

Testimony of Bill Long  
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Oversight Field Hearing on “The Fryingpan-Arkansas Project at 45:  
Sustainable Water for the 21st Century”

Before the Subcommittee on Water and Power  
U.S. House Committee on Natural Resources  
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Pueblo, Colorado

[Madame Chair] My name is Bill Long, president of the Southeastern Colorado Water Conservancy District (“Southeastern”), and I am testifying today on “The Fryingpan-Arkansas Project at 45: Sustainable Water for the 21st Century.” For nearly a half century, Southeastern’s Board of Directors has grappled with the challenge to manage, develop, and protect water and related resources in an environmentally and economically sound manner.

During the drought of 2002, the Denver Post captured water’s importance in Colorado in a story line: “In Colorado, water is everything.” It’s true, without water, our economy could not flourish and the state, and important to those who live here, the southeastern region of the state, could not sustain its population.

What that simple statement from the Denver Post overlooks is the same point that Lt. Zebulon Pike overlooked when he judged eastern Colorado a desert that would never sustain a civilized society. Pike did not foresee that mountain water could be captured to provide growth for the plains. After using the readily-available river and well water, the early settlers in eastern Colorado learned that water storage was needed. The Fryingpan-Arkansas Project (“Fry-Ark Project” or “Project”) is one of these projects that fuels the possibility of communities here in the “Great American Desert.”

The Fry-Ark Project is the result of the vision of the Arkansas Valley's early water leaders, who combined vision with common-sense solutions fostered by a desire to make a better tomorrow for the people of southeastern Colorado and the state of Colorado as a whole. These leaders of the past leave a legacy that is both humbling and challenging. The challenge for this generation of southeastern Colorado leaders is not only to steward the project we have inherited, but to enhance and increase these assets for the future generation.

Southeastern is a statutory water conservancy district (*see* C.R.S. § 37-45-101, *et seq.*), which was formed on April 29, 1958, by the District Court for Pueblo County, Colorado. Southeastern's district boundaries extend along the Arkansas River from Buena Vista to Lamar, and along Fountain Creek from Colorado Springs to Pueblo, Colorado. Southeastern administers, holds all water rights for, and repays reimbursable costs for the Fry-Ark Project, a \$550 million multi-purpose reclamation project authorized by Congress and built by the U.S. Bureau of Reclamation ("Reclamation"). The Project diverts water underneath the Continental Divide, from the Fryingpan and Roaring Fork River drainages, into the Arkansas River drainage, where Project water is stored in Pueblo Reservoir and other reservoirs. Southeastern provides Project water and return flows to supplement the decreed water rights of water users within Southeastern's boundaries. Southeastern repays a large part of the Project's construction costs (estimated at \$127 million over a minimum 40-year period), as well as annual operation and maintenance costs, in accordance with its repayment contract with the United States. Payments are made from property tax revenues available to Southeastern, supplemented by revenue from Project water sales.

## **I. Development of the Fryingpan-Arkansas Project**

Shortly after World War II, the nation was in flux. The country optimistically was gearing up for industrial growth. The ripples of the post-war economy washed over into the Arkansas Valley as well. The community leaders of the era saw a major stumbling block to overcome in any quest for growth - water. So they began pushing heavily for a project to bring water from the western slope of Colorado -- with its abundant snowfall and sparse population -- to the Arkansas River Basin, where irrigated agriculture and city water systems depended on a river that often was only a trickle by the time it reached the border with Kansas.

### **A. Congressional Authorization of the Fryingpan-Arkansas Project**

The Project originally envisioned diversions from the Gunnison River and other tributaries of the Colorado River and was known as the Gunnison-Arkansas Project. As it progressed over the years, the scope of the entire project became limited to the first phase of the Gunnison-Arkansas Project, with construction of a reservoir on the Fryingpan River near Aspen, Colorado, transporting water through the Continental Divide via tunnel and moving it into the Arkansas River Basin for storage in mountain lakes and a new reservoir near Pueblo, Colorado. While the original Gunnison-Arkansas Project envisioned 357,000 acre-feet of imports each year, the eventual Fryingpan-Arkansas Project would be limited to an average of just 69,100 acre-feet.

The name took on even more significance when backers of the Project began peddling golden frying pans up and down the Arkansas valley to raise money for the lobbying effort that was soon to come. The sale of golden frying pans in the valley were

brisk. Burros were used to carry the frying pans to towns up and down the Arkansas Valley. During January of 1955, groups were able to buy small frying pans for \$5 and large ones for \$100 or more.

The Colorado Congressional delegation continued to work with local interests to develop consensus for how the Fry-Ark Project, once authorized, would operate. On June 16, 1950, the Policy and Review Committee, authorized by the Colorado Water Conservation Board to study the development of the Fry-Ark Project, issued the first set of proposed Operating Principles for the Project, which were approved by the Colorado Water Conservation Board.

The Project, along with its Operating Principles, was opposed by the western slope of Colorado, led by Congressman Wayne Aspinall. Many west slope water users, including the City of Aspen, remained concerned about the Roaring Fork River. In response to these concerns, Congressional supporters of the Project modified the proposal to enlarge the west slope collection system (adding the Hunter Creek collection system). One of the many benefits of the expansion of the west slope collection system is that it allowed the Operating Principles to provide for minimum flows in the Roaring Fork for the protection fish and wildlife in the Project area.

