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### Enhancing Watershed Planning in Implementation of the Colorado Water Plan: An Overview of Implementation Challenges and Opportunities

Douglas S. Kenney

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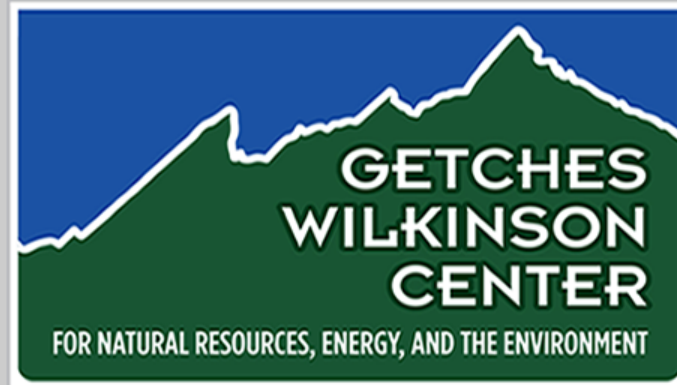
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# ENHANCING WATERSHED PLANNING IN IMPLEMENTATION OF THE COLORADO WATER PLAN:



## AN OVERVIEW OF IMPLEMENTATION CHALLENGES AND OPPORTUNITIES

March 2016

Prepared by Douglas S. Kenney, Ph.D., for the Getches-Wilkinson Center for Natural Resources, Energy and the Environment, located within the University of Colorado Law School.

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## I. Introduction

The many benefits of managing water and water-related resources at geographic scales corresponding to hydrologic—rather than political—boundaries is a key theme permeating through the Colorado Water Plan (CWP).<sup>1</sup> Basin and sub-basin scale activity already occurs in Colorado in a tremendous variety of contexts and for a variety of reasons. Examples include the administration of water rights, water quality planning (e.g., 319 compliance<sup>2</sup>, source water protection plans), water supply Basin Implementation Plans (BIPs), "stream management plans" dealing with river flows primarily for environmental and recreational objectives (sometimes as part of a BIP), efforts associated with forest health and environmental hazards (such as forest fires and flooding), and many other processes and purposes. The CWP urges efforts to build upon these diverse efforts, utilizing watershed planning (and the resulting plans) as a preferred mechanism for integrating and pursuing a wide range of water management objectives.

Exactly what constitutes "watershed planning"—and for that matter, what constitutes a "watershed" and a "watershed partnership"—is subject to multiple interpretations. In general, efforts that are broadly participatory, locally directed, at least partially voluntary and *ad hoc*, and generally broader than a single watershed function or concern are those most likely to be described as exhibiting the "watershed approach." The CWP notes several desirable features in these watershed-based efforts, primarily focused on three key areas: participation, coordination, and activities:<sup>3</sup>

- *Broad Participation.* The CWP urges partnerships featuring stakeholders from "all levels of government, special districts, private landowners, businesses, citizens, non-profits, educators, recreational interests, agricultural interests, grantors, and conservationists." Membership should be "open to diverse interests within the watershed, as well as to interests the watershed outputs directly affect." Participation of local interests is particularly critical, as "[e]ngaged community members are more likely to participate in building political will, developing management options, and supporting project implementation."
- *Coordination.* Every partnership should feature a "paid watershed coordinator," as that "improves the chances for continued coalition success by servicing all coalition stakeholders equally and by representing the interests of all coalition members."
- *Activities.* "Ideally partnerships work to develop a watershed plan. A watershed plan is a strategy that defines a coalition's mission, goals and objectives, along with assessment and management information, for a geographically defined watershed. The strategy should include the analyses, actions, participants, and resources related to developing

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<sup>1</sup> <http://coloradowaterplan.com/>

<sup>2</sup> Section 319 of the Clean Water Act is focused on managing nonpoint source pollution, which has historically been a strong impetus for watershed-based collaborative efforts.

<sup>3</sup> Quotes taken from CWP, page 7-6, at <http://coloradowaterplan.com/>

and implementing the plan.” It may include, or be informed by an existing, stream management plan.<sup>4</sup>

Efforts with these attributes are envisioned as providing a core strategy for achieving watershed-scale water management objectives, through solutions that are appropriate to local conditions and that enjoy the political support necessary for implementation.

This memo assesses the current state of watershed-scale planning in Colorado in order to identify specific areas of action and reform that state leaders should pursue in order to quickly and efficiently make progress toward realizing the watershed management objectives of the CWP. This assessment is derived from two distinct efforts: a review of several watershed planning efforts, and interviews with key thought leaders in the Colorado watershed planning community. Our interpretation of this information is further guided largely by the long history of the Getches-Wilkinson Center (formerly the Natural Resources Law Center) in assessing and promoting watershed-scale resource management throughout the western states.<sup>5</sup> Overall, all of these threads of inquiry have yielded remarkably consistent findings, which form the basis of the four major areas of recommendation.

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<sup>4</sup> The relationship between watershed plans and stream management plans is flexible and evolving. The CWCB does not provide a formal template or detailed guidance of what a stream management plan *must* include, but rather lists items it *may* include. The heart of a stream management plan is “data-driven flow recommendations” for achieving environmental and recreational objectives. By focusing on the water itself, stream management plans can provide a nice complement to preexisting watershed plans that, in many cases, are primarily about land management. In cases where a new watershed plan is underway (or an existing watershed plan is under revision), a stream management plan can be done within or in coordination with such an effort. Still another option is to undertake a broadly defined stream management plan that, in addition to its instream flow focus, can include many items more typically associated with the “watershed plan” terminology—such as “assessing existing physical conditions of stream reaches,” “establishing flow *and protection* goals for streams and rivers” (emphasis added), and “identifying and prioritizing environmental and recreational projects” (*Colorado Watershed Restoration Program, Grant Program Guidance*, revised July 2015, page 3; also see CWP page 6-168). An example of this type is the Grand County Stream Management Plan. Ultimately, the goal is integration of land and water management concerns in each region, something that presumably can be achieved via multiple coordinated efforts, or in a single planning document. The CWP language appears to suggest a preference for comprehensive “watershed plans,” but defers this decision to local participants.

<sup>5</sup> Examples include [The New Watershed Source Book: A Directory and Review of Watershed Initiatives in the Western United States](#) (by Douglas S. Kenney et al., Natural Resources Law Center, 2000); and [The State Role in Western Watershed Initiatives](#) (Natural Resources Law Center, 1998).

## II. Review of Existing Efforts

The Colorado Watershed Assembly<sup>6</sup> suggests that roughly 90 “watershed partnerships” are currently active across the state. Appendix D of the Colorado Water Plan identifies 74 completed planning efforts that have resulted from these activities. A sub-set of these efforts is described herein in Appendix A, focusing on efforts in six watersheds: Fountain Creek (in the Arkansas Basin); Eagle Creek (in the Colorado River Basin); Clear Creek (in the South Platte Basin); Animas River (in the San Juan / Dolores Basin); Uncompahgre River (in the Gunnison Basin); and Kerber Creek (in the Rio Grande Basin). The issues collectively addressed by these partnerships span a broad spectrum of watershed issues: water quality (esp. from heavy metals pollution); flooding, erosion, and sedimentation; fish and wildlife habitat protection; land-use planning; recreation; and other general issues of environmental health and sustainability.

