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**FORT COLLINS AND THE CACHE LA POUFRE RIVER:
An Integrated Greenway Vision**

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Water Organizations in a Changing West

**Natural Resources Law Center
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I. INTRODUCTION

A. Summary

Charles E. Little says that a greenway is "... an open space connector linking parks, nature reserves, cultural features or historic sites with each other and populated areas" (Little, 1990). Following this concept, the City of Fort Collins, Colorado, adopted a greenway planning approach for the urban reaches of the Cache La Poudre River. The City is addressing environmental, recreational and cultural issues in addition to traditional municipal water supply and treatment.

Along the Cache La Poudre River, the emerging greenway reflects changing community perceptions about the intrinsic values of water and natural settings, and the roles these play in the ecological, economic and social health of the community.

B. References

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II. "SNAPSHOT" OF FORT COLLINS

A. Regional Setting

1. The City of Fort Collins is on the northern front range of the Colorado Rockies, about midway between Denver and Cheyenne, Wyoming. It nestles against the foothills at the beginning of the High Plains, and is the region's commercial, industrial and population hub.
2. The Cache La Poudre River runs to the east through the Fort Collins community, presenting the best and the worst characteristics of a plains river. Known locally as the "Poudre River", or simply "the Poudre", the river is the ecologic and economic backbone of the community.

B. Local Setting

1. Supporting a growing population of 93,200 at an altitude of 5000 feet, Fort Collins is home to several major research and production industries, such as Hewlett-Packard and Anheuser Busch. Agricultural production of crops and stock are also an important part of the region's economic base (CWRPDA, 1987).
2. Fort Collins is also the home of Colorado's land grant institution, Colorado State University. Originally an agricultural college, CSU is now a diverse higher learning and research institution, earning national and international acclaim for its contributions in natural resources education, veterinary medicine, and water resources research and policy. The well-known Colorado Water Resources Research Institute is an integral part of CSU.

C. Growth Statistics and Demographics

1. The 1990 census puts the Fort Collins population at 93,200. Recent growth trends indicate an annual 2.5% growth rate. Newcomers are consistently attracted by the area's quality of life.
2. The City is currently 42.5 square miles in size, and new areas are being annexed at an annual rate of 300 to 400 acres per year. The projected urbanized area, as indicated by the Fort Collins - Larimer County Urban Growth Area Agreement, will be about 69 square miles.

D. Water Utility Statistics

1. The City's Water and Wastewater Utility services just over 100,000 customers, currently supplying an average of 25 million gpd. drinking water and treating 17 million gpd. wastewater. The 1993 annual budget for the Utility is about \$ 30 million.
2. The City of Fort Collins, through the Water Utility, has a primary interest in the water and other resources of the Poudre River. The City's water portfolio includes senior water rights on the Poudre and shares in several major local irrigation companies.

III. "SNAPSHOT" OF THE CACHE LA POUUDRE RIVER

A. Geography and Hydrology

1. The Cache La Poudre River drains a 1,890 square mile basin, extending from the Continental Divide on the West to the confluence with the South Platte River on the East. The watershed includes a small portion of Wyoming on the North, and borders the Big Thompson basin on the South.
2. Having three forks, the river originates in the high alpine tundra and trickles through mountain wetlands and glacial meadows. It carves beautiful and remote canyons through granite bedrock, before rushing through the narrows to spill out on the plains flatlands.

3. On average, the Poudre River watershed produces approximately 280,000 acre feet of native water per year, primarily through snowmelt. Annual precipitation ranges from 35 inches at the Divide to less than 15 inches in Fort Collins (CWRPDA, 1987). Sometimes the river floods, with notable events recorded in Fort Collins in 1864, 1891, 1904, 1930, and most recently in 1983 and 1984 (Evans, 1991). Runoff in 1993 promises to be plentiful.