In 1958, the Colorado Water Conservation Board, now led by Felix Sparks from Delta, Colorado, began to try to resolve the East-West divide over the Project. Mr. Sparks established a second Policy and Review Committee to revise the Operating Principles for the Project. The major change was to replace the proposed Aspen Reservoir with a larger reservoir near Ruedi. The Operating Principles, as amended

December 9, 1960, were adopted by the State of Colorado and signed by the Colorado Water Conservation Board, Southeastern, Colorado River Water Conservation District, and Southwestern Water Conservation District. After development of the 1960 Operating Principles, Colorado's Congressional delegation was united in seeking authorization for the Fry-Ark Project.

On June 13, 1962, the House passed legislation authorizing the Fry-Ark Project. The Senate approved the Project on August 6th. On August 16, 1962, John F. Kennedy flew to Pueblo, Colorado to officially and proudly proclaim the authorization of the Project, and the start of construction. The Project could not have been authorized without the diligent work of those within the Arkansas Valley to unify state interests and broker compromises to ensure that the final Project satisfied as many needs as possible.

**B. The Fryingpan-Arkansas Project was Authorized for Multiple Purposes.**

The Fry-Ark Project was authorized for numerous purposes including: (1) developing the regional and national economy through irrigation of arid lands of the Arkansas Valley; (2) developing power and energy surplus to Project needs; (3) supplying domestic, municipal, and industrial water; (4) providing flood control on the Arkansas River; (5) providing for the preservation, propagation, and enhancement of fish and wildlife; (6) improving water quality; and (7) developing recreation facilities.

The Authorizing Act, Public Law 87-590, makes it clear that certain purposes take precedence over others. Section 1(a) of the Authorizing Act acknowledges that the Project is authorized for the purposes of "supplying water for irrigation, municipal, domestic, and industrial uses, generating and transmitting hydroelectric power and

energy, and controlling floods, and for other useful and beneficial purposes incidental thereto.” Incidental or secondary purposes include recreational uses, development of fisheries, and conservation of wildlife habitat. As evidenced by the programs discussed herein, Southeastern and its constituents use Project water for many purposes, and Southeastern’s Board of Directors has attempted to maximize the use of all transmountain diversions, while recognizing the supplemental nature of Project water and acknowledging that there is insufficient water to satisfy all demands.

### **C. Project Features**

Construction of the Fry-Ark Project began with Ruedi Dam and Reservoir in 1964, and continued without interruption until September 28, 1990 when the Project was declared completed with the dedication of the Fish Hatchery at Pueblo Reservoir. Construction is completed on all the water supply-related features that were expected to be initially developed. The North Side Collection System may be expanded to Last Chance and Lime Creeks, tributaries of the Fryingpan River. However, plans to pursue this expansion have been deferred. Plans to construct the Arkansas Valley Conduit to serve towns and cities east of Pueblo with treated Project water are currently in process.

There are two distinct areas of the Project: the western slope, located in the Hunter Creek and Fryingpan River watersheds, and the eastern slope in the Arkansas River Valley. These areas are separated by the Continental Divide, which, in many places, exceeds an elevation of 14,000 feet. The Project consists of diversion, conveyance, and storage facilities designed primarily to divert water from Colorado River tributaries on the western slope for use in the water-short areas in the Arkansas River on

the eastern slope. The North and South Side Collection Systems and Ruedi Dam and Reservoir are located on the western slope in the Fryingpan River basin. Sugar Loaf Dam and Turquoise Lake, Mt. Elbert Conduit, Halfmoon Diversion Dam, Mt. Elbert Forebay Dam and Reservoir, Twin Lakes Dam and Reservoir, and Pueblo Dam and Reservoir are all located on the eastern slope in the Arkansas River Basin.

The Project provides water for uses on the west slope in response to the requirements of the Water Conservancy Act, which directs water conservancy districts removing water from the Colorado River basin to operate their projects so that existing appropriations and prospective uses of water on the western slope will not be impaired nor increased in cost to the western slope water users. This compensatory storage is provided by Ruedi Reservoir, which provides storage for replacement and regulation of water for the western slope users. This water is used for irrigation, municipal, industrial, recreation, and fish and wildlife purposes.

The North and South Side Collection Systems on the western slope collect the high mountain runoff and convey the diverted waters into the inlet portal of the Charles H. Boustead Tunnel. Sixteen diversion structures on the western slope are used to divert water into the Project collection system. The system includes eight tunnels with a combined length of 21.5 miles. The five-mile long Boustead Tunnel conveys the water from the North and South Collection Systems under the Continental Divide to Turquoise Lake. Boustead Tunnel may only divert at 900 c.f.s. from the Fryingpan River (not including water from the Hunter Creek system) unless the Colorado River Water Conservation District agrees that Ruedi Reservoir will fill that season, at which point Boustead may divert at 945 c.f.s.

For water to be diverted through the Boustead Tunnel from the Fryingpan River, the Fryingpan must meet minimum flows as measured at the Thomasville Gage, just upstream from Ruedi Reservoir. From January through March, those flows are 30 c.f.s. As a practical matter, however, for this period of time, the snowpack is not melting and the diversion structures are generally inaccessible due to snow, so diversions during this season are unlikely. Diversions will generally not begin until the spring runoff begins in late April or May. Minimum flows for the Thomasville Gage are 100 c.f.s. in April, 150 c.f.s. for May and 200 c.f.s. for June. By the end of June, the runoff has generally peaked. Nonetheless, the Project may continue to divert so long as it is in priority and there is adequate water to meet minimum streamflow of 100 c.f.s. in July, 75 c.f.s. in August, and 65 c.f.s. for September. Due to colder weather and increased snowfall, diversions are less likely in the late fall through early winter, but may occur. The Fryingpan River must measure at least 30 c.f.s. at Thomasville Gage between October 1 and December 31 for such diversions to occur.

