Executive Summary of the Strategic Plan for the *Fountain Creek Watershed*

PREFACE

The Fountain Creek Visioning Task Force, begun under the leadership of El Paso County Commissioner Sallie Clark and Pueblo County Commissioner Loretta Kennedy, created the framework for one of the most progressive and collaborative initiatives in the State of Colorado. Recognizing that issues on Fountain Creek had come to a critical point, leaders in both counties began a discussion that has led to the drafting and signing of an Intergovernmental Agreement between Pueblo and El Paso Counties and municipalities within both jurisdictions.

The Fountain Creek Visioning Task Force initially created three subcommittees devoted to remedying excessive water flows, improving water quality and exploring land use issues that contribute to these problems. Later, a subcommittee to develop ways to fund an entity dedicated to Fountain Creek, was established. Though the process took two and a half years to complete, it encompassed the hopes and dreams of citizens in both counties to make Fountain Creek an amenity that can be enjoyed by all.

Not only will the entity address the major issues of water quantity and quality, but also how to make this stretch of land between Colorado Springs and Pueblo a recreational and educational area that will sustain the Creek. Where the entity will take the vision in the future is in the hands of those appointed to the Board of Directors. But we are sure that it will continue to develop creative ways to keep Fountain Creek vital and an invaluable link between two great communities.

Sallie Clark
El Paso County Commissioner

Jeff Chostner
Pueblo County Commissioner

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INTRODUCTION

The Fountain Creek Vision Task Force was a collaborative effort of government officials, advocacy groups, and residents in three counties in southern Colorado working together to restore a neglected watershed, create a shared natural amenity, and bring their communities together. Task Force participants brought their respective aspirations, perspectives, experiences, and knowledge to bear on the many challenges facing the watershed. Managed by the 28-member Consensus Committee, participants in the Task Force came together in working groups to address issues of water quality, water quantity, and land use and environment. The working groups met monthly for more than two years, inviting expert speakers from local, state, and federal agencies and non-governmental organizations to provide data and other information as context to inform their discussions. When it became clear that the solutions for Fountain Creek would require additional funding and more dedicated management than what was currently available, the Consensus Committee created a working group to identity the best approach to address this issues as well. The Fountain Creek Vision Task Force Strategic Plan is the final work product of all these groups. It is a road map to improved conditions and enhanced opportunities throughout the watershed. This Executive Summary outlines the most salient components of the Strategic Plan, but the Fountain Creek Vision Task Force urges everyone who is interested in this important project to read the complete plan, which is available at www. fountain-crk.org.

I. MISSION AND VISION

MISSION

The members of the Fountain Creek Vision Task Force have come together to turn the Fountain Creek watershed into a regional asset that adds value to our communities. We are working to create a healthy waterway with appropriate erosion, sedimentation, and flooding that supports diverse economic, environmental, and recreational interests. We will cooperate to enhance and protect Fountain Creek, promoting sustainable use by members of our watershed community and by the visitors we know this wonderful natural amenity will attract.

VISION

Our vision for the Fountain Creek watershed is a strong, resilient, and sustainable ecosystem that supports a variety of interests and activities. Our vision includes a number of issues:

- In terms of water quality, we see a waterway that supports fish and other aquatic species, is safe for recreation, and protects public health.
- Regarding water quantity, we see successful stormwater management to better control flooding and erosion.
- For the larger natural environment, we see healthy, contiguous habitat for a diversity of wildlife species, including the threatened and endangered species that make their homes here. We envision migration corridors into and out of the watershed, allowing species safe and free movement from north to south and from east to west throughout the region.
- With respect to land use planning, we see great opportunities for recreation, including a state park and an integral part of the Front Range Trail. We expect residents and visitors alike to engage in biking, hunting, cycling, fishing, birding, cross-country skiing, camping, and other activities that foster healthy lifestyles and a greater quality of life. We

will continue to respect landowners' rights and envision ongoing opportunities for sustainable agriculture and ranching and responsible growth. We anticipate thoughtful and sustainable development that benefits local economies, supports Ft. Carson, encourages the creation of local jobs, builds neighborhoods and neighbors, promotes alternative transportation, and provides green infrastructure and ecosystem services. Throughout the watershed, we envision open space parks and other green areas that connect our residents but separate our cities, allowing each community to create and sustain its own visual and cultural identity.

- Our vision entails achieving all of these things for the entire Fountain Creek watershed. However, we acknowledge that doing so might not be possible or practical in every case and that some vision elements may be confined by necessity to Fountain Creek itself.
- Our vision for the work of the Task Force is to model successful collaboration in watershed clean-up and stewardship. We hope to demonstrate that by working together and striking a balance between short-term and long-term thinking, communities can create and realize a shared vision, turn problems into opportunities, and choose their own future. Solutions that benefit different communities, different species, and different land uses are possible, and working together to find and implement them empowers communities and creates lasting relationships. We know it is our responsibility to educate the public about our work and promote sound community stewardship of the watershed.

II. FUNDING AND LONG-TERM MANAGEMENT OF THE WATERSHED

In order to accomplish the many goals that are outlined in the strategic plan for Fountain Creek, the Fountain Creek Vision Task Force determined that a funding and management entity must be created to provide leadership and resources in the implementation process. For this reason, the Task Force is recommending that the Colorado State Legislature create the Fountain Creek Watershed Drainage, Flood Control, and Greenway District. The details of this district are outlined in the Inter-Governmental Agreement (IGA). Key elements of the district as envisioned by the Task Force are:

1. Creation of a 9-member Governing Board;
2. Possible creation of a new entity to receive and/or raise matching funds for projects and maintenance;
3. Creation of a Citizens Advisory Group (CAG) to bring the voices and ideas of residents of the watershed to the deliberations of the Governing Board; and
4. Creation of a Technical Advisory Committee (TAC) to ensure thoughtful and informed discussion on technically complex issues.

III. WATER QUALITY AND SEDIMENTATION

INTRODUCTION

Having good water quality is very important to human health, to fish, and to quality of life. It makes water usable for wildlife and habitat preservation, recreation, drinking water supply, crop irrigation, and industry. Water quality is affected by the activities of people, by wild and domestic animals, and by natural causes. According to the State of Colorado, the water quality in parts of Fountain Creek exceeds water quality standards overall but is "impaired" for E. coli and/or selenium in some places.

