueblo Reservoir would help municipal users meet their future demands and provide permanent storage space for the Winter Water Storage Program. Without additional storage space, Winter Water may be threatened with a spill or at least early release, which means that the user-period of this valuable water is restricted or eliminated entirely. In addition, the enlargement would provide for storage of other supplemental agricultural water and give small towns in the District future opportunities to contract for firm storage space.

While consideration of legislation began in 2001, it has taken time for parties to effectively address the issues raised. The Colorado congressional delegation has waited patiently for entities to accomplish this goal. It has been achieved through litigation initiated, negotiations undertaken in earnest, and a good faith effort based on a mutual desire to maximize the Arkansas River resources for all parties without undue burden on any single entity.

Since the 2001 implementation plan study, the District has separated the Enlargement and the Excess Capacity processes into two distinct programs. A more in-depth explanation of these two programs is provided below.

a. Excess Capacity Master Contract

Originally called Re-operations, Excess Capacity is a program that allows water providers to store non-Project water in Project facilities. The entities are required to obtain a contract with Reclamation for this storage. Currently these contracts are on an annual basis with exceptions of the long-term contracts received by the Board of Water Works of Pueblo and the City of Aurora Utility Department. Others are in the process of trying to obtain long-term (more than five years) contracts with Reclamation. Reclamation goes through an environmental process every five years that analyzes the effects of these storage contracts

As a result of the Preferred Storage Options Plan Implementation Report in 2001, the District is in the process of working towards a master contract for long-term excess capacity storage of non-Project water. Several water providers in the District have signed Memorandums of Agreement to work with the District and provide funding for this project. The master contract will require an National Environmental Policy Act compliance to be performed. Once this is completed the District will negotiate a contract with Reclamation that will allow it to sub-contract with water providers within the District for their own long-term storage contract within this contracted space.

b. Enlargement of Pueblo and Turquoise Reservoirs

As a result of the Preferred Storage Options Plan Implementation Report in 2001, the District is in the process of working towards enlargement of Pueblo and Turquoise reservoirs. The PSOP proposes to enlarge Pueblo Reservoir and Turquoise Reservoir in order to help meet the projected 2040 demand.

Several entities within the District have signed Memorandums of Agreement to work with the District and provide funding for this project. A prerequisite to the enlargement is federal legislation that will authorize a study to verify the feasibility of enlarging the reservoirs. The District is in discussions with several entities to draft the legislation that will then be submitted to Congress for approval.

2. Arkansas Valley Conduit

The Arkansas Valley Conduit (AVC) is an original component of the Fryingpan-Arkansas Project that had yet to be developed, primarily because the constituents did not have the funding to develop it. There has been an increase in interest in the lower basin over the past years due to water quality issues. The District delegated the responsibility for the AVC to the Water Activity Enterprise to move the process to the point of design/build. In August 2003, the District Board accepted responsibility to move the Arkansas Valley Conduit (AVC) along (Appendix U – Resolution Authorizing Initial Implementation of the Arkansas Valley Conduit by the Southeastern Colorado Water Activity Enterprise (Enterprise)).

In 2006, the Enterprise completed a study titled: Investigation leading to the Preliminary Design of the Arkansas Valley Conduit. The purpose for the study was to determine if there was enough water supply for the AVC and if the AVC participants could afford their costs. The study provided a number of conclusions and recommendations that justified pursuing the AVC project further.

A Business Plan has been developed and approved by the District AVC committee. The plan laid out an advisory committee to work with the District as the process moves forward. The representatives are from the cities of La Junta and Lamar, St. Charles Mesa Water District, Small Water Users Group, and one representative each from the water providers in Bent, Crowley, Otero, Prowers, and Pueblo counties.

In 2009, the District obtained federal legislation that provides a 65 /35 cost share arrangement for the construction of the Arkansas Valley Conduit requiring 65 percent of the cost to be funded by the federal government and a local cost share of 35 percent. This legislation also provided the District a funding mechanism to help pay the 35 percent local cost share via miscellaneous revenues (Appendix V – Federal Legislation).

The District will be completing an EPA funded State and Tribal Assistance Grant in 2010. The work from this grant will be the starting point for the environmental analysis for the Conduit. The District has received a \$5 million federal appropriation for FY 2010

that will fund the environmental analysis, a corridor survey, and geotechnical research for the Conduit. This phase of the project is expected to begin in early 2010 with anticipated completion in the spring 2011. A Record of Decision from the environmental analysis will allow the Conduit to move to design and construction with an expected completion date of 2018.

VI. PROBLEMS, OPPORTUNITIES, AND GOALS

While the District is proud of its water management and conservation efforts, it still faces problems. These include:

A. Water Measurement Procedures and Structures

1. Hunter Tunnel Measurement

There is a need to place a new measurement device on the discharge from Hunter Tunnel. The tunnel is located in the west slope collection system. The measuring device is needed to avoid adverse impacts to senior downstream water rights, including but not limited to those for Ruedi Reservoir. This device will measure the contribution Hunter Creek makes to the total diversions through Boustead Tunnel.

2. Transit Loss

The water resources of Arkansas River basin from Pueblo Reservoir to John Martin Reservoir can be characterized by increasing frequency and complexity of water exchanges, water transfers, water deliveries, and changes in water use and water-management practices; there are also the ever present concerns about Colorado's adherence to the various provisions of the Arkansas River Compact. Such realities require that the most state-of-the-art and hydrologically-sound information is available for proper administration of the Arkansas River. For over 25 years, the "Livingston Method" (Livingston, R.K. 1978. *Transit Losses and Travel Times of Reservoir Releases Along the Arkansas River from Pueblo Reservoir to John Martin Reservoir, Southeastern Colorado*: U.S. Geological Survey Water Resources Investigations Report 78-75, 30p.) has served as the foundation of a key element of water administration in this reach: determination of transit losses. Though the method has been proven to be relatively reliable for all, but unusual hydrologic conditions, it is recognized that it was based largely on a stream-aquifer model only calibrated to one reservoir release due to the lack of historical data at the time of the study, and the transit-loss relations were based on average antecedent conditions for long reaches between gauging station that do not fully address the potential for significantly different conditions within shorter reaches. The extensive amount of historical data that now can be used for model calibration and model verification, the techniques now available to model results and thus estimate transit losses at intervening points of interest (such as points of diversion), and the ability to enhance application of transit-loss results using real-time (stream-flow) data networks, suggest that a new investigation would result in more accurate and defensible methods for estimating transit loss and that these results would be extremely valuable not only to water users and managers in the basin, but also to the interests of the State of Colorado.