Turquoise Lake and Sugar Loaf Dam are located just east of the Continental Divide, approximately five miles west of Leadville, Colorado. The Lake provides storage capacity for the regulation of Project water delivered from the Boustead Tunnel, as well as non-Project water.

The Mt. Elbert Conduit, a 10.7 mile, 90 inch diameter pipe, conveys water from Turquoise Lake to Mt. Elbert Forebay. The Halfmoon Diversion Dam diverts available flows to Halfmoon Creek into the Mt. Elbert Conduit. Water delivered to the forebay is used to generate power at the Mt. Elbert Pumped-Storage Powerplant.



The Mt. Elbert Pumped-Storage Powerplant is located approximately 13 miles southwest of Leadville, Colorado, at the northwest corner of the lower lake of Twin Lakes. The powerplant has two pump-generator units, each with a nameplate capacity of 100 megawatts. After use at the powerplant, Project water flows into Twin Lakes. From Twin Lakes, Project water is released to Lake Creek and the Arkansas River for delivery to water users upstream of Pueblo Dam and Reservoir or for storage in Pueblo Reservoir. The distance from the confluence of Lake Creek and the Arkansas River to Pueblo Dam is approximately 143 river miles.

Project water is released from Pueblo Reservoir to the Arkansas River for irrigation and municipal use; to the Fountain Valley Conduit for municipal use by the members of the Fountain Valley Authority; and to the Bessemer Ditch for irrigation use. Pueblo Reservoir is the terminal storage feature for the Project, and both Project and non-Project water are conveyed to Pueblo and Pueblo West through the municipal outlet works in Pueblo Dam.

El Paso County, Colorado is located to the north of the main channel of the Arkansas River. With the growth of the Colorado Springs metropolitan area, it became clear that this area would be interested in acquiring supplemental municipal water from the Project. Accordingly, representatives from El Paso County were active in the development of the Project, and portions of the county were included within Southeastern's boundaries. Nonetheless, it was clear that the Arkansas River could not be used as a delivery mechanism for such water. Several municipal entities including Colorado Springs Utilities, the City of Fountain, Widefield Water District, Security Water District and Stratmoor Hills Water District formed the Fountain Valley Authority

which would sell bonds to construct a delivery pipeline and treatment plant. Revenue from the utility departments would then be used to fund a statutory authority which would, in turn, pay Southeastern and the United States for costs of construction of the delivery pipeline and water treatment plant. The Authority signed a 40-year contract with the United States and Southeastern to secure the repayment obligation. As with the remainder of the Project, title to the Fountain Valley Pipeline remains with the United States, even though Southeastern is responsible for operation and maintenance costs of all facilities.

## **II. Challenges for Today**

While development of the Fry-Ark Project has greatly benefited the Arkansas Valley, operation of the Project is not without challenges. Demand for water in the Arkansas Valley has increased, particularly in drought years. The State has increased regulation of well pumping due to the *Kansas v. Colorado* decision. These factors and others have highlighted the need for leadership in developing conservation programs to ensure a sustainable water supply in the Arkansas Valley.

### **A. Increased Demand for Project Water**

The Arkansas River is an over-appropriated system with a continuous call on the river. There is usually a constant demand for water. Reclamation conducted land classification investigations prior to Fry-Ark Project authorization in 1962. The total irrigable area within the District was estimated to be approximately 280,600 acres. This includes 12,538 acres above Pueblo Reservoir, 12,805 acres along Fountain Creek, and 255,254 acres below Pueblo Reservoir.

In 1979, Southeastern approved a set of Allocation Principles that described the percentage allocations to municipal and agricultural uses. The Allocation Principles were approved by the District Court for Pueblo County, Colorado that same year. The municipal demand for Project water is associated with the Arkansas Valley cities, towns, and entities lying east and west of Pueblo, Pueblo, and the Fountain Valley Authority. The Allocation Principles require allocation of “a minimum of 51 percent of the annual Project water supply to municipal and domestic use.” This allocation is distributed, as requested, to Arkansas Valley cities, towns and entities lying east of Pueblo (12%), west of Pueblo (4%), Pueblo (10%), and the Fountain Valley Authority participants (25%). In the event the municipalities do not request the full 51% available to them, any excess water is made available for agricultural uses. Finally, after all other municipal and agricultural have been met, Pueblo West Metropolitan District is given notice that it can make a request. No municipal water user is required to take a minimum amount of Project water in a given year.

Project water for use by irrigation ditches is allocated based upon an acre-foot per irrigated acre basis. Therefore, when demand exceeds supply, each ditch receives a proportionate share of available Project water. This allocation is made only after the municipal requests are met up to at least 51% of the annual Project yield.

Southeastern also promulgated a “Water Allocation Policy,” last amended in April 2006. The Water Allocation Policy is the direction of the Board of Directors as to how to implement the Allocation Principles. The Water Allocation Policy is not approved by the Pueblo County District Court and can be amended by majority vote of Southeastern’s Board of Directors at any time.

In March of each year, appropriate letters and forms are mailed to eligible entities offering them the opportunity to apply for an allocation of Project water. About May 1<sup>st</sup> of each year, Reclamation notifies Southeastern as to the amount of water available that year. The Allocation Committee then meets to review the applications submitted by constituent entities, and prepares recommendations concerning the applications received as related to the amount of water available. All recommendations of the Allocation Committee must be approved by Southeastern's Board of Directors. Recommendations from the Allocation Committee are considered at the next meeting of the Board of Directors, and appropriate allocations are made. Applicants are afforded the opportunity to appear before the Board in support of their allocation requests.