E. coli is a concern in several reaches of the creek, including Upper Fountain Creek and the mainstem of Fountain Creek from the confluence of Fountain and Monument Creeks to the Highway 47 bridge in Pueblo. Sources of bacteria could include raw sewage spills, storm runoff from urban areas, wildlife (deer, elk, geese), livestock (cattle, horses, pigs, poultry), and runoff from farms, ranches, and open areas. Monitoring conducted by the Pueblo City/County Health Department shows that bacteria frequently exceed water quality standards in Fountain Creek, especially in summer and after storms. As a result, it might be unsafe to swim or wade in Fountain Creek when levels of E. coli are high, although it is difficult to determine if high levels of bacteria directly cause an individual to become sick.

Colorado State University-Pueblo and the U.S. Geological Survey (USGS) are conducting studies using DNA from E. Coli bacteria in Fountain Creek to determine whether they come mostly from people or mostly from animals. Identifying the main sources of bacteria may make it possible to reduce bacteria levels in Fountain Creek so that standards are attained. In addition, a cooperative study between the USGS, Colorado Springs Utilities, the City of Colorado Springs, and the Colorado Department of Public Health and Environment is being conducted on Upper Fountain Creek from Green Mountain Falls to the confluence of Fountain Creek and Monument Creek to identify sources of E. Coli. This study will be completed by December 2009.

Selenium is a concern for parts of Upper Fountain Creek, parts of the mainstem of Fountain Creek in Pueblo, and Monument Creek. High concentrations of selenium are found in the bedrock and soils underlying Fountain Creek and its tributaries. Selenium is picked up by surface water and groundwater as it flows over or through the soils and bedrock, resulting in increased amounts of selenium in the water. Because of these factors, Fountain Creek between Pinõn Road and the Arkansas River consistently exceeds the water quality standard. No effects on fish health or on fish or insect populations caused by selenium were found to occur in the locations studied on Fountain Creek.

Sediment is a concern throughout the Fountain Creek Watershed. The State is evaluating data for several segments in the watershed to determine if they are impaired for sediment. Flow conditions combined with other factors (e.g. geology, stream modification, etc.) result in increased erosion and sediment transport. As the

creek is trying to re-establish equilibrium and adjust for these additional flows, it alters its meander pattern and promotes increased bank erosion and down-cutting of the creek bed, which are all evident processes currently taking place within Fountain Creek and its tributaries.

Specific factors leading to an increase in sediment transport include floodplain encroachment, construction and other ground disturbing activities, including higher frequency of channel forming flows (main stem and tributaries) and high flow events. The watershed has become increasingly urbanized which has lead to higher base flow and more frequent flood flows. As the flows are increasing in the streams, the sediment transport capacity has also increased. These additional sediment loads increase floodplain widths, impact water quality, and decrease channel capacities. Another parameter of the stream system is the meander belt, which can extend beyond the floodplain and is defined as the zone along the floor of a valley across which a meandering stream periodically shifts its channel. Encroachment into this area could prove critical and needs to be considered in future planning associated with land use and creek stability.

Several studies are underway to address water quality and erosion problems in the Fountain Creek Watershed. The U.S. Army Corps of Engineers (USACE) and the US Geological Survey (USGS) have completed engineering and scientific analyses on Fountain Creek and its tributaries. The Fountain Creek Corridor Master Plan is currently being developed for the mainstem of Fountain Creek from the southern Colorado Springs city limits to its confluence with the Arkansas River in Pueblo (approximately 44 miles of creek). The plan aims to address water quality and sedimentation concerns by changes to the creek's shape, diverting water into wetlands and side detention areas during flood flows, improving existing wetlands and adding additional wetlands in the floodplain, and installing a mechanical collector to remove sediment in the levee area in Pueblo.

FCVTF GOALS TO IMPROVE CURRENT CONDITIONS

1. Assess potential water quality problems in the watershed.
2. Mitigate adverse stream impacts.
3. Reduce selenium to levels that are at or below State water quality standards and/or background conditions or recommend that the Colorado Water Quality Control Commission (CWQCC) establish appropriate site-specific standards.
4. Reduce E. Coli to levels that are at or below State water quality standards or recommend that the CWQCC establish appropriate site-specific standards.
5. Improve watershed function to manage sediment transport patterns and reduce erosion and sedimentation.
6. Improve stormwater runoff conditions at the source to improve water quality.

FCVTF WATER QUALITY OBJECTIVES

1. By 2013, all organizations collecting water quality data in the watershed are contributing to a shared on-line water quality database accessible to the public (such as the Colorado Watershed Data Sharing Network).
2. By 2012, remove one parameter from one segment on the 303(d) list.
3. By 2015, remove two parameters from one or more segments on the 303(d) list.
4. By 2013, no additional stream segments will be added to the 303(d) list (based on existing stream standards).
5. By 2020 demonstrate a continuous water quality improvement from 2008 for parameters of concern (E. Coli, selenium) measured in each stream segment in order to reach State standards.

IV. FLOODING AND STORMWATER MANAGEMENT

INTRODUCTION

Fountain Creek drains a 930-square-mile watershed with an elevation ranging from 4,640 feet to 14,115 feet. The creek is currently not a stable system, exhibiting frequent changes in sediment loads, flows, vegetative conditions, and nearby land uses. Fountain Creek has historically exhibited highly fluctuating flows, particularly between April and September, in response to storm events. Since the early 1980s, land and water use changes within the watershed have resulted in formerly ephemeral streams located in urban areas becoming perennial and Fountain Creek downstream of the City of Fountain flowing year round. The increase in perennial streams is due in part to increased urbanization without the benefit of a comprehensive watershed management approach for the basin. Increased baseflow in Fountain Creek and its tributaries is attributable to imported water sources (i.e., transbasin diversions), increased amount of impervious surfaces, wastewater effluent discharges, and return flows from lawn watering and crop irrigation.

Three types of flows that impact the overall conditions of Fountain Creek include major flood events, channel forming flow, and baseflow. Channel forming flow is the representative discharge that shapes the channel with respect to the pattern, cross-section, and profile. This type of flow moves the largest percentage of sediment over time, because it occurs on a more frequent basis in response to daily climate and land use conditions. Baseflow is not a consistent factor in shaping the channel, as it does not typically have enough energy to consistently move sediment. While subtle, erosion caused by increased baseflow is a component of day-to-day channel erosion and sediment transport.

MAJOR FLOOD EVENTS

Flood events have occurred periodically on Fountain Creek, with the most recent occurring in 1999 with a flow of 20,000 cfs recorded at the USGS gauge in Pueblo. Embankment failures in May 2007 caused additional flooding in low-lying North Side neighborhoods in Pueblo. Flood events are documented with photos and news reports from many sources within the watershed. Significant flood events have caused damage to public infrastructure, utilities, adjacent farmlands, and residential communities. Flooding also compounds problems associated with increased sedimentation and erosion. As development continues within the watershed, with the associated increase in impervious area, runoff and flood events are expected to increase.