Five themes emerge that are common to these cases<sup>7</sup>:

- 1. Broad Participation is the Norm.** The watershed coalitions have very broad participation among both consumptive and non-consumptive use interests, with most efforts having multiple participants from federal, state, and local agencies/governments. Participation of citizens and other non-governmental actors is also common, but varies sharply based on the nature of the planning exercise. Strong local involvement—either by agencies, citizens, or both—is a consistently observed trait. Outside consultants are used extensively in many groups.
- 2. The Federal Role is Critical.** Federal agencies often play the key role in terms of stimulating/creating the watershed effort, providing participants and expertise, and in funding—especially for the large-scale planning and implementation activities. In large part, this is reflective of three factors: first, the importance of federal water quality laws (and EPA’s strong endorsement of the watershed approach); second, the high percentage of federally managed lands in the state, especially in headwaters regions; and three, the strong federal role in promoting agriculture through various USDA programs.<sup>8</sup>

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<sup>6</sup> The mission of the Colorado Watershed Assembly (established in 1999) is “to provide support for collaborative efforts among diverse stakeholders to protect and improve the conservation values of land, water, and other natural resources of Colorado’s watersheds.”

<http://www.coloradowater.org/Mission%20and%20Strategic%20Plan>

<sup>7</sup> It is worth noting that these general observations align very closely with past reviews of watershed activities in Colorado and elsewhere. See, for example, [The New Watershed Source Book: A Directory and Review of Watershed Initiatives in the Western United States](#) (by Douglas S. Kenney et al., 2000).

<sup>8</sup> Issues that have one or more of these federal connections, such as legacy mining impacts and hazards (fires and floods) originating on public lands, are well represented in the groups reviewed. Likewise, issues that do not have an obvious federal nexus—such as issues of water scarcity and allocation—are notably absent or are secondary to other concerns.

- 3. The Focus of Most Partnerships Expands Over Time.** In most watersheds, the substantive focus of efforts has grown over time, as single-issue work groups have evolved and merged to form watershed coalitions with broader “watershed health” agendas—with the notable omission being water supply considerations, which are usually only a tangential focus. In addition, in many cases watershed groups have matured from a reactive stance (e.g., responding to legacy mining impacts) to proactive planning focused on anticipated future stresses (e.g., population pressures on water supplies and quality). Similarly, in many cases, *ad hoc* groups have evolved into permanent watershed partnership organizations.
- 4. Funding Comes from a Wide Diversity of Sources.** The watershed partnerships secured funding from a tremendous variety of sources, both within government and, to a lesser extent, the private sector. Beyond that observation, it is difficult to generalize. Funding for administration (e.g., a paid coordinator) and project planning and implementation can entail very different funding streams; likewise, many partnerships are sustained by in-kind contributions of time, facilities, equipment, authority, and other resources that are difficult to precisely tally.
- 5. Most Watershed Plans Build Upon Earlier Efforts.** The ways in which watershed planning efforts are linked to, or build upon, other efforts in planning and management are extremely varied and defy easy generalizations. But in virtually all cases, clear linkages do exist; few efforts start from scratch, or operate in isolation of the planning efforts of other governments and resource managers. In fact, the ability to pull together diverse efforts has been a key contribution of many watershed planning processes.

Overall, it is not difficult to locate watershed coalitions with broad participation, adequate coordination, and a history of planning accomplishments—the general qualities identified as desirable in the CWP. By most measures, watershed planning is a practice with a strong foothold in Colorado. Of course, what is not evident from a review of successful efforts is which efforts never materialized or fizzled out, and what forces have been most prominent in providing a ceiling on what watershed partnerships have been able to achieve. These issues were better explored in interviews.



### III. Summary of Interviews

Several individuals with a deep involvement in watershed-based efforts in Colorado were interviewed as part of this research.<sup>9</sup> While the interviewees raised a very broad diversity of issues, three recurring themes emerged:

**1. A Tremendous Amount of Good Activity is Already Occurring at the Watershed Scale.**

Watershed partnerships based on local control, broad participation, and pragmatic problem-solving are now common throughout the state. In most cases, interviewees argued that the need is not to cultivate new groups or processes, but rather is to better support and coordinate the existing patchwork of efforts.<sup>10</sup> There is a tremendous diversity among the watershed partnerships in Colorado, in terms of their substantive foci, their size, their goals, their funding, their planning processes, and so on. This diversity is generally viewed as a good quality to celebrate and to build upon, rather than as a problem to remedy.

**2. The Single Greatest Limiting Factor for Expanding the Watershed Approach in**

**Colorado is Funding.** Money is often readily available for project implementation, especially for efforts covered by federal Farm Bill programs and for federal and state hazard related (floods and fires) activities. But while money may be available to build projects, funds are often not available to support the actual planning process, i.e., project administration, permitting, and grant management activities, nor for the long-term monitoring and maintenance of projects. Funding for watershed coordinators is a chronic deficiency. Reliable, long-term funding is out of reach for many watershed groups, which makes moving beyond a project-by-project orientation very difficult. Navigating the maze of funding opportunities provided by multiple agencies and programs (operating at various levels of government), as well as those from non-

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<sup>9</sup> Some wished to remain anonymous (and thus are not named here). Others interviewed included: Casey Davenport, Executive Director, Colorado Watershed Assembly; Meg White, Acting Director of the Water Program, The Nature Conservancy (Colorado office); Chris Sturm, Stream Restoration Coordinator, Colorado Water Conservation Board; Stacy Beough, Executive Director, Tamarisk Coalition; and Tamara (Tammy) Allen, Restoration and Protection Unit Manager, Watershed Section; Colorado Department of Public Health and Environment.

<sup>10</sup> The “watershed movement” is in a rapid phase of expansion, driven largely by fire and flood events, and also by deliberate “capacity building” efforts by the state, both as part of the SWSI/Roundtables/CWP processes, and as part of efforts to utilize disaster relief and hazards planning resources. This expansion is pushing the limits of the CWCB’s administrative capacity. Until recently, the CWCB had a very “hands off” approach to capacity building (of watershed groups), but significant wildland fires (e.g., Waldo Canyon, High Park) and extreme flooding (especially in 2013) changed all of that. Now the CWCB is active in capacity building. Over 10 new groups have been established, for example, to pursue flood recovery master planning (using funding from the U.S. Department of Housing and Urban Development, funneled through the Colorado Department of Local Affairs).

governmental sources, is a significant hurdle for many groups—especially those without administrative staffing.

- 3. Processes and Resources for Integrating Discrete Watershed-Based Efforts Across Substantive and Geographic Boundaries are Lacking.** Watershed partnerships often play the key role in coordinating many land and, to a much lesser extent, water management activities within a watershed. However, there are very few mechanisms for linking efforts across watersheds up to basin or statewide scales. The SWSI/CWP process and the Basin Roundtables—especially those that have sought to integrate stream management plans within their BIPs—have certainly been useful in this regard<sup>11</sup>, but have emerged at the same time that the “integrating” programs of the Colorado Department of Public Health and Environment (associated with Clean Water Act section 319 and 208) have been scaled back.<sup>12</sup> As noted above, this is largely a function of very limited funding for “coordinating” watershed planning activities juxtaposed against a relative wealth of funding for narrowly focused projects.

#### IV. The Salience of Funding

When soliciting recommendations for moving forward with the CWP’s watershed emphasis, no topic was raised more than funding. A familiar refrain in Colorado (and many other states) is that, while money for implementing watershed-based projects is often available, securing funding for planning-related activities—such as funding for watershed coordinators—remains a chronic challenge.<sup>13</sup>

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<sup>11</sup> It is worth noting, however, that the membership categories for roundtable participation do not include a “watershed partnership” representative category, or something similar. Some watershed partnerships have cited this as a barrier to participation.

<sup>12</sup> For example, the CDPHE used to employ “watershed coordinators” to promote integration both within and between watersheds, however, those positions no longer exist due to budgetary constraints.