B. Historical Overview

1. The region's lifeblood since the beginning, the Cache La Poudre River's waters and surrounding lands supported prehistoric Paleo-Indian people, and after that Arapahoe and Northern Cheyenne tribes long before white settlement (Evans, 1991). Early European settlers were explorers, fur trappers and traders, and soldiers.
2. The U.S. Army established Camp Collins on the banks of the Poudre River near the site of a small existing trade center in the early 1860's, ostensibly to protect travellers along the Overland Stage route. The encampment grew in the 1870's when linked to a regional railroad network, and with the establishment of the land grant college in 1870 (Watrous, 1976).
3. Because of the seasonal river flows and the semi-arid environment, farming settlers had to invent new technologies and cooperative partnerships to raise crops. Irrigated agriculture on the Poudre River dates from 1860 (Watrous, 1976). Conflicts over water supplies between Camp Collins and downstream users in the Union Colony (now the city of Greeley) intensified during the drought of 1874. Ultimately, the legal, legislative and constitutional precedents developed to resolve the disputes between Greeley and Fort Collins became the framework for the Colorado Doctrine of water allocation (National Park Service, 1990).
4. Today, waters from the Poudre River and transbasin diversions irrigate over 219,000 acres of farmland (CWRPDA, 1987). Agriculture accounts for about 90% of the consumptive use of the Poudre River water.

5. Because the river's waters are overappropriated, impoundments, reservoir storage and transbasin diversions have become part of the environmental fabric of the Poudre River watershed. The complex legal and engineering systems for allocating water resources are now the dominating operational parameters for the Poudre River.
6. The extraction of sand and gravel from the alluvial bed is another historically dominant use of the Poudre River. The western tradition of laissez-faire government regulation has resulted in a "lunar landscape" of floodplain lands scarred by gravel mining with minimal reclamation.
7. The river's history also includes generations of industrial abuse, channelization, and neglect by a short-sighted community that sometimes only saw the river as a convenient sewer. Today, most City projects on the river are intended to restore the integrity of the riverine systems left damaged by past actions.

IV. PRESENT DAY COMMUNITY VALUES AND GOALS

A. Changing Community, Emerging Values

1. As the community and regional populations have grown, new perspectives and attitudes about the Poudre River have taken root. Today there are many active and vocal citizens seeking a balance of the demands placed on the river, and to reframe the basic assumptions by which it is managed.

B. Regional Values: the Wild and Scenic River

1. New regional values and goals for the river are evidenced by its designation in 1986 under the Wild and Scenic Rivers Act. First proposed in the mid-1970's, the citizen-led effort was a decade-long battle to preserve the natural features of the canyons and meadows for all time. Conflicts between water developers, private property holders, government agencies, conservationists and recreation enthusiasts ensued.
2. A compromise allowing resource protection and water development was reached through the dedicated work of a coalition of interests and Congress-

sional leaders . In 1986, 75 miles of the mainstem and south fork of the river were designated — 45 as "recreational" and 30 as "scenic" (USDA-Forest Service, 1990). Today, the U. S. Forest Service is exploring Wild and Scenic status for the north fork of the Poudre River.

C. The Urban River Corridor and Integrated Local Planning

1. The urban reaches of the Poudre River corridor are the focus of an integrated planning approach by the City of Fort Collins. The strategy is to treat the river as an interactive network of systems, in order to effectively address the diverse community expectations and governmental requirements of the river as a whole. The policies and projects serve multiple objectives, with the intent to maximize opportunities and minimize problems. The key is to balance the requirements of all the systems, including plant and animal life, recreation, cultural conservation, floodplain management, water quality, water supply and treatment, agriculture, and urban growth.
2. There are several adopted City plans and policies that pertain to the Poudre River, in which there is an emphasis on coordination during implementation. Among these plans and policies are:
 - (a) Poudre River Trust - Land Use Policy Plan, 1986: This is a mix of policy and land use planning to encourage the redevelopment of the downtown river corridor. Of particular emphasis are historic preservation, recreation, and natural resource conservation. A unique aspect of this plan is the implementation partnership between the City and a citizen advocacy group, the Poudre River Trust.
 - (b) Parks and Recreation Master Plan, 1989: This document mandates the linkage of existing and future parks by a continuous greenway along the river corridor and other local streams. Completion of the Poudre River Trail is a priority, as is maintaining open space for wildlife habitat and migration, passive recreation and floodplain management.