The USACE study indicates a reduction in flood peaks from prior assessments done by Federal Emergency Management Agency (FEMA). However, channel capacities have been reduced in the lower reaches of Fountain Creek due to sediment build-up and heavy vegetative growth restricting channel widths and reducing channel depths. Other studies done on tributaries to Fountain Creek indicate problems with sediment, flooding, and channel degradation ultimately threatening buildings and infrastructure. Flood attenuation occurs in downstream segments of Fountain

Creek due to off-line storage and channel storage. In 1989, levee systems were constructed through Pueblo to protect the East Side community and the downtown area from flooding caused by a 100-year flood event. Private properties were purchased by the City of Pueblo to remove development from the floodplain and provide additional capacity within the channel. Current efforts by federal and state agencies, railroads, cities, counties, and stormwater enterprises strive to maintain channel stability by constructing detention facilities and other channel improvements. Vegetation control and debris removal have been implemented on Fountain Creek to increase channel capacity and improve flow characteristics.

CHANNEL FORMING FLOW

Channel forming flows are not indicative of catastrophic flooding. Rather, these are smaller events ranging from a few hundred cfs to a few thousand cfs that occur one to two times per year along the Front Range. These flow conditions combined with other factors (e.g. geology, stream modification, infrastructure, etc.) result in increased erosion and sediment transport. As the creek is trying to re-establish equilibrium and adjust for these additional flows, it alters its meander pattern and promotes increased bank erosion and down-cutting of the creek bed, which are all evident processes currently taking place within Fountain Creek and its tributaries.

RUNOFF REDUCTION

Conventional stormwater management practices to date have emphasized the reduction of peak runoff rates from flood events with little attention being paid to the more frequent events or to volume reduction. Fundamental changes to the methods used for planning, designing, and constructing development projects are needed to address these issues.

As a result of projected changes within the watershed and documented changes in streamflows in Fountain Creek, the USACE has made some general recommendations regarding future development within the watershed. These general recommendations address policies and strategies to reduce flood risk, sedimentation, and erosion, including the rehabilitation of riparian areas, creation of off-channel diversion and storage, and the preservation of existing wetlands, as well as the creation of additional wetlands. The recommendations emphasize low-impact development as a means to mitigate existing conditions and wisely manage future impervious surface areas and increased runoff. The USACE study also identified potential projects and sites for flood risk reduction, eco-system restoration, and channel stability.

A FUTURE TO BE AVOIDED

As impervious areas increase in the watershed, Fountain Creek will experience more frequent flood events from storms of lesser magnitude. Without effective best management practices and regulations, future development within the watershed will continue to increase instabilities on Fountain Creek because of increased runoff, volumes, and peak flows.

FCVTF GOALS TO IMPROVE CURRENT CONDITIONS

1. Recognize that stormwater is a resource and manage it for the benefit of the watershed and entities downstream.
2. Preserve natural channel capacity through floodplain preservation and sedimentation controls.
3. Preserve the natural drainage way through conservation easements and streamside setbacks.
4. Improve channel stability and flow stability by formulating a watershed development policy that promotes matching the post-development hydrographs and the pre-development hydrographs for peak, volume, and timing to the extent practicable.
5. Promote efficient stormwater management so that runoff will not exceed downstream conveyance capacity in order to minimize adverse impacts downstream.
6. Promote stable base flows and stabilize the stream system by retrofitting, to the extent practicable and in accordance with applicable Municipal Stormwater Discharge Permits (MSDPs), existing drainage systems to provide runoff reduction, water quality treatment, and improved stormwater management practices.
7. Improve stormwater runoff conditions at the source, with respect to quality, quantity, and rate/duration of flow to better mitigate development impacts.

FCVTF FLOODING AND STORMWATER MANAGEMENT OBJECTIVES

1. By 2010, all entities in the watershed will have participated in a watershed workshop to evaluate watershed management policies based on benchmark principles developed by recognized authorities such as the Center for Watershed Protection.
2. By 2012, all entities in the watershed will have adopted stormwater management policies based on benchmark principles developed by the Center for Watershed Protection; conducted workshops for revising existing drainage and land use regulations; presented revised criteria to developers and policy makers; and adopted recommended criteria for uniform application in the watershed..
3. By 2014, 10% of all existing public systems (as determined by each jurisdiction) will be retrofitted for water quality treatment and volume and peak flow reduction.
4. By 2014, 50% of all new development and 100% of all new annexations will implement LID techniques to reduce peak flows and runoff volume and to stabilize channel-forming flows.

V. MUNICIPAL WATER SUPPLIES AND RETURN FLOWS

INTRODUCTION

Currently, approximately 80% of the water used for municipal purposes in the Fountain Creek Watershed is 'non-native,' originating from another watershed (mostly from the Colorado River Watershed), or from the Denver Basin aquifers which are located deep underground and do not hydraulically connect with surface waters. Regional water demand outgrew the relatively small and undependable supply of indigenous Fountain Creek Watershed water supply over 100 years ago. At that time, a cross-basin pipeline was constructed to import water from the south slope of Pikes Peak. Since then, additional pipelines have been built to bring water to this region from up to 200 miles away. By law, the portion of this "non-native" water that remains after the initial use can be 'reused to extinction,' enabling return flows to be reused either directly for non-potable uses, or exchanged for additional non-native water.

Of all the water used in the Arkansas River Basin (which includes the Fountain Creek Watershed):

- ~87% is used for agriculture
- ~4.3% goes to Colorado Springs
- ~1.7% goes to City of Pueblo and Pueblo West
  ~2.8% goes to Aurora

Municipal water entities in this watershed typically consume 40% of their water through beneficial uses, evaporation, and losses. Of the total approximately 105.4 thousand acre-feet per year (kaf/yr) of water that is used by water users in El Paso County, approximately 42.2 kaf/yr is consumed on an average year. Approximately half of the water used by municipal systems is for outdoor irrigation and the remaining half is used indoors. A portion of the water that is used for irrigation returns to the groundwater close to the ground surface and recharges this alluvium (adds water to it). The portion of this groundwater that flows underground to a nearby creek or is recovered by an alluvial well is not considered to have been consumed, since this water is available to be reused. Of the indoor use, the water split is approximately 29% for toilets, 22% for laundry, 22% for showers and baths, 15 % for faucets, 10% for leaks, and 2% for dishwashers.