Many of the ditches serving irrigable areas located within the District have very senior decreed water rights and generally 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. As recognized in the Allocation Policy, it is Southeastern's policy "not to replace with Project Water decreed water sold by persons or entities." This results in a reduction of the total irrigable acreage that are eligible to receive Project water.

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." Allocation Principle ¶ G. In accordance with the Allocation Principles, Southeastern

recently approved a reallocation of 3.59% of the Project water supply from agriculture to non-agricultural uses, due to removal of formerly irrigated lands from agriculture. The goal of the Allocation Principles, the Allocation Policy and the procedures followed by the Board each year is to facilitate an equitable allocation of water and to ensure efficient use of Project water.

**B. Impact of the *Kansas v. Colorado* Decision on the Use of Water in the Arkansas River Basin**

In 1949, after three years of negotiations, Kansas and Colorado approved, and Congress ratified, the Arkansas River Compact. The Arkansas River Compact's primary purposes are to "[s]ettle existing disputes and remove causes of future controversy ... concerning the waters of the Arkansas River" and to "[e]quitably divide and apportion" the waters of the Arkansas River, "as well as the benefits arising from the construction, operation and maintenance by the United States of John Martin Reservoir."

In the 1950s and 60s, there was a surge in well development along the Arkansas River due to improvement in pump technology and to the availability of inexpensive electrical power. Since the 1950s, water users in the Arkansas River Basin have increasingly relied on groundwater for irrigation and other uses.

In December 1985, Kansas brought an original action in the United States Supreme Court against the State of Colorado to resolve disputes arising under the Arkansas River Compact. Kansas submitted that Colorado's increased reliance on new and existing irrigation wells materially depleted the water otherwise available for use by Kansas. The Special Master and the United States Supreme Court agreed that such additional pumping, absent appropriate offsets in surface diversions, increases the

consumptive use of water, and ultimately decreases the surface flows of the Arkansas River. Colorado generally did not require sufficient reduction of surface water use to fully offset these impacts.

Colorado's State Engineer promulgated the Amended Rules and Regulations Governing the Diversion and Use of Tributary Ground Water in the Arkansas River Basin ("Use Rules") in September of 1995. The Use Rules require that all diversions of groundwater from the valley-fill and surficial aquifers along the Arkansas River from Pueblo to the Stateline, be discontinued unless depletions caused by such pumping are replaced pursuant to a replacement plan approved by the Colorado State Engineer's Office. The Use Rules establish certain presumptive stream depletions which are used to determine depletions to the Arkansas River caused by well pumping. The presumptive stream depletions are reviewed annually, and revised if necessary to prevent material injury to senior surface rights in Colorado, and depletions to usable Stateline flows. If replacement water is not available in sufficient quantities, pumping must be curtailed. Since the Use Rules became effective, the Arkansas River has seen more water rights, including Project water and return flows therefrom, being used for augmentation purposes. This is because wells can provide a more reliable, often better quality water supply than most surface water rights. The Fry-Ark Project is an important source of water that helps sustain agriculture in the Lower Arkansas Valley while complying with Colorado's Arkansas River Compact obligations.

### **C. Sale of Project Water and Return Flows**

While Southeastern allocates Project water, Reclamation is responsible for accounting for the delivery of Project water. Southeastern provides Reclamation and the State Division 2 Engineer's Office with the 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 companies and municipalities.

The price for Project water is determined by Reclamation as directed by Reclamation policy and the Project repayment contract. Rates are subject to adjustment depending upon the "Ability to Pay Study" and "Repayment Analysis," which are conducted by Reclamation every four years. These studies first determine the irrigators' ability to pay for Project water by assessing the economic condition of the average farm operation within the District. Next, Reclamation, in consultation with Southeastern, projects the repayment status of the Project given projected revenues and expenses.

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 adopting the Allocation Principles, the Board acknowledged that it was unlikely that any municipal entity receiving Project water would require its maximum allocation for a number of years. Southeastern recognized that over time, demands will gradually increase. Even if full demand would not be asserted for many years, the Allocation Principles make it clear that failure to request full allocation of water will not constitute an abandonment of the municipal allocation. Water not needed by the area or entity to which it is allocated may

be allocated first to municipal and domestic users, thereafter offered to any other user on such basis as the Board of Directors determines.

The first time that municipalities requested their full 51% of Project Water was in 2002 due to the drought. This hurt agricultural water users, who had previously been able to use the unallocated municipal water. This is an indication that water use within the Arkansas Basin may be changing more toward municipal than agricultural uses.

Pursuant to its repayment contract with the United States, Southeastern retains dominion and control over Project water return flows. Southeastern has made return flows from the use of Project water available for use by eligible entities within its boundaries, primarily for augmentation purposes, since the first deliveries of Project water occurred. Southeastern, 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 governing the sale of return flows. This policy has been amended and the current version is as of April 15, 2004. Sale of return flows promotes multiple uses of Project water.

#### **D. Conservation of Project Water**

Southeastern encourages municipal water users to develop and implement Water Conservation and Drought Management Plans. The Board of Water Works of Pueblo, Colorado Springs Utilities, and the cities of La Junta, Salida and Cañon City have provided summaries of their Water Conservation and Drought Management practices to Southeastern.



Southeastern has also participated in numerous projects that encourage efficient use of Project water including the Winter Water Storage Program, various flow management programs, and programs to control non-native phreatophytes.

### **1. Winter Water Storage Program**

During the early planning stages of the Project, individuals and entities envisioned what has become known as the Winter Water Storage Program (“WWSP”). Prior to construction of Pueblo Dam, the various irrigation entities would divert the flow of the Arkansas River when in priority outside of the normal irrigation season to maintain soil moisture levels in the fields where crops would be grown during the following season. Problems associated with winter operation of canal and lateral systems, labor, and related items were frequently experienced.