<sup>13</sup> In many cases, it is very difficult (if not impossible) to categorize funding sources as providing for either planning or projects. Some of the programs described below—including the *Colorado Watershed Restoration Program* and the *Colorado Healthy Rivers Fund*—do both. For example, the *Colorado Healthy Rivers Fund* explicitly provides both “planning grants” and “project grants” (see <http://cwcb.state.co.us/LoansGrants/colorado-healthy-rivers-fund-grants/Documents/CHRFProgramGuidance.pdf>). A review of awards from 2004-2013 lists 65 efforts, with roughly two-thirds having a strong field-work emphasis. These awards total \$867,350, with all but 11 being \$15,000 or less (see <http://cwcb.state.co.us/LoansGrants/colorado-healthy-rivers-fund-grants/Documents/CHRFProjects.pdf>). Most of the other state programs listed, including the *Fish and Wildlife Resources Fund* and the *Invasive Phreatophyte Control Program*, have a more explicit bias toward project funding and, in the case of the *Fish and Wildlife Resources Fund*, water rights acquisition. As noted in the text, a similar bias is found in many of the federal funding sources, particularly the big NRCS programs.

Funding for watershed-based efforts is available from a tremendous variety of sources. While this is a positive, it does create a challenge to groups lacking experience in seeking funds. The CWCB and the Colorado Watershed Assembly are among those entities that provide some guidance on these matters; for example, the website of the Colorado Watershed Assembly lists 34 governmental funding opportunities as well as many from non-profit organizations.<sup>14</sup> Nonetheless, navigating the spectrum of funding opportunities is a formidable challenge for many watershed partnerships, especially new (or proposed) efforts and those lacking coordinators.

Many of the state's funding mechanisms are administered through the CWCB's "Watershed Protection and Restoration"<sup>15</sup> activities, including the *Colorado Watershed Restoration Program*, the *Colorado Healthy Rivers Fund*, the *Fish and Wildlife Resources Fund*, and the *Invasive Phreatophyte Control Program*.<sup>16</sup> While these programs are important, they have temporarily been dwarfed (quantitatively) by recent federal funding sources administered by the program. Chris Sturm, Stream Restoration Coordinator of the CWCB's Watershed Protection and Restoration Program, estimates that his office currently manages about \$60 million in grants from a one-time allotment from the USDA Natural Resources Conservation Service's (NRCS) Emergency Watershed Protection (EWP) program.<sup>17</sup> Ongoing NRCS money is

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<sup>14</sup> <http://www.coloradowater.org/Funding%20Opportunities%20List/#Governmental>. Similarly, the Riparian Restoration Connection website, managed by the Tamarisk Coalition, provides a list of 38 governmental and NGO (e.g., Foundation) programs funding efforts in riparian restoration (<http://www.riparianrestorationconnection.com/>.)

<sup>15</sup> <http://cwcb.state.co.us/environment/watershed-protection-restoration/Pages/main.aspx>

<sup>16</sup> The *Colorado Watershed Restoration Program* provides grants for "watershed/stream restoration and flood mitigation projects" throughout the state (<http://cwcb.state.co.us/LoansGrants/colorado-watershed-restoration-grants/Pages/main.aspx>.) The *Colorado Healthy Rivers Fund* supports "local watershed organizations in their efforts to provide clean water, protect habitat and improve recreation and accessibility" (<http://cwcb.state.co.us/LoansGrants/colorado-healthy-rivers-fund-grants/Pages/main.aspx>.) The *Fish and Wildlife Resources Fund* helps water management agencies to mitigate environmental impacts associated with "existing water diversion, delivery or storage facilities" (<http://cwcb.state.co.us/LoansGrants/fish-and-wildlife-resources-fund-grants/Pages/main.aspx>.) The *Invasive Phreatophyte Control Program* funds "entities to control and/or eradicate tamarisk (also known as salt cedar), Russian olive, or other riparian invasive phreatophytes," and for "riparian re-vegetation/restoration after invasive removal" (<http://cwcb.state.co.us/environment/watershed-protection-restoration/Pages/main.aspx>); also see <http://cwcb.state.co.us/LoansGrants/PhreatophyteControl/Pages/Main.aspx>). Chapter 9.2 of the CWP contains additional information about water funding in the state. CWCB funds approximately \$10 million/year in watershed and stream restoration/protection projects.

<sup>17</sup> The EWP program is primarily aimed at project construction funding (from 75 to 90% of total costs), for efforts to: "remove debris from stream channels, road culverts, and bridges; reshape and protect eroded banks; correct damaged drainage facilities; establish cover on critically eroding lands; repair levees and structures; and repair conservation practices" (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>). Funds

primarily associated with the Environmental Quality Incentives Program (EQIP) and the Regional Conservation Partnership Program (RCPP).<sup>18</sup>

Additional (but dramatically smaller) amounts of federal money are associated with EPA's 319 (nonpoint source pollution) program, and are administered through the CDPHE Water Quality Control Division.<sup>19</sup> Many other federal agencies, such as the US Forest Service, the Bureau of Reclamation<sup>20</sup>, and the US Army Corps of Engineers, are also increasingly involved in funding watershed based programs, in part due to the increased focus in recent years in projects associated with hazards—namely forest fires and flooding.<sup>21</sup> This focus on hazards is one of the most significant forces leading to the rapid growth in the number of watershed based efforts in the state. The Colorado Department of Local Affairs (DOLA) has emerged as a key player in some of these efforts through programs such as their *Watershed Resilience Pilot Program*, described as a “holistic program designed to align watershed restoration and risk mitigation

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awarded to Colorado are primarily associated with the 2013 flooding statewide. By way of comparison, CWCB funds approximately \$10 million/year in watershed and stream restoration/protection projects.<sup>18</sup> The RCPP is intended to aid broadly constituted partnerships to “improve the nation's water quality, combat drought, enhance soil health, support wildlife habitat and protect agricultural viability” (<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/releases/?cid=NRCSEPRD343611> and <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/>). Generally, while EQIP is a program that funnels money directly to farmers and ranchers that implement conservation practices (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>), RCPP is a tool for directing funds toward various non-profits and state/local governments that partner with farmers in conservation efforts that require a broader partnership. Based on data compiled in the *Grassroots Guide to Federal Farm and Food Programs* (by the National Sustainable Agriculture Coalition), almost \$2 billion in federal money is allocated nationally to these two programs in 2015; <http://sustainableagriculture.net/publications/grassrootsguide/>.

<sup>19</sup> Approximately \$1.1 million is available in FY2016 for watershed plans and projects associated with Clean Water Act section 319 compliance; <https://www.colorado.gov/pacific/cdphe/nonpoint-source-funding-opportunities>. Projects require a 40% non-federal cost share, and must follow the EPA watershed planning framework. In part due to these hurdles, many watershed groups find this funding opportunity to be overly burdensome. See, *infra*, n. 29. For most groups, 319 money is best utilized as seed money and as a way to leverage additional funding.

<sup>20</sup> The Cooperative Watershed Management Program provides roughly \$250,000/year nationally through the Bureau of Reclamation to promote and support new watershed groups: <http://www.usbr.gov/watersmart/cwmp/>.