Conservation efforts such as tiered water rates, education and outreach, regulations, rebates, and incentives have been successfully used to decrease the per capita water use. In fact, residential water use in Colorado Springs (largest population center in the watershed) is among the lowest in the West, and is 15-30% lower than the Boulder, Denver, and Pueblo per capita residential water use.

Conservation efforts have proven very effective in reducing water use. However, water providers must be prepared for the risks associated with this 'water hardening,' meaning that when conservation efforts reduce water consumption to meet only essential needs, there is no longer a water 'cushion' to curtail during an emergency or drought. Watering restrictions

and other drought measures are therefore not as effective in reducing water use during dry cycles when conservation has already reduced demands to essential needs only. Thus, water providers must be careful to increase storage capacities to assure that water supplies can meet essential water demands during times of drought.

THE FUTURE

The population in the Fountain Creek Watershed is increasing. Greater water demands accompany this growth and thus water projects are being planned to meet these demands. One major water project being planned to increase water supply to Colorado Springs, Fountain, Pueblo West, and Security is the Southern Delivery System (SDS). As a result of this project, non-native return flows will increase flow into Fountain Creek.[1]

Even with the planned future water projects, the Arkansas Basin Roundtable estimates that by 2030 El Paso County will have a 22,600 acre foot/year (AF) gross gap between water demand and water supply. This gap will be caused by:

- Increased demand in unincorporated El Paso (9,250 AF)
- Loss of groundwater supplies in unincorporated El Paso County and the Town of Monument (13,350 AF)

FCVTF GOALS TO IMPROVE CURRENT CONDITIONS

1. Develop and enhance region-wide conservation efforts
2. Develop and enhance region-wide reuse programs
3. Minimize region-wide water system losses
4. Initiate regional discussions for addressing the long-term water supply gap

FCVTF MUNICIPAL WATER OBJECTIVES

1. By 2009, issue a report identifying all the watershed stakeholders in water supply.
2. By 2009, perform a SWOT (strengths, weaknesses, opportunities, and threats) analysis on the water conservation for at least three water districts in the watershed. Prioritize the elements from this analysis into water conservation phases for water providers. Set water reduction targets for each phase.
3. By 2010, introduce water conservation phase concepts to all water providers serving 50 or more homes in the watershed.
4. By 2010 – 2015, help implement phased water conservation plans to all watershed water providers open to participating, with the goal of a 15% residential water use per household reduction for providers that do not currently have a conservation program. Monitor and verify programs impact water demands for each provider, fine-tuning programs as needed to meet goals.
5. By 2015, help establish watershed reuse programs with all feasible water districts that are open to participating.

VI. LAND USE PLANNING AND DEVELOPMENT

INTRODUCTION

Physical development is the greatest agent of change in the Fountain Creek Watershed. As municipalities and unincorporated counties approve developments within the watershed, the functionality of the physical environment changes. Colorado has one of the highest growth rates in the west. Expanding development increases the amount of impervious surfaces and increases demands on natural resources and physical infrastructure. Meeting these increased demands of development within the watershed affects water quality, water quantity, the natural environment, and patterns of land use within the watershed.

The table to the right shows the most recent population and projected growth for the eight municipalities and three counties within the Fountain Creek Watershed.

IMPERVIOUSNESS OF THE FOUNTAIN CREEK WATERSHED

"The Fountain Creek Watershed Impervious Surface Area and Watershed Health Analysis Report" describes growth and development trends and health characteristics of the Fountain Creek Watershed. Results of the study indicate that changes in percent imperviousness will be most pronounced in the northern and eastern portion of the Fountain Creek Watershed and in the areas that have shared boundaries between the City of Colorado Springs (or other municipalities) and unincorporated portions of El Paso County. Increased growth in the unincorporated portions of El Paso County will continue to put more pressure on creeks within those areas and immediately downstream. This has already occurred in Cottonwood Creek, sections of Sand Creek, and Jimmy Camp Creek, which are also expected to see the largest increase in percent imperviousness in the future.

Strategies to address increasing imperviousness are being considered by the various counties and municipalities within the watershed. Changes to development techniques may allow post-development hydrographs to approximate pre-development hydrograph on a site-by-site basis. The implementation of low-impact development (LID) practices may be one means to accomplish this goal. Adopting Smart Growth principles and promoting Green Infrastructure, Energy Star Housing, and Leadership in Energy and Environmental Design (LEED) Criteria for non-residential structures will go a long way toward minimizing the negative impacts of development within the watershed. These strategies do not necessarily require changes in planned uses, only the manner in which sites are developed.

PROSPECTIVE DEVELOPMENTS IN THE FOUNTAIN CREEK WATERSHED

There are many infrastructure and other developments that have already been planned or are being explored in the Fountain Creek Watershed. These developments include:

PROJECTED POPULATION GROWTH WITHIN THE FOUNTAIN CREEK WATERSHED.

	2000	2005	2010	Percent Change 2000-2005	Percent Change 2005-2005
City of Colorado Springs	360,890	385,312	NA	6.8%	NA
Fountain	15,197	19,489	NA	28.2%	NA
Geen Mountain Falls	773	916	NA	18.5%	NA
Manitou Springs	4,980	5,329	NA	7.0%	NA
Monument	1,971	4,114	NA	108.7%	NA
Palmer Lake	2,179	2,399	NA	10.1%	NA
Pueblo	102,121	103,994	NA	1.8%	NA
Woodland Park	6,515	7,155	NA	9.8%	NA
El Paso County	520,571	568,436	622,858	9.2%	9.6%
Pueblo County	142,054	150,917	164,783	6.2%	9.2%
Teller County	21,147	22,260	24,096	5.3%	8.2%

Source: Colorado Department of Local Affairs Website (2/26/09)