B. Funding

The issue revolves around maintaining adequate funding for existing activities and locating additional sources for expanding programs. The District will continue to pursue all means possible for providing adequate funding for existing projects.

Securing funds to continue and expand the Water Conservation Program is a high priority. Staff has pursued various grant programs for funding its projects, including Reclamation, Colorado Tree Coalition, Colorado Garden Show, Colorado Water Conservation Board, Environmental Protection Agency and Colorado Parks and Recreation Association Foundation. Many of the programs are demonstration projects that ultimately benefit the region by illustrating the most appropriate and effective water conservation methods.

The District is continuing to work towards federal legislation for the enlargement of Pueblo and Turquoise Reservoirs. This legislation will provide a cost share arrangement with Reclamation on the study to enlarge the reservoirs.

The District is pursuing a master contract for long-term excess capacity storage in Project facilities. Federal legislation was passed in 2009 that will allow the master contract and other long-term storage contracts to provide funding for capital features on the Fryngpan-Arkansas Project. Additionally, several water providers in the District have signed Memorandums of Agreements to provide funding for this project.

The District has obtained federal legislation and appropriations that will allow the Arkansas Valley Conduit to progress. Additional appropriations are needed and will be pursued through the completion of the Conduit.

The District is currently partnering with other agencies throughout the basin to obtain federal and State dollars to fund the ARKWIPP Tamarisk Control and Restoration Project.

C. Accurately Disseminate Information to a Wider Audience

The District has to ensure that reliable and accurate information is available to the widest possible audience. The District constantly analyzes how its information is distributed to the general public. A goal is to improve upon the distribution of information and to define opportunities for future improvements. The District produces printed materials, offers public speakers, and provides a variety of exhibits for agricultural shows, community fairs, and water festivals. Information distribution is most critical and is being addressed on a continuing basis.

D. Regional Coordination and Planning

Regional planning efforts must be coordinated and the political barriers that have inhibited regional water planning in the past need to be examined. The District has

worked with a vast array of water providers to develop a vision for future water supplies and uses.

The District has long held that the most efficient management of water resources is best done on a broad scale. This maximizes water use throughout the Arkansas River basin and produces additional efficiencies throughout the entire area. The District has taken the lead to meet at least quarterly, sometime monthly with the Upper Arkansas Water Conservancy District and the Lower Arkansas Valley Water Conservancy District to discuss basin-wide issues and how the three Districts would collaborate on projects that will benefit the entire watershed.

The District views this as a course that must be followed. The District continues to take on a regional leadership role and address water supply issues that cross political boundaries. The District participates in a variety of local and regional organizations and studies. All programs cross political boundaries in an attempt to bring people with diverse backgrounds together to discuss water issues.

E. Controlling Invasive Species in the Fryingpan-Arkansas Project

Invasive species are non-native animals and plants that can cause problems to the environment, including infrastructure, due to their introduction into a habitat that does not contain a mechanism to keep the species in balance.

1. Mussels

Invasive animal species for the bodies of water in Colorado include the zebra and quagga mussels. If left unchecked the mussels can proliferate so fast, they can cause damage to the environment in many ways including: clogging of pipes and channels, causing equipment to malfunction or not function at all, and harm native species, severely reducing the number of the native species. These mussels cling to surfaces and multiply very fast. They can overwhelm an environment suited to their productivity in a short period of time.

Mussels have various stages they go through during their life cycle. Mussel larvae have been found in Pueblo Reservoir but that is the extent of their infestation as of January 2010.

Inspection stations to inspect all watercraft and decontaminate boats found with mussels have been established at Pueblo, Twin Lakes, and Turquoise Reservoirs. These stations are manned by the Colorado State Parks Department and private companies hired by the U.S. Forest Service. Additionally, the District in conjunction with Reclamation and the State of Colorado conduct ongoing tests for mussels in the waters of all of the Project facilities.

Reclamation has had risk assessments performed at all of the Fry-Ark facilities. (Appendix W– Assessment of Potential Impact on Pueblo Reservoir) and (Appendix X – Assessment of Potential Impact on Turquoise Reservoir, Mt. Elbert Forebay and Powerplant, Twin Lakes, and Ruedi Reservoir) The consultant found that the risk for a

serious infestation of mussels is low with the possible exception of Ruedi Reservoir. In conjunction with testing and based on the risk analysis, Reclamation is adding procedures to their Operations and Maintenance Policies and Procedures to quickly identify if mussels have infested Project waters and ways to prevent and either slow or eradicate the mussels populations if they are found. These policies and procedures are currently being developed as of January 2010.

2. Tamarisk

Another factor that affects the water quality and quantity in the Arkansas River is that the lower basin has become inundated with the encroachment of tamarisk. Tamarisk is a tenacious plant that has a deep root system (up to 100 feet) and leaves a salt residue in the soil. These characteristics enable it to quickly displace native cottonwoods and willows as well as adjacent upland plant communities; such as bunch grasses, sage, and rabbit brush. The Arkansas River watershed harbors 67,000 acres of tamarisk, it accounts for 69 percent of the tamarisk in the entire State of Colorado. The invasive trees are causing serious impacts to a limited water resource in an already over-appropriated basin. The estimated cost for planning, control, revegetation, monitoring, and maintenance activities for the watershed is approximately \$70,000,000.

F. Water Quality Issues

A growing problem is the increasing water quality concerns due to both point and non-point source pollution. These issues confront both municipal and agricultural water users, as concerns about water quality have intensified in recent years.