<sup>21</sup> Federal and state forest health agencies, in partnership with water agencies, local governments, and other local entities, address the fire/water supply nexus in efforts such as the *Rocky Mountain Watershed Protection Partnership* (<http://www.fs.usda.gov/detailfull/prc/home/?cid=stelprd3804156&width=full>) and the *Watershed Wildlife Protection Group* (<http://csfs.colostate.edu/forest-management/watershed-management/>) and the *Western Watershed Enhancement Partnership* ([http://www.fs.usda.gov/detailfull/prc/home/?cid=stelprd3804156&width=full#Western Watershed Enhancement Project](http://www.fs.usda.gov/detailfull/prc/home/?cid=stelprd3804156&width=full#Western%20Watershed%20Enhancement%20Project)).

with community and economic development goals using a collaborative, multi jurisdictional, coalition-of-partners approach.”<sup>22</sup>

Despite this diversity of funding sources, however, there are strong concerns about the ability to adequately fund watershed planning and project efforts going forward. The CWP estimates that \$18 million is necessary simply to support watershed planning efforts.<sup>23</sup> While that is a significant sum, it pales in comparison to costs for implementing projects. About \$20 billion in projects are identified in the CWP, with roughly \$2 to 3 billion needed for “non-consumptive” elements. To match these ambitions, it may prove necessary to establish a new large-scale, dedicated funding stream—perhaps analogous to the GOCO model.<sup>24</sup> The potential for such an action is raised in the CWP in its discussion of “green bonds.”<sup>25</sup>

In a similar vein, it may be necessary to rescue or improve existing funding streams. For example, the *Colorado Healthy Rivers Fund*, managed jointly by CWCB and the Water Quality Control Commission in cooperation with the Colorado Watershed Assembly, is primarily funded by the Colorado Income Tax Refund “Check-Off” program.<sup>26</sup> It was recently determined that this program is being discontinued due to insufficient revenues. Also, while the NRCS Regional Conservation Partnership Program (RCPP), established by the 2014 Farm Bill, is widely seen as having great potential to be an ongoing source of funding for diverse watershed partnerships, the necessary rules and “administrative infrastructure” for the program have yet be developed by NRCS, and the program thus far has mostly been administered as if a part of EQIP. The availability of EPA 319 funding has declined over time, and left a palpable void in many watershed planning activities that has, at least temporarily, been filled by hazard related funding prompted by the fires and floods of 2012-2013. The availability of such funding going

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<sup>22</sup> <https://www.colorado.gov/pacific/dola/watershed-resilience>. About \$32 million is made available to watershed coalitions.

<sup>23</sup> See CWP chapter 9.2, which states that these funds are needed to prepare “up to 90 watershed or stream management plans .... to better determine the amount of river restoration work and other similar types of work that may be required.” Currently, the state allocates roughly \$1.5 million/year for stream management plans. Only about one-fourth of this money was actually spent in 2015, the first year of CWCB grant-making in this area. The CWP anticipates that this funding level will be retained and that a long-term funding source will be established (see 9-22). If allocated, this level of spending is consistent with achieving the goal of covering 80% of rivers and watersheds with such plans by 2030.

<sup>24</sup> The Great Outdoors Colorado (GOCO) program uses a portion of Colorado Lottery revenues to preserve and enhance “preserve and enhance the state's parks, trails, wildlife, rivers and open spaces” <http://www.goco.org/about-us>. GOCO funds are available for some riparian restoration activities, but generally not for more broadly focused watershed planning activities.

<sup>25</sup> Green bonds would rely on private capital for “environmental and recreational projects that may or may not be attached to a specific water infrastructure project” (CWP page 9-18). They would be administered through the CWCB’s Watershed Restoration Program. Revenue for repayment of green bonds could come from many sources, including severance taxes and public initiatives (such as the failed Referendum A in 2003).

<sup>26</sup> See <http://cwcb.state.co.us/LoansGrants/colorado-healthy-rivers-fund-grants/Pages/main.aspx>

forward is unknown. Finally, the recent drop in oil and gas prices has led to a significant decline in severance taxes, which in good times can be a valuable funding source for watershed health activities.<sup>27</sup>

Oddly absent from many funding streams are resources to support a direct focus on the water and water flows, as most “watershed efforts” are primarily focused on land management activities that are presumed to have an indirect (yet positive) impact on water quality, stream morphology, and so on. In some respects, this is an encouraging example of how land and water management can be integrated; but on the other hand, it underscores the challenge of using collaborative partnerships to address issues of river flows and water quantity in a legal environment featuring private water rights and a priority-based allocation system. This is largely not a funding issue—although a commitment to protect and increase instream flows would undoubtedly be boosted by an influx of funding for this purpose—but it speaks to the importance of supplementing watershed efforts with more flow-based initiatives, such as the “stream management plan” efforts lauded and encouraged in the CWP.

## V. Recommendations

The role of the state of Colorado in promoting and nurturing watershed efforts is varied. Philosophically, the CWP is very strong in promoting the so-called “watershed approach,” as evidenced by the plan’s “long-term goal of developing watershed master plans for every large watershed area to maintain watershed health” (page 6-178). The challenge, thus, is to identify the most practical mechanisms available to state and local decision-makers to move forward. Based on the information gathered and reviewed as part of this memo, we have recommendations in three interrelated categories:

### **1. Stabilize and Enhance State Funding for Watershed Efforts to Match the Ambitions of the CWP.**

The state has a variety of programs that offer financial support to watershed efforts. However, the magnitude of existing funding streams is inadequate to implement—or potentially even to adequately plan for—the watershed health objectives in the CWP, and some of these funding streams are in jeopardy or decline (e.g., the Healthy Rivers Fund, severance taxes, the 319 planning awards administered by the CDPHE). More (and more reliable) funding is thus a pressing need. But perhaps more important than increasing the volume of funding is to establish, rescue or retool state funding streams to address prominent “holes” in the existing

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<sup>27</sup> Colorado statutes establish a framework for distributing severance tax proceeds by the Colorado Department of Local Affairs, in part using formulas providing for “direct distributions” to counties, municipalities, and school districts (see <https://www.colorado.gov/pacific/dola/direct-distribution-severance-tax-federal-mineral-lease>).

portfolio of funding opportunities. Perhaps the most obvious deficiency is funding for administrative functions—e.g., for watershed coordinators, for permitting activities, and for grant management. Also of concern is the lack of funding for post-project efforts, namely maintenance and monitoring. The wealth of mostly-federal funding for project implementation is an incredibly important asset that could be enhanced greatly by a strategic use of state monies to fill these holes. Given these observations, some specific actions to prioritize include:

- *Better Staff Key Agencies Tasked with Promoting and Assisting Watershed Efforts.* Many funding issues are, in practice, expressed as deficiencies in staffing. As noted earlier, the watershed focus of the CDPHE has clearly waned over time—for example, the watershed coordinators positions have been eliminated—due to funding cuts rather than a desire to abandon a field where CDPHE and EPA have traditionally been leaders. In a somewhat different vein, the ability of CWCB staffers to effectively serve (and participate in) watershed partnerships and to administer related efforts (such as the stream management plan program) appears constrained by staff spread too thin, a function of the expansion of watershed-based efforts and watershed related grants administered by the agency. State agencies are critical to the functioning of watershed partnerships, providing technical expertise and authorities often not held by other members, conducting activities (such as monitoring and data management) not adequately covered by project implementation funding, and by acting as the “intergovernmental lubricant” necessary for managing collaborations involving multiple layers of government—e.g., in areas of permitting or administering funds. Personnel funding decisions should better reflect the demands on, and salience of, these key participants and the commitments to the watershed approach made in the CWP.
- *Establish (or Repurpose) Funds Expressly for Watershed Coordinators.* A variety of the administrative hurdles mentioned throughout this paper can be traced to the persistent challenge of finding funds for watershed coordinators. The CWP recognizes this as a concern, noting that a “paid watershed coordinator improves the chances” is essential for success (CWP page 7-6, emphasis added). This is a longstanding problem ripe for new ideas; one idea is to establish a program that would provide matching state funds to commitments provided by local participants.
- *Assist Partnerships Looking for Money.* While expanding the overall amount of available funding is the bigger, long-term need, an immediate barrier to tackle is to make it easier for groups to find funds from the existing diversity of federal, state, local and NGO funding streams. The Colorado Watershed Assembly, the CWCB, the Tamarisk Coalition, and others, all perform these functions to some degree, but a more dedicated effort to assign staff or develop resources (such as websites and guidebooks) would likely prove beneficial—especially given the limited administrative staff time available to most watershed partnerships.