- The Sundance Investments/Lafarge West Inc. Gravel Pit is a 745-acre property that will contain a 437-acre sand and gravel pit, along with a use variance request for possible asphalt and concrete batch plants. This proposed project would be located along two miles of the west bank of Fountain Creek just southeast of I-25, Exit 122.
- The Lower Fountain Metropolitan Sewage Disposal District (LFMSDD) is a wastewater treatment and biosolids stabilization and disposal plant is proposed to be located on Birdsall Road 4 miles south of Fountain (and 1.5 miles northeast of Exit 122). The site application is currently being reviewed by the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division. A geotechnical study has been completed to determine soil conditions and develop suitable design criteria for pipelines and structures. Commencement of construction is anticipated to begin during the first quarter of 2009.
- Pueblo Springs is a proposed 24,000-acre residential development in Pueblo County just south of the Pueblo/El Paso County line and east of I-25. Technically, only a small part is within the Fountain Creek Watershed but that part is along Fountain Creek. The developer is in talks with the City of Pueblo on many things, including the need for a future wastewater treatment plant. [2]
- Several highway projects are underway or being considered, including improvements to US Highway 24 from Colorado Springs to Woodland Park, expansion of State Highway 16 which connects Mesa Ridge Parkway /South Powers Boulevard to US Highway 85 (at Fountain) to I-25 (at exit 132) and Fort Carson (at Gate 20), and several prospective toll roads.
- Several power line expansion are under consideration as well, such a 1,000-mile high-voltage transmission line throughout eastern Colorado and western Kansas (which would include new power lines that would cross Fountain Creek); a new power line from Xcel's Comanche power plant south of Pueblo to the Daniels plant south of Denver; and a proposal to build four to six 200- to 350-foot radio towers along Overton Road.

FCVTF GOAL TO IMPROVE CURRENT CONDITIONS

Establish and implement land use policies that preserve, maintain, and enhance ecosystem health (including flood control, wildlife habitat and water quality).

FCVTF LAND USE OBJECTIVE

By 2010, establish a process that Fountain Creek communities can use to work together to achieve the land use vision and goal.

VII. RECREATION

INTRODUCTION

One of the goals of the Fountain Creek Task Force is to create a recreational amenity of Fountain Creek. The Task Force hopes to increase recreational opportunities along Fountain Creek in order to benefit the region's residents, wildlife, and the stream itself. There are many parks, nature preserves, and trail amenities in the watershed, providing an excellent foundation upon which to build a more comprehensive recreational corridor. As is true for Colorado as a whole, residents of the watershed enjoy outdoor recreation opportunities and consistently respond favorably when asked if more opportunities for recreation are desired.

Although there are substantial recreational facilities in Colorado Springs and many in the City of Pueblo, south of the City of Fountain and north of the City of Pueblo there is little opportunity for recreation along Fountain Creek. The primary public recreational facility between the City of Fountain and Pueblo is a designated bird watching trail along Hanover Road in El Paso County. This area is sparsely populated, with ranching and farming the primary land use within the corridor.

Colorado State Parks has two facilities in the area: Lake Pueblo State Park (not in the Fountain Creek Watershed) and Cheyenne Mountain State Park. Lake Pueblo State Park is among the most heavily utilized parks in the state (with an estimated 1.5 million visitors each year) and is anticipated to connect to the Front Range Trail (see below for more on the Front Range Trail). Flat-water recreation, fishing, and camping are the main attractions to the Park. Cheyenne Mountain State Park is a scenic foothills-to-mountain park located just southwest of Colorado Springs and west of Ft. Carson with hiking, biking, and educational opportunities. State Parks and Colorado Springs are in the process of acquiring the top of Cheyenne Mountain and will provide increased trail and recreational opportunities once the entire area is purchased.

There are numerous local and regional parks in the watershed. In addition to parks and open space, there are trail systems throughout the area, some of which follow Fountain Creek and connect to parks such as Fountain Creek Regional Park. The majority of these parks and open space are used for passive recreation such as walking, bicycle riding, jogging, wildlife viewing, and, in the case of Whitewater Kayak Park in Pueblo, kayaking.

FUTURE RECREATIONAL OPPORTUNITIES

One upcoming recreational opportunity within Pueblo County is the Fountain Creek Stewardship Center. The Fountain Creek Stewardship Center will serve as the hub for the Fountain Creek system of parks, open space, natural areas, and research sites. It will be connected to the other facilities located along Fountain Creek with Internet and webcam technology, making it an educational amenity for those who visit in person or on-line. Each element of the system will promote natural resource management practices.

Another project that will encourage the public to become Fountain Creek stewards is the Fountain Creek Eco-Fit Education Park. The Fountain Creek Eco-Fit Education Park will also be connected to the other facilities located along Fountain Creek with Internet and webcam technology, making it an integral educational amenity for locals and tourists alike. Visitors will learn and explore through inviting interactive and hands-on play, and health will be promoted through active play.

In addition to these future recreational facilities are other upcoming and planned developments in the watershed. Colorado State Parks is spearheading an initiative to connect Wyoming to New Mexico via the Front Range Trail (FRT). The FRT will piggyback on existing trails systems through metropolitan areas and will work to build new sections of trail where there are none. An FRT plan, funded by a grant from Colorado State Parks, will be completed by December 2009 and distributed to all the recreation planners in the region. The Task Force has also brainstormed opportunities for loop trails off linear trails that would provide wetland and riparian habitat viewing for birders and general wildlife viewing nearer to the Creek, although no formal plans have yet been developed. The Task Force has also discussed the possibility of establishing one or more Colorado State Park facilities along Fountain Creek that would be linear in shape and provide camping, flat-water recreation, and ranching activities.

FCVTF GOALS FOR IMPROVING CURRENT CONDITIONS

1. Create a common vision for recreational uses within the Fountain Creek Corridor between the various municipalities/counties.
2. Expand the types of recreational opportunities within the Fountain Creek Watershed and Corridor.
3. Preserve, maintain, and enhance the Fountain Creek Watershed and Corridor through environmentally sensitive and sustainable recreational design. Restore ecological systems that have been lost or are struggling.

FCVTF RECREATION OBJECTIVES

1. Implement the recreation vision and strengthen existing master plans by jointly creating unique recreational opportunities.
2. By 2009, identify preferred trail alignment for the Front Range Trail
3. By 2009, begin removal of invasive plant and animal/inspect species from the Fountain Creek Watershed.
4. By 2009, create a coherent list of current recreation opportunities within the Fountain Creek Watershed and Corridor.
5. By 2010, work with the Outreach Committee on programming events.
6. By 2010, create a Fountain Creek Watershed Recreational Task Force Committee
7. By 2010, complete an inventory of existing conditions along the proposed trail routes
8. By 2011, develop a list of recreational maintenance needs and solicit the help of various businesses and corporations.
9. By 2011, acquire necessary trail easements for the Front Range Trail
10. By 2011, hire an engineering firm to begin construction drawings for the Front Range Trail
11. By 2015, start construction and establish an ongoing maintenance schedule of the Front Range Trail within the Fountain Creek watershed.