1. USGS Water Quality Monitoring

The District is assisting with a study on the effects of increasing salinity levels and ground water related problems in the region. The District has partnered with the Regional Resource Planning Group and contracted with USGS to establish new water quality monitoring sites.

In addition, the USGS has begun a study of long-term water quality data needs in the Arkansas basin. Water quality concerns with Kansas and within the basin have been a longstanding problem. The purpose of this study is to collect data to lead to improved scientific approaches to assessment and potential solutions to those controversies. This study will focus on detailed analysis and sampling to narrow-down and recommend measures to solve critical data needs. Major water supply projects such as PSOP, Southern Delivery System, and John Martin Reservoir operations are affected by these controversies. The Colorado Water Quality Control Division is supportive and interested in partnering on this project.

2. Improving Irrigation Efficiency

Colorado State University (CSU) and the District are working cooperatively to boost agricultural productivity in the lower Arkansas Valley. CSU who is conducting the Arkansas Valley studies states that improving irrigation efficiency in the Arkansas Valley could dramatically improve water quality and reduce the amount of water available to weeds and invasive trees. Researchers have observed that only 55 percent of applied

irrigation water is used by crops or lost to evaporation. About 90 percent of the remaining water infiltrates the soil, and 10 percent run off the fields. Of that, 30-40 percent stayed in the ground, causing water tables to rise. In addition, 20-30 percent of water moving through canals is lost to seepage. The net loss to productivity is 10-20 percent.

The higher water tables either increase evaporation, or feed weeds, tamarisks and other undesirable vegetation. The additional evaporation from high water tables alone was greater than expected: more than a foot and a half over the growing season. The wasted water leaches 1.8 tons of salt per mile per day back into the river.

CSU claims the water table is high due to inefficient irrigation and canal seepage. The study indicates that approximately 15,000 – 60,000 acre-feet of “real water” can be recovered simply by lowering water tables in the valley. In the process, Arkansas River water quality would improve because salinity, selenium, and metals would be reduced by 30-40 percent.

Studies are now focusing at how effective several irrigation methods would be at lowering the water tables, including using sprinklers or drip systems, rotational fallowing, changing irrigation patterns, lining canals, and improving drainage from fields.

CSU is developing a decision-support system that will allow them to understand how to operate Pueblo Reservoir and John Martin Reservoir to store the water and release it in a timely manner that would not violate the Arkansas River Compact.

3. Studies of Water Transfer Effects

Studies are planned to look at the impacts of water transfers along the Arkansas River. A will look at how water used in flow management programs from Lake County to John Martin Reservoir could be more effectively managed. In addition, a second study will look at the “tipping point” of regional economies from dry-ups associated with water transfers. The two proposals are currently seeking funding through the Arkansas Basin Roundtable.

The flow management study was suggested because the objectives of the participants were not reflected in the flow recommendation request letter from the Department of Natural Resources, thereby making implementation of the flow management program challenging. The proposal will look at how the Upper Ark flow management program, started in 1990 to provide year-round flows for fish and seasonal flows for rafters, has worked. The study will look at how releases and exchanges for consumptive purposes - municipal or agricultural - fit in with non-consumptive needs - environment and recreation. Representatives from Colorado Springs and Aurora, which move much of the water along the river, have pledged cooperation with the study. The study would also look at flow management on the river below Pueblo Dam and the reach from Pueblo to John Martin Reservoir under the study’s concept.

Another study will build on work already done in Crowley County to look at the historic

impacts of water transfers between Boone and La Junta. Colorado Springs, Aurora, Pueblo and Pueblo West now control water rights that once benefitted farmers on the Colorado Canal, including Twin Lakes purchases in the 1970s. The basic concept of the study is to determine if agriculture and water disappears, how much can the local economy tolerate. The study will be asking how and why it happens and what are the consequences.

G. Wilderness Campaign

1. Obstacles to Planning

The major importers of Western Slope water - Aurora, Colorado Springs, Denver, Pueblo Board of Water Works and the Southeastern and Northern Water Conservancy Districts have outlined concerns about water planning in the state. Front Range water suppliers claim the state's water planning is "balkanized" and it's time to remove obstacles to rational planning.

The Front Range water suppliers delivered a letter to the Colorado Water Conservation Board (CWCB) and the Interbasin Compact Committee (IBCC) that included a review of regional cooperative water planning to date along with a "white paper" of suggested future actions.

The Front Range water suppliers conclude that a major (although not exclusive) water supply challenge facing Colorado is the projected gap in water supply needed for the growing population in the Front Range urban corridor from Fort Collins to Pueblo. The letter signed by managers of the six water providers states, that the ability of Front Range water supply agencies to meet water supply gaps is complicated by a variety of political, institutional, and regulatory factors that significantly hamper the ability to pursue new supply alternatives. In addition, the prospects for arriving at a statewide consensus on the right timing and mix of water supply and demand management alternatives is further hampered by Colorado's balkanized water supply and development framework. The letter goes on to call for CWCB and IBCC leadership to confront the political or legal obstacles to develop water projects in an "efficient and cost-effective manner.

The list of "obstacles" the water providers included in their white paper includes the Endangered Species Act, wild and scenic designation, wilderness designation, the National Environmental Policy Act, the need for "reform" of county land reviews under 1974's HB1041, clean water certification, reuse regulations, water court decrees, recreational in-channel diversions and use of water in energy development. All of these processes have the potential to reduce the yield of projects already identified as well as future endeavors.