- *Save (or Replace) the Healthy Rivers Fund.* The Department of Revenue should reconsider the decision to end the income tax check-off that, to date, has been the primary source of income to this fund, and the administrators of this fund (namely the CWCB, CDPHE, and the Colorado Water Assembly) should initiate efforts to look for other ways to support this fund. If the small size of the fund does not justify the administrative burden of managing the check-off, then an alternative funding stream should be established.
- *Continue Discussions About Establishing a Large-Scale, Dedicated Funding Mechanism for Environmental/Recreational Projects.* As noted earlier, \$2 to 3 billion in funding may be required to pursue the environmental health and recreational goals in the CWP. Existing funding streams are collectively significant and support many laudable efforts, but are simply not at this scale. The green bonds idea, described in section 9.2 of the CWP, is an idea potentially worth pursuing that could operate on this scale. The state, perhaps through the IBCC or the new Statewide Water Funding Investment Committee, should make this issue a priority.<sup>28</sup>

## **2. Focus on Better Integrating Diverse Efforts Rather Than on Imposing a Common Structure.**

Colorado has a wealth of watershed-based processes, and this diversity has only been increased by the CWP process (and the associated use of the Basin Roundtables) and by the influx of new partnerships inspired and nurtured by fire and flood related disasters. While some organizational attributes are common to most efforts—such as broad participation, a collaborative orientation, a pragmatic focus, and a strong base of local support—they are otherwise quite diverse in terms of their foci, actions, funding, and objectives. This is generally viewed as a positive, and preferable to any efforts by the state to standardize, consolidate, or rigidly link efforts together into a more structured format.<sup>29</sup> It is also widely acknowledged, however, that there is a largely untapped opportunity for groups to learn from each other, to share resources (such as technical expertise, data, and funding directories), and to integrate plans across substantive issues and across geographic scales—for example, from small watersheds to larger basins. Given these observations, some specific actions for promoting improved integration might include:

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<sup>28</sup> This recommendation is consistent with the commitments made in the CWP, pages 9-21 and 9-22.

<sup>29</sup> In some cases, some structure is already provided by the funding programs, the most salient example being watershed efforts funded (in part) through section 319 of the federal Clean Water Act, which requires a 9-step watershed planning process developed by EPA. Specifically, plans must: (1) identify causes and sources of pollution; (2) estimate pollutant loading into the watershed and the expected load reductions; (3) describe management measures that will achieve load reductions and targeted critical areas; (4) estimate amounts of technical and financial assistance and the relevant authorities needed to implement the plan; (5) develop an information/education component; (6) develop a project schedule; (7) describe the interim, measurable milestones; (8) identify indicators to measure progress; and (9) develop a monitoring component. Many parties report that this structure can be unduly burdensome.



- *Address the Integration Challenge Primarily Through Improved Staffing of Agencies and Partnerships.* As noted earlier, agencies associated with watershed efforts, as well as the watershed partnerships themselves, are often challenged by a lack of funding for administrative positions and coordinating functions. When budgets and staff time are tight, often the first activities that are cut are those that extend beyond narrow project-by-project implementation tasks, including the integrative activities described herein. The CWP singles out the “CPW, the CDPHE, and the CWCB” as state agencies that should play a central role in “coordination across watershed divides” (CWP page 7-10), however, there is little reason to believe these agencies have this capacity at current staffing levels. A similar “capacity problem” unduly limits the role of the Colorado Watershed Assembly. Partnerships lacking paid coordinators often find it difficult to allocate time to these larger integrating efforts.
- *Invigorate and Prioritize Efforts to Develop Stream Management Plans.* The emphasis on stream management plans featured in the CWP is an opportunity to build upon, as this is one of the very few mechanisms currently in existence for linking concerns about instream flow volumes to off-stream concerns associated with land-use and consumptive use demands.<sup>30</sup> Similarly, these plans can be the framework for integrating across watersheds to larger, river basin, scales. This is a relatively new tool, becoming eligible for CWCB grants only in 2015.<sup>31</sup> In 2015, CWCB chose not to develop a template for the plans—instead deferring to local priorities—and did not award much of the \$1.5 million made available due to a lack of applications.
- *Remove Hurdles to Participation in the Basin Roundtables.* While the rules for designated and at-large members in the basin roundtables do not explicitly preclude representatives from watershed partnerships, they also do not explicitly solicit or reserve a seat for such representatives.<sup>32</sup> Rules that set aside seats for representatives associated with a variety of specific sectors are well intentioned, but ironically work against participants—such as watershed coordinators—that strive to move outside of these substantive silos.

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<sup>30</sup> It is somewhat ironic that most “watershed efforts” are primarily about land management; conversely, stream management plans are actually about the water itself.

<sup>31</sup> The CWCB’s Watershed Restoration Program now offers grants in four categories: Restoration Grants (i.e., watershed/stream restoration and/or protection activities); Flood Mitigation Grants; CWCB Monitoring Projects; and Stream Management Grants. (*Colorado Watershed Restoration Program, Grant Program Guidance*, revised July 2015).

<sup>32</sup> <http://cwcb.state.co.us/water-management/basin-roundtables/Pages/BasinRoundtableMembership.aspx>

### 3. Cultivate an Environment Supporting Innovation.

Watershed partnerships often operate at the cutting edge of efforts to make water management more efficient, flexible, and responsive to changing threats and societal demands. As such, they can be immensely valuable vehicles for looking at both problems and solutions through a new lens, and for advocating changes in how water resources should be valued and managed. In order to make the most of these opportunities emerging from the “bottom up” in watershed partnerships, there is a role for the state to assume additional leadership from the “top down” on broad issues that affect the space where watershed groups work. Some examples may include:

- *Update and Reform Colorado Water Law to Promote Greater Flexibility and Improved Resource Management.* Reforms in Colorado water law designed to better integrate land-and-water planning, to incentivize conservation, and to permit greater flexibility in the use and movement of water, would all be helpful in promoting an environment where creative problem-solving can be pursued through watershed efforts.<sup>33</sup> Potential reforms are discussed elsewhere, primarily with respect to alternative water transfer methods (ATMs) and land/water integration, and thus are not repeated here.<sup>34</sup>
- *Enhance Public Education Efforts Regarding Water and Watersheds.* In order for watershed partnerships to be effective, they must attract and spend public money, they must encourage action by agencies and private interests, and they must be viewed as offering a well-reasoned solution to an existing or emerging problem. Each of those prerequisites is easier to achieve if the public values water and understands the state’s pressing water issues. The responsibility for this education falls to many entities, including the state.
- *Don’t Unduly Dilute the Resources Available to Existing Watershed Efforts Through the Creation of New Partnerships.* Each of the recommendations herein speaks to the need to better support existing watershed partnerships, primarily through efforts to expand

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<sup>33</sup> Some useful legal reforms may extend beyond the realm of natural resources law. For example, some watershed partnerships have run into TABOR Amendment constraints when attempting to route grant money through governmental participants.