VIII. WETLANDS

INTRODUCTION

The Fountain Creek Watershed waterways are experiencing erosion, sedimentation, flooding, and degraded water quality in some reaches. Properly located and designed wetlands can help improve these deleterious conditions, as well as increase adjoining property values and tourism (through recreation and wildlife viewing opportunities) and provide opportunities for environmental education. There are many existing wetlands in the Fountain Creek Watershed, some of which have been created by increased local water flows. However, some are at risk due to floodway reduction, increased flood flows, and Tamarisk invasions.

Wetlands provide a number of important benefits to natural and human communities. Wetlands and riparian areas in the arid west become the foundations of the food pyramid for many upland wildlife species while also providing cover, vegetation, and access to water that is critical to their survival. They can help improve water quality by filtering water through vegetation and stabilizing the banks of streams as the roots hold soil in place. Because wetlands reduce the velocity of water traveling through them and hold excess water like sponges, they can reduce erosion and flooding. As waterway sediment loads increase exponentially with water velocity, the reduced creek velocities also result in significantly reduced sediment loads. Created wetlands can mimic many of these functions of natural ones, although they rarely mimic all of them. Additionally, wetlands can serve as an outdoor classroom for environmental education and are attractive for ecotourism.

Under natural hydrology, wetlands/riparian vegetation are maintained as shifting patches on the landscape (e.g. one patch of shrubs might get washed away, while a sandbar gets created that starts new wetland vegetation building). A naturally healthy system is always in flux; the number of acres of each wetland type changes constantly but the total acres is relatively stable at the watershed scale. The Fountain Creek Watershed has become so dynamic, however, that it is beyond the natural levels of fluctuation in water quantity and frequencies of flows that would have been expected from a stable system.

In the Fountain Creek watershed, typical wetlands are cattail and bulrush marshes, wet meadows of grasses and grass-like plants, and stands of willow shrubs. The composition of wetlands in the Watershed within El Paso County is open water and marshes (2.5 square miles), shrublands (2.5 square miles), wet meadows (5 square miles), and wetlands associated with streams (10 square miles). These wetlands make up approximately 2.5% of the total land area, a much greater percentage than the 1% Colorado statewide average. Wet meadows are found in the prairies in northern and northeastern El Paso County. Traveling south into Pueblo County, the land becomes more arid and there are fewer wet meadows. Willow shrublands and marshes are found throughout the Fountain Creek Watershed along streams. The

Fountain Creek Watershed has a large cottonwood forest and an understory of willow shrubs. The cottonwood forest is filled with pockets of small to large marshes.

Determining where the most stable areas of Fountain Creek are is an important first step in deciding where to create viable wetlands in and around Fountain Creek. This information is available in the Fountain Creek Watershed Study prepared by the USACE. Other factors in choosing wetland rehabilitation and development locations include land ownership, development costs, accessibility for maintenance and for the public, habitat quality, potential for flood attenuation, erosion prevention ability, and water availability.

Careful selection of wetland sites is imperative as wetland construction is quite costly, ranging from $50,000 to $110,000/acre (these costs include general land costs, structural facilities to assure an adequate water supply and grading, and vegetation to achieve the desired function).[3] Newly created wetlands will require a dedicated water supply (and therefore dedicated water rights, which may have to be purchased prior to wetland creation) to ensure proper functioning and survival of the wetlands. How much water and when the water is needed vary by specific location and wetland type. However, a reasonable range of water that may be required for a new one-acre wetland in this watershed is between 2 and 5 acre-feet per year. [4]

WETLAND BANKING

Wetland banking appears to have potential for implementation of wetland and related projects along Fountain Creek, but it is recognized that more consultation with wetland professionals is required. A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or (in certain circumstances) preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 of the Clean Water Act or a similar state or local wetland regulation.

GOALS TO IMPROVE CURRENT CONDITIONS

1. Mitigation banks are a form of "third-party" compensatory mitigation, in which a party other than a Clean Water Act permittee assumes the responsibility for compensatory mitigation implementation and success. This transfer of liability has been a very attractive feature for Section 404 permit holders, who would otherwise be responsible for the design, construction, monitoring, and ecological success of a compensatory mitigation site for a minimum of five years in addition to ensuring the site's long-term protection. water quality, water quantity, wildlife habitats, recreation and tourism, erosion and sedimentation, and public education.
2. Maintain and enhance the health and functionality of existing wetlands and riparian areas to accomplish the goals of the wetland and riparian management plan.
3. Create additional wetlands and riparian areas that help to accomplish the goals of the wetland and riparian management plan.
4. Practice adaptive management to improve wetland protection, enhancement, and creation.

OBJECTIVES

1. By 2010, prepare and release a comprehensive inventory and assessment of all wetland and riparian areas in the watershed.
2. By 2011, interpret one pilot project using an existing wetland to demonstrate wetlands' ability to filter pollutants and to demonstrate wetlands' ability to attenuate flooding.
3. By 2018, increase the number of wetland acres in the watershed by 100 to 300 acres, with an approximate increase of 2% of the existing wetlands.

Photo By: Bill Alt

IX. WILDLIFE

INTRODUCTION

The Fountain Creek Watershed encompasses mountains, foothills, and grasslands and transition zones between these habitat types. The watershed is a crossroads of sorts, straddling two major physiographic regions: the Southern Rocky Mountains and the grasslands of the Great Plains. It is a meeting place where eastern, western, and southwestern North American species come together to form a uniquely diverse collection of plants and animals. Snow-capped, ruggedly-alpine mountains rise majestically out of the Pikes Peak-San Isabel National Forest and provide a western backdrop for one of the most spectacularly beautiful landscapes in Colorado. At their base, rolling, pine-covered foothills give way to juniper and piñon-speckled shrublands. These then blend into vast expanses of short-grass prairie and fragrant sand sage ecosystems. Tying all of this variety together is a laced network of braided wetlands, reservoirs, lakes, mountain streams and riparian corridors that together form the numerous tributaries of the greater Arkansas River system.

Fountain and Monument Creeks, originating in the mountainous uplands, are the core of the watershed, carrying water from the mountains into more arid landscapes below. This unique landscape provides a setting for numerous species of birds and land animals. It shelters rare plants and animals that are found nowhere else in the world and provides critical habitat to a number of rare, threatened, and endangered species. This diversity of ecosystems provides a range of habitats for wildlife that are utilized year round and for purposes such as migration corridors, hunting ground, breeding, severe winter range, and water sources by regional species.