2. Hidden Gems

The Hidden Gems Wilderness Campaign is seeking designation of major new wilderness additions on the White River and Gunnison National Forests and nearby Bureau of Land Management lands. The proposal would create several new standalone wilderness areas, while significantly enlarging the existing wildernesses. A coalition to support this campaign includes these partners:

- Colorado Environmental Coalition
- Colorado Mountain Club
- The Wilderness Society
- Wilderness Workshop

The proposed areas are primarily in Pitkin, Eagle, Gunnison, and Summit counties. The Hidden Gems proposal will create additional wilderness areas in the Fryingpan River Valley. These proposed areas conflict primarily with the existing and deferred features of the Northside Collection system of the Fry-Ark Project (Appendix Y). This proposal affects the Fry-Ark Project because wilderness designations that include Fry-Ark features will make it much more difficult to maintain and operate these features without being able to access these areas with motorized vehicles and equipment. The three proposed areas that directly impact the Fry-Ark Collection System are:

- Wildcat Mountain
- Mormon Creek
- Woods Lake
 - Unbuilt portions of the Northside Collection System
 - Lime and Last Chance Creeks

The District with the City of Aurora, Board of Water Works of Pueblo, and Colorado Springs Utilities has met with representatives of the Hidden Gems Wilderness Campaign to express concerns. The proponents of the Hidden Gems provided a map that theoretically showed all of the water rights in the proposed wilderness areas. The only Fry-Ark feature shown was the Boustead Tunnel. None of the sixteen diversion sites were shown. When a map showing the diversion sites, tunnels and conduits was presented to the proponents they indicated they would be willing to carve out areas protecting access to these features.

At this point, District staff is in the process of obtaining the exact locations of all Fry-Ark facilities in or adjacent to the proposed wilderness areas. Staff will present this data to the proponents, along with recommended carve outs that would protect access, and maintenance corridors for the facilities.

If there is any proposed legislation creating these wilderness areas/additions. The District will need to seek a provision specifically protecting the water rights and operations of the Fry-Ark Project, similar to those in the 1978 Act creating the Hunter-Fryingpan Wilderness Area. This item will continue to be monitored by staff for further action as needed.

3. Colorado Wilderness Act of 2009

The Colorado Wilderness Act of 2009 introduced in the House of Representatives in December 11, 2009. The bill which was referred to the Committee on Natural Resources would protect 34 areas, comprising a total of 850,000 acres. It would designate certain lands in the State of Colorado as components of the National Wilderness Preservation System, and for other purposes. Appendix Z provides detailed map of the proposed wilderness areas.

The District and other water users in Colorado have concerns pertaining to certain language in the bill. Section 3,(d),(1),(B),(4) of the bill states:
“WATER RESOURCE FACILITY- With respect to each wilderness and potential wilderness area designated by this Act, notwithstanding any other provision of law, on and after the date of the enactment of this Act, neither the President nor any other officer, employee, or agent of the United States shall fund, assist, authorize, or issue a license or permit for development of any new irrigation and pumping facility, reservoir, water conservation work, aqueduct, canal, ditch, pipeline, well, hydropower project, transmission, other ancillary facility, or other water diversion, storage, or carriage structure.

This type of designation could have an impact on the ability to utilize transbasin water and could be detrimental to the operations and maintenance of the Fry-Ark project. District staff will continue to monitor the bill and potential ramifications.

VII. EVALUATION OF POTENTIAL WATER MANAGEMENT MEASURES

The District’s water management plan continues to evolve. For that reason it is difficult to provide concrete measures that will be priorities in any year. Given that, the following section identifies the fundamental areas as specified by Reclamation and the District.

A. Public Education

The objective is to inform District constituents of the past history, present issues, and future objectives of the District. Water conservation will be discussed and emphasized in one context or another .

1. Media Outreach

In an effort to conserve precious water resources and put Project water to beneficial use, the District has developed a Fryingpan-Arkansas Project video.

The District’s video was developed in the 1990’s and is now outdated. A new video will be developed to describe the original purpose of the Project, the current benefits of the Project, including fish, wildlife, power, and recreation purposes. In addition, important components of the Fry-Ark Project like the Arkansas Valley Conduit and Tamarisk Control and Restoration Project will be featured. The video will be a great asset to the Speaker’s Bureau mission.

B. Water Supply

1. Municipal Conservation Program

The program’s objective is to promote water conservation measures among the municipalities within the District. The District has and will continue to provide assistance to communities and water providers in developing water conservation plans.

In addition, the District is pursuing funds through CWCB and the USBR to develop a regional water conservation plan (Plan) for the 40+ water providers that are participating in the Arkansas Valley Conduit. It is the District’s intent to develop the Plan based on the CWCB May 2005 Water Conservation Plan Development Guidance Document. In order to nurture buy-in from the Conduit participants the programs will be developed at their request and keeping the individual participant’s needs in mind. The District intends to develop a Tool Box of conservation programs for the Plan. A participant will be able to access the Tool Box and choose to implement ready-made conservation programs that best suit their individual needs. The District will pursue grant funds to implement the Plan and will provide technical assistance to the Conduit participants in implementing the programs. In addition, the District will also require annual reporting from the participants on the success and the water savings found from implementing the various programs in the Plan.

2. Agriculture Conservation Program

The objective of this program is to promote the efficient use of water through improved irrigation management. The goal is to increase the effectiveness of water conservation in the agricultural community by supporting area farmers in practical application of principals and use of new technologies to improve water management and conservation.

The District has partnered with CSU to develop an educational website to encourage agricultural irrigation efficiencies. With grant funding from Reclamation, the District has developed the website www.SECOwaterwise.org, the SECO is an acronym for southeast Colorado. The website features include:

- A Who We Are Page
 - Describes the organizations that have contributed to the website
- A Research Page
 - Lists many scientific research papers and project descriptions pertaining to crop and water efficiencies
- An Evapotranspiration (Et)Page
 - Describes what evapotranspiration is
 - Describes ways to utilize Et in crop production and irrigation
- A Resource Page
 - Lists various resource websites to learn more about efficient irrigation products and practices
- An Events Page
 - A calendar of upcoming events pertaining to crop production and irrigation efficiency
- A Contact Us Page
 - Lists contact information for sponsors
- Weather information maps and links to various locations throughout the District

• Buena Vista	• Colorado Springs
• Salida	• Fountain
• Howard	• Fowler
• Canon City	• La Junta

• Penrose	• Las Animas
• Pueblo	• 6 locations in Prowers County
• Vineland	• Arkansas Valley Research Center
• Avondale	

- Seven day weather forecasts
- Monthly and seasonal outlook maps
- Regional infrared satellite imagery
- Regional weather forecasts
- Rivers and lakes advance hydrologic predictions
- Snow survey reports
- Real-time streamflow reports for Arkansas River at various locations
- CoAgMet Crop use (Et) access
- CoAgMet Et reports
- CoAgMet monthly summaries
- CoAgMet daily summaries
- CoAgMet hourly data access
- CoAgMet hourly data plots

In addition, the District has encouraged the use of the secowaterwise website by advertising in newspapers and radios and promoting the site by personal contact through meetings, workshops, etc.