<sup>34</sup> Several Getches-Wilkinson Center white papers touch on these issues, for example, see: [An Enhanced Water Bank for Colorado](#) (Anne J. Castle and Lawrence J. MacDonnell; February 2016); [Improving Irrigation Water Uses for Agricultural and Environmental Benefits](#) (draft of February 2016); and [Improving the Viability of Alternative Water Transfer Methods \(ATMs\) in Colorado: A Synthesis of Research and Findings from the Getches-Wilkinson Center, 2014-2015](#) (Doug Kenney et al.; October 2015) <http://www.waterpolicy.info/wp-content/uploads/2015/10/Summary-of-GWC-ATM-research-projects.pdf>. Several individuals have noted that it would be useful for the state to speak with a “common voice” on natural resource matters, a predictable but perhaps impossible request given the often different value structures that underlie the many programs and agencies active in Colorado’s watersheds.

capacity (through enhanced funding and staffing) and remove barriers. While there is a widespread agreement that these actions would be useful, there is a parallel concern that they could inspire the formation of new partnerships that would immediately compete for and dilute the expanded resources. The idea that existing groups should be stabilized and supported before new efforts are initiated is strongly held.

## APPENDIX A: Summary of Reviewed Watershed Plans

The following text reviews a sub-set of the 75 efforts identified in Appendix D of the Colorado Water Plan, focused on six watersheds: Fountain Creek (in the Arkansas Basin); Eagle Creek (in the Colorado River Basin); Clear Creek (in the South Platte Basin); Animas River (in the San Juan / Dolores Basin); Uncompahgre River (in the Gunnison Basin); and Kerber Creek (in the Rio Grande Basin).

One theme that emerges from this review is that the focus of watershed plans can vary significantly from region to region. For example, the water quality impacts of past mining activities is a particularly strong focus in the Clear Creek and the Animas River efforts, whereas issues of soil erosion and compaction take center stage in Fountain Creek and Kerber Creek. Perhaps more noteworthy, however, is the observation that virtually all the watershed planning efforts, to some degree, touch on these and many other issues. The differences are in degrees of emphasis, more so than in what is or is not addressed at all. Issues of water quality, especially associated with nonpoint source pollution, are a particularly common point of emphasis.<sup>35</sup> But in most watersheds, the planning efforts collectively are sufficiently broad to also consider issues of growth and development, water supply, natural hazards, fish and wildlife, recreation, and other concerns. Any effort to standardize the watershed planning approach or to dictate the substantive scope of such efforts should be mindful of this balance between being responsive to the most pressing local concerns, and attempting to address everything—that is, pursuing the theoretical ideal of a plan encompassing all interrelated activities and processes that shape water conditions in a given watershed.

### Fountain Creek

Appendix D identifies 5 efforts focused specifically on Fountain Creek, with 3 others prominently including Fountain Creek in a broader suite of included rivers.<sup>36</sup> The Fountain

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<sup>35</sup> The notion that nonpoint source water quality concerns are particularly well suited to the watershed approach is an observation made in many other investigations; e.g., see [The New Watershed Source Book: A Directory and Review of Watershed Initiatives in the Western United States](#) (by Douglas S. Kenney et al., 2000); and [The State Role in Western Watershed Initiatives](#) (Natural Resources Law Center, 1998).

<sup>36</sup> The “3 other” efforts are: the *Arkansas River Watershed Invasive Plants Plan* (2008), <http://www.tamariskcoalition.org/sites/default/files/images/ARKWIPP%20Plan.pdf>; the *Protecting Critical Watersheds in Colorado From Wildfire: A Technical Approach to Watershed Assessment and Prioritization* (2009), <http://www.jw-associates.org/Resources/Work%20Group%20Final%20Report%20V6.pdf>; and the *Waldo Canyon Fire Master Plan for Watershed Restoration and Sediment Reduction* (2013) <http://cusp.ws/wp-content/uploads/2014/10/FinalWaldoCanyonFireMasterRestorationPlanComp.pdf>. In total, 11 efforts are listed that focus primarily on some part of the Arkansas River Basin. Additionally, the CWP in Appendix E notes the existence of Source Water Protection Plans throughout the state. For the

Creek efforts focus primarily on flooding issues, in part due to flood events in 1864, 1886, 1935, 1965, 1999, and 2013. These efforts are briefly summarized below:

- **Fountain Creek Watershed Plan** (2003).<sup>37</sup> This effort was primarily led by a coalition of local governments--organized under the umbrellas of the Pikes Peak Area Council of Governments (PPACG) and the Pueblo Area Council of Governments (PACOG)--in conjunction with a few state and federal agency "contributors."<sup>38</sup> Initially completed in 2001 and updated in 2003, the plan primarily focuses on the related issues of erosion, sedimentation, and flooding, establishing a baseline for future work--especially the Watershed Study (begun in 2003) led by the Corps of Engineers (see below). This Watershed Plan was primarily financed by grants from EPA, Colorado State Soil Conservation Board, and the CWCB.
  
- **Fountain Creek Watershed Study, Watershed Management Plan** (2009).<sup>39</sup> This was primarily a technical study with 17 general recommendations, focused (again) on issues of flooding, erosion, and sedimentation. The effort was led by the US Army Corps of Engineers, in partnership with 13 local, state and federal agencies. The Watershed Study was begun in 1999, overlapping and building upon two previous efforts: the Fountain Creek Watershed Plan (2003) (described above), and a Phase 1 ("reconnaissance") study completed by the Corps in 2001. This follow-up investigation, known as a Phase 2 (or "feasibility") study, was funded via a 50/50 federal-local cost-sharing, with local funds coming from a coalition including the City of Colorado Springs (the lead sponsor), El Paso County, City of Fountain, Town of Green Mountain Falls, City of Manitou Springs, Town of Monument, Town of Palmer Lake, City of Pueblo, Pueblo County, Teller County, and the City of Woodland Park, in conjunction with the CWCB and the DOLA.<sup>40</sup>

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Fountain Creek watershed, source water protection plans are noted for Buena Vista, Canon City, Manitou Springs, Monument, Palmer Lake, and Salida. For the purposes of this analysis, these are considered distinct from watershed planning efforts.

<sup>37</sup> <http://cwcbweblink.state.co.us/weblink/0/doc/136931/Electronic.aspx?searchid=eeac973e-818b-4075-b648-6d9a08192b4a>

<sup>38</sup> While largely a technical effort, the plan did feature a public involvement strategy that included public meetings in Pueblo, Colorado Springs, Woodland Park, and Monument; quarterly newsletters; numerous public presentations; and a website (Page ES-1).

<sup>39</sup> <http://cwcbweblink.state.co.us/WebLink/ElectronicFile.aspx?docid=136930&searchid=b6879eae-7485-483b-8267-bf919164e02b&dbid=0>

<sup>40</sup> The Phase 1 study was 100% federally funded. Both the Phase 1 and 2 studies can traced in large part to U.S. House of Representatives Resolution adopted on 23 September 1976, authorizing the Corps of Engineers to perform a reconnaissance study looking at flood control options on Fountain Creek upstream of Pueblo. This history is described in the 2009 document, pages 1-4 to 1-6;

<http://cwcbweblink.state.co.us/WebLink/ElectronicFile.aspx?docid=136930&searchid=b6879eae-7485-483b-8267-bf919164e02b&dbid=0>