As a result, the concept of a WWSP evolved with the objective of storing waters that otherwise would have been diverted to the fields downstream of Pueblo Reservoir if the reservoirs of those entities whose diversions to storage were located upstream of John Martin Reservoir. These stored waters would then be released during the following irrigation season. Allocation of this winter stored water is based upon the ratio of foregone winter direct flow diversion based on the average of a historic period. These ratios were negotiated among the parties through extensive negotiations. In 1974, Southeastern, with the cooperation of various entities in the basin, promoted and operated a voluntary WWSP each year from 1975-76 through 1986-87, except 1977-78. With the experience and data gained each year, refinements and adjustments were made to the program with the goal of arriving at an equitable means of apportioning the stored water

among the program participants and avoiding injury to nonparticipants. In 1984, the participants agreed to file a water court application seeking to permanently decree a change of water rights that allow winter storage. Following intensive negotiations, the Water Court entered a final decree on November 10, 1990.

The WWSP includes all ditches (except Otero and Rocky Ford) on the main stem of the Arkansas River between Pueblo Reservoir and John Martin Reservoir which have historically diverted for beneficial use or storage during the winter period. The WWSP Decree changed various decreed water rights of Southeastern, Amity Mutual Irrigation Company, Bessemer Irrigating Ditch Company, Catlin Canal Company, Colorado Canal Company, Fort Lyon Canal Company, High Line Canal Company, Holbrook Mutual Irrigating Company, Lake Henry Reservoir Company, Lake Meredith Reservoir Company, Las Animas Consolidated Canal Company, Oxford Farmers Ditch Company, Riverside Dairy Ditch, and West Pueblo Ditch to storage for the November 15 to March 15 period with a shared priority of 1910. Many of these ditches have decrees that, so long as they are taking water for direct flow irrigation, are senior water rights on the Arkansas River. The WWSP Decree changed these water rights to a more junior shared priority from November 15 to March 15, that is typically the calling water right on the Arkansas River throughout those four months.

Operation of the WWSP promotes more efficient use of water among agricultural irrigators. While irrigators were previously compelled to use water as it became available, using winter water primarily for increasing the soil moisture, they now have the flexibility to store water and use it when it is most effective for direct irrigation of crops. Storage of winter water also allows ditch owners to use the winter season for ditch

improvements, given that no water will be run during that time, further promoting efficient use of both native and trans-mountain water.

## **2. Upper Arkansas Voluntary Flow Management Program**

It was noted in 1989 that commercial and private boating was increasing, as were the number of fishermen on the Arkansas River above Pueblo Reservoir. To answer the need for better management along the river corridor, the Bureau of Land Management with the Colorado Department of Parks and Outdoor Recreation (“CDPOR”) formed a new 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 found that during the latter part of summer, river flows became too low 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 AHRA with an idea of a “Volunteer Flow Program.”

The Volunteer Flow Program was based in part on Reclamation timing releases of Project water from Twin Lakes Reservoir and Turquoise Reservoir to Pueblo Reservoir to

meet the needs of fishermen and rafters. The one problem with such releases was the increased evaporative losses that resulted from storing increased amounts of water in Pueblo Reservoir during the summer, rather than the higher mountain reservoirs. In 1992, the Colorado Department of Natural Resources (“DNR”) recommended that CDPOR 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 are released before they are actually needed by Southeastern or Reclamation. The funds to pay for this replacement are obtained from the commercial rafting companies’ yearly licensing fees.

For many years, DNR, Southeastern and other interested parties negotiated the terms of the program on an annual basis. In August of 2006, Southeastern, DNR, the Colorado Division of Wildlife (“CDOW”), CDPOR, Chaffee County Board of County Commissioners, the Arkansas River Outfitters Association and Trout Unlimited executed a five-year agreement relating to the operation of the Upper Arkansas River Voluntary Flow Management Program (“VFMP”). As was true in previous years, the parties agreed to operate the VFMP on a year that runs from July 1 of each year through June 30 of the following year (“Plan Year”). For at least five Plan Years following the date of the VFMP Agreement (2007 - 2011), DNR agreed that it would, after consultation with the VFMP Parties, agreed to request Reclamation to operate the VFMP by agreement with DNR and Southeastern on an annual basis.

The highest priority for the VFMP is to maintain a minimum year-round flow of at least 250 c.f.s. at the Wellsville gage, downstream from Salida, to protect the fishery. To the extent possible, winter incubation flows (mid-November through April) should be

maintained from 250 to 400 c.f.s., depending on spawning flows. Between April 1 and May 15 the flow target is within the range of 250 - 400 c.f.s. to provide conditions favorable to egg hatching and fry emergence. Any flow augmentation for recreational use, or to maintain flows at a target level greater than 250 c.f.s., is limited to the period from July 1 to August 15. Subject to consideration of water and storage availability, flows from July 1 to August 15 should be augmented to maintain flows at 700 c.f.s. through releases of Project water. The 700 c.f.s. level is a target; the primary goal is to maintain predictable, consistent recreation flows throughout the summer. Accordingly, Southeastern, DNR and Reclamation evaluate the water likely to be available for augmentation in a particular year and adjust the target accordingly to ensure that augmentation water is not exhausted prior to the end of the season. CDPOR is responsible for replacing evaporative losses to Project water caused by this summer flow augmentation.