- (c) Natural Areas Policy Plan, 1992: Recognizing that open lands serve fundamental beneficial public purposes, this plan lays out new policies and actions to acquire and/or protect critical natural areas. Of primary emphasis is the *Poudre River corridor* and the interacting natural systems therein.
3. There are other plans still being developed which address new and emerging community values about the Poudre River. These include:
- (a) Poudre River Corridor Fishery Plan: A cooperative effort of the City, Trout Unlimited and the Poudre River Trust, the draft of this plan identifies the requirements and necessary actions to restore a cold water fishery in the urban river corridor.
- (b) Poudre River Master Drainageway Plan (MDP): This document will identify alternatives for floodplain management in response to stated community values and expectations for the river. Resulting in a regulatory plan meeting the standards of the Federal Emergency Management Authority (FEMA), the MDP will largely establish future operational parameters for riverbank and habitat restorations, recreation development, and open space management plans.
- (c) Poudre River Landscape Opportunities Study: This is a cooperative undertaking of the City and Colorado State University. The intent is to identify community expectations for the future of the river corridor, and result in actions and projects that enhance the river as a multi-faceted community amenity. Of particular emphasis is the CSU Environmental Learning Center.
- (d) Poudre River National Water Heritage Area: This proposal evolved from the 1986 Wild and Scenic designation. It would result in the recognition of the national significance of the Poudre River Basin in the history of water management and the westward expansion of the United States. It is an educational, not a regulatory, program. Under the guidance of the National Park System, local interests would develop

local interpretive programming about the economic, social and environmental consequences of modern water management practices.

- (e) Constructed Wetlands for Wastewater Treatment: Still in the feasibility assessment stage, this proposal could add significantly to the inventory of wetlands in the river corridor, while managing the costs for tertiary wastewater treatment.
4. Some projects are in place now, which clearly reflect the environmental and recreational values of the Fort Collins citizenry:
- (a) Active recreation: the Poudre River Trail and boat chutes;
 - (b) Urban parks: Lee Martinez Park and Heritage Park;
 - (c) Natural areas: Riverbend Ponds and the Flatiron property;
 - (d) Environmental education: the Gus Swanson Nature Area and the CSU Environmental Learning Center; and,
 - (e) Environmental restoration: the WREN gravel pit cooperative reclamation project.

V. LEGAL SYSTEM ADAPTATIONS AND WORKING WITHIN THE SYSTEM

A. Water Rights for Diversion Dams

1. The City of Fort Collins is also pursuing integrated planning by working within the existing Colorado prior appropriation system of allocating water among users.
2. On April 20, 1992, the Colorado Supreme Court announced a landmark decision clearing the way for the City of Fort Collins to obtain water rights for two diversion structures. (Supreme Court, No. 90SA514).
3. The original application, filed in 1986, claimed 55 c.f.s. of Poudre River water to help maintain instream flows. Naming the urban river recreation corridor as the "diversionary structure", the 1986 application also said:
 - (a) Development of an urban recreation and wildlife corridor was in progress, featuring trails, a fishery, and habitat enhancement;
 - (b) The uses of the water will take place in the streambed; and,