- **Strategic Plan for the Fountain Creek Watershed** (2009).<sup>41</sup> Shortly before completion of the Corps' study (described above), the Fountain Creek Vision Task Force had begun work on the Strategic Plan for the Fountain Creek Watershed (2009), published later that same year. The Fountain Creek Vision Task Force was a joint creation of the El Paso and Pueblo County Commissioners, which blossomed into a highly collaborative effort including more than 60 people from local government, water agencies, advocacy groups, ranching interests, state agencies, and the public. The effort again focused primarily on flooding and water quality concerns, but also issues associated with recreation, fish and wildlife, agriculture, land use planning, and related concerns. A central recommendation was for the legislature to create a Fountain Creek Watershed Drainage, Flood Control, and Greenway District as the funding and management entity for implementation, complete with taxing authority and a citizens advisory group.<sup>42</sup>
- **Fountain Creek Corridor Master Plan** (2011).<sup>43</sup> Following up on goals established by the Fountain Creek Vision Task Force, the Fountain Creek Master Plan provides a strategy for designing and implementing demonstration projects consistent with restoring the Fountain Creek watershed between Colorado Springs and the confluence with the Arkansas River. Led by the Fountain Creek Flood Control and Greenway District (in conjunction with the Upper Fountain and Cheyenne Creek Flood Restoration Coalition) and financed by the City of Colorado Springs and the Lower Arkansas Valley Water Conservancy District<sup>44</sup>, the \$1 million effort primarily focuses on bank restoration, detention ponds, wetlands management, and the removal of invasive species on those parts of the stream corridor in public ownership.
- **Upper Fountain Creek and Cheyenne Creek Flood Restoration Master Plan** (2015).<sup>45</sup> Building on previous efforts and motivated by the 2013 flooding, the Upper Fountain Creek and Cheyenne Creek Flood Restoration Master Plan (2015) is the latest attempt in the basin to restore damaged areas and mitigate the risk of future flood impacts. Led by the Fountain Creek Watershed Flood Control and Greenway District, the project was primarily funded by a Colorado Watershed Restoration Program (WRP) grant from the CWCB, with additional funding partners including the City of Colorado Springs, El Paso County, Colorado Springs Utilities, and utilizing in-kind services from the Coalition for the Upper South Platte and the

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[ftp://ft.dphe.state.co.us/wqc/wqcc/31\\_85NutrientsRMH\\_2012/ResponsivePrehearing/LFMSDDex2a.pdf](ftp://ft.dphe.state.co.us/wqc/wqcc/31_85NutrientsRMH_2012/ResponsivePrehearing/LFMSDDex2a.pdf)

<sup>42</sup> See pages 7-8 of the strategic plan for a complete description. The entity was established in 2009 in SB 09-141 (with a slightly different name: Fountain Creek Watershed Flood Control and Greenway District); <http://fountain-crk.org/>

<sup>43</sup> <http://fountain-crk.org/studiesreports/fcw-master-plan.html> and [http://fountain-crk.org/files/REPORTS/corr\\_rest\\_masterplan101811\\_final.pdf](http://fountain-crk.org/files/REPORTS/corr_rest_masterplan101811_final.pdf)

<sup>44</sup> <https://coyotegulch.wordpress.com/2011/10/25/the-fountain-creek-corridor-restoration-master-plan-is-hot-off-the-press-from-the-fountain-creek-watershed-flood-control-and-greenway-district/>

<sup>45</sup> <http://cwcwebblink.state.co.us/WebLink/0/doc/196305/Electronic.aspx?searchid=d00be47f-263c-46f5-8f56-b51c7cc767db>

Pikes Peak Area Council of Governments. Other participants included the cities of Manitou Springs, Green Mountain Falls, Woodland Park, as well as the Pikes Peak Regional Building Department, Cheyenne Creek Metro District, Teller County and numerous local residents.

### Eagle River

Appendix D of the Colorado Water Plan lists 3 watershed efforts focused on the Eagle River (within the Colorado River drainage)<sup>46</sup>:

- **Eagle River Watershed Plan (1996).**<sup>47</sup> This was a broadly focused effort, resulting in recommended actions pertaining to water quantity, water quality, wildlife, recreation, and land-use.<sup>48</sup> The effort was led by a broad assemblage including members from local, state and federal agencies/governments, as well as extensive citizen involvement. While a variety of participating agencies provided support to the effort, the key funding came from a planning assistance grant from the National Park Service's Rivers, Trails and Conservation Assistance Program. While the legacy of past mining efforts hangs over many Eagle River efforts, this plan was largely seen as a pre-emptive effort, as the watershed was characterized by many participants as being in an "an acceptable condition now but has the potential to degrade as the local and regional population grows and subsequent demands for water quantity, developed land and recreation use increase" (page i). Featuring a very collaborative and voluntary framework, the Plan calls for establishment of an Eagle River Watershed Committee—later known as the Eagle River Watershed Council—comprised of local, state and federal officials as well as citizens, to oversee implementation, which was to occur via annual work plans of prioritized actions implemented by the relevant participating jurisdictions.<sup>49</sup> The Plan also featured a strong public education focus.

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<sup>46</sup> These 3 efforts are among 13 identified watershed plans identified in Appendix D that focus primarily on the Colorado River. An additional 7 completed watershed plans are identified for the Gunnison Basin, 10 in the San Juan/Dolores Basin, and 4 in the Yampa/White/Green.

<sup>47</sup> <http://cwcwebblink.state.co.us/weblink/0/doc/136938/Electronic.aspx?searchid=eeac973e-818b-4075-b648-6d9a08192b4a>

<sup>48</sup> In this respect, it had a much broader focus than any preceding efforts, including those led by the Northwest Colorado Council of Governments, the Colorado River Headwaters Forum, and the Eagle River Assembly, and included review of the development plans and regulations promulgated by the relevant local governments. The Northwest Colorado Council of Governments effort was primarily focused on so-called "208" planning, referring to non-point source water quality plans required under the federal Clean Water Act. The Eagle River Assembly was primarily focused on water quality and quantity issues (including trans-mountain diversions).

<sup>49</sup> The Council was officially formed in 2004, emerging from the amalgam of groups working on watershed issues first identified in the 1996 report. Activities of the Council are funded by a very broad mix of funding sources, primarily local (including special districts) and state sources, and private foundations. <http://www.erwc.org/>

- **Eagle River Watershed Plan Update** (2013).<sup>50</sup> This effort updates and replaces the 1996 Plan, and draws upon a 2010 State of the Rivers Report. Led by Eagle County and the Eagle River Watershed Council, the new plan retains (and even expands upon) the broad focus of the earlier effort, and shares a similar sentiment: namely, that the river is generally in good shape, however, it is potentially vulnerable to stresses associated with continued growth pressures and from historical mining activities. The new plan retains the reliance on local implementation and regulation, and is considered a chapter in the Eagle County Comprehensive Plan.
- **Colorado River Inventory and Assessment** (2014).<sup>51</sup> Unlike the earlier water plan efforts, this effort, prepared for the Eagle River Watershed Council by Colorado State University, was primarily confined to an assessment of basic scientific data in the river. Specifically, the study sought to compile and expand data on channel, riparian, and upland characteristics in the main stem corridor, and to inventory and assess parameters affecting the ecological integrity, recreational amenities, and aesthetic values of the river.

### Clear Creek

Appendix D of the Colorado Water Plan lists 2 watershed efforts focused on Clear Creek (within the South Platte River drainage):

- **2007 Clear Creek Watershed Report: Exploring Watershed Sustainability** (2007).<sup>52</sup> This report, prepared by the Clear Creek Watershed Foundation (established in 1997), features a remarkably broad focus on so-called “triple bottom line” sustainability, defined to include the region’s ecological, societal, and economic health. Funded by EPA (via a Regional Priorities Grant), the report documents baseline conditions in terms of “physical, biological, and human dimensions; threats to cleaner water; opportunities for sustainable management of natural resources; and descriptions of more sustainable conditions.”<sup>53</sup> This focus marked a significant expansion to “watershed sustainability” focus, whereas earlier efforts of the Foundation had been more tightly limited to issues of abandoned mine remediation.<sup>54</sup> This expansion was the natural outgrowth of past stakeholder forums and workshops held in the watershed since 1993.<sup>55</sup> Preparation of the report was supported by a Stakeholder Advisory Committee primarily comprised of

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<sup>50</sup> <http://www.townofeagle.org/DocumentCenter/View/5960>

<sup>51</sup> [http://www.erwc.org/wp-content/uploads/2014/01/CRIA\\_Final.pdf](http://www.erwc.org/wp-content/uploads/2014/01/CRIA_Final.pdf)

<sup>52</sup> <http://www.clearcreekwater.org/pdfs/CCWF-2007-report-optimized.pdf>

<sup>53</sup> *Id.*, Page 1.