To ensure that the Project is not releasing water that will be consumed by other entities' exchanges, each year, the Parties request Reclamation to include in its annual VFMP Operating Agreement a provision restricting contract exchanges, to the effect that during the time of the annual VFMP Operating Agreement, Reclamation will not execute contract exchanges (non-Project water with Project water) until after the May 1 water supply forecast from the NRCS has been evaluated to assure that such contract exchanges will not interfere with operation of the VFMP, nor impair the ability of the Fremont Sanitation District or Salida Wastewater Treatment Plant to meet their Colorado Discharge Permit System requirements. Reclamation has frequently included such restrictions when granting contracts for storage in Project facilities. The VFMP

facilitates use of Project water for multiple purposes by timing its release to support recreation and fisheries while allowing consumptive use below Pueblo Reservoir.

### **3. Arkansas River Flow Management Program**

In partnership with the United States Army Corps of Engineers, the City of Pueblo developed the Arkansas River Corridor Legacy Project (“Legacy Project”). The Legacy Project is intended to restore riparian habitat and provide enhancements to improve recreational opportunities in and along the Arkansas River through Pueblo. To help achieve the Legacy Project goals, Pueblo desired to protect and enhance the flows and the quality of the water in the Arkansas River through Pueblo. In furtherance of the Legacy Project, Pueblo filed an application for a recreational in-channel diversion (“RICD”) water right in Case No. 01CW160 (Water Division No. 2.) To resolve many of the disputes related to the RICD water right, several parties including the City of Pueblo, the City of Aurora, Southeastern, the City of Fountain, the City of Colorado Springs, and the Board of Water Works of Pueblo, Colorado (“BWWP”) entered into an intergovernmental agreement to address flow issues related to the Legacy Project.

The six parties agreed to this intergovernmental agreement (“Six-Party IGA”) in May 2004. The Six-Party IGA binds the parties to the Arkansas River Flow Management Program (“FMP”). The FMP ensures that exchanges and augmentation plans operate in a manner that preserves minimum flows in the Arkansas River between the outlet of the fishery at the Pueblo Dam and the confluence of the Arkansas River with Fountain Creek. The minimum year-round target flow is 100 c.f.s. Recreation flows between March 16

and November 14 (all times except when Pueblo Reservoir is storing water for the WWSP) vary depending on the water forecast for that year.

To meet the flow requirements of the FMP, the IGA parties, including Southeastern, agreed to limit their exchanges to allow the Arkansas River below Pueblo Dam to maintain certain flow levels. The Parties, however, explicitly stated that they did not intend to abandon any water right used to support the FMP, and accordingly created a program designed to recover foregone water. Colorado Springs, BWWP, Aurora, Fountain and Southeastern agreed to work together to develop recovery of yield storage, that is likely to be located at downstream gravel pit reservoirs.

#### **4. Tamarisk Control Program**

Tamarisk is a tenacious, non-native 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 resulting Tamarisk thickets crowd out streams and rivers; provide poor habitat for livestock, animals, and birds; increase fire hazards; and limit human use of the waterways. Tamarisk steals water by using more water than the native vegetation that it displaces. This non-beneficial user of the West's limited water resources dries up springs, wetlands, and riparian areas by lowering water tables. It is estimated that the western United States is losing from 2 to 4.5 million acre-feet of water per year over what the native plants would use. This is enough water to supply upwards of 20 million people or to irrigate over 1,000,000 acres of land.

Southeastern's Board of Directors supported the efforts to pass federal legislation providing the financial tools for the implementation of regional projects for the control of tamarisk and other non-native plants impacting western rivers. On October 11, 2006, President Bush signed the Salt Cedar and Russian Olive Control Demonstration Act, HR 2720, Public Law 109-320, which authorized \$80 million for large-scale demonstrations and associated research over a five-year period.

The Tamarisk Coalition, in which Southeastern participates, 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. Southeastern is committed to developing innovative programs to eradicate non-native phreatophytes such as tamarisk that hinder agricultural and municipal entities from making efficient use of the limited water resources in the Arkansas River Basin.

### **III. Challenges for the Future**

#### **A. Colorado River Conflicts**

With the supplemental supply of water for the communities and individuals who benefit from the Fry-Ark Project coming from the Colorado River, Southeastern, as part of a coalition of Colorado water users, has been involved in three major issues on the Colorado River over the last several years:

1. Negotiations with California and the other upper basin states on California's over use of its apportionment in use of surplus water on the Colorado River. The basin states



were successful in negotiating with California on achieving an agreement by California to reduce its use to its basin apportionment. With the Department of Interior's assistance, the other Basin states' success in reaching this agreement was historic for the river.

2. Deliveries of water to Mexico and some issues raised by Mexico and various environmental organizations in the United States to secure additional water for environmental purposes. The coalition has been involved in those issues in the last several years, and this issue will continue to come up over the next several years.

3. Current drought and shortage situation in the Colorado River. For several years, the focus of discussions has been about allocating surplus water, and, all of a sudden, there is no surplus water. Currently, the discussion is centering on drought and compact calls, which provides a very clear indication of how quickly things can change on the river.

Neither the Boulder Canyon Project Act nor the decree in the *Arizona v. California* case provides any real guidance to the Secretary on how to develop shortage criteria for how shortages will be allocated in the lower basin. The only guidance is in the authorizing legislation for the Central Arizona Project, which give California the first priority to its basin apportionment of 4.4 million acre-feet. Former Secretary Gale Norton, considering the current conditions of the reservoirs, was interested in moving forward with the development of shortage criteria. She asked the basin states to come to a consensus on that, and to provide that consensus to her.

Recently, after several months of intense negotiations, the seven Colorado River Basin States reached an accord on handling of the drought and shortage situation in the

Colorado River. The agreement is specifically designed to comport with the Colorado River Compacts and the “Law of the River” but seeks to find flexibility within the law to further improve reservoir operations. The signing of the proposed agreement is a significant event in the overall water operations on the Colorado River and will remove the threat of litigation between the states over water operations through 2025.