- (c) The City was requesting conditional water rights as in-stream rights, without the necessity of making any diversion from the river channel (District Court, No. 86CW371).
4. The City of Thornton filed a statement of opposition on February 24, 1987, because they had also filed in 1986 an application to divert large quantities of Poudre River water upstream of Fort Collins.
 5. The Colorado Water Conservation Board (CWCB) and the State Engineer also filed objections based on the claim that Fort Collins was applying for minimum stream flow rights contrary to law.
 6. Following negotiations with the CWCB and State Engineer, the City amended the 1986 application. The amendments, filed on June 1, 1988, were intended to clarify and narrow the scope of the original application. The amendments changed the named diversionary structure from the "river corridor", and named two specific structures in the river channel:
 - (a) The "Nature Center Diversion Dam", owned by Colorado State University, was constructed to divert the river back to its historic channel after the channel was cut during flooding in 1983 and 1984. The CSU Nature Center (now referred to as the CSU Environmental Learning Center) is an educational and recreational facility featuring interpretive trails and wildlife habitat enhancements.
 - (b) The "Power Plant Diversion Dam" exists in an integrated open space, historic and recreation site in downtown Fort Collins. The City renovated the old dam, and added a boat chute and fish ladder (District Court, No. 86CW371, Amendments).
 7. The 1988 amendments stated the diversion structures "... will control and regulate the flow of the Poudre River to implement the intended beneficial uses of water", and withdrew references to "in-stream rights." (District Court, No. 86CW371, Amendments).
 8. Water court found that the water appropriation at the Nature Center Dam was a diversion, and decreed a conditional water right of 55 c.f.s. with an appropria-

- tion date of February 18, 1986. The water court also found that the water appropriation at the Power Plant Dam was not a diversion, but a minimum stream flow, and thus did not decree a water right for the Power Plant Dam.
9. Thornton appealed the award of the Nature Center Dam conditional water right, and Fort Collins cross-appealed the water court's denial of a conditional water right at the Power Plant Dam.
 10. On April 20, 1992, the Supreme Court:
 - (a) Agreed with the water court that the Nature Center Dam is a control structure; and in disagreement with the water court, determined that the boat chute and fish ladder at the Power Plant Dam also constitute a control structure; and,
 - (b) Remanded appropriation date determinations to the water court for further discussions regarding Fort Collins' intent and overt actions to establish water rights for the two diversion structures (Supreme Court, No. 90SA514).
 11. The significance of the Supreme Court decision is that it rejects the traditional view that water must be removed from the river channel before a water right can be obtained. It says that control structures, constructed within a natural river channel to create beneficial uses of water, can constitute water rights apart from minimum stream flow rights.
 12. The decisions remanded to water court have not yet been scheduled for hearing.
- B. Gravel Pit Augmentation Strategy**
1. Extraction of gravel will continue to be a primary shaper of the Poudre River corridor for years to come. It is estimated that there are 3,200 acres of available gravel resources within the floodplain of the urbanizing reaches of the river. Approximately 1,880 acres are currently being mined. Gravel mining will likely continue in the area for 20 or more years, depending on market factors (City of Fort Collins, 1989).

2. The City of Fort Collins is hoping to integrate the planning for mining and reclamation of mined sites with its other river planning efforts. There are some community interests which advocate acquisition of gravel lands prior to mining activity, in order to preserve the natural features and systems of the river corridor. But to acquire all gravel lands prior to extraction may not be economically sound, or politically feasible.
3. The City plans to acquire some reclaimed gravel pits for a variety of purposes, and where feasible and appropriate, preserve potential gravel areas intact through acquisition prior to gravel mining. Along with unique opportunities, the acquisition of mined gravel pits present some challenges.
4. Meeting recently adopted State requirements for evaporative loss augmentation from gravel pit ponds can be problematic for gravel pit owners and operators. The new regulations require that injuries to senior water users due to evaporative losses from gravel pond surfaces be remedied by the provision of replacement water. The cost of water and the legal and engineering complexities of resolving augmentation issues make reclamation an increasingly expensive burden for gravel operators. Most are anxious to give depleted mined lands to public agencies willing to take on the augmentation responsibilities.
5. Before the City acquires any gravel pits subject to the new regulations, we are attempting to define a strategic approach to resolve augmentation issues without assuming the full market costs of acquiring replacement water and obtaining court decrees.
6. Some potential solutions may include the following:
 - (a) Acquire an upstream gravel pond, line or seal it so that evaporative losses to the stream do not occur, then store and release City-owned water as required to meet the augmentation needs of downstream ponds.
 - (b) Obtain decrees for transfer of use from "surplus" agricultural water rights to water rights specifically for augmentation.