C. Regulatory and Environmental

1. Invasive Species

a. Zebra and Quagga Mussels

Zebra and quagga mussels have been found in the Fry-Ark facilities. Mussel larvae have been found in Pueblo Reservoir but that is the extent of their infestation as of January 2010. If left unchecked the mussels can proliferate so fast, they can cause damage to the environment in many ways and can overwhelm an environment suited to their productivity in a short period of time.

The District in conjunction with Reclamation and the State of Colorado conduct ongoing tests for mussels in the waters of all of the Project facilities. Inspection stations to inspect all watercraft and decontaminate boats found with mussels have been established at Pueblo, Twin Lakes, and Turquoise Reservoirs.

Reclamation has had risk assessments performed at all of the Fry-Ark facilities (Appendix V – Assessment of Potential Impact on Pueblo Reservoir) and (Appendix W – Assessment of Potential Impact on Turquoise Reservoir, Mt. Elbert Forebay and Powerplant, Twin Lakes, and Ruedi Reservoir). The consultant found that the risk for a serious infestation of mussels is low with the possible exception of Ruedi Reservoir. In conjunction with testing and based on the risk analysis, Reclamation is adding procedures

to their Operations and Maintenance Policies and Procedures to quickly identify if mussels have infested Project waters and ways to prevent and either slow or eradicate the mussels populations if they are found. These policies and procedures are currently being developed as of January 2010.

b. Tamarisk Control and Restoration

The project's objective is to take a leadership role to oversee the control of non-native invasive tree species throughout the Arkansas River Basin. In addition, the restoration of riparian areas would be incorporated into the project. The District received grant funding from the CWCBC and from Bent County through a grant from the Department of Local Affairs to develop a strategic plan for the entire Arkansas River watershed. The District worked with over thirty entities, known as the Technical Advisory Team to develop the Arkansas River Watershed Invasive Plants Plan (ARKWIPP). The ARKWIPP was completed in the fall of 2008 and was approved by the State Weed Coordinator. The entire ARKWIPP plan and mapping project can be reviewed on the educational website developed for the basin at www.arkwipp.org.

The next step for this project is to implement the ARKWIPP plan. The ARKWIPP lays out a specific "path forward" for implementing the plan, including a specific set of five actions to facilitate success.

The five actions steps are:

1. Develop ways to work with landowners
2. Develop and provide education, outreach and volunteerism programs
3. Determine research needs
4. Determine and develop long-term funding mechanisms
5. Determine and develop a long-term sustainability program

2. Water Quality

The District has initiated a number of programs to address water quality issues in the Arkansas River watershed. The District is assisting with a study on the effects of increasing salinity levels and ground water related problems in the region. The District has partnered with the Regional Resource Planning Group and contracted with USGS to establish new water quality monitoring sites.

Colorado State University (CSU) and the District are working cooperatively to boost agricultural productivity in the lower Arkansas Valley. A study proposes that by improving irrigation efficiency in the Arkansas Valley it could dramatically improve water quality and reduce the amount of water available to weeds and invasive trees. . CSU claims the high water table is high due to inefficient irrigation and canal seepage. Studies have concluded that higher water tables either increase evaporation, or feed weeds, tamarisks and other undesirable vegetation The CSU study indicates that approximately 15,000 – 60,000 acre-feet of "real water" can be recovered simply by lowering water tables in the valley. In the process, Arkansas River water quality would improve because salinity, selenium, and metals would be reduced by 30-40 percent.

Studies are now focusing at how effective several irrigation methods would be at lowering the water tables, including using sprinklers or drip systems, rotational fallowing, changing irrigation patterns, lining canals, and improving drainage from fields.

CSU is developing a decision-support system that will allow them to understand how to operate Pueblo Reservoir and John Martin Reservoir to store the water and release it in a timely manner that would not violate the Arkansas River Compact.

3. Water Transfers

Studies are planned to look at the impacts of water transfers along the Arkansas River. A study will look at how water used in flow management programs from Lake County to John Martin Reservoir could be more effectively managed. The study will also look at how releases and exchanges for consumptive purposes - municipal or agricultural - fit in with non-consumptive needs - environment and recreation and at flow management on the river below Pueblo Dam and the reach from Pueblo to John Martin Reservoir

In addition, a second study will look at the “tipping point” of regional economies from dry-ups associated with water transfers. It will look at the historic impacts of water transfers between Boone and La Junta. The basic concept of the study is to determine if agriculture and water disappears, how much could the local economy tolerate. The study will be asking how and why it happens and what are the consequences.

VIII. ADOPTED PLAN ELEMENTS

In general, the District will continue to concentrate its water conservation efforts in areas where it can receive the most cost benefit.

These areas include but are not limited to:

- Adopting and maintaining policies that promote water conservation
- Enriching the Public Education Program
- Expanding the Municipal Water Conservation Program
- Improving the Agriculture Water Conservation Program
- Providing leadership and funding sources to implement the ARKWIPP

The District addresses water conservation issues and provides a framework for its plan by selecting and providing these measures.

A. Public Education Programs

1. Public Education

The Conservation Outreach Coordinator and the Xeriscape Garden Coordinator will be involved in educational activities related to all aspects of the District’s water conservation plan. The activities will include classes, presentations, tours, and informational articles, as well as, booth displays at conferences, shows, fairs, field days, symposiums, and water festivals.

2. Speaker's Bureau

The District has developed a Speakers Bureau in which staff members speak to organizations in communities throughout the District. The program provides education about the District's past history, current water issues, and future plans. The purpose of the program is to provide education, encourage cooperation, and communication throughout the region. Staff members will provide presentations to a wide variety of groups including schools, civic clubs, professional organizations, conferences, local governments, and irrigation companies.