<sup>54</sup> A “State of the Watershed Report” was also produced by the Foundation in 1997. This 2007 was the first comprehensive study since.

<sup>55</sup> <http://www.clearcreekwater.org/forums.html>



citizens, NGOs, business interests, and elected officials, and a Technical Advisory Committee of federal, state, and local officials, along with a cadre of consultants.

- **Upper Clear Creek Watershed Plan Update** (2014).<sup>56</sup> This effort primarily “enhances and updates” the Upper Clear Creek Watershed Association’s (UCCWA) 2006 *Upper Clear Creek Watershed Plan*, which unlike the broadly focused 2007 *Clear Creek Watershed Report*, is an EPA 319 targeted effort focused on the basin’s lingering problems with nonpoint source pollution, particularly metals and sediment problems associated largely with mining and road development. The UCCWA is the EPA designated Section 208 (under the Clean Water Act) entity responsible for overseeing water quality issues throughout the Upper Clear Creek Watershed. Members include roughly a dozen cities; the counties of Clear Creek, Gilpin, and Jefferson; the Colorado Department of Transportation; and major industries. Pulling in extensive monitoring data and findings from several new studies and planning documents completed since 2006, the updated report is generally optimistic, noting that “water quality conditions in Clear Creek are likely better than they have been in more than a century” (page E-3). These improvements are traced to several management efforts, including the CERCLA remedial actions for the Clear Creek/Central City Superfund site, and related projects focused on the Big 5 and Virginia Canyon drainages and the National Tunnel and Gregory Incline discharges. Relying highly on water quality databases, GIS mapping, and related technical analyses joined with stakeholder outreach, this updated plan outlines and prioritizes many additional actions, focused heavily on the Idaho Springs area.

### Animas River

Appendix D of the Colorado Water Plan lists 2 watershed efforts focused on the Animas River (within the San Juan / Dolores River drainage)—although only one effort is currently available online.<sup>57</sup>

- **Animas River Watershed Based Plan** (2011).<sup>58</sup> The Upper Animas has a long history of mining, and thus an ongoing history of water quality issues associated with abandoned mining activities, highlighted this past year by the Gold King Mine spill. This has been the historic focus of the Animas River Stakeholders Group, formed in 1994. Traveling down the watershed, other concerns emerge, including water diversions (mostly for

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<sup>56</sup> Upper Clear Creek Watershed Association. 2014. *Upper Clear Creek Watershed Plan Update*. Prepared in collaboration with Clear Creek Consultants and the Matrix Design Group. April. This report is not available online.

<sup>57</sup> The other listed effort, the *Animas Watershed Plan* (2013), is described as a product of the Animas River Stakeholder Group; <http://www.animasriverstakeholdersgroup.org/>.

<sup>58</sup> <http://cwcbweblink.state.co.us/weblink/0/doc/158630/Electronic.aspx?searchid=f52eaa3b-282c-4e41-b395-af0422b655ca>

irrigation), gravel mining, oil and gas development, and eutrophication resulting from both rural and urban sources. This larger suite of issues is addressed in the Animas River Watershed Based Plan (2011), led by the Animas Watershed Partnership—an outgrowth of the Animas River Nutrient Workgroup (formed in 2002)—and now including federal, state (both Colorado and New Mexico), tribal (Southern Ute and Ute Mountain Ute), and local governments, as well as private individuals and landowners. The Animas River Stakeholders Group and the San Juan Watershed Group, among many others, also contributed to this effort, which identifies a host of BMPs applicable to improving riparian ecosystems (e.g., buffers), and treating contaminated water. EPA support was critical to development of the plan, which followed EPA’s watershed planning handbook—a prerequisite to obtaining EPA funding for implementation of identified BMPs.

### Uncompahgre River

Appendix D of the Colorado Water Plan lists one watershed effort focused on the Uncompahgre River (within the Gunnison Basin), described below.

- **Uncompahgre Watershed Plan (2013).**<sup>59</sup> This plan, produced by the Uncompahgre Watershed Partnership (formed in 2007), addresses a variety of concerns, including impaired water quality (from heavy metals, selenium and nutrients), ecosystem stressors (including seasonal low flows and altered sediment dynamics), flood risk, and threats from continued growth (including water supply gaps). Participation in, and funding of, the watershed planning effort was remarkably broad. Contributors included members from federal (e.g., BLM, USFS, USGS), state (e.g., CDPHE, Division of Parks and Wildlife), and local agencies/governments (e.g., City and County of Montrose, Ouray County, Town of Ridgway, City of Ouray, Delta County, City of Delta); various regional organizations (e.g., the Ridgway Ouray Community Council, Uncompahgre Valley Association, Mosaic Community Project); water organizations/districts (e.g., Uncompahgre Valley Water Users Association, Tri-County Water Conservancy District, Friends of the River Uncompahgre, Colorado River District), and other interests. Funding primarily was provided through the Colorado Healthy Rivers Fund, the Colorado Nonpoint Source Pollution Program, and the Blue Water Project from the Royal Bank of Canada. The planning process followed the 9 required elements for Comprehensive Watershed Plans (under 319) provided by EPA. Goals are identified in five areas, focused on improving water quality, riverine ecosystem function, seasonal low flows, recreation opportunities, and the health of the Partnership.

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<sup>59</sup> <http://www.uncompahgrewatershed.org/wp-content/uploads/2012/03/UncompahgrePlan-Jan2013.pdf>

## Kerber Creek

Appendix D of the Colorado Water Plan lists one watershed effort focused on Kerber Creek (within the Rio Grande Basin), described below.

- **Kerber Creek Watershed Management Plan (Draft) (2010).**<sup>60</sup> This plan is a broadly focused effort addressing several water quality and environmental restoration concerns attributable to legacy mining, soil compaction, riparian and stream channel degradation, loss of native vegetative cover, stream depletions (to off-channel diversions), and the many related stressors associated with the multiple purpose management of the nearly four-fifths of the watershed under USFS and BLM land control. Led by a coalition known as the Kerber Creek Restoration Project<sup>61</sup> (formed in 2007), the Plan was drafted in consultation with USFS and BLM resource management plans, and follows the 9-elements required for EPA 319 efforts as well as the Colorado Uniform Watershed Plan Outline.<sup>62</sup> Well over \$1 million was raised for the Kerber Creek Restoration Project from a diverse group of funders, primarily federal agencies (EPA, NRCS, and BLM) and private landowners—many of them organized in a partnership known as the Bonanza Stakeholders Group. Some key management elements include stabilizing stream channels and banks, restoring healthy vegetative cover, and removing (or capping) contaminated soils.

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<sup>60</sup> <http://www.kerbercreek.org/watershedplan.pdf>

<sup>61</sup> The Kerber Creek Restoration Project is described as an “award winning collaboration among government agencies, non-profit groups, and more than 20 local landowners” (<http://www.kerbercreek.org/>.) A full list of partners is provided at: <http://www.kerbercreek.org/partners.html>.

<sup>62</sup> This is presumably a reference to a guidance document, produced by the Colorado Department of Public Health and Environment, associated with the Nonpoint Source Management Plan that the agency is required to submit to EPA as part of Clean Water Action section 319.