FACTORS IMPACTING HABITAT

According to Colorado Division of Wildlife biologists, the most important actions stewards of the watershed can take to enhance and maintain wildlife populations is to protect and preserve the habitats the species depend on for survival. Topping the list of priorities are noxious weed removal (particularly Tamarisk), reducing the instability of the creek systems to ensure the existence of predictable long-term habitat for wildlife, providing corridors for wildlife over or under transportation facilities such as I-25, maintaining suitable flows in riparian and wetland habitats, and protecting open space for food, foraging, and breeding.

Other factors impacting natural habitat associated with Fountain Creek degraded water quality, fragmentation, degradation, and loss of habitat and barriers to wildlife migration. Most species within the Fountain Creek watershed require access to riparian areas in order to survive. Many use Fountain Creek and its tributaries as natural corridors to move across the landscape. From multiple perspectives, the health and viability of the habitat along the creek is very important to the viability of wildlife populations in the region.

The quality of habitat varies by area of the watershed as it relates to development and agricultural use. The upper elevations of the watershed are least impacted by development. Major portions of the headwaters area remain undeveloped and include national forest lands and other preserves. Development intensifies at lower elevations of the watershed, particularly in the urbanized foothills and plains surrounding Colorado Springs, Pueblo, and the I-25 corridor. Fountain Creek downstream of Colorado Springs is impacted by increased total water flows and storm flow surges due to upstream development and the increase of impervious surfaces. As a result, the lower creek and banks are increasingly unstable. Increased flows in the main stems of the creek are changing and eliminating habitats important to a wide array of plants and animals. Without action to address these flows, the diversity of habitats critical to maintaining the variety of wildlife in the watershed will continue to be degraded or lost.

IMPERILED SPECIES

A number of rare, threatened, and endangered species of plants and animals coexist within the Fountain Creek Watershed. Some 500 vertebrate species consisting of residents and migrants inhabit the watershed, including federally- and state-listed species and numerous invertebrate, fish, amphibian, and bird species and plant communities of special concern. At greatest risk in the watershed are species directly associated with stream stems and adjacent wetland and riparian habitats. The primary risks to most imperiled species in the watershed are fragmentation and elimination of a variety of habitats due to increased urbanization. Some well-known species at risk in the watershed include federally threatened Preble's Meadow Jumping Mouse, the Flathead Chub, the Northern Leopard Frog, the Greenback Cutthroat Trout, the Golden Columbine, Swainson's Hawk, Lewis's Woodpecker, and the Red-headed Woodpecker.

FCVTF GOALS TO IMPROVE CURRENT CONDITIONS

1. Preserve, protect, and enhance the biodiversity, health, and long-term sustainability of wildlife within the Fountain Creek Watershed.
2. Preserve, protect, and enhance the functionality, biodiversity, health, and long-term sustainability of the habitats that local wildlife require, while maintaining access to the resources upon which wildlife depend, within the Fountain Creek Watershed.

FCVTF WILDLIFE OBJECTIVES

1. By 2009, complete a report identifying regional wildlife populations, their regional and crucial habitats, and their values.
2. By 2010, establish a watershed-wide wildlife health and population monitoring program that identifies indicator species of overall wildlife viability. This will include re-evaluations every 5 years.
3. By 2013, adopt a Wildlife Action Plan to maintain populations with the goal of reducing/eliminating declines in population for all federally-listed threatened and endangered species in the watershed, that coordinates with associated federal recovery plans for listed species.
4. By 2013, implement 10 habitat restoration projects in the watershed.
5. By 2018, identify areas in the watershed that would have the least negative impacts on wildlife and make recommendations for future development practices. Adopt watershed-wide, consistent regulations and standards for development within these areas.
6. By 2018, preserve a minimum of 75% of all identified crucial wildlife habitat in the watershed to protect it from the impacts of future development.

Photo By: Bill Alt

X. AGRICULTURE

INTRODUCTION

The present character of Colorado is rooted in the ranching and farming heritage of the State. Today, agricultural production contributes more than $16 billion annually to Colorado's economy.[5] The Fountain Creek Watershed has been used for the production of food and agricultural products since the first settlers came here over 150 years ago. Fountain Creek is one of the last significant waterways that contain no water storage facilities or flood diversion dams along the Front Range. There are many challenges to the health of Fountain Creek, including altered flow regime, flooding, erosion, water diversions, population growth, and demand for water are the greatest threats to agriculture in the watershed. These threats have the potential to reduce productive agricultural acreage in the region, transfer water resources from rural areas, and further alter natural hydrological processes.

Agricultural land use dominates the section of the Fountain Creek Watershed between Fountain and Pueblo. The land is held in relatively large parcels (250-3,000 acres) and is used for irrigated crop production (alfalfa, hay, and vegetables), seasonal livestock grazing, and hobby farms. In El Paso and Pueblo Counties, dry land livestock grazing is supplemented by irrigated hay and crop production. Ranching in the area is supported by adjacent Colorado State Land Board property that is leased to local ranchers, thereby increasing the availability of grazing land. Much of the short grass prairie is well suited to responsible grazing of its native grasses. The use of uplands for cattle production not only benefits agricultural producers, but also has positive impacts on groundwater recharge that maintains the regional water table. Land that is not surfaced with pavement or other impervious surfaces is critical to the long-term supply of groundwater by providing infiltration from rain and snow back into the water table.

AGRICULTURE AND DEVELOPMENT

The most direct threats to agricultural production in the Fountain Creek Watershed are population growth and development pressure. Farmers and ranchers face increasing economic pressure to sell their land and water as the state's urban centers continue to grow. From 1990 to 2006, there was a cumulative loss of over 2 million acres of agricultural land in Colorado.[6] It is anticipated that nearly another 1 million acres of agricultural land will be lost by 2030. The bulk of this conversion will be from undeveloped agricultural land to large-lot subdivisions or ranchettes.[7]

Along Fountain Creek these pressures are evident as development follows I-25 access ramps and annexation activities. In the past, the scarcity of water and other services impeded the active development of the region between Colorado Springs and Pueblo. Annexation and the creation of new facilities for water, electricity, and sewer could remove impediments to development. Strip development along the Interstate could

displace agricultural producers for a variety of reasons, including water availability, incompatible adjacent land use, and increased land values, making it harder for agricultural producers to remain. With increases in land values come increases in taxes, which compound problems by sometimes forcing the next generation to sell off a portion of the property to pay the inheritance tax. Since water rights are property rights, some choose to sell their water in order to keep their land.