3. Arkansas River Basin Water Forum

The District will continue to financially support and provide leadership and coordination for the Arkansas River Basin Water Forum (ARBWF). The Forum is held annually in various locations throughout the Arkansas basin. The purpose of the Forum is to educate water users and interested citizens about the key water-related issues in the basin.

4. Communication Methods Updated and Improved

Several types of media will be used to convey the District's messages. The District video will be updated to describe the original purpose of the Project, the current benefits of the Project, including fish, wildlife, and recreation purposes. In addition, important components of the Fry-Ark Project like the Arkansas Valley Conduit and Tamarisk Control and Restoration Project will be featured. The video will be a great asset to the Speaker's Bureau mission.

5. District Tours

Currently, the District provides two separate two-day tours of the District and its facilities. One tour is of the western slope collection area, diversion system and storage facilities and the other is focused on how Fry-Ark Project water is utilized on the eastern slope. These tours will be improved upon by providing more education and less transportation time. Currently the tour participants are distributed between two fifteen passenger vans. This arrangement makes it difficult to convey information to all participants at one time. By consolidating the participants into one vehicle (bus) tour participants would be able to reap the same educational benefits at the same time. A bus would also provide an opportunity show informative videos and have guest speakers address the audience while being transported. In addition, having all tour participants in one vehicle will encourage networking and learning opportunities.

The District will also provide a separate one-day tour of the Pueblo Dam facilities. The tour will emphasize the importance of Pueblo Dam storage and would include presentations on recreation and economic benefits of the facility.

In addition, other east slope water providers provide tours to constituents of their water systems. The District will request that a representative from the District be present to speak about the importance and benefits that the Fry-Ark project brings to the region.

The District will partner with the Arkansas River Outfitters to offer a rafting trip tour of the Arkansas River. The Arkansas River is the most rafted river in the world. The

District, Reclamation, and the Arkansas Headwaters Recreation Area have played a major part in the success of the Voluntary Flow Program on the Arkansas River. The Voluntary Flow Program has been a huge benefit to the rafting industry and the economic boost it provides to the region is enormous.

6. School Water Education and Conservation Programs

The expectations of the Program will be that students will recognize the need to be good water managers. Students will understand that water is a limited resource with environmental, economic, and cultural values.

The Children's Water Festival was developed as a tool for interactive education in the teaching of water conservation, water cycles, ground water, non-point source pollution, irrigation, agricultural and other important water related issues. It has been proven to be one of the most effective ways to inform children about the importance of water in their everyday lives.

The District supports and provides leadership for school districts that are interested in participating in a Children's Water Festival. The District will work to expand this opportunity to include more school districts throughout the region. The District will assist the school districts in leadership and acquiring sponsors for the Children's Water Festivals.

B. Water Supply Programs

1. Municipal Water Conservation Programs

a. Assist in Development and Implementation of Water Conservation Plans

In order to reduce the amount of water being used for domestic use the District will assist interested municipalities and water utilities in developing and improving water conservation plans. The plan will be developed with the municipality's specific needs, standards and practices in mind. The District will also assist with procuring grant monies to fund the development and implementation of the conservation plans.

b. Develop and Implement a Water Conservation Plan for the Arkansas Valley Conduit

A regional water conservation plan for the 40+ water providers that are participating in the Arkansas Valley Conduit will be developed and implemented. It is the District's intent to develop the Plan based on the CWCB May 2005 Water Conservation Plan Development Guidance Document. In order to nurture buy-in from the Conduit participants the programs will be developed at their request and keeping the individual participant's needs in mind. The District intends to develop a Tool Box of conservation programs for the Plan. A participant will be able to access the Tool Box and choose to implement ready-made conservation programs that best suit their individual needs. The District will pursue grant funds to implement the Plan and will provide technical assistance to the Conduit participants in implementing the programs. In addition, the

District will also require annual reporting from the participants on the success and the water savings found from implementing the various programs in the Plan.

c. Development of a Statewide Best Management Guide for Water Conservation

The Colorado WaterWise Council promotes the wise use of the state's water resources by providing education and resources throughout the state. The Council is embarking on an exciting project to develop a Best Management Guide for Water Conservation for the State with funding from CWCB. The Guide should be completed in 2011.

The District has and will continue to provide staff time for the Conservation Outreach Coordinator to assist the Council in the development and implementation of the Guide. The Coordinator currently sits on the Project Advisory Committee (PAC) for the Project. The PAC contributes and reviews the development of the Guide. Once the guide is complete the District will sponsor a workshop for water providers in southeastern Colorado to introduce the Guide. The workshop will also provide copies of the Guide and will demonstrate ways to use it as a useful tool in water resource planning and management.

d. Landscape Irrigation Efficiency Program

Since fifty percent of Colorado's water is used outside on landscaping the District has developed a Landscape Irrigation Efficiency Program. The District demonstrates and educates constituents about efficient irrigation methods; such as drip irrigation, subsurface irrigation, efficient rotor sprinklers, soil moisture sensors, evapotranspiration irrigation controllers, and rain and wind shut off devices. These methods illustrate ways to save water by improving the efficient use of water in the landscape.

A part of the Landscape Irrigation Efficiency Program has included the development of an Irrigation Efficiency Class. Topics include a systematic evaluation of an irrigation system design, maintenance, and management. The class identifies areas where adjustments will make an impact on water conservation. Topics include irrigation scheduling, field hydraulics, and design aspects.

2. Agriculture Water Conservation Programs

a. Efficient Irrigation Practices

The District will continue to sponsor and provide leadership for educational programs that encourage the efficient use of agricultural irrigation water. Methods will include informative articles, workshops, and farm site demonstrations that illustrate new technologies that promote water conservation. Partnerships have been developed with fellow sponsors and educators to encourage open communication and informative educational opportunities.

b. Farm Irrigation Demonstration

The District has partnered with Colorado State University Arkansas Valley Research Center (CSU-AVRC) to demonstrate efficient irrigation methods. The CSU-AVRC provides an excellent demonstration site and hands-on information to farmers to

demonstrate best management practices for irrigation. The practices demonstrated will include drip irrigation, sub-surface drip irrigation, deficit irrigation, irrigation scheduling and the use of plastic mulches that reduce soil evaporation and increases crop yields. The District will continue to assist the Research Center with the educational outreach program that serves as a resource for irrigators. Website information, educational brochures, and workshops have been developed in collaboration with the CSU-AVRC.

c. WWW.secowaterwise.org Website

The website will continue to be a beneficial tool for agricultural irrigators throughout the District. Updates to the current information will continue to be carried out, particularly to the Events, Research, Resources, and weather information pages of the website.