Several circumstances combined to lead to this agreement. Due to the recent drought conditions, the Secretary of the Interior was asked to review current operations of Colorado River reservoirs. As a result, on June 15, 2005, Reclamation published a Federal Register notice beginning the process to develop the lower basin shortage criteria and changes to the coordinated reservoir operations of Lakes Powell and Mead. The deadline for completion of this process is December 31, 2007.

In response to the Bureau’s notice, on August 25, 2005 Governor’s representatives for the seven Colorado River Basin States wrote a letter to the Secretary of Interior stating the seven Colorado River Basin States had agreed on a three-pronged strategy for improving management and operations of the Colorado River. First, the states, working with Reclamation, would develop lower basin shortage criteria in conjunction with new coordinated operating criteria for Lakes Powell and Mead under low reservoir conditions. Second, the states, working with Reclamation, would look for ways to improve system efficiency and management. Finally, the states would look for ways to augment the water supplies of the Colorado River. Southeastern continues to work with other Colorado River water users to resolve those issues in a manner that promotes sustainable use of the Colorado River.

## **B. Exportation of Water from the Arkansas Valley**

The Fry-Ark Project was designed to provide supplemental water to a valley that is water short. Thus, when municipalities from the South Platte basin have attempted to export some of the Arkansas' limited supply of native water, it has created challenges for water users in the Arkansas Valley as well as the District. Nothing in the Fry-Ark authorizing act, including any documents incorporated by reference in the statute, provides authority for the Secretary to enter contracts for use of Fry-Ark excess capacity space to store native Arkansas River water rights for use out of the Arkansas River Basin in Colorado, with the possible exception of the City of Aurora.

Special protection for the Arkansas Basin beneficiaries of the Fry-Ark Project is built into the repayment contract, Contract No. 5-07-70-W0086, as amended, between Southeastern and the United States, which govern the evacuation of water from Pueblo Reservoir. The spill order became part of the Contract by the Fourth Amendment in 1984 and resulted from negotiations between Southeastern, BWWP and Colorado Springs in connection with the 1984 applications filed in Water Court for the WWSP and Colorado Springs' and BWWP's exchanges. The spill priorities in Article 13, which are unique among Reclamation projects, provide:

(a) Whenever water is evacuated from Pueblo, Twin Lakes, and Turquoise Reservoirs to meet the necessities of Project flood control, power generation purposes, storage of transmountain Project water, storage of native Project water, and Project operational requirements; except as provided in Subarticle 13.(b) below, the water evacuated shall be charged in the following order:

1. Against water stored under contracts for if-and-when available storage space for entities which will use the water outside the District boundaries.
2. Against water stored under contracts for if-and-when available storage

space for entities which will use the water within the District boundaries. This evacuation shall be charged pro rata against water stored under all such like contracts at the time of the evacuation.

3. Against any winter storage water in excess of 70,000 acre-feet.

4. Against water stored under contracts with municipal entities within the boundaries of the District, which water is neither Project water nor return flow from Project water and which water is limited to 163,100 acre-feet less any Project water purchased and stored by municipal users. This evacuation will be charged pro rata against the water stored under all such like contracts at the time of evacuation.

5. Against winter storage water not in excess of 70,000 acre-feet.

6. Against Project water accumulated from the Arkansas River and its tributaries.

(b) Notwithstanding the order of evacuation of water listed in Subarticle 13.(a) above, evacuation of water from storage pursuant to existing firm storage contracts, the Highline storage contract and future storage contracts that may be entered into with the Board of Waterworks of Pueblo, Colorado and Twin Lakes Reservoir and Canal Company to satisfy prior commitments will be made pursuant to the terms of such storage contracts.

First to spill out of the reservoirs is water stored under contracts for if-and-when available storage space for entities which will use the water outside Southeastern's district boundaries.

Commissioner John W. Keys, III, by his letter of April 3, 2003, announced Reclamation's conclusion that it has authority to enter into long-term contracts with Aurora for utilization of Fry-Ark Project facilities. The City of Aurora acquired Rocky Ford Ditch water rights and applied to the Water Court to change the use of those water rights from irrigation use in the Arkansas Basin to use for municipal purposes in Aurora located in the South Platte River Basin. The lands previously irrigated by these water rights were included within Southeastern's district boundaries. The transfer of such

water rights out of the basin to municipal uses in Aurora has potentially serious impacts to the Arkansas River Basin. Southeastern executed an intergovernmental agreement with Aurora, as did several other parties in the Arkansas River Basin, to mitigate the damages caused by the exportation of water from the Arkansas Valley.

**C. Meeting Increased Demands for Water Within the District.**

Southeastern finalized a study in September 1998 that documented the projected future water storage and supply demands of Southeastern's municipal and agricultural constituents. The study also provided alternatives to meet those demands, which included conservation efforts. Southeastern worked with twenty-seven other water users groups throughout the District to collectively assess future storage and supply needs. The Water and Storage Needs Assessment Project envisaged future water demands and listed a set of alternatives to provide for those demands. The Needs Assessment Study reviewed existing water conservation efforts in cooperation with Southeastern and the water users groups. They provided guidance for conservation measures that will help meet future demands. The Needs Assessment Study also reviewed storage alternatives including the expansion of existing facilities and the construction of new storage facilities. The report indicated a need for an additional 173,100 acre-feet of storage in the Arkansas Valley by the year 2040. The challenge for the Arkansas Valley is to locate such storage in an environmentally and economically sound manner.