- (c) Where feasible, construct wetlands in gravel pits that would have otherwise been left as ponds, which may reduce the augmentation requirements.

VI. WHAT ARE SOME GREENWAY TRENDS?

A. Future Visions for the Cache La Poudre River

1. The recently enacted local quarter-cent sales tax will greatly increase river corridor open lands acquisition.
2. A growing and changing local population will increase demands for access and conservation, spurring more sophisticated and site-specific open lands management plans.
3. A regional greenway connection along the Poudre River to Greeley and the confluence of the South Platte River will occur.
4. Innovative solutions to water quality issues will be integrated with increasing needs for plant and wildlife habitat, stormwater management, and recreation.

B. National Trends in River Greenways

1. Established and emerging greenways are setting precedents for similar actions across the country (Little, 1990). In addition to the example set by the Cache La Poudre River projects, some notable models are:
 - (a) The Boulder Creek greenway and instream flow program integrate habitat and recreation purposes in Boulder, Colorado.
 - (b) The Platte River Greenway, through the metropolitan Denver area, is a model for grassroots constituency and cooperative planning. This highly successful greenway has become a connector among a growing number of nodal parks and participating communities.
 - (c) The Yampa Valley-way Plan was developed by a multiple interest and interjurisdictional advocacy group. The intention of the Plan is to conserve the natural features and develop recreation opportunities along 300 miles of Colorado's last free-flowing river.

- (d) The 40 Mile Loop in Portland, Oregon was designed by John and Frederick Law Olmsted Jr. almost a century ago. The greenway now runs 140 miles along the Columbia and Willamette rivers.
- (e) The Pima County River Parks, in Tucson, Arizona is an alternative to the traditional concrete channel approach to stormwater management in arid environments.
- (f) The Merrimac Greenway from St. Louis to Sullivan, Missouri is a successful example of reclaiming the cultural and natural heritage of a despoiled and forgotten riverway.
- (g) The Riverpark in Chattanooga, Tennessee is the keystone of an urban economic redevelopment project featuring hotel, office, and residential development in addition to a proposed freshwater aquarium.
- (h) The Illinois and Michigan Canal National Heritage Area from Chicago to LaSalle, Illinois, is a 100-mile long linkage of the parks and heritage features of an historical industrial and transportation canal in the Illinois river country.
- (i) Frederick Law Olmsted's Emerald Necklace in and around Boston, Massachusetts, is a classic example of linking metropolitan parks and recreation features. Law first proposed the Emerald Necklace in the 1870's, and today it winds 8 miles from the Charles River to Franklin Park.
- (j) Access to greenway nodes and trails for disabled persons will increase because of the provisions of the 1992 Americans with Disabilities Act. As federal, state and local agencies sort through access implications, the nation will experience a greater sensitivity and responsiveness to persons with disabilities.

VII. CONCLUSION

The nation's rivers and streams are no longer perceived as simple conveyances for agriculture, industry and growth. The establishment of local and regional river greenways

enables stewardship of watercourses which is increasingly responsive to emerging natural, cultural and economic needs (Grove, 1990).

Particularly in the West, this is a significant trend. Increasing urbanization requires changes in the traditional assumptions about the roles of the rivers and streams in our communities. In some places, scarce water resources are being successfully managed not only for agricultural, municipal and industrial purposes, but also for the environmental and social needs of diverse and vibrant communities.