3. Regulatory and Environmental Programs

A. Invasive Species

1. Zebra and Quagga Mussels

The District in conjunction with Reclamation and the State of Colorado conduct ongoing tests for mussels in the waters of all of the Project facilities. Inspection stations to inspect all watercraft and decontaminate boats found with mussels have been established at Pueblo, Twin Lakes, and Turquoise Reservoirs.

Reclamation has had risk assessments performed at all of the Fry-Ark facilities. In conjunction with testing and based on the risk analysis, Reclamation is adding procedures to their Operations and Maintenance Policies and Procedures to quickly identify if mussels have infested Project waters and ways to prevent and either slow or eradicate the mussels populations if they are found. These policies and procedures are currently being developed as of January 2010.

2. Tamarisk Control and Restoration Program

The District has served in a leadership position to oversee the control of non-native invasive tree species throughout the Arkansas River basin. In addition, the restoration of riparian areas has been incorporated into the project.

Currently, District staff serves on the Tamarisk Coalition Board of Directors and staff members play an important role in educating and providing resources to the public. The District worked with over thirty entities, known as the Technical Advisory Team, to develop the Arkansas River Watershed Invasive Plants Plan (ARKWIPP). The entire ARKWIPP plan and mapping project can be reviewed on the educational website developed for the basin at www.arkwipp.org.

a. Education and Outreach Efforts

The District has and will continue to sponsor and coordinate numerous educational programs that emphasize the importance of controlling non-native tree species and the restoration of riparian and upland areas after control has taken place. In addition, the

District will continue to sponsor and update the www.arkwipp.org website in order to keep information accurate and current.

b. Implementation of the ARKWIPP plan

The next step for this project is to implement the ARKWIPP. The ARKWIPP lays out a specific “path forward” for implementing the plan, including a specific set of five actions to facilitate success. The District will take the lead and work with the ARKWIPP Technical Advisory Team to develop and implement the five action steps laid out in ARKWIPP.

The five actions steps are:

1. Develop ways to work with landowners
2. Develop and provide education, outreach and volunteerism programs
3. Determine research needs
4. Determine and develop long-term funding mechanisms
5. Determine and develop a long-term sustainability program

c. Pursue funding sources

The District will establish partnerships to ensure the success of the project and to implement the ARKWIPP. The District will make efforts to secure funding sources for this expansive project. Funding may be provided through matching grants from federal, state, and local monies.

3. Water Quality Programs

The District has initiated a number of programs to address water quality issues in the Arkansas River watershed. The District is assisting with a USGS study on the effects of increasing salinity levels and ground water related problems in the region and to establish new water quality monitoring sites.

Colorado State University (CSU) and the District are working cooperatively to boost agricultural productivity in the lower Arkansas Valley. A CSU study proposes that by improving irrigation efficiency in the Arkansas Valley it could dramatically improve water quality and reduce the amount of water available to weeds and invasive trees. . CSU claims the high water table is high due to inefficient irrigation and canal seepage. Studies have concluded that higher water tables either increase evaporation, or feed weeds, tamarisks and other undesirable vegetation The CSU study indicates that approximately 15,000 – 60,000 acre-feet of “real water” can be recovered simply by lowering water tables in the valley. In the process, Arkansas River water quality would improve because salinity, selenium, and metals would be reduced by 30-40 percent.

Studies are now focusing at how effective several irrigation methods would be at lowering the water tables, including using sprinklers or drip systems, rotational fallowing, changing irrigation patterns, lining canals, and improving drainage from fields.

CSU is developing a decision-support system that will allow them to understand how to operate Pueblo Reservoir and John Martin Reservoir to store the water and release it in a timely manner that would not violate the Arkansas River Compact.

4. Water Transfers

Studies are planned to look at the impacts of water transfers along the Arkansas River. A study will look at how water used in flow management programs from Lake County to John Martin Reservoir and how it could be more effectively managed. The study will also look at how releases and exchanges for consumptive purposes (municipal or agricultural), fit in with non-consumptive needs (environment and recreation), and at flow management on the river below Pueblo Dam and the reach from Pueblo to John Martin Reservoir

In addition, a second study will look at the “tipping point” of regional economies from dry-ups associated with water transfers. It will look at the historic impacts of water transfers between Boone and La Junta. The basic concept of the study is to determine if agriculture and water disappears, how much could the local economy tolerate. The study will be asking how and why it happens and what are the consequences.

VIII. WATER CONSERVATION PROGRAM SCHEDULE

The District will adhere to the Conservation Program Schedule as close as possible. Many of the programs will be continuing and will carry over year after year. Some of the programs will involve adding or updating displays and demonstrations. The schedule is flexible in order to allow for changing budget factors and possible grant funding.

2010-2014 Conservation Program Schedule

2010 PROGRAMS

Public Education

1. Conservation staff will participate in educational opportunities – classes, presentations, tours, booth displays, field days, and symposiums pertaining to water conservation.
2. Through the District’s Speakers Bureau staff will provide presentations pertaining to the District to a wide variety of groups and organizations.
3. Will not be performed in 2010.
4. Educational and public outreach tours of the District and Fry-Ark facilities will be conducted.
5. Provide support and leadership to the annual Arkansas River Basin Water Forum.
6. Sponsor and assist in the coordination of Children Water Festivals.

Water Supply

Municipal Water Conservation

1. Assist in the development and implementation of water conservation plans for District water providers.
2. Develop a regional water conservation plan for the Arkansas Valley Conduit

participants.