AGRICULTURE AND WATER

With the increase in population in Colorado, there is a proportional strain on water resources and the potential for conflict between agricultural, commercial, industrial, and residential uses. The Colorado "Statewide Water Supply Initiative" has projected that municipal and industrial demand for water will increase by 53% statewide by 2030. Coloradans use about 208 gallons of water per day (gpd) per person. If agriculture is included, the per capita use increases to 3,690 gpd.[8] Agriculture, then, accounts for roughly 90% of Colorado's water demand and as such has been identified as the likely source for new municipal and industrial water sources in the future. [9]

The historic practice of permanently transferring water from agricultural uses to municipal or industrial uses comes in the form of selling/buying water rights and drying up the associated land. This form of water use conversion is not new to Colorado and causes the loss of arable land. This loss of land has tremendous economic and social impacts to the agricultural community in the Fountain Creek Watershed. A new alternative is being developed that would involve municipalities leasing rights to water from farmers but only using the leased water in years when it is necessary. This allows the farmer to stay in business and earn cash for the lean/dry years when the cities need the water most. Reportedly, this system is being considered by Colorado Springs Utilities and Arkansas River farmers.

GOALS TO IMPROVE CURRENT CONDITIONS

1. Preserve and protect agricultural land
2. Preserve agricultural water
3. Promote agricultural viability
4. Protect ecosystems

Note: Although the Fountain Creek Vision Task Force is deeply committed to maintaining agriculture in the watershed and to supporting activities that will help achieve the goals outlined above, the group decided not to pursue specific strategies to realize these goals, as only agricultural producers and landowners can determine what is best for their land and livelihood.

Courtesy of: Pueblo City County Health Dept.

XI. OUTREACH

Regional watershed outreach efforts are essential for:

- Establishing appreciation, understanding, and connecting with the waterway corridors in the Fountain Creek Watershed
- Creating public stewardship to increase watershed health/runoff water quality, to help assure waterway safety, to sustain healthy and functioning ecosystems/wildlife habitat, and to instill water conservation practices
- Facilitating enjoyment of healthy waterways that support diverse environmental, economic, wildlife, and recreational opportunities
- Preserving and protecting agricultural viability

There are multiple existing outreach programs in the region that educate a variety of people on diverse watershed topics. The region will benefit through greater cooperation and collaboration on pubic watershed outreach and educational programs that focus on common themes and messages. These include City and County efforts, projects and programs at local schools, environmental education and natural centers, among others.

FCVTF GOAL TO IMPROVE CURRENT CONDITIONS

Educate and engage the public (from elementary age through adult) on the Fountain Creek Watershed to:

1. Establish appreciation, understanding, and connection with the waterway corridors in the Fountain Creek Watershed
2. Create public stewardship to increase watershed health/runoff water quality, to help assure waterway safety, and to instill water conservation practices
3. Facilitate enjoyment of healthy waterways that support diverse environmental, economic, wildlife, and recreational opportunities
4. Preserve and protect agricultural viability

FCVTF OUTREACH OBJECTIVES

1. By mid 2009, create and implement a Fountain Creek Watershed website that includes a calendar for upcoming watershed related events.
2. By mid 2009, distribute Fountain Creek Watershed press packets to all television, radio, and newspaper outlets in the watershed.
3. By mid 2009, convene a roundtable of existing outreach and education program directors to develop short- and long-term program goals and implementation plans.
4. By the spring or fall of 2010, hold a Fountain Creek Watershed contest for K-12 school children throughout the watershed.
5. By 2010 and thereafter, hold at least 3 volunteer events annually focused on assessing and/or improving conditions in Watershed waterways.
6. Have a watershed educational curriculum in use in public schools throughout the watershed (5% of schools by 2011, 25% of schools by 2014).

GLOSSARY

100-year flood event: Refers to the calculated level of flood water expected to be equaled or exceeded every 100 years on average.

Alluvium: A general term for unconsolidated material deposited by a stream or other body of running water.

Base flow: That part of stream discharge that is not attributable to direct runoff from precipitation or melting snow. Primarily sustained by groundwater discharge into the stream.

Cfs = cubic feet per second

Channel forming flows: The representative discharge responsible for doing the majority of the work that shapes the channel (pattern, cross section, profile/slope).

Ephemeral streams: A stream that flows only a short time (days or weeks) in direct response to precipitation.

Floodplain: Flat areas bordering streams that are subject to flooding.

Hydrographs: The description and studies of bodies of water (e.g. lakes and rivers): as the measurement of flow and investigation of the behavior of streams and the charting or graphing of them.

Hydrology: The study of relationships between water and the geologic environment.

Impervious areas/surfaces: A hard surface area which either prevents or retards the entry of water into the soil. Examples include, but are not limited to, structures, walkways, patios, driveways, carports, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, haul roads and soil surface areas compacted by construction operations.

Municipal Stormwater Discharge Permits (MSDPs): permits are required for storm water discharges to surface waters from construction and industrial activities and municipalities if stormwater from rain or snow melt leaves your site through a "point source" and reaches surface waters either directly or through storm drainage.

Non-Potable: Water that is unsafe or unpalatable to drink because in contains objectionable pollution, contamination, minerals, or infective agents.

Perennial: A stream with year-round channel flow .

Section 303(d): Section of the federal Clean Water Act that requires states to prepare and submit a list to the EPA listing waters that do not meet water quality standards. Any stream in which water quality standards are not attained must be placed on the state's 303(d) list. This is used to set priorities for pollution controls.

END NOTES

[1] More details about this project and alternatives are available at www.sdseis.com.

[2] Munch, Jim. 2007. Personal communication.

[3] Glidden, Mark. 2008. Senior Project Manager, CH2MHill. Personal communication on January 3, 2008.

[4] Lusk, Kevin. 2008. Principal Engineer, Colorado Springs Utilities. Personal communication on January 3, 2008.

[5] Sherman, Harris 2007. Director of Colorado Department of Natural Resources, quoted in "Water roundtables tackle growth issues," in The Pueblo Chieftain, by Chris Woodka. November 17, 2007.

[6] "Colorado Agriculture: A profile of Colorado's agriculture and its contribution to the state's economy." Compiled by USDA, NASS, Colorado Field Office, 2007.

[7] "Colorado Conservation at a Crossroads." Page 2, Publication of Colorado Conservation Trust, 2005. Ibid. Page 1.

[8] "Water and growth subject of new CU report", CU-Boulder Natural Resources Law Center, Fact Sheet. November 15, 2001. Summary of "Water and Growth in Colorado".

[9] Sherman 2007.

Courtesy of: Pueblo City County Health Dept.

For more information about
the Fountain Creek Watershed please visit **fountain-crk.org**
then click on Fountain Creek Vision Task Force