**D. Preferred Storage Options Plan (PSOP)**

The "Water and Storage Needs Assessment Report" led Southeastern and the communities in the Arkansas Valley 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 Southeastern to meet water needs in the basin into the year 2040.

In 2000, the District completed a study that 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.

The first objective of PSOP is to better utilize existing capacity in the Fry-Ark Project reservoirs to help meet growing demand for storage. This is Phase I, the goal being to make full use of existing capacity in Project facilities without interfering with the current entitlements to Project water and storage. These new storage contracts will help communities meet their water needs through the year 2015. At that point, new storage capacity will need to be developed. The preferred alternatives for Phase II were to enlarge both Pueblo and Turquoise Reservoirs and to allow the use of existing excess capacity in the Fry-Ark Project (long-term contracts for municipalities within district boundaries to store non-Project water). PSOP proposes to enlarge Pueblo Reservoir by 54,000 acre-feet and Turquoise Reservoir by 19,000 acre-feet in order to help meet the projected 2040 demand.

The reasons for enlarging Fry-Ark storage facilities are to allow for greater municipal storage and storage of agricultural water through the WWSP. An enlarged Pueblo Reservoir would help municipal users meet their future demands and provide

permanent storage space for the WWSP. Without additional storage space in Pueblo Reservoir, Winter Water may be threatened with a spill or at least early release, which means that storage 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 future opportunities to contract for firm storage space.

#### **E. Arkansas Valley Conduit**

Both the 1962 and 1978 Acts contemplated the construction of the Arkansas Valley Conduit (“AVC”), which has yet to be developed, primarily because the constituents do not have the funding to develop it.

The need for the AVC is driven by projected population growth, the economically-disadvantaged nature of the lower Arkansas Valley, and increasingly costly water treatment requirements being experienced by certain water providers in the basin. In addition to population growth pressures, Southeastern’s smaller communities, especially those east of Pueblo, who rely on groundwater for their main water supply, need to develop a higher quality drinking water supply for their residents. As early as 1953, the Secretary of the Interior acknowledged that additional quantity and better quality of domestic and municipal water was critically needed for the Arkansas Valley, and in particular for those towns and cities east of Pueblo. House Document 187, 83d Congress, 1<sup>st</sup> Session, and the Fryingpan-Arkansas Final Environmental Statement dated April 16, 1975, both of which have been incorporated by reference into the Authorizing Act, recognized that the AVC would be an effective way to address this need. The local water available from the Arkansas River alluvium has historically been high in Total

Dissolved Solids (TDS), sulfates, and calcium, and has objectionable concentrations of iron and manganese. Additionally, various water suppliers have recently reported measurable concentrations of radionuclides in their water. This extremely poor groundwater quality, combined with increasingly stringent water quality regulations of the Safe Drinking Water Act, has caused several local water suppliers to invest in expensive water treatment facilities to assure a reliable water supply for their customers.

Generally, all drinking water systems in the Lower Arkansas River Basin, from St. Charles Mesa in eastern Pueblo County to Lamar in Prowers County, are concerned with the poor water quality in this region. Many of the water providers do not satisfy, or only marginally satisfy, current drinking water standards. More than 40 water providers in the Lower Arkansas River Basin could benefit from the AVC, if implemented.

All communities must meet the state and federal primary drinking water standards through treatment or source replacement. Less documented, however, is the potential burden placed upon communities by high raw water concentrations of various unregulated water quality constituents such as iron, manganese and hardness. These constituents can cause accelerated infrastructure decay and loss of tax base and economic impacts associated with factories and businesses locating elsewhere.

To address these issues, representatives of local and county governments, water districts and other interested citizens of the Lower Arkansas River Basin formed a committee in 2000 to consider a feasibility study of the AVC. These interested parties formed the *WaterWorks!* Committee and, along with Southeastern, began to review the feasibility of developing the AVC. Some of the relevant conclusions reached are as follows:



- The cost of the AVC compares favorably with any “no action alternative,” which would still require the communities involved to make substantial financial investments to address current water quality and safe drinking standards.
- The financial capabilities of the participating agencies are estimated to be inadequate to fund the construction of the proposed Arkansas Valley Conduit, under a 100 percent funding requirement, but AVC participants could afford to pay 20 percent cost-share.
- There is an adequate water supply to make the AVC feasible.

As mentioned above, the AVC was included in the original Fry-Ark reports integrated into the Fry-Ark Authorization Act. The AVC was not built because communities in the Lower Arkansas River Basin could not fully fund the AVC project. A study of the Arkansas Valley Conduit was prepared for Southeastern, the Four Corners Regional Commission and the Bureau of Reclamation in 1972. The report’s recommendations for construction of a water treatment plant, pumping station and conduit to serve 16 communities and 25 water associations east of Pueblo were not implemented at that time due to the lack of federal funding. Evaluations on the quantity of water needed to satisfy long-range objectives for water users in the Southeastern district area were prepared in 1998. Additionally, an update of the estimated construction costs presented in the 1972 report was prepared in 1998.

The citizens and communities of the Lower Arkansas River Basin have waited 30 to 50 years for this project that will improve their water quality and supply. The need for the AVC has been well established for more than 50 years. The Lower Arkansas River

Basin communities continue to seek federal assistance in moving this much-needed project forward.

#### **IV. Conclusion**

Community leaders from throughout the basin worked together in the 1950s and 1960s to create the vision for the Fry-Ark Project. Their vision has certainly paid off, but it wouldn't have been accomplished without a lot of cooperation and compromise. The challenge for Southeastern Colorado and the rest of the state is to come together again to plan for the future water resources needs by managing, developing, and protecting water and related resources in an environmentally and economically sound manner.