3. Assist the Colorado WaterWise Council in the development of a Best Management Guide for Water Conservation for the state.

4. Implement the Landscape Irrigation Efficiency Program with hands-on classes and presentations.

Agricultural Water Conservation

1. Sponsor and provide educational conferences, symposiums and workshops on irrigation efficiency.

2. Assist and participate in the CSU-AVRC field day programs to demonstrate efficient agricultural irrigation.

3. Continue to update the www.secowaterwise.org website to ensure it is beneficial to agricultural irrigators within the District.

Regulatory and Environmental Invasive Species

1. Continue to collaborate with Reclamation and other agencies to complete procedures to Reclamations Operations and Maintenance Policies and Procedures to quickly identify if Zebra and Quagga mussels have infested Project waters and ways to prevent and either slow or eradicate the mussel populations if they are found.

Tamarisk Control and Restoration

1. Sponsor and organize educational conferences, symposiums, and workshops on tamarisk control and restoration.

2. Implement the ARKWIPP by facilitating the development of the five action steps.

3. Make efforts to secure funding sources to implement the plan from federal, state, and local sources.

Water Quality

1. The District will continue to work with USGS, CSU and other agencies to address water quality issues in the watershed. Funding will be pursued to support this program.

Water Transfers

1. The District will continue to support a study that will look at the impacts of water transfers along the Arkansas River. The study will focus on how releases and exchanges for consumptive purposes fit in with non-consumptive needs and the flow management on the river.

2. The District will also support a study that will look at the “tipping point” of regional economies from dry-ups associated with water transfers. The study will determine if agriculture and water disappears, how much could the local economy tolerate and what are the consequences.

2011 PROGRAMS

Public Education

1. Conservation staff will participate in educational opportunities – classes, presentations, tours, booth displays, field days, and symposiums pertaining to water conservation.

3. The District video will be updated.

4. Educational and public outreach tours of the District and Fry-Ark facilities will be

conducted.

5. Provide support and leadership to the annual Arkansas River Basin Water Forum.
6. Sponsor and assist in the coordination of Children Water Festivals.

Water Supply

Municipal Water Conservation

1. Assist in the development and implementation of water conservation plans for District water providers.
2. Implement the regional water conservation plan for the Arkansas Valley Conduit participants.
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4. Implement the Landscape Irrigation Efficiency Program with hands-on classes and presentations.

Agricultural Water Conservation

1. Sponsor and provide educational conferences, symposiums and workshops on irrigation efficiency.
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Regulatory and Environmental

Invasive Species

1. Continue to collaborate with Reclamation and other agencies to complete and /or implement procedures to Reclamations Operations and Maintenance Policies and Procedures to quickly identify if Zebra and Quagga mussels have infested Project waters and ways to prevent and either slow or eradicate the mussel populations if they are found.

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tolerate and what are the consequences.

2012 PROGRAMS

Public Education will Focus on and Feature the 50th Anniversary of the Fry-Ark Project

1. Conservation staff will participate in educational opportunities – classes, presentations, tours, booth displays, field days, and symposiums pertaining to water conservation.
2. Through the District's Speakers Bureau staff will provide presentations pertaining to the District to a wide variety of groups and organizations.
3. Will not be performed in 2012
4. Will not be performed in 2012.
5. Provide support and leadership to the annual Arkansas River Basin Water Forum.
6. Sponsor and assist in the coordination of Children Water Festivals.

Water Supply

Municipal Water Conservation

1. Assist in the development and implementation of Water Conservation Plans for District water providers.
2. Implement the regional water conservation plan for the Arkansas Valley Conduit participants.
3. Assist the Colorado WaterWise Council in the implementation of a Best Management Guide for Water Conservation for the state
4. Implement the Landscape Irrigation Efficiency Program with hands-on classes and presentations.

Agricultural Water Conservation

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Invasive Species

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2013 PROGRAMS

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1. Conservation staff will participate in educational opportunities – classes, presentations, tours, booth displays, field days, and symposiums pertaining to water conservation.
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5. Provide support and leadership to the annual Arkansas River Basin Water Forum.
6. Sponsor and assist in the coordination of Children Water Festivals.

Water Supply

Municipal Water Conservation

1. Assist in the development and implementation of water conservation plans for District water providers.
2. Implement the regional water conservation plan for the Arkansas Valley Conduit participants.
3. Assist the Colorado WaterWise Council in promoting water conservation throughout the State.
4. Implement the Landscape Irrigation Efficiency Program with hands-on classes and presentations.

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1. Sponsor and provide educational conferences, symposiums, and workshops on irrigation efficiency.
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2014 PROGRAMS

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1. The District will continue to work with USGS, CSU and other agencies to address water quality issues in the watershed. Funding will be pursued to support this program.

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2. The District will also support a study that will look at the “tipping point” of regional economies from dry-ups associated with water transfers. The study will determine if agriculture and water disappears, how much could the local economy tolerate and what are the consequences.

XI. LEGAL, INSTITUTIONAL, AND ENVIRONMENTAL CONSIDERATIONS

Staff, Board members, and legal counsel will discuss and continue to discuss issues that affect water conservation and management.

Public education programs should not have negative legal or institutional issues associated with them and should assist with environmental understanding of water related matters.

The School Water Conservation Program will be developed in partnership with participating school district's staff. To assure that no legal, institutional, or environmental issues arises the conservation program will abide by the participating school district's policies and procedures.

The Municipal Water Conservation Program could have some legal ramifications. To prevent problems the conservation program will be created with municipality and utility staff members and it will adhere to all Federal, State, and Local laws. The District does not anticipate any difficulty with institutional or environmental issues.

The Agriculture Conservation Program should not have federal, state, or local legal implications. The District has and will encourage agricultural production. The District foresees no legal or environmental issues with this stance.

The Tamarisk control and restoration project will entail working closely with governmental entities. It will also need the cooperation of local land owners. Again all Federal, State, and local laws will be adhered to. The environmental issues will be better served because, water quality will be improved, wildlife habitat will be enhanced, and a greater native bio-diversity among both plants and animals could be found.